

Revision of the

System of Health Accounts

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The System of Health Accounts and the Health Satellite Accounts

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by

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1. Introduction

Measuring resources mobilized by - and used in a health system is complex. The process articulates a network of productive entities with a network of financial agents which progressively specialize according to technological advances and the impact of user behaviour. Health is, by excellence, a field of central interest for public policy, for economic and human development, and an object of considerable debate.

Diverse international and national organizations have dealt with the subject, paying attention to shared concerns as well as to specific needs. The Member States of the World Health Organization (WHO) have developed health accounts using different frameworks: most of these estimates are based on the *System of Health Accounts* (SHA) of the Organization for Economic Co-operation and Development (OECD) and on the *Guide to producing national health accounts* (WHO); a smaller number is based on a satellite approach, using the *System of National Accounts-1993* (UN). A few associate their monitoring approach with public finance accounting and social protection accounting. Several monitor developments using more than one of these paths.

The coexistence of different frameworks on the one hand leads to the creation of mechanisms which identify the indicators and the contents of the various methods, and on the other hand raises the challenge to generate accounts in an efficient way that allows the optimum use of all available information. Demands include a comparison of the advantages and limitations of the two main approaches based on cumulated experience and stimulated by newly emerged expectations.

The consultative procedure of the SHA revision presents an opportunity to make explicit some of these reflections and to table a strategic proposal towards a more effective measurement.

2. Present perspectives

Focusing on economic activity and on institutional sectors, the national accounts take into consideration the relative role of medical services, the registers of related activities such as the production of medicines, therapeutic appliances, etc. The information accessible to national accountants, however, is insufficient for the detailed analysis of complex systems.

Contrary to the measurement of the financing flows, which it assigns to providers and to functions (bundle of product), SHA lacks transparency in the measurement of production (e.g. export and imports of goods and services, as well as in the estimation of non health products, SHA does not *account* for personnel involved in health activities). The balance between supply and use is therefore

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not appropriately established. To date, satellite accounts have shown a heterogeneous and an incipient development. Most experiments focused on the measurement of production, exhibiting a weak bond between financing and provision. Several satellite accounts have permitted to generate SHA tables. In an experimental exercise developed in Mexico, the starting point has been the identification of health products using the SHA functional classification, moving next to the production required to ensure that level of resource use. Thereafter tackling the financing required for that level of provision and smoothing the derived estimates around anchors constituted by the strongest observations.

SHA has developed a breakdown of financing and of strategies to assign financing to providers and to functions. Health systems with detailed insurance records assign these flows directly. There are, on the contrary, few comprehensive registries of health products. In the absence of direct observation on the consumption side, quantification relies on surveys that line up products without a link with their provision; alternatively, the construction work leads to supplying details regarding the link with provision. Registries within national accounting frequently are broken down into considerable detail that does not surface unless a specific effort to display them is undertaken. Rich registry information leads to greater accuracy both in relation to activity (provision) and to final use (products). Under the premise "what is consumed is per force produced", a confrontation between production and consumption enables greater coherence in measurement. Under SHA, *stricto sensu*, this confrontation is not transparent. A triaxial model (consumption-production-financing) cannot be completed when consumption and provision are not measured independently of one another.

Each accounting approach has its own strengths. In order to optimize the accounting development, the authors advise to consider a merger of the two approaches (and a fuller use of parallel measures, such as public finance). A by product of the greater consistency has proved to be the potential to generate more timely figures and to more complete estimation, as the detailed systemic knowledge adds to the SHA indicators. The internal decision-making instrument is thereby considerably reinforced. The benefits of the hybrid path are efficiency (cost savings), effectiveness (a better interaction between macro measurement and health system focused evaluation), opportunity (greater cross-national comparability). The limitations of the two approaches should be taken into account as well as the priorities, the objectives and the availability of information at country level.

3. Brief presentation of the hybrid model

Is it feasible to elaborate an Integrated Health Accounting System (IHAS) based on both SNA-1993 and SHA 1.0 that neither favours one approach over the other, nor subordinates one to the other? Apart from classifying and quantifying transactions at functional, provision and financing dimension level with an agent identification when appropriate, IHAS allows an intrinsic weighting of health by macro-economic class and an intrinsic interaction between different measurement approaches and indicators of the economy (the macroeconomic information collated is part of the system). The concomitant use of registries associated with the elaboration of the SNA or the systemic management of health would induce a more precise evaluation of subaggregates and their behaviour in the health system. These are attractive features for discrete management and decision-making.

As a specialized extension of both of the central macroeconomic framework and a systemic analysis of a social function, IHAS opens up to a range of basic tables derived from the SNA and the SHA

approaches. IHAS both exhibits distinct facets of health accounting: products, supply branches, expenditure patterns and uses, intervening factors such as employment, etc., as well as greater detail where information is already accessible e.g. total use of medicines, focus on high-cost diseases, depending on accessibility of data and on country-determined priorities and analytical interests.

Basic tables include:

Supply and use tables.

Main focus: national production and imports; activities related to the production of health; destination of the goods and services offered.

Production accounts.

Gross output, intermediate consumption, gross value added and its cost components by provider classes and of imports.

Capital accounts.

Accountability of non-cost expenditure essential to the functioning of the health system, namely gross fixed capital formation (acquisition minus disposition of fixed assets). Human resources, principally medical and paramedical education. Knowledge build-up (R&D) and other indicators.

Labour and factor inputs.

Volume indicators of labour input, capital stocks, non-monetary indicators.

Spending patterns.

Distribution by financing sources, financing allocation, resources collected by providers, and provision costs. These would be registered by final use as health and non-health products. Besides direct expenditure on patients, possible identification of provider agent or provider sector: non-market (government and NPISH), market; nature of service (individual, community); current and capital costs; characteristic and connex activities; direct and indirect financing patterns, such as transfer payments and sector liabilities (e.g. social security contributions, household spending net of reimbursement).

Specific interest extensions (also conditioned by accessibility to detailed information).

External transactions (trade in goods and services; intellectual property; official development aid, non-profit financing arrangements, inter- and intra-generation household transfers, e.g. remittances and household grants).

Research and development (extension of the synthesis table under capital accounts).

Social protection and other third-party financing schemes.

Sub-systemic accounts: AIDS accounts, mental health accounts, reproductive health accounts, etc.

Resource cost accounts: pharmaceutical accounts, health labour accounts, etc.

The design ensures both conceptually and in terms of measurement that the data keep a tight relation with the estimation of the SNA, a corner stone of economic and political management in most societies, which is intrinsic to the Satellite Accounts approach and stronger than the compatibility attribute spelled out in SHA.

The design allows flexibility in adjusting to the generation of accounts based on the prevailing statistical and information system which is nation-specific. Where the application of SHA 1.0

encounters strong feasibility problem related to the development of the institutional subaccounts, there is a possibility to move farther through the activity subaccounts. In the context of WHO, the integrated proposal is easier to apply in the 110+ countries which comply with SNA93 and in the countries which have a recent economic census and/or health and demographic surveys. In the case of nations which currently follow the SNA68 guidelines, a case by case review to determine a potential application would be necessary because the economic activity accounts may not all be sufficiently ample; the sequence and contents of the supporting accounting base is continuously being enriched by a structural transformation in statistical observations taking place in countries around the world.

4. Procedures to be adopted to make the proposal operative

A successful implementation of the hybrid model requires a strong interactive participation of institutions which construct national accounting and with institutions knowledgeable about health systems as well as the participation of experts in the various statistical registries and other basic records that need to be tapped (e.g. social insurance). As this has been found to be a feature in the development of many SHA experiments, this cannot be tagged as a new bureaucratic layer.

The experience of integrated accounting schemes is one of a strong inventory basis, of a comprehensive list of all relevant statistical series, surveys, and other forms of quantification. The inventory should preferably be accompanied by an evaluation of each statistical file and of their immediate usability or necessity to carry out additional calculations. With the organization of the information comes a detailed classification of goods and services closely tied to the Central Product Classification (CPC). CPC contains an already sizeable and tested detail of product entries.

Once the mentioned codifier has been defined and adopted as a reference, a second classifier, also to be integrated, relates to activities and products, for which the International Standard Industrial Classification of all economic activities (ISIC) may be used. CPC and ISIC are harmonized (ISIC Rev 3 is harmonized to parallel developments such as the NAFTA classification), the same attribute is expected from the revised ISIC.

The implementation of the hybrid procedure is easier when national nomenclatures are already in line with the international codifiers. The Classification of Providers should as well be homogenised (ICHA-HP).

In spite of the above, as there is no total correspondence between the Classification of Providers of SHA and other international or national classifiers, compatibility is only found in the segment on services, not in that of goods. There is thus an opportunity to ensure a cross-walk between accounting systems as part of the SHA revision process. A classification of medical activities and products (goods and services) turns out to be a difficult undertaking; consequently, international organizations have been flexible in this area without losing sight of a desirable standardization and a comparable presentation of results at a specific level of aggregation (for example, up to four digits of ISIC).

In regard to the administrative registries that account for the budgetary exercise of governmental economic units, there is pertinence in promoting in the ministries handling public funds, that the data generated or compiled through the application of budgetary programming criteria, be more

homogeneous; such presentation should facilitate the identification and classification of the functions recommended by SHA/PG. This recommendation is raised in line with International Monetary Fund and EUROSTAT-led reporting (at a still fairly high aggregate level though, that may gradually be enlarged); that information is cast along Classification of the Functions of Government (COFOG), hence, gradually enlarging the pool of detailed expenditure figures which respond to the same definitions in all countries.

Up to now, national accounts are constructed mostly by central banks or by statistical institutions, while ministries of health tend to take a leading role in compiling health accounts. Central banks or CSO are in charge of working out or compiling the expenditure data. In the same way, the information of census or surveys that are applied to businesses and/or establishments and households is generated by basic statistics agencies. Sometimes, institutional agreements or letters of understanding are subscribed designed to promote joint efforts and with the objective of exchanging experiences in the treatment of different statistics. This type of cooperation is important to avoid duplication of work and the application of different criteria in the face of a shared objective: the construction of health accounts.

The world evolves rapidly including strong linkages at health delivery and financing level. The submission of transparent figures is a continuous and universal demand. Though not all countries have reached the same level of development in their statistical infrastructure and in the way they organize and make use of the information, joint work between the ministries of health and the entities that deal with national accounts and basic statistics emerges as a necessity. This would place the focus on better registries, as well as save money and effort, thereby broadening and strengthening the statistical infrastructure and the decision-making superstructure.

Health accounting: contents, data requirement and indicators		
Dimensions and cross-sections	Data requirements	Selected indicators
Current expenditure on health: $H_0 = CHE$	Records from: Ministry of Finance, insurance schemes, economic censuses and surveys, balance of payments, foreign trade	Consumption. Total - Public - private expenditure. Equivalent FCE in SNA vectors (GDP, GNI, etc.).
T account: Sources of funds - financing agents transactions: HF x FS	Records from financing (intermediaries including external agencies), foundations and NPISH. Household income-expenditure survey	Expenditure distribution by entities purchasing health services and distribution of the financial burden.
Financing agent transactions by provider transactions: HP x HF	Administrative and financing intermediary records plus economic censuses and economic surveys + provider unit records	Distribution of expenditure by entities providing goods and services according to entities purchasing/paying goods and services
Financing agent transactions by functions: HC x HF	Administrative records and surveys of financing intermediaries and providers.	Distribution of goods and services by purchasing/payer entity.
Provider transactions by final use transactions: HC x HP	Administrative records and surveys of financing intermediaries and providers plus economic censuses	Distribution of supply of goods and services by type of provider.
Total expenditure on health: $H_3 = H_0 + HC.R^2$	Administrative records and surveys of financing intermediaries and providers plus case-mix analyses and ATC analyses (anatomic-therapeutic-chemical)	Expenditure distribution by goods and services
Personal expenditure by - ICD classes - case mix	Administrative records and surveys by beneficiary characteristics plus analyses by case-mix plus ATC (Anatomic-Therapeutic Chemical classification) + specific records of health care cost by disease	Distribution of expenditure by disease
Personal expenditure by - age and sex - socioeconomic	Administrative records and surveys by beneficiary characteristics + analyses by case-mix + ATC + records of health care cost by age and sex groupings	Expenditure by population groups by age and sex
	Specific for satellite accounts	
H_0 Supply and Use (SUT-Current Health)	MoF records, household income-expenditure survey, economic census and surveys, business registries, balance of payments and foreign trade	Economic balance of supply and use
Distribution of total health (H_3) by economic category	MoF records, economic censuses and surveys, business registries.	Gross output, intermediate consumption and gross value added (GVA): Compensation of employees, production taxes, gross operating surplus, mixed income, capital consumption. Contribution of health to GDP and components
Gross fixed capital formation: GFCF H \approx HC.R.1	MoF records, economic censuses and economic surveys, business registries.	Gross fixed capital formation and its components: buildings, equipment and machinery
Occupation H_0	MoF records, economic censuses and economic surveys, business registries.	Occupation, salaried and non-salaried

² H_0 - H_1 - H_3 are the labels of different levels of the expenditure on health: in SHA already proposed: current expenditure - total expenditure (including investment) - national expenditure.