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Guide to Producing Health Information System Subaccounts

within the national health accounts framework

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Contents

Boxes

Figures

Tables

Acronyms

DHS	Demographic and Health Survey
EPI	Expanded Programme on Immunization
FMOH	Federal Ministry of Health
ICHA	International Classification of Health Accounts
ICT	information and communication technology
HIS	health information system(s)
HMIS	health management information system
HMN	Health Metrics Network
HSDP	Health Sector Development Programme
M&E	monitoring and evaluation
MDG	Millennium Development Goal
MICS	multiple indicators cluster survey
MOH	Ministry of Health
NGO	nongovernmental organization
NHA	national health accounts
NHE	national health expenditure
OECD	Organisation for Economic Co-operation and Development
PASDEP	Plan for Accelerated and Sustained Development to end Poverty
PEPFAR	President's Emergency Plan for AIDS Relief
RHB	Regional Health Bureau (in Ethiopia)
SHA	System of Health Accounts
THE	total expenditure on health
USAID	United States Agency for International Development
WHO	World Health Organization

Preface

Accurate, complete and timely information is fundamental to health. Unfortunately, it is most frequently the countries with the greatest health needs and fewest resources that have the weakest health information systems (HIS). Over the years, a number of factors, including weak capacity and financial constraints have resulted in low levels of investment in HIS. The consequent lack of evidence compromises policy-makers' ability to be good stewards of their health systems. Multilateral and bilateral donor programmes in countries often create their own vertical reporting systems, resulting in both gaps and redundancies in the national health information picture.

To build or strengthen a national HIS, decision-makers need to know what resources are needed. To determine this, they need a clear picture of what is currently being spent on HIS, where the funds are coming from, and what services they are buying, in both the public and the private sector. An HIS subaccount, prepared using the national health accounts (NHA) framework, can provide this information.

The NHA methodology is an internationally accepted tool that provides a comprehensive estimate of all national health expenditures. An NHA subaccount is a more detailed reporting of spending levels and patterns for a particular component of health care. Subaccounts report expenditures in accordance with the NHA framework but with a focus on specific relevant categories. HIS subaccounts are unique in that they cut across different diseases, programmes and sectors. In some cases, the funds going to HIS may be earmarked as such; often, however, they will be embedded in other categories of funds, and data on HIS will need to be teased out using, for example, unit costing or time and motion studies.

HIS subaccount results can be used in various ways to inform policy and programming. Because the subaccount methodology uses the internationally recognized NHA framework, its findings can be compared across countries. If a country prepares estimations for a number of years, the results can be used to track trends in expenditure, to monitor patterns of resource use over time, and to evaluate how resource use relates to the achievement of programme goals.

This guide has benefited from the participation and contributions of numerous HIS and NHA experts, and from experiences with use of the methodology in Ethiopia. Particular efforts have been made to ensure that it is consistent with existing WHO guidelines on producing national health accounts. Intended for both NHA country experts and novices, this guide aims to help countries obtain a clearer picture of resource flows within the health information system, through regular estimations that can inform the policy process.

1. Guide to producing national health accounts with special applications for low-income and middle-income countries. Geneva, World Health Organization, 2003.

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Chapter 1
Introduction

Accurate, complete, and timely health information is fundamental to ensuring health. A recent WHO report emphasized that reliable information is particularly necessary in resource-constrained settings, where optimal allocation of resources can mean the difference between life and death (Health Metrics Network, 2008). It also pointed out that, in a world affected by new and resurgent diseases and other public health threats, accurate information can save lives, by preventing outbreaks of disease.

In recent years, the world has witnessed an unprecedented mobilization of efforts and resources to combat global health threats. Targets such as the Millennium Development Goals (MDGs) have been universally adopted, and international financing mechanisms, such as the Global Fund to Fight AIDS, Tuberculosis and Malaria, UNITAID, and the GAVI Alliance, have been established. Managing these large programmes requires timely, quality information on programme performance and financial management, which further strains already weak health information systems (HIS). Viewed more positively, however, these reporting requirements have raised countries' awareness of the need for good data, produced within the framework of a single, integrated, coordinated, national HIS.

HIS have four functions: (1) data generation, (2) data compilation, (3) analysis and synthesis, and (4) communication and use (Health Metrics Network, 2008). In summary, HIS collect data from the health system and relevant sectors, analyse the data, check their quality, relevance, and timeliness, and convert the data into information for health-related decision-making. Regularly updating the information allows policy-makers to judge if decisions are being implemented correctly and are achieving the intended results or need to be modified.

In addition to their monitoring and evaluation (M&E) function, HIS provide early warning systems, support direct delivery of care to patients and management of health facilities, inform planning and research, permit the analysis and reporting of the health situation, and communicate health information to diverse users (WHO, 2008). HIS operate at four levels: individual, health facility, population and public health surveillance.

To build or strengthen a national HIS, country and donor decision-makers need to know what resources are needed. To determine this, they need answers to questions such as the following: How much is currently spent on HIS? Who finances the HIS? On what kind of HIS activities are resources spent?

Without this information, it is difficult to plan and budget for an HIS. To answer these questions, comprehensive data are needed on the flows of HIS funds, not just for the public sector, but also for donor and private investments.

A widely used tool that provides information about financial flows for health at the national level is national health accounts (NHA) (OECD, 2000; WHO, 2003). This guide adapts the NHA framework to the HIS context, providing recommendations on how to prepare an NHA HIS subaccount. The target audience for this document is NHA practitioners and senior-level HIS staff in low- and middle-income countries. The guide offers a comprehensive approach that can be adapted to the country-specific setting, answer domestic policy questions, and allow international comparisons.

1.1. Concept of NHA

NHA are a methodology for capturing total expenditure on health (THE) (current and capital, originated from public, private, and external sectors) in a country for a particular year. The information is presented in a set of two-dimensional tables, with each expenditure categorized according to the International Classification of Health Accounts (ICHA). Funding flows (see Figure 1.1) are tracked as follows:

- from the financers of health *(financing sources)*, such as the Ministry of Finance, households, and multilateral and bilateral donors;
- through the principal managers of those funds (*financing agents*), such as the Ministry of Health (MOH), insurance organizations, and nongovernmental organizations (NGOs);
- to the entities that deliver health care services (*providers*), such as hospitals, dispensaries, and pharmacies, and the various inputs required to produce them;
- to the end uses of health funds (health services and products, termed *functions*), such as curative care services, public health programmes, and health care administration.

The most frequently produced NHA tables are: financing agents vs financing sources (HF x FS), financing agents vs health care providers (HF x HP), financing agents vs health care functions (HF x HC) and health care providers vs functions (HP x HC). A more comprehensive NHA might include tables of inputs against providers or financing agents (HP x RC or HF x RC), as well as a distribution of expenditure according to characteristics of the beneficiaries (such as age, sex, ICD groups, region and socioeconomic group).

NHA estimates are meant to inform health policy-making in a country (see Figure 1.1). This is most effective when NHA are conducted on a regular basis, ideally as part of routine data collection. The NHA framework is internationally recognized and used worldwide,[2] and has been endorsed by multilateral and bilateral organizations, such as WHO, the World Bank, and the United States Agency for International Development (USAID).

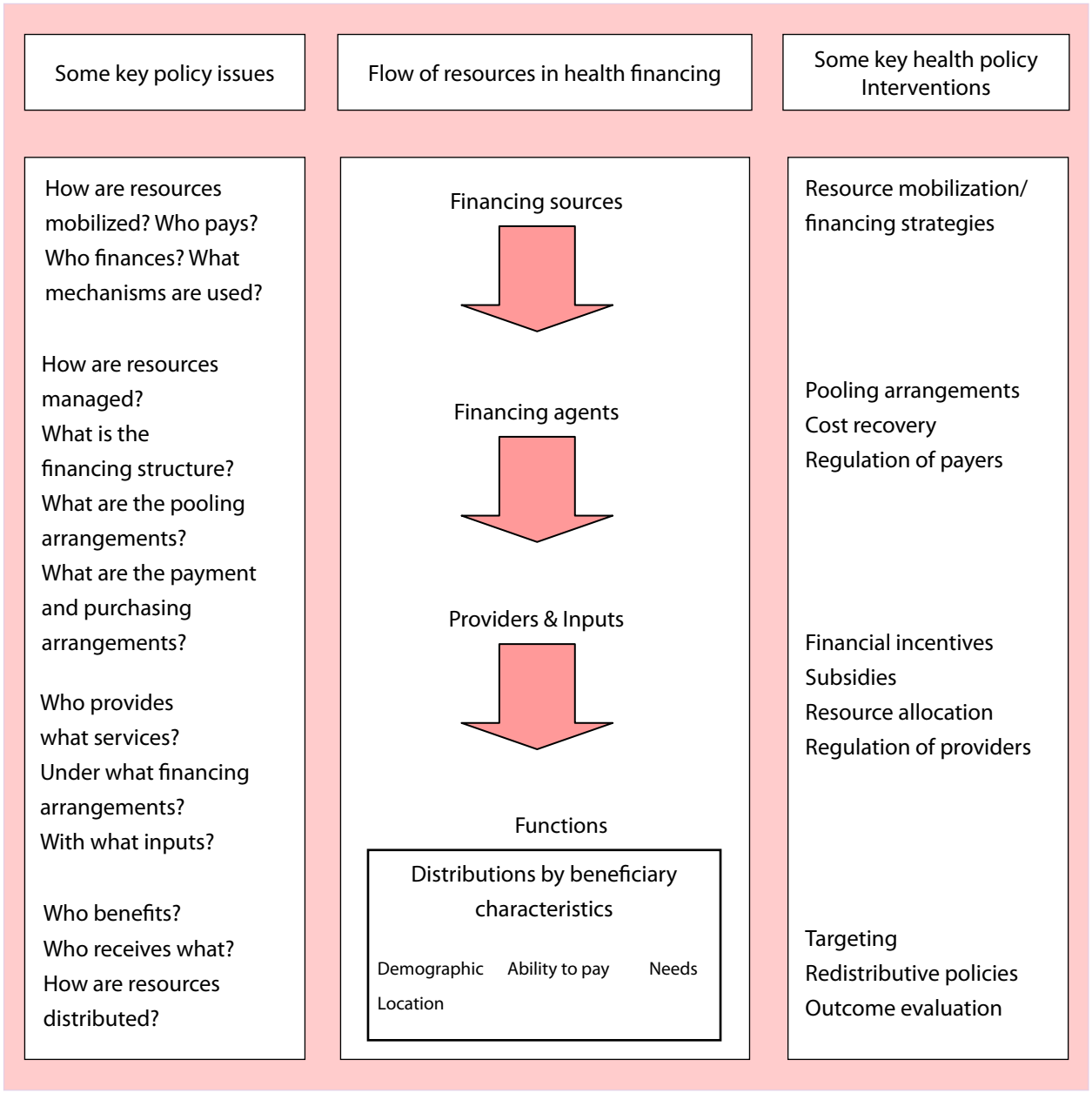
1.2. Overview of HIS subaccounts

The NHA framework is suited to tracking HIS expenditures. Like the general NHA, HIS subaccounts capture all HIS expenditures in a two-dimensional table format, comprehensively listing the flow of funds from financing sources to end uses. HIS subaccounts aim to:

- identify all sources and uses of financial flows for HIS in the context of overall health spending;
- provide this key HIS expenditure information, preferably on a routine basis, to national policy-makers, donors, and other stakeholders, to inform strategic planning in HIS; and

2 More than 100 low- and middle-income countries had undertaken at least one round of NHA by the end of 2012.

Figure 1.1. Link between NHA categories and selected policy interventions



Note: The panel on the right shows some of the main policy instruments or decision areas that health care policy-makers must address to improve health system performance through financing reforms. It is possible to link those concerns with the information obtained by the NHA classifications. NHA reports health expenditures as they flow through the health system. The reporting is structured in ways that help policy-makers answer a wide range of crucial questions that should improve their capacity to provide good stewardship and hence improve health system performance.

Source: Adapted from: Hernandez P, Tan Torres T, Evans DB. Measuring expenditure on the health workforce: concepts, data sources and methods. In: Dal Poz MR, Gupta N, Quain E, Soucat ALB, eds. *Handbook on monitoring and evaluation of human resources for health, Geneva*; WHO, World Bank, USAID;2009.

- provide internationally comparable data on HIS.

Preparing an HIS subaccount in conjunction with a general NHA estimation minimizes duplication of effort. The health accounting methodology involves triangulation as a key strategy to ensure the appropriateness of estimated expenditure levels. Additionally, preparing regular HIS subaccounts allows countries to monitor expenditures over time.

HIS subaccounts have the same limitations as the general NHA framework with respect to the trade-off between policy relevance (providing the right information at the right time) and measurement feasibility (the ability to retrieve and analyse data, and report the resulting information in the time available) (OECD, 2000; WHO, 2003).

1.3. Policy objectives of HIS subaccounts

HIS subaccounts are an important input to the policy-making process and can, to a large extent, answer the following key HIS policy questions.

- How much is spent on HIS? What percentage of THE goes to HIS?
- Who finances HIS and how much do they spend?
- Who manages HIS funds? Who has control over their allocation?
- What share of public health funds is spent on HIS?
- What share of HIS expenditure goes to vertical as opposed to horizontal HIS?
- What is the reliance on donors for HIS? What share of donor health funds is targeted to HIS?
- Where are HIS funds spent?
- Are expenditures in line with national HIS plans (particularly those that are costed)?
- How does financing of HIS differ across countries (assuming multiple country data are available and estimated using the same framework)?

Additional policy issues that can be addressed by HIS subaccounts include the following.

- How much is being spent on the different data sources (see Chapter 2)?
- How much is being spent on HIS coordination at national and subnational levels?
- How much is being spent on human resources for HIS?
- How much is being spent on human resources by HIS function, particularly data collection and collation, analysis, and use?
- How much is being spent on activities and interventions related to the use of information for decision-making by various actors across the health system?
- How much is being spent on disease surveillance?

1.4. Indicators produced by HIS subaccounts

Insufficient funding is a major constraint facing HIS in several countries. Resource needs vary by country, capacity, and strength of a health system. Although no global estimates of the funding shortfall for HIS are currently available, it is indisputable that additional resources are required to support building and sustaining effective HIS.

Table 1.1. Potential indicators for the HIS subaccount and related policy questions[a]

Policy question	Indicators	Relevance of indicators	Source tables in HIS subaccount
How much is spent on HIS and on HIS including memorandum items? ○ Comparison of resource availability for HIS/HIS health activities between countries ○ What percentage of THE does HIS/HIS health represent? ○ What percentage of GDP does HIS/HIS health represent? ○ How has HIS /HIS health expenditure evolved over time?	Total HIS/HIS health expenditure ○ Total HIS/HIS health expenditure as share of THE ○ Total HIS/HIS health expenditure as share of GDP ○ Total HIS/HIS health expenditure per capita ○ Total HIS/HIS health expenditure per capita as share of GDP per capita	Resource availability for HIS activities ○ Assess allocation of THE ○ Advocate for increased funding for HIS ○ Compare resource availability for HIS activities across countries	All tables (Total values)
Who finances HIS/HIS health and how much do they spend? ○ Who pays for HIS/HIS health and how much do they spend? ○ Who manages HIS/HIS health funds? ○ Who has control over their allocation? ○ What is the role of the government in financing HIS/HIS health? ○ What is the role of the private sector in financing HIS/HIS health? ○ What is the role of the external (donors) sector in financing HIS/HIS health?	HIS/HIS health expenditure by source and by manager of funds ○ Public funds spent on HIS/HIS health as a percentage of all HIS expenditure ○ Social security funds spent on HIS/HIS health as a percentage of all HIS expenditure ○ Private funds spent on HIS/HIS health as a percentage of all HIS expenditure ○ HIS/HIS health expenditure by nonprofit institutions serving households ○ HIS/HIS health expenditure by private non-parastatal firms and corporations ○ HIS/HIS health expenditure by external agencies	Resource availability ○ Assess adequacy of funds from all sources and evaluate alternative sources of financing HIS/HIS health ○ Assess adequacy of funds handled by all managers and evaluate coordination of financing of HIS/HIS health ○ Assess allocation of public funds to HIS/HIS health and compare with national HIS/HIS health priorities and needs ○ Financial sustainability of HIS/HIS health activities ○ Identify financial gaps in HIS/HIS health activities ○ Assess allocation of funds to HIS/HIS health and coordinate national and external financing flows	FSxHF

a The denominator to be used in calculating the indicators will depend on the policy relevance of the indicator in question. In some cases, the denominator will be total HIS expenditure (including non-health expenditure for HIS), while in other cases, it will be THE or public/donor health expenditure (excluding health-related and addendum or non-health expenditures). This would be particularly applicable where there is a need to compare with resources spent on health.

- As THE includes expenditures for capital formation, the HIS expenditures must also include expenditures for capital formation to maintain consistency. In the event that only current HIS health expenditures are computed, the denominator for this indicator should be current HE.
- In most low- and middle-income countries, public expenditures include donor expenditures if the donor funds are not earmarked for health but given to the central government as budget support.
- HIS principal categories/ functions could be country specific but assessment of feasibility of measurement should be done prior to developing policy questions and using the NHS HIS subaccounts.

Policy question	Indicators	Relevance of indicators	Source tables in HIS subaccount
Assess allocation of HIS principal categories and compare with national HIS priorities/needs How does financing of HIS/HIS health components differ across countries? (requires data from multiple countries, estimated using the same framework? Who funds what?	HIS expenditure by component (e.g. inpatient, outpatient, prevention, administration) o HIS/HIS health expenditure in vertical programmes as a percentage of total HIS/HIS health expenditure o Routine (cross-cutting funding from health system) HIS expenditure as a percentage of total HIS/HIS health expenditure	o Assess financial sustainability of HIS/ HIS health activities by component o Identify financing flows to HIS/HIS health components o Identify gaps in financing of HIS/HIS health components	HFxHC
Who performs the component activities of HIS/HIS health? o What is the relative importance of the various HIS/ HIS health providers? o Who does what? What resources are used to provide HIS/HIS health components? o How is HIS/HIS health produced? o What are the key resources involved in HIS/HIS health production? o What resources are used by type of investment?	o Providers of HIS components (e.g. hospitals, ambulatory centres, surveillance units) o Share of expenditure on HIS/ HIS health by provider o Share of expenditure on HIS/ HIS health by provider and by component Inputs required for HIS/HIS health production (e.g. human resources, supplies and services) o Share of human resources used for HIS/HIS health as proportion of THE o Share of government human resources used for HIS/HIS health as proportion of GGHE (Expenditure on Health by General Government) o Expenditure on HIS/HIS health by type of investment (e.g. building, equipment, furniture)	o Identify market structure of HIS/HIS health components o Identify gaps in production of HIS/HIS health components Identify the resource mix used to generate HIS/HIS health Identify investment available for HIS/HIS health	HP x HC HP x RC HP x GFCF (gross fixed capital formation)

Given the high visibility of health on the global development agenda, and the crucial role that health information plays in supporting management and monitoring of local, national, regional, and global health efforts, it is important to track the flow and amount of resources spent on HIS. Additionally, data generated by NHA HIS subaccount estimations can inform evaluations of the efficiency of HIS in countries. Table 1.1 presents some of the indicators that can be provided by an HIS subaccount.

1.5. Methodological approach and organization of this guide

The approach suggested in this guide adheres to that of the Producers' Guide for national health accounts (WHO, 2003). However, when a country decides to prepare NHA, local organizational and political considerations must be taken into account and the general methodology adapted to the specific context. For example, issues such as the organization of the HIS and the availability of expenditure information will affect the NHA implementation strategy.

As a first step, the purpose of the HIS subaccount should be specified. This will help establish the boundaries. For example, what types of goods and services related to HIS will be included in the analysis? These issues are discussed in more detail in Chapter 2.

Once the purpose and boundaries of the subaccount have been established, the expenditures need to be classified in accordance with the ICHA categories recommended in Chapters 3 and 4 of the Producers' Guide (WHO, 2003). Chapter 3 of this guide outlines a breakdown for the specific dimensions of HIS. The main difference with the general NHA classification scheme is in the level of detail relating to HIS functions. Chapter 3 also presents a mapping of classifications that provide the names and codes that will be the row and column headings of the core subaccount tables.

Chapter 4 describes the data needed for HIS subaccounts and suggests data collection methods. The chapter discusses how available information could be used, as well as the usefulness of adding specific questions to general NHA surveys. It is important that the subaccount technical team clearly understands how HIS are organized and function, as this will facilitate the planning and implementation of data collection and analysis.

Once the data have been collected and assessed for quality, the process of completing the NHA tables begins. This requires a thorough examination of existing data gaps, resolution of data conflicts, agreement on estimation techniques and their documentation.

Data analysis for HIS subaccounts can be difficult because substantial expenditures are "embedded" in other programmes. Teasing out these embedded expenditures, and clearly categorizing earmarked and non-earmarked expenditures, are discussed in Chapter 5. Earmarked HIS funds are those that specifically and exclusively fund HIS activities.

Chapter 6 addresses the practical aspects of implementing HIS subaccounts and makes recommendations for institutionalization of data collection on HIS expenditures and incorporation of HIS into expenditure tracking systems. This can only be done with the commitment of all stakeholders, as well as the production, analysis, and dissemination of sound and complete data by technical experts. The chapter also suggests a timeframe for elaboration of HIS subaccounts and summarizes the resources required for implementation.

Chapter 2
Definition and scope of HIS subaccounts

2.1. Introduction

A shared understanding of the meaning and scope of HIS – which activities are to be included in or excluded from the HIS subaccounts – is crucial for estimating HIS expenditures.[3] Harmonized, uniform boundaries allow subaccount estimates to be comparable. This chapter presents the scope and boundaries of HIS subaccounts within the general NHA framework.

2.2. NHA boundaries

NHA take a functional approach to expenditures.[4] The expenditures included in the NHA are the monetary value of goods and services consumed and of activities implemented, the primary purpose of which is to improve, restore or maintain the health status of an individual or population (WHO, 2003). Thus, NHA look at the intent of the service or function, and not the institution providing or paying for the service, when deciding whether and how to include it (WHO, 2003). Expenditures in the NHA fall into two primary categories (see Table 2.1): health expenditures are those directly related to health care, such as disease prevention, treatment, and general health system stewardship; health-related expenditures are those that assist in the provision of care, for example, capital formation for health care facilities,[5] training and research (WHO, 2003). The accounts track these expenditures in the country in a given year.

3 NHA distinguishes between HIS and health management information systems (HMIS). The latter refer to health services data (at provider or facility level). As such, an HMIS is a component or subsystem of the HIS. This guide encompasses HIS in the broad sense, and not merely the HMIS.

4 For more details on the NHA functions and their international classification, see the Producers' Guide (WHO, 2003), Table 3.2.

5 Capital formation refers to the physical assets (land, buildings, and equipment) acquired by or accessible to the health sector during the estimation year. It should be noted that, while health expenditure should include recurrent expenditures associated with these assets, such as depreciation of buildings and equipment, in practice NHA estimations often do not do this; instead, capital and recurrent expenditures are often aggregated.

Table 2.1. Activities included in NHA

ICHA Code	Function
HC.1–HC.5	Personal health services and goods
HC.1	Services of curative care
HC.2	Services of rehabilitative care
HC.3	Services of long-term nursing care
HC.4	Ancillary services to medical care
HC.5	Medical goods dispensed to outpatients
HC.6–7	**Collective health services**
HC.6	Prevention and public health services
HC.7	Health administration and health insurance
HCR.1–HCR.5	**Health-related functions**
HCR.1	Capital formation for health care provider institutions
HCR.2	Education and training of health personnel
HCR.3	Research and development in health
HCR.4	Food, hygiene, and drinking-water control
HCR.5	Environmental health
HC.1–7	**Total current expenditure on health (TCEH)**
HC.1–7+HCR.1	**Total expenditure on health (THE)**
HC.1–7+HCR.1-5	**National health expenditure (NHE)**

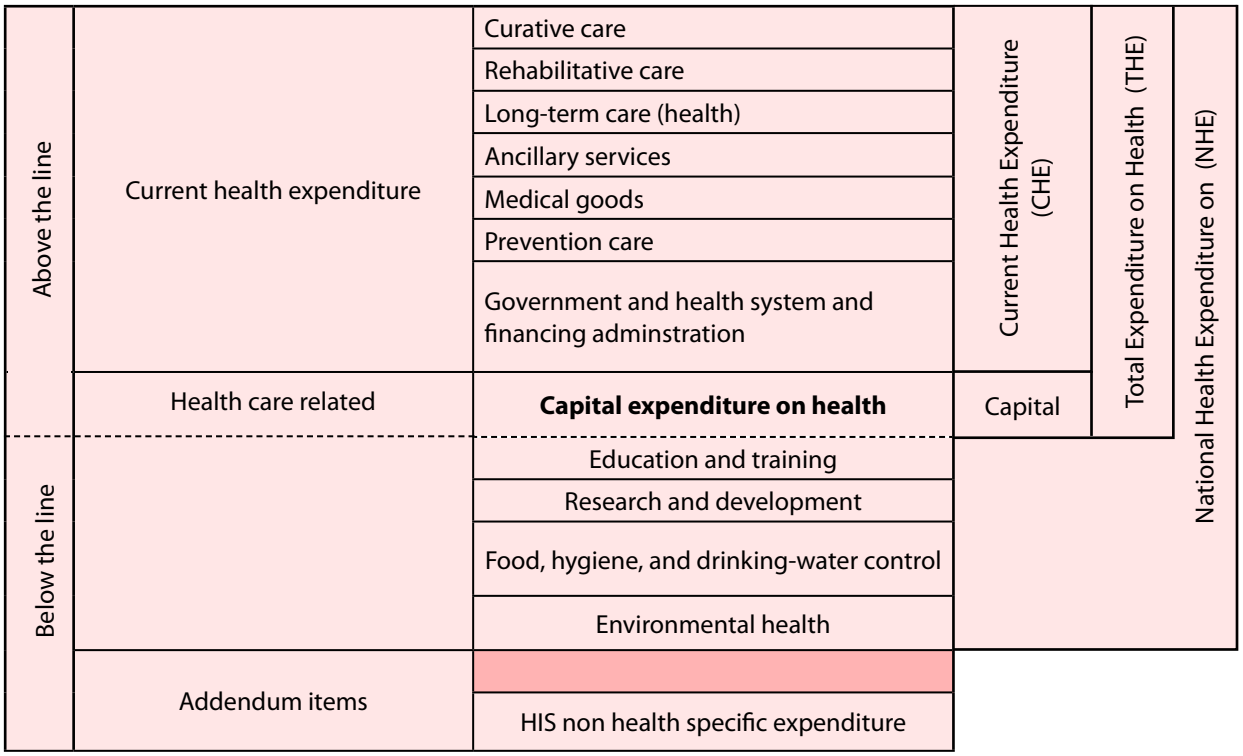
Source: WHO,2003.

The NHA framework combines expenditures in two ways: THE is the sum of the current health expenditures plus capital formation; national health expenditure (NHE) comprises THE plus other health-related expenditures.

In HIS subaccounts, an additional layer is required to cover HIS expenditures that do not correspond to core health and health-related functions. These other expenditures are generally not captured in the NHA framework (for more information, see OECD, 2000), but they can be tracked separately as non-THE, non-NHE addendum items. For example, a population census may include questions about the health of individuals. However, it is not the primary purpose of a census to improve, restore, or maintain health; health is just one aspect of population status. The census would therefore not be included in the NHA, but can be captured as an addendum item in the HIS subaccount. Similarly, health data from social sector studies, such as surveys of poverty or living standards, and vital records systems to monitor births and deaths, would be included as addendum items. A further way to categorize expenditures is by whether they fall above or below the line (see Figure 2.1). Expenditures contained in NHE fall above the line, and all other addendum item expenditures fall below the line.

By using these categories in a standard and consistent way, a country can compare its health spending with that of other countries, and identify trends in its own health spending over the years.

Figure 2.1. NHA expenditure boundaries



2.3. Concept of HIS

HIS have four key functions: data generation; compilation; analysis and synthesis; and communication and use. HIS collect data from the health system and other relevant sectors, analyse the data and ensure their overall quality, relevance, and timeliness, and convert them into information for health-related decision-making.

Health planners require information from sources outside the health system. For example, information on food security may be needed to evaluate the risk of malnutrition (a health issue), on climate change to predict outbreaks of epidemic diseases, on road accidents to inform trauma programmes, and on the environment for framing appropriate public health interventions (Macfarlane, 2005).

For the purposes of these guidelines, the HIS universe is considered as consisting of three inter-related components: (1) data sources, which may be population- or institution-based; (2) data management systems, which include all activities linked to collection, storage, quality assurance, processing, analysis and dissemination; and (3) policies and resources, which provide inputs and direction for the overall functioning of the HIS (WHO, 2008b).

2.4. Definition of HIS expenditures

This guide uses the definition of HIS proposed by the Health Metrics Network framework (WHO, 2008, pp 16). Thus, an HIS is a system comprising six components, which can be grouped as inputs, processes and outputs (see Table 2.2).

- ***Inputs*** or HIS resources include legislative, regulatory, and planning and statistical frameworks, and other resources needed for the proper functioning of the system (e.g. personnel, financing, logistic support, templates for reporting, computers, mobile telephones and other information and communication technology (ICT)).

- ***Processes*** comprise: indicator generation (e.g. determinants of health, health system inputs, outputs, and outcomes, and health status); routine and non-routine filling of population- and facility-based data sources (e.g. population-based census, vital registration records and population surveys), and institution-based data (e.g. individual records, service records, and resource records); and data management (collection, storage, quality assurance, processing, compilation and analysis).
- ***Outputs*** are information products and their dissemination and use.

Table 2.2. The six components of HIS as defined in the HMN Framework

1. INPUTS	1. Resources	These include the legislative, regulatory, and planning and statistical frameworks required to ensure a fully functioning HIS, and the resources needed for such a system to function. Such resources involve personnel, financing, logistic support, templates for reporting, computers, mobile telephones, and other information and communication technology, and coordinating mechanisms within and between the various components.
2. PROCESSES	2a. Generation of indicators	A core set of indicators and related targets is the basis for an HIS plan and strategy. Indicators need to encompass: determinants of health; health system inputs, outputs, and outcomes; and health status.
	2b. Filling of data sources	Data sources can be divided into two main categories: (1) population-based (censuses, civil registration, and population surveys) and (2) institution-based (individual records, service records, and resource records). There should be a basic set of standards for each source and strategic element. A number of other data collection approaches and sources provide important information that may not be available elsewhere; these include occasional health surveys, research, and information produced by community-based organizations.
	2c. Data management	This covers all aspects of data handling from collection, storage, quality assurance, and flow, to processing, compilation, and analysis. Specific requirements for periodicity and timeliness are defined where critical – as in the case of disease surveillance.
3. OUTPUTS	3a. Information products	Data must be transformed into information that will become the basis for evidence and knowledge to shape health action.
	3b. Dissemination and use	The value of health information can be enhanced by making it readily accessible to decision-makers (giving due attention to behavioural and organizational constraints) and by providing incentives for information use.

Source: Health Metrics Network (2008).

Like the general NHA and other NHA subaccounts, the HIS subaccount takes a functional approach to defining HIS expenditures: if the primary purpose of the expenditure is to support, produce, compile, analyse or use information whose primary purpose is to improve, restore or maintain the health of an individual or population, the expenditure is included (WHO, 2003). Also like other accounts, the function, rather than the entity making the expenditure, determines its inclusion. Thus, HIS subaccounts include entities that monitor and evaluate vertical health programmes, government ministries and departments outside the ministry of health, donor organizations, NGOs, and private for-profit health facilities. They could also include HIS spending by institutions that are not affiliated with health care, for example, corporations that undertake activities aimed at improving, restoring, or maintaining the health of their employees and employees' families, or a national statistical bureau that finances a large-scale population-based survey focusing on health.

HIS are not explicitly mentioned as a health care function under the NHA framework. Rather, they are considered as a subfunction or intermediate good[6] embedded in each health care function, such as delivery of HIV/AIDS, malaria, or reproductive health services. From a budget classification perspective, expenditures on HIS are most often included in the general administration costs of health activities. This makes estimating HIS expenditure complex. For example, in most low-income countries, the HIS department of the Ministry of Health is within the Ministry's planning unit: the NHA will capture the unit's recurrent and capital expenditures under General Administration of Health of Ministries of Health. Teasing out HIS expenditures requires a systematic review of the ministry's budgeting system, access to reports of actual expenditure and special estimation techniques (for more information, see Chapters 4 and 5).

As well as adhering to the methodological framework of the NHA (OECD, 2000; WHO, 2003), the boundaries of the HIS subaccount must be relevant from a policy perspective. The former allows comparability of data and integration into a broadly used resource tracking framework for health. NHA by themselves would not measure all expenditures across the six components of the HMN framework, because NHA collect data only on health expenditures. Therefore, while NHA would provide estimations of expenditure on health and health-related HIS, more extensive, addendum-type information on HIS expenditures would be needed to get a full picture of HIS. It is advisable to consider cost-benefit issues to assess the appropriate effort of producing the various HIS components when preparing an HIS account. HIS accounting is a key tool when major investments need to be monitored.

Table 2.3 compares the NHA and HMN frameworks, and provides examples of techniques that might be employed to estimate HIS expenditure. It is recognized that, while the expenditures captured using the approach described in this guide will be sound, policy-relevant, and comparable across countries (i.e. coherent with the overall NHA approach), an additional effort may be needed to include some HIS expenditures of interest to the HMN framework.

Whatever is deemed appropriate for inclusion, HIS expenditure estimates should be as disaggregated as possible, so that HIS needs can be clearly and reliably documented. Moreover, it is important to maintain the link between the total expenditure on HIS and the THE of the country. Because HIS, in the broad sense, include several data sources under which different HIS functions are performed, it is likely that not all data sources will provide information that qualifies as health expenditures and be included in THE. The proposed boundaries of HIS subaccounts are therefore as follows.

- **Current HIS health expenditures + capital formation**: HIS activities primarily or entirely associated with health care, e.g. curative care, rehabilitative health care, pharmaceuticals and other nondurables, prevention and public health services, ancillary services (such as laboratory services) and general health administration, plus the health-related function of capital formation. This is total HIS health expenditure (THEHIS).
- **THE_{HIS} + health-related HIS expenditures**: The above expenditures plus expenditures related to HIS activities by virtue of overlap with other health-related activities, such as

6 Final consumption consists of goods and services used up by individual households or the community to satisfy their individual or collective needs or wants.

Table 2.3. Comparison of NHA and HMN frameworks

NHA framework	HMN framework	Remarks
Uses a functional approach to defining health expenditures – expenditures are included based on their primary purpose of improving, restoring or maintaining health, regardless of outcome or of the institution providing the service or product.	Uses a production function approach of inputs, processes, and outputs to define its components, e.g. HIS resources (inputs), indicators, data sources, data management (processes), and information products and their dissemination and use (outputs).	A mixed approach is feasible to reach a complete HIS estimation, which requires a complementary effort. Complementarity includes the focus on all HIS components, as well as estimation techniques required to tease out HIS expenditure, such as time and motion studies, and detailed subsector expenditure reviews. As in other cases, it is advisable to consider cost–benefit aspects of such supplemental effort before embarking on an HIS account.
Includes only resources on activities whose primary purpose is to improve, restore, or maintain health. The focus is on final consumption[7].	Includes resources on information systems, including those on non-final health expenditures[8]. Most HIS activities are not final consumption but intermediate consumption, which are not explicitly displayed in NHA.	For example, a living standards survey that includes questions on health would fall under the HMN framework. The NHA would treat it as an addendum item or exclude it, on the basis of the primary purpose criterion. Including the health-related components of such a survey would make the HIS expenditure estimate more comprehensive, but also consume time and resources, and the cost-benefit of such effort must be taken into account.
Most of the data sources formats used in estimating actual expenditureson health are close to the NHA structure, e.g. expenditure data presented by programme, line items, etc.	Most data sources formats do not display the various key components of the HMN framework	HIS is a cross-cutting health function. A specific effort is required to tease HIS spending out from most health activities.

water and sanitation activities, other social expenditure, and research and development. These include education and training in HIS, HIS for nutrition support and water programmes, and research and development one-off events, such as public expenditure reviews and capital formation. This is termed national HIS health expenditure (NHEHIS).

- **NHE_{HIS} + addendum HIS expenditures**: The above expenditures plus addendum expenditures on HIS activities that do not meet the primary purpose criterion of the NHA, but that do form part of HIS according to the HMN framework (population census, vital registration records, living standard measurement surveys, etc. notably in the components linked to health information). This is total HIS expenditure.

The objective of the HIS subaccount is to accurately track information on HIS expenditures. A comprehensive measurement is desirable; in particular, the larger a specific component, the

7 Final consumption consists of goods and services used up by individual households or the community to satisfy their individual or collective needs or wants.

8 This includes intermediate consumption, that is, goods and services consumed as inputs by a process of production.

higher the priority to capture it. The availability of data will determine the extent to which expenditures falling under the broader activities (NHEHIS and addendum HIS expenditures) can be disaggregated to be included as HIS expenditures. It is important to note that, in some cases, data may be available on targeted HIS expenditure. In other instances, the proportion of an activity that is aimed at HIS will have to be determined or estimated. Criteria for allocation of expenditure to HIS can be determined using techniques such as time and motion and unit costing studies (see Chapters 4 and 5).

2.5. HIS expenditures: illustrative needs

In preparing HIS subaccounts, HIS components and functions need to be examined, and links between these and specific NHA functions established. This is because the HIS comprises various health functions, and there are very few, if any, countries in which a single entity manages all HIS. Data sources should be treated to identify HIS resources. All inputs involved in data collection-related activities should be included. For example, a Demographic and Health Survey (DHS) requires human resources, such as enumerators, technical assistance to design surveys and develop study instruments, training in data collection, and provision of training materials and supplies for data collection instruments. Data analysis-related activities and resources should be treated in the same way. Expenditures should be measured for the HIS functions (data generation, compilation, analysis and synthesis, and communication and use) within each of the NHA functions (personal, collective, health-care-related and other memorandum items).

2.6. NHA functions including HIS

The HIS content of the following NHA functions should be included in the HIS subaccounts. All of these comply with the criterion that their primary purpose is to improve, restore, or maintain the health of an individual or population.

- **Health care services**. Collection, storage, and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse or disseminate information on health activities in hospitals and other health facilities, including retail sales of medical goods. Data sources may be routine (e.g. HMIS) or non-routine (e.g. patient surveys). Examples of activities are the data entry, storage, analysis, and dissemination of service statistics, studies such as quality assessments and recognition surveys, compilation of individual records, monitoring and evaluation of the public health situation (e.g. disease surveillance) at health facilities or within the facilities' catchment area, by facility staff or technical assistants paid by the facility, and monitoring and evaluation of facility performance. Excluded are expenditures on the production of income and expenditure statements, ledgers, etc. by accounts personnel.
- **Public health programmes**. Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse or disseminate information on public health matters and programmes (e.g. vertical health programmes). Examples are health studies conducted at regular intervals, such as the DHS and Multiple Indicators Cluster Surveys (MICS); routine monitoring and evaluation of public health programmes, such as those against HIV/AIDS and malaria, and the Expanded Programme on Immunization (EPI); and HIS activities undertaken for purposes of monitoring and surveillance of public health.
- **Health administration**. Overall HIS planning, coordination, administration, management, policy development, and dissemination of information (technical documentation, health

statistics at administrative level). Examples are routine HIS activities at the central, regional or provincial, and district levels, such as HMIS units and their personnel, all administrative, management, and coordination activities and production of HIS/HMIS reports undertaken for purposes of monitoring and evaluation of health services provision, financing, resource generation, stewardship of curative care or prevention and public health services at health system level not included in the facility level.

2.7. HIS health-related functions

The following HIS health-related functions should be included in the HIS subaccount.

- **Capital formation**. Examples are construction of buildings and purchase of computers, software, and other equipment (vehicles, etc.) for HIS use.
- **Education and training**. Pre-service and out of service training of staff on HIS functions (policy development, data collection, storage and analysis, and dissemination and use).
- **Research and development**. Studies, assessments, and evaluations not conducted as part of routine activities. This specifically refers to one-off studies or those not developed to directly improve the performance of the service.
- **Food, hygiene, and drinking-water control**. An example is HIS for monitoring and evaluation of quality control of food and drinking water.

2.8. HIS addendum functions

Addendum functions are cases for which information was generated with a primary purpose other than improving, maintaining or restoring health. In all these cases, the expenditure on the components useful for health purposes should be extracted. This process may be challenging, because it requires knowledge of the production process of these information products.

The following are examples of functions that should be included as addendum items in the HIS subaccounts.

- **Data collection, storage, analysis, and dissemination for the national census**. Although a national census provides some information on health, this is not its primary purpose. While the total results of the census can be useful for various health purposes, it would be inappropriate to include the total value of the census in the addendum items. Rather, the value of the components used primarily by the health system should be included, e.g. a proportion of the value related to health-associated components, such as the number and selected characteristics of the insured population.
- **Data collection, storage, analysis, and dissemination for vital registration recording of births and deaths**. Although a vital registration system provides information on marriages, births and deaths, its primary purpose is not to support, produce, compile, analyse or disseminate health information on activities whose primary purpose is to improve, restore, or maintain health. However, selected information in the vital registration data will be widely used for health and their value should be included in the addendum items.
- **Data collection, storage, analysis, and dissemination for broader social sector studies**. These include Living Standard Measurement Surveys, poverty assessments, and welfare and income monitoring surveys. While such surveys may include a health module, their primary purpose is to provide data on social welfare, not on activities whose primary purpose is to improve, restore, or maintain health. Most components of these information products are also useful for health purposes and the expenditure to be recorded in the HIS should be estimated on an ad hoc basis. For example, household surveys may include

a module on health, which is used to estimate expenditure for the NHA. Such a module is clearly of great use for health purposes but is also part of the measurement of the total expenditure of the household. In this case, an estimation should be made, e.g. of the share of the expenditure going to health, say 30 questions out of 200. The effort needed to measure these components should be assessed based on the expenditures involved: the larger a component, the higher the priority to capture it.

2.9. HIS subaccounts and other NHA subaccounts

Expenditure on HIS cuts across disease categories, health programmes, and other functions of the health system. For example, expenditure on provision of care to an HIV-positive person is captured in the HIV subaccounts. However, maintaining that patient's file or a facility register is part of the HIS and, therefore, only a portion or percentage of the expenditure on HIV care and treatment should be included in the HIS subaccount. Another example is quarterly supervision of HIV (or other) services. Although the primary purpose is to improve the quality of HIV care and treatment and the patients' health, supervision relies on data generated by the HIS, and frequently involves assessments of data quality. Therefore, a percentage of the expenditure should be included in the HIS subaccount.

Thus, when preparing HIS subaccounts in tandem with the general NHA or other subaccounts (HIV/AIDS, malaria, tuberculosis, child health or reproductive health), all HIS expenditures falling within the core functions of these subaccounts need to be estimated and aggregated in the HIS subaccount, along with other general HIS expenditure. All expenditure that can be included in another specific account should be clearly identified so that, when different subaccounts are handled together, double counting will be avoided.

If measurement of HIS expenditure is not harmonized in this way, expenditure estimates in non-HIS subaccounts in countries where HIS subaccounts have not been prepared will be higher than elsewhere. Users of these guidelines, and of subaccounts results in cross-country comparisons, should bear this in mind. Harmonization of subaccounts should be easier if priority is given to including components on the basis of their primary purpose and if all components are clearly labelled.

It would be difficult to estimate HIS spending for each disease. Disease programmes are very unevenly resourced – consider, for example, Buruli ulcer vs. HIV programmes. In programmes that do not have disaggregated HIS expenditure data – but for which HIS expenditure is of policy interest – expert opinion and special estimation techniques, such as unit cost or time and motion studies, can be used to estimate the expenditures. Of course, the cost-benefit aspects of such studies must be considered when deciding whether to launch one.

Another challenge in estimating HIS expenditure occurs when two programmes (e.g. reproductive health and child health), for which separate subaccounts are being prepared, share an element, such as a monitoring and evaluation system. It is difficult to estimate precisely the HIS expenditures of each programme. In such cases, the HIS subaccount team needs to decide which of the two subaccount HIS expenditures is to be included. This will depend on the nature of activities carried out in the specific context. Chapter 5 provides more details on how to address such issues.

2.10. Geographical boundaries

As with the general NHA, the geographical boundary for the HIS subaccount is the country of usual residence of the beneficiary of the expenditure. In general, the subaccount will include expenditures on HIS that benefit country residents, whether the expenditures are made in the country or abroad. Because HIS expenditures do not occur on an individual level (i.e. individuals spending money on HIS), the limitations on foreign temporary residents do not apply. Expenditures by foreign agencies (e.g. donors and NGOs) on HIS functions and inputs within the country are included as part of the overall estimation.

2.11. Time boundaries

The timeframe of the subaccounts should correspond to the timeframe of the general NHA, which can be either a calendar year or a fiscal year. Either timeframe is acceptable as long as it is used consistently.

The NHA approach uses an accrual method, as opposed to a cash-based accounting method (WHO, 2003). This means that health expenditures are counted in the period in which they are committed, not the period in which payment is actually made. For example, if an HIS computer is delivered in December 2008 and paid for in January 2009, the expenditure is attributed to 2008 (WHO, 2003, pp. 22–23). When an HIS expenditure involves different periods of time, it should be treated on an ad-hoc basis.

- If the expenditure refers to a significant capital good, e.g. the purchase or building of an asset, such as a building, instalments are treated as partial deliveries of the building. If a single payment is made at delivery, it should be recorded in the year of delivery; if payments are made in instalments, each instalment should be recorded in the year it is made.
- If the expenditure refers to a product that is not considered as an asset, the expenditure should be reported when the product is delivered, e.g. for population surveys, expenditure should be recorded for the year of execution of the survey.

Chapter 3
HIS subaccounts classification schemes and output tables

3.1. Introduction

This guide uses the basic NHA framework to classify HIS expenditures. The major difference with the general NHA framework is a more detailed disaggregation of the functions of the health system that apply to HIS.

HIS subaccounts classification using ICHA

As noted in Chapter 1, the NHA framework organizes data into four main classifications: financing sources, financing agents, providers, and functions. It also features a supplemental classification of resource costs. Each classification consists of a series of standardized entities that allow data to be organized in a coherent manner. Each classification is identified by a two-letter code and the entities and activities within each classification are distinguished by a numerical code, as shown in Figure 3.1. The classifications and codes for tracking HIS expenditures are consistent with the ICHA codes presented in the Producers' Guide (WHO, 2003).

As with the general NHA framework, the originators of the funds spent on HIS are referred to as the financing source(s), denoted by the code FS. Unlike other NHA subaccounts, HIS functions (data collection, storage, analysis, dissemination and use) are financed principally by institutions, such as the Ministry of Finance, donors, NGOs, firms, and corporations, and not by households, although their payments can be used to fund HIS activities.

From financing sources, funds flow to entities that pool them and decide how to spend them. These entities, called financing agents (HF), have programmatic responsibilities – they decide which types of HIS services or goods to purchase with the funds received from the financing sources. Examples include monitoring and evaluation units within the EPI, NGOs, and donor organizations. Financing agents are also the origin of funds for the providers of HIS services, in the sense that they purchase their HIS services directly from the providers. Households are generally not included as HIS financing agents, except in the rare instance where reliable information is available on household out-of-pocket payments on HIS[9].

9 While some of the funds that households pay, through health insurance premiums or direct out-of-pocket expenditure, are undoubtedly used for the HIS activities of the receiving organizations, such expenditures would be difficult to disaggregate and attribute to households. In most developing countries, household health expenditures, in particular direct out-of-pocket expenditures, are estimated through household health expenditure and utilization surveys or broader household /budget /living standard measurement surveys, in which health expenditure is one component. It would not be feasible to extract household out-of-pocket expenditures on HIS from such surveys. Even where households might directly spend on HIS, such as for a document, these expenditures would be difficult to identify and track. Hence, it is recommended that households be excluded from the HIS subaccounts as financing agents. Of course, if reliable household HIS expenditure data are available, they should be included.

From the financing agents, HIS funds flow to HIS providers. In line with the general NHA, HIS providers are entities that deliver HIS goods and services, and are identified by the HP code. Examples of HIS providers include hospitals and clinics where health care is offered, laboratories, central medical stores, pharmacies and chemists, blood banks, and other structures and entities that manage and oversee HIS programmes. These providers may be owned by various institutions, such as government ministries or departments, NGOs, donor organizations, firms, and corporations.

HIS functions refer to the services and activities that are delivered for HIS. As indicated in Chapter 2, health functions include personal care and collective care, and health-related activities, such as HIS education and training, research and development. The health care functions are denoted by the code HC and the health-related functions by the code HC.R. The availability of data for this classification is crucial for HIS subaccounts. Total expenditures under HIS subaccounts are decided on the basis of the functional classification.

As also noted in Chapter 2, HIS comprises non-health functions. These should be classified under addendum items, denoted as AD. An example of the recommended classification at single digit level is shown in Table 3.1. However, compilers of HIS subaccounts should identify and include other addendum items as needed.

In addition to HIS outputs, inputs are required to strengthen HIS, particularly in low- and middle-income countries. An analysis of HIS resource allocation can affect policies related to investment in human resources for HIS, provision of material supplies and equipment, etc. As such, HIS subaccounts should generate information on HIS inputs and provide a tool for monitoring investments in HIS strengthening. Distribution of health expenditures by inputs is denoted as resource costs (RC).

In summary, the major dimensions recommended for tracking HIS expenditures are:

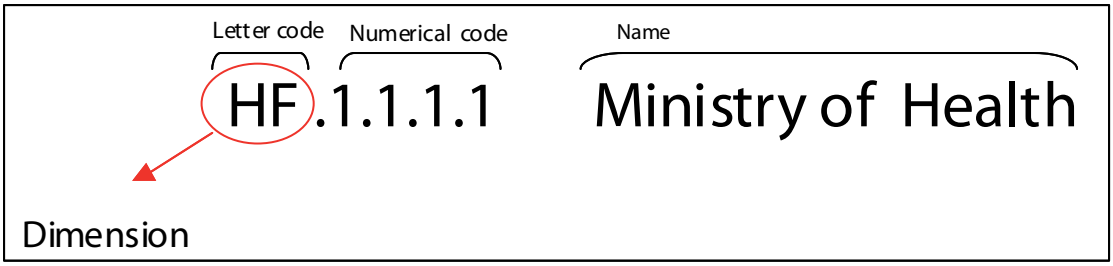
- from the financers of HIS, called financing sources;
- to the principal managers and controllers of HIS funds, called financing agents;
- to providers of HIS goods and services, known as providers;
- to activities defining HIS functions of the health system; and
- to inputs used in carrying out HIS functions of the health system.

3.2. ICHA for HIS subaccounts

In the NHA framework, each classification comprises a series of entities, classified with an alphanumeric code (see Figure 3.1). Each additional part of the code reflects a further level of disaggregation. The ICHA-based classification scheme, which is used for HIS subaccounts, is as follows:

- letter code for the principal health classification;
- numerical code ;
- name.

Figure 3.1. Construction of classification codes in the ICHA



The classification scheme satisfies the following criteria: the categories presented should be relevant from the policy point of view, be mutually exclusive, and reflect international standards (WHO, 2003). The scheme is flexible enough to allow country-specific categories and subcategories to be added to each dimension, as long as this occurs within the general NHA framework. (For more information, see the Producers' Guide.) This flexibility is useful when a particular policy concern can best be addressed by adding a specific level of detail within an existing category. Conversely, such flexibility makes it possible to eliminate categories that are not relevant.

For example, a country might wish to distinguish between public and private hospitals, to determine which type of hospital receives what amount of HIS funds. The ICHA classification in the general NHA framework does not provide for this distinction. In this case, a nationally relevant subcategory could be added.

Original code:

- HP.1.1 General hospitals
- New subcategories:
- HP.1.1.1 Publicly owned general hospitals
- HP.1.1.2 Privately owned general hospitals

The ICHA categories described in the Producers' Guide for financing sources, financing agents, and providers should be used in developing the HIS subaccounts. When new subcategories are introduced, the first two digits of the code should match the ICHA category. Given the uniqueness of the HIS subaccounts, addendum items can be added to each original ICHA classification .

Table 3.1 shows the recommended classification for HIS functions. Depending on the specific situation in the country, other entities may need to be adapted for the other NHA dimensions. Examples of HIS-specific categories for financing sources, financing agents, and providers are discussed in the following sections.

Table 3.1. Functional classification for HIS activities

ICHA Code	
HC.1–HC.5	**Personal health services and goods**
HC.1	**Services of curative care (inpatient and outpatient)**
HC 1.1	Inpatient curative care
HC1.1.1	○ Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, or disseminate information on inpatient curative health care
HC1.3	Outpatient curative care
HC1.3.1	○ Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, or disseminate information on outpatient curative health care
HC 1.4	Services of curative home care
HC.1.4.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on curative home health care*
HC.2	**Services of rehabilitative care**
HC.2.1	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on rehabilitative health care
HC.3	**Services of long-term nursing care**
HC.3.1	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on long-term nursing care
HC.4	**Ancillary services to medical care**
HC.4.1	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on ancillary services to medical care
HC.5	**Medical goods dispensed to outpatients**[a]
HC 5.1	Pharmaceuticals and other medical nondurable goods
HC 5.1.3.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on pharmaceuticals and other medical nondurables*
HC.6	**Prevention and public health services**[b]
HC 6.1.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for maternal and child heath, family planning and counselling*
HC.6.2.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for school health services*

a Self-standing retail sale

b This category includes expenditures on services specifically intended to enhance the health status of the population or specific population subgroups, as distinct from the personal medical services, which repair health dysfunction. Many of the expenditures may be made in an integrated provision (preventive and curative jointly) by general medical institutions as part of their normal activities. Typical examples are vaccination services, campaigns, and special reproductive health programmes.

c Several subcategories could be created depending on the number of programmes being implemented, e.g. HC.6.3.1.1 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of HIV/AIDS; HC6.3.1.2 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of malaria; etc.

ICHA Code	
HC.6.3.1[c]	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of communicable diseases, e.g. (1) health studies repeated regularly, such as DHS and MICS; (2) routine M&E of programmes for prevention of communicable diseases, e.g. HIV/AIDS, malaria, and EPI*
HC.6.4.1[d]	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of noncommunicable diseases, e.g. (1) health studies repeated regularly, such as DHS and MICS; (2) routine M&E of programmes for prevention of noncommunicable diseases, e.g. mental health problems and diabetes*
HC.6.5.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for occupational health care*
HC.6.9.1	○ *Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on all miscellaneous public health matters and programmes*
HC 6.9.2.	*In-service training* ○ *In-service training of staff in HIS*
HC.7	**Health administration (stewardship) and health insurance**
HC7.1	General government administration of health (e.g. overall HIS planning, coordination, administration, and policy development and dissemination of general information and technical documentation and statistics on health at central, regional/provincial, and district levels)
HCR.1–HCR.5	**Health-related functions**
HCR.1	**Capital formation for health care provider institutions, e.g. construction of buildings for HIS use and purchase of computers for HIS use**
HCR.2	**Education and training of health personnel** ○ ***Pre-service training for HIS***
HCR.3	**Research and development in HIS, e.g., one-off studies in HIS, such as costing of health services, and Quality Assessment and Recognition (QAR)**
HCR.4	**Food hygiene and drinking-water control, e.g. HIS for nutrition programme**
	Addendum Item
AD.1	**Data collection, storage, analysis, and dissemination for national census**
AD.2	**Data collection, storage, analysis, and dissemination for vital registration**
AD.3	**Data collection, storage, analysis, and dissemination for Living Standard Measurement Surveys**

c Several subcategories could be created depending on the number of programmes being implemented, e.g. HC.6.3.1.1 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of HIV/AIDS; HC6.3.1.2 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of malaria; etc.

d Several subcategories could be created depending on the number of programmes being implemented, e.g. HC.6.4.1.1 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of mental health problems; HC6.3.1.2 could be data collection, storage and analysis from all data sources whose primary purpose is to support produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of diabetes; etc.

3.3. Classification scheme for HIS financing sources

As indicated above, the classification scheme for HIS financing sources should be the same as that of the general NHA. Households as financing agents direct their payments to health care more than to health information products. However, the various contributions from households may be used by financing agents to fund HIS activities. Thus, in theory, households can be included as a financing source. In the rare cases where household expenditures on HIS can be estimated, they should be classified in the general NHA ICHA categories at the first and second digit level. Country-specific subcategories of HIS financing sources can be added as shown in Table 3.2.

Table 3.2. Classification scheme for HIS financing sources (FS)

Code	Description
FS.1	Public funds
FS.1.1	Territorial government funds
FS.1.1.1	Central government revenue
FS.1.1.2	Regional and municipal government revenue
FS.1.2	Other public funds
FS.1.2.1	Return on assets held by a public entity
FS.1.2.2	Other
FS.2	Private funds
FS.2.1	Employer funds
FS.2.2	Household funds
FS.2.3	Nongovernmental organizations
FS.3	Rest of the world funds

Source: Adapted from WHO, 2003, page 42.

3.4. Classification scheme for HIS financing agents

The classification scheme for HIS financing agents should be the same as that of the general NHA framework, adapted to the fourth digit level for government institutions responsible for HIS activities. It could be argued that specific institutions, such as HMIS, HIS, and M&E units or departments, could be classified at the fifth digit level, depending on the country's policy needs. However, in most developing countries, HIS functions are undertaken within institutions (such as the Ministry of Health or national statistical organization) that have programmatic responsibilities for other activities. HIS, HMIS or M&E units themselves do not typically exercise programmatic control over the allocation and use of HIS resources, as this responsibility rests with their parent organization. Classifying these units as financing agents would, therefore, not be useful to understanding the policy relevance of HIS expenditure distribution. Thus, this guide classifies HIS expenditures by government institutions at the fourth digit level (as shown in italics in Table 3.3), and for all other organizations at the third digit level.

As indicated earlier, direct household out-of-pocket spending on HIS should not generally be included in the HIS subaccount under financing agents, because of the difficulty of obtaining accurate measurements. However, where HIS household out-of-pocket expenditures are available or have been estimated, they should be classified as proposed in Table 3.3.

Table 3.3 Classification scheme for HIS financing agents

Code	Description
HF.1	General government
HF.1.1	Territorial government
HF.1.1.1	Central government
HF.1.1.1.1	*Ministry of Health*
HF.1.1.1.2	*National Bureau of Statistics*
HF.1.1.1.3	*Ministry of Defence*
etc.	*etc.*
HF.1.1.2	State/provincial government
HF.1.1.3	Local/municipal government
HF.1.2	Social security funds
HF.2	Private sector
HF.2.1	Private social insurance
HF.2.2	Other private insurance
HF.2.3	Private household out-of-pocket payment
HF.2.4	Nongovernmental organizations
HF.2.5	Private firms and corporations (other than health insurance)
HF.3	Rest of the world funds

Source: Adapted from WHO, 2003, page 36.

Table 3.4. Providers of HIS services and goods

HP.1	Hospitals
HP.1.1.1	Government general hospitals
HP.1.1.2	Nongovernment general hospitals
HP.2	Nursing and residential care facilities
HP.3	Providers of ambulatory health care
HP.4	Retail sale and other providers of medical goods
HP.5	Provision and administration of public health programs
HP.6	General health administration and insurance
HP.7	All other industries (rest of the economy)
HP.8	Institutions providing health-related HIS services and goods
HP.8.1	Research Institutions
HP.9	Rest of the world
HP.10	*Institutions providing non-health-related HIS services and goods*
HP.10.1	*National Bureau of Statistics*
HP.10.2	*All other institutions providing non-health HIS services and goods*

Source: Adapted from WHO, 2003, pages 39-40.

3.5. Classification scheme for HIS providers

The classification scheme for HIS providers should correspond to the ICHA scheme for providers (see Producers' Guide (WHO, 2003), page 39). This is because it is envisaged that all providers have some HIS activities, although they are seldom labelled as such. Extracting HIS expenditures at the health provider level is challenging, particularly when the expenditures are not specifically earmarked for HIS activities (for more details, see Chapters 4 and 5).

Depending on the country's HIS policy needs and context, units that are directly responsible for HIS services provision, such as HIS/HMIS units and M&E units, may be classified at the third or fourth digit level, depending on the health provider type. Table 3.4 gives an example of providers of HIS health services and goods.

3.6. Classification of HIS inputs

As noted in Chapter 2, HIS funds are usually spent on inputs used in the various stages of performing HIS functions. Since budgeting systems and expenditure reporting formats in most developing countries are line-item based, it is important that a country's HIS input classification scheme follow the general ICHA scheme, shown in Table 3.5. However, country-specific policy needs can be accommodated by adding codes.

Table 3.5. Classification of HIS inputs[a]

Code	Description
RC.1	Current outlays
R.C.1.1	Compensation of employees and owners
RC.1.1.1	Wages
RC.1.1.2	Social contributions
RC.1.1.3	Non-wage labour income
R.C 1.2	Supplies and services
RC.1.2.1	Material supplies
RC.1.2.1.1	Other supplies
RC.2	Capital expenditure
RC.2.1	Buildings
RC.2.2	Movable equipment
RC.2.2.1	Vehicles
RC.2.2.2	Other

Source: Adapted from WHO, 2003, page 47.

3.7. HIS recommended tables

Collection of data for HIS subaccounts is a complex exercise. HIS cuts across health care functions, and HIS activities at the health facility level are difficult to isolate for expenditure measurement purposes. However, in addition to the normally recommended four subaccount

a There is no difference between the HIS classification and the standard classification, except that the option for capturing input data with a higher degree of detail is proposed. Movable equipment may include vehicles, computers, furniture, etc.

tables,[10] because HIS can be adequately measured through investments in various inputs, this guide proposes additional tables on the distribution of HIS expenditure by inputs, from financing agents to inputs, from providers to inputs or, in specific cases, from financing sources to inputs.

Experience has shown that the most difficult expenditures to track for institutions outside the public health sector are input category expenditures and functions, i.e. line items and rehabilitation or preventive services. Estimated expenditures for, say, security for computers or use of rooms for HIS could be misleading without a sound basis for such estimations.

The proposed tables for NHA HIS subaccounts can be summarized as follows (see also Annex 1):

- Financing sources to financing agents (FS x HF) (Annex 1, Table A1.1).
  - To which financing agents do financing sources provide HIS funds and how much?
  - From which financing sources do the various financing agents receive their HIS funds? How much is received?
- Financing agents to providers (HF x HP) (Annex 1, Table A1.2).
  - How much funding for HIS does each provider receive from each financing agent?
- Providers to functions (HP x HC) (Annex 1, Table A1.3).
  - On what functions do HIS providers spend their HIS funds?
- Financing agents to functions (HF x HC) (Table A1.4).
  - How do financing agents spend their HIS funds across each type of function?
- Financing agents to inputs (HF x RC) (Table A1.6).
  - On what HIS inputs do financing agents spend their HIS funds?
- Providers to inputs (HP x RC) (Table A1.7).
  - On what HIS inputs do providers of HIS services and goods spend their funds?
- Financing sources to inputs (FS x RC) (Table A1.5) (This table is relevant only if special earmarked funding is to be tracked, e.g. external funding for HIS.)
  - What HIS inputs receive earmarked funding and how much is given?

10 Existing guidelines for the general NHA and for other subaccounts (HIV/AIDS, reproductive health, child health, malaria and TB) recommend the following four tables: financing sources to financing agents, financing agents to providers, financing agents to functions, and providers to functions.

Chapter 4
Data collection

4.1. Introduction

Once the conceptual framework for the HIS subaccounts has been presented, it is important to craft a feasible methodology for identifying and collecting data. The methodology proposed here for data collection has been pilot-tested in Ethiopia. As more countries prepare HIS subaccounts, their experiences will be used to improve the data collection process and this guide will be revised accordingly.

4.2. The data collection process

Step 1. The technical team responsible for preparing the HIS subaccount should first specify the most important HIS policy questions that the subaccounts are intended to answer (see Box 4.1). The HIS subaccounts estimates may not be able to answer all relevant policy questions; as previously indicated, time and resource limitations usually force trade-offs between the desirability of certain data for policy analysis and the feasibility of measurement.

Step 2. The subaccounts team should draw a diagram of the flow of HIS funds. This will help identify who finances what and for what purpose, as well as areas where double-counting could occur. This is also useful for data triangulation.

Step 3. On the basis of steps 1 and 2, the NHA team should identify the tables and details of classifications to be produced. This is important because it will guide the process of data identification and collection.

Step 4. Once the HIS policy questions have been reviewed and translated into tables with classification details and a diagram of flow of HIS funds, the subaccounts team should prepare a well-structured data collection plan, based mainly on a census of all available expenditure information. If general NHA are being conducted at the same time as the HIS subaccount, the general NHA data collection plan should be used, but with specific efforts to obtain detailed information on HIS expenditure.

Step 5. The team should determine whether primary data collection is necessary or if data can be extracted from secondary sources. They should also consider what it is feasible to obtain with the available resources.

Box 4.1. Which HIS issues can the HIV subaccounts inform? An example from Ethiopia

Ethiopia, along with 188 other countries, signed the Millennium Declaration, and is seeking to achieve the health-related and other MDGs by 2015. The country is currently reforming its HIS in order to facilitate data collection and inform decision-making in relation to this and other national goals.

Previously, various formats were used by the Federal Ministry of Health (FMOH), regional health bureaus (RHBs), and their partners to collect health data; health care providers were expected to collect, compile, and report data. This was a time- and resource-consuming duplication of effort and most of the data collected were never used for local decision-making. The FMOH started to reform its HMIS/M&E system on the basis of the principles and objectives of the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) [a] and the Health Sector Development Program (HSDP) III (2005-06 to 2009-10).[b] The reform identified several key areas for intervention: capacity-building; standardization and integration of data collection and reporting formats; establishment of common data definitions and understanding between data sources (i.e. between public, private for-profit, and not-for-profit organizations); action-oriented performance monitoring; and use of appropriate technology.

The FMOH planned to institutionalize the revised HMIS/M&E system in seven regions: Addis Ababa, Amhara, Dire Dawa, Harari, Oromia, the Southern Nations, Nationalities and People's (SNNP) Region, and Tigray, over an 18-month period (January 2008 to June 2009) and then to roll it out to the remaining regions in the ensuing 18 months. The total estimated budget required to institutionalize the revised HMIS/M&E in the first seven regions was US$17–19 million; annual running costs for consumables (stationery, technology operations, and logistics) were estimated at US$5–6 million (Jamison et al., 2006, Chapter 54).

Many developing countries lack the budget needed to institutionalize their HIS. For instance, a recent review in Mexico concluded that less than 1% of total public health spending in the developing world is allocated to HIS (Lippeveld, 2001). This makes these countries highly dependent on donor funding for their HIS.

The major policy questions of the Ethiopian HIS subaccounts were:

- How much was being spent on HIS? What percentage did it represent of THE?
- Who was financing HIS and how much were they spending?
- Who was managing HIS funds? Who had control over their allocation?
- What share of public health funds were being spent on HIS?
- What was the reliance on donors for financing HIS? What share of donor funds were targeted to HIS?
- Where did these funds go?
- Were expenditures in line with national HIS needs?
- How did financing of HIS differ in other countries

[a] Plan for Accelerated and Sustained Development to End Poverty (PASDEP). Addis Ababa, Ministry of Finance and Economic Development (MoFED), 2005.

[b] Health Sector Development Program (HSDP). Addis Ababa, Ministry of Health, 2010.

4.3. Approaching the HIS data collection process

HIS subaccounts require comprehensive data from the public, private, and donor stakeholders of the health care system. Gathering these data can be the most time-consuming step of the estimation process. The time required for data collection depends on a number of factors, including availability of, and access to, data within the country, funding to carry out surveys if primary data collection is needed, the level of cooperation of respondents, the stability of the subaccounts team, and the team's ability to maintain the momentum of data collection efforts.

The NHA approach strongly recommends the use of more than one information source for any given estimate. This is necessary for data triangulation purposes, in order to compare and assess the levels of expenditure or complement the use of the data. For example, if estimating

the expenditure incurred by development partners contributing to HIS services and goods through the Ministry of Health, the NHA technical team should examine the amount that the MOH reports having received from the general budget against its actual expenditure on HIS services and goods. Additional detail on triangulation and data retrieval are provided in the Producers' Guide (WHO, 2003).

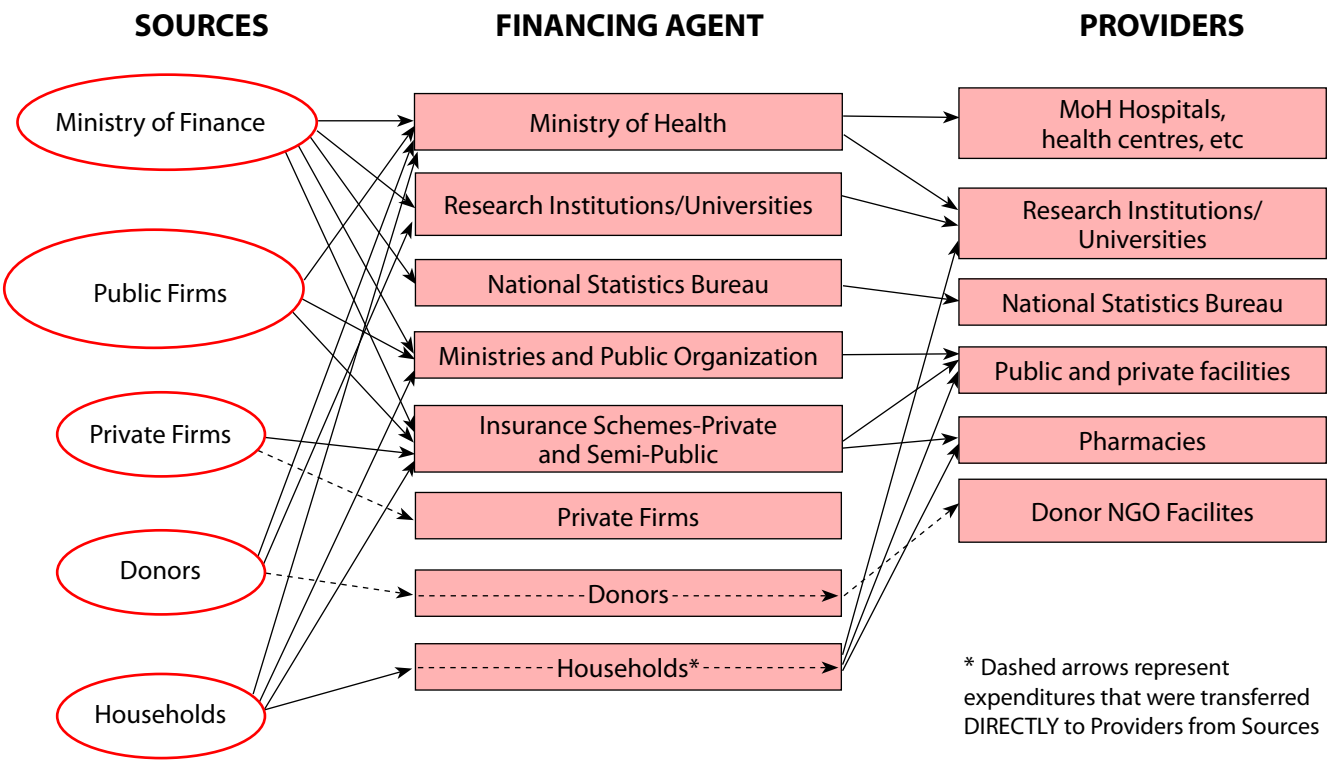
HIS subaccounts are unique in that they cut across different diseases, programmes and sectors, including some outside the health system.[11] HIS expenditures are embedded in NHA functional categories, such as curative health care, prevention and public health, and general administration. Therefore, HIS subaccount estimations require both traditional and innovative methods for data collection and analysis.

The following sections focus on the specific data collection issues relevant to the HIS subaccounts, incorporating lessons learned from data collection efforts in Ethiopia.

4.4. Understanding what is needed and why

Considering the need for comprehensive, triangulated data, and bearing in mind that HIS involves actors outside the health system, it is important for the team to have a clear view of the "spider web" of funding flows for HIS, and to understand who is funding whom and where those funds are going. It is particularly important to identify the more important flows in terms of magnitude and strategic role. This process involves listing all known entities associated with health information and mapping the flow of funds between them. This can best be visualized in a flow-of-funds diagram (Figure 4.1).

Figure 4.1. Example of a map of the flow of funds for HIS subaccounts



11 A health system is defined by WHO to include all the activities whose primary purpose is to promote, restore or maintain health. (WHO, 2000, pp 5).

If resources flow directly from a source to a provider, the financing agent can be considered "virtual". This is the case for households, for example, which represent a "scattered" virtual financing agent, and for external funding agencies, which transfer their aid directly to providers. The idea is that there is always a financing agent role in the decision of which provider should receive what funds.

Once a flow of funds diagram has been constructed, a table can be drawn up to bring together all the issues around the HIS subaccount estimation: the links between HIS entities involved in financing, management, and provision of HIS services; the type of HIS policy questions that can be answered by HIS subaccounts and the HIS tables needed to do so; and the existing potential data sources on HIS expenditures for filling the HIS tables. Table 4.1 provides a generic listing of entities involved in HIS and the types of questions that can be answered by data from these entities. Note that although the primary focus is to find information on expenditure, in practice, cost studies and non-financial data are also needed. The non-financial data are related to what is understood as the "volume" of the health services and goods which are related to the expenditure under measurement.

Table 4.1. Data sources used in the construction of HIS subaccounts

HIS entities[a]	HIS subaccount-related questions addressed by data estimates from each entity	Potential data sources
Government entities e.g. Ministry of Finance, MOH (HMIS/ HIS units), national statistical bureau, and others	○ Government as financing source: • To which financing agents does the Ministry of Finance give HIS funds and how much? *(FSxHF table)* ○ Government as financing agent: • From which financing sources do the various ministries (excluding the Ministry of Finance) receive their HIS funds? How much is received? *(FSxHF table)* • How do the various ministries (excluding the Ministry of Finance) allocate their HIS funds across each type of provider, function and input? *(HFxHP, HPxHC, HFxHC, HFxRC, HPxRC tables)*	○ Budget and expenditure books, audited government accounts, expenditure print-out copies ○ Existing time and motion studies ○ Existing unit cost studies by type of intervention or facility ○ Special surveys of key government institutions and ministries involved in health and non-health expenditures and involved in financing or implementing HIS
Insurance companies and schemes	○ Insurance companies as financing agent: • How much was spent on HIS activities? *(HFxHC table)*	○ Insurer annual financial statements ○ National sample survey of health insurers or census of health insurers with health expenditures within which there are HIS expenditures
Employers	○ Employer as financing source • To which financing agents (such as insurance schemes) do employers give funds that are ultimately used for HIS and how much do they give? (*FSxHF table)* ○ Employer as financing agent and provider • How much do employers spend on HIS in their on-site facilities? (*HFxHP, HFxHC, HFxRC tables*)	○ Existing reports of firms' expenditures on health ○ Special national sample survey of firms and corporations with health expenditures within which there are HIS expenditures

HIS entities[a]	HIS subaccount-related questions addressed by data estimates from each entity	Potential data sources
NGOs	○ NGOs as financing source • Do NGOs serve as financing sources for HIS by generating their own revenue locally (e.g. from church groups)? If so, how much is generated in this way? (*FSxHF table*) ○ NGOs as financing agent: • From which financing source do NGOs receive their HIS funds? How much do they receive? *(FSxHF table)* • How do NGOs allocate HIS funds across each type of provider, function and input? *(HFxHP, HPxHC, HFxHC, HFxRC, HPxRC tables)*	○ Existing NGO reports on health expenditures ○ Special national sample survey of NGOs or census of all NGOs involved in financing and delivery of health services within which there are HIS activities
Households	○ Households as financing agent: • How much do households pay out-of-pocket for HIS? For what products? *(FSxHF, HFxHP, HFxHC, and HPxHC tables)*	○ Existing provider records
Donors	○ Donors as financing source: • To which financing agents do donors give HIS funds? How mucho they contribute? *(FSxHF table)* ○ Donors as financing agent: • Do donors transfer funds directly to providers? If so, to which ones? How much, and for which functions? (*HFxHP, HPxHC, and HFxHC tables)*	○ Existing donor health expenditure/disbursement reports and databases ○ Special survey of all donors involved in funding general health services including HIS services and goods
Providers Hospitals (HP.1), nursing and residential care facilities (HP.2), providers of ambulatory health care (HP.3), retail sale and other providers of medical goods (HP.4)	○ How much does each provider receive from each financing agent for HIS? (*HFxHP table)* ○ How do providers spend their funds across each HIS function? *(HPxHC table)*	○ Existing provider records on health expenditures ○ Existing unit cost studies by type of intervention or facility ○ Existing time and motion studies
Providers of public health programmes (HP.5)	○ From which financing agents do the providers of public health programmes receive their HIS funds? How much do they receive? *(HFxHP and HPxHC tables)*	○ Budget and expenditure books, audited government accounts ○ Special survey of all entities involved in funding health services including HIS services and goods ○ Survey of NGOs involved in financing or implementing of health services including HIS

a Each entity listed can be a financing agent, a financing source or a provider.

b Questions asked to each entity will depend on the entity's role (financing source, financing agent, provider).

4.5. Types of data needed

The NHA technical team will next need to determine the types of data needed from each entity. It is suggested that a two-step process be followed for data collection at health facility level. First, only targeted (i.e. earmarked) HIS expenditures should be collected or estimated for both personal care and public health. As a second step, if resources are available and the flow of funds is important from a policy perspective, estimation techniques, such as time and motion (see Box 4.5) and unit cost studies, should be conducted to estimate HIS expenditures embedded in curative, rehabilitative and ancillary health care services.

The objective of NHA is to capture data on what has been spent. Therefore, the subaccounts team should seek information on actual expenditure, not budget or cost estimates. If, however, such data do not exist or are not readily retrievable from normal secondary or primary sources, the team can, as a last resort, use alternative data. Techniques such as unit cost indicators (of specific inputs) or time and motion studies may be required. If unit cost data are to be used, they should be actual unit cost data, and not assumed or ideal costs. This information can be obtained from the central Ministry of Health, national statistical bureau, or other entities that use cost accounting systems. In decentralized settings, regional or district health offices may be able to provide such data.

When possible, it can be helpful to indicate in the map of flows (Figure 4.1) the expected magnitude of the different flows, to facilitate decision-making on data collection and help ensure that the most significant components of HIS expenditure are included.

The technical team will need to anticipate what expenditure estimation techniques they might have to use, and work backwards to determine the type of data to collect. The three steps for HIS data collection most likely to be used are as follows.

1. Collect information on earmarked HIS health expenditures, from financing sources, to financing agents, and to providers of health services and goods. This involves collecting expenditure information from: financing sources, such as ministries of finance, donors, NGOs, firms and corporations, and households; financing agents, such as HMIS/M&E units in the Ministry of Health or NGOs, firms and corporations; and providers of health services and goods, such as hospital HMIS/HIS units. All health-related HIS data sources in the country should be listed, e.g. HMIS, disease and demographic surveillance systems, and mortality and morbidity monitoring surveys. Earmarked expenditure can be identified directly from primary or secondary data sources, whether routine (such as HMIS reporting) or non-routine (such as a DHS). These funds are generally programme expenditures incurred by major HIS financing agents or sources, such as the Ministry of Health, local and international NGOs, and donors that support HIS or HMIS strengthening or fund HMIS/M&E units (see Box 4.2).
2. Collect earmarked non-health HIS expenditures, from financing sources to financing agents to providers of non-health HIS services. Respondents might include national statistical bureaus, research institutions and universities involved in financing and implementing surveys, such as the DHS and MICS. Since most of these non-health HIS data are not collected routinely, key informant interviews could be used to determine whether such studies were conducted in the year of estimation (see Box 4.3).

Box 4.2. Collecting information on earmarked HIS expenditures in Ethiopia

In Ethiopia, information on earmarked HIS health expenditures was collected from the M&E units of various donors and NGOs with preventive and public health programmes in the areas of:

- maternal health (both routine and non-routine);
- family planning and condom distribution (both routine and non-routine);
- child health (routine only);
- HIV/AIDS (routine only);
- malaria (routine only).

Box 4.3. Collecting information on earmarked non-health HIS data in Ethiopia

The subaccounts team interviewed key informants in the National Statistical Bureau to find out whether, during the year of the NHA estimation, a population census, vital registration, or DHS had been done, or resources used to prepare for such an activity in the future. Once they learned that these studies had been neither planned nor undertaken during the estimation year, they were able to exclude the institutions from their data collection plan. The interviews – in contrast to fielding a more expensive team of data collectors to visit the institutions – proved to be a cost-effective contribution to the data collection effort.

3. Collect information on non-earmarked HIS health expenditures embedded in other health programmes. Because HIS is a subfunction of the NHA functions and cuts across diseases and programmes, most HIS expenditures are embedded in NHA expenditure functions. To tease out such expenditures, two methods of data collection are proposed: systematic review of units producing HIS data; and special studies.
   - **Systematic review of the functioning of HIS, HMIS and M&E units**. In the absence of HIS expenditure data, it is important to undertake systematic key informant interviews in institutions to determine the amount of resources consumed, such as how many staff were involved in HIS activities during the year of estimation, their grades, the range of their personal emoluments, the nature and volume of activities during the year of estimation, the type of HIS documents produced during the year of estimation, equipment purchased, etc. (see Box 4.4). In the absence of financial or nonfinancial data on programme function, expert opinion should be sought, but only as a last resort.

Box 4.4. Collecting information on non-earmarked HIS expenditure from Ethiopia's HMIS unit

The Federal Ministry of Health of Ethiopia (FMOH) reports its spending of funds from both the Ministry of Finance and donors in terms of the programmes that receive the funds. There is no expenditure specifically allocated to HMIS, because HMIS is embedded in the planning department. Therefore, information on the composition of the HMIS units – numbers of staff, their grades, and personal emoluments – was collected to provide an estimate of expenditure on HMIS. Personal emoluments constitute the most important driver of expenditures in the health system.

Note: Although this approach underestimates HIS expenditures – because there are also significant costs associated with printing HMIS forms, registers, and reports, etc. – it was adopted because it was methodologically sound and did not require the technical team to make "guesstimates".

- **Special studies, such as unit costing and time and motion**. According to the NHA framework, all HIS recurrent expenditures incurred at the facility level (i.e. staff salaries, supplies, technical assistance) are considered as a subcomponent of inpatient and outpatient curative care services. These expenditures are difficult to estimate as they cut across several services and the funds are not earmarked as HIS. HIS activities in health facilities and the corresponding expenditure can be estimated using several techniques, including examination of health facility budgets, expenditure reporting systems, key informant interviews, and specialized time and motion studies (based on surveys or estimation techniques). It should be noted, however, that few low- and middle-income countries prepare their budgets or expenditure reports as per the proposed HIS or NHA functional categories. Thus, proxy measures are often used to estimate, for example, curative care, which is subsequently split into inpatient and outpatient curative care (e.g. using costing studies).[12] Extracting accurate HIS expenditure estimates from these proxy measures at facility level can be very challenging.

Box 4.5. Time and motion studies

A time and motion study aims to do the following:

- determine the "correct" time needed to complete a certain task;
- establish the "one best way" to perform a task.

The objective of the study is to determine an average time for a job, by using observers to record exactly how much time is devoted to each task.

The steps in a time and motion study are:

1. establish a standard job method;
2. break down the job into elements;
3. study the job that a particular worker is doing;
4. rate the worker's performance;
5. compute the average time for the job;
6. compute the "normal" time, as follows: normal time = (elemental average time)x(rating factor)
7. compute the "standard" time, as follows: standard time = normal cycle time x (1 + allowance factor)

Cycle time is the total time from the beginning to the end of your process.

Normal time is the time required by a trained worker to perform a task at a normal pace.
The allowance factor accounts for delays or behaviour that would normally be accepted in the performance of the tasks under study.

Time and motion studies can be used for the following:

- evaluating performance;
- predicting the level of output that can be achieved;
- uncovering problems and finding solutions;
- doing time cost analyses

Source: http://healthit.ahrq.gov/portal/server.pt/community/health_it_tools_and_resources/919/time_and_motion_studies_database/27878

Estimating earmarked spending for HIS is a valuable exercise, as it provides a picture of the total amount that is specifically programmed for HIS (i.e. funds over which HIS stakeholders have a say in budgeting and managing). In the absence of earmarked

12 A study in South Africa estimated the cost of inpatient services as two-thirds that of outpatient services; this ratio has been used to split costs between inpatient and outpatient services in several health expenditure reviews and NHA studies in South Africa.

expenditures at the health facility level, countries are encouraged to conduct one-time unit cost or time and motion studies to estimate HIS expenditure; these results can then be used as a basis for current and future HIS subaccount estimations. Such non-earmarked spending can provide insight into the full picture of HIS investment.

The same principle applies to extraction of information from prevention and public health programmes, such as malaria control and EPI, and general administration of health services. Efforts should be made to identify earmarked HIS activities within the prevention and public health programmes and general administration of health services (see Table 4.2). Apart from one-time studies to estimate non-earmarked HIS expenditures, all other techniques to estimate non-earmarked HIS expenditures will yield only approximate results. In order to have a sufficient amount of relevant information for the HIS subaccounts exercise, countries should, if possible, undertake unit costing or time and motion studies before preparing HIS subaccounts. However, it should be borne in mind that time and motion studies are resource intensive from a human, financial, and time perspective.

It is important to be aware that data on earmarked and non-earmarked expenditure may be needed. Exclusion of non-earmarked expenditures may result in an underestimation of HIS expenditures at health facility level, which may lead to decisions being made on the basis of inaccurate information. Whenever estimation techniques are used, the assumptions and methods should be clearly stated, explained and substantiated.

Table 4.2. HIS expenditures extracted from prevention and public health programmes, Ethiopia, 2007–08

	HP. 1.1.1.2 Regional hospitals	HP.1.3.1 Public specialist hospitals	HP.3.4.5.1 Public primary health care unit	HP.3.4.5.2 NGO primary health care unit	HP.6 General health administration & insurance	HP.8.1 Research	Grand total	% of total
HC.6.1.1.1 Maternal health, M&E, routine					766 615		766 615	0.53
HC.6.1.1.2 Maternal health, M&E, non-routine					144 951		144 951	0.10
HC.6.1.2.1 Family planning and condom programmes, M&E, routine.	4 199 035	4 199 035	11 395 532	138 053	236 372		20,168,027	14.07
HC.6.1.2.2 Family planning and condom programmes, M&E, non-routine					4 614 530		4 614 530	32.19
HC.6.1.3.7.1 Child health, M&E, routine			183 136	549 407	77 539		810 081	0.57
HC.6.3.1.9.1 HIV, M&E, routine			21 204	63 611	2 448 172		2 532 930	1.77

HC.6.3.1.9.2 HIV, M&E, non-routine					4 394 112		4 394 112	3.07
HC.6.3.2.5.1 Malaria, M&E, routine					96 631		96 631	0.07
HC.6.3.3.2 Tuberculosis, M&E					277 294		277 294	0.19
HC.6.9 All other miscellaneous health services					6800		6800	0.005

To maintain the credibility and consistency of data collection and estimations of HIS expenditures, it is essential to focus on collecting data on earmarked HIS expenditures for all health care functions at all levels of the health care system. Estimation of non-earmarked HIS expenditures should preferably include the larger components, through an apportioning or other appropriate method, depending on data availability and resources. Unless resources are available to support a special study, small non-earmarked expenditures can be excluded, as was the case in the Ethiopia (see Box 4.6).

The NHA methodology uses triangulation to ensure the plausibility of estimations. It is critical not to overestimate expenditure in any subaccount. It is thus recommended to prepare subaccounts at the same time as the NHA, and to compare aggregates and subaggregates to ensure that they are plausible.

Box 4.6. Including or excluding particular health expenditures, Ethiopia

The Ethiopian authorities and the NHA team questioned the value and policy relevance of trying to estimate the amount of time health workers spent completing patient files, as well as other non-earmarked HIS expenditures, in the absence of time and motion or unit costing studies. Such estimations could potentially give an inflated impression of HIS expenditures in an environment where there is a significant resource shortfall for compilation of patient data.

The authorities also inquired whether the time spent on accounts at health facilities or at the FMOH constituted an HIS expenditure. NHA team members saw such expenditures as not intended to provide HIS services according to the HMN framework definition of components of data management, but rather as constituting general support for the entities' financial functions. They therefore excluded accounting personnel time and related expenditures from the HIS estimates.

Note: Inclusion or exclusion of health worker time in the HIS subaccount will depend on the country context. Where there are no HIS workers at the point of service delivery and service providers do data capture and entry (such as aggregate statistics, and daily, weekly, or monthly registers), the time they spend on HIS should be estimated and included. However, recording of patient history during the provider–patient encounter should be excluded.

Accounting staff time spent compiling data for a health expenditure review or NHA exercise should be included as an HIS expenditure.

4.6. Identifying sources of data

Data sources can be divided into two broad categories: primary and secondary sources. Secondary data sources may be routine or non-routine. The most important secondary data sources are the retrospective financial records of institutions involved in financing or implementing HIS activities. These include budget and expenditure reports (e.g. ministry of finance budgetary records and annual expenditure reports of the ministry of health and national bureau of statistics); executed financial operations of health insurance schemes; provider reports and budgets; and annual statements of accounts of employers and private companies. Chapter 6 of the Producers' Guide (WHO, 2003) provides more details on the strengths and weaknesses of these secondary data sources. In Ethiopia, routine secondary data sources for HIS expenditures are presented in Box 4.7.

Box 4.7. Data sources for HIS expenditure, Ethiopia

The HIS currently in place in Ethiopia obtains data from two main sources: population-based health information comes from census records, vital events registration, household surveys and surveillance; while health service-based information is taken from facility-based data on morbidity, mortality, types of services delivered, drugs and commodities provided, availability and quality of services, financing and management. Health service-based information is generated via routine monitoring of the services provided and constitutes the HMIS.

Few low- and middle-income countries publish secondary non-routine HIS expenditure data, although they may finance or implement various non-routine surveys (such as DHS, Income and Expenditure Surveys, household health expenditure and utilization surveys, Welfare Monitoring Surveys, Living Standards Measurement Surveys, MICS, or general NHA surveys). In Ethiopia, the few non-routine data sources that were available for the HIS estimation included donor obligation and disbursements reports, particularly those of the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Because secondary data sources on HIS expenditure are so limited, it is likely that primary data will need to be collected from institutions involved in financing or implementing HIS activities. Special surveys for HIS should be undertaken using specifically designed questionnaires or modules, as was the case in Ethiopia (see Table 4.3 and Annex 2). If the HIS subaccount is prepared at the same time as the NHA, it is recommended that "rider" questions or modules be added to the general NHA questionnaires (see Annex 3).

Table 4.3. HIS entities and data sources used in estimating HIS expenditures, Ethiopia, 2007–2008

HIS entities	HIS subaccount-related questions addressed by data estimates from each entity	Data sources
Government entities: FMOH, National Statistical Agency, Regional Health Bureaus (RHBs)	Government as financing source and financing agent: ○ From which financing sources did the FMOH and RHBs receive funds for HIS? *(FSxHF table)* ○ How did the FMOH and RHBs allocate their HIS funds across each type of provider, function and input? *(HFxHP, HPxHC, HFxHC, FSxHC tables)*	• Budget and expenditure books • Key informant Interviews with officials of FMOH and RHBs • Expert opinion of people working on HIS
Insurance companies	• Insurance companies as financing agent: ○ How much was spent on HIS activities? *(HFxHC table)*	• National Health Accounts sample survey of health insurers or census of health insurers with health expenditures within which there were HIS expenditures *Note: Rider questions on HIS were added to the general NHA questionnaire, but no data were obtained on HIS spending. It proved extremely difficult to estimate HIS spending by insurance companies because of the nature of the operations*
Employers	• Employer as financing source ○ To which financing agents (such as insurance schemes) do employers give funds that are ultimately used for HIS and how much do they give? (*FSxHF table)* • Employer as financing agent and provider ○ How much do employers spend on HIS in their on-site facilities? (*HFxHP, HFxHC, HFxRC*)	• Special national sample survey of firms and corporations on health expenditures within which there HIS expenditures *Note: Rider questions on HIS were added to the general NHA questionnaire, but no data were obtained on HIS spending. It proved extremely difficult to estimate HIS spending by employers because of the nature of the operations*
NGOs	• NGOs as financing source ○ Do NGOs serve as financing sources for HIS by generating their own revenue locally (e.g. from church groups)? If so, how much is generated in this way (*FSxHF table*) • NGOs as financing agent: ○ From which financing sources do NGOs receive their HIS funds? How much do they receive? *(FSxHF table)* ○ How do NGOs allocate HIS funds across each type of provider, function, and input? *(HFxHP, HPxHC, HFxHC, HFxRC, HPxRC tables)*	• Special national sample survey of NGOs involved in financing and delivery of health services within which there are HIS activities

HIS entities	HIS subaccount-related questions addressed by data estimates from each entity	Data sources

Donors	• Donors as financing source:
	  ○ To which financing agents do donors give HIS funds? How much do they contribute? *(FSxHF table)*
	• Donors as financing agent:
	  ○ Do donors transfer their funds directly to providers? If so, to which ones? How much, and for which functions? (*HFxHP, HPxHC, HFxHC tables)*
		• Existing donor health expenditure/ disbursement reports and databases
		• Special survey of all donors involved in funding general health services including HIS services and goods

In summary, data sources can be organized into four broad categories. To minimize the cost of data collection and avoid duplication of effort, the team should identify sources of information from these four categories in the following order.

1. *Existing information systems.* What types of data on HIS expenditure are captured on a regular basis, e.g. financial reports submitted to a donor coordinating forum, the Ministry of Health or disease control commission; annual health budget expenditure reports; donor reports?
2. *Secondary data (existing studies/reports)*. What studies and reports have already been produced, e.g. previous HIS assessments or focused expenditure reviews?
3. *Ongoing surveys*. Are there any ongoing surveys (by donors, NGOs or government) to which rider questions on HIS expenditures could be added?
4. *HIS subaccount-specific surveys*. As a last option, if there is no other way to estimate expenditures, the team may need to carry out an HIS subaccount-specific survey, for instance targeting all disease control programmes and other agencies involved in HIS activities. The type of survey needed will depend on:
   - the principal financers and recipients of the transaction targeted; and
   - the likelihood of obtaining accurate responses from recipients.

The flow of funds diagram (see Figure 4.1) is useful for identifying the agencies to which the entity routinely submits financial reports. These could include budget offices, HIS coordination offices, and the national statistical bureau.

For each data source identified, the Producers' Guide (WHO, 2003) recommends evaluating the level of detail, quality (scope, level of detail, reliability), appropriateness, and sufficiency of the data provided. This will help the team determine whether additional data sources are needed.

4.7. Data collection plan

A data collection plan should be prepared, outlining the types, sources, purpose, and timeframe of data to be collected. Individual team members should be assigned responsibility for accessing a given data source, and in the event of primary data collection, for coordinating the survey. Conclusion

The success of the data collection effort will depend on the availability and quality of existing information, the potential to use existing surveys to obtain needed information, and the availability of resources for collecting primary data. Understandably, the more primary data required, the greater the cost and time needed to complete the HIS subaccount. Therefore, the team should examine all non-primary data collection options before embarking on specific surveys. Given the general shortage of available data for the HIS subaccount, it is likely that primary data collection will be needed. However, the costs of such activities should not be excessive because data do not need to be collected at household level.

The larger the use of secondary data the larger the opportunity to contribute to the institutionalization of NHA, such that HIS expenditures can be obtained on a routine basis without much added cost or extra effort.

Chapter 5
Data analysis

The Producers' Guide clearly documents the process to be followed in analysing general NHA data (WHO, 2003, Chapters 9–13). This chapter focuses on strategies for dealing with HIS-specific data analysis issues. The guidance provided is based on the advice of NHA and HIS experts at country and international levels, as well as country experience in preparing HIS subaccounts. As more and more countries apply the HIS subaccount methodology, the chapter will be enriched by country-level experiences.

HIS subaccounts will generally be prepared either at the same time as, or just after, the NHA. The data analysis stage for the subaccount can therefore use the same resources and methods as the general NHA. The analysis involves a thorough review of the data collected and their assembly to provide a clear picture of HIS funding flows. During this process, the team will inevitably encounter data conflicts and gaps that will require further scrutiny and possibly use of alternative estimation techniques.

The data analysis stage aims to:

- complete the four basic HIS subaccount tables (or more, as needed) for the year of study:
  - FSxHF,
  - HFxHP,
  - HFxHC,
  - HPxHC,

  and if necessary
  - FSxRC,
  - HFxRC,
  - HPxRC;
- compute critical policy indicators for the HIS subaccount report and for stakeholders.

5.1. Getting organized: what is needed?

Data analysis for the HIS subaccount can be a long process, especially if the right data have not been collected. To avoid delays, it is critical first to assemble all needed data, directly related to the NHA tables or HIS information or not, and including financial and non-financial information. The essential types of data and information, classified by purpose of use, are listed in Table 5.1. It is also suggested that countries develop a database or data repository of health expenditure information, coded to identify how HIS expenditures are likely to flow through the system.

Ethiopia followed this approach, giving all data ICHA codes before the data analysis. This greatly simplified the sorting of data by source, financing agent, provider and function.

The analysis is also expedited if the electronic template for the tables has already been created or is available from previous NHA estimations. This template should incorporate: (1) country-adapted classifications in the row and column headings; (2) formulas for summation of columns and rows; (3) links between tables to cross-check that the sums of rows and columns in the different tables are consistent; and (4) links to an HIS indicator sheet so that policy indicators and charts can be automatically generated from the estimates in the tables.

Table 5.1 Information needed for HIS subaccounts data analysis

Purpose of needed information	Examples of the types of data needed
To populate the HIS subaccount tables	• Clean data sets on health expenditures from surveys • General NHA data or reports • Secondary data (as listed in the data collection plan), such as financial records for the year of estimation from the MOH and national statistical bureau • Health expenditure database from government, insurance agencies, and other secondary sources, with codes identifying services, products, and equipment targeted to HIS
To weight primary datasets to national level	NHA-related surveys may have targeted a sample of the universe for a given entity. To extract national estimates from such data, appropriate weights must be applied. Deriving these weights may require additional information, such as: • total number of NGOs that contribute to HIS relative to total NGOs involved in the health sector (to weight NGO datasets). Also the way NGO samples are selected would determine the weights • weighting methods used for the sampling procedures for surveys of facilities
To convert currencies	• Average official exchange rate (for the year) from donor-reported currencies to local currency (to convert donor disbursements to local currency) • Average official exchange rate (for the year) from local currency to US$ (for comparison with other countries) • International dollar rate to achieve purchasing power parity (for comparison with other countries)
To adjust datasets with earlier or later timeframes to year of estimation	• Gross domestic product deflator, consumer price index, or medical inflation rates (when available) • Population growth rates • For current dollar, inflation rates (for time series comparisons)
To compute key policy indicators and to use these macro series as reference series	• Gross domestic product • Total population • Any other data needed to compute indicators • Total government expenditure • Total government health expenditure • Total donor commitments, disbursements and expenditure
To verify expenditure estimates	• Plausibility regarding NHA aggregates • Verification of internal consistency of HIS aggregates

It is useful to link the HIS subaccount tables to the general NHA tables in order to determine the proportion of THE going to HIS.[13] This can serve as a gauge for assessing the interim HIS expenditure estimates. If the HIS expenditures are equivalent to or larger than general health expenditures, the team will need to obtain more data and revise the HIS expenditure estimates.

It is important to maintain the general NHA database in electronic format, with codes for all expenditures by year, source of funds, function, provider, and location. This approach was followed in Ethiopia in developing the four core tables (FSxHF, HFxHP, HFxHC, HPxHC).

The technical team will need to use different methods depending on the amount of information available.

1. *Detailed information is available and activities are earmarked to HIS*. When resources are allocated exclusively to HIS, e.g. to HIS/HMIS and M&E units in the MOH, donor organizations, and NGOs, detailed information is likely to be available. With this information, the team may be able to estimate the expenditures by aggregating them from the bottom up. This method should be used whenever possible. Verification is needed to see if only earmarked funds are used for HIS.
2. *Detailed information is not available, or expenditures are not earmarked for HIS, or are grouped under other programmes and departments, such as health planning, policy development or general health administration*. This will often be the case, because HIS is a subfunction and its services and goods are shared across personal and public health programmes. There are two ways to approach the situation.
    - Estimate through proxies, such as expenditure on human resources involved in HIS activities in the HIS/HMIS and M&E units, by collecting information on the numbers and grades of staff during the year of estimation. This approach was used in Ethiopia because, in some organizations, data were embedded in other programmes, in particular general administration of health services. Depending on the situation in the country, it may be necessary to include also a capital goods valuation, since some goods used in HIS can be expensive.
    - Use allocation keys to assess the share that can be allocated to HIS. This method can be referred to as a top-down (allocation) approach, and can produce valid estimates of non-earmarked HIS expenditures. This method was not used in Ethiopia because of a lack of resources to undertake the necessary exploratory work to choose an appropriate allocation key, and lack of data from time and motion studies or unit costing of interventions.

To the extent possible, the technical team should try to identify expenditure components that can be directly categorized as HIS. Algorithms for allocating general expenditures should be analysed as well as the assumptions used, or results of specific studies such as time and motion studies or unit costing of interventions.

13 This includes only core health expenditures for HIS, not addendum items. However, the addendum items can also be verified, by comparing the volume of components related to health with the total. As in the case of core health expenditure, the total and relative levels should be assessed for plausibility.

5.2. Conducting the analysis

The initial phase of the analysis process essentially has three steps: (1) tallying the national annual amounts received and spent by each principal health care entity in accordance with NHA classifications (essentially through T-accounts); (2) completing the tables; and (3) reviewing initial results to check that they are logical and coherent. The relevant indicators can then be calculated.

5.2.1. Step 1: creating a T-account

The first step entails a review of primary and secondary expenditure data for the entities concerned. As recommended in the Producers' Guide (WHO, 2003, pages 146-147), a T-account can be helpful in organizing this process. In a T-account, the entity's expenditures are listed in the left column and revenues on the right. (See Table 5.2 for an example of an HIS T-account for the Ethiopian Federal Ministry of Health.) The team should capture information only on revenue that was spent during the year of estimation. In creating T-accounts, the team should map each type of expenditure to the appropriate NHA classification.

Some agencies may have their own T-accounts, covering their total income and expenditure flows. However, the idea here is to develop T-accounts only for the HIS components. The rules for the overall NHA are also valid for the HIS selected resources. The components should be easily identifiable through this process. Estimations need to be generated before being handled in the tables.

Table 5.2. Example of a T-account for HIS for the Ethiopian FMOH, 2007–08

Expenditure (Birr)		Revenue (Birr)	
HC.6.1 HIS for child health programmes	22 587.8	FS.1.1.1 Ministry of Finance	22 587.8
HC.6.9 All other HIS miscellaneous public health services	6 799.6	FS.3 Rest of the world	81 766 092
HC.7.1 HIS for general government health administration	81 759 292.4		
Total	**81 788 679.8**	**Total**	**81 788 679.8**

Note: The guiding principle of T-accounts is that the left and right sides must always be equal.

When starting the T-account process, it is recommended that the team begins with the main financing agents, for example, the Ministry of Health, national statistical bureau, and local and international NGOs. These generally possess detailed information on HIS expenditure, in particular earmarked expenditures found in HMIS/HIS units and M&E units of various vertical programmes.

5.2.2. Step 2: populating the tables

Once the individual T-account summaries have been prepared for each entity, the next step is to populate the subaccount tables. This step involves triangulating data estimates, resolving data conflicts and gaps, and avoiding double-counting. Triangulation is useful for verifying data estimates. Inevitably, no two data sources will report exactly the same expenditure; the team will need to make a selection or compute an alternative estimate. Some questions to consider during the data reconciliation process are given below.

- Is one data source more reliable than another? Did one survey have a higher response rate?
- Are all data sources measuring the same data and do they have the same boundaries? For example, one source may include data on spending on sanitation services, while others do not.
- Do all data sources measure data for the same time period?
- Do all data sets measure the same concept? For example, donors report commitments or disbursements while NGOs and MOHs may report expenditure.

Because data can be obtained from both the source and the recipient of the funds, care must be taken to avoid double counting. This occurs when the same piece of information is captured in more than one data source. An example: capital transfers can be given from central to regional level. These transfers can be reported by the central government as current spending whereas the regional government can report an acquisition of an asset for HIS. As both transactions refer to the same resources only once should be recorded to add up the THE. The first one should refer to a source and the second one to the agent. The data source to be taken should be aligned with the table and classification to be used. In some cases there are specific reasons to give preference to a data source. An example: development partners may report HIS disbursements to the MOH while the MOH may report actual expenditures. In this case, the MOH's actual expenditure figures should be used preferably, because they refer to spending and because the accounts are produced at domestic level, with domestic values. Not always the values reported by the development agency and the national entity are the same, e.g. due to valuation differences. The Producers' Guide provides more information on double-counting.[14]

There are several issues for the team to consider when faced with a lack of data while completing the matrices. Is the benefit of filling that cell worth the time and effort needed to do so? If the gap relates to a transaction of significant amount or policy interest or answers a key policy question, then it is important to estimate the figures. Otherwise, it may be more advisable to leave the cell blank or simply record the transaction in the "other" category. This decision should be based on the likely magnitude of the expenditure and the time and resources needed to obtain the missing information. Ideally, the HIS subaccount should capture all relevant flows; at the same time, the estimates must be produced in a timely fashion so that they can inform the policy process. A trade-off is therefore needed.

Once the HFxHP and HFxHC tables have been generated, it is relatively easy to work "upstream" and complete the HPxHC and FSxHF tables. Depending on the availability of data and the triangulation process, some flows can be treated in parallel.

5.2.3. Step 3: review and documentation

The final and most important step is to critically review the draft results to check whether they are logical and coherent. Once all the information has been entered in all relevant tables, a number of basic cross-checks should be undertaken to identify missing data and duplications. The internal consistency of the various expenditures should be considered, and levels compared

14 The Producers' Guide (WHO, 2003), particularly through its "Appia" case study, offers guidelines on resolving a variety of data conflicts and gaps.

with the corresponding expenditures in the NHA and with selected variables, such as general government expenditure. The team might find, for example, that certain basic ratios – such as HIS expenditure for prevention and public health services in relation to total HIS expenditure – are unlikely or impossible. This may be because of errors in the data or in data entry, or missing data.

It is of paramount importance to document all assumptions, weighting procedures, and estimation techniques used during the analysis. This will not only facilitate the drafting of the methodology chapter of the subaccounts report but, more importantly, inform and expedite subsequent country NHA efforts.

5.3. Conclusion

The data analysis stage requires access to a lot of health and non-health data, including information on expenditure on health activities, health-related activities, and non-health activities for HIS. It is strongly recommended that this information be assembled ahead of time to avoid delays in the data analysis. Some guiding principles for the analysis itself, particularly for the HIS subaccounts estimation, are: (1) always check the primary purpose of the reported expenditure and compare with the boundaries of the HIS subaccounts, and (2) systematically cross-check each item with the aggregate NHA estimates (if available) to make sure that the estimated amount is plausible.

Specific estimation issues include dealing with expenditures that target HIS but are embedded in programmes and with non-earmarked HIS expenditure, such as time spent by health care providers on maintaining reporting templates. The latter issue poses significant challenges, which can be dealt with according to the relevance of the expenditure. All strategies used should be as sound as possible and documented in detail. As countries intensify their HIS strengthening activities, the need for HIS subaccounts will be increasingly recognized, and the background information needed to improve the subaccount estimations will become more easily available.

Chapter 6
Implementation process for HIS subaccounts

6.1. Introduction

The HIS subaccounts should preferably be conducted as part of the general NHA or within the NHA framework. This chapter discusses the implementation process, propose timeframes for the development of HIS subaccounts, and outlines the resources needed.

The Producers' Guide (WHO, 2003) gives clear guidelines for the practical aspects of producing NHA. It recommends establishing a steering committee of high-level representatives from stakeholder organizations that fund or implement health care functions. This committee should identify the policy questions that provide the rationale and motivation for the NHA, and guide their development and preparation. Steering committee members may consult with representatives of other institutions or programmes, such as the national bureau of statistics, M&E experts in different health system institutions, and international organizations and donors that provide funding or technical expertise, to keep these stakeholders informed and encourage their cooperation with the data collection efforts of the NHA technical team. The committee can also act as an authoritative conduit for communicating the findings arrived at by the technical team, and facilitate institutionalization of NHA by establishing "ownership" at the highest level.

The rationale for preparing an HIS subaccount should be determined by the country context, with national institutions and stakeholders leading the process of defining the problems that need to be addressed (see Figure 6.1). For the HIS subaccounts, HIS stakeholders and experts should be incorporated into the Steering Committee. They and ongoing committee members should perform for HIS subaccounts the same role as for the general NHA; if appropriate, an HIS subcommittee may be formed. A special meeting for HIS subaccounts should be held early. General descriptive materials on NHA, together with this guide, should be provided to the new HIS-related committee members, to inform them of the general purpose and objectives of NHA.[15] The committee should ensure that the HIS subaccounts are conducted in the context of the general NHA.

If members of the HIS Steering Committee feel that they "own" the project, they are more likely to follow progress, provide guidance on obtaining data, and help with data collection. It will also increase the likelihood that the results of the estimation will be used in national policy-making. Both users and producers of information on HIS should be involved in this work.

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15 In particular, the Steering Committee should be given Chapters 1 and 2 of this guide to help them formulate the policy questions that the HIS subaccount can answer.

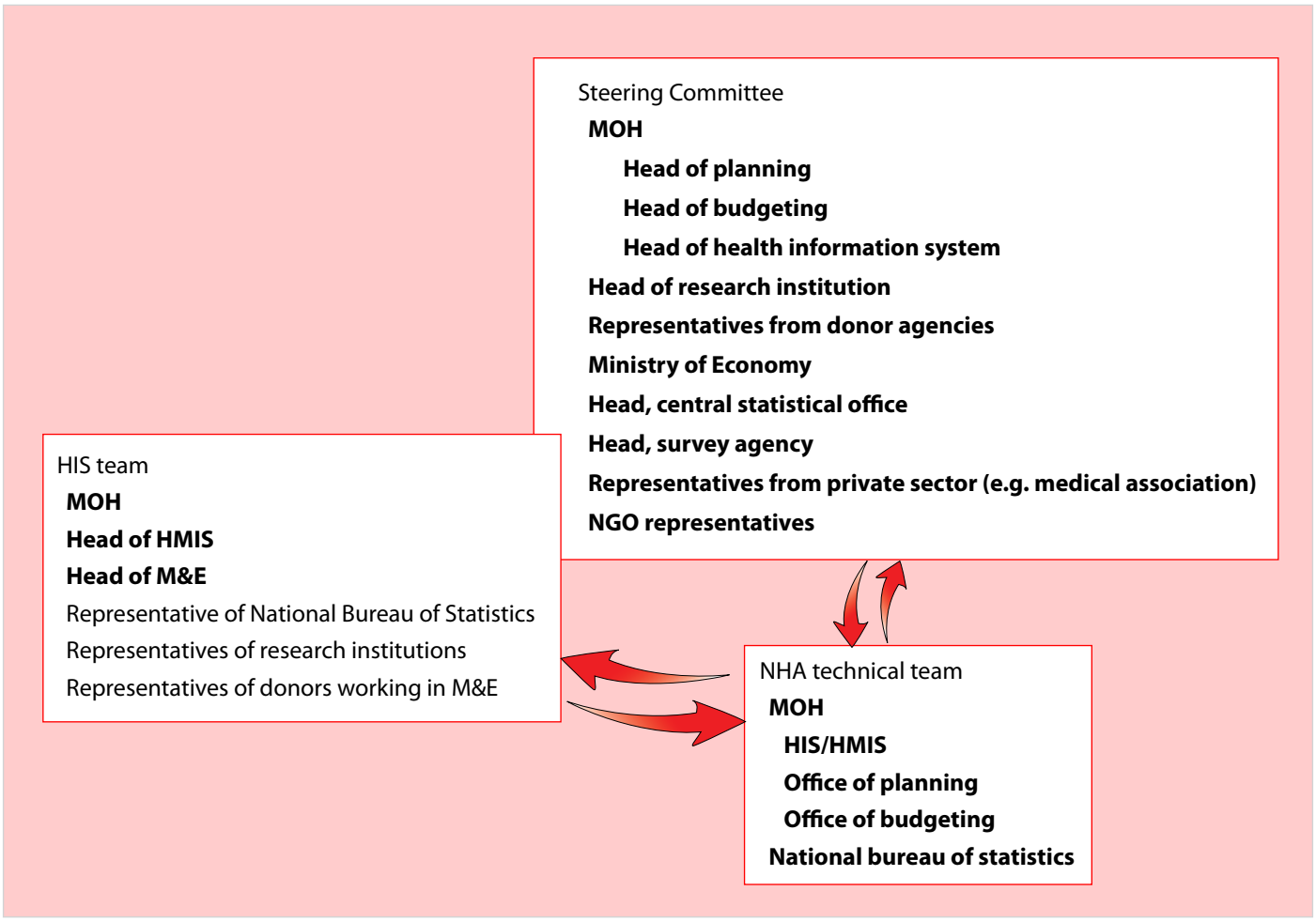
The Steering Committee has the following responsibilities:

- define the HIS policy questions to be addressed by the HIS subaccount;
- agree on the scope and boundaries of the HIS subaccount;
- meet regularly with the technical team to provide guidance on relevant policies and priority areas and to be informed about methodological issues, intermediate results and possible gaps in the data;
- assist the technical team by facilitating the data collection process;
- promote and help in the analysis of HIS subaccount data and other relevant information on HIS activities;
- organize meetings and workshops with the broader group of stakeholders to discuss results and findings.

The technical team has the following responsibilities:

- develop conceptual and fieldwork methodology for the HIS subaccount;
- conduct training workshops and develop a project workplan;
- design data entry screens;
- collect data;
- analyse the data;
- draft a report and submit to the Steering Committee for review.

Figure 6.1 Stakeholders involved in the production of NHA and HIS subaccounts



The human resources needed to prepare the HIS subaccount will depend on the existing capacity of institutions and individuals involved in the general NHA. Assuming that both a steering committee and technical team already exist for the NHA, it is recommended that the following be added:

- To the existing Steering Committee:
  - Head of the HIS/HMIS programme at the MOH;
  - representative of international organizations that fund or provide technical assistance to HIS/HMIS, such as WHO;
  - head of M&E at the Ministry of Health and M&E officers for various vertical programmes.
- To the NHA technical team:
  - WHO national technical officer for health systems development;
  - representatives from the statistics office in charge of surveys such as the DHS, Living Standard Measurement Survey, and Welfare Monitoring Survey.

6.2. Resources needed

6.2.1. Equipment

Preparing health accounts is a data-intensive process, but does not require sophisticated equipment. Computers should be available with access to the Internet and a spreadsheet program. One computer is sufficient to process the data sets from the institutional surveys. It is important for the technical team to collaborate with data management experts at the national statistical bureau; in fact, they should be part of the HIS subaccounts team.

6.2.2. Other resources

Members of the technical team will need to be trained for the HIS subaccounts; one day of training should suffice. It is more cost-effective to conduct this training in conjunction with the general NHA training. Resources will be needed for the preparation and implementation of the training, e.g. content development, presentation, documentation, trainers' fees and expenses, transport, meals for trainers and trainees, hire of room, printing, and stationery.

Financial resources are also needed for data collection, cleaning, entry, and analysis, as well as report writing and dissemination. Reporting and disseminating the results are an integral part of the implementation process. Many countries have used up their NHA budget by the end of data analysis, and have no funds left for the production of policy indicators, report writing, and dissemination of results to policy-makers; this jeopardizes the usefulness of the subaccount for policy. Countries should dedicate sufficient time and resources to dissemination – as a minimum, the team should produce HIS subaccount policy briefs that summarize the objectives, data collection methods, and findings of the subaccount, with key indicators and policy implications. These findings can be disseminated via print, electronic, and other media.

6.3. Workplan

Before beginning preparation of an HIS subaccount, the team should draft a detailed workplan containing activities and timelines, with start and end dates, and the names of the persons responsible for each activity (see Table 6.1).

Table 6.1. Activities and timeline for preparing HIS subaccounts

Activity	Month												Responsible persons
	1	2	3	4	5	6	7	8	9	10	11	12	
Start-up													
Form HIS subaccounts team within the NHA Steering Committee													
Form HIS subaccounts technical team													
Conduct training workshop and develop project workplan													
With the Steering Committee, identify the relevant HIS policy questions													
Implementation													
Identify HIS-relevant entities in the NHA flows													
Undertake inventory and assessment of existing data, identify gaps, and develop data collection plan													
Set up and finalize formats for data collection													
Collect secondary data													
Collect primary data[a]													
Design or modify survey instruments													
-develop sampling frames and sample selection schemes													
-pre-test survey questionnaires													
-arrange logistics for implementation of surveys													
-collect data													
Design data entry screens													
Create electronic data file and clean data													
Analyse data and produce HIS subaccount tables													
Write report and submit to Steering Committee for review													
Dissemination and feedback													
Present HIS subaccount results to stakeholders													
Prepare dissemination materials for specific audiences													
Disseminate and track use of HIS subaccount information													

6.4. Institutionalization

Institutionalization is the process whereby production of HIS subaccounts becomes a routine activity in a country, with clearly defined objectives and allocated budget and staff. As with the general NHA, the institutions that could be tasked with the routine production of HIS subaccounts include the Ministry of Health, the national statistical bureau, or an academic institution.

a It is suggested that, as far as possible, existing surveys should be used. If required, the team should discuss with the survey agencies to include certain questions related to HIS expenditure (see Chapter 4).

The institutionalization of HIS subaccounts has four key dimensions.

- *Recurrence*. HIS subaccounts should be produced on a regular basis, preferably yearly. This is important for identifying trends and monitoring changes in the financing of HIS activities over time. Several rounds of subaccounts may need to be produced before enough momentum and demand are generated to make it an annual process.
- *Policy penetration*. HIS financial information needs to be introduced into the policy-making process. Information that is not applied to policy serves no purpose. Engaging different stakeholders within the MOH and other ministries or entities, such as the national statistical office, donors, and international NGOs can help the institutionalization process. Opportunities to use the information include sector-wide approaches (SWAps) and annual health sector reviews.
- *Government ownership*. The initial impetus for preparing HIS subaccounts is the government's need for financial information on HIS. Government ownership has to be translated into ongoing support, in terms of resources and time, from key policy-makers.
- *Broad demand and use*. The HIS subaccount has to respond to the need for information of a broad group of potential users. Clear presentation of the information, targeted to different audiences, will improve the chances of its being used, leading to an increased demand and a repeating cycle.

The process of institutionalization will differ from country to country, but the following general features are common.

- *Establish the relevant policy questions to be addressed by the HIS subaccount*. It is extremely important to start the HIS subaccount by defining the specific policy issues that need to be addressed. This will ensure that expectations for the subaccount are realistic, focus the efforts of the technical team, and create ownership of the results.
- *Establish standards for HIS data collection and analysis*. The procedures and methods used need to be clearly specified so that they become systematic. This includes adding relevant questions to planned or ongoing surveys and data collection efforts. Every step of the HIS subaccounts estimation process must be documented for the benefit of future HIS subaccount exercises – technical teams tend to have high turnover rates and thus little institutional memory.
- *Institute data reporting requirements*. It is recommended that legislation be enacted to require reporting of data. This can be particularly useful in relation to the private sector, which is often reluctant to share information.
- *Link NHA to the HIS*. Routine collection of expenditure data will help to strengthen countries' institutionalization of HIS and of NHA.

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Annex 1

The proposed tables for NHA HIS subaccounts

Table A1.1 HIS expenditure by financing source and financing agent (FSXHF)

Financing agents	FS.1 Public funds					FS.2 Private funds				FS.3 Rest of the world	Total
	FS1.1 Territorial government		FS.1.2 Other public funds		FS.2.1 Employer funds	FS.2.2 Household funds	FS.2.3 Non-profit institutions serving households (NPISH.NGOs)	FS.2.4 Other private funds			
	FS.1.1.1 Central government revenue	FS.1.1.2 Regional and municipal government revenue	FS.1.2.1 Return on assets held by a public entity	FS.1.2.2 Other				FS.2.4.1 Return on assets held by private entity	FS.2.4.2 Other		
HF.1 General government											
HF.1.1 Territorial government											
HF.1.1.1 Central government											
HF.1.1.2 State/ provincial /Regional government											
HF.1.1.3 Local/ municipal government											
HF.1.2 Social security funds											
HF.2 Private sector											
HF.2.1 Private social insurance											
HF.2.2 Other private insurance											
HF.2.3 Private household out-of-pocket payment											
HF.2.4 Non-profit institutions serving households (NPISH-NGOs)											
HF.2.5 Private firms and corporations											
HF.3 Rest of the world											

Table A1.2 HIS expenditure by financing agent and health provider (HFx HP)

Providers	HF. 1 General government				HF.2 Private sector					HF.3 Rest of the world	Total
	HF.1.1 Territorial government			HF.1.2 Social security funds	HF.2.1 Private social insurance	HF.2.2 Other private insurance	HF.2.3 Private household out-of-pocket	HF.2.4 Non profit institutions serving households (NPISH-NGOs)	HF.2.5 Private firms and corporations		
	HF.1.1.1 Central government	HF.1.1.2 State/ provincial/ regional government	HF.1.1.3 Local/ municipal government								
HP.1 Hospitals											
HP.2 Nursing and residential care											
HP.3 Providers of ambulatory health care											
HP.4 Retail sale and other providers of medical goods											
HP.5 Provision and administration of public health programmes											
HP.6 General health administration and insurance											
HP.7 All other industries											
HP.8 Institutions providing health -related HIS services											
HP.9 Rest of the world											
Total											

Table A1.3. HIS expenditure by provider and function (HPxHC)

Functions	HP.1 Hospitals	HP.2 Nursing and residential care	HP.3 Providers of ambulatory health care	HP.4 Retail sale and other providers of medical goods	HP.5 Provision and administration of public health programmes	HP.6 General health administration and insurance	HP.7 All other industries	HP.8 Institutions providing health-related HIS services	HP.9 Rest of the world
HC.1 Services of curative care (inpatient and outpatient)									
HC.1.1 Inpatient curative care									
HC.1.3 Outpatient curative care									
HC.1.4 Services of curative home care									
HC.2 Services of rehabilitative care									
HC.3 Services of long-term nursing care									
HC.4 Ancillary services to health care									
HC.5 Medical goods dispensed									
HC.6 Prevention and public health services									
HC.7 Health administration (stewardship) and health insurance									
HC.R.1 Capital formation of health care providers									
THE									
HIS health-related functions									
HCR.2 Education and training of health personnel									
HC.R.3 Research and development in HIS									
HC.R.4 Food hygiene and drinking-water control									
NHE									
HIS Addendum Functions									

Functions	HP.1 Hospitals	HP.2 Nursing and residential care	HP.3 Providers of ambulatory health care	HP.4 Retail sale and other providers of medical goods	HP.5 Provision and administration of public health programmes	HP.6 General health administration and insurance	HP.7 All other industries	HP.8 Institutions providing health-related HIS services	HP.9 Rest of the world
AD.1 Data collection, storage and analysis,and dissemination for national Census									
AD.2 Data collection, storage and analysis, and dissemination for vital registration									

Table A1.4. HIS expenditure by financing agent and function (HFxHC)

Functions	HF.1 General government				HF.2 Private sector						
	HF.1.1 Territorial government										
	HF.1.1.1 Central government	HF.1.1.2 State/ provicial government	HF.1.1.3 Local/ munipal government	HF.1.2 Social security funds	HF.2.1 Private social insurance	HF.2.2 Other private insurance	HF.2.3 Private out-of-pocket	HF.2.4 Non profit institutions serving households	HF.2.5 Private firms and corporations	HF.3 Rest of the world	Total
HC.1 Services of curative care (inpatient and outpatient)											
HC.1.1 Inpatient curative care											
HC.1.1.1 HIS for inpatient curative services											
HC.1.3Outpatient curative care											
HC.1.3.1 HIS for Outpatient curative care											
HC.1.4 Services of curative home care											
HC.1.4.1 HIS for curative home care											
HC.2 Services of rehabilitative care											
HC.2.1 HIS for rehabilitative care											
HC.3 Services of long-term nursing care											
HC.3.1 HIS for long-term nursing care											
HC.4 Ancillary services to health care											
HC.4.1 HIS for ancillary services of health care											
HC.5 Medical goods dispensed											
HC.5.1 HIS medical goods dispensed											
HC.6 Prevention and public health services											
HC.6.1 HIS for prevention and public services											
HC.7 Health administration (stewardship) and health insurance											
HC.7 HIS for health administration (stewardship) and health insurance											

Functions	HF.1 General government				HF.2 Private sector						
	HF.1.1 Territorial government										
	HF.1.1.1 Central government	HF.1.1.2 State/ provicial government	HF.1.1.3 Local/ munipal government	HF.1.2 Social security funds	HF.2.1 Private social insurance	HF.2.2 Other private insurance	HF.2.3 Private out-of-pocket	HF.2.4 Non profit institutions serving households	HF.2.5 Private firms and corporations	HF.3 Rest of the world	Total
HC.R.1 Capital formation of health care providers											
HC.R.1.1 HIS capital formation of health care providers											
THE											
HIS health-related functions											
HCR.2 Education and training of health personnel											
HC.R.3 Research and development in HIS											
HC.R.4 Food hygiene and drinking -water control e.g. HIS for Nutrition Programme											
NHE											
HIS Adendum Functions											
AD.1 Data collection, storage and analysis and dissemination for national Census											
AD.2 Data collection, storage and analysis and dissemination for Vital registration											
AD.3Data collection, storage and analysis and dissemination for Living Standard Measurement Surveys											

Table A1.5. HIS expenditure by financing source and resource cost (FSxRC)

Resource cost	FS.1 Public funds				FS.2 Private funds					FS.3 Rest of the World	Total
	FS1.1 Territorial government		FS.1.2 Other public funds					FS.2.4 Other private funds			
	FS.1.1.1 Central government revenue	FS.1.1.2 Regional and municipal government revenue	FS.1.2.1 Return on assets held by a public entity	FS.1.2.2 Other	FS.2.1 Employer funds	FS.2.2 Household funds	FS.2.3 Non-profit institutions serving households	FS.2.4.1 Return on assets held by private entity	FS.2.4.2 Other		
RC.1 Current outlays											
RC.1.1 Compensation of employees and owners											
RC.1.1.1 Wages											
RC.1.1.2 Social contributions											
RC.1.1.3 Non-wage labour income											
RC.1.2 Supplies and services											
RC.1.2.1 Material supplies											
RC.1.2.1.2 Other supplies											
RC.1.3 Consumption of fixed capital											
RC.2 Capital expenditure											
RC.2.1 Buildings											
RC.2.2 Movable equipment											
RC.2.2.1 Vehicles											
RC.2.2.2 Other											

Table A1.6 HIS expenditure by financing agent and resource cost (HFxRC)

		HF.1 General government				HF.2 Private sector					HF.3 Rest of the World	
		HF.1.1 Territorial government										
Resource cost	**Functions**	**HF.1.1.1 Central government**	**HF.1.1.2 State/ provicial government**	**HF.1.1.3 Local/ munipal government**	**HF.1.2 Social security funds**	**HF.2.1 Private social insurance**	**HF.2.2 Other private insurance**	**HF.2.3 Private out-of-pocket**	**HF.2.4 Non profit institutions serving households**	**HF.2.5 Private firms and corporations**		**Total**
RC.1 Current outlays												
RC.1.1 Compensation of employees and owners												
RC.1.1.1 Wages												
RC.1.1.2 Social contributions												
RC.1.1.3 Non-wage labour income												
RC.1.2 Supplies and services												
RC.1.2.1 Material supplies												
RC.1.2.1.2 Other supplies												
RC.1.3 Consumption of fixed capital												
RC.2 Capital expenditure												
RC.2.1 Buildings												
RC.2.2 Movable equipment												
RC.2.2.1 Vehicles												
RC.2.2.2 Other												

Table A1.7. HIS expenditure by health provider and resource cost (HFxRC)

Functions	HP.1 Hospitals	HP.2 Nursing and residential care	HP.3 Providers of ambulatory care	HP.4 Retail sale and other providers of medical goods	HP.5 Provision and administration of public health programmes	HP.6 General health administration and insurance	HP.7 All other industries	HP.8 Institutions providing health related services	HP.9 Rest of the world
RC.1 Current outlays									
RC.1.1 Compensation of employees and owners									
RC.1.1.1 Wages									
RC.1.1.2 Social contributions									
RC.1.1.3 Non-wage labour income									
RC.1.2 Supplies and services									
RC.1.2.1 Material supplies									
RC.1.2.1.2 Other supplies									
RC.1.3 Consumption of fixed capital									
RC.2 Capital expenditure									
RC.2.1 Buildings									
RC.2.2 Movable equipment									
RC.2.2.1 Vehicles									

Annex 2

Adapted classification scheme used for Ethiopian HIS subaccount

Health information systems

Financing sources		
FS.1.1.1	Central government revenue (Ministry of Finance)	
FS.1.1.2	Regional and municipal government	
FS.1.1.2.1	Regional government	
FS.1.1.2.2	Woreda and city administrations	
FS.2.3	Non-profit institutions	
FS.3	Rest of world	
Financing agents		
HF.1.1.1.1	Ministry of Health	
HF.1.1.1.1.1	FHAPCO	
HF 1.1.1.2	Ministry of Education	
HF 1.1.1.3	Ministry of Defence	
HF 1.1.1.4	Federal police	
HF 1.1.1.5	Other	
HF.1.1.2.1	Regional health bureaus	
HF.1.1.2.2	Other regional agencies	
HF.1.1.3	Local and municipal governments – health offices	
HF.1.1.3.1	Woreda health offices	
HF.1.1.3.2	Municipality and city administration health offices	
HF.2.1.2.1	Parastatal employer insurance	
HF.2.1.2.2	Private employer insurance	
HF.2.2	Private individual (non-social) insurance	
HF.2.4	Non-profit institutions serving households (NGOs)	
HF.2.5.1	Parastatal companies	
HF.2.5.2	Private for-profit companies	
HF.3	Rest of the world	

Providers		
HP.1.1.1.1	Federal hospitals (St Pauls, Black Lion)	
HP.1.1.1.2	Regional hospitals (includes zonal)	
HP.1.1.2	Private hospitals	
HP.1.1.2.1	Not-for-profit hospitals	
HP.1.1.2.2	For-profit hospitals	
HP.1.2	Mental health hospitals (Emmanuel)	
HP.1.3.1	Public speciality hospitals (Alert, St Peters)	
HP.1.3.2	Private speciality hospitals	
HP.3.1	Offices of physicians (private clinics)	
HP.3.4.5.1	Public primary health care units	
HP.3.4.5.1.1	Health posts	
HP.3.4.5.1.2	Health centres	
HP.3.4.5.2	Not-for-profit primary health care units	
HP.3.4.9	All other outpatient community and integrated care centre	
HP.5	Provision and administration of public health programmes	
HP.6	General health administration and insurance	
HP.8.1	Research institutions	
HP.8.2	Education and training	
HP.8.3	Other institutions providing health-related services	
HP. 9	Rest of the world (treatment abroad and donor health facilities, e.g. UNHCR)	
HP. Nsk	Provider not specified by kind	
Functions		
HC.6.1	Maternal and child health, family planning and counselling M&E	*Unless specified, programmes do not include costs for monitoring and evaluation*
HC.6.1.1.1	*Maternal health programmes M&E – routine*	
HC.6.1.1.2	Maternal health programmes M&E – non-routine	
HC.6.1.2.1	Family planning and counselling programmes M&E – routine	
HC.6.1.2.2	Family planning and counselling programmes M&E – non-routine	
HC.6.1.3.7.1	Routine M&E for child health	
HC.6.1.3.7.2	Non-routine M&E for child health	
HC.6.3	Prevention of communicable diseases	
HC.6.3.1.9.1	HIV M&E – routine	
HC.6.3.1.9.2	HIV M&E – non-routine	
HC.6.3.2.5.1	Malaria M&E – routine	
HC.6.3.2.5.2	Malaria M&E – non-routine	
HC.6.3.3.2	Tuberculosis M&E – routine	

HC.6.3.3.2	Tuberculosis M&E – non-routine	
HC.6.3.4.1	Child health M&E – routine	
HC.6.3.4.2	Child health M&E – non-routine	
HC.6.4	Prevention of noncommunicable diseases	
HC.6.5	Occupational health care	
HC.6.9	All other miscellaneous health services	
HC.7	General health administration and insurance	
HC.7.1	Non-specified routine M&E	
HC.7.2	Non-specified non-routine M&E	
HCR 1	Capital formation	
HCR 2	Education and pre-service training	
HCR 3	Research and development in health	
HCR 4	Food hygiene and drinking-water control	
HCR 5	Environmental health (e.g. standing water monitoring)	
Non-health addendum items		
AD.1	Informing the development of vital events registration (pilot sites)	
AD.2	Demographic surveillance sites (DSS) research (EHNRI)	
AD.3	Food security assessments (DPPA, Pre- and post-harvest assessments)	

Annex 3

Example of NHA questionnaire, containing rider questions for the HIS subaccounts in Ethiopia

NATIONAL HEALTH ACCOUNTS (NHA) EFY 2000 (July 8th 2007- July 7th 2008).

SURVEY OF INTERNATIONAL PARTNERS (DONORS AND NGOS)

ID No. | | | | |

Name of interviewer: _____

Notes:

- In this questionnaire, you are requested to report the amount of money that your organization received and spent on health, health-related activities and addendum activities for the year EFY 2000 (July 8, 2007- July 7, 2008), including administration costs.
- In this questionnaire, you will also be asked to provide value of in-kind contributions. If you cannot provide the exact value of in-kind contributions, please provide the quantities per type of good received or given.
- All the information that you will provide in this questionnaire will be kept confidential, and will not be disclosed.
- In the final report, all the data obtained from the questionnaires will be aggregated, so no organization name will appear in any report.

If you have any questions concerning this questionnaire, please call the supervisor below:

Name: _____

Telephone number: _____

Email: _____

We ask you to return your completed questionnaire to the supervisor by the following date:

Due date: _____ 2009

TABLE OF CONTENTS

*Please keep in mind that we are tracking only **EXPENDITURES***. Please note the distinctions between commitments, disbursements, and expenditures:

- Commitments: point at which funding that is readily available to the funder is legally promised to recipients.
- Disbursements: point at which funds are transferred from the funding mechanism to a recipient (and the recipient, such as a NGO can then spend those funds).
- **Expenditures: measurement in monetary terms the value of consumption of the goods and services of interest.**
  - **i.e., What was SPENT on a particular service or product?**
  - **Implies that a service (i.e., technical assistance, surgery, counseling session, etc.) or product (i.e. drugs, inoculations, etc.) that has been rendered to the population and/or patients**

Please keep in mind the following classifications in order to avoid double counting:

Expenditure category	HIV/AIDS	TB	Malaria	Reproductive health	Child health
HIV/TB co-infection	√				√
HIV/malaria co-infection	√				√
STI management and treatment	√				
PMTCT for HIV	√				√
Child health services	√ (for HIV)	√ (for TB)	√ (for malaria)		√ (general)
Condoms	√ (for HIV prev.)			√ (for family plan.)	
Postnatal care				√ (for mother)	√ (for newborn)
Breastfeeding counseling					√
BCG vaccines for TB		√			√
ITNs			√		√
Anti-malarial chemoprophylaxis			√		√

Please keep in mind the following definitions:

Health care expenditure: All expenditures for activities whose primary purpose is to restore, improve, and maintain health for the nation during a defined period of time.

Health care-related expenditures: All expenditures for activities that may overlap with other sectors, such as education, overall 'social' expenditure, research and development, and

infrastructure. May be closely linked to health care in terms of operations, institutions, and personnel but should, to the extent possible, be excluded when measuring activities belonging to DIRECT health care functions.

Addendum/Non-health expenditures: All expenditures on non-health activities which help maintain integrity of health accounts and which avoid inclusion of non-health activities in the National Health Accounts (e.g., income-generating activities for HIV/AIDS patients)

PART A. IDENTIFICATION INFORMATION OF RESPONDENT

No.	QUESTIONS	ANSWER
Q01	Name of respondent	
Q02	Position of respondent	
Q03	Contact phone number of respondent	
Q04	E-mail address of respondent	
Q05	Office location/address of respondent	

PART B. GENERAL PARTNER INFORMATION

No.	QUESTIONS	ANSWER
Q06	Name of partner	
Q07	Type of partner	1. International Donor ☐ 2. International NGO ☐ 3. National Donor ☐ 4. National NGO ☐ 5. Other Please specify ☐ _____
Q08	In addition to using your information in an aggregate manner, would you approve the disclosure of your organization's name and contribution in the final NHA report?	1 Yes ☐ 2 No ☐
Q09	Please state the currency that you will use in this survey to enter your financial information: (*Please only use one currency for the entire survey)*	1 Ethiopian Birr ☐ 2 US Dollars ☐ 3 Euros ☐ 4 British Pounds ☐ 5 Other : Specify_____ ☐

PART C: TOTAL EXPENDITURES ON HEALTH

In this section, we would like to learn about your organizations Total Health expenditures. Health activities are those "whose primary purpose is to restore, improve, and maintain health for the nation and individuals." In this section, please report on Total Health spending (inclusive of all expenditures on HIV/AIDS, malaria, reproductive health, general health care, etc.) for the Ethiopian fiscal year (EFY) 2000 (GC July 8th, 2007- July 7th, 2008)- on an accrual basis.

No.	QUESTIONS	ANSWER
Q10	Did you have any health expenditures in EFY 2000 (July 8th, 2007- July 7th, 2008)?[1]	1 Yes ☐ 2 No ☐ (If no, please go to the end of the survey)
Q11	What was your organization's total expenditure[2] on health, which includes all health expenditures such as malaria, reproductive health, child health, and HIV, TB, HIS expenditure activities in EFY 2000 (July 8th, 2007- July 7th, 2008((including the value of donations given in-kind (i.e., material donations), program and management support)?	Amount: _____
Q12	Of your organizations total health expenditures, how much did you spend on your own organization's program support (including staff costs for the management/ coordination of your organization)[3]?	Amount: _____ **OR** If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)_____%
Q13	Of your organizations total expenditure on health, how much did you spend on Addendum (non health) expenditures, as defined earlier (in areas of HIV/AIDS, TB and HIS)?	Amount: _____ **OR** If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)_____%

PART D: DISEASE/PROGRAM SPECIFIC EXPENDITURES ON HEALTH

In this section, we would like to learn about your organizations Disease/Program Specific Health expenditures. Health care activities are those "whose primary purpose is to restore, improve, and maintain health for the nation and individuals." In this section, we are interested in learning about spending for disease priority areas (Malaria, HIV/AIDS, Reproductive Health, Child Health, Tuberculosis, and HIS) for the fiscal year EFY 2000 (July 8th, 2007- July 7th, 2008) on an accrual basis.

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16 The Ethiopian calendar fiscal year starts on July 8th and ends on July 7th. The EFY 2000 therefore covers the period between July 8th 2007 and July 7th 2008.

17 For example, if health care equipment was obtained and used during the evaluation period, but the actual cash transfer did not take place until August 2008 (after the evaluation period) please include the value of the equipment in your expenditure estimate for the year NHA year (EFY 2000).

18 Including all health care, health care related and addendum expenditures.

19 Expenditure refers to the actual amount that was spent and not the budgeted amount

20 Program support costs should include overhead and labor costs associated with planning, management, regulation, coordination, monitoring of plans/ projects etc. for health care. Administrative costs do not include technical assistance (TA). Rather TA should be included in the health expenditures reported.

IMPORTANT: Please keep in mind that the sum of these categories might be bigger than the total spending on health reported previously, as some categories may overlap.

No.	QUESTIONS	ANSWER
	MALARIA	
Q14	How much money did you spend for Malaria activities in EFY 2000 (July 8th, 2007- July 7th, 2008) including in-kind contributions and program support services? Also include those non-earmarked malaria programs that may be embedded within other health programs.	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%
	HIV/AIDS	
Q15	How much money did you spend for HIV/AIDS in EFY 2000 (July 8th, 2007- July 7th, 2008), including in-kind contributions and program support services? Also include those non-earmarked HIV/AIDS programs that may be embedded within other health programs.	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%
	REPRODUCTIVE HEALTH	
Q16	How much money did you spend for Reproductive Health (RH) activities in EFY 2000 (July 8th, 2007- July 7th, 2008), including in-kind contributions and program support services?	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%
Q17	Is your organization involved in procuring, distributing or selling Reproductive Health commodities?	1 Yes ☐ 2 No ☐
	CHILD HEALTH	
Q18	How much money did you Spend for Child Health (CH) activities in EFY 2000 (July 8th, 2007- July 7th, 2008), including in-kind contributions and program support services?	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%
	TUBERCULOSIS	
Q19	How much money did you Spend for Tuberculosis activities in EFY 2000 (July 8th, 2007- July 7th, 2008), including in-kind contributions and program support services?	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%

No.	QUESTIONS	ANSWER
	HEALTH INFORMATION SYSTEM	
Q20	Did you participate in the Ethiopian Health Information System (HIS)[1] in EFY 2000 (GC July 8th, 2007- July 7th, 2008)?	1 Yes ☐ (go to Q26) 2 No ☐
Q21	If you did not participate in the Ethiopian HIS, did you have your own health information system in EFY 2000 (GC July 8th, 2007- July 7th, 2008)?	1 Yes ☐ 2 No ☐ (go to Q28)
Q22	How much money did you spend in HIS or your own information system on ROUTINE activities in EFY 2000 (GC July 8th, 2007- July 7th, 2008)?[2]	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%
Q23	How much money did you spend in HIS or your own health information system on NON-ROUTINE activities in EFY 2000 (GC July 8th, 2007- July 7th, 2008)?[3]	Amount: _____ OR If you cannot provide an amount: What is it, as the approx % of total health expenditures (as entered in question **Q11**)?_____%

* *For the following tables, should you need more rows than that provided, please request a second questionnaire from the survey administrator.*

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22 The Ethiopian Health Information System is the broader government-led HIS at each level in the health system. And an internal HIS spending covers HIS spending within the organization and its implementing partners.

23 **Routine** activities include:

- Activities primarily associated with health care (tracking of)
- Data collection, storage, and analysis from all data sources with the primary purpose to improve, restore, or maintain the health of an individual or population at facility level (i.e., all HIS activities undertaken at a health facility level for the purpose of monitoring and evaluation (M&E) of the health facility)
- Data collection, storage and analysis from all data sources with the primary purpose to improve, restore, or maintain the health of an individual or population (i.e., all HIS activities undertaken for the purpose of M&E of public health situation. E.g. regular health studies, routine M&E, etc…)
- Overall HIS at administrative levels: M&E of health services provision, financing, resource generation, stewardship, etc.… not included at facility level.

24 **Non-routine** activities include:

- Capital formation for HIS
- Education and training for HIS
- Research and development, e.g. once off surveys or studies
- Food, hygiene and drinking control, e.g. HIS for M&E of nutrition support programs

PART E: HOW WAS MONEY IN EACH OF YOUR HEALTH PROJECT/ PROGRAMS SPENT?

Instructions: We would like to learn about your health expenditures on health care by programs. We would like to know where you received your money, what beneficiaries received money from your programs, and what health expenditures they incurred. Health care activities are those "whose primary purpose is to restore, improve, and maintain health for the nation and individuals."

Please report on Health spending in EFY 2000 (GC July 8th, 2007- July 7th, 2008), including obligations (the goods were received (or distributed) and used during EFY2000 but have not been paid yet) incurred in addition to actual cash disbursements.

Please use the codes in the accompanying guide to indicate beneficiaries and their corresponding project expenditures. Expenditure categories are subdivided between general health, HIV/ AIDS, TB, Malaria, reproductive health, child health and health information systems.

Please report expenditures with the most specific category as possible.

Please use extra table provided if you have additional programs.

Project/Program 1

Who gave the money for this project/program (include in-kind contributions)? (Enter "Self" if self generated)

No.	QUESTIONS	ANSWER
Q24	Name of Project/program	
Q25	Description of Project	
Q26	Total Project Health Expenditures	

No.	QUESTIONS	Name	Amount
Q27	Funding Source #1		
Q28	Funding Source #2		
Q29	Funding Source #3		
Q30	Funding Source #4		
Q31	Funding Source #5		

25 For example, if health care equipment was obtained in December 2007 but the actual cash transfer did not take place until February 2008, please include the value of the equipment in your expenditure estimate for the year 2007.

(Q32) Where was this money spent, and what was it spent on?

Immediate recipient: (Where was this money spent?, Enter beneficiary categories and the corresponding amount spent)					**Project activity Expenditures** (What was this money spent on? Enter activity categories and the corresponding amount spent).		
Immediate recipient/ Beneficiary	**Amount received**	**If unable to provide amount: % of total project expenditures**	**In-kind contributions, non-monetary donations**		**Project Activity Code**	**Project Activity Amount**	**If unable to provide amount: % of project expenditures at specified recipient**
			Type and Quantity	**Approximate Monetary Value**			
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%

Project/Program 2

Who gave the money for this project/program (include in-kind contributions)? (Enter "Self" if self generated)

No.	QUESTIONS	ANSWER
Q24	Name of Project/program	
Q25	Description of Project	
Q26	Total Project Health Expenditures	

No.	QUESTIONS	Name	Amount
Q27	Funding Source #1		
Q28	Funding Source #2		
Q29	Funding Source #3		
Q30	Funding Source #4		
Q31	Funding Source #5		

(Q32) Where was this money spent, and what was it spent on?

Immediate recipient: **(Where was this money spent?, Enter beneficiary categories and the corresponding amount spent)**					**Project activity Expenditures (What was this money spent on? Enter activity categories and the corresponding amount spent).**		
Immediate recipient/ Beneficiary	**Amount received**	**If unable to provide amount:** **% of total project expenditures**	**In-kind contributions, non-monetary donations**		**Project Activity Code**	**Project Activity Amount**	**If unable to provide amount:** **% of project expenditures at specified recipient**
			Type and Quantity	**Approximate Monetary Value**			
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%
							%
							%
							%
							%
Code: ________ Name: ________	________	________%		________			%
							%
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Code: ________ Name: ________	________	________%		________			%
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							%
Code: ________ Name: ________	________	________%		________			%

Project/Program 3

Who gave the money for this project/program (include in-kind contributions)? (Enter "Self" if self generated)

No.	QUESTIONS	ANSWER
Q24	Name of Project/program	
Q25	Description of Project	
Q26	Total Project Health Expenditures	

No.	QUESTIONS	Name	Amount
Q27	Funding Source #1		
Q28	Funding Source #2		
Q29	Funding Source #3		
Q30	Funding Source #4		
Q31	Funding Source #5		

(Q32) Where was this money spent, and what was it spent on?

Immediate recipient: **(Where was this money spent?, Enter beneficiary categories and the corresponding amount spent)**					**Project activity Expenditures (What was this money spent on? Enter activity categories and the corresponding amount spent).**		
Immediate recipient/ Beneficiary	**Amount received**	**If unable to provide amount:** **% of total project expenditures**	**In-kind contributions, non-monetary donations**		**Project Activity Code**	**Project Activity Amount**	**If unable to provide amount:** **% of project expenditures at specified recipient**
			Type and Quantity	**Approximate Monetary Value**			
Code: ________ Name: ________	________	________%		________			% % % % %
Code: ________ Name: ________	________	________%		________			% % % % %
Code: ________ Name: ________	________	________%		________			% % % % %
Code: ________ Name: ________	________	________%		________			% % % % %
Code: ________ Name: ________	________	________%		________			%

Project/Program 4

Who gave the money for this project/program (include in-kind contributions)? (Enter "Self" if self generated)

No.	QUESTIONS	ANSWER
Q24	Name of Project/program	
Q25	Description of Project	
Q26	Total Project Health Expenditures	

No.	QUESTIONS	Name	Amount
Q27	Funding Source #1		
Q28	Funding Source #2		
Q29	Funding Source #3		
Q30	Funding Source #4		
Q31	Funding Source #5		

(Q32) Where was this money spent, and what was it spent on?

Immediate recipient: (Where was this money spent?, Enter beneficiary categories and the corresponding amount spent)					**Project activity Expenditures (What was this money spent on? Enter activity categories and the corresponding amount spent).**		
Immediate recipient/ Beneficiary	**Amount received**	**If unable to provide amount: % of total project expenditures**	**In-kind contributions, non-monetary donations**		**Project Activity Code**	**Project Activity Amount**	**If unable to provide amount: % of project expenditures at specified recipient**
			Type and Quantity	**Approximate Monetary Value**			
Code: ____________ Name: ____________	________	________%		________			% % % % %
Code: ____________ Name: ____________	________	________%		________			% % % % %
Code: ____________ Name: ____________	________	________%		________			% % % % %
Code: ____________ Name: ____________	________	________%		________			% % % % %
Code: ____________ Name: ____________	________	________%		________			%

Project/Program 5

Who gave the money for this project/program (include in-kind contributions)? (Enter "Self" if self generated)

No.	QUESTIONS	ANSWER
Q24	Name of Project/program	
Q25	Description of Project	
Q26	Total Project Health Expenditures	

No.	QUESTIONS	Name	Amount
Q27	Funding Source #1		
Q28	Funding Source #2		
Q29	Funding Source #3		
Q30	Funding Source #4		
Q31	Funding Source #5		

(Q32) Where was this money spent, and what was it spent on?

Immediate recipient: **(Where was this money spent?, Enter beneficiary categories and the corresponding amount spent)**					**Project activity Expenditures (What was this money spent on? Enter activity categories and the corresponding amount spent).**		
Immediate recipient/ Beneficiary	**Amount received**	**If unable to provide amount:** **% of total project expenditures**	**In-kind contributions, non-monetary donations**		**Project Activity Code**	**Project Activity Amount**	**If unable to provide amount:** **% of project expenditures at specified recipient**
			Type and Quantity	**Approximate Monetary Value**			
Code: ______________ Name: ______________	______	______%		______			% % % % %
Code: ______________ Name: ______________	______	______%		______			% % % % %
Code: ______________ Name: ______________	______	______%		______			% % % % %
Code: ______________ Name: ______________	______	______%		______			% % % % %
Code: ______________ Name: ______________	______	______%		______			%

PART F: Reproductive health commodities

Instructions: This part of the questionnaire should be administered only to organizations/firms involved in the procurement, distribution or sale of family planning commodities. The questions ask the respondent to describe which types of Reproductive Health commodities distributed in EFY 2000 – (GC July 8th, 2007- July 7th, 2008), and the total amount spent on the commodities at different points in the supply chain. Reproductive Health commodities are commodities distributed for the primary purpose of family planning. Condoms or other commodities distributed to the public with the primary purpose of preventing HIV transmission should not be included. Reproductive Health commodities do not include other family planning methods such as sterilization or traditional methods.

Q33: Is your organization involved in procuring, distributing or selling Reproductive Health commodities? (circle one) YES NO

If YES, please continue filling out this section. If NO, end questionnaire.

Q34: How many types of commodities do you procure, distribute or sell? (Give number)

Q35: Procurement of commodities. Please fill out a table for each type of commodity you procure, distribute or sell. The purpose of this question is to obtain the total amount spent by the funding source for each type of commodity.

A. Select the commodity type from the Code Guide on page 3
B. Indicate the brand name
C. Identify the funding source(s) for the commodity
D. Indicate the number of units
E. Indicate the original unit cost of the commodity. Different funding sources may have procured the same commodity at different prices. The multiple rows allow you to report all the prices in this circumstance. Please include the currency.
F. Other costs associated with the funding source procuring and storing the commodity (e.g., freight costs, handling fees, import fees, taxes). If the other costs are a % of total purchase, provide %. Please include the currency.

The answer to Q34 is the number of tables you should fill out in Q35 and Q36 below.

Examples are shown in grey for your reference.

A. Commodity type (enter code)	B. Commodity brand name	C. Funding source	D. Number of units	E. Unit cost of commodity	F. Other costs
5 [Injectable]	Depo Provera [funded by]	UNFPA	X [purchased each unit for]	$0.25 [plus]	Handling fee: 5% of total cost Import fee: $5 per 100 injectables Storage costs: $600
		Government funds	X [purchased each unit for]	$0.31 [plus]	Handling fee: 4.5% of total cost Import fee: $5 per 100 injectables Storage costs: $600

A. Commodity type (enter code)	B. Commodity brand name	C. Funding source	D. Number of units	E. Unit cost of commodity	F. Other costs

A. Commodity type (enter code)	B. Commodity brand name	C. Funding source	D. Number of units	E. Unit cost of commodity	F. Other costs

A. Commodity type (enter code)	B. Commodity brand name	C. Funding source	D. Number of units	E. Unit cost of commodity	F. Other costs

A. Commodity type (enter code)	B. Commodity brand name	C. Funding source	D. Number of units	E. Unit cost of commodity	F. Other costs

Q36: Supply chain of commodities. Please fill out a table for each type of commodity you procure, distribute or sell. The purpose of this question is to obtain data on the supply chain for each commodity and the total amount spent by users (men or women using the RH commodity). Fill out the same number of tables in this question as in the previous question.

A. Select the commodity type from the Code Guide on page 3
B. Indicate the brand name
C. Identify the entity next in line in the supply chain from the Code Guide on page 3. If your organization distributes the commodity directly to users (men or women), indicate that by selecting the code for "users."
D. Indicate the number of units sold to that entity (or user) in the given time frame.
E. Indicate the price for which each unit of the commodity is sold to the entity or user indicated in column C, including any fees (a commodity might be sold to different entities at different prices).

Examples are shown in red for your reference.

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit
1 [Male condoms]	Intimate [Sold to]	19 [Wholeseller] [who bought]	10 boxes with 10 condoms per box (i.e., 100 units) [for]	$0.10
		7 [Users] [who received]	400 condoms [for]	$0
		7 Public Health Center [who received]		

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

A. Commodity type (enter code)	B. Commodity brand name	C. Entity next in line	D. Number of units	E. Price per unit

Annex 4
Developments in health accounts: SHA 2011

Background

Since 2000, countries have been using the OECD System of Health Accounts version 1.0 (SHA 1.0)[a] as a standard approach to measurement of health care expenditure. In 2006, OECD, Eurostat and WHO started to update the SHA in an attempt to make expenditure data more comprehensive, reliable, timely and comparable. The new system, SHA 2011, is the result of a consensual process involving representatives of 160 countries and the relevant international organizations and health accounts partners. The manual for the updated system can be found at http://www.who.int/nha/sha_revision/en/.

Compared with the previous system, SHA 2011 aims to allow the recording of more detailed and consistent data that can reflect the complex systems of health financing in low-, middle-, and high-income countries. The most important changes in the new version are listed below.

- The functional classification for prevention has been further developed by type of service.
- Financing is analysed through two main classifications: the financing schemes (instead of the institutions managing them) and the strategies used to obtain revenues (instead of the institutions providing the resources).
- An increased number of options for monitoring resources are included, based on the characteristics of the beneficiary, such as disease group, age, sex, income level and region.
- There is an improved approach to factors of provision, such as compensation of employees and spending on pharmaceuticals and other goods and services.
- A greater distinction is made between current health expenditure and capital formation expenditure, which are reported as two separate aggregates.
- The memorandum items ("health-care-related" items in SHA 1.0) are now called either "reporting items" (when they introduce a different type of expenditure on health category) or "health-care-related" (when the content of the expenditure categories goes beyond the health expenditure boundary).

Ensuring consistency between HIS accounts and SHA

The methodology and guidelines for producing HIS subaccounts outlined in this document were developed using SHA 1.0. As it is expected that countries will move progressively towards using SHA 2011, this annex provides a mapping of the SHA 1.0 categories to the SHA 2011 categories for HIS health expenditures. Thus, for an HIS subaccount prepared using the classifications proposed in this guide, the mapping will help to reformat the results according

a A system of health accounts, Version 1.0. Paris, Organisation for Economic Co-operation and Development, 2000.

to the new SHA 2011 categories. To facilitate both the migration of previous estimates and the new estimations based on the updated standard, all the classifications are given below, with the relevant changes in coding.

An operational approach to mapping

Mapping is the process of establishing equivalence between the codes and labels of the categories in SHA 2011 and those in SHA 1.0. The mapping proposed in the tables below includes a detailed breakdown of each code, since the greater the detail, the more comparable the aggregates. This does not mean that this amount of detail is required for reporting; rather, it illustrates how expenditure items can be classified and helps ensure that the content of the aggregates is comparable.

In the table, cells for which the code has been changed are coloured, to make them easier to identify. When coding of data is being updated from SHA 1.0 to SHA 2011, it is preferable to give only the updated codes, to avoid confusion.

The SHA 2011 model

The main principles and basis of SHA 2011 are the same as those of SHA 1.0 and the Producers' Guide.[b] While the same basic classifications are retained, they have been modified and new classifications have been included, to respond to increasing needs for information and to reflect recent experiences in countries. Table A4.1 outlines the SHA 2011 accounting framework (cf Fig. 1.1).

Table A4.1 SHA 2011 accounting framework

Dimensions	Core classifications	Extensions
Consumption	Health care functions (HC)	• Beneficiaries (HB) • Products
Provision	Health care providers (HP)	• Capital formation • Factors of provision (FP) • Trade
Financing	Financing schemes (HF)	• Revenues of financing schemes (FS) • Financing agents (FA)

Mapping the classification of health care functions

The classification of health care functions categorizes the type of service: this is reflected in the first digit. The second digit defines the mode of provision, while the third digit refers to the specialization.

One of the major changes in the classification refers to prevention. In the SHA 1.0 classification, this was combined with other public health components. The new classification scheme aims to be more policy-relevant, by identifying clearly the preventive content. Reports based on the SHA 1.0 will have a total in the "Prevention and public health" category that will not be equivalent to the new "Preventive care" category in SHA 2011.

b Guide to producing national health accounts: with special applications for low-income and middle-income countries. Geneva, World Health Organization, 2003.

- Components of curative and rehabilitative care offered to priority populations are expected to be reclassified in HC.1–HC.4.
- The new definitions are more explicit about the content covered and there are fewer opportunities for subjective decisions related to the classification of components of administration, environmental health, nutrition and training, making the content more comparable over time and across countries.

In case there is a specific interest in a continued reporting by programme, the SHA 2011 classification proposes a memorandum item class, which captures SHA 1.0 "Prevention and public health" categories.

In adjusting the distribution of expenditure by function according to SHA 2011, the following aspects have been considered.

- Boundaries: clear specifications are given for the inclusion and exclusion of prevention, administration, environmental health, nutrition, training, and research.
- Public health services have been distributed to the corresponding HC.1–HC.6 categories.
- Codes for expenditure on curative, rehabilitative and long-term care and categories non-identified by function remain unchanged at the first and second digit levels; however, the third digit now reflects specialized and general care also in the inpatient, outpatient and day care categories. The third digit code for some therapeutic appliances has also changed. The functional classes in curative care can be split into general and specialized services; when this is not relevant, they can be reported at a more aggregate level.
- Categories for preventive care now disaggregate programme components by type of service.
- Expenditure on HIS can be distributed accordingly and identified through a specific label.

Table A4.2. The classification of health care functions in SHA 2011 and mapping to SHA 1.0

SHA 2011 Code	Description	SHA 1.0 codes
HC.1	**Curative care**	**HC.1**
HC.1.1	Inpatient curative care	HC.1.1
HC.1.1.1	General inpatient curative care	
HC.1.1.2	Specialized inpatient curative care	
HC.1.2	Day curative care	HC.1.2
HC.1.2.1	General day curative care	
HC.1.2.2	Specialized day curative care	
HC.1.3	Outpatient curative care	HC.1.3
HC.1.3.1	General outpatient curative care	HC.1.3.1
HC.1.3.2	Dental outpatient curative care	HC.1.3.2
HC.1.3.3	Specialized outpatient curative care	HC 1.3.3
HC.1.4	Home-based curative care	HC.1.4
HC.2	**Rehabilitative care**	**HC.2**
HC.2.1	Inpatient rehabilitative care	HC2.1
HC.2.2	Day rehabilitative care	HC2.2
HC.2.3	Outpatient rehabilitative care	HC2.3

SHA 2011 Code	Description	SHA 1.0 codes
HC.2.4	Home-based rehabilitative care	HC2.4
HC.3	**Long-term care (health)**	**HC.3**
HC.3.1	Inpatient long-term care (health)	HC.3.1
HC.3.2	Day long-term care (health)	HC.3.2
HC.3.3	Outpatient long-term care (health)	part of HC.3
HC.3.4	Home-based long-term care (health)	HC.3.3
HC.4	**Ancillary services (non-specified by function)**	**HC.4**
HC.4.1	Laboratory services	HC.4.1
HC.4.2	Imaging services	HC.4.2
HC.4.3	Patient transportation	HC.4.3
HC.5	**Medical goods (non-specified by function)**	**HC.5**
HC.5.1	Pharmaceuticals and other medical non-durable goods	HC.5.1
HC 5.1.1	Prescribed medicines	HC.5.1.1
HC 5.1.2	Over-the-counter medicines	HC.5.1.2
HC 5.1.3	Other medical non-durable goods	HC.5.1.3
HC.5.2	Therapeutic appliances and other medical durable goods	HC.5.2
HC.5.2.1	Glasses and other vision products	HC.5.2.1
HC.5.2.2	Hearing aids	HC.5.2.3
HC.5.2.3	Other orthopaedic appliances and prosthetics (excluding glasses and hearing aids)	HC.5.2.2
HC.5.2.9	All other medical durables, including medical technical devices	HC.5.2.4- HC.5.2.9
HC.6	**Preventive care**	**HC.6, part of HC.R.4, HC.R.5**
HC.6.1	Information, education and counselling programmes	Part of HC.6.9, part of HCR 4, HC.R.5
HC.6.2	Immunization programmes	Part of HC.6.3
HC.6.3	Early disease detection programmes	Part of HC.6.3, HC.6.4
HC.6.4	Healthy condition monitoring programmes	Part of HC.6.1, HC.6.2, HC.6.5
HC.6.5	Epidemiological surveillance and risk and disease control programmes	HC.6, part of HC. 4, HC. 5
HC.6.6	Preparing for disaster and emergency response programmes	Part of HC.6
HC.7	**Governance and health system and financing administration**	**HC.7**
HC.7.1	Governance and health system administration	HC.7.1
HC.7.2	Administration of health financing	HC.7.2
HC.9	**Other health care services not elsewhere classified (n.e.c.)**	
Memorandum items		
Reporting items		
HC.RI.1	Total pharmaceutical expenditure	
	of which Inpatient pharmaceutical consumption	
HC.RI.2	Traditional, complementary and alternative medicines (TCAM)	HC.1-HC.6.1
HC.RI.2.1	Inpatient TCAM	HC.1.1
HC.RI.2.2	Outpatient and home-based TCAM	

SHA 2011 Code	Description	SHA 1.0 codes
HC.RI.2.3	TCAM goods	
HC.RI.3	Prevention and public health services (according to SHA 1.0)	HC.6
HC.RI.3.1	Maternal and child health; family planning and counselling	HC.6.1
HC.RI.3.2	School health services	HC.6.2
HC.RI.3.3	Prevention of communicable diseases	HC.6.3
HC.RI.3.4	Prevention of noncommunicable diseases	HC.6.4
HC.RI.3.5	Occupational health care	HC.6.5
HC.RI.3.9	All other miscellaneous preventive care services	HC.6.9
Health care related	**Long-term care (social)**	
HCR 1	Long-term care (social)	
HCR.1.1	In-kind long-term social care	Part of HCR.6
HCR.1.2	Long-term social care cash-benefits	Part of HC.R.7
HCR.2	Health promotion with multisectoral approach	HC.6, HC.R.4, HC.R.5

Source: SHA 2011

The HC classification should be adjusted as shown in Table A4.1; note that capital spending is no longer included and now has its own classification (see below). All memorandum classes have changed; however, HIS memorandum classes can remain as part of the health care-related categories in the new SHA.

Figure 2.1 in the main text will need to be adjusted accordingly. The boundaries of the HIS subaccount under the new system are outlined below.

- In SHA 2011 there is no single THE reported, but two aggregates – current health expenditure (CHE) and capital formation (code HK). In the HIS subaccount, the two main aggregates will be CHEHIS and HKHIS. The CHE is the sum of classes HC1–HC7, as before, while capital formation (formerly HCR1) now has a separate classification and a single aggregate.
- Note that the health care-related categories have changed. More clear definitions have been developed for most of the previous classes:
  - capital now has its own classification;
  - expenditure on research, development, education and training is now clearly defined. When these services are intended to improve health care provision, they are considered part of expenditure on health (above the line), embedded in the HC classes. When they are not used in the short term, e.g. training of human resources, pharmaceutical research, they are considered an investment, and are included as a memorandum item in the capital account;
  - other categories, such as environmental health and nutrition, have also been better defined. When they are part of health care, they are classified with expenditure on health, above the line (see the codes in the detailed classification).
- Addendum HIS expenditure may include two types of content in SHA 2011.
  - Reporting items, are those classes whose expenditure is included above the line but under a different perspective or classification principles. They cannot be added to CHE because they are already contained there (although they are not displayed as specific classes). Reporting items meet the primary purpose criterion of providing HIS on

activities whose primary purpose is to improve, restore, or maintain the health of an individual or population. RIHIS can give specific components of the CHEHIS, such as on TCAM.

- Health care-related classes are those whose content goes beyond health: they contain all HIS expenditure related to non-health services (population census, vital registration, living standard measurement surveys, etc., notably the components linked to health information). The non-health HIS expenditures remain as health care-related, HCRHIS .

Figure A4.1. HIS expenditure boundaries in SHA 2011

Above the line	**Current health expenditure**	HIS expenditure on curative care
		HIS expenditure on rehabilitative care
		HIS expenditure on long-term care (health)
		HIS expenditure on ancillary services (non-specified by function)
		HIS expenditure on medical goods (non-specified by function)
		HIS expenditure on preventive care
		HIS expenditure on governance and health system and financing administration
	Capital expenditure on health	Capital expenditure on HIS
Below the line	**Memorandum Items**	Reporting items
		HIS expenditure on total pharmaceutical
		HIS expenditure on traditional, complementary and alternative medicines
		HIS expenditure on prevention and public health services (according to SHA 1.0)
		Health-care-related
		HIS expenditure on long-term care (social)
		HIS expenditure on health promotion with multisectoral approach

The main change to section 2.6 of this guide is that public health is no longer included as a separate subfunction. It should be easier in most cases to locate the HIS resources associated with the specific services, e.g. HC.6.5 (Epidemiological surveillance and risk and disease control programmes).

The health-related and addendum functions (sections 2.7 and 2.8) also need to be modified. The main change is that capital formation, education and training, and research and development will be in the capital account (except for the intermediate consumption values, which are not displayed).

The boundaries set in Fig. 2.1 should be adjusted as in Fig. A4.1, and Table 3.1 of this guide should be replaced by Table A4.3, including the HC classification.

Table A4.3. Classification of functions in SHA 2011

Code	Description		SHA 1.0 codes
HC.1	**Curative care**		**HC.1**
HC.1.1	Inpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on inpatient curative health care	HC.1.1
HC.1.1.1	General inpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on general inpatient curative health care	
HC.1.1.2	Specialized inpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on specialized inpatient curative health care	
HC.1.2	Day curative care		HC.1.2
HC.1.2.1	General day curative care		
HC.1.2.2	Specialized day curative care		
HC.1.3	Outpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on outpatient curative health care	HC.1.3
HC.1.3.1	General outpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on general outpatient curative health care	HC.1.3.1
HC.1.3.2	Dental outpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on dental outpatient curative health care	HC.1.3.2
HC.1.3.3	Specialized outpatient curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on specialized outpatient curative health care	HC 1.3.3
HC.1.4	Home-based curative care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on home-based curative care	HC.1.4
HC.2	**Rehabilitative care**	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on rehabilitative health care	**HC.2**
HC.2.1	Inpatient rehabilitative care	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on inpatient rehabilitative care	HC2.1
HC.2.2	Day rehabilitative care	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on day rehabilitative care	HC2.2
HC.2.3	Outpatient rehabilitative care	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on outpatient rehabilitative care	HC2.3
HC.2.4	Home-based rehabilitative care	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on home-based rehabilitative care	HC2.4
HC.3	**Long-term care (health)**	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on long-term health care	**HC.3**

Code	Description		SHA 1.0 codes
HC.3.1	Inpatient long-term care (health)	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on inpatient long-term health care	HC.3.1
HC.3.2	Day long-term care (health)	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on day long-term health care	HC.3.2
HC.3.3	Outpatient long-term care (health)	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on outpatient long-term health care	part of HC.3
HC.3.4	Home-based long-term care (health)	Data collection, storage and analysis from all data sources whose primary purpose is to support, produce, compile, analyse , and disseminate information on home-based long-term health care	HC.3.3
HC.4	**Ancillary services (non-specified by function)**	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on ancillary services to health care	**HC.4**
HC.4.1	Laboratory services	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse , and disseminate information on laboratory services	HC.4.1
HC.4.2	Imaging services	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on imaging services	HC.4.2
HC.4.3	Patient transportation	Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on patient transportation services	HC.4.3
HC.5	**Medical goods (non-specified by function)**		**HC.5**
HC.5.1	Pharmaceuticals and other medical non-durable goods	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on pharmaceuticals and other non-durables	HC.5.1
HC 5.1.1	Prescribed medicines	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on prescribed pharmaceuticals	HC.5.1.1
HC 5.1.2	Over-the-counter medicines	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on over-the-counter medicines	HC.5.1.2
HC 5.1.3	Other medical non-durable goods	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on other medical non-durables	HC.5.1.3
HC.5.2	Therapeutic appliances and other medical durable goods	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on therapeutic appliances and other medical durable goods	HC.5.2
HC.5.2.1	Glasses and other vision products	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on glasses and other vision products	HC.5.2.1
HC.5.2.2	Hearing aids	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on hearing aids	HC.5.2.3

Code	Description		SHA 1.0 codes
HC.5.2.3	Other orthopaedic appliances, orthesis and prosthetics (excluding glasses and hearing aids)	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on other orthopaedic appliances, orthesis and prosthetics (excluding glasses and hearing aids)	HC.5.2.2
HC.5.2.9	All other medical durables, including medical technical devices non-specified by function	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on other medical durables, including medical technical devices non-specified by function	HC.5.2.4- HC.5.2.9
HC.6	**Preventive care**	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on preventive care	**HC.6, part of HC.R.4, HC.R.5**
HC.6.1	Information, education and counselling programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on information, education and counselling programmes on preventive care	Part of HC.6.9, part of HCR 4, HC.R.5
HC.6.2	Immunization programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on immunization programmes	Part of HC.6.3
HC.6.3	Early disease detection programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on early disease detection programmes	Part of HC.6.3, HC.6.4
HC.6.4	Healthy condition monitoring programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on preventive care linked to healthy condition monitoring programmes	Part of HC.6.1, HC.6.2, HC.6.5
HC.6.5	Epidemiological surveillance and risk and disease control programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on preventive care linked to surveillance of communicable and noncommunicable diseases, injuries and exposure to environmental health risks	HC.6, part of HC. 4, HC. 5
HC.6.6	Preparing for disaster and emergency response programmes	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on preventive care linked to preparing for disaster and emergency response programmes	Part of HC.6
HC.7	**Governance and health system and financing administration**		**HC.7**
HC.7.1	Governance and health system administration	General government administration of health (e.g., overall HIS, planning, coordination, administration, and policy development and dissemination of general information and technical documentation and statistics on health at central, regional/ provincial, and district levels)	HC.7.1
HC.7.2	Administration of health financing	HIS activities linked to administration of health financing: collection and pooling contributions, and paying for health care benefits, linked to health insurance	HC.7.2

Code	Description		SHA 1.0 codes
HC.9	**Other health care services not elsewhere classified (n.e.c.)**		
Memorandum items			
Reporting items			
HC.RI.1	Total pharmaceutical expenditure	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on total pharmaceutical expenditure	
	of which Inpatient pharmaceutical consumption		
HC.RI.2	Traditional, complementary and alternative medicines (TCAM)	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on traditional, complementary and alternative medicines	HC.1-HC.6.1
HC.RI.2.1	Inpatient TCAM		HC.1.1
HC.RI.2.2	Outpatient and home-based TCAM		
HC.RI.2.3	TCAM goods		
HC.RI.3	Prevention and public health services (according to SHA 1.0)		HC.6
HC.RI.3.1	Maternal and child health; family planning and counselling	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for maternal and child health; family planning and counselling	HC.6.1
HC.RI.3.2	School health services	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for school health services	HC.6.2
HC.RI.3.3	Prevention of communicable diseases	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of communicable diseases, e.g. health studies repeated regularly, such as DHS and MICS; routine M&E of prevention of communicable diseases e.g. HIV/AIDS, malaria, and EPI, i.e., HIS activities undertaken for purposes of monitoring and surveillance of public health situation for communicable diseases	HC.6.3

Code	Description		SHA 1.0 codes
HC.RI.3.4	Prevention of noncommunicable diseases	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for prevention of noncommunicable diseases, e.g. health studies repeated regularly, such as DHS and MICS; routine M&E of prevention of noncommunicable diseases, e.g. mental illness and diabetes, i.e., HIS activities undertaken for purposes of monitoring and surveillance of public health situation for noncommunicable diseases	HC.6.4
HC.RI.3.5	Occupational health care	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on public health matters and programmes for occupational health care	HC.6.5
HC.RI.3.9	All other miscellaneous preventive care services	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on all miscellaneous public health matters and programmes	HC.6.9
Health-care-related	**Long-term care (social)**		
HCR 1	Long-term care (social)	• Collection, storage and analysis of data from all sources whose primary purpose is to support, produce, compile, analyse, and disseminate information on long-term social care	
HCR.1.1	In-kind long-term social care		Part of HCR.6
HCR.1.2	Long-term social care cash benefits		Part of HC.R.7
HCR.2	Health promotion with multisectoral approach		HC.6, HC.R.4, HC.R.5
HCR.3	Other non-health HIS		
HCR.3.1	Collection, storage, analysis, and dissemination of data for national census		AD.1
HCR.3.2	Collection, storage, analysis, and dissemination of data for vital registration		AD.2
HCR.3.3	Collection, storage, analysis, and dissemination of data for Living Standard Measurement Surveys		AD.3

The SHA 2011 functional classification does not include capital formation, thus a table with additional capital goods categories should be generated (see below).

Mapping the financing dimension

There are two major changes to the financial analysis.

- The emphasis has been moved from the institutional unit (financing agent) purchasing the service and paying for it to the financing scheme behind the purchase of the service. The rationale for the change is to focus the analysis on the financing mechanisms themselves, as frequently there is not a one-to-one relationship between agents and schemes (e.g. several agents can be related to a single scheme or vice versa). The classification of schemes and the related mapping are given in Table A4.5.
- The emphasis has been moved from the institutions providing resources to the agents (financing sources) to the mechanisms used by the schemes to receive their revenue. The classification of revenue of financing schemes is shown in Table A4.4. As this is a new classification, there is no mapping from SHA 1.0.

For both financing agents and financing sources, the entities involved are kept as a reporting item in the associated classification, to facilitate their reporting when desired.

Table 3.2 in this guide would then be replaced by the classification of revenue of financing schemes in the SHA 2011, which is shown in Table A4.4.

Table A4.4. Classification of revenue of financing schemes

Code	Description
FS.1	**Transfers from government domestic revenue (allocated to health purposes)**
FS.1.1	Internal transfers and grants
FS 1.2	Transfers by government on behalf of specific groups
FS.1.3	Subsidies
FS.1.4	Other transfers from government domestic revenue
FS.2	**Transfers distributed by government from foreign origin**
FS.3	**Social insurance contributions**
FS.3.1	Social insurance contributions from employees
FS.3.2	Social insurance contributions from employers
FS.3.3	Social insurance contributions from self-employed
FS.3.4	Other social insurance contributions
FS.4	**Compulsory prepayment (other than FS.3)**
FS.4.1	Compulsory prepayment from individuals/households
FS.4.2	Compulsory prepayment from employers
FS.4.3	Other compulsory prepaid revenues
FS.5	**Voluntary prepayment**
FS.5.1	Voluntary prepayment from individuals/households
FS.5.2	Voluntary prepayment from employers
FS.5.3	Other voluntary prepaid revenues
FS.6	**Other domestic revenues n.e.c.**
FS.6.1	Other revenues from households n.e.c.
FS.6.2	Other revenues from corporations n.e.c.

Code	Description
FS.6.3	Other revenues from Non Profit Institutions Serving Households (NPISH) n.e.c.
FS.7	**Direct foreign transfers**
FS.7.1	**Direct foreign financial transfers**
FS.7.1.1	Direct bilateral financial transfers
FS.7.1.2	Direct multilateral financial transfers
FS.7.1.3	Other direct foreign financial transfers
FS.7.2	**Direct foreign aid in kind**
FS.7.2.1	Direct foreign aid in goods
FS.7.2.1.1	Direct bilateral aid in goods
FS.7.2.1.2	Direct multilateral aid in goods
FS.7.2.1.3	Other direct foreign aid in goods
FS.7.2.2	Direct foreign aid in kind: services (including Technical Advise)
FS.7.3	Other direct foreign transfers (n.e.c.)
Memorandum items	
Reporting items	
FS.RI.1	Institutional units providing revenues to financing schemes
FS.RI.1.1	Government
FS.RI.1.2	Corporations
FS.RI.1.3	Households
FS.RI.1.4	NPISH
FS.RI.1.5	Rest of the world
FS.RI.2	Total foreign revenues (FS.2 +FS.7)
FS Related items	
FSR.1	Loans
FSR.1.1	Loans taken by government
FSR.1.2	Loans taken by private organizations
FSR.2	Aid in kind at donor value

Source: SHA 2011

Table 3.3 in this guide should be complemented by the new classification of financing schemes, as shown in Table A4.5.

Table A4.5. Mapping of financing agents to financing schemes

ICHA-HF classification of health financing schemes SHA 2011		ICHA-HF classification of health care financing SHA 1.0	
HF.1	**Government schemes and compulsory contributory health care financing schemes**	**HF.1**	**General government**
HF.1.1	**Government schemes**	**HF.1.1**	**General government excluding social security funds**
HF.1.1.1	Central government schemes	HF.1.1.1	Central government
HF.1.1.2	State/regional/local government schemes	HF.1.1.2	State/provincial government
		HF.1.1.3	Local/municipal government
HF.1.2	**Compulsory contributory health insurance schemes**		
HF.1.2.1	Social health insurance	**HF.1.2**	Social security funds
HF.1.2.2	Compulsory private insurance		
HF.1.3	Compulsory medical saving accounts		
HF.2	Voluntary health care payment schemes (other than OOP)	HF.2	**Private sector**
HF.2.1	**Voluntary health insurance schemes**	HF.2.1	Private social insurance
		HF.2.2	Private insurance enterprises (other than social insurance)
HF.2.1.1	Primary/substitutory health insurance schemes		
HF.2.1.2	Complementary/supplementary voluntary insurance schemes		
HF.2.2	**NPISH financing schemes**	HF.2.4	NPISH (other than social insurance)
HF.2.3	**Enterprise financing schemes**	HF.2.5	Corporations (other than health insurance)
HF.2.3.1	Enterprises (except health care providers) financing schemes		
HF.2.3.2	Health care providers financing schemes		
HF.3	**Household out-of-pocket payment**	HF.2.3	Private household out-of-pocket expenditure
HF.3.1	Out-of-pocket excluding cost-sharing	HF.2.3.1	Out-of-pocket excluding cost-sharing
HF.3.2	Cost sharing with third-party payers:	HF.2.3.2	Cost sharing: central government
HF.3.2.1	Cost sharing with government schemes and compulsory contributory health insurance	HF.2.3.3	Cost sharing: state/provincial government
		HF.2.3.4	Cost sharing: local/municipal government
HF.3.2.2	Cost sharing with voluntary insurance schemes	HF.2.3.5	Cost sharing: social security funds
		HF.2.3.6	Cost sharing: private social insurance
		HF.2.3.7	Cost sharing: other private insurance
		HF.2.3.9	All other cost sharing
HF.4	**Rest of the world financing schemes**	**HF.3**	**Rest of the world**

ICHA-HF classification of health financing schemes SHA 2011		ICHA-HF classification of health care financing SHA 1.0	
HF.4.1	Compulsory schemes (non-resident)		
HF.4.1.1	Compulsory health insurance schemes (non-resident)		
HF.4.1.2	Other schemes (non-resident)		
HF.4.2	Voluntary private schemes (non-resident)		
HF.4.2.1	Voluntary health insurance schemes (non-resident)		
HF.4.2.2	Other schemes (non-resident)		

Mapping the HIS providers

The classification of providers in SHA 2011 is very similar to that in SHA 1.0. A code has been added to delineate the providers of ancillary services (HP.4) and all the codes after this have been aligned with those in the functional classification. The class HP.10, as given in Table 3.4 of this guide, becomes HP.8 (Rest of economy) in SHA 2011; more specifically, it could be HP.8.9.1 (HIS non-health care providers).

Table A4.6. Mapping of classification of providers

Code	Description	SHA 1.0 codes
HP.1	**Hospitals**	**HP.1.0**
HP.1.1	General hospitals	HP.1.1
HP.1.2	Mental health hospitals	HP.1.2
HP.1.3	Specialized hospitals (other than mental health hospitals)	HP.1.3
HP.2	**Residential long-term care facilities**	**HP.2**
HP.2.1	Long-term nursing care facilities	HP.2.1
HP.2.2	Mental health and substance abuse facilities	HP.2.2
HP.2.9	Other residential long-term care facilities	HP.2.3, HP.2.9
HP.3	Providers of ambulatory health care	**HP.3**
HP.3.1	Medical practices	HP.3.1
HP.3.1.1	Offices of general medical practitioners	HP.3.1
HP.3.1.2	Offices of mental medical specialists	HP.3.1
HP.3.1.3	Offices of medical specialists (other than mental medical specialists)	HP.3.1
HP.3.2	Dental practice	HP.3.2
HP.3.3	Other health care practitioners	HP.3.3
HP.3.4	Ambulatory health care centres	HP.3.4
HP.3.4.1	Family planning centres	HP.3.4.1
HP.3.4.2	Ambulatory mental health and substance abuse centres	HP.3.4.2
HP.3.4.3	Free-standing ambulatory surgery centres	HP.3.4.3
HP.3.4.4	Dialysis care centres	HP.3.4.4
HP.3.4.9	All other ambulatory centres	HP.3.4.5, 3.4.9
HP.3.5	Providers of home health care services	HP.3.6
HP.4	Providers of ancillary services	
HP.4.1	Providers of patient transportation and emergency rescue	HP.3.9.1

Code	Description	SHA 1.0 codes
HP.4.2	Medical and diagnostic laboratories	HP.3.5, 3.9.2
HP.4.9	Other providers of ancillary services	HP.3.9.9
HP.5	**Retailers and other providers of medical goods**	**HP.4**
HP.5.1	Pharmacies	HP.4.1
HP.5.2	Retail sellers and other suppliers of durable medical goods and medical appliances	HP.4.2, 4.3, 4.4
HP.5.9	All other miscellaneous sellers and other suppliers of pharmaceuticals and medical goods	HP.4.9
HP.6	Providers of preventive care	HP.5
HP.7	**Providers of health care system administration and financing**	**HP.6**
HP.7.1	Government health administration agencies	HP.6.1
HP.7.2	Social health insurance agencies	HP.6.2
HP.7.3	Private health insurance administration agencies	HP.6.3, 6.4
HP.7.9	Other administration agencies	HP.6.9
HP.8	**Rest of economy**	**HP.7**
HP.8.1	Households as providers of home health care	HP.7.2
HP.8.2	All other industries as secondary providers of health care	HP 2.3, 2.9, 7.1, 7.9
HP.8.9	Other industries n.e.c.	
HP.9	Rest of the world	HP.9

Reporting the factors of provision

In the Producers' Guide, which is based on the SHA 1.0, a classification was proposed for resource cost items. The factors of provision classification (which is new in relation to SHA 1.0) can be mapped to the resource cost classification of the Producers' Guide as shown in Table A4.7.

Table A4.7. Mapping of the factors of provision classification to resource costs classification

Code	Description	Resource costs code
FP.1	**Compensation of employees**	**RC.1.1**
FP.1.1	Wages and salaries	RC.1.1.1
FP.1.2	Social contributions	RC.1.1.2
FP.1.3	All other costs related to employees	
FP.2.	Self-employed professional remuneration	RC.1.1.3
FP.3	**Materials and services used**	**RC.1.2**
FP.3.1	Health care services	RC.1.2.2
FP.3.2	Health care goods	RC.1.2.1
FP.3.2.1	Pharmaceuticals	RC.1.2.1.1
FP.3.2.2	Other health care goods	RC.1.2.1.2
FP.3.3	Non-health care services	RC.1.2.2
FP.3.4	Non-health care goods	RC.1.2.1.2
FP.4	**Consumption of fixed capital**	**RC.1.3**
FP.5	Other items of spending on inputs	
FP.5.1	Taxes	
FP.5.2	Other items of spending	

c Guide to producing national health accounts: with special applications for low-income and middle-income countries. Geneva, World Health Organization, 2003.

Reporting fixed capital spending

The main purpose of the capital classification is to provide greater detail on investments. The major classes are buildings and equipment. Since the functional classification in SHA 1.0 did not include detail of the capital spending, the mapping with SHA 2011 is relatively simple (Table A4. 8).

Table A4.8. Classification of capital formation in SHA 2011 and equivalent codes

Codes SHA 2011	Capital formation (HK)	PG codes	SHA.1.0 codes
HK.1	Gross capital formation	RC. 2	HC.R.1
HK.1.1	Gross fixed capital formation		
HK.1.1.1	Infrastructure	RC.2.1	
HK.1.1.2	**Machinery and equipment**	**RC.2.2**	
HK.1.1.3	Intellectual property products		
HK.1.2	Changes in inventories		
HK.1.3	Acquisitions less disposals of valuables		
HK.2	**Non-produced non-financial assets**		
	Memorandum items (HKR)		
HKR.1	Loans		
HKR.2	Accumulated savings		
HKR.3	**Public-private partnerships**		
HKR.4	Research and development in health		HC.R.3
HKR.5	Education and training of health personnel		HCR.2

Section 3.7 of this guide (HIS recommended tables), section 4.4 (Understanding what is needed and why), and section 4.5 (Types of data needed) will need to be adjusted to reflect the expanded classifications proposed in SHA 2011. The main adjustments are: the change from financing agents to schemes; the change from prevention based previously on programmes to type of services; and the new classifications on revenue of schemes, factors of provision and capital.

New data sources that may be needed to provide data for the new components include:

- government executed budgets;
- task force reports, white papers, parliamentary commission reports and academic or industry studies;
- reports from international agencies;
- records from insurers and provider, including administrative records and surveys from individual companies and industry associations, special analyses of tax records or other official reports;
- household surveys, including census surveys, DHS, LSMS, labour surveys, household expenditure surveys, studies from academic and non-profit institutions, marketing studies.

In order to facilitate the filling of the gaps, information on average prices and quantities can be used to estimate spending by function (services consumed and their cost or price adjusted). Cost should preferably be used for public services when subsidies are involved, whereas prices may be used for private services. See detailed examples in other guidelines such as malaria, reproductive health and child health subaccounts

In order to adjust the results of studies or surveys from previous years, the inflation rate and other similar techniques can be used. It is recommended to discuss with national accountants to the most appropriate use and interpretation of the available data, such as price statistics, supply and use tables, and the various national accounts products.

Although the largest changes are in the financing classification, data still need to be collected from financing agents. However, some preparatory work is needed before the data are collected, for example, to identify the types of schemes in the country (specific financial arrangements) and to adjust the various survey instruments to provide the additional detail required.

Sources that may provide information on factors of provision include:

- national accounts;
- public and private business accounts and executed budgets;
- business surveys and economic censuses;
- tax reports;
- earmarked financing (domestic and external).

Sources that may provide information on capital include:

- business records;
- budgets;
- national accounts;
- surveys;
- building permits;
- records of import of equipment;
- custom records;
- trade records;
- earmarked funds and grants.

The surveys presented in the Annex 2 should be adjusted accordingly: (a) to identify the appropriate schemes funding HIS and their revenue; (b) to identify the factors of provision involved; and (c) to show the capital spending associated with HIS.

National health accounts are widely recognized as a valuable tool in the stewardship of a country's health system. Such accounts provide a systematic compilation and display of health expenditure, tracing how much is being spent, where, on what and by whom. As such, they can play an essential role in efforts to assess the performance of the system and identify opportunities for improvement.

However, policy-makers often need more detailed information, for instance on spending levels and patterns for particular components of health care. As governments seek to meet their commitment to achieve the Millennium Development Goals (MDGs), such information will be invaluable in allowing a more effective use of resources and highlighting gaps in spending.

The present document offers detailed guidelines on the construction of health accounts for health information systems (HIS). Building on previous guides on the production of national health accounts, it shows how the various techniques and approaches can be used to focus on HIS spending, whether explicitly earmarked as such or hidden within other specific programmes.

HIS compile and analyse data from the health sector, and convert the data into information for health-related decision-making. In addition to their monitoring and evaluation function, they also provide early warning, support care delivery and management of facilities, inform planning and research, and communicate health information to diverse users. An effective HIS is essential for the efficient delivery of health services. The preparation of national HIS subaccounts can provide important insights into the workings of the system, and hence strengthen the delivery of health care in the country.

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