

PART I
Chapter 3

**Accounting Concepts
and SHA Aggregates**

Introduction

This chapter presents an overview of the main accounting concepts and aggregates used throughout the Manual. While each aggregate is considered in further detail in the following chapters, here the focus is on the relationship between the consumption of health care goods and services and all the other possible uses of health care goods and services in the economy. The range of possible uses includes intermediate consumption (or factors of provision), analysed in Chapter 9, capital formation, presented in Chapter 11, and exports, examined in Chapter 12 together with imports. This chapter examines the central concept of consumption, considering the distinction between final consumption expenditure and actual final consumption and discusses the role of capital transfers. Various issues concerning the valuation of market and non-market transactions are also explored.

The chapter both starts and concludes with a discussion of the main similarities and differences between the System of Health Accounts and the System of National Accounts (SNA); it relates information on the health sector to the national economy accounting rules and considers differences in the production boundaries of the two systems.¹

Accounting and national accounting as a base for the System of Health Accounts

Accounting is, in the words of the American Institute of Certified Public Accountants (AICPA), “*the art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events which are, in part at least, of financial character, and interpreting the results thereof*”. When this refers to the accounting of the individual actors or “institutional units” in the economy, such as households, enterprises and public bodies or government agencies, this is sometimes referred to as micro-economic accounting. When this refers to the measurement of a nation’s economic activity (as compared to business activities, which are recorded in business accounts), we may talk about national accounts or macro-economic accounts. Health accounts, in turn, refer to summary accounts for expenditure with a health purpose in a particular economic territory or a nation, which aggregates the expenditure of different actors for this purpose. This sits in between micro and macro-accounting, and is sometimes referred to as meso-economic accounting.

The System of Health Accounts draws upon and relies on health care-related accounts of both individual units and organisations, as well as certain aggregates compiled as part of the national accounts. The more closely SHA can link to business accounting and public accounting standards, to international and national health recording guidelines, and to national accounting definitions, the more feasible it will be to produce health accounts and the more useful they will be for analyses. Accounts that can be linked to national accounts are known as satellite accounts to the national accounts framework. Although SHA uses methodologies that are closely linked to the main national accounts methodology, the system is not bound to employ exactly the same concepts and can focus more on health specific issues. As SHA focuses on current health spending for consumption purposes and

is tri-axial – linking consumption to provision and to financing – it does not qualify as a full SNA satellite account. In order for the SHA to become an SNA satellite account, it would need additional information on the production of the health care industries.² Annexes A and B discuss in more detail the links and mappings between health accounts and national accounts statistics that are required to support the development of health accounts using national accounts information.

National accounts typically present the whole range of the production, distribution and consumption activities of an economy's *institutional units* (corporations, government, households and non-profit institutions). They measure the stocks (accumulation to a point in time) and the flows (over time) in an economy. The main aggregate measures in national accounts are gross domestic product (GDP), gross value added, disposable income, saving and external trade. The typical national accounts tools include input-output tables (showing how industries interact with each other in the production process), and the national balance sheet (showing assets on one side and liabilities and wealth on the other). The accounts are derived from data sources, including surveys, administrative and census data and official records. They are structured in a sequence of accounts components that include current accounts (production, income and expenditure accounts), capital accounts, financial accounts and balance sheets. Each account has a balancing item, which is obtained by subtracting the total value of the entries on one side of an account (uses or assets) from the total value on the other side (resources or liabilities). This ensures that the accounts balance, and provides information such as value added, operating surplus, disposable income, saving, net lending/net borrowing and net worth.

The final section of this chapter examines in more detail the relationship between expenditure on health, as defined in the System of Health Accounts, and the components of consumption, as defined in the national accounts.

The consumption, availability and use of health care goods and services

This section examines the central SHA concept of the *consumption* of health care goods and services in relation to the SNA perspective of the *use* of health care goods and services. The boundary of what constitutes health care under the SHA is delimited in Chapter 4, and the health care goods and services within that boundary are classified in the functional classification in Chapter 5.

All health care goods and services that are available in a country are either supplied by domestic providers or have been imported from the rest of the world. They can then be put to different uses, either to satisfy the health needs of the population, or as inputs to produce other health care goods and services. For example, a radiologist might provide a consultation to patients resident in the country, to foreign tourists, or to another health provider (a colleague or a hospital, for example). Those health care goods or services produced and imported in the economic territory and used by a resident to satisfy an individual or collective need are classified as final consumption and included in the health accounting framework. However, the following cases are considered to lie outside the boundaries of the SHA accounts, which encompass functions, providers and financing schemes:

- If the user is non-resident, the products are considered as exports;
- If the health care goods and services are used by other health care providers, they are considered as factors of provision (intermediate consumption); and

- If the health care goods are stored for future use they are accounted for as a change in inventories or stocks of goods.

Figure 3.1 presents, in schematic form, all the possible uses of health care goods and services. The two main uses are: as inputs into the production of other health care goods and services (as factors of provision), and as final uses. Final uses itself can be broken down into final consumption expenditure; investment (or gross capital formation); and exports. The shaded area represents the total *final consumption expenditure* on health care goods and services, which corresponds to current health expenditure and the triangular identity between consumption, provision and financing, introduced in Chapter 2 as the basis of the System of Health Accounts.³

Intermediate uses consist of those health care goods and services that are consumed (used-up or transformed) in the production process. Examples include a radiology consultation provided to another health care provider and medical materials used in operating theatres. The provision of a service from, say, one hospital to another is counted as an input into the overall service to the patient by the second hospital, and only at this point counted as final consumption. In this example, the additional compilation of the consultation of the first hospital would lead to double-counting from a consumption point of view and is therefore not shown separately. Such products, which could be either produced by domestic firms or imported from the rest of the world, are used together with other “intermediate consumption” goods and services produced by the rest of the economy (e.g. electricity, water, fuel and protective wear) and capital goods. Capital goods, which include MRI machines and hospital buildings, are characterised by the fact that they are used repeatedly and for more than one year in the delivery of health care services by providers.

Figure 3.1. **The uses of health care goods and services**

Health care goods and services		Total uses of health care goods and services		
		Factors of provision	Final Consumption	Gross capital formation
Functions				
Providers	Produced within the economic territory	Health care goods and services purchased within the economy and abroad by residents		
	Imports			
		Financing		

Source: IHAT for SHA 2011.

Within the category of final consumption, household final consumption expenditure consists of the expenditure incurred by resident households for the individual consumption of goods and services, including the consumption of goods and services acquired abroad.

Final consumption expenditure by general government consists of expenditure incurred by government units, which itself can be divided into two types: those expenditures incurred for the benefit of individual households (individual) and those incurred for the benefit of the community as a whole, or of large sections of the community (collective).

Individual goods and services are thus distinguished from collective or public goods and services and have the following characteristics:

- It must be possible to observe and record the acquisition of the good or service by an individual household or member thereof and also the time at which the acquisition took place;
- The household must have agreed to accept the provision of the good or service and to take whatever action is necessary to make it possible, for example, by attending a school or clinic; and
- The good or service must be such that its acquisition by one household or person, or possibly by a small, restricted group of persons, precludes its acquisition by other households or persons.

By contrast, collective services have the following characteristics:

- Collective services are delivered or made available simultaneously to every member of the community or to particular sections of the community, such as those in a particular region of a locality;
- The use of such services is usually passive and does not require the explicit agreement or active participation of all the individuals concerned; and
- The provision of a collective service to one individual does not reduce the amount available to others in the same community or section of the community. There is no rivalry over acquisition.

With relation to health services, collective health services refer notably to some preventive and health promotion services, but also by convention cover the governance and administration services of the health system.

The treatment of consumption expenditures incurred by non-profit institutions serving households (NPISH)⁴ is very similar to that for general government. However, whereas government expenditures are financed in large part out of taxation, NPISH expenditures are financed principally out of subscriptions, contributions or donations, or property income. NPISH final consumption expenditure consists of the expenditure incurred by resident NPISH on individual consumption goods and services and on collective consumption services.

Final consumption expenditure, as detailed above, refers to “who incurs”. But the total of final consumption may also be viewed from another angle, that is, “who consumes”. In this way *actual final consumption of households* is measured by the value of all the individual consumption goods and services acquired by resident households, irrespective of who incurs the expenditure. Therefore, we can identify three sets of goods and services entering into household actual final consumption: those acquired through the final consumption expenditure of households themselves and those acquired as social transfers in kind both from government and from NPISH, that is, goods and services purchased on behalf of individuals. The goods and services can be the output of these institutions as non-market producers, or they may have been purchased by these institutions from market producers

for onward transmission to households for free or at prices that are not economically significant.

Main aggregates of health expenditure

Total expenditure on health (SHA 1.0)

The approach taken in SHA 1.0 was to sum up the two aggregates of “current expenditure on health” and “gross capital formation” to arrive at “total health expenditure”. However, the use of the aggregate “total health expenditure” tended to be misunderstood. In effect, while current health expenditure refers to final consumption, which is the demand for health care goods and services by households, government and non-profit institutions, gross capital formation refers to the demand for capital goods by health providers. Thus, it could be argued that the two aggregates cannot be directly summed up as they refer to different timings of consumption, since capital formation enables future provision. For this reason, it is recommended to keep the two aggregates “current expenditure on health care” and “gross capital formation in health care” separate under SHA 2011, and to discourage the use of the aggregate “total health expenditure”, at least with respect to how it was used in SHA 1.0.

Current expenditure on health care

In measuring expenditure on health care goods and services, current expenditure on health can be defined as follows.

Current expenditure on health care = final consumption expenditure of resident units on health care goods and services

In other words, current expenditure on health quantifies the economic resources spent on the health care functions as identified by the consumption boundaries set in Chapter 4. Furthermore, SHA concerns itself primarily with the health care goods and services consumed by resident units *only*, irrespective of where that consumption takes place (i.e. in the economic territory or in the rest of the world), or indeed who is paying. Therefore, exports of health care goods and services (provided to non-resident units) are *excluded*, whereas imports of health care goods and services for final use, for example, those goods and services consumed by residents while abroad, are *included*.

Expenditure on gross capital formation in the health care system

The distinction between current expenditure on health care goods and services and capital expenditure in health care industries is an important one. Capital goods are an essential component of the demand of health care providers and play a crucial role in the provision of health care goods and services by maintaining or expanding their production.

Gross capital formation in health care is defined as the acquisition of produced assets; that is, assets intended for use in the production of other goods and services over a period of one year or more. It is the sum of the values of the following three components:

- Gross fixed capital formation;
- Changes in inventories; and

- Acquisitions less disposals of valuables.

Therefore, gross fixed capital formation is one of the three elements included in the wider aggregate called gross capital formation.

In calculating the acquisition of produced assets in capital formation, the disposal of existing assets should be deducted from the value of the acquired capital goods. Such capital may be tangible assets, for example, hospital buildings, ambulances or MRI machines, or intangible assets, such as investment in software and databases.⁵ Gross capital formation can be further broken down according to the health care provider industry. It should be noted that, for the most part, capital goods are produced by branches or industries outside the realm of health care providers.

The guiding criterion for the recording of gross capital formation is the ownership of the assets by the health providers. The only category of health providers for which capital formation would not be recorded is the rest of the world, as the acquisitions of capital by non-resident providers will be recorded in the country of residence of the provider.

The inclusion of all providers (except the rest of the world) is a departure from SHA 1.0, which excluded the net acquisition of capital assets by retailers of medical goods (as the retail sale of medical goods is regarded as a supporting activity). The recommendation to also record the value of gross capital formation acquired by retail sellers is motivated by the fact that retail sales are part of the health system. Retail sellers are part of the distribution of medical goods – they are a different type of provider, but arguably as relevant as medical offices. In summary, the definition of “capital formation” is the following:

Gross capital formation in the health care system is measured by the total value of the assets that providers of health services have *acquired* during the accounting period (less the value of the disposals of assets of the same type) and that are used repeatedly or for more than one year in the provision of health services.⁶

Capital transfers to health care providers

Capital transfers⁷ from financing agents to health providers for the purpose of capital formation may deserve particular attention.

The extent to which the remuneration of the health services covers operating together with capital costs can vary widely across and indeed within countries (Box 3.1). In a few countries, the payments that providers receive for the delivery of health services include operating costs only, while capital expenses are covered by separate grants that health providers receive from different levels of government or by philanthropic organisations. For example, the financing system used in Germany for the remuneration of hospital services, based on diagnosis-related groups (DRG), excluded from the payment for health services the capital costs of reconstruction and medical equipment, which are subsidised by capital transfers by the German States (“Länder”) based on their investment programmes, in co-ordination with their strategic hospitals plans.

More common, at least in OECD countries, is the case of partial coverage of capital expenses through the payment received for the delivery of the health services, with the remaining part funded by specific investment grants. For example, in Luxembourg,

hospital charges paid by the *Sécurité Sociale* covered 20% of capital costs, while the remaining 80% is paid with government investment grants funded out of taxes. Similar situations have occurred in France, where charges for hospital services covered only part of the capital costs.

By contrast, there are also payment schemes that cover both the operating costs and capital expenses. For example, Medicare fees for hospital services in the United States include the full coverage for capital expenses. Similarly, in Canada the costs for major medical equipment may be reimbursed through operating expenses. In Germany, investment surcharges are included in fees for some long-term care services.

Typically, for private providers in OECD countries, charges for service delivery very often fully cover capital expenses, although even here in a few cases governments may also make capital transfers for the purchase of medical equipment.

Looking at some further examples, in December 2007, the Federal Parliament in Switzerland passed a reform of the hospital financing system that introduced a DRG payment system. Under the new arrangement, payments to hospitals remunerate both the operating costs and capital costs. In the Netherlands, a case-mix system based on “diagnosis treatment combinations (DBC)” was introduced for the reimbursement of hospitals and medical specialist care in 2005. Prices negotiated between health insurers and hospitals include capital costs, while prices based on fixed tariffs do not. However, hospitals that get paid on a fixed price basis may be compensated in the following year by the Ministry of Health for the capital costs incurred.

The presence of such wide-ranging payment mechanisms, and the different extent to which capital costs are included in prices, can potentially affect the comparability of health expenditure across countries, between parts of the same health system, or over time. A possible solution to the potential loss of comparability is to adjust current health expenditure by adding the capital transfers that financing agents transfer to the health providers to fund the part of capital expenses not covered by charges for operating costs.

This Manual proposes the sum of “current health expenditure” plus “capital transfers”, which could be called “overall health expenditure”, as an additional aggregate, and encourages further research to gather empirical evidence on the potential of this concept to improve international comparability compared to the use of “current health expenditure” alone.

Research and development

In the 2008 SNA, research and development is considered as an intellectual property product and as such included as part of capital formation. The results of research and development (R&D) “consists of the value of expenditures on creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and use of this stock of knowledge to devise new applications. This does not extend to including human capital as assets within the SNA. The value of research and development (R&D) should be determined in terms of the economic benefits it is expected to provide in the future. This includes the provision of public services in the case of R&D acquired by government. In principle, R&D that does not provide an economic benefit to its owner does not constitute a fixed asset and should be treated as intermediate consumption. Unless the market value of the R&D is observed directly, it may, by

Box 3.1. Layers of the core accounts and health financing

Pricing policies of health providers can vary widely between countries and providers and over time. Sometimes financing schemes, rather than paying for the outputs, pay for the inputs, that is, the factors of provision, such as compensation of employees and capital services. All the diverse types of transactions that reimburse providers for the provision of health care in the current period should be considered in the measurement of health expenditure. As outlined in Chapter 9, the valuation of the cost of services includes the consumption of both interest and fixed capital. The valuation of the transactions covering consumption (HC) should comprise their full cost and all the current payments made by financing schemes (HF) or financing agents (FA) to providers (HP). Accounts capture the sales and other revenues of providers that equal the purchases of financing schemes:

Total consumption and provision of *health care* for residents equals total revenues of domestic health care providers for health care less provision for non-residents plus residents' purchases of health care abroad:

$$\sum_{i=1}^9 HC_i^{residents} = \sum_{j=1}^8 (HP_j^{total} - HP_j^{non-residents}) + HP_9^{residents} = \sum_{k=1}^6 \sum_{l=1}^n FA_{kl}^{residents} \quad [1]$$

The kind of economic transactions ($l=1, \dots, n$) for the purchase of services vary in the income statements of provider accounts and financing agents. The main categories are direct payments, global budgets, lump-sums, fee-for-service payments, cost-sharing, in-kind reimbursement, subsidies and possibly also transfers for capital cost/expense. Suppose that in equation [1] the index $l=n$ stands for capital transfers, then the following equations hold for current health care expenditure and capital transfers for health care:

$$\text{Current health care expenditure} = \sum_{i=1}^9 HC_i^{residents} - \sum_{k=1}^6 FA_{kn}^{residents} \quad [2]$$

$$\text{Capital transfers for health care} = \sum_{k=1}^6 FA_{kn}^{residents} \quad [3]$$

It is recommended to give special attention to the revenues of providers coming from government and other financing agents in the form of expenses for capital formation, investment grants and other transfers, because these transfers might include transfers for capital formation of future periods that do not affect the consumption of health care in the current period (see Chapter 11). Capital transfers might also be difficult to assign to specific functions, and therefore should be reported for providers. The compilation of the demand of capital goods by health care providers is further outlined in Chapter 11.

For the consumption and provision of *health-related activities*, the following equation holds:

$$HC_R = \sum_{j=1}^9 HP_{R,j}^{total} - \sum_{j=1}^9 HP_{R,j}^{non-residents} = \sum_{k=1}^6 \sum_{l=1}^n FA_{R,kl}^{residents} \quad [4]$$

The subscript R denotes the health-related activities of consumption, provision and financing. Health-related activities consumed abroad are not included.

convention, be valued as the sum of costs, including the cost of unsuccessful R&D...” (SNA 2008, 10.103).

Although according to the SNA, R&D of health care providers should be recognised as part of capital formation, for practical reasons the SHA regards R&D in health as a capital-related expenditure and therefore to be recorded as a memorandum item to the capital account.

Examples of R&D include those linked to the generation of specific products such as vaccines and pharmaceuticals that result from basic research and biomedical, clinical research and research on risk factors.

The *Frascati Manual*, which provides detailed guidelines for the estimation of expenditure on research and development in health (OECD, 2002a, Annex 4), may be a source of useful examples. Further information on international comparisons and examples of national initiatives can be found in “Measuring expenditure on health-related R&D” (OECD, 2001). The separate recording of expenditure on R&D as a component of capital formation is suggested and is expected to be an area for further development.⁸

Expenditure on “education and training” is treated in a similar way to Research and Development in that it is conceptually close to capital when it refers to investment in human capital. In the SHA, it is treated as capital-related expenditure and therefore recorded as a memorandum item to the capital account. As is stated in the SNA, when training is part of programmes to ensure an improvement of ongoing activities, it is considered as intermediate consumption.⁹ This means that all resources involved in training in those circumstances should be accounted for as intermediate consumption: the salaries paid during the training (to trainers and to trainees) as well as the specific additional resources to undertake the activities, which is part of the resources used in the various health programmes, and thus recorded above the line within the programmes in the functions.

Rest of the world

A measure of final consumption expenditure of *residents* needs to consider interactions with the rest of the world. Imports and exports of goods and services are defined by the existence of a transaction (sale, barter, gift, grant, etc.) in goods and services between residents and non-residents. Given the increasing importance of trade in health care goods and services, a consistent and comparable aggregate of health care expenditure that takes account of this trade is necessary.

In this respect it is important to clarify the concepts of residence and what is to be included under imports and exports. Residents include any individual, enterprise or other organisation ordinarily domiciled domestically. To ensure compatibility with other macroeconomic statistics, SHA takes its lead from the definitions contained in the Balance of Payments Manual (BPM6) (IMF, 2009): “The residence of each institutional unit is the economic territory with which it has the strongest connection, expressed as its centre of predominant economic interest. Each institutional unit is a resident of one and only one economic territory determined by its centre of predominant economic interest.”

Health care goods and services acquired by non-residents from resident providers are *exports*. For example, health care provided to non-resident tourists represents an export. Exports can, however, take other forms which do not necessarily imply the movement of the user across the border. Consider, for example, the increasing importance of e-health,

tele-diagnosis, or the purchase of medical goods through the Internet. Another example relates to health professionals providing services abroad on a temporary basis. Health services provided to foreign enclaves such as embassies are also part of exports.

In the System of Health Accounts, the category *rest of the world*, relating to non-resident units, is referred to in the provider and financing schemes classifications. However, with respect to imports and exports of health care goods and services, it is important to clarify that it is the provision rather than the financing by non-resident units that is of interest here. For example, if a foreign government or non-resident non-governmental organisation (NGO) pays for health services for residents, but these services are actually provided by a domestic provider, then these services are indeed financed by the rest of the world, but are not classed as an import. If, however, the services are *provided* by a foreign government to a resident, then this is indeed accounted for as an import.

In SHA tables, therefore, imports of goods and services from non-resident units are recorded under the provider category *rest of the world* (HP.9) and can be cross-classified against the functional and financing classifications. Within the current health expenditure account, exports are not included since they refer to consumption by non-residents. During compilation, the direct purchase of health care goods and services by non-residents will therefore often need to be explicitly excluded from domestic provider revenues. However, for transparency and reconciliation, it is recommended that *exports* should also be reported in a supplementary trade table (Chapter 12).

Transactions in the health care sector

SHA recommends the standard SNA/ESA¹⁰ approach when referring to transactions in the health care sector. Hence, the definition of a transaction can be interpreted as an economic flow or a kind of formalised relationship between various units acting in the health care sector, that is, between consumers and providers, providers and financing units, or consumers and financing units. It usually takes the form of an agreement or contract under which the quantity, price (or payment) and quality characteristics of the transaction is articulated. As in SNA, transactions in SHA can be divided into four main groups, as follows:

- Transactions in products, which refers to final consumption of health care goods and services;
- Distributive transactions, which encompasses transfers granted to households for the specific purpose of providing health care services to family members;
- Financial transactions, which comprises either acquisitions or disposals in financial assets and liabilities such as loans to health care providers from financing agents;
- Other flows, which refers to the consumption of fixed capital and acquisitions less disposals.

Time of recording

The timing of recording of final consumption expenditures within SHA has two elements:

- Calendar year versus fiscal year;
- Accrual versus cash accounting.

First, a particular period must be chosen within which the activities took place. Most often this is a fiscal year or a calendar year. This choice may seem trivial, but in practice it can pose problems. For example, government entities may report spending on the basis of a fiscal year while private entities report on the basis of a calendar year. For the purposes of international comparability, the calendar year is preferred. In such a case, the health accountant must adjust the figures reported so that only one time period is used (the *Producers Guide* provides practical guidelines).

The second element of the time boundary is the distinction between when the activity took place and when the transaction that paid for the activity took place. In practice, this involves a choice between accrual accounting and cash accounting. Health accounts should use the accrual method, in which expenditures are attributed to the time period during which the economic value was created, rather than the cash method, in which expenditures are registered when the actual cash disbursements took place.

The same treatment should be made when considering exports and imports; these are recorded at the time when a service is delivered or, in the case of goods, when the change in ownership of real assets occurs.

The measurement of consumption and output: market and non-market production

By convention, final uses are valued at the prices agreed to by the parties to the transaction. These prices are described as market prices or purchasers' prices. In the case of full direct payment by households, they correspond to the price paid to the health provider, *e.g.* hospital, physician or pharmacy. The prices of final uses include non-deductible VAT, other taxes on products (such as sales taxes and specific duties) and transport and marketing costs.

However, there are a large range of activities for which the notion of sales is non-existent, particularly in the health care sector. These constitute the non-market sector, and cover mainly services provided by general government and non-profit institutions. The organisations concerned do not sell their services, or if they do, the prices do not cover the full cost, and it is therefore necessary to find a different measure of valuation of their output. Non-market providers are those that provide services, and in some cases goods, either free of charge or at prices that are not economically significant, typically meaning, in practice, prices that cover less than half the full cost of production (*i.e.* including any subsidies or other transfers).¹¹ In such cases, the value of the good or service is, by convention, measured as equal to the sum of its production costs, including:

- Intermediate consumption, *e.g.* electricity, water, as well as other medical goods and services used up in the production process;
- Compensation of employees (gross salaries in cash and in kind, actual and imputed social contributions and taxes);
- Consumption of fixed capital, which is the utilisation cost of the equipment used by non-market producers; and
- Other taxes paid on production (taxes on ownership or use of land, buildings or other assets used in production).

General government bodies constitute the bulk of the non-market producers, but there are others, like the non-profit institutions. Most of the services provided by general government are provided to the general public without charge. These services may be financed through taxation and social contributions, but there is no direct link between the payment of the tax and the level of services received. A tax is a compulsory transfer to general government and is not the price of a public service. Certain services provided by general government, like education and health care, are provided to households on an individualised basis, meaning that it is possible to know who consumes them. Other services are provided only on a collective basis (*e.g.* mass health information and education campaigns), meaning it is impossible to know who consumes what.

In the case of individual services, if prices are fully paid by patients or third-party payers (on the patients' behalf), the provision is valued at market prices. If patients do not pay the full price, for example if government charges only part of the price to the consumer, and this price is well below the production costs of the services consumed, the value of the good or service is conventionally measured as equal to the sum of its production costs, as above.

In some cases, even when government corporations are engaged in market-oriented production, they may still offer health care services to their workers and their relatives free of charge. In such cases, the valuation should also be made through an input cost approach.

The treatment of subsidies and other transfers to provider industries

According to SNA, “subsidies” are current unrequited payments that government units make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services that they produce, sell or import (SNA 2008, 7.98). Subsidies on products (payable per unit of good or service) should be distinguished from other subsidies on production (not calculated per unit of good or service) that often take the form of regular transfers paid to cover persistent losses. It is important to recall that, “Subsidies ... do not include grants that governments may make to enterprises in order to finance their capital formation ... such grants being treated as capital transfers” (SNA 2008, 7.99).

Subsidies to public corporations and quasi-corporations¹² consist of regular transfers that are intended to compensate for persistent losses (that is, negative operating surpluses) incurred on their productive activities as a result of charging prices that are lower than their average costs of production as a matter of deliberate government economic and social policy. In order to calculate the basic prices¹³ of the outputs of such enterprises, it will usually be necessary to assume a uniform *ad valorem* implicit rate of subsidy on those outputs determined by the size of the subsidy as a percentage of the value of sales plus subsidy (SNA 2008, 7.105).

In health care provision and finance, current government transfers and subsidies are frequently used to reduce the prices paid by final consumers or insurance funds for certain goods or services (especially for institutionalised care). These government transfers have two different forms, according to whether they are paid to market or non-market providers of health care. Transfers to market producers are identical to the category of “subsidies” in national accounts in so much as subsidies can only occur in market production. In many countries, however, subsidies for market production in health care are of relatively minor importance compared with transfers that go to non-market producers. In the latter case, these are recorded as “current transfers”.

Chapter 29 of SNA 2008 gives two options for reporting on subsidies:

“... either consumption is valued differently from the core framework in order to include the value of consumption subsidies, or consumption is valued as it is in the central framework and specific current transfers must include consumption subsidies” (SNA 2008, 29.69).

SHA abides by the first option. Final consumption values of, for instance, hospital services should be recalculated (whenever possible) by adding subsidies to the recorded costs. This solution provides for a uniform treatment of national totals and for functional and institutional breakdowns, when shares in total expenditure on health are compared across countries. The exclusion of subsidies could lead to distortions in cross-country comparisons. In practice, subsidies for health care are almost exclusively related to inpatient care.

Also relevant to the issue of subsidies and current transfers is the provision of in-kind goods and services to health providers. It may be the case in the health care sector that the cost of certain intermediate goods and services may be met by central government directly, with these services being made available to health care providers at no or a very low nominal charge. An example of this would be the provision of electricity or water services to public health care providers, with the government covering all or part of the cost directly. A similar example may be the provision of blood products from publicly run blood banks and blood transfusion centres to hospitals free of charge. In both cases, the valuation of non-market services should attempt to take into account these costs.¹⁴

The production boundary of health care services

SHA recommends following the standard SNA rules for drawing the production boundary of health care services, albeit with two notable exceptions:

- Occupational health care is included in the national totals of health care spending. In SNA, this item is recorded as ancillary services and part of intermediate production of enterprises;¹⁵ and
- Part of the cash transfers to private households for care givers of home care for the sick and disabled are treated as the paid household production of health care.

Occupational health care

Occupational health care expenditure is the sum of expenditures incurred by corporations, general government and non-profit organisations on the provision of occupational health care. Occupational health care can be provided in-house or contracted out.¹⁶ Occupational health care includes the surveillance of employee health (routine medical check-ups) and therapeutic care (including emergency health care services) on or off business premises.

Household provision of health care

The provision of health care services not only takes place in health care facilities, but also in private households, where care for the sick, disabled or elderly is provided by family members. The own-account provision of these personal care services by members of the household for their own final consumption is excluded from measured production in conventional national accounting practice. However, the boundary line drawn in SHA

includes personal health services provided within households by family members in the case where they correspond to social transfer payments granted for this purpose.

This valuation is based on the assumption that the value of the unpaid care work performed in the household is worth what social programmes are willing to grant. This is of course not a totally satisfactory treatment, since the actual amount of time spent on health care work is not taken into consideration. Nevertheless, it is preferable to no valuation at all, and therefore to no consideration of the hours spent on care, which is the case when no formal care or monetary support is granted to households.

Health care as part of the informal sector

The concealed production of health services (to avoid the payment of income or other taxes or to achieve hidden additional income besides that under contract with health insurance and/or government programmes) may amount to a sizeable share of the real medical benefits accruing to private households. It may also be the case that such non-declared payments may be made to health care providers on top of their “official” revenues for reported health services. In both cases, an estimate of the amounts should be part of total current expenditure on health as defined by SHA, as differences in the treatment of the informal health care sector can distort international comparisons.

Illegal actions should in principle be recorded in the accounts in the same way as legal actions, if they fall within the health care boundary – see also Chapter 4.

The relationship between current expenditure on health and the SNA components of consumption

SHA and national accounts differ in their primary perspective of the economic activity of a society. While SHA concerns itself with the consumption, provision and financing of health care goods and services only, national accounts refer to the supply of all goods and services, the use of those goods and services, and the generation and distribution of income in the whole economy.

Although, as stated, the primary interest of SHA is the consumption of health care goods and services, the health provision boundary linked to the basic health consumption boundary is important, as it involves some differences from SNA production boundaries. The expenditure of production units on providing occupational health services for their employees is recorded as intermediate consumption of the respective units under SNA, while it is recorded as output of the respective units in SHA. In another departure from SNA, the production of households that take care of their dependents is not considered as an economic activity under SNA and is therefore not recorded. Under SHA, however, it is recorded as health expenditure, although restricted to the case where there are social transfers made to carers.

In SNA, the output of products is recorded at basic prices. The basic price is defined as the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable and plus any subsidy receivable on the product as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer.

The use of products is recorded at purchasers’ prices. The purchaser’s price is defined as the amount payable by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place

required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place. The difference in value recorded for a product between when it is produced and the moment it is used for, say, final consumption expenditure can be considerable. In the health sector, the main component of this difference is "taxes less subsidies on products payable by the producer".

Table 3.1 shows the link between current expenditure on health as defined in SHA and the main components of consumption as defined in SNA 2008. Although the concept of current expenditure on health mainly overlaps with the SNA aggregate "final consumption expenditure" (which is much wider as it covers all goods and services consumed in the economy), as described above it also includes some components that are not considered as consumption in SNA.

Table 3.1. Relationship between SHA current expenditure on health and SNA terminology

SNA 2008 code	Description
P.31	Individual consumption expenditure on health
P.32	Collective consumption expenditure on health
P.3	Final consumption expenditure on health (= P.31 + P.32)
D.31-D.21	Government subsidies to health care providers (net) in order to lower price of output
P.31*	Occupational health care (intermediate consumption within establishments) minus an estimated share of occupational health in health providers' and other medical industries net administration
P.31*	"Remunerated" unpaid household production in the form of transfer payments (social benefits in cash) for home care of sick, disabled and elderly persons provided by family members
P.3*	Adjusted total final consumption expenditure on health (= P.3 + D.31 - D.21 + P.31*) CURRENT EXPENDITURE ON HEALTH (\approx P.3*)

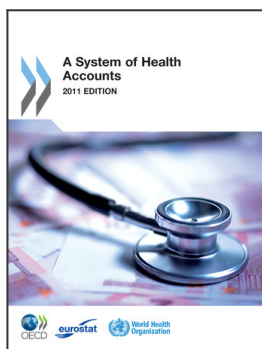
*: The production boundaries used in SHA for the estimation of this item differ from SNA rules. Please see Annex A for a more detailed discussion of the differences.

Source: IHAT for SHA 2011.

Notes

1. A more detailed examination of the relationship between SHA and SNA is presented in Annexes A and B.
2. To become an SNA satellite account, SHA would need extra information and accounts such as a production account; intermediate inputs to the health care industries; as well as gross capital stock and an input-output table of health care industries. See SNA 2008, 29.139 to 29.141.
3. There are differences in the SNA and the SHA boundaries relating to the treatment of occupational health care and household provision of health care which are discussed later in the chapter.
4. In most countries non-profit health care providers have market oriented practices. As in the SNA (4.83) health non-profit institutions are legal or social entities, created for the purpose of producing goods and services, whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them. In practice, their productive activities are bound to generate either surpluses or deficits but any surpluses they happen to make cannot be appropriated by other institutional units according to the articles of association by which they are established.
5. A full classification by type of asset is detailed in Chapter 11.
6. Please note the use of "provider of health services" instead of "health care services" so to include those economic units providing health administration services.
7. Capital transfers are defined as "unrequited transfers where either the party making the transfer realises the funds involved by disposing of an asset (other than cash or inventories), relinquishing

- a financial claim (other than accounts receivable) or the party receiving the transfer is obliged to acquire an asset (other than cash) or both conditions are met” See SNA 2008, 10.19.
8. An OECD “Handbook on deriving capital measures of intellectual property” is under preparation at the time of writing. Its purpose is to provide guidance on deriving capital measures (gross fixed capital formation, consumption of fixed capital, capital services, and the stock of capital) of R&D and other intellectual property products.
 9. “[W]hen training is given by an employer to enhance the effectiveness of staff, the cost is treated as intermediate consumption” (SNA 2008, 1.54).
 10. The European System of Accounts (ESA) is the system of national accounts and regional accounts used by members of the European Union.
 11. Although SNA itself does not set such a level of costs to distinguish between market and non-market production, European System of Accounts (ESA) does set a 50% borderline as a criterion for this distinction. It is therefore recommended for the purposes of SHA to follow this practice so that when the price covers less than 50% of the cost, the provider is treated as a non-market producer.
 12. “Some unincorporated enterprises function in all (or almost all) respects as if they were incorporated. These are termed quasi-corporations” (SNA 2008, 4.42). In the health system, these are typically public health service providers exercising a degree of market activity and a certain autonomy from government control.
 13. Basic prices are prices before taxes on products are added and subsidies on products are subtracted (SNA 2008, 2.63).
 14. See Box 9.1 in Chapter 9 for a further discussion of intermediate consumption in the health system.
 15. This excludes remuneration in kind in health care goods and services that do not constitute intermediate consumption, but household actual final consumption.
 16. The item corresponds to *Item 05.2: Health* in the Classification of the Outlays of Producers by Purpose (COPP).



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