



SHA Guidelines

**Practical guidance for implementing
A System of Health Accounts in the EU**

Authored by: the Office for National Statistics (UK)

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Foreword

Health systems across Europe and further afield receive significant scrutiny from those interested in understanding the extent to which resources are used efficiently, actions are effective in reducing morbidity and mortality, and access to health goods and services are available to all. OECD's publication of *A System of Health Accounts* in 2000 constituted a significant step on the path towards the setting of an international framework for the analysis of expenditure on health.

The European Statistical System's Statistical Programme Committee recommended in 2001 that reporting of health expenditure for intra-EU comparisons should be according to *A System of Health Accounts*. The World Health Organisation, the World Bank and the United States International Development Agency have adopted *A System of Health Accounts* as the framework on which its *Guide to producing national health accounts* has been based.

At the time of publication, there was a critical mass of European countries that were compiling Health Accounts according to the OECD's framework, including some which had indeed published some results. *SHA Guidelines* has been written both for those compilers who are only just beginning the process of development and for those who may just dip in to certain subsections for suggestions on a particular question.

The growing amount of information available to those wishing to compile Health Accounts will inevitably reduce the resource requirements. Under development at the time of publication is a website to support the *SHA Guidelines*, which will be a medium for compilers and developers to feed back further advice and suggestions in order to further reduce development costs and increasingly to share best practice.

The Project Board considers *SHA Guidelines* to be a very useful tool for those in Europe and indeed elsewhere who wish to compile Health Accounts according to the OECD's *A System of Health Accounts*. The Board is convinced it contains a good deal of assistance in understanding *A System of Health Accounts* and advice on the practical issues associated with compilation.

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SECTION 1

GENERAL GUIDELINES

Chapter 1: Preliminaries

This chapter clarifies the purpose of *SHA Guidelines*, provides relevant background information, gives an overview of the contents and structure of the manual, makes reference to existing publications and projects which can be used in conjunction with this publication, and lists the main points of contact for the Health Accounts developer.

1.1 Purpose of SHA Guidelines

The purpose of *SHA Guidelines* is to provide practical guidance to EU countries wishing to implement the OECD manual *A System of Health Accounts* (SHA)¹. The SHA can be downloaded free of charge in PDF printable format from:

<http://www.oecd.org/dataoecd/49/51/21160591.pdf>

The SHA has been recognised as a framework for compiling comprehensive, consistent and internationally comparable Health Accounts.

-  Health Accounts are an internationally accepted tool for describing, summarising and analysing expenditure on health and its financing. The end product of the accounts is a set of interrelated tables which describe health care systems from various perspectives and answer key questions such as: How much is being spent on health care activities? Who funds these activities? Who provides these activities? What kinds of activities are provided? In what setting are they provided?

Various countries in the EU and world-wide have conducted pilot implementations and have presented initial figures. The implementation process, however, is at an initial stage and countries acknowledge that there is more work left to do.

The complexity and diversity of health care systems around Europe, paired with differences between the definitions in *A System of Health Accounts* and existing accounting systems, means that implementation of SHA is not straightforward. For example, the definitions of the health care functions raise various interpretation problems and imply demanding data requirements.

Hence the need for practical guidance to help countries in implementing the SHA. The publication earlier in 2003 of the *Guide to producing national health accounts* by the World Health Organisation (WHO), the World Bank and the United States Agency for International Development (USAID) has a particular focus on low- and middle-income countries. *SHA Guidelines* is directed mainly to European countries and draws primarily on experience of European countries. The *Guide to producing national health accounts* can be found at:

<http://whqlibdoc.who.int/publications/2003/9241546077.pdf>

1.2 Symbols used throughout SHA Guidelines

Three symbols have been used to highlight certain types of text to aid the reader as follows:

-  The *open book* symbol identifies definitions or explanations of key concepts.
-  The *exclamation mark* identifies key ideas, remarks and suggestions in the text.
-  The *question mark* identifies key questions that tend to be faced by developers.

¹ OECD (2000). *A System of Health Accounts*. Version 1. OECD: Paris

1.3 Who is *SHA Guidelines* written for?

SHA Guidelines has been written mainly for those who are involved in the compilation of Health Accounts or who are testing the ground and deciding whether to compile Health Accounts.

This manual is intended for all types of Health Accounts developer, ranging from the beginner to the expert. The beginner is advised to read the whole publication, preferably from the start and working their way towards the specific guidelines that form Section 2, whereas the expert can do more selective reading. In particular, this chapter and the next are essential reading for the beginner, whilst those with some expertise may choose to skip these two first chapters and begin either at chapter 3 or 4 depending on their own experience and expertise.

The reader is expected to be aware of basic economic and statistical concepts, as well as have an understanding of health systems and health data. *SHA Guidelines* does not offer comprehensive treatment of National Accounts or economic / statistical theory. Formal definitions of key technical terms are provided in the glossary.

Those readers venturing beyond chapter 2 will need to be familiar with the SHA. *SHA Guidelines* therefore does not in general repeat what is already written there but seeks to explain how the principles set out in the SHA can be applied in practical terms. Nonetheless, the fundamental concepts set out in the SHA are reviewed in chapter 3 and briefly in the introductions of each of the specific guidelines in Section 2.

1.4 Background

SHA Guidelines is the first and main output of a project entitled "Support Package for Applying the Manual of Health Accounts in the EU", which has been co-financed by Eurostat and by the Office for National Statistics (ONS) in the UK. The other outputs are a strategy for learning for those working in the field of Health Accounts, the design of a website to support Health Accounts compilation and recommendations on the future maintenance of *SHA Guidelines*.

This Project was conceived by Eurostat's now defunct Task Force on Health Care Statistics² and supported by Eurostat's Working Group on Public Health Statistics. Funding from Eurostat was awarded in 2001 and work began in mid 2002.

The support package put together by this Project is primarily directed towards member countries of the European Union, the European Economic Area and the European Free Trade Association.

SHA Guidelines has been written to cater for the differing levels of expertise and experience across Europe, as SHA implementation is already under way in several countries. The tables on the next two pages set out the current state of play of implementation in OECD countries, as reported by OECD at its October 2003 meeting of Health Accounts experts, and as updated since then by member countries.

The advice in *SHA Guidelines* is based on experience accumulated so far in European countries, which typically have only recently begun implementation of the SHA. As experience increases in countries, the guidance presented in this first version will form the platform for future inclusion of countries' experience.

² The Core Group on Health Care Statistics took over the Task Force's mandate in January 2003.

Table 1: Status of implementation of *A System of Health Accounts* as of September 2003

	Major SHA study already undertaken or currently under way	Preparatory work for SHA project underway	Considering the implementation ; resources not yet allocated	No immediate plans for SHA implementation as of summer 2002
Australia	X			
Austria				X
Belgium	X			
Canada	X			
Czech Republic	X			
Denmark	X			
Finland	X			
France		X		
Germany	X			
Greece			X	
Hungary	X			
Iceland			X	
Ireland		X		
Italy				X
Japan	X			
Korea	X			
Luxembourg	X			
Mexico	X			
Netherlands	X			
New Zealand				X
Norway	X			
Poland	X			
Portugal			X	
Slovak Republic	X			
Spain	X			
Sweden	X			
Switzerland	X			
Turkey	X			
United Kingdom	X			
United States	X			

Source: OECD and member countries

Table 2: Sources of health expenditure and finance data in OECD Health Data 2003

Health expenditure and finance data presented in OECD Health Data 2003 are based on:					SHA tables available to the Secretariat as of October 2003
	SHA	Locally produced National Health Accounts	National accounts estimates	OECD Secretariat estimates	
Australia	1998-2000	1960-1998			1999-2001
Austria			1960-2001		
Belgium				Based on NA data	1998
Canada	1975-2002	1960-1975			1996; 1999
Czech Republic			1970, 75, 80, 85, 1989-2001		
Denmark	1971-2001				1999
Finland		1960-2001			2000
France	1990-2001				
Germany	1992-2001	1970-1990			1992-2001
Greece			1987-2001	1970, 1980	
Hungary	1998-2001	1991-1998			1998-2001
Iceland			1960-2001		
Ireland			1960-2001		
Italy			1960-2001		
Japan	1995-2001		1960-1994		1999-2000
Korea	1995-2000				1998-2001
Luxembourg			1970-2000		
Mexico		1990-2001			1999-2001
Netherlands	1998-2001	1972-1998			1998-2001
New Zealand		1970-2001			
Norway			1960-2001		
Poland		1991-2001			1999
Portugal			1995-2001	1970-1994	
Slovak Republic			1997-2001		1999-2001 (preliminary)
Spain		1960-2001 (public exp.)	1960-2001 (private exp.)		1999
Sweden			1960-2001		
Switzerland	1995-2001	1960-1994			1999-2001
Turkey		1998		1970-1997	
United Kingdom	1997-2001		1960-1996		Financial year 1999 - 2000
United States	1999-2002	1980-1998	1960-1980		1997

Source: OECD and member countries

1.5 Contents and structure

SHA Guidelines is separated into two main sections: section 1 sets out introductory material and the general principles for compilation of Health Accounts; section 2 deals with specific compilation issues related to the SHA classifications. The two sections are linked in practice by the use of cross references: section 1 refers to section 2 to indicate to the reader where practical examples and country experiences can be found or to indicate where some topics receive a more extensive treatment. Whilst section 2 refers to section 1 mainly to indicate where certain general principles underlying the whole of the Health Accounts can be found.

Chapter 2 explains the potential benefits of producing Health Accounts, describes how Health Accounts can be tailored to specific country needs, gives an indication of the resources needed to produce Health Accounts, advises the reader on making a working plan and finally comments on the issue of institutionalisation of Health Accounts. In summary, this chapter deals with the exploratory phase of implementation, as it gives inputs for making a decision on whether to produce Health Accounts or not and it advises on the initial preparatory steps for starting the project.

Chapter 3 outlines the main principles, concepts and definitions underlying the SHA approach. It explains key rules for classifying expenditure into the various classifications, tries to define the health boundary of the SHA and briefly discusses the *System of National Accounts* (1993) (SNA93) approach to health expenditure. Readers are expected to refer back to this chapter frequently as it contains key principles that should always be kept in mind when compiling health expenditure information.

Chapter 4 describes how Health Accounts could be built up, discusses the main approaches used in practice by Health Accounts developers and proposes a five step process for compiling SHA data, starting from zero and finishing with completed tables. In this chapter, the reader may find some useful tips and practical examples on how to organise the Health Accounts database, what keys are frequently used, what problems are typically faced and how those problems might be solved.

The last chapter in Section 1, chapter 5, gives an overview of typical data sources used in the compilation process. It describes briefly how existing health expenditure work and analyses can be of benefit in the development of Health Accounts, describes the basic data sources from which information on health expenditure can be found (spelling out main advantages and disadvantages of each) and finally makes some considerations on judging the relative quality of different data sources.

The chapters in Section 2 (chapters 6 to 16) cover specific guidelines and provide advice on compilation issues mainly relating to the SHA's functional classification but also on some specific items for which Health Accounts developers have sought further advice. The specific guidelines are illustrated with some practical examples from countries that are developing Health Accounts based on the SHA. Each chapter treats a specific topic e.g. the preventative function, giving an overview of existing definitions in *A System of Health Accounts* and elsewhere, offering a refinement of the definitions, (mainly clarification of SHA concepts and boundary cases) and advises on what data and estimation methods can be employed to obtain the information required.

Chapters 6 to 13 cover the key SHA functions one by one. Chapter 6 covers curative and rehabilitative care, chapter 7 long-term care, chapter 8 modes of production in hospitals and chapter 9 ancillary services. Chapter 10 covers medical goods, chapter 11 prevention and public health services, chapter 12 occupational health care, which is part of prevention but

deserves special treatment because of its peculiarity, and chapter 13 deals with administration and insurance.

Chapters 14 to 16 have been written in response to particular demands from countries for specific information on particular aspects of health accounting. Chapter 14 gives advice on compiling information on health expenditure when sources of finance are private. Chapter 15 deals with health imports and exports and chapter 16 covers household production of health care.

1.6 What *SHA Guidelines* does not cover

The SHA proposes a framework for the analysis of expenditure on health-related functions as well as the health functions. Box 1 provides more detail on these health-related functions.

Box 1: SHA health-related functions

HC.R.1	Capital formation of health care provider institutions
HC.R.2	Education and training of health personnel
HC.R.3	Research & development in health
HC.R.4	Food, hygiene and drinking water control
HC.R.5	Environmental health
HC.R.6	Administration and provision of social services in kind to assist living with disease and impairment
HC.R.7	Administration and provision of health-related cash benefits

Source: SHA (2000)

SHA Guidelines only deals with the health functions, which are required to be cross classified with the provider and source of finance classifications. As *SHA Guidelines* does not provide advice on HC.R.1 capital formation of health care provider institutions, the scope of the advice given in *SHA Guidelines* is total current expenditure on health, and specifically not total expenditure on health. For HC.R.1, see paragraphs 5.37 and 5.38 on capital formation in health care provider industries in *A System of Health Accounts*.

Chapter 7, Price and Volume Measurement, of *A System of Health Accounts* summarises the main requirement and issues yet to be solved in price and volume measurement. The SHA refers in annex to the measurement of human resources in health care, and suggests discursively further disaggregation of health expenditure, for example, by health status indicators; diagnosis; sex, age and income. Whilst *SHA Guidelines* does not offer advice on any of these topics, this does not reflect any lack of interest in or desirability for such information. This simply reflects the greater focus in the SHA on current expenditure, as well as the need for this first version of *SHA Guidelines* to focus on a single topic.

For the same reason, *SHA Guidelines* does not offer advice on treatment of the recording of all financing flows in the health care system, from primary sources of finance to financing agents, as recommended in chapter 6 of the SHA, although this is touched upon in *SHA Guidelines* in subsection 3.1.3. Similarly, *SHA Guidelines* only treats the health function at a national level and does not treat other interesting and desirable applications such as regional Health Accounts or welfare accounts.

SHA Guidelines does not provide comprehensive and detailed guidance on the ICHA-HP provider and ICHA-HF source of finance classifications. Throughout *SHA Guidelines*, reference is made to all three ICHA classifications, but the focus is on the functional classification.

SHA Guidelines concentrates on the production of structural Health Accounts i.e. accounts at a specific point in time. Although no specific reference is made to time series information, the reader can draw out advice when compiling time series.

Finally, although references to National Accounts are frequent, *SHA Guidelines* does not set out to detail the links between the SHA, the SNA93 and the *European System of Accounts* (1995) (ESA95). Chapter 8 of *A System of Health Accounts* (The SHA and Health Satellite Analysis and Accounts) summarises the main pertinent issues. It is widely recognised that it is the work carried out in the development of National Accounts that is of use to the Health Accounts developer, rather than the National Accounts outputs themselves: there are few cases in which aggregate information from National Accounts matches Health Accounts.

1.7 Useful resources

1.7.1 Publications and projects

As mentioned above, *SHA Guidelines* will be supported by an interactive website which will assist countries in compiling Health Accounts as well as provide the user with information of use in analysing health expenditure data and in drawing reasonable conclusions from international comparisons. The website is currently being designed and is expected to be available in 2004.

This website will be a tool for collecting further guidance on Health Accounts compilation and it is therefore envisaged that it will hold future versions of the *SHA Guidelines*, as the intention is to update this publication with the latest guidance available.

A source which has also been noted earlier is the *Guide to producing National Health Accounts* disseminated by the WHO, the World Bank and USAID. This publication has similar objectives to *SHA Guidelines*, but has been written particularly from the point of view of Health Accounts compilers in low-income and middle-income countries. The Health Accounts compiler in any country may find useful guidance in either publication irrespective of the relative level of national income. Health Accounts developers in Europe should use this publication with care given the difference in target audience. We advise using it as a source for further practical guidance; *A System of Health Accounts* should be used as a reference tool for concepts and definitions.

Eurostat is a key player within Europe, managing in collaboration with National Statistical Institutes the work on health statistics that is carried out under the aegis of the European Statistical System. Eurostat has helped, and is helping, to fund a number of projects that support the improvement of the wider statistical system on health including Health Accounts. The table in Annex 3 sets out briefly the titles and mandates of these projects, as well as information on where further information can be acquired.

1.7.2 Points of contact

For theoretical and general methodological advice the main point of contact is the OECD as publisher of the SHA and leader in the theoretical development of health accounting. The OECD also offers a great deal of expertise to assist in solving practical issues; organises annual meetings of Health Accounts experts in OECD member countries; publishes OECD Health Data; and has an overview of health care systems in its member countries.

Health Accounts compilers within individual countries are a great resource for practical advice and finding out about solutions to issues connected to Health Accounts implementation. Communication within the Health Accounts community is reflecting the

great synergies to be exploited. Contact between colleagues is also useful for finding out about the international comparability of methods, sources and definitions employed.

A table with contact names of colleagues working in the field of Health Accounts, many of whom have been instrumental in helping draft *SHA Guidelines*, can be found in Annex 4. These contacts may be of assistance to developers of Health Accounts.

Chapter 2: Getting started

This chapter explains the potential benefits of producing Health Accounts, describes how Health Accounts can be tailored to specific country needs, gives an indication of the resources needed to produce the accounts, guides the reader on making a working plan and finally deals with the issue of the institutionalisation of Health Accounts. In summary, this chapter deals with the exploratory phase of implementation in that it gives inputs for making a decision on whether to produce Health Accounts or not and it advises on the initial preparatory steps for starting the project.

2.1 Evaluating the use of Health Accounts

This subsection seeks to explain the main benefits and uses of Health Accounts. First of all, it describes the general benefits of producing the accounts; secondly, it outlines some ways in which Health Accounts can be tailored to specific country needs; thirdly, it gives an overview of the international demand for Health Accounts.

2.1.1 Benefits of SHA Health Accounts in general

Health Accounts are a very useful tool for supporting policy decisions, analysing the health care system, improving the transparency of the flows of information and making international comparisons. Health Accounts are of interest for both national and international purposes and are beneficial for society at large, affecting different interest groups. The main stakeholders that can benefit from Health Accounts are the following:

- Political advisors and policy makers
- Academia and researchers more generally
- Health enterprises
- The statistical community
- International bodies

Policy makers are undoubtedly one of the most important groups of users of Health Accounts. Health Accounts are usually designed in order to aid policy making and to provide politicians with a full picture of the health sector. They can be used, for example, as the basis for health expenditure projections, for finding out the level of health expenditure per capita, to know what the trend of private financing and provision is and to understand the balance between investment in prevention or curative services.

Researchers can also benefit from Health Accounts since they constitute an important component in the analysis on a multiplicity of aspects of the health care system such as sustainability, efficiency, effectiveness and equity.

Businesses can use the accounts in order to see where there may be scope for market expansion or to make projections of the demand for health care.

The statistical community can use the information e.g. National Accountants in providing information that informs the public; provides the evidence base for public debate on health expenditure.

Finally, international organisations and foreign country representatives benefit from Health Accounts because they provide an internationally comparable set of information. Of course, many of these uses are not particular to the user groups mentioned.

Below are described the basic criteria for the SHA and then information on key variables that can be analysed through the use of Health Accounts.

2.1.2 Basic criteria for the SHA

Understanding the objectives of the SHA is key for perceiving the potential extra value of implementing SHA based Health Accounts as opposed to using existing expenditure estimates.

The SHA provides a framework aimed at producing a set of comprehensive, consistent, coherent and internationally comparable information which enables users to examine health systems across time and across national boundaries, overcoming problems of comparability deriving from different financing methods or institutional arrangements.

The means through which the SHA objectives are achieved (definitions, classifications, tables and so on.) will be explained in chapter 3. This subsection focuses on the objectives themselves and the benefits they produce. The following are the basic criteria for the SHA³:

- ─ **Comprehensiveness:** the SHA aims to account for the whole field of health care activities. It is not limited to a specific range of public and private programmes. In accordance with the functional approach, all programmes designed to provide health care or a substantial amount of health status enhancement by medical means should be included, whether labelled “health care” or not in national statistics.
- ─ **Consistency:** the use of uniform boundaries and data distributions proposed by the SHA should result in data that are more *consistent over time*. The resulting time series should be capable of monitoring past structural changes and serve as input for simulation and forecasting models. The SHA is also *internally consistent* by providing identities and accounting rules for cross-checking the validity of estimates derived along the different dimensions of the SHA.
- ─ **International comparability:** the proposed concepts and classifications should facilitate the task of transforming existing national data into cross-country comparable data, which will aid the understanding of policy-makers and researchers. It is acknowledged, however, that convergence of internationally comparable statistics can only be achieved gradually.
- ─ **Compatibility:** as an accounting framework built around a core set of tables in monetary terms, the SHA is methodologically compatible with the System of National Accounts (SNA). Methodological compatibility with the SNA is a prerequisite for calculating meaningful expenditure ratios and for international comparability. The SHA also adopts definitions and concepts from existing statistical systems, approved and defined under the auspices of the United Nations and other international and regional organisations (UNESCO, WHO, the European Union). In areas not covered by UN-OECD-Eurostat classifications, other widely used standards set by learned societies and regional organisations have been applied and modified where deemed appropriate.
- ─ **Timeliness and precision:** any set of quality criteria for accounting enters in potential conflict with other desirable goals, notably *timeliness* and *precision* of reporting. *Precision* relates to a minimum level of detail judged necessary in regular reporting. To consider a statistical survey in health accounting and health care resources as *timely* ideally means that at least preliminary data are available no later than six months after the end of the period they describe. Timeliness conflicts with precision when large data sets and a multiplicity of surveys have to be combined, which is typically the case in health expenditure estimates.

³ Adapted from the SHA (2000), ch. 1.

- » **Policy sensitivity:** policy sensitivity of the SHA is crucial in times of frequent changes of public policy in health care. In the past, the monitoring of economic consequences of health care reform was often obstructed by the inability of existing reporting systems to distinguish between changes in coverage and mode of financing and actual change. Important changes in the division of labour in health care were underreported due to outdated classifications.

2.1.3 Key issues to which Health Accounts can contribute

Health Accounts can contribute to a number of analyses of the health care system. However, in general they need to be combined with other information to answer any particular question.

One issue to which Health Accounts can contribute is the *sustainability* of health expenditure. OECD reports that health expenditure in member countries has been growing faster than GDP in real terms and the sustainability of health expenditure is at the centre of political attention. When evaluating sustainability, the following question is posed: “How can the provision of health care services in sufficient quality and quantity be guaranteed [today and] in the future, when tax and social security systems are heavily challenged, and the size of the labour force is declining due to population ageing?”⁴

Health Accounts can help to answer this question since they provide a comprehensive measure of total health expenditure and they provide breakdowns according to functions, financing agents and providers. It is particularly valuable to have information on all flows of financing, from primary sources of finance to financing agents, as this uncovers the ultimate incidence of health financing.

A question connected to sustainability is *efficiency*, which is concerned with the use of available resources. Economic efficiency “occurs when society is using its scarce resources to produce the highest possible amount of goods and services that consumers most want to buy. Economic efficiency requires both *productive efficiency* and *allocative efficiency*. Productive efficiency is when firms deliver the highest possible output from given inputs and so produce at lowest unit cost whereas allocative efficiency occurs when firms produce those goods and services most valued by society.”⁵

The categorisation of expenditure into functions, financing agents and providers is key to understanding where resources have been used and how their use might be improved. Health Accounts show for example whether expenditure is moving from hospitals to ambulatory care providers, whether in-patient care is being substituted by out-patient care, whether there is a correlation between expenditure on prevention and the reduction of expenditure on other functions, what impact administration expenditures have on the total and so on.

Effectiveness is another key concept, the understanding of which can be aided by Health Accounts. “Effectiveness can be defined as ‘the extent to which an intervention or a set of interventions achieve goals... [It] is then a technical concept which relates health services directly to their outcome.’”⁶ The detailed set of expenditure classifications proposed in the SHA can be linked to health outcome measures and inferences can be made on how different institutional arrangements in a country could lead to better outcomes.

Last but not least, Health Accounts can contribute to the consideration of *equity*, for example, by identifying the shares of private and public expenditure on health care in a

⁴ BASYS, CEPS INSTEAD, CREDES, IGSS; (2003). “Development of a Methodology for Collection and Analysis of Data on Efficiency and Effectiveness in Health Care Provision”

⁵ See footnote 5

⁶ See footnote 5

country. The detailed information on sources of finance and financing agents collected for SHA purposes, combined with information on the age, sex and other demographic information can paint a picture of the extent to which aspects of the health system are equitable.

The concepts discussed above benefit greatly from combining information on expenditure to other types of information such as health prices and volumes, health outcome information and diagnosis specific information, employment and so on.

2.1.4 Evaluating the specific needs for Health Accounts in a country

As highlighted in the previous subsection, Health Accounts are beneficial for both national and international purposes. Nationally they aid policymaking and internationally they provide a set of comparable information, which other countries and international organisations can most readily use. Of course, these uses overlap. It is important to stress, however, that Health Accounts should first of all fulfil national needs and should not be compiled simply to report a dataset to Eurostat, the OECD or the WHO. Of course, national users may desire the ability to compare their country with other countries around the globe.

For this reason compilers are advised to liaise with policy makers, understand what questions need to be answered and make the best use of limited resources. Different political needs might affect Health Accounts by expanding, remodelling or restricting them. The international definitions and main classifications should always be kept intact but, besides key reporting⁷, countries may decide to have country-specific groupings, breakdowns and classifications and should evaluate the level of detail they require based on their own needs.

It is widely acknowledged for example that the first attempt at compiling Health Accounts need not aim at perfect completion of the SHA tables. Ongoing compilation of Health Accounts in a country will allow improvement in the methods already developed for the areas which users have identified as priority as well as development of other areas of relatively lower priority.

Another consideration for the Health Accounts compilers to make in an initial stage of implementation is whether to compile Health Accounts relating to a single year or whether to embark on an exercise to produce a time series.

Experience has shown that the value of Health Accounts increases substantially when time series information is available. However, this extra utility needs to be balanced against the extra resource requirements - searching for and reconciling sources which present a picture of changes over time - and the implied extra risks associated with the exploration of continuity over time.

If initially Health Accounts are produced for a single year only, it would be wise to design the compilation system with an eye to time series production. For example, this might mean preference is given to ongoing annual or quarterly surveys or to methods which avoid too much reliance on single point-in-time estimates⁸.

Sustainability and institutionalisation of Health Accounts have been recognised as goals in the EU and it would therefore be desirable to think of producing Health Accounts on a

⁷ More detail on this can be found in the next section.

⁸ The real value of Health Accounts materialises when time-series are produced. Expenditure patterns, impacts of policy changes and changes in health care needs over time cannot be detected without a time series. Moreover, the quality of the accounts increases substantially with experience and ongoing compilation tends to lead to increasingly reliable results.

regular basis. An intermediate solution would be to produce National Health Accounts for two or three years; this would enable the Health Accounts developer to compare the figures obtained for different years, cross-check the methods used and help in making projections.

Health Accounts compilers may also wish to consider the possibility of compiling regional Health Accounts. Regional economic accounts have been or are being developed in several countries, and the experience and expertise of regional accounts compilers can be of help if there is a demand for the development of sub-National Health Accounts. *SHA Guidelines* does not deal with this topic but may still provide useful information for a regional Health Account compiler. The SHA provides the framework for the development of a National Health Account, but more work needs to be carried out to develop the framework, and in particular sources and methods, for Health Accounts at the regional or local level.

Health Accounts developers could also consider compiling accounts which cover a wider functional analysis than health e.g. welfare accounts. The international definition of health covers activities that nationally may be referred to as social care. The close link between the health and social care functions may be reflected in some countries by the desire to create accounts that subsume, but separately identify, health and social care.

The SHA and *SHA Guidelines* do not cover expenditure on the wider aspects of welfare but remain a useful tool for working on the health function within the wider welfare field. Other frameworks and workstreams, both international and national, exist for analysis that is wider in scope than Health Accounts, and these include Social Accounting Matrices and ESSPROS⁹. The Netherlands is an example of a country that has compiled accounts covering both health and certain aspects of social care.

Finally, Health Accounts developers might consider whether to focus merely on expenditure or compile information on other aspects the health system which can be of great use for analyses of efficiency, productivity, effectiveness and equity. These are the measures discussed briefly in the previous subsections i.e. health prices and volumes, health outcome information, diagnosis specific information and employment.

This subsection does not mean to be exhaustive but rather means to give some ideas on the types of analyses the Health Accounts developer could consider. The next subsection will give some hints on the core dataset that would be desirable for international purposes.

2.1.5 Health Accounts and international reporting

Even though answering national needs takes priority in the compilation process, it is worth knowing the main components of Health Accounts that would be desirable for international reporting purposes and for the country to make useful comparisons with other countries.

As a prerequisite, countries are advised to put effort into making sure that the health boundary is consistent with SHA definitions and ensuring the reliability of the total health expenditure figure.

In terms of the expenditure breakdowns, the key tables that should be completed are tables 2, 3 and 4 in the SHA's proposed list of standard tables. Within them it is recommended to obtain information at least at the one-digit level of the three ICHA classifications. On the functional side, it should be remarked that distinguishing between cure and rehabilitation is not crucial but rather the distinction between in-patient and out-patient care should be considered a higher priority.

⁹ European System of integrated Social Protection Statistics

For a discussion of a minimum set of indicators in the EU, Health Account compilers should read the report on the EU supported project *System of Health Accounts (SHA) in the EU: Definition of a Minimum Data Set and of Additional Information Needed to Analyse and Evaluate SHA*¹⁰

2.2 Drafting a working plan and evaluating resources for producing Health Accounts

Planning the work is essential. Whilst there might be few people directly employed in the team, ideally there will be many others involved. There will also be many data sources to be explored and many compilation issues to be worked through. Such complexity requires clarity in setting out the purpose of the work, how the project is staffed and organised, what the timetable is and how the project will be overseen.

In the following subsection, an evaluation of the resources needed to produce Health Accounts will be given and readers will be guided in making a working plan.

2.2.1 Human resources and expertise needed

The availability and application of staff is key to developing Health Accounts. This does not mean that the development team needs to be large. Experience in several countries shows that it is possible to develop an initial set of Health Accounts using two to three staff years' labour. What it does mean is that the development team should establish and maintain good working relationships with a broad range of people with relevant expertise and experience, whose input is of benefit to the production of Health Accounts. Below guidance on where the Health Accounts project could be hosted will be given and the key relations that the Health Accounts developer should maintain will be outlined.

The National Statistical Institute (NSI) is a typical compiler of Health Accounts due to its access to a rich dataset. The NSI is the producer of the National Accounts and often possesses a wide set of statistics on health care, which are of use to the Health Accounts compiler.

Other organisations that can host Health Accounts are the Ministry of Health¹¹ and other ministries or institutions that are responsible for health care. In some countries most health statistics and analyses are conducted and stored by the Ministry and it therefore makes it convenient to host the project here. An advantage of hosting the project in these organisations is that they can usually offer specialised health care expertise and they are close to policy issues related to health care.

Ideally, the development work should be carried out under the sponsorship of all such organisations; alternatively the work could be carried out within one organisation with staff from other organisations seconded in.

Independently of where the project is hosted, it is key to have a diversity of inputs and resources into the project. Below we describe the key relations a Health Accounts developer is advised to maintain.

Health Accounts developers are advised to network with other people working in Satellite Accounts (to the National Accounts). For example, in many countries, Environmental

¹⁰ BASYS, CEPS INSTEAD, CREDES, IGSS (2003) System of Health Accounts (SHA) in the EU: Definition of a Minimum Data Set and of Additional Information Needed to Analyse and Evaluate SHA (interim report September 2003),

¹¹ Also called, for example, Ministry of Health and Social Care or Ministry of Social Affairs.

Satellite Accounts exist, and there are a growing number of countries compiling for example Tourism Satellite Accounts.

There is a fundamental difference between these Satellite Accounts and Health Accounts: the latter usually start from detailed input-output tables of the economy, whereas Health Accounts do not, since the health sector tends to be relatively sparsely considered in input-output analyses. It is true, however, that the SHA accounting rules are compatible with the SNA93 recommendations on Satellite Accounts. Also, the similarity of the type of research and overview of typical sources and methods for reconciling data from those sources are useful skills and knowledge that are transferable. The difference does however mean that SNA data, and hence Satellite Accounts data, cannot be used directly to compile Health Accounts. This will be discussed further in chapters 3 and 4.

Box 2: Roles within the Health Accounts team

It is valuable for the Health Accounts team to be formed by people with different backgrounds and skills.

One member of the team for example could be a statistician working for the NSI, possibly with exposure to National Accounts. This person could, for example, be in charge of collecting relevant sources in the NSI, evaluating the suitability of sources for Health Accounts purposes, establishing the links between the SHA, the National Accounts and national health expenditure recording frameworks, for ensuring the methodology used is correct.

Another member of the team could be someone working for the Ministry of Health or for a Social Security Fund. This person could, for example, be responsible for collecting data sources coming from these departments, for facilitating communication between the Health Accounts team and the departments, for ensuring key policy questions are addressed in the compilation of the accounts.

The team could also benefit from the presence of an economist (possibly with Ministry of Finance experience) who could help decide where resources should be best spent, direct the work in line with the objectives of economic analysis and liaise with ministries holding the budget.

Having someone with medical knowledge on board would also be useful for Health Accounts. Classifying health expenditure functionally for example would greatly benefit from the advice of, for example, a doctor.

Another key relationship is the one with the people working on National Accounts. At the very least, National Accounts' own sources and methods can be further examined with a specific focus on health. Depending on the level of implementation of the functional classifications that are part of the ESA95, it might be that National Accountants have already conducted much work to separate out health expenditure. For example, they may have analysed household final consumption expenditure in order to produce the disaggregation by classification of individual consumption by purpose (COICOP). The same may hold for government expenditure classified by classification of function of government (COFOG) and non-profit institutions classified by classification of purpose of non profit institutions (COPNI).¹²

¹² For more information on COFOG, COICOP and COPNI classifications, see SNA93.

Knowledge of, or access to those with knowledge of, the health system is another key asset. Development of Health Accounts is facilitated by availability of information on the organisational set-up of the health system, on the logistics of delivery, on the financing of care and on the existence of data on activities. Staff in Ministries of Health or in Social Insurance institutions are an obvious source here; others might be those working in central planning agencies such as the Strategic Health Authorities which exist in the UK, or the similar regional agencies that tend to exist in Nordic countries (for example health boards); audit, monitoring and other such institutions; medical professionals; and academia.

Building up a good relationship with fellow Health Accounts developers in the EU and all over the world, as well as with experts within international organisations such as Eurostat, the OECD and the WHO would also be beneficial. A list of points of contact for this type of relations has already been referred to in subsection 1.7.2.

It is good practice to form a Steering Group and Project Board for the project. Both would be staffed by those with key stakeholdings in health. The former would be set up to ensure that the project respects users' demand for such information and would have fairly strategic Terms of Reference. The latter would be set up to direct the work on a more-or-less day-to-day basis, for example keeping it on timetable, advising on difficult or controversial issues, such as priority setting and the reconciliation of competing user demands, and helping to facilitate contacts with the relevant stakeholders.

Finally, another key person is someone who has in-depth knowledge of policy issues and information that would be required for policy formation. While this person may not need to work full time on Health Accounts, he/she should be readily available for consultation. This fits with the idea that accounts should be developed to fit policy needs.

2.2.2 Software requirements

Development of National Health Accounts requires a great deal of data, and consequently the use of a software tool or tools to aid in the processing of these data. The functionality required by Health Accounts compilation suggests that standard spreadsheet or database packages would be sufficient. Typical functions required include simple mathematical calculation; use of keys; importing and exporting of data; archiving data; storage of data; and consistency checking.

The choice of software tool is generally between a database and a spreadsheet and it is useful to understand the relative advantages and disadvantages of each. In summary, spreadsheets are particularly useful for sophisticated calculations; they are relatively flexible and can cope with a variety of datasets that differ in format and content. Databases are particularly useful for storing and processing large datasets with relatively uniform format and content.

In a first stage, it might be useful to ignore relatively high-tech solutions involving sophisticated spreadsheet and database applications until it has become clear what the specific demands for software are.

2.2.3 Evaluating health expenditure information and additional work required

To complete basic estimates of total spending on health and useful breakdowns, data on various types of government and private expenditures are needed. These can often be found in readily accessible sources, such as government financial accounts and records, social security information, reports of health insurance agencies, and existing surveys. Much can be done with information that is available; even limited and incomplete data can yield useful findings and stimulate greater interest in acquiring more knowledge.

It is quite likely, however, that pursuit of the tri-axial cross-classification proposed in the SHA will require some new information collection. As noted in the *Guide to producing National Health Accounts* one of the primary roles of the Steering Group, suggested in subsection 2.2.1, should be to encourage the collection of new data as well as to ensuring access to all existing data. The value of a good set of Health Accounts depends on the quality of the data used in compilation as much as on the staff who prepare them.

For planning purposes it is important to have an initial phase of research into existing health information with the purpose of finding out:

- ?
- How much health information is out there?
- ?
- How suitable it is for Health Accounts purposes?
- ?
- Given the level of detail and scope of the accounts desired, how much work there is to do?

Typical sources which should be researched are the National Accounts (and its background database), other sources within the NSI, the Ministry of Health and Social Security institutions. At this stage, the research is not meant to go into much depth but the Health Accounts developer should get a feel for the additional work involved in the project.

2.2.4 The time-quality trade off

This subsection is linked to subsection 2.1.4, in which some of the choices the Health Accounts developer faces were discussed. Here the focus is on the trade-off between the amount of time allocated to compilation and other aspects of quality, such as comprehensiveness, validity and credibility. Of course, there is a point at which a dataset is considered too poor to be included as part of the compilation process. However, it is clear from all previous experience that no data source is perfect.

The compilation of Health Accounts is an ongoing process, involving a continuous development cycle. In the planning phase, it is very important to be informed about the initial desired quality of the accounts, since this will have an important effect on the resources required by the project.

The accounts should be built up from detailed data sources, the so-called ‘bottom-up’ approach, but in the first development round(s) some components may typically be estimated using so-called ‘top-down’ approaches, whereby existing health expenditure aggregates are broken down according to the availability of proxies and other estimation techniques. Over time, as Health Accounts are redeveloped, compilers should aim to replace top-down with bottom-up methods. The issue of top-down and bottom-up method is discussed further in subsection 4.1.

2.2.5 The cost of producing Health Accounts

There is no standard cost for developing Health Accounts for a country. The main factors that influence the cost of producing Health Accounts are twofold:

- ! The first is the ready availability of comprehensive and suitable information on health expenditure in a country (see discussion in subsection 2.2.3).
- ! The second is the desired quality and quantity of information which the Health Accounts developer plans to achieve (see discussion in subsections 2.1.4 and 2.2.4)

The main difficulties typically include: significant gaps in data availability; complex financing arrangements; lack of clarity in available data sources between what constitutes health care and non health care activities; a varied and disparate range of organisations and institutions and actors in the field of health care; public / private provider mix.

- ! Compilers should pay careful attention during the first stage of development to the identification of the particular national difficulties as they can impact substantially on the cost of producing the accounts.

2.3 Institutionalising Health Accounts

As reported earlier in this chapter, experts in several countries have pointed out that the value of Health Accounts increases substantially when time series are available. The production of time series and the continued compilation on a regular basis of Health Accounts is greatly aided by setting up systems that support a production line process. Designing systems to produce first estimates that also address future needs for compilation, as well as help minimise future resource demands, is a key part of institutionalisation.

The setting up of team with dedicated staff rather than ad-hoc project workers is also a key part of institutionalisation.

Both these points are focussed on the internal process of compiling the Health Accounts. As important is the external aspect of institutionalisation: namely, the justification in terms of known user demand for the continued production of this set of information. Experience in some countries, such as the Netherlands and the UK, has shown that early development work can be driven forward by a strong champion to advocate the benefits set out in subsection 2.1.1.

However, to be sustainable consultation of a wide range of potential users across the spectrum, from government through academia to user groups and so on is an important part of understanding whether demand for the information supports the resources devoted to the work. Country experiences have shown that consultation of users is greatly aided by the availability of figures in tables. With real numbers, users can more easily see how the information may be of use to them. For those countries that do not yet have real numbers, using first estimates based on whatever information is already available, or even Health Accounts produced by other countries, can be of help.

Chapter 3: Key concepts and definitions

This chapter outlines the main principles, concepts and definitions in the SHA approach. It explains key rules for classifying expenditure, comments on the definition of the health boundary of the SHA and briefly discusses the SNA approach to health expenditure. Readers are expected to refer back to this chapter frequently as it contains principles that should always be kept in mind when compiling health expenditure information.

3.1 The SHA approach to health expenditure

- ! A key feature of the SHA is its functional approach to defining the boundary of health care. The SHA approach is functional in that it refers to the goals and purposes of activities (e.g. cure, rehabilitation, prevention etc.) and is independent of where and how the activities are provided and how they are financed. The SHA defines internationally comparable health care functions and provides a general concept of health care that forms the basis for activities to be considered health care. Box 3 repeats this concept.

Box 3: The SHA concept of “health care” underlying the functional classification

Activities of health care in a country comprises the sum of activities performed either by institutions or individuals pursuing, through the application of medical, paramedical and nursing knowledge and technology, the goals of:

- Promoting health and preventing disease
- Curing illness and reducing premature mortality
- Caring for persons affected by chronic illness who require nursing care
- Caring for persons with health-related impairment, disability, and handicaps who require nursing care
- Assisting patients to die with dignity
- Providing and administering public health
- Providing and administering health programmes, health insurance and other funding arrangements

Source: SHA (2000)

The definition of health care in the SHA is founded on the premise that the provision of health activities requires some kind of *medical knowledge* or training. In most cases, this will mean direct contact with a medically qualified professional; either a doctor or a nurse. In some cases, the contact may be indirect, as in the case of health care provided in nursing and residential care, where contact may mainly be with nursing assistants who are supervised by a qualified nurse. In other cases, the contact will be with a person who is not medically qualified, but has received medical training to carry out the very specific activity in question. This is the case with occupational health care in some countries and with paramedics and others closely associated with the provision of medical services. For medical goods bought over the counter, the medical input is to be found at the pharmaceutical design stage, and also in the provision of the prior education on the pharmaceutical's health benefits to the purchaser before the medical goods are bought.

Prior to the publication of the SHA in 2000, EU countries used a mixture of institutional and possibly functional criteria for classifying health care providers and health care spending, and it was items such as ‘general hospitals’ or ‘family doctors’ making up total health expenditure. Differences in the contents of these items in different countries and their

variability over time clearly hindered comparability. Many countries for example used National Accounts for computing total health expenditure and this led to different definitions of the health boundary. These differences arise in part from National Accounts use of industrial breakdowns as the main classification for disaggregation.

The SHA makes sure that a clear separation is made between the financial, institutional and functional aspects of health care by proposing a tri-axial system of recording which answers three key questions:

- ?
- Where does the money come from? (source of financing)
- ?
- Where does the money go? (provider of health care services and goods)
- ?
- What kind of (functionally-defined) services are performed and what types of goods are purchased?

These questions are addressed respectively in the newly proposed International Classification for Health Accounts (ICHA) which breaks down:

- Health care ***sources of funding*** (ICHA-HF)
- Health care service ***providers*** (ICHA-HP)
- Health care ***functions*** (ICHA-HC)

In this classification system, every part of expenditure is assigned to a specific function, provider and source of financing. The categories within each classification are broken down at different levels of detail, from the one-digit level to a maximum of a three-digit level. The choice of these "...categories in the three dimensions of the ICHA was guided by their relevance for health policy and reform issues, in particular for monitoring structural changes, such as shifts from in-patient to out-patient care and the emergence and spread of multifunctional providers in national health care systems."¹³

As well as the core ICHA-HC functions, the SHA defines health-related functions. These relate to expenditure on activities that are closely related to health care (according to the principle defined above).

Table 3: Calculation of total health expenditure

<i>ICHA-HC Code or Abbreviation</i>	<i>Description</i>
HC1-HC4	TOTAL HEALTH CARE SERVICES
HC5	MEDICAL GOODS DISPENSED TO OUT-PATIENTS
TPHE	TOTAL PERSONAL EXPENDITURE ON HEALTH
HC6	PREVENTION AND PUBLIC HEALTH SERVICES
HC7	HEALTH ADMINISTRATION AND HEALTH INSURANCE
TCHE	TOTAL CURRENT EXPENDITURE ON HEALTH
HCR1	GROSS CAPITAL FORMATION IN HC INDUSTRIES
THE	TOTAL EXPENDITURE ON HEALTH

Source: SHA (2000)

¹³ SHA (2000), ch.1, p.12

The functional classification is the key classification among the three since it is the one that ultimately determines total health expenditure – the most important figure obtained with the Health Accounts. The international comparability of the functions justifies their choice as the basis for computing the financial commitment to health care in a country. Total health expenditure is computed as in table 3.

Total health expenditure is therefore given by the sum of expenditure on all the core health care functions – from HC.1 to HC.7 of ICHA-HC – plus one of the health-related functions, namely capital formation in the health care provider industry.

Expenditure on these functions is included as long as it is borne for *final use of resident units* i.e. as long as it is final consumption by nationals in the country or abroad. For this reason, imports for final use are included and exports for final use are excluded¹⁴. “Final use” generally corresponds to the concept of final consumption in National Accounts with a couple of exceptions to be discussed in subsection 3.4.

A System of Health Accounts has taken a substantial step forward in terms of providing a framework to compile Health Accounts and measure health expenditure. It is a first edition that only proposes a framework, and the OECD and Health Accounts community recognise that there is still work to be done in some areas, which will be touched upon throughout *SHA Guidelines*, related to areas such as the separation of health care and social care, and the sub-categorisation of mode of production.

3.1.1 Key concepts related to the functional classification

The concept of functions has been explored in the previous subsection. The full functional classification can be found in Annex 5 and each of the functions is dealt with in detail in section 2. The SHA definitions of functions can be found in chapter 9 of the SHA. A few general remarks about the functions and how to classify expenditure to them will however be made here.

Functions HC.1 to HC.5 are functions of personal health care and comprise services provided to individuals. “HC.6 – Prevention and public health services” and “HC.7 – Administration and Insurance” are collective health care functions. This should not be confused with the economic concept of “collective services” or “public good”. For a better treatment of collective services, see chapters 11, 12 and 13.

- ! A remark should be made about the difference in the use of the word “collective” in the SHA and in SNA93. The term collective in SHA is related to the concept of a health programme and includes collective actions that can be attributed to individuals. Individual attributable activities in SNA instead are not classified as collective but individual.

Functions of personal health “are classified both by *basic functions of care* (curative, rehabilitative and long-term nursing care) and by *mode of production* (in-patient, day care, out-patient, home care).”¹⁵ Section 2 of the manual offers detailed treatment of these functions and of the modes of production breakdown.

The mode of production breakdown has a high priority due to its policy sensitivity and this can be seen in tables 2 and 4 of the SHA set of standard tables in which the mode of production is the primary category. This is then split into the curative, rehabilitative and long-term care functions. The mode of production breakdown also has an effect on the distribution

¹⁴ For more details see the specific guidelines in chapter 15.

¹⁵ SHA (2000), ch.9, p.111

of expenditure among the one-digit level functions. This is the case for expenditure on ancillary services and medical goods, which are included respectively as “HC.4 – Ancillary services” and “HC.5 – Medical goods”, if they are provided in out-patient settings and as part of the cost of the connected services, whereas they are included as part of the relevant basic functions of care if they are in-patient or day cases. See box 4 for a discussion on this.

Box 4: The separation of modes of production and functional classifications

There is ongoing discussion about the nature of the functions set out in the ICHA-HC functional classification, and the extent to which they are functions that describe the purpose of a health activity. Some compilers have noted specific interest in their countries for information on the totality of ancillary services, of medical goods, and for a different borderline for administration of health care that draws in some of the administration carried out within individual health care providers. If such demand exists, it is worth investing the extra time to discern the relationship between the provision of ancillary services, goods and administration in relation to the medical services, and to treat the functions and modes of production as separate classifications in your compilation systems.

If this is done, it is essential that the compilation system support the calculation of the elements required for reporting according to *A System of Health Accounts*. In order to be comparable with other countries, expenditure on, for example, ancillary services provided in relation with in-patient curative care, should be included as part of the expenditure on the curative care.

An excellent discussion of this appears in the thesis publication of van Mosseveld (2003).¹⁶

The basic functions of care (curative, rehabilitative and long-term nursing care) are determined in principle by the concepts of *episode of care* (episode of curative, rehabilitative and long-term nursing care respectively) involved. Again, we recommend reading the relevant chapters dedicated to these functions in section 2 and of course the definitions provided in chapter 9 of the SHA.

Functions need to be identified from the accounts of the providers or from the sources of financing which Health Accounts developers examine. This will give rise to various problems because the information is rarely designed, and therefore easy to use, for this purpose. Practical advice on country experiences and possible estimation methods are given in chapter 4 and in section 2. Within a provider or source of finance accounts, all health functions should be distinguished from each other and separated from health-related and non-health functions. If for example a provider’s activities are 90% curative care and 10% social (i.e. non-health) care, then the expenditure on the 10% social care activities should be excluded. However, as with hotel costs (see box 5), all institutional care costs should be included where health care need is the main reason for institutionalisation.

The SHA also recommends including what have commonly become known as ‘hotel costs’ in some cases. Box 5 provides details on these items of expenditure.

¹⁶ van Mosseveld, C. (2003). International Comparison of Health Care Expenditure: Existing frameworks, Innovations and Data Use, CBS.

Box 5: Hotel Costs

The term ‘hotel costs’ refers to the cost of activities such as cooking, cleaning and accommodation that are incurred as part of the cost of treatment when the mode of production is in-patient. These activities are not strictly health activities (they do not require any medical knowledge) but they are included in health expenditure if the main reason for the institutionalisation of the patient is health care. This is due to the fact that these activities are instrumental for the health care treatment of the patient, or the package of services is best provided in this way. For this reason, the SHA also recommends including accommodation and other costs borne by a relative or a friend who stays at the institution to assist a patient.

3.1.2 Key concepts related to the provider classification

The provider classification can be found in Annex 6 and the SHA definitions of providers can be found in chapter 10 of the SHA. The classification covers not only those providers that provide health care goods and services, but also those that play some other role in the health care system. For example, health administrations, regulatory bodies and health insurance companies¹⁷. This subsection gives some suggestions to aid classification of establishments in ICHA-HP.

? How to classify a provider within a provider e.g. a pharmacy within a hospital?

The decision on how to classify this provider is based on the concept of “independent economic unit.” The pharmacy will be classified under “HP.4 – Retail sale and other providers of medical goods” and not “HP.1 – Hospitals” where it operates with some independence from the hospital and presents independent financial statements, and HP.1 otherwise.

? How to classify a provider with mixed activities e.g. a nursing care home which provides some social care and some long-term nursing care and how do we treat the expenditure within it?

The classification decision depends on what constitutes the majority of the activities provided. If more than 50% of expenditure is on long-term nursing care the provider will be classified as “HP.2.1 – Nursing care facilities”; if instead more than 50% of the activities are linked to social care this will be classified as HP.7 other industries.

To identify and classify health care expenditure borne by a provider, one should:

- Isolate the part of expenditure which is health care
- Break this part only into the health care functions

Whilst the allocation of a particular category within the provider classification may provide a hint as to the functional classification for the expenditure incurred by the provider, it is important to establish the functional classification in its own right. The expenditure that should be included in Health Accounts is simply the expenditure borne on activities that constitute health care. If the provider provides 10% health care and 90% social care, 10% of

¹⁷ Since health administration is a health care function, the bodies / institutions where this administration takes place are considered health providers (even though they are not providers of health care goods and services in a strict sense).

the expenditure only should be included in Health Accounts; and this 10% should of course be broken down into the relevant functions. See also Box 5 for hotel costs.

For some of the providers in ICHA-HP and some of the functions in ICHA-HC, the title may appear to suggest a one-to-one relationship between a function and a provider for example “HC.6.5 – Occupational health care and “HP.7.1 – Establishments as providers of occupational health care services”. As discussed in the SHA, these are not the same.

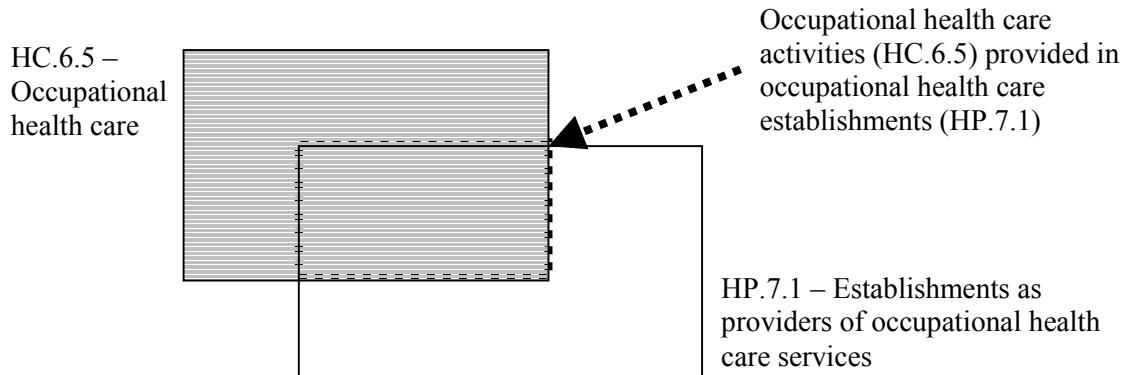
An actor will be classified in the ICHA-HP provider classification according to the majority of the activities it provides. This does not mean, however, that the majority activity will be the only activity performed and that this activity will only be performed within this provider. For example, the figures in HC.6.5 and HP.7.1 need not be the same since occupational health care provision can take place in other providers and HP.7.1 providers may provide health care other than occupational health care. The point is illustrated in table 4.

Table 4: Similar categories in different classifications

	HP.1 – Hospitals	...	HP.3 – Providers of ambulatory health care	...	HP.7.1 – Establishments as providers of OHC services	TOTAL
HC.1 – Curative care					<u>20</u>	
HC.2 – Rehabilitative care					<u>30</u>	
...						
...						
HC.6.5 – Occupational health care	80		100		<u>150</u>	330
...						
TOTAL					<u>200</u>	

In the table, the underlined figure in bold corresponds to the part of occupational health care production that is provided by HP.7.1. However, other providers such as hospitals or ambulatory offices also provide occupational health care services (figures in bold, not underlined). Some “HP.7.1 – Establishments as providers of occupational health care services” also provide other types of health care (underlined figures, not in bold). Hence, the difference between the totals of HC.6.5 and HP.7.1. Diagrammatically, this is represented in figure 1.

Figure 1: Similar categories in different classifications



Note: The same reasoning applies to the finance classification. In the example, take the ICHA-HF source of financing code “HF.1 – Corporations”. Not all health care expenditure borne by corporations needs to be “HC.6.5 – Occupational health care” and not all expenditure on HC.6.5 needs to be financed by corporations.

- ! Categories with similar titles belonging to different classifications (e.g. provider and functional classifications) are not necessarily associated with the same amount of expenditure.

3.1.3 Key concepts related to the source of finance classification

- ! The source of financing classification can be found in Annex 7. The SHA includes text on sources of finance in chapter 11. *SHA Guidelines* recommends classifying as source of financing the funding unit that pays the final provider of health care.

For example, in Spain there is a charity (Hermanas Hospitalarias del Sagrado Corazon de Jesus) providing a relatively high proportion of total mental health services in Madrid. The government buys health services directly from this charity, which the charity then provides. The source of financing here is the government, as it is the institution paying the provider of the health service and which has (contractual) control over the goods and services to be provided. In many EU countries, such as the UK, the government provides grants to charities to purchase and provide medical services but the charities are allowed freedom to decide how the money is finally spent. In this case the source of financing is the charity and not the government as it is the charity that has control over the provision of goods and services.

Another example is that of insurance companies. Households pay premiums to insurance companies that in turn either pay health care providers directly or reimburse households. The source of financing here is the insurance company, rather than the household (operationally it is the insurance company which has control over the goods and services it finances).¹⁸

¹⁸ Note that if insurance contracts are such that the household pays and then gets reimbursed immediately afterwards by the insurance company, the source of funding is still the insurance company.

Box 6: The SHA treatment of sources of funding

The SHA presents two options for classifying expenditure in the ICHA-HF classification. These can be summarised in the following way:

- Financing agent method
- Primary source of funding method

A *financing agent* is the funding unit that pays the final provider of health care. The *primary source of financing* is the funding unit from which the money ultimately is sourced. *SHA Guidelines* recommends using a financing agent method for classification, but it is worth mentioning both approaches here.

It is worth mentioning here the lack of agreed terminology for the institutions involved in the flow of financing. *SHA Guidelines* specifically uses distinct terms from *A System of Health Accounts* and the *Guide to producing national health accounts* in order to help avoid setting in stone the language from either publication in advance of wider discussion and agreement.

In the Spanish example immediately above, the charity is acting as a financing agent, whilst the primary source of financing is government.

The financing agent method is the most used around Europe so far. Ideally, however, all financial flows from primary sources of funding to financing agents should be traced, as explained in detail in chapter 6 of the SHA. As stated in chapter 1, *SHA Guidelines* does not give detailed guidance for this exercise.

3.2 The health care boundary

It has been stressed that the concept of health care in the SHA is a functionally based one. Health care is neither defined by provider nor by financing agent, but by type of activity or purpose.

In practice, however, the theoretical definitions can be hard to apply. For this reason, a crucial starting point in the compilation process is the mapping of national concepts and definitions to SHA concepts and definitions (this step is explained in more detail in chapter 4, which is dedicated to the steps Health Accounts developers should follow in the implementation of Health Accounts).

This subsection focuses on the main boundary issues which Health Accounts compilers face. Advice on how to deal with these issues is given in section 2 of this manual; this subsection is limited to listing them and serves as a reminder for the Health Accounts compiler.

The pursuit of exhaustiveness is an intrinsic and important part of health accounting, but can pose some difficulties especially in systems that are not centralised. Exhaustiveness can be achieved by systematic analysis of a health system. As such, knowledge of, or easy access to those who have knowledge of, how the health system works is particularly valuable.

- ?
- The use of the classifications that exist in the SHA can help systematise the search for health activities by serving as reference tools in the formulation of questions such as "where is long-term care provided?" and "who provides ambulance services?"

3.2.1 The boundary health – non health

This borderline health – non health is fraught with difficulty and poses some of the biggest issues in terms of expenditure. This is due mainly to the difficulty in separating expenditure

on health from expenditure in social services, which may have an effect of the order of 1 percentage point of Gross Domestic Product (GDP) in some countries. Given that health expenditure as a percentage of GDP¹⁹ in the EU in 2001 was 8.3%, this borderline issue is critical to improving international comparisons. *SHA Guidelines* makes an attempt in some of these areas to clarify a way in which countries can interpret the SHA such that there is improved comparability.

In many countries, welfare services, some of which are health, some of which are social, are provided in a joined-up way. This might mean that the services are provided by the same staff in the same building at the same time. Typically, there is scant empirical evidence available on the balance between health and social service provision in such cases.

Furthermore, the typical sources of information on providers and sources of funding often have unified accounts for health and social care. Social security funds are usually problematic in this respect, but government accounts can also present difficulties. This is the case in Northern Ireland (part of the UK) for example, which has a ministry responsible for health, social security and public safety (the Department of Health, Social Services and Public Safety).

The boundary health – social care is particularly difficult to disentangle at an international level, not only because national definitions and institutional arrangements differ substantially, but it is also an area that is not well covered by the SHA. Further information on this borderline can be found in the specific guidelines chapter on “long-term care” in which *SHA Guidelines* gives examples of how different countries have dealt with this problem.

Another boundary issue between health and non-health activities is the distinction of health from safety. The main factor that distinguishes health from safety is that medical knowledge is required for performing health services. In practice, however, it may be difficult to distinguish between the two (see examples in occupational health care guideline).

According to *A System of Health Accounts*, any non-health activities within health care providers or in source of funding accounts should be identified and excluded.²⁰ For example, if there are non-health (e.g. flower) shops in a hospital, expenditures on these should not be included in the accounts. However, if the revenues from these non-health activities are being used to cover patient care costs, then they should be included. It will often be difficult to identify what these revenues are being used for and so, given limited resources, *SHA Guidelines* recommends Health Accounts compilers to spend effort on priority areas, which substantially affect health expenditure.

3.2.2 The boundary health – health-related

Health-related functions are described in chapter 9 of the SHA and can be seen in Annex 5 in *SHA Guidelines*. Here the discussion is limited to the main areas of difficulty encountered by Health Accounts compilers:

- ***Separating out education and training expenses from health care providers or source of funding accounts.*** The problem is particularly severe for teaching hospitals or when the budget is allocated jointly to education of staff and health provision.

¹⁹ Expressed as a simple average across EU member states; includes data for 2000 for Luxembourg

²⁰ This information may prove useful when checking the consistency of other estimates and when reconciling to totals that are related to the expenditure being excluded. A record of this expenditure information may also provide useful anecdotal evidence to support other estimates. The use of databases is discussed in chapter 4.

- ***Separating out research and development expenses from health care providers.*** The problem is particularly severe for teaching hospitals and institutions that conduct research together with providing health care.
- ***Distinguishing expenditure on environmental health (health-related) and prevention and public health (health care).*** The chapter on “Prevention and public health” in section 2 provides some guidance.

3.2.3 Being exhaustive with providers and sources of finance

The Health Accounts developer should try to identify expenditure on health no matter where it is provided or how it is financed. Partially hidden activities such as health care provided by non-health industries, such as health care in prisons, are often overlooked but might have an impact on total expenditure. Other examples of health activities that may be overlooked include: armed forces' health; taxi companies providing ambulance services; sales of medical goods in supermarkets; organisations responsible for health system audit and statistical monitoring.

3.3 The timing of recording

! ***Accruals and cash accounting:*** as with National Accounts, the accounting basis for Health Accounts is accruals rather than cash. Accrual accounting records flows at the time economic value is created or exchanged and so the recording of expenditure corresponds to the time when a health care good is purchased for final use, or the time when a health care service is provided.

The distinction will only manifest itself in annual accounts when the good or service is provided in one year but paid for in another. For more on this see the SHA, sections 5.35 and 5.36.

! Following the convention in the SNA, the SHA specifies calendar year, rather than fiscal or other accounting year.

3.4 The SHA and National Accounts

The National Accounts possess a rich database from which Health Accounts can greatly benefit. Hence, understanding the framework, its sources and methods and having access to National Accounts expertise and experience is a great advantage when developing Health Accounts.

The National Accounts primarily measure the activities of the economy at large. As such their data sources and especially their methods may not necessarily be fit for the purpose of analysis at the detailed level of health functions, providers and financiers. For this reason, *SHA Guidelines* explicitly chooses not to give a detailed description of the links between SHA and ESA/SNA but rather advises Health Accounts developers to get hold of the basic data sources which have been used to compile National Accounts figures (see subsection 4.1). Below, a few example links and differences between National Accounts and Health Accounts are discussed; the reader should refer to the SHA or to the *Guide to Producing National Health Accounts* for more detailed descriptions.

In measuring total expenditure, the ESA distinguishes between final and intermediate consumption in order to avoid double counting. Intermediate consumption consists of the value of goods and services (except capital) that are consumed as inputs by a further process

of production. Final consumption consists of expenditure incurred on goods and services that are used for the satisfaction of either individual or collective wants or needs.

The SHA is similar to the ESA/SNA in that it generally includes final consumption expenditure on health as defined in National Accounts. There are two exceptions however: occupational health care, which is classified as intermediate consumption in ESA /SNA; and household production of health care, which is not included at all in ESA / SNA as it falls outside the production boundary. Incidentally, the valuation method for household production of health care services, which refers to benefits paid to those caring for those with health care needs, uses a proxy which is dealt with in ESA / SNA (it is a transfer payment, i.e. an unrequited payment that is not made in return for economic activity). Both of these are covered in more detail in section 2.

Another difference is that the SHA focuses on the *consumption and financing* of health care goods and services in a country, whereas the ESA and SNA focus on the *production*. The difference here is given by foreign trade of goods and services. The SHA accounts for health goods and services consumed by resident units wherever that might be, whereas the SNA and ESA account for the units which are produced nationally for final use.

Chapter 4: Building the accounts

This chapter sets out a strategy for the process of implementing Health Accounts. It describes how Health Accounts could be built up, discusses the main approaches used in practice by Health Accounts developers and proposes a five step process for compiling SHA data, starting from zero and finishing with completed tables. The reader may find some useful tips and practical examples on how to organise the Health Accounts database, what keys are frequently used, what problems are typically faced and how those problems might be solved.

- ! *SHA Guidelines* proposes the following five steps of implementation:

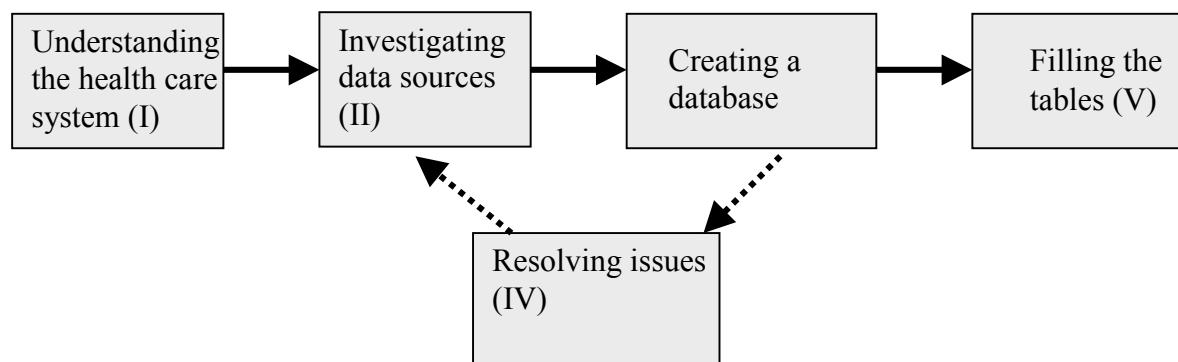
- I. Understanding the health care system under study
- II. Investigating data sources
- III. Creating a Health Accounts database
- IV. Resolving issues
- V. Filling the tables

In terms of the timeline for these steps, step I (the conceptual investigation) and II (getting hold of key data sources) should be carried out first. Steps III, IV and V will then follow as an iterative process: there will be an initial compilation of the database using identified data sources; gaps and problem areas in the database will be identified and resolved by searching for new data sources, reconciling and making suitable estimations where necessary; the database will be updated accordingly. This process will be repeated until a final version of the database is achieved²¹.

Steps III, IV and V could be considered as one step since effectively they are carried out at the same time and are part of a stream of work which ends with the completion of the Health Accounts database. They are separated here for convenience and clarity of exposition.

The process is portrayed graphically in figure 2:

Figure 2: The process of Health Accounts implementation



Subsections 4.3 to 4.8 explain in further detail, giving hints for each of these steps.

²¹ A well constructed database will be useful beyond Health Accounts compilation. It will provide a useful resource for National Accounts compilers and other national users as well as useful source of information for the OECD. The desire to serve national need may also influence how the database is created.

! Steps II, III, IV and V should be seen as an iterative process similar to that used in compiling National Accounts. These steps should involve an elaborate and complex system of checks and balances, choices, trial and error to decide how to put all the data together. This system will help determine which data to use and why, and more importantly identify which data sources should not be used and why. Judging the quality of data sources is a key part of this iterative process and is discussed further in subsection 5.1.

4.1 The importance of building the accounts bottom-up

The concepts of top-down and bottom-up approaches to building Health Accounts have been touched on in earlier chapters but more detailed definitions are required here.²²

- ─ A **top-down approach** is used when most of the Health Accounts' information is obtained taking figures directly from pre-existing aggregate health expenditure classifications and recording systems. This usually involves an extensive use of proxies, assumptions and other estimation techniques for breaking down pre-existing aggregates and also involves a limited amount of reconciliation. A typical example of this is when Health Accounts developers attempt to migrate directly from National Accounts to Health Accounts.
- ─ A **bottom-up approach** is used when most of the Health Accounts' information is obtained using detailed information, possibly presenting activity information at a detailed level. Here aggregate data is used less frequently and reconciliation is often carried out. Pre-existing information is still used but the Health Accounts developer does not attempt to migrate directly from one system of recording to SHA data.

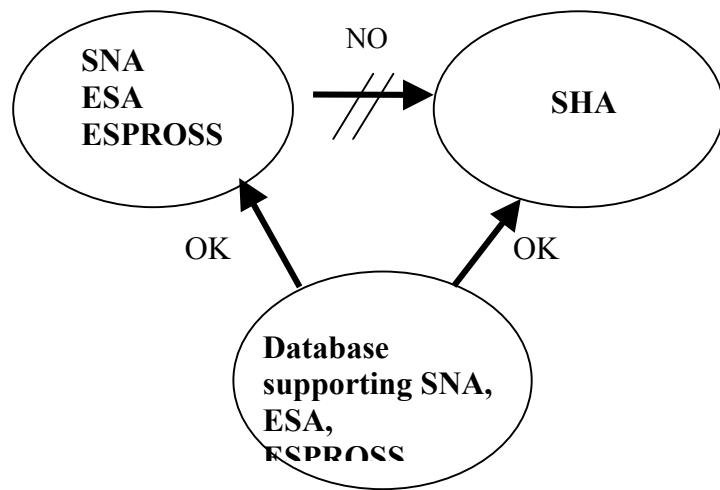
SHA Guidelines strongly recommends the Health Accounts compiler to use a bottom-up approach since the full value of Health Accounts is realised only in this way. If one migrates from an aggregate system of recording like the ESA or the SNA (not specifically designed for health care) to the SHA, important boundary issues may be overlooked, the functional classification may be flawed, important pieces of expenditure may be missed out and the objectives of Health Accounts production may not be achieved.²³ A bottom-up approach also helps to provide a mutually exclusive as well as an exhaustive counting of expenditure.

This is not to say that National Accounts are not a useful source. Indeed, National Accounts figures are backed up by a rich database that should provide the Health Accounts compiler with precious information. We therefore advise at least looking into the basic sources underlying the database but not to try to migrate from one system to another. Graphically, this is shown in figure 3.

²² See section 2.2.4.

²³ This is why there is no attempt here of cross-classification between ESA, SNA and SHA and no detailed explanation of their inter-linkages

Figure 3: Migrating from National Accounts to Health Accounts



When Health Accounts are compiled for the first time it is not expected that a full bottom-up approach will be used. Over time, as Health Accounts are improved, compilers should aim to re-estimate all the parts of the accounts where top-down methods have been used, replace them with bottom-up methods and increase the amount of reconciliation.

Top-down approaches may be useful in corroborating bottom-up ones, since they can help to crosscheck that the figures obtained are sensible. It is also possible that bottom-up approaches highlight problems that exist in National Accounts and may well lead to improvements in those measures as well. This feedback into National Accounts when using bottom-up methods can be a key part of Health Accounts development.

4.2 Main approaches to building the accounts

Health Accounts compilers deal with multiple data sources coming from both sources of funding and providers and with reconciliation all the time. They also tend to use both basic data sources and aggregate information. Nonetheless, a generalisation can be made on the main approaches that Health Accounts developers tend to undertake when compiling Health Accounts. Below we describe three main types of approaches that Health Accounts developers can typically follow. The first two (the source of funding and the provider approach) are consistent with bottom-up methods, the last one is based on top-down methods.

Before going into the details of the approaches we provide a summary of the main characteristics of each:

- ─ **Source of funding approach:** Health Accounts developers following this approach use source of funding data as their main data source. The core data are financial data on expenditures by the different sources of funding. This information is then integrated with provider data sources where possible.
- ─ **Provider approach:** Health Accounts developers following this approach use provider data as the main data source. The core data are financial data on the receipts of the providers but also data on the inputs used by the providers (mainly staff costs and intermediate consumption)

and the outputs they produce (activities and their prices / costs). This information is then integrated with data on sources of funding where possible.²⁴

- ─ **Top-down approaches:** these are approaches which entail migrating from an existing accounting system (e.g. ESA/SNA) to the SHA using aggregate information.

The choice of approach will generally be dictated by the type of sources that are available, which in turn is usually determined by the type of health care system in place, and the type of pre-existing accounting framework.

- ! *SHA Guidelines* provides limited guidance on the top-down approach, as this is not a preferred approach.

4.2.1 The source of funding approach: an overview

The source of funding approach is used by compilers who use 'sources of funding' data as a starting point and core dataset. As mentioned above, this approach tends to involve the use of expenditure on health by sources of funding as the core figures in the compilation of the accounts.

In this approach, it is particularly important to be exhaustive on the source of funding side since the benchmark figure for total health expenditure will be given by total amount of money spent by financing agents (or by primary sources of funding).

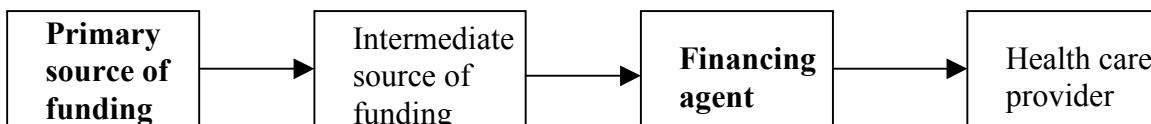
Hence, as a first step the Health Accounts compiler should make sure that all expenditure by all sources of funding appears in the database. From the financial / budgetary information, the accountant then tries to identify the functional breakdown of the activities which are financed and identify to whom the money has been paid. Reconciliation is then performed, where possible, and provider data sources are checked. This will provide the Health Accounts compiler with more information on activities (and thus a better functional breakdown) and will give the opportunity to match expenditures more precisely with the relevant providers. This is the general idea although there are many in-between steps that will be explained more clearly in the five step procedure we propose.

- ! When using this approach, care should be taken not to include non-health expenditure borne by the source of funding (e.g. expenditure on social care or environmental health).

A typical problem that is faced when following this approach is double counting. As mentioned in chapter 3, *SHA Guidelines* recommends recording the financing units that pay the final health care providers as sources of funding. The SHA, however, allows also for the option of recording expenditure in the ICHA-HF classification according to primary sources of funding. In order to avoid double counting it is important to be consistent when choosing which of the two to employ and to make sure that transfers between sources of funding at various levels are netted out. One can think of sources of funding in terms of a chain of payments which ultimately reach the health care provider, as illustrated in figure 4.

²⁴ A limitation of this approach is the difficulty of identifying and eliminating spending on services to non-residents.

Figure 4: Source of funding chain of payments



In the UK for example, the source of funding chain of payments illustrated in figure 4 could include the Department of Health (the UK's Ministry of Health) as the primary source of funding, a primary care trust (PCT) as the financing agent and a hospital as the health care provider.²⁵

In systems where both regional and central government play a role in financing, clearly the Health Accounts compiler needs to ensure that the expenditure is recorded just once.

One should be careful with double counting also when households pay for health care services out-of-pocket and are then reimbursed by insurance.

It should be noted that in this case the financing agent is the insurance company and not the household. The fact that the household actually hands the money to the provider does not make him a financing agent since reimbursement follows immediately.

Examples of key data sources used when following this approach are: social security financial information, government budgetary reports, data from insurance umbrella organisations or surveys on insurance companies, household expenditure surveys and NPISH accounts.

- ! In many cases, these data sources do not provide the amount of detail required to compile all SHA information requirements and it is therefore necessary to use other data sources like provider data or general surveys as complements.

4.2.2 The provider approach: an overview

The provider approach is used by compilers who use as their core dataset 'provider based data'. Expenditure on health care when derived from this approach will mainly be based on information on the financial receipts of providers. When this type of information is not present or is not complete, estimation of receipts can be obtained by using information on inputs and their cost (staff wages and intermediate consumption) and output / activity information (number of activities performed and respective prices / costs).

In this approach, exhaustiveness will be particularly important on the provider side since the benchmark figure for total health expenditure will generally be given by the total amount of money received by health care providers for health care activities.

The general process followed is the following: The Health Accounts compiler usually organises the database by providers of health care. Provider data is the starting point and provider receipts are obtained either directly or using input and output information. From these data a provisional functional breakdown is made and relevant sources of funding from which the money was received are traced. Finally, reconciliation with source of funding and other information is made.

²⁵ Primary care trusts (PCTs) manage services provided within the primary care sector. They are responsible for the planning and securing of health services and improving the health of their local population typically of 60,000 - 150,000 (although some cover much larger populations).

- ! When using this approach care must be taken to exclude non-health expenditure borne by the provider (e.g. expenditure on social care).
- ! Attention should also be paid to the possibility of double counting. Suppose for example that a hospital contracts out lab services from an independent ancillary service provider. The Health Accounts compiler must ensure that this expenditure is not counted twice, once when analysing hospital accounts, and a second time when looking at ancillary service providers' accounts.

Example of key data sources used when following this approach are: business surveys, surveys on financial activities, accounting information posited at statistical offices and tax offices and market information such as information on supply and demand collected by market research companies.

4.2.3 Top-down approaches

These are approaches in which the Health Accounts developer attempts to migrate in a direct way from pre-existing estimates of (health) expenditure. As mentioned previously these pre-existing information sources might include the following:

- ESA / SNA
- Non-SHA standard Health Accounts
- National systems of recording

- ! It is worth making a brief remark about ESA and SNA, which are of relevance for the whole of Europe. A number of National Accounts classifications present a functional view on expenditure, identifying expenditure on health amongst other functions. Please see subsection 5.2 for further details and guidance on how the development of Health Accounts can benefit from the work carried out in developing estimates of expenditure disaggregated according to these classifications.

4.3 Step I: Understanding the health care system under study

Before diving into data collection and calculation methods, it is worthwhile dedicating some time to understanding how the health care system under consideration functions. Having an overall view of the system might take some time initially but will save lots of time and misunderstandings in the future. There are two key parts to this process:

- (i) Comparing the national and SHA health care boundaries
- (ii) Useful sketches of the health care system.

The following two subsections further discuss how this initial phase of Health Accounts compilation can be carried forward and provide some examples of country experiences.

4.3.1 Comparing the national and SHA health care boundaries

The SHA definition of the health care boundary is different from definitions used in national systems of accounting and it is crucial to pin down all the points of divergence between the systems. The main difference is that the SNA puts all domestic production within the boundary whilst the SHA puts all domestic consumption within the boundary. The other key difference is the inclusion in the SHA of items such as household production of health care services. Experience in different countries shows that adopting SHA definitions can make

estimates of total health expenditure change substantially, in some cases in the order of one percent of GDP or more.

All countries have existing, perhaps non-SHA based, estimates of health care expenditure and may use various classifications to break it down. In all EU countries, the majority of health care expenditure is financed publicly, in varying proportions of tax finance and social security funds depending on the country. For this reason, the Ministry of Health²⁶ or Social Security Fund authorities are a first point of contact. The working definition of what is considered to be health at a national level is likely to vary from system to system due to different institutional arrangements, payment systems and country traditions. Getting hold of the concepts and classifications existing nationally is the first step in Health Accounts compilation. These should then be compared to SHA definitions, with the aim of identifying the key differences in the definition of the health care boundary.

- ! Some countries also possess National Health Accounts (pre-SHA) which attempt to describe the health care system in a detailed and complete way. In this case, this information should also be compared with the SHA.

All European countries compile National Accounts following ESA95 and SNA93 and, before the introduction of the SHA, international comparisons of health care were made mainly on the basis of this information. Therefore, getting hold of documentation of methods, for example the 'GNI inventory'²⁷, is also a key step.

Here follow some examples of countries' work on reconciling national concepts and definitions of health accounting with SHA concepts and definitions.

In Spain the starting point was a publication entitled *Estadística del Gasto Sanitario Público* (EGSP or Statistics on Public Expenditure on Health). The main principles underlying the health care system were identified and cross-checked with the principles in the SHA. Table 5 is a rough sketch used by Spain to present their work at the 2001 meeting of OECD Health Accounts experts.

Each side of the table is a stand-alone list, so items on the left and right hand sides do not necessarily correspond. The definition of health care in the SHA were then cross-checked with the health boundary of the national system, details on which were taken from the national legislation setting out health policy in Spain, extracted from the General Act for Health (Art. 6 and 18 to 21, LGS).

Cross-checking general concepts is very useful as one can spot where there may be large differences between a national system and the SHA. Health policy in some countries, for example, targets not only health care but also social care, and both types of expenditures may be included in existing estimates of health care expenditure. In other countries, long-term nursing care activities might be managed in administrations other than the health administration and expenditure on these activities might not be considered as health expenditure. These differences between national systems and the SHA can lead to very large differences in the measurement of health expenditure.

²⁶ This may have different names depending on the country e.g. Department of Health, Ministry of Health and Care, Ministry of Health and Social Affairs.

²⁷ The GNI Inventory (Gross National Income) is a document on the methods and data sources used in compiling national economic statistics, for which there is a requirement under EU law. National copies of this will be available from National Accounts.

Table 5: Conceptual workings on the boundary of health care in Spain

EGSP	SHA
Health promotion	Promoting and preventing disease.
... prevention of diseases and not only curing them.	Curing illness and reducing premature mortality.
Guarantee health care in all cases of reduction of health.	Caring for persons affected by chronic illness who require nursing care.
Promoting interest on health, providing a good level of education to the population.	Caring for persons with health-related impairments, disability and handicaps who require nursing care.
Promoting the actions needed to aim functional and social rehabilitation of the patient.	Assisting patients to die with dignity.
	Providing and administering public health.
	Providing and administering health programmes, health insurance and other funding arrangements.

Source: Seminario sobre cuentas de Salud, Marzo 2001, Ministerio de Sanidad y Consumo, Madrid

Other examples are activities related to environmental protection or hygiene that in some countries may be under the responsibility of the health care system and therefore counted as health expenditure, whereas in the SHA they are health-related functions and do not form part of total health expenditure.

In the UK, the coverage of the existing health expenditure figures prior to the setting up of the Health Accounts project was compared to the SHA in a similar way to the previous Spanish example, and an overview is set out in box 6.

Box 6: Departures from the SHA prior to setting up the UK Health Accounts project

- Expenditure on health by government incorporated only expenditure by health administrations and excluded expenditure on health by other parts of government (prisons, armed forces, local authority and Department for Work and Pensions expenditure on long-term nursing care)
- Expenditure on health by government in contrast included expenditure on Research & Development and on education & training
- Expenditure on health by households excluded expenditure on nursing care in long-term care institutions
- No estimates were included for expenditure on health by NPISH
- Expenditure on occupational health care and household production of health care services was not included (these are still not included in total UK health expenditure figures)

Source: Office for National Statistics, UK

This initial work is crucial to steer the Health Accounts work process in the right direction and to understand where large expenditure adjustments are needed in switching from the existing system to National Health Accounts.

4.3.2 Useful sketches of the health care system

Sketches of the health care system should be drawn taking the SHA definitions into account, in order to avoid missing out on important parts of expenditure. As a starting point, it is worth looking for existing sketches, put together by academics or other health care experts. A useful source for this exercise is “The European Observatory on Health Care Systems” which provides descriptions of the different health care systems in place.²⁸

Existing sketches may have to be remodelled according to SHA requirements. It is useful to produce these sketches in consultation with a wide variety of colleagues such as analysts from ministries, boards, trade associations and academic researchers since the health care system is usually complex and no single person usually has a comprehensive understanding of all of its parts.

The first sketch we advise drawing is one showing the flows of funds circulating within the health care sector and between the health care sector and the rest of the economy. This sketch is meant to outline all major actors in the health care system and to link them according to the flows of funds circulating between them.

The EUCOMP project²⁹ collected a great deal of information on the actors in health care systems in countries in the EU. The actors collected for the EUCOMP project are divided into actors in the health care area – the providers of health care – and actors in the financing area – the financiers. This initial sketch could usefully distinguish between these. Since this graph is meant to give an overview of the system, however, actors should be grouped into main categories and not divided into detailed categories. For example, one category may be ‘hospitals’ with no detailed categories such as ‘mental hospitals’ or ‘other specialty hospitals’. Different institutional arrangements, however, might dictate otherwise and it is important for the sketch to suit a country’s particular needs.

The same entity could appear on the graph more than once. Households, for example, can act as providers of health care (household production), as well as be the source of funding (they buy health care goods and services out-of-pocket). Flows of funds should be identified at all levels i.e. one should trace the payments made by financing agents to health care providers but also the payments that the primary sources of finance make to financing agents and other sources of finance. For example in the UK, NHS Trusts, which receive block funding from government typically to manage the provision of local secondary health services, finance hospitals and other units. In the initial sketch, of course, no monetary values should be assigned to the different flows; the emphasis is on identification of flows.

? How does one go about designing such a complex picture?

The process could start with a brainstorming session aimed at identifying all major actors in the health care system, although this might be avoided if your country has been involved in the EUCOMP project (see annex 3). Once this has been done, each actor should be categorised as a provider of health care, source of finance or both. Finally, all actors should be linked together by the flows of funds circulating from one to the other. It would be useful to enrich these flows (usually indicated with arrows) with some simple metadata indicating the essence of the flow e.g. tax, investment, out-of-pocket payment and so forth.

²⁸ These can be found in electronic format at www.who.dk/eprise/main/who/progs/obs/toppage.

The OECD also possesses standardised flowcharts of this type, authored by Jeremy Hurst.

²⁹ See Annex 3 for further details on EUCOMP

An example of such a sketch is figure 5 taken from the Hungarian pilot implementation paper. This sketch is comprehensive in terms of sources of finance and providers and financial flows are labelled with concise metadata. Although it represents a complex system, its usefulness can easily be seen by the ease with which it can be followed.

The sketch developed should be viewed as a preliminary rather than final outline. The Health Accounts team should bear this in mind as they undertake their work, and keep an open mind about the number, relative position, and activities of the actors in the health system. Changes to this sketch may well come about as the compilation of the Health Accounts advances.

Another aspect of the health care system that we could usefully depict is the flow of services from providers to final consumers (inhabitants in the Hungarian graph). This could be done by identifying the main routes a patient follows in a given country to get health care services and sketching them in a simple and intuitive way. These will eventually be looked at during the compilation of Health Accounts to understand how to classify expenditure in the functional and provider classifications.

4.4 Step II: Investigating data sources

This step involves identifying and investigating datasets that contain information on health care. It also involves making an inventory of these sources and recording their main characteristics. This stage should also see the beginning of an exhaustive list of actors in the health care system, based on the information taken from the data sources studied.

4.4.1 Making an inventory of data sources

The first thing to do is to catalogue known sources of data on health care, especially those sources which include expenditure or other financial information such as costs or prices.

The contacts listed in Annex 4 will be an excellent group of people to assist in identifying such sources.

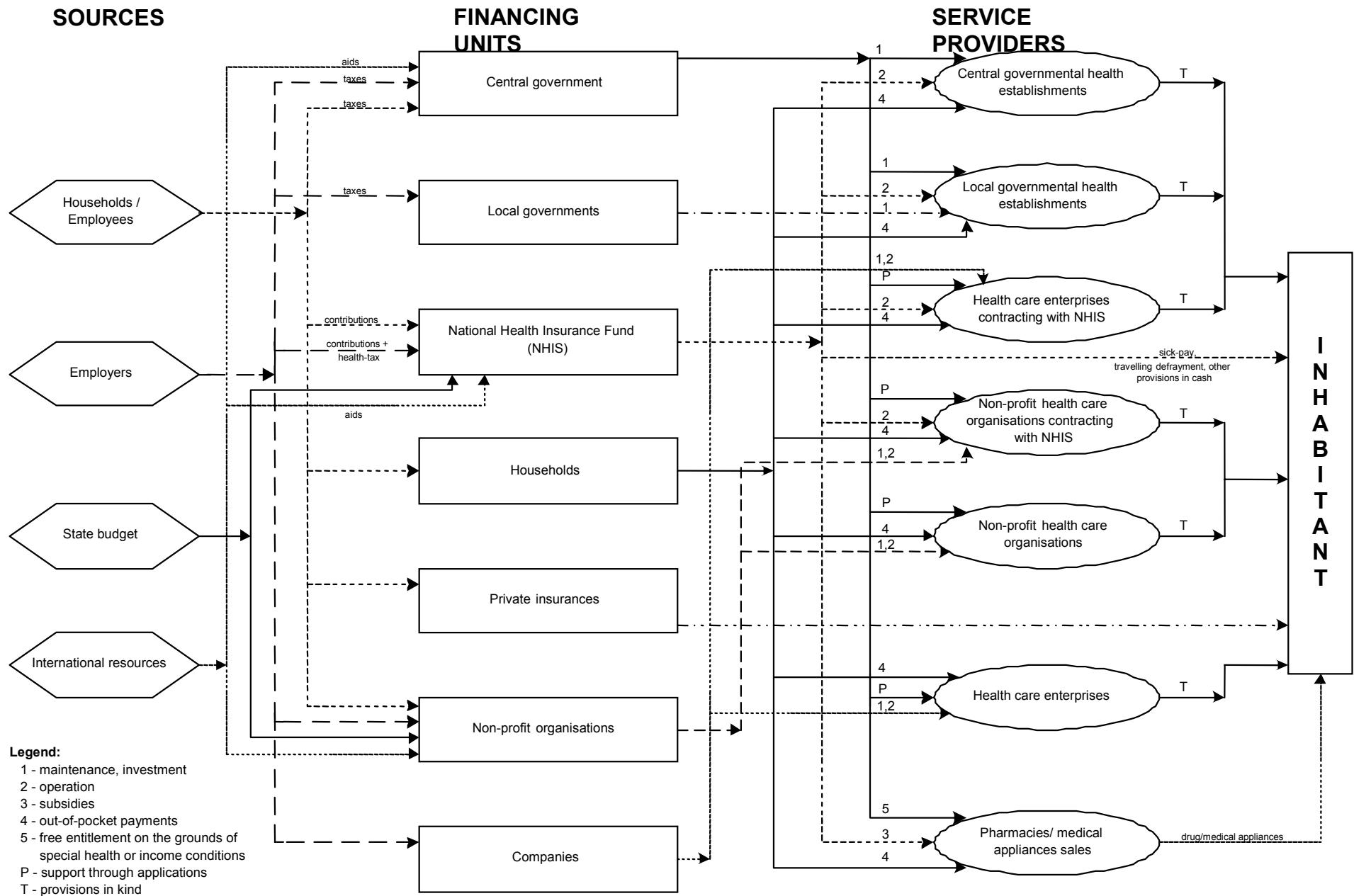
- ! At this stage the inventory is unlikely to be exhaustive. In the process of compiling Health Accounts new data sources are likely to be found. Discovering these new data sources forms an important part of Health Accounts development.

In all countries, there are bodies of work that can be drawn on when developing Health Accounts and it is therefore not the case that development work has to start from scratch. The Health Accounts developer should draw from pre-existing systems, making sure that the more detailed, original data sources used by them are identified wherever possible. In summary, these include the National Accounts, any non-SHA Health Accounts, government records (for example, Ministry of Health budgetary information, regional governments' data) and Social Security data.

These should then be complemented with other data sources such as data from insurance umbrella organisations and NPISH accounts data, for example, where these are not included in the databases mentioned above or where more detail is necessary.

When making the inventory, each source should be examined with the aim of finding out what the main content is, what information is provided, what questions are answered and what the original purpose of the source is. The aim here is to record all relevant metadata that will be of use when dealing with data for SHA compilation.

Figure 5: Flow of funds in the Hungarian health care system



Sources could be divided into two main categories: source of funding data sources and provider data sources. An example of the way in which metadata on sources could be organised and presented is set out in tables 6 and 7.

These example tables include some key informative pieces of descriptive information on the data sources, but clearly there could be many more questions that could be addressed. For example, what is the time period of the source, the frequency, the coverage, does the source relate to public or private providers, public or private sources of finance, how the data can be obtained and at what cost. There are also many possible ways of recording metadata and this presentation in a two-dimensional table is only one option.³⁰

Table 6: Data sources relating to sources of finance

Title of data source	Origin of data source	Type of source	Level of detail of the data	Whether expenditure can be assigned to providers	Whether expenditure can be disaggregated into functions
Central government health budget	Ministry of Health database	Administrative	Aggregate	Mostly, but some parts are unclear	Partially but problems with...
Social security reimbursement information	Social security database	Administrative	Detailed
Household budget survey	Statistical Office database	Statistical survey	Detailed
...					

Table 7: Data sources relating to providers

Title of data source	Origin of data source	Type of source	Level of detail of the data	Whether expenditures can be disaggregated into sources of funding	Whether expenditures can be disaggregated into functions
Surveys on hospital activities	Statistical Office database	Statistical survey	Detailed BUT it is activity (non-financial) information	No	Mostly
Surveys on general practitioner activities and revenues	Social security database	Statistical survey	Detailed	Yes	Partially
...					

4.4.2 Starting to compile an exhaustive list of actors

- ! In order to achieve correct figures for total health expenditure and its breakdowns, it is necessary to be exhaustive in recording actors in the health sector.

³⁰ Chapter 5 contains further guidance on data sources in particular.

At this stage of the process, it is worth starting to put together lists of such actors which play some kind role in the health care system, be it provision of health care goods and services, administration, financing or a combination of these roles. The same actor can perform activities of different kinds and indeed many actors are both sources of funding and providers.

- ! This list is unlikely to be exhaustive. In the process of compiling Health Accounts new sources of financing and new actor are likely to be found. Expanding this list forms an important part of Health Accounts development.

In the initial sketches proposed in subsection 4.3.2 this had already been done at a general level. Here we want to have a more detailed list so that we ensure exhaustiveness within the main categories of actors. For example, instead of having just 'hospitals' we will have 'public general hospitals', 'public specialty hospitals' and 'private mental health hospitals'. This list will be a dynamic document to which actors will be added as the process continues.

Exhaustiveness is crucial for presenting correct figures in the Health Accounts. As mentioned in subsection 4.2, exhaustiveness on the provider side is particularly important when following a provider approach and exhaustiveness on the source of funding side is particularly important when following a source of funding approach. Exhaustiveness should be achieved according to the SHA boundary of health care, as this is the internationally comparable means for calculating health expenditure.

4.5 Step III: Creating a Health Accounts database

After completing the inventory and having had a first go at recording actors, data should start to be collected and recorded in a database through the use of appropriate software packages. We identify five parts to this process:

- (i) Which data to acquire
- (ii) Placing existing data as they are into a spreadsheet or database package
- (iii) Initial allocation to SHA classifications
- (iv) Further investigation of data sources
- (v) First SHA tables

- ! An iterative approach is recommended for this work. Of course, information on new actors as they are discovered should be included in the list of actors discussed in subsection 4.4.2 and the health care sketches discussed in subsection 4.3.2 should be updated on the same ongoing basis.

4.5.1 Which data to acquire?

Clearly, the more data the better. However, it should be acknowledged that there are costs associated with the acquisition of data. Some datasets will not be free of direct costs and a fee may need to be paid. Such a fee may be substantial as is common for market research data. For other datasets, the burden on providers in tailoring the dataset, or the time and other resources required of the team in acquiring the data should be considered.

Of particular importance in the early stages of development will be to focus on the acquisition of data on expenditure. Other, non-expenditure, datasets can be acquired at a later date when a view has been taken on the extent to which expenditure sources are sufficient.

4.5.2 Placing existing data into a spreadsheet or database package

Depending on the approach chosen, the data recorded at the start will be related to sources of funding or to providers. At this stage, the recording will consist of simply placing the figures taken from the relevant data sources into a spreadsheet or a database package.

The organisation of the database should be constructed bearing in mind the nature of the health system and the availability of information. In the UK, the main data sources are from sources of finance, and so the suite of spreadsheets has been designed with this in mind. In the Netherlands, a provider approach has been taken, where a sheet exists for each provider, or actor.

4.5.3 Initial allocation to SHA classifications

This corresponds to a first attempt at allocating the functional, source of finance and provider classifications. Of course, at an early stage of development, any allocations should be on a pilot basis but can be used as a benchmark for future development. For ease of exposition, tables 8 and 9 present only a one dimensional view on how this could be carried out for the functional distribution, but of course the three SHA classifications should be dealt with, and if possible, the cross-classification.

Table 8: Source of funding example

MINISTRY OF HEALTH BUDGETARY INFORMATION		
<i>Code for budget item</i>	<i>Title</i>	<i>Function</i>
Item1	Diagnostic procedures	Health care – ancillary services, cure?
Item2	Assistance to the disabled	Possibly health care?
Item3	Purchase of radiography equipment	Health care related – capital
Item4	Newspaper subscriptions	Non-health
...	...	

Table 9: Provider example

HOSPITAL ACTIVITY INFORMATION		
<i>Code for hospital activity</i>	<i>Title</i>	<i>Function</i>
HOSP1	Dialysis	Health care – long-term care / rehabilitation?
HOSP2	Endoscopy	Health care - cure?
HOSP3	Cervical cancer diagnoses	Health care - cure?
HOSP4	Radiography	Health care - cure, ancillary services?
...	...	

This process is necessarily simplistic, as in many cases the data source may only provide information on aspects of one or two of the three SHA classifications. Also, the titles in the

data source at hand are not sufficiently informative for correct classification. In table 9, for example, the item "assistance to the disabled" may contain some health expenditure.

The Health Accounts developer should not discard information, but store it just in case it might serve a purpose later.

A simple example of how detailed entries might look in a spreadsheet, limited to the title of the individual expenditure item and cross-classification, is illustrated in table 10.

Table 10: Initial cross-classification work

<i>Expenditure item</i>	<i>Value (currency units)</i>	<i>Function</i>	<i>Provider</i>	<i>Source of funding</i>
ACT1 Diagnostic procedures	20	HC.1 and / or HC.4	HP.1	Not known
ACT2 Cancer prevention	30	HC.6	HP.1	Not known
ACT3 Assistance to the disabled	100	Not known	HP.1	Not known
...

The table demonstrates the value of the adding other categories to each of the SHA's three classifications as an acknowledgement of issues to be resolved. Such categories might reflect the fact that a particular piece of information is unknown, of a provisional nature, unclear or fits into more than one category.

An additional step that may be useful here would be to consider the mapping between existing and widely used international classifications, such as the International Standard Industrial Classification (ISIC), and the SHA classifications. This may be a key step if there is an initial reliance on National Accounts data sources. Guidance on these mappings can be found in Annexes 4 and 5 of the SHA.

4.5.4 Further investigation of data sources

Following on from the initial allocation of data according to the SHA classifications, a number of questions about the data source will have arisen. It is imperative to get into contact with the owners and / or experts involved in the data source, in order to discuss the use to which the Health Accounts compiler is putting the data. This will allow the expert to advise accordingly. In advance, reading up on the data source should help to make the most of the discussion.

4.5.5 First SHA tables

Once data start appearing in the spreadsheets and databases, it is worth designing the system to aggregate the information into the basic SHA tables. This will assist in exposing issues, by revealing cells in the table which ought to have some expenditure but there appears to be none, revealing distributions of expenditure which do not seem reasonable, and revealing how much expenditure has been classified to the other categories such as "unknown" (see the last paragraph of subsection 4.5.3) created for exactly this purpose. Further details on typical issues and how to resolve them are to be found in the next subsection.

Table 1 of the SHA's proposed set of standard tables is the key table to be created, as it cross-classifies expenditure by all three classifications. From this table will flow all two and one

dimensional tables. A database is designed to carry out exactly this kind of aggregation, whereas a spreadsheet will require more thought. In the Netherlands, a sophisticated system of interlinked spreadsheets has been designed, taking advantage of the greater flexibility compared with databases, with formulae used to carry out the main compilation steps. In the UK, Microsoft Excel's pivot table facility has been used to carry out this aggregation.

It is also worthwhile designing the system to cope with a great deal of descriptive information from an early stage. This will allow issues to be more readily resolved at a later date. Table 11 presents an example of such information:

Table 11: Metadata attached to the tables

<i>Cell HP.1.1.1 – HF.1.1.1: Public hospitals – Central government</i>
<i>Definition:</i> funds allocated by Ministry of Health to state-owned hospitals
<i>Sources:</i> Ministry of Health annual report (MHAR) and other budgetary information (OBI)
<i>Calculation:</i> HP.1.1.1 – HF.1.1.1 = (MHAR budgetary codes MHAR11 + MHAR17 +...– MHAR55) + (OBI codes OBI6 – OBI5 + OBI88...)
<i>Gaps and problem areas:</i> (a) Ministry of Health code MHAR11: there might be some social i.e. non-health expenditure, (b) OBI5 is a provisional figure, to be firmed up early next year

4.6 Step IV: Resolving issues

The importance of keeping a record of issues relating to data sources was highlighted in previous subsections. However, these issues related only to individual data sources. An examination of the first SHA tables will have highlighted issues involving more than one data source: for example, different data sources might suggest different values associated with the same activity.

This step discusses how to resolve the issues relating to both individual data sources and those relating to the comparison of multiple data sources for the same activity. First of all, this subsection lists the typical issues that will be encountered.

4.6.1 Typical issues encountered

(i) *No data on an actor:* this issue arises when there are no data on actors that are known to bear expenditure on health care. For example, there may be no information on health expenditure in prisons and in armed forces, or in institutions for the elderly or the disabled which perform health care activities as well as social care.

(ii) *Insufficient functional information:* for example, data for some institutions that provide joined-up care (health and social care provided as a single service), a separation of health and social care might not be readily available. It might also not be possible to distinguish detailed SHA functions within the overall health care boundary.

(iii) *Lack of cross-classification:* this issue arises when an individual data source does not provide information on the cross-classification by function, provider and source of financing. For example, household budget surveys typically collect information on the goods and services bought (from which the function can be derived) but may not capture sufficient information on the provider.³¹

³¹ Household surveys are notorious for undercounting because they rely on respondent recall and households can only provide information that they are aware of. For example, households may know

(iv) *Limitations from individual data sources*: this covers a wealth of issues. Included are, for example, incomplete population coverage with household budget surveys tending to cover only people living in private households and not those in communal establishments. Sample surveys are subject to sampling error and certain data collection instruments do not record expenditure on certain goods and services well e.g. surveys of individuals are known to under record purchase of medical goods and services of a particularly personal nature. See subsection 5.1 for further examples of these limitations.

(v) *Contradictory results*: multiple data sources may provide different information on the same activity. This may be due to the different view taken by the different sources, from the source of funding and provider sides, but also because of the different purpose of collection or sampling error.

(vi) *Lack of information on expenditure*: in some cases, there may be no information on expenditure, although there might be information on activities for instance.

The specific guidelines in section 2 present advice on how to deal with these issues in relation to the individual functions and other areas for which countries have reported compilation difficulties. The remainder of this subsection gives advice from a general perspective on how these issues can be resolved, grouping the solutions into three main categories:

- Acquiring more information
- Making assumptions and the use of keys
- Collecting new data

A fourth type of solution, reconciliation of contradictory results, is dealt with separately in chapter 5.³²

4.6.2 Acquiring more information

As explained at the beginning of this chapter, although the flow of this work suggests a strict timeline and a specific order in which tasks are carried out, it is important to carry out the work as an iterative process. The acquisition of more information should be seen in this light: gaps in the coverage of the data already acquired and placed in the database will reveal what more information is required and hence what data sources should be sought.

For example, a gap in the UK Health Accounts continues to be expenditure on health in prisons. A focus on this expenditure, including consultation of those in UK government with responsibility for the provision of health care within prisons, has revealed sources of data that were not known at the outset. These sources of information provide information on the totality of activities, the types of activities, the costs of those activities and the way in which those activities are provided. This should allow a reasonable, if aggregate, allocation of this expenditure to the SHA classifications.

Where there is low confidence in an estimate because of, say, a particularly small sample size, searching for a complementary source to corroborate or even substitute for the estimate is essential.

Discussing the availability of more data with various experts in the light of the identified issues should help identify extra sources to be incorporated into the databases.

about charges for services, but may not be aware of discounting that takes place when public and private insurers pay providers for their care.

³² See subsection 5.1.

If it proves difficult to disentangle, say, the health care component from the environmental component in a government public health programme, discussing this with those responsible for reporting and compiling the information may highlight sources of information which might be combined with estimation methods to resolve the problem.

Where two sources provide contradictory information, a third data source might provide some extra information to help in the reconciliation process (see chapter 5). This process should involve things such as evaluating collection methods, sample design or specific survey questions and checking for consistency of results over time.

- ! In some cases a third data source may not be able to reconcile these differences. In the worst case scenario the third data source may agree with the poorer of the existing data sources rather than the best.

Acquiring more information will be helpful, but is not always possible. The next subsections therefore go through other methods for solving problems and filling gaps.

4.6.3 Making assumptions and the use of keys

Even after searching for other data sources, in some cases there will still not be sufficient information to comprehensively estimate a component of the Health Accounts and it will be necessary to resort to other estimation means using other information available.

This will clearly be the case where there is no expenditure information available for a Health Accounts component, but this may also be the case where the expenditure information available is limited.

- ☞ Using keys and keying refers to the practice of using the distribution of a proxy variable as a substitute for an actual distribution. For example, where no information on the distribution of expenditure across functions for a particular actor is concerned, that distribution of activities might be used as the "key" for allocating the functional distribution.

! *Making assumptions*

Taking the scenario of a social security fund³³ for which we want to find out administrative expenditures on health, if what is known is only how much the fund pays out for health goods and services and for social care but not how much administrative expenditure is related to these, it might be necessary to make an assumption. For example, it might be reasonable to assume that the ratio of expenditure on health goods and services to social care is the same as the ratio of their respective administration costs. For example, if 8% of the fund pays for health goods and services and 92% pays for social care, 8% of total administrative costs would be allocated to health care expenditure. Such an assumption may need to be tested, possibly by enquiring further into the cost structure of the fund's administration. Whether or not it is possible to test such an assumption, the known limitations of the assumption should be fully documented.

There are other assumptions that can be used. The important points are that they should be justified and well documented. All estimation methods and assumptions should be clearly presented in metadata attached to the final results. This transparency is a key part of Health Accounts development as it provides users with a better understanding, and of course assists compilers in subsequent compilation rounds.

³³ Note that social security fund is a source of funding and a provider of health administration services

! **Keying with employment**

Take again the administration example given above. Another method for estimating this administrative expenditure on health might be by using information on employment.

If information on the number of employees working on the administration of the health care and social care is available, these can be multiplied by, say, average labour cost to obtain staff costs³⁴. Hence:

$$\text{Health staff costs} = \text{Number of health staff} * \text{Average labour cost of professional category}^{35}$$

A refinement would be to incorporate information on the seniority or profession of employees, if this is available.

To complete the expenditure on health administration, a proportion of running costs could be assigned to health. This expenditure will comprise items such as telephone, office rents and electricity, which are not directly attributable to health but for which common accounting is kept. Such running costs (or overheads) could be allocated based on the share of health personnel out of total personnel. Note that this procedure is an approximation that contains the assumption that running costs follow staff costs proportionately. This may not be the case since different units may use up different amounts of common goods. In any case, the estimation will be the following:

$$\text{Health running costs} = \frac{\text{Number of health staff}}{\text{Number of all staff}} * \text{Total running costs}$$

Dividing overheads can actually be done in different ways: they can be calculated per capita (as above) or per hour worked. For example, telephony might tend to be proportional to time worked, whereas it seems sensible to divide office space and heating in per capita terms. Finally total health costs will be given by:

$$\text{Total health costs} = \text{Health staff costs} + \text{Health running costs}$$

! **Keying with activity information and activity costs / prices**

When detailed expenditure information is not available, information on number of activities performed might be used. This information combined with information on unit (average) costs can be used to estimate expenditure.

Suppose it is not known how much is spent on in-patient and out-patient treatments in a hospital but the ratio of people treated in in-patient and out-patient settings is known. The product of the number of in-patient cases and number of out-patient cases and the average costs of an in-patient stay and out-patient consultations could be used to break down expenditure into in-patient and out-patient, as follows:

$$\text{In-patient expenditure} = \text{Number of in-patient stays} * \text{Average cost of an in-patient stay}$$

and

³⁴ This may not be necessary as totals for the wage costs of different categories of personnel (in our case health personnel) might already be available

³⁵ An alternative would be to use average wages. The problem here is that average wages do not include social insurance contributions paid by employers. These contributions should be included in staff costs and so the use of average wages would underestimate staff costs. However, data availability may force the use of average wages with estimates more readily available in most countries.

*Out-patient expenditure = Number of out-patient stays * Average cost of an out-patient case*

This method has been used in various countries to estimate expenditure on vaccinations. Expenditure on vaccinations was estimated as number of vaccinations performed multiplied by average unit cost of a vaccination.

! ***Using small scale studies and applying results to the population***

In some cases, it might be reasonable to use the results of a small-scale study to estimate the results for a component. For example, in the UK, a mooted possibility for improving the treatment in UK Health Accounts of the health expenditure of charities is to study a few charities and apply this distribution to all charities. This approach does have its risks, in particular the bias this might introduce because the selected charities are in some way different from the charities not selected. It is important to document the methods employed and the potential biases from such methods.

This approach can be used in a variety of areas where there is little history of separate accounting for health expenditure, or for particularly difficult components, including prisons, the armed forces and long-term nursing care in institutions.

! ***Estimating the source of financing for co-payments***

If the average rate of co-payment and total expenditure on a given health function is known, the out-of-pocket share can be estimated as:

$$\text{Household expenditure} = \text{Total expenditure} * \text{Average rate of co-payment}$$

or

$$\text{Household expenditure} = \text{Total expenditure} * (1 - \text{Average rate of reimbursement})$$

! One should take care in these cases however since part of these services may be fully paid out-of-pocket; one should therefore make sure that the average rates used here take this into account (i.e. they include the cases for which the rate of reimbursement is zero).

4.6.4 Collecting new data

This type of solution may not be an available solution for many, as it will usually require considerable resources, both in money and time. In the total absence of information, and where a small-scale study cannot be conducted because of for example high levels of variability, it may be the only solution. Guidance on the design of data collection instruments is not offered here, as there is a wealth of material to draw on elsewhere.

Getting agreement to allocate resources to the collection of new data is helped if there is a user demand for this piece of information specifically. For example, in the UK, a Time Use survey of the activities of medical staff within the prison service is being considered, which will provide more detailed information to improve the classification according to the SHA. This would not be taken seriously if it were not for the desire within the prison service to better understand this area in order to improve manpower planning, resource allocation and establish a baseline for target setting purposes.

The case for conducting a new data collection is also improved if the results would have a significant impact on the total expenditure figure or on the distribution of expenditure across the three classifications.

A final piece of advice is to consider the possibility of using existing surveys, positing extra questions for example, rather than setting up a completely new collection instrument. Further to this, by building up a long-term relationship with collectors of health care data the Health Accounts compiler may be able to influence current data collection to be more in line with Health Account needs. This is likely to be a two-way process with the data collectors benefiting from Health Accounts expertise with regards to important policy questions.

4.7 Step V: Filling the tables

Once the database is complete, that is there has been a final iteration of the compilation process, gaps have been filled and issues have been resolved as far as is reasonably possible, it is important to carry out an audit of the compilation process to ensure that the Health Accounts are of high quality in terms of calculation, spreadsheet manipulation, importing and exporting of data, and provision of metadata for the user to understand fully the process.

- ! An important use to be borne in mind for metadata is as an aid to compilers in subsequent Health Accounts development and compilation rounds.

The output of the process is the cross-classification of total current expenditure by function, provider and source of financing, which corresponds to table 1 in the SHA's set of proposed standard tables. From this the information for tables 2, 3 and 4 (respectively current expenditure on health by function and provider industry, current expenditure on health by provider industry and source of financing and current expenditure on health by function of care and source of financing) can easily be extracted.

It is important to present next to the tables descriptive information which explain the methods which have been used in order to obtain the figures. In particular, it should be pointed out which parts of the table are of particular concern regarding quality, and the nature of this concern. Credibility is enhanced through the honest description of issues and problems. It also promotes the improvement of information as data suppliers begin to understand how their information is used and to strive to make improvements.

Chapter 5: Overview of data sources

Previous chapters provided information on the type of work, expertise and knowledge required to compile Health Accounts, as well as more detailed guidance on how to account for expenditure on health. This chapter supports the preceding chapters by pulling together information on the typical data sources that can be used in Health Accounts compilation. This chapter lists them, describes their general features and discusses their relative advantages and disadvantages.

- ! A message worth repeating in this chapter is that some work will already have been carried out in the field of health expenditure accounting. This may be for reporting on public expenditure to national parliaments, explaining the purpose of government expenditure or household expenditure in the National Accounts or reporting expenditure on health in OECD Health Data.

Key to the process of developing Health Accounts is the notion that the quality of the accounts is significantly improved by the use of a variety of data sources that can be compared and reconciled. Although this reconciliation requires rather more effort than using single data sources to estimate different components of the accounts, contrasting for example the production of, say, medical goods with information on consumption of those same goods should lead to a more coherent and consistent set of estimates.

The specific guideline chapters in section 2 provide some advice on reconciliation of data sources. The WHO / World Bank / USAID *Guide to producing National Health Accounts* also provides useful step-by-step guidance on reconciliation in chapters 10 to 13. Before listing typical data sources of use in Health Accounts we discuss how to judge the relative quality of these data sources.

5.1 Judging relative quality of data sources and reconciliation

When there are multiple data sources for a given component of the Health Accounts, it is likely that the results will not match perfectly. Understanding the basis for these differences and juxtaposing the advantages and disadvantages of the different sources is a prominent part of the process in developing Health Accounts.

There are no absolute criteria for judging relative quality when reconciling data sources. However, there are some general principles to be considered whilst carrying out reconciliation work.

Firstly, it is important to fully understand the data sources being considered. Collecting a decent description of the source is essential to being able to understand how it may be used in Health Accounts compilation, even before considering how its estimates might be used in conjunction with estimates from other sources. Such a description ought to include, as a bare minimum: the primary purpose of the source; its coverage (population, geography etc.); what classifications, terms and definitions are used; if it is a sample survey, its sample size and therefore the accuracy of its estimates; the time periods for which it is available.

Secondly, it is important to be objective. For example, having previous working experience and expertise in a particular source may be extremely useful, but this may artificially lend undue weight to the usefulness of the source.

Thirdly, it is important to recognise that the concept of quality is complex. Limiting the definition of quality to one or two simple aspects may lead to a biased decision on how the data sources are to be used.

Fourthly, it is important to be systematic. Once a system for judging the relative advantages and disadvantages of a particular source has been laid out, this same system can and should

then be used for all other sources, allowing for some limited flexibility where appropriate and justified.

Finally, decisions on how data sources can be used to complement each other should be tested as widely as possible. This should include discussion with the experts in the data sources as well as amongst the Health Accounts Team and stakeholder group. The Project Board and / or Steering Group are also good fora for discussing reconciliation issues, and may act as arbiters for particularly difficult issues regarding reconciliation. Of course, exposure of methods, including assumptions made during the reconciliation process, alongside the Health Accounts estimates will encourage debate about improvement to those methods, and developers should be open to this positive criticism.

It is worth bearing in mind that some sources may only be useful in corroborating other results, and this should be allowed for in setting up a system for reconciling data sources. For example, if data on expenditure from financiers and providers of medical goods are available alongside information on consumption of quantities of medical goods from consumers, the latter source may not necessarily feature in the actual method of estimating expenditure on medical goods, but may add evidence to be considered when comparing the two sources of expenditure data.

5.2 Existing health expenditure work

In order to get the greatest benefit from other work in the field of health expenditure accounting, it is worth noting that there is usually no simple mapping mechanism from one framework to another and that what is required is a more detailed exploration of the data sources, classifications used, assumptions agreed and methods employed.

There are several analyses commonplace in Europe, which are of interest to the Health Accounts developer. The following is not an exhaustive list, but a useful pointer to existing analyses.

As stated in chapter 4, *SHA Guidelines* does not dwell on the relationship between Health Accounts compiled according to the SHA and other work in the field of health expenditure accounting, for the simple reasons that in practical terms the relationships are necessarily complex and country-specific.

Moreover, it is the development work underpinning other analyses of health expenditure that is of interest to the Health Accounts compiler, rather than the estimates resulting from these analyses. A thorough investigation of these other analyses may reveal that the estimates already produced can be used for Health Accounts purposes, but this should not be taken for granted.

The accompanying text to these other analyses is therefore limited to simple descriptions of general advantages and disadvantages.

5.2.1 National Accounts

Table 12: Advantages and disadvantages of National Accounts

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> When suitable, data from the National Accounts classifications are quick to use ESA specifies functional classifications which identify health expenditures National Accounts data have been reconciled, are coherent, consistent and internationally comparable In theory, possible to trace compilation back to primary sources which will contain much more detail Good source for cross-checking results 	<ul style="list-style-type: none"> Compilation of functional classifications is only voluntary in ESA Functional classifications are not entirely consistent with SHA Primary purpose is compilation of national output; detailed analyses such as functional breakdown may not be sufficiently detailed and may be compiled using top-down approaches Principles for classifying expenditure do not match SHA Not as transparent and information-rich as primary sources of information (which ideally should be used by the Health Accounts developer)

5.2.2 Public expenditure accounts presented to national parliaments

Table 13: Advantages and disadvantages of public expenditure accounts

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> Figures are usually very accurate, having been audited prior to presentation to parliament In theory, possible to trace compilation back to primary sources which will contain much more detail Good source for cross-checking results 	<ul style="list-style-type: none"> Concepts, definitions and classifications unlikely to be consistent with SHA Likely to include only aggregate totals without too much detail Likely to report ministerial responsibilities – health ministry may not cover all government health and may include activities other than health eg social care Lack of coverage of private financed health care

5.3 Basic data sources

This list is not intended to be exhaustive. The Health Accounts compiler is encouraged to use this list merely as a good starting point. The variability of health systems and health information systems across countries is such that there may be several other sources that may complement or even substitute for the sources suggested here. The opposite may also be true: sources mentioned here may not exist in some countries.

- ! A key disadvantage for most sources available to the Health Accounts compiler is that of differing purpose: the sources will have been designed for some other reason than the completion of health accounts tables.

5.3.1 Government data (budgetary and other administrative data)

Government data can be subdivided into two categories: budgetary / financial information and other administrative information. For the budgetary information, please refer to the table on public expenditure accounts in subsection 5.2.2.

When tracing public expenditure accounts back to primary sources, it is worth checking carefully for double counting. This may be an issue where the health system has a flow of financing arrangement involving the transfer of money between different stakeholders within government, as is the case when several layers (central, regional or local) of government have a role in the financing of health care.

Governments are a rich source of administrative information. This can be information to control regulatory requirements, monitor public health, management information for scrutinising the overall system, reviews of service provision and so on.

Table 14: Advantages and disadvantages of budgetary and administrative data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • Usually accurate and independently audited • May be completely enumerated • Useful for cross-checking results 	<ul style="list-style-type: none"> • May not be, or even relate closely to, expenditure • May not be continuous through time, but reflect information requirements at a single point in time • Collection of administrative data will almost certainly be designed for another purpose, so definitions unlikely to match

5.3.2 Social security reimbursement data

Table 15: Advantages and disadvantages of social security reimbursement data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • Complete (not sample based) and non-overlapping • In Social Security funded systems, tend to have high coverage rates of total health expenditure • Usually provides more detailed information than government records 	<ul style="list-style-type: none"> • Concepts, definitions and classifications unlikely to be consistent with SHA • Funds may cover social care and other expenditure apart from health which could prove difficult to separate, particularly for what concerns HC.7 – Health administration and health insurance expenditure • Reimbursement information / rules are usually complex and it might therefore be difficult to use this source to estimate private spending

5.3.3 Private insurance data

These sources would include surveys on insurance companies, data from umbrella organisations, licensing offices and other regulatory bodies. For example, in Germany there is "Bundesaufsichtsamt für das Versicherungswesen" and in the Netherlands there is the "Verzekernigshamer".

Table 16: Advantages and disadvantages of private insurance data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • Data would tend to be detailed in order to support business models of supply and demand 	<ul style="list-style-type: none"> • Concepts, definitions and classifications unlikely to be consistent with SHA • Commercial confidentiality may restrict availability of data • Policies often cover other expenditure apart from health, which may be difficult to separate. • Reimbursement information / rules are usually complex

5.3.4 Remaining financing agents' data

This would include, for example, surveys of charities that play a role in health care.

Table 17: Advantages and disadvantages of remaining financing agents' data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • Data would tend to be more detailed in order to support business models of supply and demand 	<ul style="list-style-type: none"> • Concepts, definitions and classifications unlikely to be consistent with SHA • Commercial confidentiality may restrict availability of data

5.3.5 Provider data

Table 18: Advantages and disadvantages of provider data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • Usually detailed and comprehensive • Often contain detailed information on activities and therefore allow for precise computation of health care expenditure 	<ul style="list-style-type: none"> • Data may be non-financial; estimation may be required • Possible provider incentives to over-report or under-report depending on payment and tax systems • Commercial confidentiality may restrict availability of data • Concepts, definitions and classifications may be inconsistent with SHA

5.3.6 Market research data

This would include, for example, ongoing collection of information on demand and supply for existing companies and start-ups and for consumers as well as one-off reviews of particular market sectors

For example, in the UK, Laing and Buisson provide data and analysis of the UK health care sector. They produce market reports and databases on long term care provision, private medical insurance purchase and acute hospital care.³⁶

Another UK source for market research data is the company Mintel, which provides detailed market reports on different areas of consumption in the health care sector. Recent UK reports have covered areas such as cold and flu remedies, minor ailment remedies, gastro-intestinal remedies, prescription medicines and private medical insurance purchase. Mintel is an international organisation that not only covers the UK but also countries such as France, Germany, Ireland and other EU countries.³⁷

Both these sources of market research help to build up a better picture of the health care sector and provide additional data sources that can be used to confirm or question previous results and help build up a database.

Table 19: Advantages and disadvantages of market research data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none">• Possibility of Health Accounts developers specifying their own research study, at a price	<ul style="list-style-type: none">• Concepts, definitions and classifications unlikely to be consistent with SHA• Data would tend to be focused on sectors where there is a market for information• Analyses may be based on limited response to privately conducted surveys or on qualitative information only• Price of information may limit availability to Health Accounts developers• Survey methods, sample frame and specific questions answered may not be disclosed

³⁶ See <http://www.laingbuisson.co.uk>

³⁷ See <http://www.mintel.com/>

5.3.7 Household data

Typical sources include household budget surveys, household income surveys, household panel surveys and censuses.

Table 20: Advantages and disadvantages of household data

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none">• Cross-classifies against other information, eg demographics• Provides some information on informal production	<ul style="list-style-type: none">• Concepts, definitions and classifications unlikely to be consistent with SHA• Respondents known to under-report consumption of certain goods and services• Small sample size leading to low levels of accuracy for some goods and services e.g. hospital stays• Sampling frame typically ignores those in communal establishments• Tend not to accurately reflect when payments are reimbursed• Usually cannot provide information to link insurance payouts to expenditure on medical goods and services

As already stated, the content of these tables is not meant to constitute an exhaustive list of data sources but one which presents sets of data sources which are typically available across countries.

These tables mark the end of this chapter and indeed the end of this section. The remainder of *SHA Guidelines* provides guidance on specific issues.

SECTION 2

SPECIFIC GUIDELINES

Chapter 6: Curative and rehabilitative care

6.1 Overview

In order to distinguish between the medical service functions (curative, rehabilitative and long-term care), it is the type of episode of care provided which is key. The difficulty in distinguishing between the first two medical services, curative and rehabilitative care, is acknowledged in the SHA's proposed set of standard tables in that expenditure on these two functions is not separately identified. *SHA Guidelines* continues this pragmatic approach, and provides guidance on how to identify expenditure for the two functions combined.

The broad definition of curative care in particular, with its consequent inclusion of a set of rather disparate activities, contrasts with the narrower definitions of other functions, which consequently tend to have more homogenous sets of activities. This contrast has lead, in some countries, to this function being estimated by residual: as total health expenditure (or medical services or personal services) less the other relevant functions.

6.2 Existing definitions

A System of Health Accounts

An episode of curative care is defined as “one in which the principal medical intent is to relieve symptoms of illness or injury, to relieve the severity of an illness or injury or to protect against exacerbation and/or complication of an illness and/or injury which could threaten life or normal function”.³⁸ An episode of illness may involve one or several episodes of care.

An episode of rehabilitative care involves “services where the emphasis lies on improving the functional levels of the persons served and where the functional limitations are either due to a recent event of illness or injury or of a recurrent nature (regression or progression). Included are services delivered to persons where the onset of disease or impairment to be treated occurred further in the past or has not been subject to prior rehabilitation services”³⁹. The SHA goes on to note that “rehabilitative care is generally more intensive than traditional nursing facility care and less than acute (curative) care. It requires frequent (daily to weekly) recurrent patient assessment and review of the clinical course and treatment plan for a limited (several days to several months) time period, until a condition is stabilised or a predetermined treatment course is completed.”⁴⁰

Cases of inclusion and exclusion of some particular activities in curative and rehabilitative care (e.g. obstetric services as part of curative care) can be found in chapter 9 of the SHA under the chapters dedicated to these two functions.

At the two-digit level, cure and rehabilitation (as well as long-term care) are subdivided into the four types of mode of production of care i.e. in-patient, out-patient, day cases and home care. The subdivision of functions into these modes of production is important for health policy purposes and it is very useful to have data on totals by mode of production in a country. Given the importance of this topic, a separate guideline has been written on modes of production in hospitals.⁴¹

The SHA also proposes a three-digit split of out-patient curative care expenditure into “Basic medical and diagnostic services”, “Out-patient dental care”, “All other specialised health

³⁸ SHA (2000), Ch. 9, p.115

³⁹ SHA (2000), Ch. 9, p. 117

⁴⁰ SHA (2000), Ch. 9, p. 117

⁴¹ See chapter 8

care” and “All other out-patient curative care”. The SHA descriptions of these sub-functions turn out to be useful for determining the content of out-patient curative care. Various borderline cases and links to international medical classifications like the IC-Process-PC can be found in chapter 9 of the SHA.

In terms of providers, expenditure on curative and rehabilitative care takes place in most providers of the ICHA-HP classification and generally there is no specific provider that is distinctly linked with these functions, although this is not always the case in all countries. For example, in the USA there are specific providers of rehabilitative care.

6.3 Explanation and interpretation of definitions

The broad content of cure and rehabilitation makes it difficult to give brief significant advice on inclusion or exclusion of activities over and above the guidance already given in the SHA.

Although the name of the curative care function may suggest otherwise, this function includes diagnostic services provided to the patient (for example in HC.1.3.1 – Basic medical and diagnostic services). It must be stressed that not all diagnostic expenditure should be allocated to this function however; if diagnostic services are provided under a programme this diagnostic expenditure should be classified under HC.6 – Prevention and public health services.⁴²

Some countries have, in pragmatic terms at least, estimated curative care by treating it as a residual. This has been justified on the grounds that all other functions but this are reasonably tightly defined. Estimating total health expenditure according to the SHA concept of health care, and then distinguishing within this total functions HC.2 to HC.7, leaves HC.1. It should be noted that as a residual, there is a distinct possibility that curative care compiled in this way may be biased towards over-estimation. *SHA Guidelines* advises that where such a method is used, it is worth checking the detail of what is left as the residual to help ensure that there is no expenditure on functions that are neither curative nor rehabilitative.

For example, in Denmark and in the UK, the availability of information on unit costs for hospital in-patient activity allows some curative care to be identified, but not all. The remainder of curative care in practical terms has been defined as the residual once the other functions have been estimated. This is not strictly in accordance with *A System of Health Accounts*, but it has been judged a reasonable assumption given the pilot stage of development, and steps have been taken to ensure that users are aware of the limitations.

6.4 Data and information collection

As described in the general section there are two main types of approach to compiling Health Accounts: the provider approach and the finance approach. Health Accounts compilers following the former approach will find total health expenditure and its functional breakdown concentrating mainly on actors, whereas the ones following the latter approach will concentrate on sources of finance figures. Details of how the approaches work will not be given here but the discussion will be limited to a few country experiences in the field.

It is worth repeating the main point from the last sentence of the previous section here: whilst these examples illustrate how countries have estimated expenditure on this function in practice, these might not be solutions that accord perfectly with the principles set out in *A System of Health Accounts*. Nevertheless, these examples impart information that should be useful to others in developing their methods.

⁴² See chapter 11 for more detail on this.

Germany

Germany has adopted a finance approach. The starting points were social security fund accounts, the most important ones being the ‘public health insurance’ funds. In some cases, expenditure items were easily attributable to the various SHA functions whereas in other cases it was difficult to identify the purpose of the funds. In some cases, Health Accounts compilers approximated functions by the combination German function / type of providers that the funds were paid to. For example, expenditure on physician services paid to ‘rehabilitative hospitals’ was assumed to be wholly expenditure on HC.2 – Services of rehabilitative care⁴³; expenditure on ‘general hospitals’ was attributed instead to curative care. The main social security funds in which rehabilitation expenditure was found in Germany were the ‘public old age insurance’ fund and part of the ‘public health insurance’ fund. Most expenditure, however, was placed under curative care.

Apart from the social insurance funds described above, some German expenditure on cure and rehabilitation in Germany was identified by examining public employer insurance, private insurance and co-payment data sources. The most important providers of care are hospitals, followed by GPs and specialists.

Poland

In their 1999 pilot project, Poland followed a similar approach and allocated expenditure by financing agents to particular categories of the functional classification. (most of the expenditure information was taken from social security fund accounts). Attributing account items to functions was done on a one to one basis i.e. no item was split between functions but it was decided whether the item would go into cure, rehabilitation or other functions. When items were particularly obscure, relevant people administering the fund or in the providers receiving the fund were contacted and decisions were made based on these conversations. Most of the expenditure on rehabilitation was found to be in-patient and comprised expenditure on Sanitary Prophylactic Homes (Spa), balneo-therapies and other types of sanatorium treatment. The rest of the expenditure consisted of day cases and out-patient services of rehabilitative care. Cure and rehabilitation are almost certainly overestimated since some expenditure on ancillary services to health care i.e. out-patient laboratory services and diagnostic imaging could not be separately identified.

Expenditure by private insurance was also included. Information on the total amount spent was found in the statistical reporting system, whereas the type of expenditure was established mainly through conversations with the main five or six insurance companies, which cover between 50% and 70% of total private insurance expenditure on health. The split between in-patient and out-patient services was found but expenditure on rehabilitative services could not be separated from curative care expenditure. Out-of-pocket expenditure was established through a yearly survey of household expenditure on health; this is actually the only part of expenditure for which a three-digit functional split was possible.

Netherlands

In the Netherlands, a provider approach was followed. Information was collected from social security funds, enquiries on health care providers and other sources owned by the NSI. This information was then organised in actor files and expenditure on health care was estimated separately for each of the actors. Cure and rehabilitation were found as a residual after taking

⁴³ Care should be taken with this approach since functions and providers are separate classifications. The introduction of bias using such an approach is limited if there is a particularly strong correlation between providers and specific functions (e.g. ‘rehabilitation hospitals’).

out expenditure on the other functions. All the non-health and health-related activities, expenditure on laboratory services and diagnostic imaging etc. were isolated and the rest constituted the estimate of expenditure on cure and rehabilitation. The most important actors for this type of expenditure were general and teaching hospitals.

There were some clinics called rehabilitation clinics and 100% of this expenditure was placed under HC.2 – Services of rehabilitative care. Rehabilitation expenditure in general hospitals was estimated in two different ways: 1) using personnel– number of physiotherapists etc. – with respective overheads as a key ; 2) using information on activities, performing the calculation *Number of Rehabilitation activities x Price*. The two methods led to roughly the same results suggesting reliability of the figures (see chapter 4 of this manual for a fuller explanation of these estimation techniques).

Italy

In Italy, most expenditure on health care can be found through budgetary information of the regional health units (Aziende Sanitarie Locali or ASL) funded by central government. Health administration responsibilities are devolved to these ASL. Most of the information on cure and rehabilitation is present in budgetary reports of the ASL, although some estimation based on personnel data may be required to separate all cure and rehabilitation from one another. Expenditure on public GP offices are covered in the ASL budgets whereas expenditure by citizens on private specialist offices is traced through specialists' associations (e.g. the Dentist Association). The problem here is that there is a large amount of expenditure that is probably not picked up because of private physicians failing to report all expenditure. Some estimations of the black market are still required.

UK

In the UK, expenditure on curative and rehabilitative care was estimated directly. For example, unit cost information for public sector in-patient hospital activity is available at a detailed level. The classification used is either the Diagnosis Related Groups (DRG) system or something closely related. Therefore, expenditure on curative and rehabilitative care covered in this way was identified as the product of these unit costs and the number of activities. Although several other components were able to be calculated in this way, a significant residual was allocated to cure and rehabilitation once all other functions were estimated. For household financed curative and rehabilitative care, UK National Accounts includes a breakdown by type of service, and it was assumed that all hospital, paramedical, dental and medical services mapped neatly to cure and rehabilitation.

Chapter 7: Long-term nursing care

7.1 Overview

Most countries report the greatest compilation difficulties for this function, in part due to the tight interconnection of health and social care services and in part due to the lack of available information on which to base expenditure estimates. As referred to earlier, the importance of resolving these difficulties is highlighted by the fact that a country's estimate of total health expenditure can be affected by as much as one percentage point, depending on where the borderline between health and social care is drawn.

7.2 Existing definitions

A System of Health Accounts

From the functional side (chapter 9 of SHA)

The SHA offers a number of key words and phrases to help delineate long-term nursing care from other functions. These are that the care must be *ongoing*, and *due to chronic impairments* and a *reduced degree of independence and of activities of daily living*. It can be provided as in-patient care, day care or home care but not as out-patient care.

The SHA further clarifies the treatment of expenditure incurred because of the institutionalisation of a patient requiring long-term nursing care. These costs are sometimes referred to as the 'hotel costs' and include, for example, cooking, cleaning and laundry. For other functions, the sole reason for institutionalisation is that it is necessary for the person's health and/or the health care is most efficiently provided in an institutional setting. For example, taking the example of heart bypass surgery, the invasive and traumatic nature of the operation requires in-patient hospital admittance for several nights.

However, in the case of long-term nursing care, the decision to institutionalise a patient may be based jointly on health and social grounds. *A System of Health Accounts* suggests that "The ground rule should be to report institutional care under health care where institutionalisation is necessary for the person's health or where the health care component in question is most efficiently provided in an institutional setting."⁴⁴ The SHA, however, notes that a preferred solution would be to estimate genuine health care resources by evaluating their input in the form of labour and intermediate or final use of medical goods when the medical component of the total care provided is less than half.

From the provider side (chapter 10 of SHA)

Nursing care and residential care facilities appear in the provider classification as HP.2. As with all categories in the provider classification, it is important to note that these providers may provide activities that fall under other health functions than long-term nursing care; for example first aid would be classified as curative care. Also, other providers may provide long-term nursing care services. For example in some countries, hospitals provide a significant proportion of long-term nursing care.

The interpretation of the exact nature of the definition of long-term nursing care will have a very great effect on the comparability of countries' Health Accounts. Many countries are participating in discussions led by the OECD to refine the definition at a global level, and as such *SHA Guidelines* does not step into the breach. For this guideline only, then, there is no text on "Explanation and interpretation of definitions".

⁴⁴ SHA (2000), Ch. 9, p.129

7.3 Data and information collection

However, in order to help countries who wish to compile some estimates of long-term nursing care, *SHA Guidelines* does provide some examples of countries' practices - both in terms of interpretation and expenditure estimation - which it is hoped will illuminate possible compilation methods for other countries.

The remainder of this subsection, therefore, sets out the varying interpretations of the definition of this function in a number of European countries. As a quick aside beforehand, it is worth noting that a quick win strategy to estimate long-term care expenditure may be to focus on a couple of approaches:

On the provider side, focus on institutional long-term care, that is long-term care provided in institutions specially dedicated to nursing care. In many countries, the majority of long-term care takes place in such institutions.

On the finance side, look for a flow of public money specially dedicated to nursing care (or dependency care or long-term care etc.) This may be a long-term care fund in social insurance schemes or a long-term care budgetary item in tax financed system. In most countries, such stream(s) of funds are present and usually encompass much or perhaps most of long-term care expenditure.

These examples are presented in order to give compilers some ideas on how they might be able to account for such expenditure, and may not necessarily be optimal solutions that accord perfectly with *A System of Health Accounts*.

Germany

A special agency is responsible for determining whether a person has a long-term care requirement, and the level of dependency of people who have such a requirement. The level of dependency is rated according to a standard national scale based on Activities of Daily Living (ADL). The ratings go from 1 (mild restrictions) to 3 (severe restrictions). The rating agency also states what setting is appropriate (in-patient, home care etc). The 'public long-term nursing care insurance', which is a special social security fund, then pays a fixed amount according to the agency's ratings, usually directly to the care provider, for services provided for an individual person. Some people ('zero-level' patients), who are not classified from 1–3 on the dependency scale, are still deemed to require some kind of care, and are covered by the 'Social assistance scheme'.

Finally, there is a special group of people with very high levels of dependency (in addition to level 3) who are eligible for an extra payment to cover the higher cost of the more intensive level of care.

All these costs are included as German expenditure on health on the grounds that there is a legal requirement for the care to be provided or supervised by a qualified nurse.

Most of this expenditure was found through social security funds. Some expenditure, however, is also borne out-of-pocket and this amount was estimated in the following way:

$$(Average\ cost\ of\ LT\ patient\ * Number\ of\ patients\ being\ treated) - Payments\ by\ social\ security\ and\ other\ sources$$

Most of the care in Germany is provided in in-patient settings in nursing homes but some is provided by ambulatory providers in the form of home care and some of it is household production of health care. No expenditure on long-term care is provided in general hospitals.

UK

Responsibility for government policy is devolved to the health administrations in England, Wales, Scotland and Northern Ireland. There is a good deal of diversity in the provision of long-term nursing and other care around the UK, which helps to ensure that people can be offered the most appropriate, convenient and cost effective service.

Hospitals in the National Health Service (NHS) provide some long-term nursing care, usually for those patients with the greatest need. This expenditure is picked up in UK Health Accounts through unit costs or through an estimation process involving average costs and number of occupied beds in hospitals. This includes the "hotel costs" on the grounds that hospitalisation is a necessity for the patient for health reasons.

The legal framework for institutional long-term health and social care providers requires those providing nursing services to register separately from others not providing nursing services and to employ qualified nurses around the clock. Until recently, the former were labelled "nursing homes", but this labelling has now been removed. All patients retain free access to primary health services provided by General Practitioners as well as community services provided by district nurses and professions allied to medicine. Decisions on institutionalisation are taken at a local level according to various dependency classifications, including the ADL/IADL scales. However, there is no national standard. The expenditure on long-term nursing care delivered in "nursing homes", as well as that for long-term nursing care in private hospitals, is estimated as the product of the average marginal cost of nursing care and the number of occupied beds. "Hotel costs" are excluded on the grounds that the main reason for institutionalisation is social care.

Finally, some long-term nursing care is provided by the NHS to people in their own home, and this expenditure is picked up by aggregating the various budgets for these types of services from NHS financial reports.

Netherlands

In the Netherlands, the starting point was to identify all actors involved in providing 'long-term dependency' or 'social care'. A functional breakdown was obtained by using information on provider receipts and source of finance payments. This information was also supplemented by general surveys.

In particular, in the Netherlands there is a special social security fund dedicated to dependency care. The fund was split into the relevant providers according to enquiries conducted by the NSI. Other expenditure on long-term care was established by inspecting payments into pension funds. Some of the money paid towards pensions in the Netherlands is retained and paid towards social assistance funds which will then insure the individual when needing long-term care.

Hotel costs in the Netherlands were included for all long-term expenditure. The rationale for this was that most people in nursing care homes are there principally for medical reasons. No distinction between ADL and IADL restrictions was made, again on the grounds that the institutionalised are generally very needy patients. An investigation into how to exclude social care expenditure was conducted, nonetheless, resulting in the use of the little information available on activities conducted on residents. The main principle for this method of estimation was the level of medical / nursing need required by the individuals; only 5% of these activities turned out to be social care and therefore total expenditure on long-term care was reduced by this percentage.

On the provider side, apart from long-term institutions, some expenditure on long-term care was estimated in homes for mentally deficient and disabled, although most of the expenditure here was on social care.

Italy

In Italy, most of long-term care is provided in private licensed institutions financed by the regional government health units (Aziende Sanitarie Locali, ASL). It is fairly straightforward to distinguish health from social expenditure since patients requiring social care are financed separately from patients requiring health care: health patients are financed by the ASL whereas social patients by small municipalities (Comuni). In cases where the institution was for the majority a health care institution all hotel costs were included, whereas when health was a minority hotel costs were excluded.

Poland

In Poland, most of the expenditure on long-term care was attributed to home care and financed by the government (namely by Ministry of Labour and Social Policy) and by social security funds via different type of social benefits like permanent allowance, nursing allowance and specialist care services. Households here are the main providers of care. This expenditure might have been overestimated since difficulties were found in delineating the boundary between personal health and the health-related function HC.R. 7 – Administration and provision of health-related cash benefits. Expenditure on in-patient long-term nursing care was also found in social security funds ('cure and care' fund) and in budgetary classifications in which two 'long-term nursing care' items were found. It is likely however that long-term care has been underestimated since information in the Ministry of Labour and Social Policy concerning a variety of so called 'homes of social care' was not investigated and it is likely that some expenditure borne in these homes is health care.

Private out-of-pocket expenditure on long-term care was estimated using a yearly household survey on health care expenditure. The survey is designed according to COICOP and one part of it corresponds to COICOP class 12.3.1.1.1 – Social assistance (including accommodation). For this part of expenditure an assumption was made and 50% of it was placed under long-term care and the other 50% under rehabilitative care.

Chapter 8: Modes of production in hospitals

8.1 Overview

As well as separating between HC.1 curative care, HC.2 rehabilitative care and HC.3 long-term nursing care, the SHA divides these functions up further by modes of production, sometimes referred to as the setting. HC.3 long-term nursing care is not provided as out-patient care. HC.4 ancillary services to health care and HC.5 medical goods include only the services or goods provided within one of the modes of production - out-patient care.

The mode of production summarises a number of separate dimensions: (i) whether or not the care is provided on the premises of the provider; (ii) whether or not the patient is formally admitted for care on the premises of the provider (or formally discharged); and (iii) whether or not the patient stays on the premises of the provider overnight.

The four modes of production are in-patient care; out-patient care; day care; and home care.

The mode of production classification features as part of the functional classification and relates specifically to the personal health care functions. Such classification however could be seen as a separate classification that reflects the setting in which the care is provided.

In order to avoid undue repetition, this guideline focuses on modes of production in hospitals, but the principles are general and can be applied equally to other providers.

8.2 Existing definitions

A System of Health Accounts

Where the care is provided at a patient's home, this is clearly home care. Where the care is provided on the premises of the provider, the modes of production is summarised in table 21.

Table 21: Concepts behind of the mode of production classification

	Formal admission or discharge	No formal admission
Overnight stay	In-patient	N/A
No overnight stay	Day care	Out-patient

Formal admission (or formal discharge in some countries) usually involves a considerable amount of paperwork and accompanying reporting.

In-patient care

For in-patient care, the "hotel costs" - cooking, cleaning, accommodation, but also the hosting of patients' relatives if it is indispensable - associated with the overnight stay of the patient should be included as part of the cost of health care where the main reason for institutionalisation is health care. This borderline poses a particular difficulty for mixed providers, that is, typically HP.2 nursing and residential care facilities.

In-patient care occurs mainly in hospitals, but also in other providers, for example residential and ambulatory care, prisons, army hospitals. The term 'in-patient' in the SHA has a wider meaning compared to some national reporting systems (where this term may be limited to in-patient care in hospitals).

Day care

Usually the stay is between 3 and 8 hours and often takes place in institutions or wards specialised for this kind of care, for example elective surgery.

Out-patient care

Out-patient care is provided for example in a physician's private office, hospital out-patient centres, ambulatory-care centres and so on.

Home care

Home care excludes the consumption of medical goods dispensed to out-patients as part of private household consumption. Examples of the type of services provided at home are obstetric services, dialysis, telematic services, services provided by mobile nurses and health visitors; and long-term nursing care.

8.3 Explanation and interpretation of definitions

This Guideline does not seek to further define the concept of formal admission or of overnight stay, but does give examples of common practices.

The modes of production are part of the functional classification, but form a distinct sub-classification in their own right. The functional classification aims to distinguish between the purposes of health care, whilst the modes of production answer three basic questions:

- ?
- Is the care provided on the premises of the provider?
- ?
- Is the patient formally admitted for care on the premises of the provider?
- ?
- Does the patient stay on the premises of the provider overnight?

The reference to the provider in all three questions suggests that the mode of production classification is associated more closely with the provider classification. In fact it is associated with the functional classification on the grounds that they relate specifically to the personal health care functions

Box 7: Remarks on home care

If a nurse or a doctor visits a patient at home and provides medical goods, these goods are an integral part of the service and should be included as part of the costs of the home care. If a prescription is provided as part of the service, then clearly the ensuing expenditure on goods should be classified as HC.5 – Medical goods dispensed to out-patients.

'Household production of health care' e.g. a daughter nursing her elderly mother should be classified as home care (of course, only when there is a social transfer payment granted for this purpose: see chapter 16 and SHA page 59 on household production of health care).

It should also be noted that home care can also take place when the provider is a hospital. This is the case for example when patients have undergone treatment in the hospital and the treatment continues when the person is at home (e.g. through visiting nurses employed by the hospital).

Box 8: Particular examples of modes of production

In some countries self-employed doctors work in hospitals renting a certain amount of space (including beds) to conduct their profession. The activities performed in such settings should be classified under HP.3 Providers of ambulatory care. If patients have to stay overnight such stays are to be classified as in-patient but the provider remains the ambulatory care provider (this is the case of the German "Belegärzte").

Also in some ambulatory settings it is possible for there to be overnight stays and these are not necessarily in-patient stays. "Overnight cases" (admittance for treatment eg dialysis during the night also potentially significant in psychiatric hospitals) which last just a few hours should be classified as "day cases" not in-patient.

In some countries the concept of "night cases" exist; there are essentially patients who are admitted for treatment during the night only and in concept equivalent to day cases. They should be included as day cases.

8.4 Data and information collection

We have not proposed standard definitions of the variables that define modes of production (i.e. 'overnight stay' and 'formal admission'). The reason is that the separation of modes of production stems from the technical and managerial organisation of care within a country's health care system and is thus particular to that country. The design of a hospital's accounting system in terms of separating modes of production is often associated with the need for creating an information system aimed at aiding the remuneration schemes in place.

Hence, if for example we tried to place a minimum time limit for an intervention to be defined as in-patient care (e.g. 8 hours), this may not be viable in a country where the remuneration system uses a boundary of 12 hours. The concept of formal admission would present similar problems.

In order to help novice Health Accounts developers, however, it might be useful here to give some examples of how countries have adapted their information systems to the SHA mode of production classification.

In Hungary, for example, most data on hospital activities come from a compulsory yearly report filled out by providers and delivered to the social insurance fund. To identify in-patient expenditure they use a cut-off time of 24 hours (since their hospital data is specified in that way). Day care is similar to in-patient care but is for a time period of less than 24 hours. They are able to isolate day cases from out-patient expenditure, since such interventions receive special finance (remuneration) from health insurance.

In the UK and Denmark, unit costs, typically in hospital settings, are calculated according to Diagnosis Related Groups (DRGs) and Health care Resource Groups (HRGs). In such cases, the subdivision into in-patient, out-patient and (where possible) day care may already be labelled. Also in Denmark the DRG system is linked up to the 'National Patient Register' which contains information on time spent in the hospital.

In Germany and the Netherlands, it is not possible to separate expenditure into the various modes of production. For the figures on direct expenditure by disease in OECD Health Data, however, in-patient expenditure in these countries is estimated using data on average length of stay and the assumption that the cost per day for all diseases is the same.

In Norway, there is no information available from hospitals on the direct costs of, for example, out-patient activity. However, the remuneration system is such that this information is available by combining Social Security records with surveys on out-of-pocket payments.

In Spain the National Health System Reference Costs provide cost information on a sample of 18 public hospitals and are used to estimate the mode of production split of hospital expenditure. This source identifies in-patient activity costs and the activities that are excluded from the hospital costs match the services the SHA excludes from in-patient curative care (day cases of curative care, services of curative home care etc.). Using this information the percentage of hospital costs that are associated with in-patient care can be estimated, the remainder being allocated to out-patient hospital activities.

In order to have good quality information on modes of production in a country, a detailed study of hospital activities may be necessary involving the collection of time-use data. In the shorter term, it should be possible to conduct such a study in just one or two hospitals. A private hospital would be a good starting point since such hospitals usually have detailed and careful accounting. It may be risky to apply such results to the whole hospital sector given such a small, and possibly biased, sample.

Some information on detailed activities may also be present in organisations which study or audit hospitals, or perhaps represent them, including hospital associations and other such bodies. They are likely to have figures on numbers of day treatments, for example, which could be multiplied by the cost of an average day to obtain a figure on out-patient and day care.

Chapter 9: Ancillary services

9.1 Overview

Some countries have reported difficulties in distinguishing between ancillary services delivered as part of in-patient and out-patient treatments. Other countries have responded to national demands for separate identification of ancillary services by mode of production.

9.2 Existing definitions

A System of Health Accounts

From the functional side (chapter 9 of SHA)

- HC.4 Ancillary services to health encompasses a variety of services, mainly performed by paramedical or medical technical personnel with or without the direct supervision of a medical doctor. It is made of four components, HC.4.1 Clinical laboratory, HC.4.2 Diagnostic imaging, HC.4.3 Patient transport and emergency rescue, and HC.4.9 All other miscellaneous ancillary services.

The function HC.4.2 diagnostic imaging is limited to services provided to out-patients. The SHA does not expressly state that HC.4.1 Clinical laboratory and HC.4.9 All other miscellaneous ancillary services should also be limited to services provided to out-patients, but for consistency this should be the case.

HC.4.3 patient transport and emergency services comprises all such services - irrespective of mode of production - even though these services are related to medical services which do have a mode of production dimension.

From the provider side (chapter 10 of SHA)

Main providers of ancillary services are classified as HP.3 – Providers of ambulatory health care, which is subdivided, for this purpose, into HP.3.5 – Medical and diagnostic labs and HP.3.9.1 – Ambulance services.

9.3 Explanation and interpretation of definitions

These are supporting activities rather than medical interventions, which do not necessarily require medical training or knowledge. In the in-patient and day care modes of production, the costs of these services is difficult to separate out from the other costs of the medical services, and as such are not separately identified in the SHA. In out-patient and home care settings, the SHA requires the ancillary services to be separately recorded.

As delivery of health services differs across countries in terms of their mode of production, the relative proportion of ancillary services separately identified in the SHA framework will also differ. Some countries have therefore found it useful for national purposes to collect information on ancillary services delivered in all settings. The 'total' ancillary services figure, if compiled, can appear in Health Accounts as an exhibit item.

In terms of the provider classification, a whole range of providers including hospitals and offices of physicians, could provide HC.4 – Ancillary services. This implies that the sum of the amounts in HP.3.5 – Medical and diagnostic laboratories and HP.3.9.1 – Ambulance services may not necessarily be equal to the amount in HC.4 – Ancillary services.

- ! A remark about medical and diagnostic laboratories in hospitals: in another part of the provider classification, the SHA recommends that pharmacies in hospitals serving mainly out-patients should be part of HP.1 hospitals. On this basis, the *SHA Guidelines* recommends that units that are part of hospitals and that are primarily engaged in providing ancillary

services should also be classified under HP.1 hospitals. However, note the example of HP.3.3 office of other health practitioners, which may actually be located within a hospital. This suggests that ownership should be considered alongside location and if the entity operates independently of the parent institution it should be treated separately. This does however require separate records to be available.

9.4 Data and information collection

Ancillary services may be provided in two main ways. Firstly, they may be provided by a separate institution as the medical services to which they relate. Secondly, they may be provided by the same institution. There are, of course, variations on these two themes. For example, either way, it might be that the main activity of the institution is some other health (or non-health) function, or it might be ancillary services. In the latter way, it might be that separate cost accounting for the ancillary services is carried out.

Typically, in most countries, there is a mixture of ways of providing ancillary services. The availability of data and corresponding methods for accounting for ancillary services provided in them are different.

For ancillary services that are carried out in a separate institution, it is usually not difficult to find information about these activities and their costs. No matter whether one uses a demand or a supply approach, financial flows or output data of this type are clearly identifiable. If a hospital for example contracts out ancillary services to an independent laboratory, the financial flow will generally be easy to trace.

The more difficult cases are the ones where ancillary services are provided in the same institution as the medical services.

Compilation is also problematic in terms of the need to compile expenditure on ancillary services to out-patients for comparison with other OECD countries; many countries have reported that they cannot easily distinguish between ancillary services provided in different modes of production. The problem is particularly severe in hospitals since ancillary services to out-patients are often not clearly specified in reimbursement / finance information and are difficult to separate from ancillary services to in-patients.

- ! There appear to be two current methods available to the compiler, although over time it is hoped that these methods can be expanded on and other methods will be brought into play. In summary, the first method involves searching for information on financial flows. The second involves the commissioning of a specific study to examine expenditure on ancillary costs.

These examples are presented in order to give compilers some ideas on how they might be able to account for such expenditure, and may not necessarily be perfect solutions.

Denmark

In Denmark, two major sources were used for clinical laboratory and diagnostic imaging: the NHS Register, which contains information on reimbursements to GPs and physicians, and DRG type data, which contains information on expenditures in hospitals. From the GP data, expenditures on ancillary services were easily identified and could even be broken down into clinical laboratory and diagnostic imaging. From the DRGs, it was not possible to identify clearly expenditure on ancillary services as these costs were a not-separately-identified component part of the individual DRG costings. It was necessary to enquire further into the DRG compilation process to obtain figures. Finally, data on transportation services were obtained from the two main national providers, one of which was publicly financed and the other one paid by private insurance companies. Information on emergency transport services

provided by military helicopters was also obtained. For this last item, estimates were calculated by using data on number of flights per year and average cost of a flight.

Germany

In Germany, it was possible to identify ancillary services used up by doctors, given that information on sickness funds' reimbursement this was very detailed. For hospitals this was done using estimations on ancillary services based on hospital statistics. A method for overcoming this problem would be to study a sample of hospitals and find out how much is spent on ancillary services. Private hospitals could be a starting point for a study given that they usually possess detailed accounting information. Another option is to estimate expenditure on ancillary services on the basis of staff costs or numbers, and then allocate the distribution by mode of production according to the relative shares of activity. Hence, for example:

$$\text{Out-patient ancillary services} = (\text{Wages} + \text{Share of overheads}) * \text{Out-patient share of total activity}$$

Patient transport and emergency services in Germany are provided in three ways. When these services are provided privately, they are reimbursed by sickness funds and private insurance, and this expenditure is separately recorded. When they are provided by the fire brigade, the expenditure is borne by municipalities and this health expenditure is picked up from National Accounts in the COFOG classification. The third type of provision is where hospitals themselves provide transport services, which it has not yet been possible to separate out from other costs.

Poland

In Poland, only out-of-pocket expenditure on clinical laboratory and diagnostic imaging figures has been separately identified and recorded so far; it has not yet proved possible to distinguish expenditure on ancillary services from social insurance reimbursement information. The out-of-pocket expenditure is derived from household surveys and assigned to different providers depending on the types of activity performed. In contrast, complete data from all finance sources for transport was available.

- ! In other countries such as Finland, Italy or Spain it is very difficult to separate ancillary services in hospitals and other providers. Studies on providers or using proxies such as staff costs or personnel numbers may be a solution. However these methods are not ideal.

Netherlands

In the Netherlands, the starting point was to compile totals from the provider side by using enquiries into ancillary service providers. The total was divided into sources of finance based on provider receipts. Cross-checks were carried out using financial information from insurance and household sources. Data on the number of employees in laboratories and relative sizes of medical treatments in hospitals were used to separate out clinical laboratory in hospitals.

Chapter 10: Medical goods

10.1 Overview

The compilation of information on this item may be fairly straightforward, as medical goods are tangible and thus more easily accounted for. However, several countries have reported difficulty in distinguishing between goods associated with different modes of production, and accounting for the more detailed types of good.

10.2 Existing definitions

A System of Health Accounts

From the functional side (chapter 9 of SHA)

The SHA framework limits the scope of HC.5 to **goods dispensed to out-patients**, reflecting in part the difficulty of data availability (most countries cannot easily account for medical goods which are consumed as part of treatments in institutions) and in part the interest in medical goods which are consumed off the premises of health professionals.

The SHA also includes in HC.5 the expenditure on the services associated with the dispensing of medical goods alongside expenditure on the goods themselves. Such services are included only when provided in close connection with the dispensing function i.e. only when provided in establishments whose main activity is the dispensing / retail trade of the goods. Included are services of public pharmacies, opticians, sanitary shops, and other specialised or non-specialised retail traders including mail ordering and teleshopping. Examples of services are retail trade, fitting, maintaining and renting of medical goods and appliances.

- ! The SHA states that HC.5 – Medical goods to out-patients is linked to COICOP class 06.1, Medical products, appliances and equipment. See subsection “Links to SNA93 and ESA classifications” below.

HC.5 is divided into two main two-digit level subcategories, which are themselves further divided into three-digit level subcategories as illustrated in box 9.

Box 9: HC.5 subcategories

HC.5.1 Pharmaceuticals and other medical non-durables, of which:

- HC.5.1.1 Prescribed medicines
- HC.5.1.2 Over-the-counter medicines
- HC.5.1.3 Other medical non-durables; and

HC.5.2 Therapeutic appliances and other medical durables, of which:

- HC.5.2.1 Glasses and other vision products
- HC.5.2.2 Orthopaedic appliances & other prosthetics
- HC.5.2.3 Hearing aids
- HC.5.2.4 Medico-technical devices, including wheelchairs, and
- HC.5.2.9 All other miscellaneous medical durables.

From the provider side (chapter 10 of SHA)

The main providers involved in the dispensing of medical goods as specified in HC.5 (goods not provided in institutional settings) are included in HP.4 Retail sale and other providers of medical goods. HP.4 is further subdivided into the following subcategories in box 10.

Box 10: HP.4 subcategories

- | |
|--|
| HP.4.1 Dispensing chemists |
| HP.4.2 Retail sale and other suppliers of optical glasses and other vision products |
| HP.4.3 Retail sale and other suppliers of hearing aids |
| HP.4.4 Retail sale and other suppliers of medical appliances (other than optical goods and hearing aids) |
| HP.4.9 All other miscellaneous sale and other suppliers of pharmaceuticals and medical goods. |

The European System of Accounts and related classifications

Table 22 reports the links where expenditure on HC.5 – Medical goods dispensed to outpatients appears in the various ESA classifications⁴⁵.

Table 22: Medical goods in the SHA and other frameworks

ICHA-HC	COICOP House-holds	COICOP NPISHs	COICOP Govt	COFOG	COPNI
<i>HC.5 – Medical goods dispensed to out-patients</i>					
<i>HC.5.1 – Pharmaceuticals and other medical non-durables</i>					
HC.5.1.1 Prescribed medicines	06.1.1	13.2.1	14.2.1	07.1.1	02.1.1
HC.5.1.2 Over-the-counter medicines	06.1.1	13.2.1	14.2.1	07.1.1	02.1.1
HC.5.1.3 Other medical non-durables	06.1.2	13.2.2	14.2.2	07.1.2	02.1.2
<i>HC.5.2 Therapeutic appliances and medical equip. (durables)</i>	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3
HC.5.2.1 Glasses and other vision products	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3
HC.5.2.2 Orthopaedic appliances and other prosthetics	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3
HC.5.2.3 Hearing aids	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3
HC.5.2.4 Medico-technical	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3

⁴⁵ Detail from table in SHA (2000), Ch. 9, p. 132

devices, including wheelchairs					
HC.5.2.9 All other miscellaneous medical goods	06.1.3	13.2.3	14.2.3	07.1.3	02.1.3

Source: SHA

- ! It should be noted that there is not a perfect match between on the one hand COICOP, COFOG, COPNI and on the other ICHA-HC. Health Accounts compilers should be wary when using National Accounts estimates to populate these cells. The mappings are not always one-to-one and are not always mutually exclusive.

The COICOP classifications are listed separately in the SHA and in the ESA manual, and as such we do not repeat them here.

10.3 Explanation and interpretation of definitions

It is worth stressing that HC.5 contains only those goods that are used by final consumers off medical premises. The phrase “out-patient medical goods” in the SHA could be misleading since goods which are used up during out-patient visits in GP offices or hospitals are not included in HC.5 but are included in curative, rehabilitative etc. functions. Such goods would be included in HC.5 only if they were given to patients for use at home, as in the case of dispensing GPs.

The SHA treatment of medical goods is useful in terms of finding out how much is spent on goods outside of institutions but does not answer other very important questions such as:

- ? What is total expenditure on goods in a country?
- ? How much do institutions spend on medical goods?
- ? How much is spent on drugs in hospitals, out-patient centres, GP offices?

As delivery of health goods and services differs across countries in terms of their mode of production, the relative proportion of medical goods separately identified in the SHA framework will also differ. Some countries have therefore found it useful for national purposes to collect information on medical goods dispensed in all settings. The 'total' medical goods figure, if compiled, can appear in Health Accounts as an exhibit item.

- ! It is worth making a remark about the services included in HC.5. These services are performed by providers whose main activity is the dispensing of goods and they are only those services which are strictly connected to the dispensing / sale of the products and whose provision does not require medical knowledge. Examples include the fitting of dentures and the cleaning of hearing aids.

Health and non-health goods, content of the different categories of HC.5

Table 23 summarises and compares the information in COICOP 06.1 and in HC.5 in ICHA-HC, and provides some examples of goods that are at the boundary between health and non-health.

Table 23: Illustrative list of goods by category

ICHA-HC	COICOP	Illustrative list of goods
HC.5.1.1 Prescribed medicines & HC.5.1.2 Over-the-counter medicines	06.1.1	Medicinal preparations, medicinal drugs, patent medicines, serums and vaccines, vitamins and minerals, cod liver oil and halibut liver oil, oral contraceptives.
HC.5.1.3 Other medical non-durables	06.1.2	Clinical thermometers, adhesive and non-adhesive bandages, hypodermic syringes, first-aid kits, hot-water bottles and ice bags, medical hosiery items such as elasticated stockings and knee-supports, pregnancy tests, condoms and other mechanical contraceptive devices, in-continence articles
HC.5.2.1 Glasses and other vision products	06.1.3	Corrective eye-glasses and contact lenses, glass eyes, cleansing fluid and the fitting by opticians
HC.5.2.2 Orthopaedic appliances and other prosthetics	06.1.3	Artificial limbs and other prosthetic devices, orthopaedic braces and supports, dentures, orthopaedic footwear, surgical belts, trusses and supports, neck braces, medical massage equipment and health lamps, hire of therapeutic equipment
HC.5.2.3 Hearing aids	06.1.3	All kinds of removable hearing aids including cleaning, adjustment and batteries
HC.5.2.4 Medico-technical devices, including wheelchairs	06.1.3	Powered and unpowered wheelchairs and invalid carriages, “special” beds, crutches
HC.5.2.9 All other miscellaneous medical goods	06.1.3	Electronic and other devices for monitoring blood pressure, specialised telematic equipment for emergency calls from the patient’s home and/or for the remote monitoring of medical parameters
<i>BOUNDARY GOODS</i>		Ergonomic chairs, special screens for people with sight problems, safety glasses, disinfective soaps, lifts for handicapped, rims of glasses, wigs for health purposes
<i>GOODS AND RELATED SERVICES WHICH ARE IN OTHER PARTS OF ICHA-HC</i>		Implants (HC.1), audiological diagnosis and treatment by physicians (HC.1.3.3), audiological training (HC.1.3.9)
<i>SURELY NON-HEALTH (COICOP codes in parenthesis when available)</i>		Veterinary products (09.3.4), articles for personal hygiene such as medicinal soaps (12.1.3), protective goggles, belts and supports for sport (09.3.2), sunglasses not fitted with corrective lenses (12.3.2), fire blankets and other safety products, automatic staircase lifts

This table is helpful for categorising goods according to type. It is worth stressing that there is no perfect match between COICOP and ICHA-HC: COICOP does not include services such as fitting dentures, cleaning hearing aids etc. i.e. those services connected to dispensing which ICHA-HC includes. In ICHA-HC, renting and repair of therapeutic appliances and equipment is reported under the corresponding categories of goods.

- ! Regarding the distinction between categories HC.5.1.1 'prescribed medicines' and HC.5.1.2 – OTC medicines, it must be said that HC.5.1.1 includes any medicines that are prescribed, rather than only those that require a prescription. It might happen, of course, that a prescription contains common aspirin. The expenditure on this prescribed aspirin should be included as HC.5.1.1 'prescribed medicines'. HC.5.1.3 covers non-durable goods that are not injected or swallowed but instead are used as external (mechanical) goods.

10.4 Data and information collection

Before analysing compilation methods, it is worth repeating that Health Accounts developers in many countries are finding it difficult to obtain a two- or three-digit level split for the HC.5 function. Therefore, at an early stage of Health Accounts development, it might be sensible to put relatively more effort into getting the total for HC.5 right rather than on trying to find the more detailed split.

As for every type of expenditure in Health Accounts, there are two main approaches for estimating such expenditure:

- ─ The **source of funding approach**: this approach is used by compilers who use as their core dataset 'sources of funding' data, 'consumption data' or both.
- ─ The **provider approach**: this approach is used by compilers who use as their core dataset 'provider based data'.

In reality, most Health Accounts developers mix the two approaches and obtain final figures on health spending by reconciling several data sources and using both approaches. Reconciliation is recommended, as such a method presents the possibility of cross-checking that the data compiled makes sense. We can now go through the two main types of approaches:

The source of funding approach

The sources of finance which are most relevant for expenditure on medical goods are: (1) Households, (2) Government, (3) Social insurance. The relative share of financing among these three will vary from one health care system to the next. In a social security system, the main financiers will be social insurance and households, in a national health service system the main financiers will be government and households etc. Here we shall list and explain the main types of health care systems and explain how data can be collected in each one:

National Health Service systems (tax financed, centralised)

In these systems, most of the expenditure on medical goods is borne by households and the central government. Households will generally pay for OTC medicines and part of prescribed medicines and the central government will usually pay a variable percentage for the prescribed medicines. Durable goods might or might not be reimbursed depending on countries. A first estimate of medical goods expenditure in these countries is given by:

$$\text{Medical goods expenditure} = \text{Total Central Government expenditure on goods} + \text{Total household expenditure on goods}$$

Data on government expenditure can be found in government budgetary information e.g. in the Ministry of Health annual report. Usually the information provided here is not very detailed and the split between the various two and three digit level subcategories is not possible.

Data on household expenditure can be found through household surveys. The Household Budget Survey is the most obvious example but countries may have at their disposal other surveys that specialise in finding out about household medical expenditure.

- ! Care should be taken when using these data sources as one has to make sure that households report the actual expenditure they have borne out-of-pocket rather than the total cost of the medical goods. Making this distinction is particularly important in countries where households receive reimbursement having originally paid directly for health goods and services. Moreover, household data sources should be treated with caution, as they are subject to all the weaknesses mentioned in the data sources chapter of this manual.

Surveys are usually designed based on COICOP and data can often be found directly by looking into National Accounts (COICOP, class 06.1). In the UK, for example, household expenditure on goods was taken directly from the National Accounts.

If data on household expenditure is not available or not reliable, an estimation of such expenditure can be achieved in the following way:

$$\text{Household expenditure} = \text{Total expenditure} * (1 - \text{Average share reimbursed to households})$$

For example, if households are reimbursed at an average rate of 30%, household expenditure can be estimated as 70% of the total expenditure. Alternatively, if the source of financing for the remainder is government, household expenditure could be estimated as 233% (7/3) of government expenditure.

- ! The problem is that this average rate is usually not clear since each medical good is reimbursed at different rates.

In Spain, the same relationship as above was used but instead to arrive at household expenditure given the availability of public expenditure and the reimbursement rate:

$$\text{Total expenditure} = \text{Public expenditure} / \text{Average share reimbursed to households}$$

In Italy, medicines can be of type A (full reimbursement), B (40% partial reimbursement) and C (no reimbursement). Government expenditure on all three is known and hence this type of estimation can be done for each group of medicines. Care has to be taken with these approaches since reimbursement rules can be quite cumbersome (based on age, income, etc.) and the average reimbursement rate is likely to change from year to year.

Once expenditure by the government and households has been computed, expenditure by residual sources of finance should be added in, hence:

$$\text{Total HC.5 expenditure} = \text{Total Central Government expenditure on goods} + \text{Total household expenditure on goods} + \text{Residual Finance}$$

where residual finance is made of private insurance, non profit institutions serving households, corporations, residual social security funds etc. Guidelines on how to find out about this are given below and in the general section.

! There is a possibility here of double counting between household expenditure and private insurance. If households are recording expenditure for which insurance companies later reimburse them, there will be double counting.

At this stage, expenditure should be assigned to providers in the HP-classification. If it is not possible to assign at the two or three digit level, one should place all expenditure in the general provider HP.4 – Retail sale and other providers of medical goods. If there is detailed information on the goods consumed, then expenditure should be allocated to the various two-digit level categories of the provider classification depending on what the goods sold are.

! Care should be taken since expenditure on HP.4 need not be exactly the same as HC.5. This can be because some goods may be given to patients in health facilities for the patient to use at home. That would enter HC.5 but not HP.4. This is the case in Germany for example where there are dispensing GPs; the accurate provider in this case is HP.3 – Providers of ambulatory health care.

Tax financed, devolved

In these systems, reimbursement is likely to take place at the local government level. Municipalities, Local Authorities, Regional or Provincial Governments' budgetary reports are therefore likely to contain reimbursement expenditure. This is usually the case for Scandinavian countries and Italy is moving in that direction. Methods for estimating expenditure on HC.5 are similar to the above and the total is given by:

$$\text{Total HC.5 expenditure} = \text{Total Local Governments' expenditure on goods} + \text{Total household expenditure on goods} + \text{Residual Finance}$$

where residual finance here includes also outlays by the central government.

Social security systems

Again, the estimation procedures do not change much besides the fact that now the total is given by:

$$\text{Total HC.5 expenditure} = \text{Total Social security reimbursement on goods} + \text{Total household expenditure on goods} + \text{Residual Finance}$$

where residual finance here includes also outlays by the central and local governments.

Mixed systems

In these cases, a combination of the above approaches will be used. This is for example the case in Poland in which budgetary information, social insurance reimbursement information, household data and other residual sources of finance data were used. Most countries actually fit into this category; the extent of the mix however varies.

The provider approach

When using this approach, the key source of data is retail trade data i.e. data on the turnover of pharmacies and other retailers of medical goods. This approach was followed for example in the Netherlands and in Hungary. The total expenditure on medical goods with this approach can be estimated as follows:

$$\text{Total expenditure on medical goods} = \text{Turnover of all possible retailers of medical goods}$$

where the data on turnover can be census type data or can be derived from a sample of providers. Clearly, the larger the sample the better.

In Hungary, retail trade data is kept by the NSI, the Ministry of Health, the Ministry of Finance, Social Security etc.

In the Netherlands, a database was set up in which every organisation, or actor, playing a role in health care was recorded. For each actor a file was created containing financial information, activity information etc. For the out-patient medical goods, the relevant actors are public pharmacies, pharmacies in health centres, dispensing GPs, drugstores, other dispensers (e.g. supermarkets). For therapeutic appliances (hearing, optical...), the main suppliers are optical and hearing shops and home care organisations. For each of these actors there is information on the providers' turnover, cost structure, goods sold etc.

The relevant actor's turnover was adjusted for at least two reasons: (a) to respect national accounts' rules – for example problems with trade margins, (b) secondary activities of pharmacies (sales of soaps, liquorice etc.) had to be taken out and additional entities e.g. supermarkets' sales had to be added (if they had not been included in the actor files). Additional information on sales and activities of providers was taken from enquiries into different providers.

The next step was to divide expenditure on medical goods across the various financiers. This was done through an analysis of sources of receipts within each provider and enquiries into the different types of actors. Moreover, financial information from social and other insurance was used.

It is worth noting that when using this approach there is a risk of double-counting because it might be that institutional entities buy goods from pharmacies and pharmacies do not keep track of their customers.

Integrative approach and finding residual finance

As mentioned above, the first-best solution is integrative, looking at expenditure from both the source of funding and provider sides and reconciling data sources. In the Netherlands, actor information was integrated with financial information coming from social insurance and private insurance, health surveys and household surveys.

The first step was to check insurance information. Different medical goods / appliances had different levels of reimbursement and most of the information on reimbursement and financial flows was taken from the Health Insurance Funds (social security). An analogy was then created for private insurance companies since reimbursement rates were not clear there. This reimbursement information was then put together with the actor database that was precise enough for reimbursement calculations to be carried out at the level of individual goods.

For Health Insurance Funds, complete (census-type) information was present whereas for private insurance companies the Health Accounts compilers used enquiries and aggregate data from umbrella organisations. Once the total amount financed by insurance was found, it was subtracted from the total production of medical goods and an estimate obtained for out-of-pocket expenditure. This information was then cross-checked by using consumption data sources like the household budget survey.

Finally, other types of cross-checking were carried out e.g. comparing total optical expenditure obtained from actors with simple estimates, for example, the product of average number of people wearing glasses and average number of glasses bought per person per year and average cost of a pair of glasses.

In the Netherlands the Health Accounts compilers also estimated the amount of medical goods consumed in institutions. For the in-patient medical goods, the estimation method was based on information on expenditure incurred in hospitals from surveys.

Chapter 11: Prevention & Public Health

11.1 Overview

Prevention & public health is item HC.6 of the ICHA-HC classification of functions of health care and is thus part of "Total Current Expenditure on Health". It is made up of six items namely maternity & child health, school health, occupational health, prevention of communicable diseases, prevention of non-communicable diseases and "other". From a main activity point of view, prevention and public health is provided by HP.5 "Provision and administration of public health programmes." As such prevention and public health is part of the health care provider industry as well as being a health care function. The figures in HC.6 and HP.5 need not be the same since some preventative health care production can take place in providers other than HP.5, as for example in the case of blood and organ banks; and HP.5 might contain some expenditure which is not preventative e.g. first aid services.

! Prevention and public health is part of collective health care: a key concept is that all activities included in this function are part of a programme intended to protect and enhance rather than repair the health status of a particular sub-group of the population which is exposed to a specific health risk⁴⁶.

A programme under prevention & public health can be set up by any entity (public, private, groups of doctors etc), and may involve activities directed to an individual as well as a group of individuals. Enhancement and protection rather than repair requires there to be no health problem underlying the reason for contact with the health system. Preventative activities that form part of an out-patient consultation rather than a programme, for example, the provision of medical advice on healthy lifestyles, would tend to be included as personal health care.

For example, in the UK, there is a national programme for breast screening which is extended to all women in a set age group. This is part of prevention & public health. However, there is no equivalent national programme in the UK for testicular cancer for males, and screening occurs only at the specific request of a patient. This is not part of prevention & public health (but is part of personal health care).

Where a health problem is identified under such a programme, the ensuing health activities are part of the relevant function of personal care. For example, where a national programme of detection for diabetes is in place, the screening of urine or blood and associated activities form part of prevention & public health. Where incidence of diabetes is detected, the ensuing activities, including dietary advice, prescription of medical goods and so on form part of personal health care.

Due to the heterogeneity of the items making up this function, each is dealt with separately.

11.2 Existing definitions

A System of Health Accounts

HC.6.1 Maternal and child health; family planning and counselling

This item covers a wide range of health care services, from "family planning" to "school child health", including genetic counselling, new-born baby health care and vaccinations.

⁴⁶ This does not guarantee comparability across countries. International comparability would require a more comprehensive definition of prevention & public health activities, covering the preventative activities outside programmes, too. Compilers may wish to build into their systems the possibility of identifying a broader definition of prevention & public health.

HC.6.2 School health services

This item covers a variety of services of health education and screening, disease prevention and the promotion of healthy living conditions and lifestyles. The key point is that the services are provided in schools. Where basic medical services are part of the school health programme, these should also be included here⁴⁷.

HC.6.3 prevention of communicable diseases

This item includes compulsory reporting and notification of communicable diseases, epidemiological enquiries as well as systematic screening, immunisation and vaccination of high risk groups. Vaccinations that are not provided as part of a programme, as is the case for, for example, travel, are included as personal health care. Vaccinations provided under the auspices of an employment contract are included under HC.6.5 occupational health care. Vaccinations provided in the framework of maternity and child health should be reported under HC.6.1.

HC.6.4 prevention of non-communicable diseases

This item includes a broad range of programmes of health education, disease prevention, promotion of healthy living conditions and lifestyles. It excludes public health environmental surveillance and public information on environmental conditions. It also excludes activities which are requested on a patient's initiative or which relate to an existing health problems.

The SHA notes that National Health Accounts are usually linked to the identification of specific programmes of screening or health check-ups with a legally or administratively defined, limited coverage.

HC.6.9 – All other miscellaneous public health services

A variety of miscellaneous public health services are included under HC.6.9, such as the operation (and administration) of blood and organ banks, public health environmental surveillance and public information on environmental conditions.

For HC.6.9 public health environmental surveillance include items such as surveillance of level of pollution in the air and other expenditure that relate to assessing the impact of the environment on health status. Public information on environmental conditions includes expenditure on items related to informing the public about environmental conditions that effect the health status of the population.

11.3 Explanation and interpretation of definitions

HC.6.1 Maternal and child health; family planning and counselling

The separate identification of maternal and child health, family planning and counselling in the SHA reflects in part the interest in these services and in part the particular nature of the activities involved in ensuring that a new-born child has a good start in life.

Vaccinations that are provided specifically to babies and children as part of a programme are included here rather than at HC.6.3 prevention of communicable diseases⁴⁸. Although the SHA includes vaccinations in this item, HC.6.3 prevention of communicable diseases also

⁴⁷ The SHA allows for this on the grounds that data availability almost certainly precludes separately identifying this.

⁴⁸ It is acknowledged that the SHA contains a typo. The text on page 122 should read "HC.6.3 Prevention of communicable diseases...immunisation / vaccination programmes (compulsory and voluntary); EXCEPT vaccination under maternity and child health care"

includes "child vaccinations". The difference here can be understood in terms of the target population of an immunisation programme. If the programme is specifically targeted at babies and children then it should appear under HC.6.1, but if babies and children receive immunisation under a programme targeted at the whole population then it should appear under HC.6.3.

As with all prevention & public health, activities are included only where they are part of a programme. For example, neo-natal screening for abnormality where part of a screening programme is included as prevention & public health.

In many countries, the provision of activities under a programme may be provided alongside related activities which are personal health care. As with other items which form part of prevention & public health, where a health problem is identified eg the requirement for caesarian surgery, this is no longer collective but personal health care.

The inclusion in the SHA of "school child health" here is distinct from HC.6.2 "school health services" in that the former covers programmes for children of school age where the activities are NOT provided under the responsibility of the school. No guidance is given here on the definition of a school child, save that the preventative programmes of interest are designed to provide a good start in early life and are reasonably distinct from adult preventative programmes.

HC.6.2 School health services

As with HC.6.5 occupational health care, these are programmes defined by the existence of a particular responsibility of care. The school has a responsibility for the care of the children in its charge. Also as with occupational health care, the services provided under the programme may be delivered in school, for example a nurse visiting to examine for head lice⁴⁹, or may be delivered in another setting, for example drug or alcohol abuse educational programmes provided jointly by schools and health education institutions.

HC.6.3 & HC.6.4 prevention of communicable and non-communicable diseases

These Guidelines treat both of these items together, as the accounting principles are the same.

Health promotion and disease prevention can be either (i) active: reduce probability of illness (vaccinations, education of the public etc.) or (ii) passive: screening, epidemiological inquiries.

Vaccinations that are provided to babies and children as part of a programme are included at HC.6.1 maternal and child health. Where the programme includes the production of statistics on public health, these should be included here; otherwise they should be included as HC.7 health administration.

HC.6.9 All other miscellaneous public health services

- ! There is an unclear boundary between HC6.9 and the following health-related functions; HC.R.3: Research and Development in health; HC.R.4: Food, hygiene and drinking water control, and HC.R.5: Environmental health.

⁴⁹ Provided that this is part of a programme.

11.4 Data and information collection

The process

The starting point for collecting information on Prevention and Public Health will be the identification of social programmes that are separately listed in money terms. In order to conduct such research effectively, one should start with describing the country's public health system. Depending on whether the system is tax financed or social insurance based and whether it is centralised or devolved, different searching orientations should be adopted:

Tax financed, centralised: an example of such a system is the National Health Service (NHS) in the UK⁵⁰, which finances and produces the majority of health care and the great majority of public health. As such, the Annual Reports of the health administrations overseeing the NHS provide expenditure on the important public health programmes, such as expenditure on the Public Health Laboratory Service (PHLS)⁵¹ and the National Biological Standards Board (NBSB)⁵².

Tax financed, devolved: Finland is a clear example of this system. In this case, municipalities make decisions on the allocation of expenditure between health, education, social services etc. These local authorities' budgetary information will then be the starting point in the search for information on public health programmes.

Social insurance based: in such systems, the amounts of expenditure on health will not be fully decided in advance by government institutions but will be heavily based on employment insurance contributions earmarked for health and social services. Social insurance systems are usually characterised by a heavier presence of private health care institutions. In such systems, the social insurance institutions reimburse households or providers for part or all of the expenditure borne. They will reimburse households when the payment system is fee-for-service and they will reimburse providers otherwise. In these cases, an obvious source for finding programmes will be social insurance reimbursement data. However, for public health, even in such systems there will usually tend to be funds coming from the government and allocated to Public Health institutions. An example of such a country is the Netherlands.

A distinctive characteristic of information from social insurance institutions is that it tends to be much more detailed than in tax financed systems. This generally may stem from the fact that there is competition among several funds or competition among providers to receive the funds. Detailed accounting is required to monitor these institutions.

Mixed systems: this is the case in which health care financing is shared between social insurance and tax finance, as in France. This is actually the case in most commonly defined 'social insurance type countries', where government supplementary finance is usually present. In these cases, starting points for collecting information on preventative programmes will be both government budgetary information and social insurance reimbursement information.

As a first approximation, this type of search will be enough. However, in order to compile comprehensive accounts on Prevention and public health, all publicly or privately promoted programmes should be included. To expand the list, supplementary information possibly

⁵⁰ England, Scotland, Wales and Northern Ireland each has their own health administration and therefore NHS.

⁵¹ The primary function of the PHLS is to improve the health of the population through diagnosis, prevention and control of infections and communicable diseases.

⁵² The NBSB manages the creation of standards for, and tests, the purity and potency of biological substances (eg vaccines, hormones, blood products).

covering other potential financiers (such as NPISHs) should be used. Public health regulatory agencies, public health offices or other institutions which promote and co-ordinate public health will be a good source of information. Further information could also be found through GP associations, NPISH associations, funding information from international organisations etc.

In compiling expenditure on prevention and public health, a good starting point is an examination of the potential sources of finance. In some countries, this has also been the ending point (case 1) whereas in others, such as the Netherlands, the problem has been explored fully by a careful examination of the providers of care (case 3). In some other countries, provider based information has been used as supplementary information when the finance information was not complete or was too aggregated (case 2).

Case 1 - Pure finance approach

This is the case of Poland, France or Denmark for example. In terms of prevention and public health, Poland is a mixed system in which funds come from both the government and social insurance. The health care part of central and local governments' budgetary classifications was analysed and the activities that seemed to fit into prevention and public health were recorded and cross-classified to ICHA-HC. Table 24 illustrates this.

Table 24: Example of initial cross-classification of national and SHA functions

Polish Government classification code	Polish Government classification name	ICHA-HC
8522	State health policy programmes	HC.6.1, HC.6.2, HC.6.3, HC.6.4, HC.6.9
8531	Sanitary Inspection	HC.6.3
8534	Prevention and treatment of AIDS	HC.6.3
8535	Illicit drug use prevention	HC.6.4
8555	Occupational Medicine	HC.6.5
8536	Alcohol prevention	HC.6.4
8519	Blood Banks	HC.6.9
...

Of course, some of these categories should not be classified on the basis of their title alone. Titles like "State health policy programmes" or "Sanitary inspection" suggest investigation into the activities making up the programme. In the former, particular types of preventative programmes were allocated among appropriate categories of HC.6 according to the Ministry of Health's list of these programmes. In the latter, the whole amount of expenditure on Sanitary Inspection was attributed to HC.6.3. However, problems were encountered in defining the boundary between health care and health-related functions. Part of the expenditure reported under 'Sanitary Inspection' should have been attributed to HC.R. 4 or HC.R.5 (but it was not done within the 1999 pilot project).

Contacting the people directly involved in the management of the programmes is the most obvious step. Otherwise investigating the provider side will be necessary (see below). In Poland, if the programme could not be allocated to a specific sub category of the prevention function, it was allocated to HC.6.9 other category. If there are doubts about including 100% of a programme within the prevention function but the effort required to trace the activities involved is too great, this should be mentioned clearly in the metadata.

Another problem which might be faced when there are multi-level governments such as in Poland is double counting. Some of these programmes were regionally based / financed but

subsidised in part by the central government. In this case, the corresponding item called “transfers” within the central government classification had to be subtracted. The same is true for preventative programmes under the Polish “Financial Plan of Sickness Funds” which is partly financed by through government transfers, and partly by Sickness Funds themselves.

Data on social health insurance in Poland was obtained from the aggregate “Financial Plan for Sickness Funds”. Doctors receive funds on a capitation payment (based on the number of patients) and are compelled to spend a certain ratio of per capita payments, which varies depending on the Fund, on preventative activities. This is the result of internal ordinances within particular Sickness Funds (there are 17 Sickness Funds operating under Universal Health Insurance) which require part of out-patient care to be spent on preventative activities. This is considered to be a programme and is included in HC.6.

Even though Polish Health Accounts compilers found out about this by reading contractual agreements between some Sickness Funds and ambulatory care providers, they did not have data on this at the national level. This expenditure was therefore not included in HC.6 in the 1999 pilot implementation.

In Poland, care had to be taken with vaccines since these were given for free to the doctors by the government. Their value had to be subtracted to avoid double-counting any vaccination costs recorded by the doctors where these costs were also included in government expenditure.

Under this approach, categorising expenditure by provider is usually not very difficult since, from financial statements, it is normally known to whom the money is paid.

Case 2 – Using supplementary information

Finland has a devolved tax financed system and therefore started from aggregate financial information from Municipalities. However, they had trouble splitting total HC.6 prevention into the various sub-categories. In order to do that they had to use data from a different organisation, which supplied them with information on the ‘number of visits’ for some categories. Moreover, data on unit costs was available for doctors / nurses. Hence, expenditure was the product of number of visits and their unit cost. The estimates produced by this method were then reconciled with the aggregate financial information from the Municipalities.

To complete the analysis, additional finance sources were explored by going through annual reports of relevant associations such as the “Student health service foundation” and the Finnish “Slot machine association”⁵³.

Case 3 – Examining the providers

The Netherlands has a social insurance funded system and all health care providers are private. The NSI conducts many surveys on the income, expenditure and production of health providers, hence the convenience of such an approach.

As for all countries the initial means of identifying prevention and public health programmes was on the finance side. However, a close study of providers was carried immediately afterwards. Most of the time, the financial information coming from the government and social insurance contained information on where the money was spent. However, at times hospitals or GPs used a different coding system than the one used by the social security institutions or the government. Some interpretation and data linking work was needed in such cases. Other times, it was not possible to attribute programmes to providers as this was not

⁵³ The Slot Machine Association finances health care through a charitable foundation.

specified in the financial statements, for example ‘breast cancer screening’ was not specified separately. Additional information had to be taken from the National GP Association that did have information on financing flows.

From the balance sheet information of providers, there were also activities which looked like preventative programmes but did not appear as such in the financial statements of financiers (programmes can usually be isolated from ‘personal’ services as they are organised differently: often the times and logistics of the delivery are set in advance, public health nurses follow certain rules etc.). Moreover, providers use transaction-based information whereas financiers tend to have cash-based information. Hence the discrepancies between the totals obtained in the two ways. When adjusting and correcting, however, the production based figures were taken as a benchmark and the finance based ones tended to be adjusted accordingly. This was the case since output (the production side) is the closest to the real value of services / final consumption. An integrated approach, such as the one just described, (looking at both the finance and provider sides) will tend to lead to higher quality results.

Box 11: A remark on the provider classification

Clearly, expenditure on / production of prevention and public health should be placed within the providers in which the activities are ultimately performed i.e. “HP.3.1 – Offices of physicians” if they are performed by private GPs, “HP.1 – Hospitals” if they are conducted therein etc. There is one category within the ICHA-HP classification, however, which is dedicated to public health i.e. “HP.5 – Provision and administration of public health programmes” which comprises “... *both government and private administration and provision of public health programmes such as health promotion and protection programme.*” (SHA, p. 146). Such institutions are usually run by the government (but not always) and perform public health functions such as health education of the public, dissemination of information, screening etc. but also co-ordinate and administrate public health in a certain region⁵⁴. Examples of such expenditure are “government provision and administration of public health programmes (as part of ISIC class 7512)” and “public health department/district (USA: local health agency)” or “public health institutes”.

Public health institutes, however, are usually problematic since they often perform health-related functions as well as public health functions. In Finland, for example, the Public Health Institute conducts medical research and performs environmental activities as well as prevention. An estimation method using personnel could aid in solving this problem.

Achieving a full picture

As for all health care functions, all preventative expenditure should be included in HC.6 – Prevention and public health, no matter where it is provided. Hence, preventative expenditure borne in the army, prisons or other non-health industries should be pulled in.

Nowadays, for example, considerable funds have been employed by EU countries to protect the population against bio-terrorism. The health care component of such programmes should be extracted and placed under HC.6 – Prevention and public health. For countries who send troops to war, expenditure on vaccinations for soldiers etc. should be included; making contact with the Ministry of Defence to get information necessary. It should also be remarked that boundary problems are likely to appear between health and security expenditure.

⁵⁴ In terms of the functional classification, the expenditure borne in such institutions is to be placed entirely into HC.6 following the general principles on administration

The following box is an illustrative list of typical prevention and public health programmes. Please note that the title alone may not provide sufficient information for classification purposes and the Health Accounts developer should always try to dig a bit deeper into the content of each programme. Nonetheless, here is a sample of common programmes:

- ! Some of these programmes, such as "pregnancy examinations and child care" and "analysis of nuisances to worker's health" might seem better suited to appear under personal health or environmental health. However, as noted above, the problem here is that the title alone does not give sufficient information.

Box 12: Illustrative list of public health programmes present in the EU

Preventative health care for children age 0-4, e.g. screening of developmental disorders.

Pregnancy examinations & child care

School health for persons age 4-19, e.g. youth dental hygiene

Prevention of infectious diseases

Miscellaneous preventative programs, health education, info and epidemiology

National immunisation program

Flu vaccination for seniors.

Cervical cancer prevention program, i.e. taking cervical smears

Prevention of non-communicable diseases, for psycho-hygiene

Promotion of screening for breast & cervical cancer

Prevention of addiction (drugs, alcohol, tobacco, gambling) and mental problems

Occupational Health Care

National Plan Against AIDS,

Prevention of STDs

National Anti-drug plan e.g. Drug substitution programmes

Regional Health Education

Screening for cardiovascular & renal diseases & diabetes for sickness fund members of age

Antenatal and post-natal care

Family Planning and Counselling, assessment of handicapped children, health education and antenatal advice

Contraceptives promotion

Sex education

Programme for early detection of non-insulin dependent diabetes.

Analysis of nuisances to workers' health.

Chapter 12: Occupational health care

12.1 Overview

"Occupational health care" is item HC.6.5 of the ICHA-HC classification of functions of health care. It is the fifth sub-category of "Prevention and public health services" and is thus part of "Total Current Expenditure on Health". From a secondary activity point of view, Occupational Health Care is provided by HP.7.1 "Establishments as providers of occupational health care services." As such occupational health care can be part of the health care provider industry as well as being a health care function. Occupational health care, as one of the costs of production, appears in National Accounts as intermediate consumption (it is not separately identified) and not therefore as final consumption expenditure.

The separate identification of occupational health care reflects in part the desire to ensure that all health care expenditure is recorded in Health Accounts. Where occupational health care is recorded in the European System of Accounts and in the System of National Accounts it is classified as part of intermediate consumption.

It should be noted that occupational health care comprises a diverse list of health interventions which, if taken out of the context of an employment contract, would fall into other functions of care, for example cure or prevention. Expenditure on occupational health care therefore covers activities which would otherwise (were it not for the employment contract) be classified as curative, preventative etc.⁵⁵

- ! It is worth remarking that in order for activities to be classified as occupational health care, it is not necessary for these activities to be provided nor financed by the employer. The only requirement for inclusion is that the employer has the responsibility to ensure the provision takes place.

12.2 Existing definitions

A System of Health Accounts

- book In chapter 9 of the SHA, occupational health care "... comprises a wide variety of health services such as surveillance of employee health (routine medical check-ups) and therapeutic care (including emergency health care services) on or off-business premises (including government and non-profit institutions serving households). This excludes, however, remuneration-in-kind of health services and goods that constitute household actual final consumption rather than intermediate consumption of business [It] is only part of a broader range of activities that aim at improving the working environment in its relation to health. Occupational health activities to improve ergonomics, safety and health and environmental protection at the workplace, accident prevention, etc., should be distinguished from occupational health care. They are not to be recorded under health care activities in the SHA."

The System of National Accounts (SNA) / European System of Accounts (ESA)

The SNA and the ESA do not separately describe the accounting treatment of occupational health care. However, they deal with the more general concept of intermediate consumption: the SNA (paragraph 6.147) states that intermediate consumption "...consists of the value of

⁵⁵ A potential improvement for a future version of the SHA may be to restrict occupational health care to those activities which would normally (were there no employment contract) be classified under the parent category "prevention and public health services". Currently, the SHA clearly states that activities such as emergency services should be included. Compilers should build in flexibility in their methods to cater for such a change.

the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital". An analogous definition can be found in ESA (paragraph 3.69).

The SNA (paragraph 6.153) also carefully delineates between intermediate consumption and remuneration-in-kind: “*...it is necessary to decide whether the goods and services are intermediate consumption or, alternatively, remuneration in kind to employees. In general, when the goods or services are used by employees in their own time and at their own discretion for the direct satisfaction of their needs or wants, they constitute remuneration in kind. However, when employees are obliged to use the goods or services in order to enable them to carry out their work, they constitute intermediate consumption.”*

The ESA (paragraph 3.71.d) does not consider those goods and services both produced and consumed within an individual unit in an enterprise to form part of output. It is only where the products are produced in one unit and consumed in another that they form part of output. Consequently, occupational health care produced and consumed within a single unit of an enterprise will not be recorded as intermediate consumption in National Accounts.

Finally, the SNA (paragraph 6.153) includes "*First aid facilities, medical examinations or other health checks required because of the nature of the work*" in the list of the main business intermediate consumption activities.

- ! In Health Accounts terminology, this intermediate consumption is to be incorporated in total expenditure (final consumption).

12.3 Explanation and interpretation of definitions

- ? What are the criteria for including activities as Occupational Health Care?

Clearly the main criterion for classification of a health intervention as occupational health care is that the health care is provided as part of the business function: the employer has a responsibility for the health status of its employees. The employer can be a corporation as well as an NPISH or government (all kinds of employer are included).

In general, employers will ensure that health services are provided to employees with three main goals: to respect the law, to enhance employee health and in turn productivity or to offer a competitive remuneration package. Only the provision of care granted according to the first two goals constitute occupational health care, as they are consistent with the definition of intermediate consumption. For the third goal, the expenditure by the employer - whether in cash or in kind - is not intermediate consumption, but employee's income. Care should be taken to ensure that any health care which is financed as part of employees' remuneration is correctly recorded in Health Accounts in the relevant function (curative, rehabilitative etc.).

Whenever the law specifies that a certain activity has to be carried out, it is occupational health care. Otherwise, difficult borderline cases are likely to arise in which it will be difficult to determine whether the service is part of intermediate consumption or of a remuneration package. An example may shed some light on the issue. Let us take the case of a firm paying for eye tests for office workers who spend time looking at computer screens. Clearly there is a direct link between employees being able to read what is on their computer screen and the proper conduct of the business, and as such expenditure on these tests is occupational health care.

- ! Taking another example, that of dentist check-ups, it is difficult to see how this is instrumental in the proper conduct of business and so should be excluded from occupational

health care. It is remuneration-in-kind. The function here will be HC.1 and the source of finance will follow the normal convention in the SHA.

It might be useful for compilers of Health Accounts to consider the rationale behind the other functions i.e. the purpose of the activity when examining occupational health care. Table 26 contains a list of typical activities of occupational health care grouped by purpose.

Table 25: Illustrative list of occupational health care activities by purpose

Purpose of activity	Occupational health care activity
Curative	First aid, diagnostic activities (e.g. eye tests)
Rehabilitative	Physiotherapist services
Long-term care	Back treatment
Ancillary services	Clinical lab activities
Medical Goods	First aid kits, drugs
Surveillance of employee health	Regular health checks, preventative care necessary for working conditions, information and advice on good health practices including setting up and implementing stress policies, courses on how to deal with alcohol and drug abuse problems
Administration	Administrative costs borne by employers for occupational health care

It must be underlined that the boundaries of health care expenditure apply here as well as to any other item of expenditure under consideration as part of Health Accounts development. Activities which are part of intermediate consumption but are outside of the health boundary (health-related or non-health) will never be recorded under occupational health care.

An example of health-related activities is education and training of staff for delivering occupational health care. This should not be included in HC.6.5, but under HC.R.2.

Non- health activities should also be excluded from occupational health care. The term occupational health care as used in some countries may not correspond exactly with that in *A System of Health Accounts*. The major difference tends to be the inclusion of safety assurance in national concepts of occupational health care. Such activities are outside the boundary of health care and are clearly to be excluded from Health Accounts. Examples are:

- Activities that aim at improving the working environment in its relation to health (safety / accident prevention / risk assessment, health and environmental protection at the workplace, ergonomic goods⁵⁶)
- Disability related health expenditure
- Compensation to employees for a health problem caused by work

⁵⁶ It is debated whether ergonomic services should be included, despite the fact that the SHA clearly states that ergonomics is excluded. Some support the inclusion of ergonomic services (and the exclusion of ergonomic goods) on the grounds that ergonomic services (like someone telling you how to sit) require medical knowledge / expertise, whereas ergonomic goods are not medical goods and hence are outside of the health boundary. However, this is an issue that requires further discussion / agreement and, as of now, ergonomics as a whole should not be included.

? How to deal with the Provider and Finance classifications?

There are two main ways in which occupational health care can be provided. These are (i) ***in-house*** - usually the case in large firms which either train a subset of staff as first aid officers or may even have a separate room or rooms set aside for employee health care and employ medically qualified staff and (ii) ***contracted out*** - this can be done through different kinds of providers e.g. private physicians' clinics, companies whose main activity is to provide occupational health care, public health centres, and so on.

In terms of the provider classification, companies which provide occupational health care in-house are classified under HP.7.1 "Establishments as providers of occupational health care services." When the provision is contracted out, providers can be grouped into two main categories, depending on whether occupational health care is a primary or a secondary activity. Where it is a secondary activity (e.g. non-specialised GPs, hospitals, out-patient centres etc.), expenditure will go respectively under HP.1, HP.2 etc. depending on the main activity of the provider. When occupational health care is the primary activity of the provider, expenditure should also be included in HP.7.1⁵⁷.

On the finance side, corporations (HF.2.5) are the main source of financing. In countries in which there is some reimbursement or a subsidy system, however, an additional source will be one of the HF.1 categories; which one will depend on the financing arrangements of the country (general government, local government, social security etc.).

12.4 Data and information collection

It is worth noting that many countries have found it generally easier to obtain data on occupational health care when it is contracted out than when it is provided in-house.

When it is contracted out, there is a market transaction involved and expenditure or production of occupational health care is recorded separately in the company accounts of purchasers or providers. Depending on where the basic data is extracted from (either from surveys of companies as consumers of occupational health care or surveys of providers of care), the figures obtained will be consumption based or production based.

When the services are provided in-house, instead, expenditures on employee health are usually embedded in the total wage cost of the enterprise and are thus difficult to separate out. In this case, companies are simultaneously consumers and providers of occupational health care, so there will be no difference between production and consumption approaches⁵⁸.

This subsection will be divided into the main sources of information that a country could use to compile occupational health care expenditure. It is difficult to separate countries into pre-defined typologies since, in order to have a complete picture of occupational health expenditure in a country, it will usually be necessary to use more than one type of source and adopt mixed approaches. Generally, however, the availability of data on occupational health

⁵⁷ The SHA states that HP.7.1 should only include establishments providing occupational health care as ancillary production. Experts agree, however, that this also needs to incorporate establishments which provide it as primary production.

⁵⁸ There will be a difference in the valuation of occupational health care depending on whether this is contracted out or provided in-house. When it is provided in-house, the services will be valued at cost. When contracted out, instead, these services will be valued at market price, given that profits will be included in the valuation (although when collecting data with a production approach it could be the case that 'contracted out' occupational health care is also valued at cost, as profits may not be included in the value of the services).

care will vary depending on institutional systems and, in particular, on the level of regulation in a country. The sources of information which already exist in a country to help identify occupational health care expenditure can be grouped in four categories: national accounts, administrative data, market data and household data. If information cannot be derived from any of these, it may be necessary to collect new data. This could be done using a consumption or a production approach as explained below.

National Accounts

Starting from national accounts, some data may be available if expenditure is classified according to the classification of outlays of producers by purpose (COPP). One category of COPP, class 05.2 is Outlays on Health, defined as "Outlays on medical services (provision of emergency medical services, routine medical check-ups, etc.) as well as on the respective equipment, facilities and personnel." Classification of intermediate consumption by COPP will therefore provide some useful information on occupational health care for SHA implementation. However, care needs to be taken as the ESA excludes from the definition of output the goods and services produced and consumed within a local unit of an enterprise, and therefore this may not be included in National Accounts estimates of intermediate consumption.

It may be possible to acquire data on production of and expenditure on occupational health care from supply-use tables. Health care services provided to non-health care industries by health industries may be identified depending on the level of disaggregation by industry. This would constitute a first approximation to occupational health care expenditure. There are several problems associated with this procedure though. Firstly, this method would account only for the part of health care that is contracted out. Secondly, it would include all such health care goods and services and not just occupational health care. Expenditure is likely to be increased by the input of medical professionals and / or health industries aimed at improving safety or guaranteeing the quality of the products sold. However, if some adjustments can be made and some more detailed information is available, this could be a starting point.

In any case, a few countries have suggested that, due to the fact that National Accounts uses different principles and have different aims from the SHA, it is usually not worth taking the data obtained here and importing them directly into the SHA. Indeed, if available, one should get hold of the primary sources of information that were originally used to compile National Accounts (the ultimate datasets from questionnaires etc.). The following are sources of this kind.

Administrative Data – Official Surveys

Government data are sources of information which are more consistent with the bottom-up approach. The government may conduct routine surveys of occupational health care expenditure. Depending on whether a consumption or a production approach is used, surveys will be conducted on firms as 'consumers' of occupational health care or on providers as suppliers of care. When the survey is sufficiently representative and the questions are sufficiently comprehensive, this can be a reliable and sufficient data source.

The level of regulation by and involvement of the government in occupational health care differs widely across countries. In some countries such as Poland or Finland, the system is very regulated and a lot of information is collected centrally or by local government units. In such countries the state may have in place an "Occupational Health Care Institute" (variously called Occupational Health Regulatory Agency, Work Medicine Institute, Work Safety Institutions) with the role of policy making, overseeing and inspecting the application of

occupational health laws. Legislation can therefore be the starting point, especially if these agencies collect information on expenditure by companies in carrying out their legal requirements. In the Netherlands, for example, a starting point was to look at the law relating to highly regulated industries (dangerous processes' industries, chemicals, nuclear etc.) for which data on legally required interventions/activities are reported.

A problem may arise for health outlays, that are not legally required, of highly regulated firms with the purpose of enhancing employee productivity, as presumably there will be no requirement to report on the expenditure. In countries where there is reporting of the expenditure on legally required activities, a question could be added on the non-legally-required activities.

Industries that are less highly regulated pose a more difficult problem that will require a more time consuming solution. The issue is similar for countries in which, for example, there is no institution such as an Occupational Health Care Institute. Some data may be collected for administrative / statistical purposes. The government departments which are usually responsible for this are the Ministry of Health, the Ministry of Labour / Work and Pensions or the Social Security Institute. These may have questionnaires in place that collect data regularly, surveying either employers or providers of occupational health care. When the level of regulation is not so strong, however, these questionnaires tend to be relatively rare or sometimes they are conducted as a one-off episode. In these cases, some estimation techniques should be used to infer data for the missing years. Some proxy calculations based on detailed information of a few representative firms' activities for the missing years could be a way to proceed. However, given the small size of the sample used in these techniques and the lack of random selection, the statistical validity of the results may be questionable. This does not mean that attempts should not be made to overcome gaps in data, but the methodology used to do so should be spelled out clearly as a side note to published tables.

Administrative Data – Reimbursement (subsidy) data

Special sources of information may be available in countries where the government finances part of the occupational health care expenditure. In Finland, for example, the government subsidises fifty percent of the cost incurred on employee health. The Finnish Social Insurance Institute has at its disposal a very detailed database based on the reimbursement applications filled out by companies. In this case, companies have a strong incentive to complete the questionnaires, which are then cross-checked by the relevant government agencies. Data of this type are likely to be very detailed and precise, spelling out all the activities conducted for occupational health care, the number of employees, the costs incurred etc. Given the administrative nature of this, it will also be possible to obtain totals without approximations i.e. no surveys will be used but the total expenditure will be derived from all existing applications. The problem here is that in Finland, activities that are not legally required but are designed to improve productivity are not subsidised and therefore not accounted for in this way. If possible, a solution would be the addition of a question on expenditure on such occupational health care on the application form for the government subsidy. The subsidy to (amount reimbursed to) employers should be counted as government expenditure on occupational health care.

Administrative data – Issues and possible solutions

- ! Using administrative data in this way requires caution. In general, information may not be complete and several problems arise as the main purpose is not Health Accounts. In particular, not all production / expenditure may be included as is the case in Finland or, in the opposite case, too much expenditure may be included, such as expenditure on safety.

A typical problem faced by countries in the EU is the separation of health activities from safety, risk assessment or environmental protection at the workplace. Normally, in a firm there will be one unit that is responsible for all these activities and the corresponding expenditures will tend to be accounted for jointly. Another potential problem could be the separation of expenditure borne as remuneration-in-kind from intermediate consumption. Adopting an expenditure approach, some proxy calculations based on detailed information on the purchases of a few representative firms in each industry could be a first step. If this is not possible or it is too resource intensive, and non-health expenditure is included as health expenditure by default, it is important to clearly state this, as has been done for example in the Netherlands. Adopting a production approach, the same exercise could be done but on providers of care (where these are different from consumers when occupational health care is contracted out); a small-scale study could be conducted on such institutions. With respect to the separation of intermediate consumption and remuneration-in-kind, this does not seem to have constituted a big issue in most countries.

In other countries, it will not be possible to include all relevant expenditures as occupational health care. This will tend to be the case especially when companies provide occupational health care in-house. In this case, as a first approximation occupational health care expenditure could be estimated as the cost of the medical personnel employed by the firms. The computation of the salaries of the people employed in occupational health care will be a beginning, and will depend on the availability of wages and salaries disaggregated by the appropriate occupational and possibly educational classifications. For example, one approximation would be to sum the wages and salaries of staff in non-health industries whose occupation is related to health (doctor, nurse, etc) and/or who have a medical qualification. There is a pan-European survey of income information once every four years, but in many countries, such surveys of incomes are conducted more frequently. Other sources of information on incomes may be surveys on employment conducted by the NSI e.g. the Labour Force Survey or surveys conducted by employment ministries. Another source of information on incomes may be the ministry responsible for income taxes.

When sources of wages and salaries do not permit the separate identification of groups of employees who are involved in the provision of occupational health care, a possibility is to use numbers of medically qualified staff or those in medical occupations multiplied by some "standard" wage.

Care needs to be taken with such proxy methods, as there is a possibility of including medically qualified people who are performing activities other than occupational health care e.g. they may be providing medical advice during the development of new personal hygiene products. On the other hand, not all occupational health care employees are medically qualified; it may well be the case for example that they are just regular employees who have received some medical training. One solution to this would be a small-scale study of a few representative companies in terms of the occupational health care activities performed by staff and the medical qualification of the staff performing these activities.

Market data

A further source of data is market research and studies conducted by private organisations such as employer federations, insurance consultants or private companies whose main activity is the provision of occupational health care.

It should be recognised that the data may relate only to specific types of firm e.g. chemical industries for which there is a need for specific market information. The content of such

studies should also be treated carefully, keeping in mind that what we are looking for is occupational health care and not outlays on health by companies in general.

Among the various kinds of market data, insurance data in particular could be a useful source of information. In some cases, in fact, companies pay a premium to an insurance company which will in turn take care of the health care needs of the firm's employees. The insurance contract may cover activities that are not necessarily within the health care boundary drawn by the SHA. Examples are compensation to employees for damages caused by work and expenditure related to the special health needs of some employees. This private insurance coverage might also be granted to employees as remuneration-in-kind. In some cases, however, it will also cover occupational health care. Of course, only these last outlays are the ones in which we have an interest for HC.6.5.3. This packaging means that it will usually be difficult to separate out occupational health care. Nevertheless, this could be a very useful source of information, especially if one considers that insurance companies will have a lot of data on companies' health expenses when conducting actuarial computations to calculate premiums.

- ! A study of activities of a select few representative companies may well provide sufficient information to have a first estimate of the distribution. It may be difficult to access these data, however, as they will be commercially sensitive.

Household Data

Some additional (though probably limited) data may come from household budget surveys. If employees pay for their occupational health care out-of-pocket and then get refunded by their employer, this expenditure will be recorded in the household budget survey. This happens with, for example, eye tests in the UK, where many employees pay for their own eye tests to be reimbursed later. The household budget survey could be a start here but it should be noted that the quality of such data is sometimes perceived to be quite low. For example, it may not be the case that the survey records the reimbursement by the employer. Also, there may be issues surrounding the correct recording of items which are refunded (respondents may not report them).

Collecting new data – Consumption and production approaches

In the worst scenario, when information is not available from any of the above mentioned sources, it will generally be necessary to conduct a special survey. Sometimes adding appropriate questions to an established survey can do this; for example, the office responsible for the country's national income accounts will already survey firms, in which case it may be possible to "piggyback" on their surveys. At other times, such a survey must be a new initiative. This, however, may be too resource intensive. Estimations based on the number of doctors employed in the various industries and proxy calculations as mentioned above could be a start.

If funds were available to conduct a survey, the choice would be between adopting a consumption or a production approach i.e. surveying employers or providers (the two entities being different only when occupational health care is contracted out, otherwise they coincide). In most countries, surveys used for accounting for occupational health care are on employers although surveys on providers do exist.

For surveys on employers, it is important to note that the need for occupational health care varies largely across industries (e.g. a nuclear company will certainly have different - and greater - health needs from an accounting firm). The survey should therefore be stratified by characteristics thought to relate to probability and level of expenditures. In particular,

spending by firms for health care typically varies by industry, firm size, ownership (public and private sectors, foreign or domestic), etc. The legal requirements imposed on each industry could be a good initial guide to deciding upon the weights to attribute to the various sectors. Stratification allows development of a statistically valid average cost per employee in each stratum, which can be multiplied by the estimated aggregate employment in the strata (from the country's Labour Force Survey) to produce a national estimate.

Surveys of providers of occupational health care suffer from the general issues of business surveys. As noted by the *Guide to Producing National Health Accounts* "Firms are often difficult to sample because of lack of any established and reliable sampling frames. This is especially true of small firms, which may come and go faster than the tracking ability of the government authorities. It is frequently the case, however, that small firms make little or no expenditure of the type discussed here, in which case weak or missing data are not a problem. At the same time, larger firms, which are more likely to make such expenditures and more likely to keep records of that spending, tend to be more stable and easier to find".

When surveying employers, a distinction should be made between those who contract out and those who provide occupational health care in-house. In the second case, expenditures on employee health are usually embedded in the total wage cost of the industry and the companies themselves may not have a separate figure for occupational health expenditure. The solution here would be to survey only the employers that contract out, and estimate the costs of the companies who provide health care in-house through the figures obtained here (assuming they spend the same per employee for example). However, care should be taken as there may be a relationship between the fact that a company is contracting out and the level of occupational health care need.

Placing expenditure in the Provider and Finance classifications

If the available data are consumption based, there should be no problem in placing expenditure in the provider and source of financing classifications; it will be clear who is paying whom or whether occupational health care has been provided in-house.

If we collect data following a production approach, the provider side will of course be well known. The financing side, however, may be unclear given that the exact source of financing may not be fully recorded by providers. In most cases, the problem is easy to solve, given that corporations usually finance most of occupational health care expenses and, whenever the government finances part of it, there will be budgetary information from the relevant part of the administration.

Polish Case Study

- ! Box 13 below presents a Polish case study for estimating occupational health care. Health Accounts compilers should be cautious when using this example. Names and titles given to activities vary across EU countries and, as such, without detailed information on the organisations and activities described in this case study it may not represent a good template for use in other EU countries regardless of its appropriateness in Poland.

Box 13: The Polish case study

The Occupational Health Service (OHS) in Poland is regulated mainly by the Occupational Health Services Act (which is now being amended). The Institute of Occupational Medicine is the advisory institute of Ministry of Health, and supervising, advisory and training body for OHS units: regional and primary ones.

The health protection of those exposed to hazardous conditions at workplaces is the main purpose of OHS. OHS activities include: limiting the harmful effects of work on health, preventative health care for workers, out-patient rehabilitation justified by occupational pathology, first aid and emergency services at the workplace, health promotion, initiating employers' health protection actions, analysing employees health status, collecting and processing information on occupational diseases, accidents and occupational risks.

The Polish system is organised in a two-level structure which consists of primary units (approximately 8,000 authorised doctors) and 23 regional OHS centres. The latter ones are responsible mainly for consultations and control of primary units, postgraduate education and training, diagnosing of occupational diseases, examining the appeals from medical certificates, consulting to regional government and issuing opinions on functioning of health care for workers, registration of notifications and providing occupational health services supplementing primary OHS units activities. Regional OHS centres may provide curative services (even hospital ones) in cases of occupational pathology.

Primary OHS units deals mainly with prophylactic examinations of workers (pre-employment, periodic, follow-up).

Primary and regional OHS units are obliged by law to deliver annual reports on their activities according to the MZ-35 form. Aggregated data are collected by Regional OHS centres in the region and sent to the Institute of Occupational Medicine. The final reports are then presented to Ministry of Health and published.

The main sources of information available in Poland are:

- Direct (financial) data from "budgetary classifications" of both central and local governments – part 'Health care', chapter 'occupational medicine'
- Indirect (non-financial) data used for estimating corporations' expenditures on occupational medicine. These come from "Reports of activity of regional occupational health services centers" and "Annual report of a physician carrying out preventative examinations of employees", based on the compulsory questionnaires of authorised occupational physicians sent to the Regional OHS centers and the Institute of Occupational Medicine. Also other data are collected for the purposes of different research projects, that are based on non-obligatory questionnaires sent to the OHS units and collected by the Institute.

Here is the process that Poland followed in calculating occupational health care expenditure within its pilot SHA introduction. Poland adopted an approach that is mainly production based, given that its richest source of information was the MZ-35 (compulsory questionnaire on all providers of occupational health care)

The first part of the exploration was the budgetary reports. 100% of the expenditure recorded by central and local governments under chapter 'Occupational medicine' were included within function HC.6.5 "Occupational health care".

The central government expenditure on occupational medicine comprises mainly of

expenditures on special tasks in this field provided by several institutes of occupational medicine in Poland. The central government finances (subsidises) some special tasks of local governments in the field of Occupational Medicine

The local government units finance the statutory activities of regional OHS units, health programmes, health promotion programmes, preventative examinations for some groups of population (when the corporation who employed the employee is liquidated).

The second part of the exploration was aimed at calculating expenditures on Occupational Medicine borne by corporations. Corporations incur the costs of pre-employment, periodic and follow-up examinations as well as the costs of preventative health care indispensable due to working conditions, as set out by the principles specified in the Labour Code and other regulations; corporations also finance health services voluntarily undertaken to enhance workers' productivity.

For these types of expenditures, the most comprehensive source of information was the 'Report of activity...', based on the questionnaires sent out to all authorised physicians. From this report a lot of information was available on number of physicians employed, number of examinations conducted and some other information on physicians activities and contracts with other units. The problem, however, was that in the report there was no detailed information on costs of different types of examinations. An estimation of average unit costs was therefore made on the basis of OHS data coming from regional centers and primary units. This average cost was then multiplied by the total number of examinations conducted, and a total was obtained for expenditure on preventative examinations as a part of occupational health care. Thus, within the function of occupational medicine financed by corporations only expenditure on preventative (medical check-up) examinations was included. This led to an underestimation of Occupational Medicine expenditure according to the SHA.

Besides this last one, the main problems which have not yet been fully solved under the Polish pilot SHA implementation are:

- Splitting / taking out the expenditures of research and training activities from medical examination programs financed by central and local governments
- Activities of quasi-insurance entities. In the middle of nineties a lot of private health entities / providers have appeared in the health care sector in Poland. Among them, there are providers organised as special medical centres (Medicover, Falck, Luxmed) offering packages of health services (in-patient, out-patient, emergency etc.) mainly to corporate clients. The majority of the services offered by these companies should not be classified under occupational health care despite the fact that employers usually record these costs as intermediate consumption. Instead, according to SHA, they should go into 'HC.1.3 Out-patient curative care' (this was actually done within the pilot SHA implementation). A double-counting problem arose here since different types of expenditures could not be separated within the packages. Some of the expenses on preventative examinations carried out by these companies were already reported and accounted for in the Ministry of Health questionnaires.

Chapter 13: Administration & insurance

13.1 Overview

This is item HC.7 of the ICHA-HC classification of functions of health care, and is divided into HC.7.1.1 general government administration of health, HC.7.1.2 administration, operation and support activities of social security funds, HC.7.2.1 health administration and health insurance: social insurance, and HC.7.2.2 health administration and health insurance: other private.

A key distinction to make is between overall administration of the health care system and health insurance providers, and administration of health care providers. This function is only concerned with the former and not the latter. In some systems, there is a clear separation between health system management - as in the UK with for example its National Health Service, whereas in others there is more vertical integration of the system administration and other health care functions - as in some of the Nordic countries with their municipalities.

Another distinction is that between health administration and insurance and non-health administration and insurance. Where government has organised itself such that a particular ministry has responsibility for a number of functional areas, such as social services or education, it is important to separate out only that part which is health. Similarly with health insurance; many providers of health insurance also provide other forms of insurance including unemployment, travel etc.

13.2 Existing definitions

A System of Health Accounts

From the functional side (chapter 9 of SHA)

The main activities are planning, management, regulation, fund collection, handling of claims of delivery system.

- *HC.7.1.1 general govt administration of health (except social security):* This item includes activities such as formulation, administration, co-ordination and monitoring of overall health policies, plans, programmes and budgets, equating to category 07.6 of COFOG. Examples of activities for inclusion are preparation and enforcement of legislation and standards for health provision, licensing of medical establishments and medical / paramedical staff, production and dissemination of general / technical / statistical information on health (other than those in HC.6 prevention & public health). Compilation of health statistics by a central statistical agency, administration of public security, law and order activities, fire and defence, road control activities should be excluded.
- *HC.7.1.2 administration, operation and support activities of social security funds:* The SHA provides no further information.
- *HC.7.2.1 Health administration and health insurance: social insurance:* The SHA provides no further information.
- *HC.7.2.2 Health administration and health insurance: other private:* This includes the administration and operation of all other private health and accident insurance including private for-profit institutions.

From the provider side (chapter 10 of SHA)

- *HP.6 – General health administration and insurance:* Establishments mainly engaged with regulation of activities of agencies that provide health care, overall administration of health policy and health insurance

- *HP.6.1 – Government administration of health:* Government administration (excluding social security) for health policy, setting and enforcing standards, including regulation and licensing of providers. Note that government agencies mainly engaged in providing public health services are classified under HP.5 Provision and administration of public health programmes.
- *HP.6.2 – Social security funds:* Funding and administration of government-provided compulsory social security programmes compensating for low income due to sickness (part of ISIC 7530)
- *HP.6.3 – Other social insurance:* Social insurance other than government compulsory
- *HP.6.4 – Other (private) insurance:* Insurance (not social) – ISIC class 6603. Establishments where there is management of insurance (insurance agents, average and loss adjusters, actuaries, and salvage administration; ISIC class 6720).
- *HP.6.9 – All other providers of health insurance:* Private establishments mainly engaged in providing health administration (other than private social and other private)

The System of National Accounts

General government administration of health appears under category 07.6 of COFOG, the title of which is "health not elsewhere classified" and the description of which is:

Administration, operation or support of activities such as formulation, administration, co-ordination and monitoring of over-all health policies, plans, programmes and budgets; preparation and enforcement of legislation and standards for the provision of health services, including the licensing of medical establishments and medical and paramedical personnel; production and dissemination of general information, technical documentation and statistics on health. Includes: health affairs and services that cannot be assigned to (07.1), (07.2), (07.3), (07.4) or (07.5)

Flows of financing relating to health insurance are dealt with differently in the SNA compared with SHA. It might be useful to provide some background information before presenting this difference. Private insurance companies receive income from two sources: the main source is premiums from policyholders; the minor source is investment gains associated with the stock of premiums held by insurance companies (termed property income in National Accounts). The insurance companies spend the majority of this income on health care goods and services for policyholders. The remainder is the costs of administering the health insurance policies.

The SHA records the difference between total premiums paid and expenditure on health goods and services by private insurance companies as HC.7 administration⁵⁹, and all of this expenditure as financing by HP.6.4 Other (private) insurance.

The SNA records the difference between total premiums paid and expenditure on health goods and services by private insurance companies as a financial service rather than expenditure on health (category 12.5.3 in COICOP, "insurance connected with health"), and all of this expenditure as financing by households.

⁵⁹ where there is no net movement in the value of the fund held by the insurance companies to pay for future claims

13.3 Explanation and interpretation of definitions

Administration in many senses, including in the SNA, is a term used to cover the overhead - or ancillary - costs of production. This includes the costs of activities such as finances and personnel. Although of interest to many, the SHA does not separately require the reporting of expenditure on these activities where they are directly associated with the provision of health care goods and services. The SHA requires only the reporting of the administration of the system and of health insurance.

In practice, it might be useful to separate between the providers of health care in the ICHA-HP classification. Where administration occurs within an individual provider in categories HP.1 hospitals, HP.2 nursing and residential care facilities, HP.3 providers of ambulatory care, HP.4 retail sale, HP.7 other industries and HP.9 rest of the word, the costs of administration should be included as part of the costs of the provision of the health goods and services. For HP.5 provision and administration of public health programmes, HC.6 prevention & public health is defined to include all associated administration. This leaves HP.6 general health administration and insurance, for which it might be the case that all costs are HC.7 administration.

- ! Care needs to be taken where there is vertical integration. So, for example HP.5 general health administration and insurance providers might administer the health system and/or operate health insurance, as well as provide health care goods and services. In such a case, it is desirable to distinguish between the part of the organisation that provides health care goods and services from the part that administers the health care system and allocate the different types of administration accordingly⁶⁰. If the value of production is built up from input costs the Health Accounts compiler will need to allocate administration costs associated with service provision back to HC.1 - HC.4 and HC.6, once HC.7 administration has been identified.
- ! Care also needs to be taken with horizontal integration. For example, a ministry with responsibility for health may have other functional or topical responsibilities, too. In Ireland, for example, there is a Ministry for Health and Children, whilst in Northern Ireland (part of the United Kingdom) there is a Department for Health, Social Services and Public Safety. The Health Accounts compiler must ensure that administration costs are allocated to health and non-health functions accordingly.
- ! In countries like the USA that have employer-sponsored insurance, employers incur administrative costs. These administrative costs associated with the employer-sponsored insurance should be included at HC.7.2.2 irrespective of whether or not the employer bears the risk.

The production of health statistics, National Health Accounts and other health information as well as outlays for respective information technology systems and their development are usually to be classified as health administration. Where health statistics, National Health Accounts and other health information are produced by the NSI, this is not included as health

⁶⁰ International comparisons of efficiency and effectiveness based on SHA data may be systematically biased if the split between HC.7 administration and administration carried out at the level of the provider of health care goods and services differs significantly across countries. Addressing this issue may form part of a future version of the SHA and compilers may wish to take this into account when designing their systems.

care expenditure. This treatment reflects the desire to retain compatibility with the National Accounts' COFOG classification⁶¹.

- ! Where administration relates to another function, for example social care, expenditure on such administration should not be included in Health Accounts.

13.4 Data and information collection

Government and social insurance

This subsection is divided according to the main types of health care systems present in Europe⁶².

Tax financed, centralised

In such systems, most of what the SHA considers administration takes place centrally in institutions such as the Ministry of Health (or the Board of Health). In the UK, for example, HC.7 expenditure information was taken fully from the health administrations' annual reports. Budgetary information from health institutions at a high level such as this will usually be enough in public financed / provided systems. It is to be noted that in the UK, for example, administration expenditure by NHS Trusts has not been included since such institutions take care of the administration at the level of providers of health care goods and services.

A problem that may occur in such countries is the horizontal integration of regulatory activities. This is the case in Northern Ireland, for example, where there is the Department (Ministry) of Health, Social Services and Public Safety. A way to separate expenditure in such a situation would be to use data on personnel, subdividing employees into different professional categories corresponding to the three main categories of activities performed by the institution. Responsibilities will usually be allocated to different units / work areas and personnel registers should be available. Once personnel figures have been found, it will be necessary to multiply the number of staff times their wage or the average salary of such professional category to obtain 'staff costs'⁶³. Hence:

$$\text{Health staff costs} = \text{Number of health staff} * \text{Average labour cost of professional}$$

To complete the expenditure on health administration, one will need to assign a proportion of 'running costs' to health. These expenditures will be made of items such as telephone, office space, electricity and so on which are not directly attributable to health but for which common accounting is kept. Such running costs (or overheads) could be allocated based on the share of health personnel out of total personnel. Note that this procedure is an approximation that contains the assumption that running costs follow staff costs proportionately. This may not be the case since different units may use up different amounts of common goods. In any case, the estimation will be the following:

$$\text{Health running costs} = \frac{\text{Number of health staff}}{\text{Number of all staff}} * \text{Total running costs}$$

⁶¹ Compilers in countries where the NSI produces a significant proportion of information on health (compared with institutions that are considered part of the health system) may wish to reflect this in their National Health Accounts. If this advice is taken, it would be useful to explain the extra divergence from National Accounts practices.

⁶² See chapter 11.

⁶³ This may not be necessary since totals for the wage costs of different categories of personnel (in our case health personnel) might already be available.

Dividing overheads can actually be done in different ways: they can be calculated per capita (as above), per hour worked, etc. For example, telephoning will tend to be proportional to time worked, whereas it seems sensible to divide office space and heating in per capita terms. Finally total health costs will be given by:

$$\text{Total health costs} = \text{Total health staff costs} + \text{Health running costs}$$

It should be highlighted that all this was done assuming that all the staff in the Ministry are involved in administration. This is not a bad assumption as the definition of HC.7 is wide and includes items such as budgeting, designing health policy, planning, management etc. In any case, if in some institution there is health personnel dedicated to other activities, the same kind of estimation will be conducted but instead of using ‘health staff’ one should use ‘health administration staff’.

Tax financed, devolved

In such countries, Municipalities / Local Authorities will be ideal candidates to look into when searching for health administration expenditure⁶⁴. Local governments in these countries (e.g. Denmark and Finland) are usually responsible for all the main public functions in a state (i.e. health, social services, education, pensions etc.). Hence, the problem of separating out health expenditure from other non-health activities will be the rule rather than the exception.

As previously, within the local authorities there will usually be separate departments or units allocated to the different functions performed. An estimation method similar to the one just explained can be effective in this case, too.

It is also often the case that budget allocation and care provision are partially overlapping in such institutions (vertical integration). If health boards not only finance, but also provide care, it is absolutely crucial to correctly estimate the administration part. A method for estimation such as the one explained above can be used but this time it should be applied to ‘administrative staff costs’ and ‘administrative running costs’. Hence, the staff ratios (personnel costs plus respective running cost overheads) will give the totals.

Finally, it should not be forgotten to pull in the expenditure from the higher levels as well. At the national level, often there is an institution such as the National Board of Health which coordinates and manages municipalities. Again, professions or occupations may be used to split health board functions.

Social insurance systems & Mixed Systems

For the governmental side of administration in these countries, the guidelines given above will apply. For what concerns social insurance funds, the guideline can be given simply. If there is a fund dedicated uniquely to health, it will be enough to extract the administration items out of its accounts (usually there will be a category called ‘management and control’ or something similar). When there are funds which contain health but not only health, splitting the ‘management and control’ item into functions can be done through the health quota of the funds i.e. if 8% of the funds is used to finance health care provision and 92% is dedicated to social and other services, the percentage of the ‘management and control’ item attributed to health will be 8%. Again, this is based on the assumption that administrative costs supporting 1 Euro of funds are the same no matter where that Euro is spent. Such an assumption could be challenged given that certain sectors may be more administration intensive than others. Nonetheless, it is one way of estimation. Such a method was used for example in Germany to split the health component out of Social Pension Funds and Social Accident Funds.

⁶⁴ Although accounts may be available at a central level (as in Denmark).

- ! Care should be taken since some countries outsource administration work into government agencies or parafiscal institutions, whereas others have the functions performed in ministries. Both types of administration should be included.
- ! For completeness and comprehensiveness, one should try to estimate and pull in administrative expenses in non-health industries which provide health e.g. Ministry of Defence, Ministry of Internal Affairs (for prisons for instance) etc. In order to do that, estimation using personnel shares could be used. Problems of confidentiality may arise in these cases.

There is substantial administration involved in providing health-related activities. This should not be included under HC.7 but should be included in the appropriate health-related function. Such expenditures are likely to be forgotten. Administering health research, training, and particularly the management of health-related financial benefits requires similar estimation techniques as described above. Research administration outlays may be keyed with respect to the share of research budgets allocated by subject, administration in social aid offices or similar institutions by the percentage of social benefits distributed by type.

Private insurance companies

Good sources of information in this case will be information coming from ‘national insurance federations’, surveys on insurance companies or national accounts’ based information.

A way to allocate expenditure on administration in health insurance companies will be to use the ‘service charge’ given by:

$$\text{Administration in health insurance companies} = \text{Service charge} = \text{Sum of all premiums} - \text{Sum of all payouts}$$

It is important to note the implicit assumption, in this method of valuation, that net flows in and out of the investment funds and other vehicles are assumed to be zero. This is a reasonable assumption over time and at a macro level. At a micro level – at the level of an individual enterprise – it is clear that in a year where there are few payouts, there will be a net increase in the amount of funds kept in reserve, and vice versa. This net increase is not health expenditure, and its opposite the net decrease is not health administration.

In the UK, data on premiums and pay-outs are available directly from the National Accounts in particular from household final consumption expenditure figures. The same type of calculation was performed in Denmark but here data were based on a Danish insurance company covering 95% of the market. In the Netherlands, data were available from the balance sheets of insurance companies. Damage insurance companies’ expenditure was pulled in whereas life insurance company expenditure was excluded. Where administrative expenditure was an unusual share of turnover, data was double-checked.

Often private insurance companies provide health insurance along with life insurance or likewise. It is important to separate as best as possible the share of administration expenses related to health from those related to other functions. A good way to estimate will be to split total administration outlays with respect to either the percentage of premium payments received (input orientation) or compensation paid (output orientation).

Sometimes, it might even be worth inquiring into the non-health parts of the funds e.g. disability funds, since they might contain an important chunk of health expenditure. This could be done through personnel keys or by taking out relevant items from the total fund allocation (e.g. wages for the unemployed) and assign what is left to health. The health share

can then be applied to administrative costs to find the relevant HC.7 administration expenditure.

Other institutions

Often public pension funds (statutory pension funds) finance some health activities such as rehabilitation or retraining to reduce the risk of early pensioning due to ill health. Also there are institutions such as the 'Robert Koch Institute' in Germany, which produces statistics and information on health. In principle, the HC.7 administration expenditures of such institutions should be included.

- ! For institutions that provide personal health goods and services as well as general health administration, for example a leading hospital may have responsibility for setting surgical procedure standards, this could be assigned proportionally to the activities performed by the provider. However, this might not necessarily be strictly valid since administrative expenditure may not be proportional to the provision of goods or services. What one could do for example is to divide it into functions (health, health-related, and non-health) according to personnel information i.e. numbers of administrative staff present in different parts of a provider.

Chapter 14: Private sector finance

14.1 Overview

A common feature across countries in Europe is that the private rather than the public sector poses the most problems for the Health Accounts compiler. On the public sector side, there is usually a great deal of information available to the compiler through the management information system of the public health care system. In contrast, the strong desire in the private sector to retain commercial confidentiality limits the amount of information available.

The difficulty with charitable organisations, which form part of the private sector, and with other Non Profit Institutions Serving Households (NPISH) is primarily that countries tend not to have set up such sophisticated systems for collecting information on the activities of this sector. Survey sources of information on household expenditure are not considered particularly accurate and the sample sizes typically do not support the level of analysis required in health accounting (see the general part of this manual under 'household sources').

In this guideline, all categories within "HF.2 – Private sector" of the source of finance classification will be discussed at least at the one digit level. A particular focus will be given to the sources of finance for which data are imprecise or difficult to find (e.g. NPISHs), whereas relatively little attention will be given to the sources of finance which do not pose many problems (e.g. private insurance). Also, relatively little attention will be given to the theory (note that here we limit ourselves to reporting the SHA definitions) since it is well treated in the SHA (chapters 6 and 11) and in the ESA/SNA.

It is very difficult to solve all problems related to estimating private sector finance in health but this guideline aims to provide at least some useful hints for compilers.

14.2 Existing definitions

A System of Health Accounts

HF.2 Private sector

This sector comprises all resident institutional units that do not belong to the government sector. For a breakdown of health spending by source of financing, it is recommended to distinguish at least the following five sub-sectors: private social insurance, private insurance enterprises (other than social insurance), private household out-of-pocket expenditure, NPISHs and corporations (other than health insurance).

HF.2.1 Private social insurance

This sector comprises all social insurance funds other than social security funds. It includes programmes that are set up by government for their employees only (see SHA p.152-3 for the definition of social insurance funds and social security).

HF.2.2 Private insurance enterprises (other than social insurance)

This sector comprises all private insurance enterprises other than social insurance. This sector comprises both for-profit and non-for-profit insurance schemes other than social insurance.

HF.2.3 Private household out-of-pocket expenditure

The definition of a household which is adopted by survey statisticians familiar with the socio-economic conditions within a given country is likely to approximate closely the concept of a household as defined in the SNA and consequently will also be in most cases appropriate for the purposes of health accounting (see SNA 93, 4.134).

For a more detailed breakdown of out-of-pocket payments by private household, the following definitions are relevant (adapted from the glossary in OECD, 1992, p. 9):

- ─ **Out-of-pocket payments:** payments borne directly by a patient without the benefit of insurance. They include cost-sharing and informal payments to health care providers
- ─ **Cost-sharing:** a provision of health insurance or third-party payment that requires the individual who is covered to pay part of the cost of health care received. This is distinct from the payment of a health insurance premium, contribution or tax that is paid whether health care is received or not. Cost-sharing can be in the form of *deductibles*, *co-insurance* or *co-payments*
- ─ **Co-payment:** cost-sharing in the form of a fixed amount to be paid for a service.
- ─ **Co-insurance:** cost-sharing in the form of a set proportion of the cost of a service. In France and Belgium, “ticket modérateur”.
- ─ **Deductibles:** cost sharing in the form of a fixed amount which must be paid for a service before any payment of benefits can take place.

Private funding is at the moment the least reliable component of health care financing (mainly due to uncertainties with respect to the amount of out-of-pocket payments to health care providers and pharmacies) and also one of the major sources of estimation error in total expenditure on health in many countries. Data sources for a detailed breakdown of out-of-pocket financing by private households are consequently one of the weak points in existing Health Accounts in many countries. For this reason, more specific household surveys for tracking private expenditure on a regular basis are recommended.

HF.2.4 Non-profit institutions serving households (other than social insurance)

Non-profit institutions serving households (NPISHs) consist of non-profit institutions that provide goods or services to households free or at prices that are not economically significant (SNA 93, 4.64).

Relevant as sources of funding of health care are in particular charities, relief or aid agencies that are created for philanthropic purposes and not to serve the interests of the members of the association controlling the NPISH. Such NPISHs may provide health care goods or services on a non-market basis to households in need, including households affected by natural disasters or war. The resources of such NPISHs are provided mainly by donations in cash or in kind from the general public, corporations or governments. They may also be provided by transfers from non-residents, including similar kinds of NPISHs resident in other countries (SNA 93, 4.67).

HF.2.5 Corporations (other than health insurance)

This sector comprises all corporations or quasi-corporations whose principal activity is the production of market goods or services (other than health insurance). Included are all resident non-profit institutions that are market producers of goods or non-financial services (SNA 93, 4.68).

- ! The SHA is clear that HF.2.5 only covers market producers of goods and services and so any occupational health care financed by government or non-market NPISH will not appear here.

Box 14: A note on recording financial flows

The SHA gives a choice for methods of allocating expenditure to sources of finance in the final SHA tables. The first method is the financing agent method i.e. recording as the source of finance the ‘last’ financier i.e. the one who directly paid the provider of health care goods and services. The second one implies allocating expenditures to the ‘ultimate’ sources of finance i.e. the ones from which the finance originally came.

It would be ideal if Health Accounts developers could compile information on the detailed flows of finance and therefore at least both ends of the financing flow as well as any intermediate ones if they exist. This would give a fuller picture of the functioning of the health care system and may provide a good test for exhaustiveness of coverage of health activities. As mentioned in the general section, it is useful to sketch diagrammatically the health care system in a given country and to identify financial flows. If these financial flows are traced and measured and Health Accounts developers make sure that numbers add up to totals, the quality and reliability of Health Accounts is considerably enhanced.

If it is not possible to account for the full flows of financing due for example to resource constraints, the *SHA Guidelines* advises using the financing agent method as it is the one that most Health Accounts developers use and using a consistent method will improve comparability.

As an example for the financing agent method, if the government donates money to a charity which then pays for health activity, the financing agent is the charity and as such the source of financing in the SHA tables should be HF.2.4 NPISH.

It is worth remarking, however, that Health Accounts developers should aim at using both methods and record all the financial transactions which take place in their health care system (see SHA chapter 6).

14.3 Hints for finding and improving data

Private insurance (HF.2.1 and HF.2.2)

Countries have not reported too many compilation difficulties with this type of expenditure in Health Accounts so we will limit the discussion to some key points. First of all, we should distinguish between two types of expenditure borne by insurance companies:

- (i) *Claims and outlays on health.* Under some arrangements, households pay for health care and then get reimbursed – in this case we speak about ‘claims’ – whereas in other arrangements insurance companies finance health care interventions directly – in this case we use the more general term ‘outlays’.
- (ii) The *service charge*, defined as *total premiums paid towards health minus total claims/outlays on health*, assuming that there is no net change in the value of the funds held in reserve to be used to finance future claims.

The sum of all claims and outlays on health incurred by insurance companies in a country represents the total expenditure of insurance companies on health care goods and services in a strict sense. This expenditure will enter functions HC.1 to HC.5 in the ICHA-HC classification, depending on the type of health care provision that is financed. The sum of the service charges within an economy give the total for health insurance administration (which enters into function HC.7 in the ICHA-HC classification). Hence, the total premiums paid by

households to insurance companies for health therefore approximate the total expenditure by private insurance companies (HF.2.1 and HF.2.2)⁶⁵.

Box 15: Private social insurance vs. Private insurance (not social)

An insurance programme is designated as a *social insurance programme* if at least one of the following three conditions are met (SNA 93, Annex IV, para. 4.111):

Participation in the programme is compulsory either by law or by the conditions of employment; *or*

the programme is operated on behalf of a group and restricted to group members; *or*
an employer makes a contribution to the programme on behalf of an employee⁶⁶.

Expenditure on private social insurance in Europe is relatively minor so we will not focus on this distinction. Examples of private social insurance are ‘Obligatory insurance schemes for civil servants and policemen’ or ‘Funds spent on people who have special policies i.e. those who would be refused by the insurer but are protected by law and are allowed to participate in the scheme with special terms’ (both examples from the Netherlands).

There are several sources of information that may provide data on private insurance. The main ones are:

- *Enquiries into insurance companies' activities*
- *Data coming from umbrella organisations comprising several insurance companies (where they exist)*
- *National Accounts (ESA / SNA)*
- *Household surveys*

This information can be complemented with:

- *Health provider data*
- *Market research information*

Several countries have used *enquiries* and data from *umbrella organisations* to find out about insurance company expenditure. From these sources it is generally easy to trace the providers who have been paid. Sometimes, however, the functional breakdown is not easy to obtain. Here we propose a few ways to alleviate this problem, each of which with certain disadvantages. First of all, one could try to guess the function basing on the provider to which the funds are given (this has been done for example in Denmark). Hence, if the provider is a pharmacy the function will almost certainly be HC.5; if the provider is an out-patient centre, expenditure can be assigned to the function out-patient curative care etc. Clearly, the former example is a fairly neat assumption, whereas the latter is not.

Data on the functional breakdown could otherwise be obtained by looking at the consumption (household data) or production (e.g. hospital accounts) sides, trying to match flows of funds and trying to deduce where they were spent. Provider receipts might be very clear and match flows of finance with expenditure whereas other times one might have to make assumptions. The same goes for consumption data, which are treated more closely below.

⁶⁵ This is actually an approximation. See discussion on funds invested by insurance companies in chapter 13.

⁶⁶ See SHA chapter 11.

Finally, if no functional breakdown is feasible from the available data sources, one could use various proxies. For example, one could make a brave assumption that expenditure by insurance companies follows the functional distribution of overall national expenditure or the distribution of out-of-pocket expenditure. However, this would be a particularly sub-optimal solution as the Health Accounts wish to measure exactly the kind of difference that the use of such a proxy would disguise. The proxy to be used would depend on the insurance schemes present in different countries i.e. on the types of health activity for which policy holders are normally insured. More information on insurance company activities could be found through trade organisations, research and other private sector companies' information.

In *National Accounts*, household expenditure on the health insurance service charge is classified in ESA in COICOP 12.5.3; the remainder of the premium is classified in ESA in COICOP 06. Usually, the National Accounts COICOP compilation is such that it should be possible to distinguish the out-of-pocket and insurance company sources of finance amongst the expenditure classified to COICOP 06.

Household surveys such as the household budget survey could be used to find out total premiums paid by households to insurance companies and possibly to find out total claims made. However, household budget surveys may have relatively small sample sizes, and may not be the best instruments for recording claims.

In order to obtain high quality data Health Accounts developers are advised as usual to combine and reconcile information coming from consumption, source of finance and provider sides where possible.

It should also be mentioned that for insurance companies it is often difficult to separate health expenditure from non-health expenditure. Often insurance companies are not strictly health insurance companies but also provide life insurance and other services. In this case, often the split will be clear from an examination of the premiums paid (input orientation) or of the claims (output orientation). If difficulties arise, some keys such as personnel could be used (see Administration guideline for various techniques). Moreover, when enquiries are not present for every year, some estimation methods can be made by studying earlier expenditure trends (this has been done for example in Finland).

- ! There is a further difficulty here in that insurance companies may offer reduced premiums to employers on their health insurance if the employer also agrees to purchase other policies, such as pensions. In this case premiums would not always provide a true allocation between the health and non-health functions.

Private household out-of-pocket expenditure (HF.2.3)

There are several data sources for this type of expenditure, as follows:

- *Household surveys* of which: the household budget survey, other surveys harmonised with COICOP...
- *National Accounts*, especially COICOP
- *Government, social insurance and private insurance reimbursement data*

and this information can be complemented with:

- *Health provider data (including retail trade data for goods)*
- *Market research information*

Descriptions, advantages and disadvantages of these data sources can be found in the general part of this manual.

The base for the figures on household out-of-pocket expenditure is household surveys and national accounts' data on households. Data from COICOP is in a fairly aggregated form for use directly by Health Accounts developers. COICOP broadly distinguishes between medical goods, out-patient services and hospital services⁶⁷ and this does not allow us to get functional information and precise provider allocation. Moreover, COICOP data should always be checked by looking into the actual surveys and other sources of data in order to understand what expenditures have been included and what were missed out.

For this reason, these data need to be complemented and compared with government and insurance reimbursement data, health provider data and possibly market research information in order to correctly allocate expenditure to the SHA classifications. To successfully trace where private household funds were spent, a good starting point is having a solid understanding of health legislation, particularly in terms of knowing what services are free and what are not and where these services are usually provided. Then, provider receipts can be checked and compared with household data. After comparison and reconciliation of data sources, out-of-pocket expenditure can be placed in the various cells.

- ! Health Accounts compilers should consider that estimates of private expenditure on services coming from household surveys usually underestimate their real value. One possibility would be to apply an uplift factor based on expert advice or better empirical evidence of the bias.

In countries where household data are not available or are considered of too poor quality estimates of out-of-pocket expenditure could be calculated from reimbursement records, which has been done in Germany. Reimbursement records, however, are usually very complex and a solid understanding of the system is needed. Examples of calculations are:

$$\text{Household expenditure on dental care} = \frac{\text{Government Expenditure} * \text{Average \% reimbursed to households}}{\text{Average \% paid by the government}}$$

or

$$\text{Household expenditure on goods} = \text{Pharmacies' turnover} * (1 - \text{Average \% reimbursed to households})$$

or

$$\text{Household expenditure on goods} = \text{Pharmacies' turnover} - \text{Reimbursement by government}$$

Non-profit organisations serving households (NPISH) (HF.2.4)

Virtually every country has reported severe difficulties in obtaining estimates for health expenditure by NPISH. The main sources of information which are used are:

- Surveys on NPISH
- Provider information (surveys on various providers, provider receipts / accounts)
- Publications on NPISH
- National accounts

⁶⁷ COICOP is actually further classified in subcategories but is still too aggregate for our purposes

First of all, Health Accounts developers are advised to take into account the main NPISH that operate in a country on health. One of them is in many countries, the Red Cross. Such big and famous organisations receive a considerable amount of donations and certainly present some kind of public accounts and information, almost certainly of good quality, although perhaps not in a way that is consistent with the reporting made by other types of institution.

In a second stage, one should try to be as exhaustive as possible, looking into NPISH information and trying to establish which ones provide health services. In the UK, for example, there is an annual publication on NPISH that provides aggregated accounts for the main NPISH operating in the country. Clearly though, being totally exhaustive does not pay since it would be extremely difficult to study the case for every NPISH in the country. Instead, the Health Accounts developer should focus on the ones that seem to and whose volume of activity is conspicuous. Where umbrella organisations exist, they might have already carried out some aggregation work.

One effective way to build up a list of NPISH that provide health services would be the use of snowball sampling. Snowball sampling involves asking those NPISH already identified as providing health services to identify other NPISH they know about that also provide health services. The newly identified NPISH are then asked the same question, and so on. This is a quick and effective way of building up a list of NPISH that provide health services.

! Estimates based on snowball samples should be treated with care, as it will be unclear how they relate to the total population: for example, will the snowball sample include only the largest organisations, thus introducing some potential bias?

In the UK, a sample of the biggest NPISH in the publication was taken, as it was organised according to size. Each NPISH was allocated by majority principle to be a health or non-health provider according to the main aim, the description of activities and in some cases according to annual reports, mission statements and any other information that had been made available. The survey provided a ratio of health to non-health expenditure for NPISH that could be applied to the National Accounts total expenditure by NPISH. In the UK, there are no NPISH accounts, only a total expenditure figure for the sector.

In other countries, such as Hungary and the Netherlands, information was taken from specific NPISH surveys. In Spain, information was found in National Accounts, particularly in the input-output matrices.

The next step will be to find out the functional and provider breakdown of NPISH expenditure. One solution is to speak directly to people working for a few large NPISH, and apply the distribution to the total. Another solution would be to key the functional and provider breakdown with some other variable such as national expenditure on health for all other categories (although this is a very rough estimation since NPISH are likely to specialise in certain areas of health). In terms of the provider classification, a study of provider receipts can lead to results. This type of information was used in the Netherlands.

Corporations (HF.2.5)

For expenditure by corporations on occupational health care, information can be found in the Occupational Health Care guideline. For health benefits-in-kind provided by corporations to their employees, these benefits-in-kind can be of two forms:

- (i) The corporations pay for health insurance contracts
- (ii) The corporations pay directly for health care goods and services

The first of these has already been dealt with in *SHA Guidelines*; we suggested above to use a ‘financing agent’ method for classifying sources of finance and thus expenditure of this kind will be recorded under the source of finance “Private insurance.” For the second type of expenditure, the following sources could be used:

- *Business enquiries*
- *Labour market enquiries including surveys of incomes*
- *Ministry of Labour / Department of Work and Pensions information*
- *Household surveys*
- *Health provider data*

where *business and labour market enquiries* and *Ministry of Labour / Department of Work and Pensions* information probably constitute the core of the dataset.

Box 16: Deducing source of finance from provider receipts and ‘residuals’

This method is particularly useful for determining the contributions of sources of finance for which it is very difficult to obtain data (e.g. NPISHs). A method of this type has been used in the Netherlands. Let us see here the main steps which can be followed:

Identify providers and establish the total value of health care goods and services provided in the economy

Take the turnover / production and see what the various sources of receipt are (e.g. a hospital may have 60 lines of receipts). From these you can see who paid for the services provided. Let us see how this can be done:

First of all, take out government and insurance payments. For government and social insurance, there is usually precise data and for private insurance you get data from umbrella organisations or enquiries into insurance companies.

Whatever is left is shared between corporations, out-of-pocket expenditure, NPISHs and rest of the world. For corporations, there are various sources (treated above and in the occupational health care guideline) i.e. surveys on providers of occupational health care, studies on a few sample corporations, labour market enquiries etc.

If we take corporations out then, *the residual is out-of-pocket and NPISH expenditure*. Out-of-pocket expenditure is derived from household surveys and various reimbursement information. The leftover is then expenditure by NPISHs and rest of the world. This figure is then cross-checked with NPISH surveys, surveys on hospital receipts and foreign trade information.

Chapter 15: Imports and exports

15.1 Overview

As Health Accounts relate to the resident population of a country, that country's Health Accounts should not include exports of goods and services, but should include imports of goods and services that are for final use.

Imports and exports are defined by the existence of a transaction involving units in two different countries, and not necessarily the movement of a good across a border.

15.2 Existing definitions

A System of Health Accounts

The SHA provides a category in each of the provider and source of finance classifications to deal with non-resident sources of finance and non-resident producers. These are both termed "rest of the world".

The SHA identifies two items of foreign trade that should be reported: (i) foreign trade in medical goods and services for final use such as health care and pharmaceuticals purchased by tourists or patients seeking specialised care and (ii) foreign trade in capital formation in health care industries and health insurance.

The European System of Accounts

Imports and exports of goods and services consist of transactions in goods and services (sales, barter, gifts or grants) to/from residents from/to non-residents.

15.3 Explanation and interpretation of definitions

It is worth repeating that total health expenditure is given by the final use of resident units of health care goods and services plus gross capital formation in health care provider industries. The key phrase here is "final use of resident units". Hence, total health expenditure should exclude consumption of health goods and services by foreigners, but should include consumption of health goods and services by residents. A key point is that it does not matter where the consumption takes place.

There are three types of trade in health care goods and services of interest to the Health Accounts developer:

- Medical goods and services
- Private health insurance
- Government aid programmes

Medical goods and services

This item comprises exchanges of medical goods and services for final consumption (not for the purposes of intermediate consumption).

For *services*, it may be useful to consider the following examples:

- ─ **Cross-border supply:** This could be health counselling provided over the phone by an English doctor to a German patient. This would be an entry in the German, not UK, Health Accounts and is an export for the UK and an import for Germany.
- ─ **Consumption abroad:** This could be an Italian tourist receiving medical treatment in a hospital in France. This would be an entry in the Italian, not French, health account, and is an export for France and an import for Italy.

In this latter example, it is useful to distinguish between those who travel abroad for the purpose of receiving medical treatment (for example, some UK residents are sent abroad by the National Health Service for certain operations), and travel where medical treatment is incidental (for example, where the medical treatment related to an unforeseen accident). In the first case, the cost of travel and other related expenses should be included as an integral part of the cost of the medical treatment. In the latter case, they should not.

The situation for goods is similar to that for services. The transaction is either a movement of goods from one country to another, or it is the consumption of a good by a resident of one country in another country. An extra complication is the existence of costs associated with travel. These and other associated costs should be included under the cost of the health care if the primary reason for travel is health care.

This expenditure is included mainly in the ‘Health-related travel’ category of the International Monetary Fund Balance of Payments.

Private health insurance

This is the provision of health insurance to non-residents by resident insurance companies and vice-versa. As discussed elsewhere in *SHA Guidelines* (see the administration and insurance specific guideline), the foreign trade only includes the service charge element of the premium paid by households

This expenditure is included in category 5 ‘*Insurance services*’ of the International Monetary Fund Balance of Payments classification.

- ! Any other payments made by the insurer to or on behalf of non-residents should be excluded when allocating expenditure to HC.1 - HC.5.

Government aid programmes

This type of expenditure comprises goods and services provided by foreign governments to resident units and vice versa. Note that it is the provision of goods and services and not the financing by the foreign government that is important. For example, if the Austrian government donates money to other countries or to international organisations, this amounts only to a transfer of funds. If the German government provides health care goods and services for final use directly to a foreign country, this will be a health export for Germany and a health import for the foreign country (and should be reflected in that foreign country's, and not Germany's, Health Accounts).

The core of this type of expenditure is represented by government aid programmes for enhancing health in foreign countries. These could also be led by the military but, of course, only health expenditures should be taken into account.

Treatment in the SHA classifications

It should be clarified that only imports will be recorded in the SHA tables. Exports will not be recorded in the SHA tables; the concept is discussed here only in order to ensure that the Health Accounts developer excludes exports from total health expenditure and therefore the cells of the SHA tables. That said, it may be useful to record exports as an exhibit item in Health Accounts.

Imports will appear in the tables in the following ways:

In the *functional classification*, expenditure should be placed in the category corresponding to the type of good or service provided (as usual).

In the *provider classification*, the relevant provider is HP.9 – Rest of the world.

In the *source of finance classification*, different sources of finance will be possible e.g. HF.2.3 – Private household out-of-pocket expenditure, HF.2.2 – Private insurance enterprises, HF.3 – Rest of the world (when the service is provided for free to the resident by foreigners) etc.

15.4 Data and information collection

Medical goods and services

It should be remarked that EU countries generally possess very little information concerning foreign trade of health care goods and services for final use. It is perhaps worth stating here also that there are fairly large differences between countries in the balance between intermediate and final use concerning trade in health goods and services. For example, the majority of the UK's trade in medical goods and services is for intermediate consumption or production. Another extreme is perhaps Luxembourg, where imports and exports of health goods and services for final use may well be relatively high.

Using existing information

Given the relative lack of development of methods in this area, here the focus is on existing data sources that have been used by different countries to pick up international flows, albeit at least partially rather than advising on methods for getting comprehensive measures of foreign trade.

Some data on *intra-EEA exchanges* can be obtained by enquiring into the Ministry of Finance, Health or other relevant ministry which keeps track of health care imports and exports as specified by EEA regulations on “Entitlements to benefits in kind during a stay in a Member State.” When travelling within the EEA, Member States' citizens can complete an *E111* form that entitles them to receive emergency health care. At the end of the year, governments then take care of settlements. Apart from this EEA agreement, countries may have other *international agreements* and data on these should exist. Such data have been used in the Netherlands and the UK.

Netherlands

In the Netherlands, data are also available from the “Equalisation Board”, which is the institution which keeps track of international exchanges in health. Data was supplied to the Board by health insurance funds (there are 3 main funds that belong to this equalisation agreement) and the NSI then took data from the Board. The problem is that only a ‘net’ figure (exports – imports) was present. In the UK, the same process was followed and data were kept in the Ministry of Finance.

Germany

In Germany, data are available from social security funds participating in international agreements. However, only overall totals were available; in order to split these into the different health care functions, the overall fund activity split was used as a proxy.

Poland

In Poland, most information on imports is taken from *private insurance data*. In Poland people purchase health insurance mainly when they go abroad so private insurance data is a good proxy for expenditures borne when travelling abroad. Hence, in Poland a few insurance companies were called and the amount they spent abroad was found. This sample of

insurance companies was then used to impute the total. Data from private insurance companies were used in Germany as well.

Denmark

In Denmark, data on imports were obtained through **NHS reimbursement information**. Danish travellers carry a card with them on which health expenditures abroad are recorded and afterwards reimbursed by the NHS. Potentially, they could also find out about exports since foreigners who get treatment have a different **health ID** and these expenditures could be tracked down in the system (this however has not been done yet).

In some countries (such as Finland) Health Accounts developers believe that foreign trade is very limited and have no plans to estimate these amounts in the short term.

! It is clear from above that most countries can get some data on imports whereas exports seem to be harder to trace. This implies that there may be an overestimation of health expenditure due to unidentified exports.

If all else fails, a rough way of estimating exports of medical goods (in particular the consumption abroad element) could be to take the total turnover by pharmacies as reported in retail trade inquiries and subtract the amount consumed by resident units as reported in say household budget surveys. An alternative method would be to assume that medical good / ambulatory ratios are the same for both residents and non-residents and apply this ratio to get from ambulatory exports to exports of medical goods. If resorting to one of these methods the Health Accounts compiler will have to decide which is the most appropriate given data availability and reliability.

Collecting new data

For those countries for which trade in health goods and services for final use is envisaged to be relatively large, and where there is a dearth of available information for the Health Accounts developer, it may be worth collecting new data. An evaluation of costs and benefits is the first step. In Luxembourg, for example, foreign trade will play a significant part in determining health expenditure whereas in countries like Finland overlooking this amount might be justifiable.

Different ways of collecting data could be used for estimating imports and exports of health care for final use, starting with considering the addition of new questions to existing surveys. This would be relatively cheap and easier than building a whole new questionnaire. It might be that the extra questions only needed to be asked fairly infrequently, as an add-on module, which would reduce extra costs further. Surveys to which extra questions might be added could be:

- Health expenditure surveys
- Household budget surveys
- General surveys
- Travel surveys

Designing a new questionnaire or study is an expensive option. For *imports*, a questionnaire could ask whether people have travelled in the last year and if so how much they spent on health and on what. This new questionnaire could be built in conjunction with government ministries that have related interests (e.g. in tourism) so that building the questionnaire becomes worthwhile and that the costs can be shared.

For *exports*, a questionnaire could be sent to providers of health care (if they keep records of treatments of foreigners vs. nationals). Otherwise, one could conduct a short intensive study on a sample of representative providers, find out how many foreign patients have been treated and how much their treatment has cost, how it has been paid etc. From this sample, an estimate for the national level could be obtained. Alternatively, if the provision of health goods and services is concentrated in a few providers, the results of a study of these few providers would constitute the national estimates. It might also be worth studying private sector providers (aside public ones) as often people travelling for health reasons buy goods and services from specialised private health clinics.

Government aid programmes

Liaison with government ministries should lead directly to relevant information. In the UK, for example, there is a department called ‘Department for International Development’ which engages in various aid programmes, which provides and monitors government foreign aid. Other departments to look into are the Ministry of Health, the Treasury, the Foreign Affairs etc. NPISH data could also contain some expenditure of this type.

Chapter 16: Household production of health care

16.1 Overview

Health care provided by households constitutes a part, albeit possibly a relatively small part, of the total amount of health care provided in a country. Health Accounts therefore should include these activities. However, production of services by households for own use is not considered to be economic activity by ESA95 and SNA93, and thus household production of these services is ignored in National Accounts. Of course, the purchase of goods bought by households to be used in the "production process" is recorded as final expenditure.

16.2 Existing definitions

A System of Health Accounts

By household production of health care we mean the health care for the sick, infirm or old people provided in private households by family. Although not explicitly stated in the SHA, this also includes friends and neighbours.

The SHA recommends that the value of household production of health services is estimated as the cash transfers that are paid to those caring for family and friends with health needs.

From a provider point of view, such expenditure should be recorded in *HP.7.2 – Private households as providers of home care*

The European System of Accounts and related classifications

The cash transfers used as the basis for valuation of household production of health services are classified in ESA as "Social benefits other than social transfers in kind (D.62)".

16.3 Explanation and interpretation of definitions

Use of social transfer payments is merely as a proxy or estimate of household production of health care services, so there is no conceptual difficulty associated with how these funds are actually used by households i.e. the possibility that the social transfer payments paid to carers may be used to purchase health goods and services already recorded elsewhere in Health Accounts is not double counting.

Although it is possible that there are social transfer payments within the household sector which might match these definitions, the *SHA Guidelines* recommends that these transfers be ignored on the grounds that it is extremely difficult to gauge the purpose behind the transaction. The inclusion of social transfer payments should be restricted to those paid by the government and NPISH sectors.

Expenditure on household production of health care should be recorded in the following manner:

In the *functional classification*: the totality of household production will be classified as curative, rehabilitative or long-term care depending on the type of care which is being provided. However, given the very specific way in which this component is being valued, the allocation by function should be allocated according to the purpose behind the payment of the cash benefit. For example, if the benefit is paid to a family member for looking after someone with long-term health care needs, the function is HC.3 long-term care. Alternatively, if the benefit is paid to a carer on a temporary basis following an accident involving a family member e.g. a broken leg, the function is HC.1-2 curative and rehabilitative care.

The *mode of production* is home care.

In the *provider classification*, there is a provider category specifically for this type of expenditure. This is HP.7.2 – Private households as providers of home care

In the *source of finance classification*, the source of financing is the institution that grants the benefits in cash.

Benefits paid to carers of disabled or mentally impaired people are included as long as they are granted for health care (not social) services.

Box 17: Expanding the SHA definition of household production of health care

There may be interest in a more thorough exploration of household production of health services, and in some countries this may have been attempted in for example development of a household satellite account. Such an account might include ALL services provided by the household irrespective of whether there is a social transfer paid for that purpose.

If there is a national interest in the compilation of such information, it is important to explain the different bases of the two sets of information, that is the set of information compiled for international comparable Health Accounts compiled according to *A System of Health Accounts* and the set of information which is compiled as a response to particular national demands.

Further information on such accounts can be found by registering on the European Union website at:

<http://forum.europa.eu.int/Public/irc/dsis/tus/home>

16.4 Data and information collection

The identification of the major providers of social transfers paid to carers who are looking after those with health needs should be fairly straightforward. This is a key role for government and social insurance, and as such these institutions may be the sole providers in some countries. Ministries of health, welfare, social security, finance, labour, pensions etc as well as regional and local government equivalents are prime targets for your attention. Other institutions might include charities and religious organisations.

The next step, following the identification of providers of these social transfer payments, is to identify the value of the social transfers paid out. Budgetary information on government and social security spending should easily allow identification of the relevant items.

National Accounts may be a source of information. As mentioned earlier, these payments are classified as "Social benefits other than social transfers in kind (D.62)". National Accountants may already have available a detailed reckoning of the payments of interest to the Health Accounts developer.

A difficulty recognised by some at this stage is how to distinguish between health and social security. In many cases, single payments are made to those caring for those with both health and social care needs.

One solution, for example used in Poland and proposed for the UK, is to adopt a majority principle approach, and allocate the whole of a benefit according to the main purpose - whether health or other. However, this is an approach that is not entirely consistent with the rest of the SHA framework, and should be avoided if possible.

A better, but much more resource intensive solution, would be to construct an account for these social transfer payments in which the distinction between health and other functions is made. Such an account might be populated according to research carried out by government

or academia on the use to which these payments are put, or on the basis of studies on the effect on the health system of the introduction of such social transfer payments.

Box 18: Some examples of relevant social transfers

In Denmark the following benefits were included as household production of health care: *Grants for nursing dying relatives, Grants for nursing children and adults with reduced ability of daily function, Grants to parents with seriously ill children.*

In Finland, most benefits paid to carers were health-related rather than health. The social insurance institute, however, reimburses for care of children at home and this benefit was included.

In Germany, benefits were found in Nursing Care Funds.

So far *SHA Guidelines* has proposed a ‘source of finance approach’ to estimate household production of health care. This seems the most appropriate approach for this type of expenditure although some data and information may be found by looking at the production / consumption side. Sources such as a household income survey or from tax collection agencies could be used to find out about social transfers. This type of approach is particularly useful for social transfers paid by NPISH since these are very difficult to trace using a source of finance approach. Another idea is to enter a question into existing surveys about social transfer payments received and their purpose. In the UK census, for example, a question is:

“Q12 - Do you look after or give help to friends/ relatives/ neighbours who are;

- long-term physically/mentally impaired or disabled?
- have problems because of old age?

If so how many hours a week does this occur?”

Here, for example, it would be useful to add a question like “Do you receive any benefits related these services? And if so, how much?”

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ANNEXES

Annex 1: Abbreviations

ADL	Activities of Daily Living
APNHA	Asian Pacific National Health Accounts Network
BASYS	Beratungsgesellschaft für angewandte Systemforschung mbH
CEPS	Centre d'Etudes de Populations, de Pauvreté et de Politiques Socio-Économiques
CREDES	Centre de Recherche d' Etude et de Documentation en Economie de la Santé
COFOG	Classification of Function of Government
COICOP	Classification of Individual Consumption by Purpose
COPNI	Classification of Purpose of Non Profit Institutions
DREES	Direction de la Recherche des Etudes, de l'Evaluation et des Statistiques
DRG	Diagnosis related group
EPHF	Essential Public Health Functions
ESA	European System of Accounts
ESSPROS	European System of integrated Social Protection Statistics
Eurostat	Statistical Office of the European Communities
EU	European Union
GB	Great Britain
GDP	Gross Domestic Product
GNI	Gross National Income
HIVA	Hoger instituut voor de Arbeid
HRG	Health care resource group
IADL	Instrumental Activities of Daily Living
ICD	International Classification of Diseases
ICHA	International Classification for Health Accounts
ICHA-HC	ICHA classification for health care functions
ICHA-HF	ICHA classification for health care sources of funding
ICHA-HP	ICHA classification for health care providers
ICPM	International Classification of Procedures in Medicine
IGSS	Inspection Générale de la Sécurité Sociale
ISIC	International Standard Industrial Classification
MS	Member States
NA	National Accounts
NEHB	North Eastern Health Board
NIVEL	Nederlands instituut voor onderzoek van de gezondheidszorg
NPISH	Non profit institutions serving households
NSI	National Statistical Institute
OECD	Organisation for Economic Cooperation and Development
ONS	Office for National Statistics
OTC	Over-the-counter
PAHO	Pan American Health Organization
RIVM	Rijksinstituut voor Volksgezondheid en Milieu
SHA	A System of Health Accounts
SNA	System of National Accounts
UK	United Kingdom of Great Britain and Northern Ireland
USAID	United States Agency for International Development
WHO	World Health Organisation

Annex 2: Glossary

Actor	Synonym for "provider", which avoids the misuse of the term "provider" as shorthand for "provider of medical goods and services" (i.e. excluding providers of administration, finance and health insurance)
Benchmark	This is a term used for an aggregate figure which is thought to be of good quality and to which a distribution can be applied. For example, if a figure for long term nursing care is available and believed, this might be a benchmark on to which a distribution by mode of production could be applied i.e. the sum of the components is forced to be the same as the aggregate figure
Bottom-up approach	The practice of building up to a total from a detailed data source. For example, the completion health expenditure accounts for charities based on a detailed survey of charities' expenditure would be a bottom-up approach. See also top-down approach.
Final consumption	Final consumption consists of goods and services used by individual households or the community to satisfy their individual or collective needs or wants.
Health Accounts	Health Accounts are an internationally accepted tool for summarising, describing and analysing expenditure on health and its financing. The end product of the accounts is a set of interrelated tables which describe health care systems from various perspectives and answer key questions such as: How much is being spent on health care activities? Who funds these activities? Who provides these activities? What kind of activities are provided? In what setting are they provided?
Hotel costs	The term 'hotel costs' refers to the cost of activities such as cooking, cleaning and accommodation which are incurred as part of the cost of treatment when the mode of production is in-patient.
Intermediate consumption	Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.
Keys and keying	Using keys and keying refers to the practice of using the distribution of a proxy variable as a substitute for an actual distribution. For example, where no information on the distribution of expenditure across functions for a particular actor is concerned, that distribution of activities might be used as the "key" for allocating the functional distribution
Production boundary	This refers to the definition of what is deemed economic activity within the National Accounts. In basic terms, all paid activities are included as well as unpaid production of goods for own use. Unpaid production of services for own use are excluded from the National Accounts production boundary, hence the need to estimate household production of health care services separately for Health Accounts.

Top-down approach	The practice of disaggregating a total provided from an exogenous source according to relevant and available information. For example, the compilation of a total expenditure figure for charities based on a survey of charities would be a bottom-up approach. See also bottom-up approach.
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Annex 3: List of related EU funded projects

Projects (Title)	Institutes	Expected Outputs	Need of co-ordination
Development of a Methodology for Collection and Analysis of Data on Efficiency and Effectiveness in Health Care Provision Eurostat Grant:	BASYS CREDES	To evaluate a) the demand for information and analysis relating to efficiency and effectiveness and to evaluate b) the MS' ability to supply the data needed for this demand; Based on the findings of the evaluation, to develop a <i>methodology for collection and analysis of data</i> , consisting of a <i>framework concept</i> (c) of efficiency and effectiveness analysis, a <i>suggested list of detailed data needed</i> for applying that framework concept (d), and of <i>recommendations on data collection and analysis</i> (e);	With respect to macro efficiency with Eurostat Grant MDS and Eurostat Projects SHA and HLA
System of Health Accounts (SHA) in the EU: Definition of a Minimum Data Set and of Additional Information Needed to Analyse and Evaluate SHA Eurostat Grant:	BASYS CREDES-CEPS-IGSS	To evaluate the demand for SHA data and the MS' ability to supply these data; To develop a <i>concept</i> for a minimum data set (MDS) and of additional data considered necessary, based on the findings of the evaluation; To <i>co-ordinate</i> with other relevant projects and activities.	MS' ability to supply SHA data is also part of Eurostat Project SHA and HLA
Statistical Analysis and Reporting of Data on Health Accounts Eurostat Project: Reference: 2001/S 144-0989/EN	BASYS	an evaluation of existing statistical data and meta information in the Member states relating to Health Account data and health expenditures, a comprehensive proposal on how to improve the calculation of SHA-base health expenditure data in the MS, based on the finding of the evaluation, -a proposal of procedures, which could contribute to greater synergies in the implementation process.	The procedures to implement SHA is also part of the Eurostat Grant GUIDE
Implementing the Concept of Health Care Manpower in Member States on a Prototype Basis Eurostat Project: Reference: 2002/S 170-136143	BASYS HIVA NIVEL	Evaluate all existing statistical data and meta information in Health Care Manpower in MS as described in the final report of the predecessor project (EVALUATION OF DATA SOURCES), including a potential update of the data sources. Start the INITIAL COLLECTION OF SAMPLE DATA, the evaluation of the associated data quality and comparability and draft the recommendation of data sources to be included in the FINAL COLLECTION OF PROTOTYPE DATA Develop a draft concept for improved Health Care Manpower data in Member States Prepare a draft electronic file (Microsoft Access or Excel) containing the FINAL COLLECTION OF PROTOTYPE DATA on Health Care Manpower and draft a manuscript for a Eurostat publication, which contains the final draft concept for improved Health Care Manpower data in Member States under b) and the results obtained on its basis Delivery of the final data file and final manuscript for publication as described under c)	With respect to metadata and update a co-ordination with SHA an EUCOMP is necessary
Towards Comparable Health Care Data in the EU Eurostat Grant	NEHB	Metadata on functional breakdown of health care systems in Member States, by reference to international health care classifications, detailing health care functions performed, as well as the activities linked to these functions.	EUROCOMP I already finished, EUROCOMP II with respect to metadata collection with SHA and HLA
Eurostat Grant	CEPS-IGSS		AGESEX already finished: results are important with respect to Eurostat Grants EFF and MDS and EU Grants GUIDE and ECHI,
Integrated approach to establishing	RIVM	Proposing a comprehensive list of health indicators ' <i>to contribute to the establishment of a Community health monitoring system</i> ', in order to:	Co-ordination with ECHI II necessary after decision on care

European Community Health Indicators EU Grant		Measure health status, its determinants and the trends therein throughout the Community; Facilitate the planning, monitoring and evaluation of Community Programmes and actions, and Provide MS with appropriate health information to make comparisons and support their health policies.	indicators
Integrated approach to establishing European Community Health Indicators EU Grant	RIVM	Proposing a comprehensive list of health indicators ' <i>to contribute to the establishment of a Community health monitoring system</i> ', in order to: Measure health status, its determinants and the trends therein throughout the Community; Facilitate the planning, monitoring and evaluation of Community Programmes and actions, and Provide MS with appropriate health information to make comparisons and support their health policies.	Co-ordination with ECHI II necessary after decision on care indicators

Source: BASYS

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Annex 5: ICHA-HC classification of health care and health-related functions

HC.1	Services of curative care
HC.1.1	In-patient curative care
HC.1.2	Day cases of curative care
HC.1.3	Out-patient curative care
HC.1.3.1	Basic medical and diagnostic services
HC.1.3.2	Out-patient dental care
HC.1.3.3	All other specialised health care
HC.1.3.9	All other out-patient curative care
HC.1.4	Services of curative home care
HC.2	Services of rehabilitative care
HC.2.1	In-patient rehabilitative care
HC.2.2	Day cases of rehabilitative care
HC.2.3	Out-patient rehabilitative care
HC.2.4	Services of rehabilitative home care
HC.3	Services of long-term nursing care
HC.3.1	In-patient long-term nursing care
HC.3.2	Day cases of long-term nursing care
HC.3.3	Long-term nursing care: home care
HC.4	Ancillary services to health care
HC.4.1	Clinical laboratory
HC.4.2	Diagnostic imaging
HC.4.3	Patient transport and emergency rescue
HC.4.9	All other miscellaneous ancillary services
HC.5	Medical goods dispensed to out-patients
HC.5.1	Pharmaceuticals and other medical non-durables
HC.5.1.1	Prescribed medicines
HC.5.1.2	Over-the-counter medicines
HC.5.1.3	Other medical non-durables
HC.5.2	Therapeutic appliances and other medical durables
HC.5.2.1	Glasses and other vision products
HC.5.2.2	Orthopaedic appliances and other prosthetics
HC.5.2.3	Hearing aids
HC.5.2.4	Medico-technical devices, including wheelchairs
HC.5.2.9	All other miscellaneous medical durables
HC.6	Prevention and public health services
HC.6.1	Maternal and child health; family planning and counselling
HC.6.2	School health services
HC.6.3	Prevention of communicable diseases
HC.6.4	Prevention of non-communicable diseases
HC.6.5	Occupational health care
HC.6.9	All other miscellaneous public health services

HC.7	Health administration and health insurance
HC.7.1	General government administration of health
HC.7.1.1	General government administration of health (except social security)
HC.7.1.2	Administration, operation and support activities of social security funds
HC.7.2	Health administration and health insurance: private
HC.7.2.1	Health administration and health insurance: social insurance
HC.7.2.2	Health administration and health insurance: other private
HC.R.1	Capital formation of health care provider institutions
HC.R.2	Education and training of health personnel
HC.R.3	Research and development in health
HC.R.4	Food, hygiene and drinking water control
HC.R.5	Environmental health
HC.R.6	Administration and provision of social services in kind to assist living with disease and impairment
HC.R.7	Administration and provision of health-related cash-benefits

Annex 6: ICHA-HP classification of health care providers

HP.1	Hospitals
HP.1.1	General hospitals
HP.1.2	Mental health and substance abuse hospitals
HP.1.3	Speciality (other than mental health and substance abuse) hospitals
HP.2	Nursing and residential care facilities
HP.2.1	Nursing care facilities
HP.2.2	Residential mental retardation, mental health and substance abuse facilities
HP.2.3	Community care facilities for the elderly
HP.2.9	All other residential care facilities
HP.3	Providers of ambulatory health care
HP.3.1	Offices of physicians
HP.3.2	Offices of dentists
HP.3.3	Offices of other health practitioners
HP.3.4	Out-patient care centres
HP.3.4.1	Family planning centres
HP.3.4.2	Out-patient mental health and substance abuse centres
HP.3.4.3	Free-standing ambulatory surgery centres
HP.3.4.4	Dialysis care centres
HP.3.4.5	All other out-patient multi-speciality and co-operative service centres
HP.3.4.9	All other out-patient community and other integrated care centres
HP.3.5	Medical and diagnostic laboratories
HP.3.6	Providers of home health care services
HP.3.9	Other providers of ambulatory health care
HP.3.9.1	Ambulance services
HP.3.9.2	Blood and organ banks
HP.3.9.9	Providers of all other ambulatory health care services
HP.4	Retail sale and other providers of medical goods
HP.4.1	Dispensing chemists
HP.4.2	Retail sale and other suppliers of optical glasses and other vision products
HP.4.3	Retail sale and other suppliers of hearing aids
HP.4.4	Retail sale and other suppliers of medical appliances (other than optical glasses and hearing aids)
HP.4.9	All other miscellaneous sale and other suppliers of pharmaceuticals and medical goods
HP.5	Provision and administration of public health programmes
HP.6	General health administration and insurance
HP.6.1	Government administration of health
HP.6.2	Social security funds
HP.6.3	Other social insurance
HP.6.4	Other (private) insurance
HP.6.9	All other providers of health administration

- HP.7 Other industries (rest of the economy)
 - HP.7.1 Establishments as providers of occupational health care services
 - HP.7.2 Private households as providers of home care
 - HP.7.9 All other industries as secondary producers of health care
- HP.9 Rest of the world

Annex 7: ICHA-HF classification of health care sources of funding

- HF.1 General government
 - HF.1.1 General government excluding social security funds
 - HF.1.1.1 Central government
 - HF.1.1.2 State/provincial government
 - HF.1.1.3 Local/municipal government
 - HF.1.2 Social security funds
- HF.2 Private sector
 - HF.2.1 Private social insurance
 - HF.2.2 Private insurance enterprises (other than social insurance)
 - HF.2.3 Private household out-of-pocket expenditure
 - HF.2.3.1 Out-of-pocket excluding cost-sharing
 - HF.2.3.2 Cost-sharing: central government
 - HF.2.3.3 Cost-sharing: state/provincial government
 - HF.2.3.4 Cost-sharing: local/municipal government
 - HF.2.3.5 Cost-sharing: social security funds
 - HF.2.3.6 Cost-sharing: private social insurance
 - HF.2.3.7 Cost-sharing: other private insurance
 - HF.2.3.9 All other cost-sharing
 - HF.2.4 Non-profit institutions serving households (other than social insurance)
 - HF.2.5 Corporations (other than health insurance)
- HF.3 Rest of the world