

## ANNEX B

# *The Relationship between SHA and SNA*

### **Introduction**

This annex illustrates the relationship between the System of Health Accounts (SHA) and the System of National Accounts (SNA). Readers who are to some extent familiar with either health accounts or national accounts, but not both, will find a description of how health expenditure and financing data reported in the SHA cross-classified tables relate to the main macroeconomic variables in the SNA. In other words, the point is to develop a common language between the two disciplines, which should be of value both theoretically and practically.

From a theoretical viewpoint, this annex shows how, in principle, SHA data can be reorganised and displayed in a form very similar to the form used by the SNA (*i.e.* supply and use tables and the sequence of integrated economic accounts). This kind of representation would allow users of SHA data to relate the categories included in the SHA to the macroeconomic variables included in SNA (*e.g.* the relationship between current expenditure on health and health consumption of households).

At the same time, this section has a practical value in that it could be useful to health accountants who need to retrieve data from their national accounts (for example, if basic information included in SNA represent the sole source to compile SHA tables, or if a comparison with related national accounting aggregates is required). Moreover, it provides basic guidelines for the compilation of a full set of additional SNA-type accounts, which can supplement the information included in the SHA cross-classified tables. The choice of whether national authorities compile the SHA cross-classified tables only or, additionally, the corresponding SNA-type tables, will depend on the priorities set at a national level. It is not intended that the assembly of the additional set of SNA-type tables should be an integral and essential part of the data compilation under the revised SHA methodology. Those interested in enhancing the analytical power of SHA can use this annex as guidance for studying and reporting health expenditure from a different perspective.

### **A dual representation of the health system**

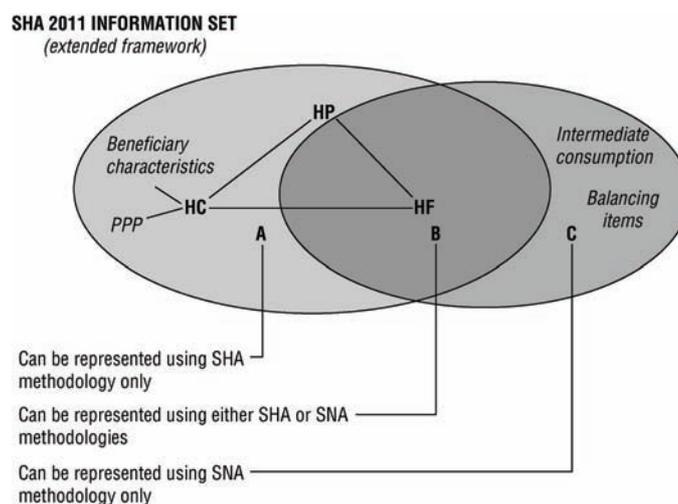
The statistical information included in SHA can be presented by means of two groups of tables, also called accounts: the typical SHA cross-classified tables, and a set of tables similar to those proposed by the System of National Accounts (SNA). It is worth noting that the elementary information forming the basis of the two representations is the same, that is, the flows and stocks identified by SHA boundaries.<sup>1</sup>

When delimiting the health system, SHA 2011 identifies two sets of boundaries (see Chapter 4): the first, known as the “core accounting framework”, refers essentially to the value of health care products (goods and services) consumed by the population; the second, labelled the “extended accounting framework”, gives a fuller economic picture of the health system. The information included in the “extended framework” can in turn be clustered in two groups: the first includes health specific information (such as health expenditure by disease, age or gender, or by health products) is classified by means of SHA-specific classifications and is generally presented via various cross-classified tables set out in this Manual. The second group includes information which, by its nature, is not necessarily specific to the health system (*e.g.* inputs used in the production of hospital services, such as water and electricity) and can be organised and presented using a set of T-accounts.<sup>2</sup>

As shown in Figure B.1.1, the two information sets partially overlap and identify three subsets of statistical information: a first set of information which is typical of the health system and which can be displayed by using SHA tables only (area A in Figure B.1.1), for example, expenditure on health broken down by beneficiaries’ characteristics or expressed in terms of health-specific purchasing power parity standards (PPP). A second set consists of macroeconomic information referring to the consumption of health products and its financing, which can be represented using either SNA-type tables or SHA-specific tables. Finally, there is a third set of economic information (the components of the demand side of the health system other than consumption and the supply-side components) which can be represented using SNA tables only. Examples of the first and third sets were given above (health expenditure by provider and disease on the one hand and the production account on the other); while an example of the overlapping set could be information concerning the consumption of medicines.

In principle, the information recorded in SHA on health expenditure and its financing is also included in SNA, as the latter covers all the economic activities (and financial transactions) that take place in a country.<sup>3</sup> The two systems, however, report the information differently: SHA, for example, employs its own specific classifications (*i.e.* the ICHA classification of providers, of financing schemes (derived from agents) and health functions,) to break down the health expenditure at a high level of detail. In addition, SHA highlights the origin and destination of the economic (and financial) flows through the use of cross-classified tables. SNA, on the other hand, is composed of two main sets of tables: the supply and use (SUT) framework (including the symmetric input-output table and the accounts by industry) and the sequence of integrated economic accounts (IEA) for the institutional sectors. The supply and use (SUT) framework describes in detail the production process (*i.e.* cost structure, output, income generated and employment) plus the imports and the use of goods and services (*i.e.* intermediate and final consumption, exports and capital formation), while the sequence of integrated economic accounts (IEA) provides information on how income is generated, distributed and used as final consumption or saving as well as the process of the accumulation of financial and non-financial assets.

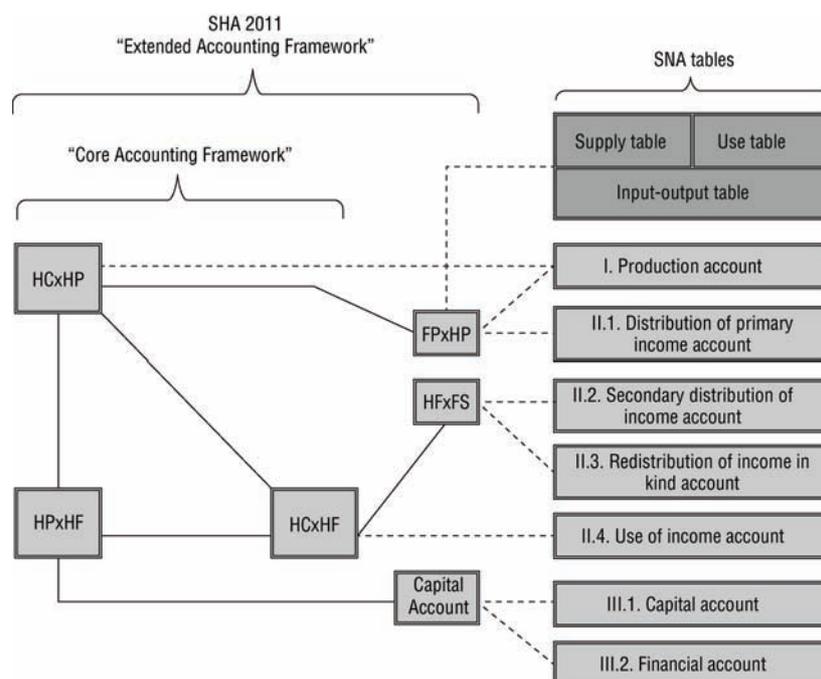
Although the approach proposed here uses the SNA structure of accounts (*i.e.* the supply and use tables and the sequence of integrated economic accounts), it retains SHA concepts, including definitions of variables and classifications. For example, all accounts based on the SNA sequence of integrated economic accounts are developed with reference to the health providers (see Chapter 6) and to the health financing agents (see Annex D)

Figure B.1.1. **SHA 2011 information set**

Source: IHAT for SHA 2011.

rather than to the institutional sectors in SNA. Also, the health care goods and services identified by SHA boundaries are classified using the SHA functional classification (see Chapter 5) instead of the CPC, COICOP or COFOG (for a correspondence between the different classifications see Annex A).

Figure B.1.2 below outlines the links between the two representations. The unbroken lines show the links across SHA tables, while dashes show the correspondence between

Figure B.1.2. **Links between the System of National Accounts (SNA) and the System of Health Accounts (SHA)**

Source: IHAT for SHA 2011.

SHA aggregates and their counterpart included in the supply and use tables or in the relevant account in the sequence of integrated economic accounts (IEA). In short, the following links can be established:

- Current health expenditure reported in SHA is the sum of health care goods and services for final consumption of resident units (see Chapter 3). When broken down by providers (as in SHA table HCxHP), it also represents the value of that part of the output of the health providers which is consumed by households, Non-profit institutions serving households (NPISH) and General Government are valued at market prices. SHA calls “provision” the value of the health providers’ output used as final consumption. The same information would be recorded in SNA in the supply and use tables and in the production account, which is the account showing output as a resource and intermediate consumption as use. The value of goods and services consumed as intermediate consumption by the health providers is also recorded in SHA in the HCxFP tables, which makes use of a specific Factors of provision classification.
- The compensation of employees of the health providers is also reported in the HPxFP table. Compensation of employees corresponds to the “compensation of employees” reported in the distribution of primary income account in SNA.
- In SHA 2011, the HFxFS table reports the revenues of the financing schemes (see Chapter 8), that is, the funds which have been transferred to the financing agents from the bodies collecting and pooling the funds. Revenues might be collected by different bodies (*e.g.* central/local government, social security agency, commercial insurance fund, employer fund, health care provider, etc.) using a variety of contribution mechanisms (*e.g.* direct taxes, indirect taxes, payroll tax revenues, often called “social health insurance contributions”, voluntary prepayment, usually for voluntary health insurance). In SNA, each health contribution mechanism is included in different items of the classification of economic flows (called the classification of transactions) and recorded in a different stage of the sequence of accounts. Consider, for instance, taxes on cigarettes used in some countries to fund health care programmes. In the SNA, these would be included under the category of taxes on products and would be reported in the “Distribution of primary income accounts”, which is the account showing how much of the value added is generated by labour in the form of the compensation of employees and how much of the value of output is payable to the government in the form of taxes (less subsidies) on products. In the same way, the “social health insurance contributions” would be included in the broader category of “social contributions” and reported in the “Secondary distribution of income accounts”, which reflects the redistribution of (primary) income through monetary transfers (income and property taxes, social contributions, social benefits other than social benefits in kind, other current transfers). SHA, instead, focuses only on the last step, that is, only the resources of the financing schemes (that pay the health providers) are recorded in the HFxFS table, while SNA reports all the transactions, some in the “Distribution of primary income accounts” and the remainder in the “Secondary distribution of income accounts”. The latter accounts also record all the transfers made between the different actors (*e.g.* the transfer of funds from the central government to local governments), which in the health financing

literature is referred to as “pooling”, and which is not recorded in SHA (see Chapter 8 and Annex D).

- The purchase of health products from health care providers made either by the entities pooling the funds (third-party payers) or by households as out-of-pocket expenditure is recorded in SHA in the table HPxHF. In SNA, these expenditures are recorded in the “use of disposable income account”.
- Finally, the SNA Capital account records the value of the non-financial assets that are acquired, or disposed of. The information on the acquisitions less disposals can be combined with the saving and the capital transfers to calculate the change in net worth. A similar account is developed in SHA (see Chapter 11). The SHA version of the capital accounts, however, is extended to also include the relevant changes in financial assets. These would be recorded in SNA in the financial accounts.

To conclude, all aggregates included in SHA to account for the health activities of production, collection of funds, pooling of funds, purchase of health goods and services and accumulation are in principle also recorded in SNA. Therefore, a set of empty SNA-type tables could be populated by using the information collected in the SHA extended accounting framework.

### **Differences between SHA and SNA**

Although SHA adopts definitions and concepts derived from SNA, there exist a few important differences that ought to be borne in mind whenever comparing the two systems. Of particular note are the extension of the production boundaries in the SHA, the inclusion of some ancillary services in final consumption, the treatment of goods purchased and resold by retailers, and the capitalisation of research and development.

SHA extends the SNA production boundaries by including, under certain conditions, a part of the household production of health services for own final use. The extension of the production boundaries is limited to those health services whose costs are partially or completely covered by dependency allowances. Therefore, if households receive transfers in cash to cover a sizeable share of the costs of services to persons with severe functional mobility or cognitive handicaps, the transfers are treated as quasi-salary in SHA and a corresponding “production value” is then calculated and included in current health expenditure.

Secondly, the final consumption of health services in the SHA also includes the services of “occupational health” (*e.g.* surveillance of employee health and therapeutic care on or off business premises, see Chapter 5), which are considered as an ancillary activity in the central framework of the SNA and treated as intermediate consumption.

Thirdly, SHA considers the goods purchased and resold by retailers as their intermediate consumption, whereas SNA excludes them, as only minimal processing such as grading, cleaning, packaging, etc. are performed. Two consequences derive from the different approaches: 1) producers of health goods are excluded from the provider classification, and 2) retailers’ output is measured in SHA by the sum of the total value of the goods they purchase for resale plus the trade margins realised, while in SNA only the latter component is considered.

Lastly, research and development is considered as a non-financial asset in the SNA (and therefore included in the capital accounts) whereas SHA 2011 has excluded the creation of R&D assets on practical grounds.

### Box B.1.1. Final consumption expenditure and actual final consumption of households

Final consumption consists of expenditure on final goods and services (goods and services that are not used for the purpose of production). Final goods or services are acquired for the direct satisfaction of human needs, whether individual or collective. Three different sectors can acquire consumption products:

- Household acquire goods and services (for individual consumption), which are then used to satisfy the needs and wants of members of that household.
- Government spends to benefit specific individuals (e.g. health care, education, food aid, etc.). Besides expenditure for individual benefit, the government also spends for collective purposes, such as public administration, defence, security, general health improvement, etc., which benefit the society as a whole but not specific individuals.
- The final consumption expenditure of *non-profit institutions serving households* (NPISH) is by convention classified as individual consumption only.

Therefore, to satisfy their needs, households actually benefit from some goods and services paid for by themselves or by other institutions (government and NPISH). The products acquired by the government sector or by NPISH are transferred to households as social transfers in kind. The table below shows final consumption expenditure by institutional sectors (that actually spent) and by purposes (individual or collective consumption).

#### Final consumption expenditure and actual final consumption of households

Purpose	Sector			
	Households	Government	NPISH	Total acquisitions
Individual	X	X (=Social transfers in kind)	X (=Social transfers in kind)	Households' actual individual final consumption
Collective		X		Government's actual collective final cons.
Total	Household final cons. Expenditure	Government final cons. expenditure	NPISH final cons. expenditure	Actual final cons. = Total final cons. exp.

Source: IHAT for SHA 2011.

Thus, the overall expenditure for individual consumption that actually benefits households equals the sum of:

- Final consumption expenditure of households;
- Social transfers in kind from the government;
- Social transfers in kind from NPISH.

The sum of the three components is the "*Households actual individual final consumption*". This concept was introduced in SNA93 with the objective of better comparing final consumption of households across space and time in the country and internationally, while taking into account government social policies and NPISH activities.

### Box B.1.1. Final consumption expenditure and actual final consumption of households (cont.)

#### Social transfers in kind

Social transfers in kind include:

- *Individual final expenditure of the government sector (less sales)*. This includes the output of individual goods and services which are produced by the government sector and distributed free to individuals, such as education, health, social security and welfare, sports and recreation, culture, provision of housing, collection of household refuse and operation of transport. It excludes general administration and regulatory and research expenditures in each category.
- *Social benefits in kind*, which include:
  - *Reimbursements* from government's social security funds to households on specified goods and services bought by households on the market;
  - *Other social security benefits in kind except reimbursement*. This includes goods and services that are not produced by the government sector but are bought and distributed free or almost free to households under the social security funds (any payment by household must be deducted);
  - *Social assistance benefits in kind*. This includes goods and services similar to other social security benefits, but not under social security schemes.

#### Health supply and use tables

This section looks more closely at the example of supply and use tables for health care. Any health care good or service available within an economy must have been produced domestically or have been imported. At the same time, any health good or health service entering an economy must be used for intermediate consumption, final consumption, capital formation (including changes in inventories) or exports (Figure B.1.3). These two statements can be combined to give the following accounting identity:

#### Equation 1. Goods and services accounting identity

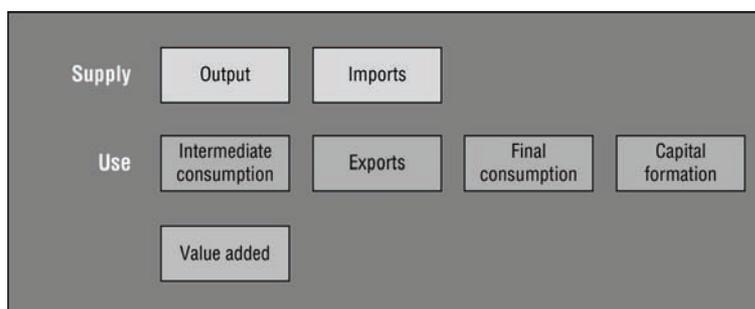
Supply	Use
Output + Imports	Intermediate consumption + Final consumption + Capital formation + Exports

By subtracting the item "Intermediate consumption" from both sides of the previous identity we obtain the so-called "goods and services account", which is one of the most basic, if not the most basic, identity in the SNA.<sup>267,268</sup> This kind of identity can be compiled for any health good or service. A complete set of health care product (goods and services) identities can be arranged in a matrix, in which each row represents a health product and each column the supply and use.

#### Health supply table (H-ST)

Taking only the left-hand side of the identity, it is possible to isolate a smaller matrix, with the health care products in the rows while the columns show whether the products

Figure B.1.3. **Health supply and use tables (H-SUT)**



Source: IHAT for SHA 2011.

are the output of a domestic producer or have been imported. As such a matrix would be difficult to handle due to its large number of rows, it is convenient to group the health care products. Products may be classified either according to the health functional classification (see Chapter 5) or a classification of health care products (see Annex E).

For analytical purposes, however, it could also be of interest to identify the different domestic producers of health goods and services. This could be done by introducing separate columns for each group of providers and using the classification of health providers (see Chapter 6). However, a provider can also produce health-related output and non-health products. These health-related and non-health products can also be recorded in separated rows. In this way all the information on the output of each provider can be kept, which might then facilitate a consistency check. For the same reason it would also be helpful to record taxes (less subsidies) on each product.

An example of a complete matrix could thus have the following form:

The health supply table (Table B.1.1) shows, along each row, the health product (classified according to the functional classification) produced both by domestic providers

Table B.1.1. **Health supply table (H-ST)**

	Providers of health goods and services			Taxes less subsidies on products	Total output	Imports ( <i>f.o.b.</i> )	Total resources
	HP <sub>1</sub>	HP <sub>j</sub>	HP <sub>9</sub>				
	(1)	...	(9)	(10)	(11)=(1)+.. +(9)+(10)	(12)	(13)=(11)+(12)
<b>Health goods and services (*)</b>	HC <sub>1</sub>	A <sub>i,j</sub>	(T-S) <sub>i</sub>	THO <sub>i</sub> =	I <sub>i</sub>	TR <sub>i</sub> =	
	:			Σ <sub>j</sub> A <sub>i,j</sub> +(T-S) <sub>i</sub>		THO <sub>i</sub> +I <sub>i</sub>	
	HC <sub>i</sub>						
	:						
	HC <sub>9</sub>						
<b>Health output</b>		B <sub>j</sub> = Σ <sub>i</sub> A <sub>i,j</sub>	Σ <sub>i</sub> (T-S) <sub>i</sub>	Σ <sub>i</sub> Σ <sub>j</sub> A <sub>i,j</sub> + (T-S) <sub>i</sub>	Σ <sub>i</sub> I <sub>i</sub>	Σ <sub>i</sub> TR <sub>i</sub>	
<b>Health-related output</b>	HCR.1	C <sub>k,j</sub>					
	.						
	HCR <sub>k</sub>						
<b>Total health-related output</b>	D <sub>j</sub> = Σ <sub>k</sub> C <sub>k,j</sub>						
<b>Non-health output</b>	E <sub>j</sub>						
<b>Total output</b>	F <sub>j</sub> = B <sub>j</sub> + D <sub>j</sub> + E <sub>j</sub>						

\*: The health products correspond to the health functions.

Source: IHAT for SHA 2011.

and imported.<sup>8</sup> The sum of the two components (production and imports) represents the value of the health resources that are available.

### *Description of the elements of the H-ST*

- Columns of the H-ST

#### *Health providers*

In the health supply table H-ST, matrix A shows the different categories of health products produced by each health care provider. The total health output by each provider of health products is shown in vector B. Each element  $B_j$  of the vector B would represent the total health output of each provider included in the HP classification.

The value of the secondary production of the health care providers (health-related output and non-health output) should be recorded in the matrix C and the vector E, respectively. When a provider produces health-related products as a secondary activity, these products are recorded under matrix C, by the type of health-related product. The vector D corresponds to the total of health-related output that is produced on a secondary basis by each provider. Take, for instance, a long-term nursing care facility that is linked to a facility providing social care: the fees for the latter activity should be recorded under column HP.2.1 (Long-term nursing care facility) in row HCR.1 (for example, if it corresponds to long-term social care) in cell  $C_{1,2,1}$  in matrix C, and if this is the only amount of health-related output that is produced, then the respective amount should also be recorded in vector D as a total of health-related-output that is provided additionally by the health care provider. Elements  $D_j$  of vector D represent the total value of the health-related output of each provider.

As health care providers may also provide non-health output on a secondary basis, this could be recorded under vector E. For instance, many providers sell non-health products, such as renting space for small shops, charging visitors for parking spaces or serving meals to visitors (other than meals provided to inpatients and personnel).

Finally, the vector F shows the total output of Health providers, which is likely to be composed mainly of health goods and services, but which could also include health-related and non-health products. The elements  $F_j$  of vector F would be the sum of the corresponding elements  $B_j+D_j+E_j$  Non-health providers which produce health services on a secondary basis.

Some producers of health-related products could also produce, as secondary production, health products. For instance, home help providers produce mainly health-related output in social care, but could provide nursing care services as well as other non-health services. The health-related output could be recorded in matrices C; the sales of nursing services could be recorded in A; while any non-health output could be recorded under vector E. The total output should be the sum of the three types of output and should be recorded in vector F.

Finally, there are non-health producers that manage their own occupational health schemes in a private way by producing their own health output for their employees and their families. Sometimes these productive units create separate establishments for the provision of health goods and services, and therefore these establishments can be considered as health providers, because their output is mainly health. In other cases these

non-health producers provide health products without creating a separate establishment, that is, output that is produced on a secondary basis or, as is more often the case, as an ancillary activity. Moreover, many non-health producers provide occupational medical services to their own employees as an ancillary service. According to SHA, these ancillary services must be considered as separate output. This is a conceptual difference between national accounts and SHA. The ancillary services would be recorded as output of non-health producers in matrix A. The total health output of these non-health producers would be recorded under vector B.

#### *Taxes less subsidies on products*

The supply table would also record the taxes less subsidies on products that are imposed on health care products. For instance, in some countries there are some taxes, such as value added tax (VAT), that are imposed on pharmaceuticals and other medical goods durables and non-durables and therapeutic appliances. In other countries there may also be health services on which taxes on products are imposed.

The sum of the value of the health goods (valued at basic prices) plus taxes less subsidies equals the value of the health output at purchasers' prices. Column I corresponds to the imports of health goods and services. The total resources available to be used in the health system are shown in column TR.

- Rows of the H-ST

Data for each health and health-related product category that is produced is shown in rows. The value of Health goods and services is broken down by providers and is measured at basic prices, in matrix A. The value is also expressed at purchasers' prices by adding taxes less subsidies. Each element of the column Total output represents the value of health products produced in the economic territory. By adding the imports by product, we get the total resources by health products/functions that are available to be used by the resident units.

#### **Health use table (H-UT)**

In a way similar to the supply table, in the H-UT information included in the right-hand side of Equation [1] can be arranged in a matrix that gives a full picture on the use of the output produced by the health providers. The matrix would take the form of a rectangular matrix, where the rows represent all health products available in an economy, valued at purchasers' prices, and the columns indicate the various types of uses.

Although the production of health goods and services is likely to be mainly for final domestic use, a minor part of the total production of the health care system could be exported or consist of intermediate products acquired by other health providers. The value of the output of the health providers can therefore differ from the value of final consumption on health. Consider, for example, a physician in private practice who may also work part-time for a hospital. In that case, a part of his/her output is acquired by another health provider as intermediate consumption. If the health providers' output were wrongly assumed to equal final consumption, a double-counting issue would arise. The reason would be that the sum of the output of the hospital plus the output of the physician would double-count the value of the service that the hospital has purchased from the physician.

The same consideration can apply to imported health products. Imports can be employed either as final consumption or also as intermediate consumption. Using the same example as above, if the physician working part time for a domestic hospital were resident abroad, the purchase of his/her service would be an imported service used as intermediate consumption.

In addition, the beneficiary of the health services provided by resident providers may be either a resident or a non-resident unit. For example, the service provided by a domestic hospital to a foreign tourist should be considered as an exported service.

Therefore, health care goods and services available in any given economy may in principle be used as intermediate and final consumption, or exported.

At the same time, health providers might be acquiring health-related or non-health products as input for their production process. For instance, consider the use of chemicals in ancillary diagnosis services, such as imaging or clinical laboratory.

However, health products are most likely employed as final consumption. The perspective of final consumption is the actual consumption of the households, regardless of the fact that part of the expenditures are financed by health insurance schemes and the collective consumption of services and administration funds.

#### *Description of the elements of the H-UT*

- Columns of the H-UT

The health providers use inputs of a different nature to produce their output. These could include health products produced by other providers, health-related products or non-health products.

The health products employed as intermediate consumption by other health providers should be recorded in matrix HIC. Examples could include the case of a hospital using an external laboratory to perform blood tests. Also, health providers may subcontract with self-employed health professionals who work as own-account workers. These could be doctors, nurses and other health professionals who are not employees of the provider. The subcontracting of these workers should be recorded as the intermediate consumption of the provider to whom these self-employed render their services.

The health providers also consume health-related and non-health products. Those inputs should be recorded in the matrices HRIC and NHIC, respectively. An example of health-related products used as intermediate consumption would be a self-employed clinical social worker who renders their services to a hospital (family planning, individual and group therapy in Mental health and substance abuse), whereas non-health products would include water, electricity, etc.

Final uses includes three broad categories: final consumption, gross capital formation and exports.

The final consumption of health goods and services describes all the health goods and services that are used for the final use of households individually and collectively. Individual final consumption (vector IFC) includes all the health care products/functions that are supplied to the households for final use, such as services of curative care, rehabilitative care, long-term care, ancillary services and pharmaceuticals, among others. All the healthcare services are part of personal health expenditure, regardless of who finances these healthcare services. The column represented in the vector IFC shows total individual final consumption by product or health care service.

Table B.1.2. **Health use table (H-UT)**

	Intermediate consumption			Final uses				
	Providers of health goods and services			Total intermediate consumption	Final consumption of health goods and services		Gross capital formation	Exports
	HP <sub>1</sub>	HP <sub>i</sub>	HP <sub>9</sub>		Individual cons.	Collective cons.		
	(1)	...	(9)	(10)	(11)	(12)	(13)	(14)
<b>Health goods and services (*)</b>								
HC <sub>1</sub>	HIC <sub>i,j</sub>		Σ <sub>j</sub> HIC <sub>i,j</sub>	IFC <sub>i</sub>	CCAF <sub>i</sub>	HGCF <sub>i</sub>	X <sub>i</sub>	
:								
HC <sub>i</sub>								
:								
HC <sub>9</sub>								
<b>Totals</b>	Σ <sub>i</sub> HIC <sub>i,j</sub>		Σ <sub>i</sub> Σ <sub>j</sub> HIC <sub>i,j</sub>	Σ <sub>i</sub> IFC <sub>i</sub>	Σ <sub>i</sub> CCAF <sub>i</sub>	Σ <sub>i</sub> HGCF	Σ <sub>i</sub> X	
<b>Health-related products</b>	HRIC <sub>j</sub>	Σ <sub>j</sub> HRIC <sub>j</sub>				Software produced by hospitals for other hospitals		
<b>Other products</b>						Other assets produced by health care providers		
<b>Non-health products</b>	NHIC <sub>j</sub>	Σ <sub>j</sub> NHIC <sub>j</sub>						
<b>Totals</b>	TIC <sub>j</sub>	TIC						
<b>Gross value added (Health)</b>	GVA <sub>j</sub>	GVA						
<b>Net value added (Health)</b>	NVA <sub>j</sub>	NVA <sub>j</sub>						
<b>Compensations of employees</b>	D1 <sub>j</sub>	D1						
<b>Other taxes less subsidies on production</b>	(D29-D39) <sub>j</sub>	(D29-D39)						
<b>Gross operating surplus /Gross mixed income</b>	(GOS/GMI) <sub>j</sub>	(GOS/GMI) <sub>j</sub>						
<b>Net operating surplus/Net mixed income</b>	(NOS/NMI) <sub>j</sub>	(NOS/NMI) <sub>j</sub>						
<b>Consumption of fixed capital</b>	CCF <sub>j</sub>	CCF						
<b>Gross fixed capital formation</b>	GFCF <sub>j</sub>	GFCF						
<b>Health labour input, of which:</b>	L <sub>j</sub>	L						
- Employees								
- Self-employed								

\*: The health products classified according to the health functions classification.

Source: IHAT for SHA 2011.

The collection and administration of funds that are final consumption correspond to the health products/functions of prevention and health services and health administration and health insurance. It includes the administrative cost not only of public health insurance but also of private health insurance. The respective amounts should be recorded in vector CCAF.

The vector gross capital formation (HGCF) records all the assets produced by health providers and also acquired as gross capital formation. In practice, intellectual properties are considered in this column, plus "Changes in inventories" (e.g. pharmaceuticals and other medical non-durables and therapeutic appliances and other medical durables).

The column "Exports (X)" shows the amounts of health products that are provided to non-resident units.

- Rows of the H-UT

As previously mentioned, this table shows the health products (resources) that are available to be used as intermediate consumption by other providers, and as final consumption, individually and collectively by households, or exported. For the medical goods dispensed to outpatients, it shows how much is available to be used as intermediate consumption, final consumption, held in stocks or exported.

The first section “Health goods and services” is shown by type of product/function, with an extension for other products that are used to provide some medical services, and shows the way these products are used in the health system. The section “Non-health products” that is represented as one row only provides an indication of the other inputs that are used to produce, by provider, health and health-related services. For instance, the inpatient services as part of curative care, by Hospital A, is mainly used as individual final consumption. However, if Hospital B subcontracts Hospital A to provide these kinds of services to patients, then the provision of these services is considered as the intermediate consumption of Hospital B. The output of these services (shown in the health supply table) provided by Hospital A to Hospital B is already included in the output provided by Hospital B, and therefore is allocated as being used by households as Individual Final Consumption.

The output of collective health care services (prevention and public health services and health administration and health insurance) are totally allocated in the respective product code to final consumption as the collective consumption and administration of funds (vector CCAF). In the proposed H-UT, the cost of private health insurance is considered as a final consumption of administration funds, together with collective consumption of general government.

The health goods and services that are provided to non-residents are recorded by type of health-service in vector X, as exports. For instance, services provided by hospitals to non-residents are recorded in this vector by type of service rendered. Moreover, the exports of pharmaceuticals and other medical goods are recorded under vector X in the respective product. In fact, the medical goods may be used by other providers as intermediate consumption, are allocated to final consumption of households when dispensed to outpatients, and may be exported or held in stocks (Column GCF).

The row “Gross value added, by provider”, results from the difference between the total output, by provider, and the Intermediate consumption, by provider.

The row “Other taxes less subsidies on production” includes eventual “Other taxes on production” (equal to D29 in SNA93) and “Other subsidies on production” (equal to D39 in the SNA) that are paid/received by providers of health goods and services.

The operating surplus corresponds to the income obtained by the producers from the use of their own production facilities. It is the balancing item of the generation account, and it can be estimated separately or as a balancing item. “Gross operating surplus” is one of the components of “Gross value added” in the income approach.

The self-employed and the own-account workers obtain income that cannot be split between their profit and what should be considered as remuneration for their work. This income is called “mixed income”.

“Gross capital formation” includes the investment carried out by health providers in health assets (tangible and intangible). Gross capital formation comprises: gross fixed capital formation; changes in inventories; and acquisitions less disposals of valuables.

It is worth noting the difference between the aggregate “Gross capital formation” reported in the vector HGCF and the vector GFCF. The former refers to the capital goods produced by the health providers. The latter records the capital goods acquired by the providers.

The row “Consumption of fixed capital” measures the decrease of the value of fixed assets as a consequence of their use in the process of production. It enables the change from “Gross balancing items” to “Net balancing items”. It is also a component of non-market output, for it is considered as a cost of production. In this case it reflects only health providers.

Health labour measures employment in health, which can be divided into health employees and the self-employed. It can be measured in persons, posts or full-time equivalent/hours worked. The income received by employees for their participation in the production process is recorded under “Compensation of employees”. The income paid to the self-employed is “mixed income”. A person can be working as an employee as well as self-employed. Under such circumstances, usually the former is the main activity.

The shaded areas in Table B.1.2 show the information set identified by the SHA boundaries, which can be represented through the SHA cross-classified tables as well as through the health use table (*i.e.* current expenditure on health + capital formation). The first area (top right-hand side) includes the final consumption of health products classified through the functional classification. The second reports the gross capital formation broken down by providers.

### **The sequence of Health Integrated Economic Accounts (H-IEA)**

The health supply and use tables, together with the health input-output table, provide detailed analyses of the process of production and the use of health goods and services. The information reported in the supply and use tables can be further elaborated to show, on the one hand, how the income derived from the production of health goods and services is divided between the factors of production (labour and capital) and used for the acquisition of capital goods by health providers. It can then show, on the other hand, how the income available to households is increased by the provision of health goods and services and how the resources needed for the provision of health products are collected, pooled, transferred and finally used.

Consider, for example, the consumption of health services. As with any other products, the consumption of health services is the result of a choice between spending the available resources or saving them for future use. These two possible uses of the available money, that is, consumption (called “final consumption expenditure” in the national accountants’ jargon) and saving, are recorded in the sequence of integrated accounts in a table called “use of disposable income account”.

Using the same example, we might wonder who has purchased that particular service. Was it the household itself using its own resources, or was it the government (or social security or an NPISH)? If it was the government that purchased the health service, it would obviously not be the government itself that actually consumed the health service. Rather, households would actually benefit from the service. As a consequence, the value of goods and services consumed by households (the “final consumption expenditure” included in the “use of disposable income account”) could be adjusted by adding the value of those goods and services which, although paid by the government, were actually consumed by

### Box B.1.2. T-Account

A T-Account is a standard accounting tool whose name comes from its distinctive shape, like the capital letter T.

Account name	
Uses	Resources

The account title is reported above the top portion of the T. The left side of the base of the T includes the *uses* (i.e. the amount spent), while the right side shows the *resources* (i.e. the amount received). The vertical part of the T accounts shows the transactions, each of which identifies a row where entries can be reported, either under uses or under resources.

The difference between the total resources recorded on one side of the account and the total uses recorded on the other side gives the *balancing item*. Balancing items are economic constructs of considerable interest and analytical significance. Examples of balancing items in National Accounts include value added, disposable income and saving. Balancing items can be expressed gross or net, the difference being the consumption of fixed capital.

T-accounts can be built for any statistical unit (i.e. households and providers) or groups of statistical units. In order to simplify the reading and the comparison of different groups of units, T-Accounts can be presented in a more compact form. Using just one table, it is possible to present in adjacent columns on the left-hand side the uses of each single T-Account. The same occurs for the resources grouped in a set of columns on the right-hand side.

Account name			
Uses		Resources	
Households	Providers	Providers	Households

It is worth noting that each transaction implies that the amount spent by a unit corresponds to the amount received by another unit. This gives rise to a pair of matching entries within the accounts, the first recorded as use for the unit making the payment, the other as resource for the unit receiving the payment. This bookkeeping principle is traditionally called *double-entry*.

A further step is the “consolidation” of the accounts. A *consolidated T-account* is simply an aggregation of single T-Accounts.

Account name	
Uses	Resources
All Units	All Units

the households. Therefore, National Accounts employ a different table to report the “actual consumption”, as opposed to the “final consumption expenditure”. This table is entitled

“Use of adjusted disposable income account”. In an accounting logic, where consistency is a stringent requisite, if the amount spent is adjusted, then the resources available also need to be adjusted, in that to spend more you need more. Therefore the concept of “disposable income” also needs to be modified to take into account the value of goods and services transferred to the households. Therefore the algebraic sum of disposable income and the transfers (called social transfers in kind) results in “Adjusted disposable income”, which is reported in the “Redistribution of income in kind account”. The “Adjusted disposable income” exceeds the “Disposable income” of those economic units, like households, receiving the transfers, whereas the contrary applies to the units offering the goods and services (*e.g.* the government).

Besides the purchase of health care goods and services on behalf of households, the health system is characterised by a number of other transfers and, more generally, by other kind of transactions.<sup>9</sup> For example, consider transfers of funds between central and local government, or between central government and the National Health Service; another example could be the payment of contributions to the National Health Insurance or the payment of premiums to private health insurance companies, or the transfer of funds from abroad for health-specific projects (*e.g.* AIDS programmes). All the transactions related to the health system can be grouped according to the economic activities that they refer to, such as production of health goods and services, and the generation, distribution, redistribution and use of income. In National accounts each transaction is recorded in a specific account.

Each account shows the resources available to the institutional units and the uses made of these resources. The difference between the total resources recorded on one side of any account and the total uses recorded on the other side of the same account gives a balancing item (*e.g.* value added, disposable income and saving), which encapsulates the net result of the activities covered by the account in question. The balancing item from one account is carried forward as the first item in the following account. Consider for example the “adjusted disposable income”, which is the balancing item of the “Redistribution of income in kind account” and, at the same time, the starting point for the construction of the “Use of adjusted disposable income account”. The balancing items are therefore the chain element which allows the different tables showing the economic activities (production, the generation, distribution, redistribution and use of income) to be connected and thereby make the set of accounts an articulated whole. For this reason, the set of economic accounts are called “integrated economic accounts”.

Integrated economic accounts (IEA) provide a flexible and powerful tool to record in a systematic way all the transactions taking place between the economic units included in the health boundaries. They are a powerful tool as they allow all transactions to be recorded, and most of all this provides a methodology to record all the transactions in a systematic way. This tool is flexible because, although presented in the SNA to provide a synthesis of a country’s whole economy, it can be adapted to a specific sector and to specific analytical needs. The following example shows how the elements of the sequence of integrated economic accounts can be re-aggregated to meet specific SHA needs.

- *The accounts of the health system*

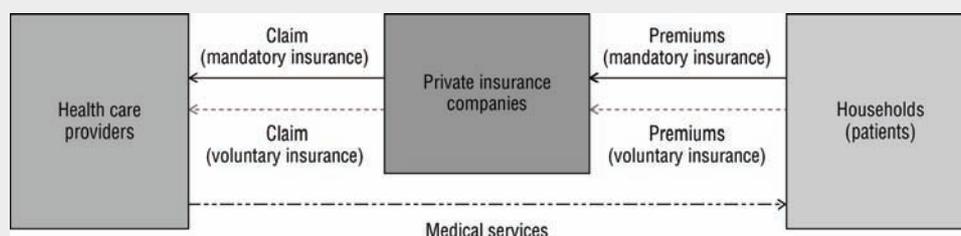
When referring to a country’s whole economy, the SNA sequence of integrated economic accounts (IEA) provides information on how the entire national income is

### Box B.1.3. Interpreting expenditure by financing schemes as an aggregation of transactions

Chapter 7 presents the concept of the financing scheme as a category for international comparisons of health expenditure. In this section we show how the concept of the financing scheme would fit in the sequence of accounts.

Consider a household subscribing to a mandatory health insurance policy with a private insurance company: the value of the premium is recorded as a use under the household accounts and as a resource under the insurance company accounts. If the same household also subscribes with the same insurance company a complementary voluntary insurance, a new transaction is recorded in both accounts (again under uses for the households and resources for the insurance company). However, as the two transactions differ in nature (one being voluntary and the other mandatory), the payment of the two premiums can be registered using two different headings (payment of premium for voluntary insurance vs. payment of premium for mandatory insurance). The same distinction could be applied to the claims, in that claims paid by the insurance company in force of a voluntary insurance policy are distinguished from those made because a mandatory insurance was subscribed (see figure below).

#### Voluntary and mandatory insurance



Source: IHAT for SHA 2011.

If for international comparison, it is deemed more convenient to separate voluntary premiums and claims from mandatory ones and then aggregate them into the categories of the financing schemes classification, this can be done by aggregating the transactions that take place between the financing agents, the providers and the units providing the resources to the financing schemes. All those transactions are in principle reported in the integrated sequence of economic accounts (IEA).

generated, distributed and used as final consumption or saving. This is done by reporting in different accounts all the transactions that take place both between resident units and between these units and non-resident units. A similar set of accounts can be developed for a specific sector of the economy, like the health sector. As in the case for the supply and use table, the basic idea in SHA is to consider a set of empty tables, similar to those used in SNA, and populate them with the information available either in the core or in the extended SHA accounting frameworks.

The two main differences between the SNA and SHA sequence of integrated economic accounts are first, the way resident units are grouped and second, the classification used for transactions. In SNA, units are grouped into five institutional sectors, while the non-resident units form the rest of the world; in SHA, resident units engaging in health transactions are classified according to the Provider (if they provide health goods and services), the financing agents (if they collect, pool and use resources) or as households,

with the rest of the world being included in both the provider and financing agents classifications. The classification of transactions used in a health-IEA would differ slightly from the corresponding SNA classification so as to show the required level of disaggregation, which is usually more detailed.

- *Behind the delivery of health products: the production and generation of income accounts*

Health care products (goods and services) consumed by resident households are recorded in the SHA core accounting framework as Current health expenditure. In doing this, SHA privileges a demand-side approach, in that the purchase of health products is considered together with its financing. However, a supply-side approach is also possible, in that health products consumed by the resident households can be regarded as delivered by resident health providers or as imported. Whenever a supply approach is adopted, the structure of production costs becomes of interest. Hence, an account showing at once the value of the output of the health providers together with the set of costs can be derived from the SNA sequence of accounts by combining the production and generation of income accounts (see Table B.1.3 below).

The health providers can, however, also deliver health services to non-resident households (i.e. tourists) or to other health providers, which then employ those services as inputs into their production process. Services delivered to non-resident households and to non-resident providers are regarded as “exports”, while the services acquired by other resident health providers constitute the intermediate consumption of those provisions. Both exports and intermediate consumption are excluded from the SHA core accounting framework and considered only in the SHA extended framework (see Chapters 3 and 4). Health providers can also produce health-related services or even non-health services. Health-related and non-health services are also excluded from the core framework. So, if the Current health expenditure broken down by providers corresponds to the output of the same health provider, the contrary is not necessarily true. The right-hand side of the production and generation of income account reports all health provider outputs, possibly broken down into health goods and services, delivered to either resident or non-resident units, and the health-related products and non-health products.

The left-hand side of the account (uses side) records the purchase of all goods and services acquired by the health providers for the production of their output. As shown in Chapter 9, the inputs can be broken down into health care goods and services (e.g. pharmaceuticals delivered to inpatients or specific tests performed by other providers), non-health care goods and services (e.g. electricity, water, disposable equipment) or health-related products. The sum of all the products used by the providers to perform their activities is called “intermediate consumption” in national accounts terminology.

The difference between output and intermediate consumption is the value added, which is the balancing item of the production account. Value added represents the contribution of the factors of production (e.g. labour and capital) to increasing the value of goods and services bought as inputs to the production process. Hence, the value added corresponds to the incomes received by the owners of these factors. Value added can be presented gross or net of the consumption of fixed capital. The concepts of intermediate consumption and value added are part of the SHA extended framework, but not of the core framework.

The sum of the value added of all health providers results in the value added of the health system as a whole. The value added of the health system can be used as an important indicator to assess the relative importance of the health system compared with the rest of the economy.<sup>10</sup>

#### Box B.1.4. Intermediate consumption

Intermediate consumption represents the value of the basic materials, components and semi-manufactured goods going into the product, as well as the value of the electricity, the cost of rents, IT services, insurance, legal and accounting services, etc., used in the production of a good or a service. In short, intermediate consumption consists of everything needed to produce other goods and services intended for sale, other than the labour of the workforce and the services provided by plant and machinery, offices and factory buildings. Just as output is not equal to sales, intermediate consumption is not equal to the purchases of goods and services intended to be intermediately consumed. This is because certain intermediate goods used in the production during the period may have been bought and stocked in a previous period. Similarly, some purchases during the period may be consumed after the period has ended, having been stocked in the meantime. In the end, intermediate consumption is equal to the purchases during the period minus the change (positive or negative) in the value of the inventories of goods and services for intermediate consumption. Firms often refer to these inventories as “materials inventories”. Like output, intermediate consumption is a flow, corresponding to what has been consumed during a period (a year or a quarter). This leads to the exclusion from the definition of intermediate consumption of the goods used for production but not entirely consumed during the period, such as machinery or software. These capital goods are classified as “gross fixed capital formation” (GFCF).

Source: Lequiller and Blades (2007).

The value added that has been created in the production process is distributed between the factors of production (i.e. labour – as compensation of employees, and capital – as gross operating surplus) and taxes on production. The information on the remuneration of the health work-force reported in the table HPxFP corresponds to the information included in this account.

The compensation of employees includes employees’ contributions and income tax withheld at source. Similarly, although employees do not in practice receive the employers’ social contributions (which, like the employees’ contributions, are paid directly to social insurance plans, tax authorities, etc.), the national accounts treat them as if employees did receive them, in such a way as to show the total cost of the labour factor to employers. The contributions included comprise both those actually paid by the employers and so-called imputed contributions. In addition, the account records taxes less subsidies on production under the uses side. These taxes on production are made up of taxes on wages or capital paid by the health providers. The balancing item is operating surplus or mixed income for

Table B.1.3. **Production and generation of income account of health providers**

Uses		Resources	
Y	Intermediate consumption	Output at basic prices	X
	FP.3 Materials and services used	<i>Health goods and services</i>	
	FP.3.1 Health care services	<i>Delivered to residents</i>	
	FP.3.2 Health care goods	<i>Delivered to non-residents</i>	
	FP.3.2.1 Pharmaceuticals		
	FP.3.2.2 Other health care goods	<i>Health-related products</i>	
	FP.3.3 Non-health care services	<i>Non-health products</i>	
X-Y	Gross value added at basic prices		
	Gross value added at purchasers' prices		
K	Consumption of fixed capital		
(X-Y)-K	Net value added		
	<i>RC.2. Compensation of employees and operating surplus/mixed income</i>		
w	<i>D1 Compensations of employees</i>		
	D11 Wages and salaries		
T	<i>(D29-D39) Other taxes less other subsidies on production</i>		
(X-Y)-W-T	B2 Gross operating surplus/mixed income		
(X-Y)-W-T-K	B2N Net operating surplus		

Source: IHAT for SHA 2011.

self-employed providers. The gross operating surplus of a non-market health producer is equal to consumption of Fixed Capital only, as the net operating surplus is by definition nil.

By using the health supply and use table it is possible to derive the production and generation of income account for each category of the health provider classification and for the health system as a whole. The production and generation of income accounts represent the link between the SHA HPxHF or HCxHP tables and SNA.

### **Where does the money come from? And where does the money go to?**

The previous sections covered information related to the provision of health care and the related transactions. Besides the provision of health care, SHA also addresses two basic questions: 1) where does the money spent on health go? and 2) where does the money come from? To answer these questions, two different perspectives are available:

- The first perspective aims at a breakdown of expenditure on health into the complex range of third-party payment arrangements plus direct payments by households or other direct funders of, *e.g.*, government-provided health care.
- The second perspective considers the ultimate burden of financing borne by sources of funding. In this kind of analysis, the sources of financing of the intermediary sources of funding (social security funds; private social and other private insurance; NPISH) are traced back to their origin. Additional transfers – such as inter-governmental transfers, tax deductions, subsidies to providers, and financing by the rest of the world – are included to complete the picture.

To record health care financing, SHA has developed a specific set of classifications (*i.e.* the HP classification of providers, the HF Classification of Financing Schemes, the FS Classification of the Revenues of Financing Schemes and the FA Classification of Financing Agents) plus a set of specific tables (*e.g.* HPxHF, HFxFS, HFxFA). The remainder of this annex shows how the information recorded in SHA via a set of cross-classified tables can also be

displayed using a section of the SNA sequence of accounts. If the primary interest is the financing of current health expenditure, the redistribution of income accounts and the use of income accounts are the most relevant accounts, whereas the capital account and the financing accounts can be employed to report the capital formation of health care providers and its financing.

- *Redistribution of income accounts*

Health systems are financed differently (*e.g.* through taxes or contributions) depending on the organisational set-up in each country. Moreover, within the same country, each health financing unit can raise its revenues in different ways (see Chapters 7 and 8): for example, general government can collect taxes or social contributions paid by households or other economic actors, or it can receive transfers from abroad; private insurance companies typically use premiums. All these financing mechanisms can be classified using the classification of transactions and reported in the secondary distribution of income accounts. This account is the first of the two accounts which in the SNA form the set called the “Redistribution of income accounts”. The second is the “Redistribution of income in kind account”.

#### *The secondary distribution of income account*

The secondary distribution of income account can be compiled for every group of financing units of the health system. Each transaction will be recorded either as a resource (revenue) if the subject is receiving the funds, or as a use if the subject is making the payment. For example, social contributions paid by households to the government will be recorded as uses (expenditures) in the household secondary distribution of income account and as resources in the government account. More generally, the Secondary distribution of income account shows how the balance of primary incomes of a health financing unit is transformed into its disposable income by the receipt and payment of current transfers,<sup>11</sup> excluding social transfers in kind (*i.e.* current taxes on income and wealth, social benefits, and other current transfers as both resources and uses, since what is a resource for one sector is a use for another). The balancing item is “Disposable income”. Disposable income is the amount available for consumption-expenditure and/or saving (investment and capital transfers).

The main transactions included in the Secondary distribution of income account are (Table B.1.4):

- *Taxes on income*, which comprises taxes on incomes, profits and capital gains. They are assessed on the actual or presumed incomes of individuals, households, NPISH or corporations;<sup>12</sup>
- *Social contributions for health benefits* paid by employers to social security funds, insurance enterprises administering social insurance to secure social benefits for their employees;<sup>13</sup>
- *Social benefits other than social transfers in kind*, which includes all health care social benefits that are either in cash or are not provided by social security funds.

#### *Redistribution of income in kind account*

Health goods and services provided to individual households by government units (including social security funds) and NPISH, whether purchased on the market or produced

Table B.1.4. Secondary distribution and use of income accounts

Account	Transactions	Health care providers		Health administration and system of financing		Others		Rest of the world		Total	
		HP1. + HP-6		HP-7		HP-8		HP-9			
		U	R	U	R	U	R	U	R	U	R
Secondary distribution of income	D.3.1 Subsidies										
	D.5 Current tax on income, wealth, etc.										
	D.5.1 Tax deduction (private households)										
	D.6.1 Social contributions										
	D.6.1.1 Actual social contributions										
	D.6.1.1.1 Employers' actual social contributions										
	D.6.1.1.1.1 Compulsory										
	D.6.1.1.1.2 Voluntary										
	D.6.1.1.2 Employees' actual social contributions										
	D.6.1.1.2.1 Compulsory										
	D.6.1.1.2.2 Voluntary										
	D.6.1.1.3 Actual social contributions by self- and non-employed persons										
	D.6.1.1.3.1 Compulsory										
	D.6.1.1.3.2 Voluntary										
	D.6.2 Social benefits other than social transfers in kind										
D.7 Other current transfers											
<b>B.6 Disposable income</b>											
Reditribution of income in kind	D.6.3 Social transfer in kind										
	D.6.3.1 Social benefits in kind										
	D.6.3.1.1 Social security benefits, reimbursements										
	D.6.3.1.2 Other social security benefits in kind										
	D.6.3.1.3 Social assistance benefits in kind										
D.6.3.2 Transfers of individual non-market goods and services											
<b>B.7 Adjusted disposable income</b>											
Use of (adjusted) disposable income	P.3 Final consumption expenditure										
	P.3.1 Individual consumption expenditure										
	P.3.2 Collective consumption expenditure										
	<b>B.8 Saving</b>										
	P.4 Actual final consumption										
	P.4.1 Actual individual consumption										
P.4.2 Actual collective consumption											

Source: IHAT for SHA 2011.

as non-market output by government units or NPISH, are called “transfers in kind”.<sup>14</sup> They may be financed out of taxation, other government income or social security contributions, or out of donations and property income in the case of NPISH. The Redistribution of income in kind account takes the balancing item of the Secondary distribution of income account, disposable income, and adjusts this for the value of social transfers in kind to reach a new balancing item, called adjusted disposable income. Adjusted disposable income will be higher than disposable income for the household sector, and lower for the government and the NPISH (SNA 2006, 8.140). The Redistribution of income account records social benefits in kind, which includes both benefits for which the households do not incur the expense and benefits for which the households make the initial outlay and are later reimbursed. The account also records the transfer of individual non-market goods and services, such as education and health, not included in social benefits in kind. Both types of transactions are included under the heading Social transfers in kind.

This account is relevant only for the household sector, which is the recipient of the social benefits in kind, and the government sector and the non-profit institutions serving households (NPISH), which are both “serving” the households.

The purposes of this account are 1) to give a clearer picture of the role of government and NPISH, 2) to deliver a more complete measure of household income, 3) to give a more complete picture of the redistribution process between sectors, and 4) to facilitate international comparisons and comparisons over time when economic and social arrangements differ or change.

- *Use of the disposable income account*

This account shows how disposable income is used either for the purpose of consumption expenditure or for saving. The account records disposable income as a resource and consumption expenditure as a use. The balancing item is saving.

Consumption expenditure covers the amount used on goods and services for final consumption. Excluded here is consumption of goods and services used in a production process (intermediate consumption is recorded in the production account).

Only the households, the government and the non-profit institutions serving households have final consumption expenditure.

Final consumption expenditure consists of the expenditure, including imputed expenditure, incurred by general government on individual and collective goods and services, and incurred by households and NPISH on individual goods and services.

An adjustment for the change in the net equity of households on pension funds is done by imputation. Pension funds are considered to be assets of households, not of the institutional units that manage them (the financial sector). The households pay contributions to and receive benefits (when retired) from the financial sector. Any difference between the contributions paid and the benefits received should be considered part of household’s saving, since the household is the owner of the assets. To accomplish this, an adjustment item is introduced. The adjustment is a resource (positive or negative) for the household sector and a use for the financial sector.

- *Use of the adjusted disposable income account*

The purpose of this account is to measure the sector’s actual final consumption. Actual final consumption for households covers goods and services that are effectively

available for individual consumption by households, regardless of whether the ultimate bearer of the expense is the household itself, the government or NPISH. Consequently, actual final consumption for the government refers only to collective consumption, while NPISH by definition have no actual final consumption, since all their consumption is individual by nature, and transferred to the households.

- *Capital account*

Non-financial assets like hospital buildings, ambulances, scan machines and so on are an important component in the production of health services. The value of the assets acquired or disposed of by health providers is recorded in the capital account (see Chapter 11). This account records also how the acquisition of the assets is financed (*e.g.* through own funds – saving – or capital transfers from resident or non-resident units) and finally reports the change in net worth due to saving and capital transfers. The transactions may take place either with other institutional units, both resident and non-resident, or could be internal transactions in which units retain products that they have produced themselves for use as capital formation (*e.g.* software produced in a hospital).

Saving plus capital transfers constitute the total of capital revenues, which finances what in the SNA is called changes in net worth due to saving and capital transfers. The difference between the latter and the level of non-financial investments defines the capacity of the sector to lend to (+) or its need to borrow from (-) other sectors. The detail on financial instruments used in lending or borrowing is presented in the financial accounts.

- *Financial accounts*

The financial account records all transactions in financial assets and liabilities – financial instruments – *i.e.* all borrowing and lending. The account shows net acquisitions of financial assets on the left-hand side and net incurrence of liabilities on the right. The balancing item of this account is net lending/net borrowing, the same balancing item as in the capital account.

## Setting priorities

SHA compilers might wonder whether it would be possible to set priorities for which accounts in the sequence of integrated economic accounts should be compiled first. To address this issue, it is worth noting that:

- This depends very much on the policy relevance assigned to the data in each country at any point in time. For example, there may be cases where the efficiency of the financing system is considered a priority. In such a case, the secondary distribution of income and the redistribution of income in kind accounts would be paramount. It could be the case that the containment of costs is the main issue, so that the information included in the production accounts could become the primary objective. Also, the availability of equipment and infrastructure of the health system could be considered as the main issue: in this situation the capital account together with the estimation of capital stock (not included yet in this annex) would be considered as a priority.
- The great majority of the information included in the sequence of IEA is the same information as included in the cross-classified tables (the main difference being the level of detail). As a consequence, the issue of setting priorities in the sequence of IEA is

strictly linked to the priority assigned to the compilation of SHA cross-classified tables. As an example, consider the remuneration reported in the HPxFP table: if this table is compiled, then the same information can be displayed in the generation of income account, but if the compilation of the HPxFP is not a priority for a given country because the analysis of the remuneration of the health personnel is not an issue, then the same also applies to the compilation of the generation of income account.

- One of the advantages of compiling the IEA is the possibility of calculating the balancing items, which are taken forward into the following account. So, unless a certain balancing item is estimated directly, it would not be possible to isolate one account from the rest of the sequence. As an example, consider the capital account. The entry balancing item is “saving”, which is taken forward from the use of disposable income account. If a direct estimation of saving were made, then it would be possible to compile the capital account without compiling the previous accounts.
- Finally, the accounts could also be compiled without taking into consideration the entry balancing items. In that case, they would only include the information on transactions, which would correspond to the information included in the cross-classified tables. However, compiling the accounts in this way might still have some advantages, in that it would be possible to display the information at a higher level of disaggregation as compared to the cross-classified tables. This could also be of great use for the compilers, as the consistency of information coming from different sources could then be checked, which would enhance the quality of the data.

**Note on the practicality of implementing the supply and use tables and the sequence of IEA**

As for any other statistical manual, the main concern for users is whether the approach proposed is feasible, and whether it is worth the time, costs and effort of implementing it. Obviously, a sound assessment depends on the specific features of the national statistical system (i.e. to what extent different statistical bodies – the Ministry of Health and the National Statistics Office to mention just two – co-operate and exchange information; the quality of the survey, the availability and reliability of administrative data sources, etc). However, it is worth repeating that the greater part of the information required for the compilation of the supply and use tables and the IEA sequence is the same information used in the compilation of SHA cross-classified tables. This is essentially due to the specific characteristics of the health system, notably the high share of non-market production, and therefore the lack of economically significant prices and in the case of non-market providers the output of the health providers is indirectly estimated using the sum of production costs. As a result, all the information required to compile the supply tables and the production accounts should be available, at least for the non-market production, when SHA cross-classified tables are compiled. The sole set of information that is not required for the compilation of SHA cross-classified tables is the “intermediate consumption” of the market providers. Similarly, demand-side aggregates (consumption, gross capital formation, exports) need to be estimated to compile SHA cross-classified tables: first, the final consumption expenditure, but also exports need to be estimated, as the SHA boundaries require their exclusion. Similar considerations apply to the compilation of the secondary distribution of income, as the information corresponds to the HFxFS table.

### **Advantages and disadvantages of the SHA- and SNA- type representations**

The SNA-type representations of the health system supplement those of SHA cross-classified tables rather than being in competition. Each has its own advantages as well as disadvantages:

- The main advantage of the system of SHA cross-classified tables is to show the origin and destination of the flows (i.e. “from whom to whom”). In addition, the matrix approach imposes consistency on the use of different data sources and helps to identify information gaps and needs. The principal disadvantage, however, is that the cross-classified tables are limited in that the transactions are not explicitly reported, and the surplus/deficit and net lending/borrowing of health actors are not accommodated.
- The SNA-type accounts could provide instead a richer set of information that has the potential to increase the analytical power of the SHA. The main benefits are:
- The SNA sequence of accounts provides information on the nature of the economic flows (i.e. transactions) that are not explicitly reported in SHA cross-classified tables. SNA-type accounts show whether funds have been collected using taxes (local or central, direct or indirect), contributions (paid by employers or employees), donations, or transfers from the rest of the world; or whether they are redistributed among actors that purchase health products; or whether the purchase is for own final use or as third-party payments. Also, the SNA sequence of accounts provides estimates of the surpluses or deficits (net lending or net borrowing) of the actors in the health system (balancing items, which are currently not included in SHA cross-classified tables). The analysis of surpluses or deficits is required to address the issue of the financial sustainability of the health system. A drawback of the sequence of accounts is that it is not possible to identify the origin and the destination of the transactions (“from whom to whom”). However, this might be overcome by employing a sufficiently detailed classification of transactions.
- SNA-type accounts and tables also allow the analysis of the supply side of the health system. The analysis of the production structure of the health providers (through the supply tables and the production and generation of income accounts) includes the share of intermediate consumption, the integration of the health system into the rest of the economy and its financial and non-financial dependence on the rest of the world. The cross-classified tables of current health expenditures and capital formation focus only on the demand side of the health system.

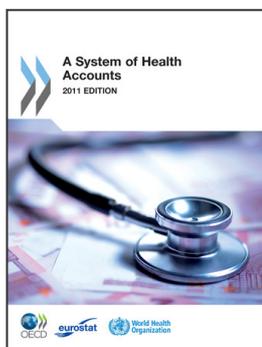
It is worth noting that, although the compilation of the tables derived from the SNA could enhance the analytical power of the SHA, its compilation should be considered as an advanced stage in the different stages of SHA implementation.

#### **Notes**

1. See Chapter 4 for the definition of SHA boundaries. Please note that the boundaries of health in the SNA (COFOG or ISIC) are not considered here. Therefore, the total value of the corresponding aggregates (i.e. current health expenditure) is in principle the same.
2. See Box B.1.2 for a definition of the T-Accounts.
3. An important difference is the way trade and transport margins for pharmaceutical goods are treated in SHA. See Annex A.

4. Because the uses of products are usually valued at purchasers' prices, but production at basic prices, it is necessary to add trade and transport margins, and taxes on products less subsidies on products to the left-hand (or supply) side of the identity so both sides are expressed in purchasers' prices. Therefore a more precise accounting identity is given by:
5. Output (at basic prices) + Imports + Non-deductible VAT + Other taxes on products – Subsidies on products + Trade margins + Transport margins= Uses.
6. Also, imports and exports require special consideration due to the cif/fob valuation.
7. See SNA 2008, 14.11.
8. Health products are valued either in basic prices or c.i.f. The total supply of each product in purchasers' prices is obtained by adding in trade and transport margins, and taxes less subsidies on products. C.i.f./f.o.b. adjustment is for obtaining total imports in f.o.b.
9. Most economic actions are undertaken by mutual agreement between economic units. They are either an exchange of economic value or a voluntary transfer by one unit to another of a certain amount of economic value without a counterpart. These actions undertaken by mutual agreement between two institutional units are called transactions in the SNA.
10. In the SNA, §6.37 "In the System, the intermediate inputs are recorded and valued at the time they enter the production process, while outputs are recorded and valued as they emerge from the process. Intermediate inputs are normally valued at purchasers' prices and outputs at basic prices, or alternatively at producers' prices if basic prices are not available. The increase between the value of the intermediate inputs and the value of the outputs is the gross value added against which must be charged the consumption of fixed capital, taxes on production (less subsidies) and compensation of employees. The positive or negative balance remaining is the net operating surplus or mixed income. The definition, measurement and valuation of outputs and inputs is, therefore, fundamental to the System and is described in detail in the following sections."
11. A transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as a direct counterpart. Transfers are separated into current transfers and capital transfers. Capital transfers are unrequited transfers where either the party making the transfer realises the funds involved by disposing of an asset (other than cash or inventories) or by 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. Capital transfers are often large and irregular, but neither of these are necessary conditions for a transfer to be considered a capital rather than a current transfer. Other transfers are described as current. A current transfer is a transaction in which one institutional unit provides a good or service to another unit without receiving from the latter any good or service directly in return as a counterpart, and does not oblige one or both parties to acquire, or dispose of, an asset.
12. Normally, there are no income taxes "earmarked" for health. Government policy regarding income taxed on individual households can, however, indirectly influence household decisions on health care financing, e.g. where tax deductions are granted to private households on private health insurance or on the direct out-of-pocket payment of health care services. For health policy analysis, however, this is an important piece of information.
13. The SNA makes a distinction between Employers' actual social contributions (D.6111); Employees' actual social contributions (D.6112); and Social contributions by self- and non-employed persons (D.6113). Although it is administratively more efficient for employers to pay the contributions on behalf of their employees, this must not be allowed to obscure the underlying economic reality. The payment made by the employer to the social security fund, insurance enterprise or autonomous pension fund is not a current transfer by the employer. The transfer takes place between the employee and the social security fund, insurance enterprise or autonomous pension fund out of remuneration provided by the employer. It is customary to describe the employers' social contributions as being re-routed in the accounts via the employees' primary and secondary distribution of income accounts. A further breakdown of social contributions for health benefits into compulsory contributions and voluntary contributions would be a useful tool.
14. The SNA states: "In principle, social transfers in kind may be paid to non-residents. One simple example is emergency medical care provided to a foreign tourist by a hospital within general government. However, just as non-resident households may benefit from social transfers in kind from the national government, so resident households may benefit from social transfers in kind paid by the government of another economy. In general these flows to non-residents will be small relative to the total level of social transfers in kind and, unless there is strong evidence to the

contrary, by convention it may be assumed that the flows to non-residents are balanced by flows from governments (and NPISH) of other economies. Subject to this convention, it is therefore the case that total disposable income for the total economy is exactly equal to total adjusted disposable income” (SNA08 8.141). This is a difference between the SNA and SHA, as in the latter the two flows should be recorded: the exports to be subtracted from domestic production, and the imports included in consumption.



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