BASYS

South African System of Health Accounts (SASHA)

Data inventory and compilation guide

May 2014

Markus Schneider

BASYS Beratungsgesellschaft für angewandte Systemforschung mbH
Reisingerstr. 25, D-86159 Augsburg, Germany, www.basys.de

Foreword

This report is part of a project commissioned by WHO SA to facilitate the development of National Health Accounts in South Africa. The chapters 3 and 4 of this Report reflect discussions about data structures relevant for national health expenditure accounts in South Africa. The information was collected during two visits of Dr. Markus Schneider during the periods 12 – 19 November 2013 and 9 – 15 March 2014. Information came also from a desktop review and relevant documents – previous NHA and health expenditure reviews and other literature. Further information was given during interviews and email communication with stakeholders. However, the information could be neither completed nor crosschecked by the various data holders. Furthermore, the information provided about data structures were mainly excel-tables but not the collected data records and the manuals of the data systems.

Chapters 5, 6 and 7 provide preparatory work for the compilation of SASHA. Chapter 8 outlines the compilation and possible results. All chapters together present the ingredients for national health accounts compilations based on the international standards of the Manual "System of Health Accounts 2011" of OECD, Eurostat, WHO. As a result one will receive a type of "cookbook" for the compilation of national health accounts in South Africa incl. consolidated excel sheets.

The Report was delivered May 10, 2014 after the second mission of Dr. Markus Schneider in South Africa.

Acknowledgements

This report would not have been possible without discussing the information system with
Mark Blecher (National Treasury),
Aparna Kollipara (National Treasury),
Refiloe Thokoa (National Treasury),
Konstantin Makrelov (National Treasury),
Jonatan Daven (National Treasury),
Mongi James Jokozela (NDoH),
Nhalanhla Ntuli (NDoH),
Milani Wolmarans (NDoH),
Brijlal Vishal (CHAI),
Tebogo Maziya (CMS),
Anton de Villiers (CMS),
Paul P. Bosch (CMS),
Nondumiso Khumalo (CMS),
Julindi Scheepers (CMS),
Nozipho Shabalala (StatSA),
Dan Kibuuka (StatSA),
Linky (StatSA),
Gerhardt Bouwer (StatSA),
Karen Kuhn (SARB)
Susan Knox (SARB)
Teresa Guthrie (CEGAA),
Berndt Appelt (GIZ),
Julia Pick (GIZ),
Thuthula Balfour-Kaipa (Chamber of Mines),
Antoinette Richardson (SALGA),
Winnie Manganye (SALGA),
Mvuyisi April (SALGA),
Habib Somanje (WHO SA),
Tomas Roubal (WHO SA).

I thank all of them for the supportive discussions and provision of information in this project. Needless to say, I am solely responsible for any errors or imperfections that remain in the report.

Content

Figures

Boxes

Tables

Abbreviations

AGSA	Auditor-General of South Africa
APT	Annual Planning Tool
ASC	Aids Service Classification
ATC	Anatomical Therapeutic Chemical Classification
BAS	Basic Accounting System
BHF	Board of Healthcare Funders of Southern Africa
CBO	Community Based Organisation
CBS	Central Bureau of Statistics Netherlands
CEGAA	Centre for Economic Governance and Aids in Africa
CHAI	Clinton Health Access Initiative
CMS	Council for Medical Schemes
COIDA	Compensation for Occupational Injuries and Diseases Act
COGTA	Cooperative Governance and Traditional Affairs
CPC	Central Product Classification
CPI	Consumer Price Index
DHIS	District Health Information System
DSD	Department of Social Development
EC	Eastern Cape Province
EU	European Union
FA	Financing Agent
FS	Financing Source
FS	Free State Province
FSB	Financial Services Board
GDP	Gross Domestic Product
GFS	Government Finance Statistics
GEMS	Government Employees Medical Schemes
HASA	Hospital Association of South Africa
HDACC	Health Data Advisory Coordination Committee
HIS	Health Information System
HST	Health Systems Trust
ICD	International Classification of Diseases and Conditions
ICHA	International Classification of Health Accounts
ICT	Information and Communication Technology
IES	Income and Expenditure Survey
IMSA	Innovative Medicine South Africa
ISCO	International Standard Classification of Occupations
ISHP	Integrated School Health Programme
ISIC	International Standard Industrial Classification of Economic Activities
KZN	KwaZulu Natal Province
LFS	Labour Force Survey
MDB	Municipality Demarcation Board

MDS	Minimum Data Set
MHSC	Mine Health and Safety Council.
MNCH	Maternal, Neonatal, Child Health
MP	Mpumalanga Province
NASA	National Aids Spending Assessment
NC	Northern Cape Province
NDoH	National Department of Health
NDoL	National Department of Labour
NDoMR	National Department of Mineral Resources
NGO	Non-Governmental Organisations
NHA	National Health Act
NHLS	National Health Laboratory Service
NHRPL	National Health Reference Price List
NIDS	National Indicator Data Set
NPI	Non-profit institution
NPISH	Non-profit institutions serving households
NSDA	Negotiated Service Delivery Agreement
NW	North West Province
ODA	Official Development Assistance
OHS	Occupational Health and Safety
OOP	Out-of-Pocket Expenses
PCNS	Practice Code Numbering System
PEPFAR	Presidents Emergency Fund for AIDS Relief
PERSAL	Personnel Administration System
PFMA	Public Finance Management Act
PHC	Primary Health Care
PIDS	Provincial Indicator Data Set
PMTCT	Prevention of mother-to-child transmission
QLFS	Quarterly Labour Force Survey
RAF	Road Accident Fund
ROW	Rest of the World
SA	South Africa
SACHA	South African Classification of Health Accounts
SAIA	South African Insurance Association
SAICA	South African Institute of Chartered Accountants
SAIEH	The South African Institute of Environmental Health
SANAC	South African National Aids Council
SANC	South African Nursing Council
SAPC	South African Pharmacy Council
SARB	South African Reserve Bank
SARS	South African Revenue Service
SASHA	South African System of Health Account
SHA	System of Health Accounts

SIC	Standard Industrial Classification of all Economic Activities
SNA	System of National Accounts
TB	Tuberculosis
TCAM	Traditional, Complementary and Alternative Medicines
UNAIDS	Joint United Nations Programme on HIV/AIDS
US	United States of America
USAID	United States Agency for International Development
WC	Western Cape Province
WHO	World Health Organisation

1. Introduction

South Africa has developed a comprehensive Health Information System (HIS) for the compilation of health expenditure indicators and tracking financial flows during the last years. However, the availability of information about public and private health care expenditures differs, because of the dichotomised health system. Furthermore, at the macro level, various activities aimed to compile national health accounts in South Africa (see McIntyre 1997, Doherty et al 2002). Recently, OECD, Eurostat, and WHO released a new manual for the compilation of national health expenditures: "The System of Health Accounts 2011" (SHA 2011). SHA is internationally used to measure expenditures on health in a comparable and consistent way. It is the international gold standard on measuring expenditures on health in all countries.

SHA is a key instrument for describing financial flows in the health sector, monitoring macro-efficiency and financial sustainability. The SHA provides a toolkit for financial management of health services and goods of the health sector as a whole. In contrast to separate accounts of the various financial agencies, the SHA links the various accounts in a coherent and consistent way by equalizing the expenditure flows of health care financing, provision, and health functions. In the tri-axial approach, it is expected that the same total expenditures observed for consumption of health care should hold in the other axes of provision and financing. The SHA 2011 supplements the core accounts of SHA 2000 by distinguishing further between financing schemes, financing sources, and financing agents. In top of that, the additional classifications of patient characteristics, factors of health care provision, and capital formation offer a wide range of monitoring functions.

Comprehensive accounting of a country's health financing system requires tools to track the revenue-raising, pooling and resource-allocation of funds, as well as the institutional units involved (see Figure 1). SHA 2011 puts financing schemes (HF) at the core of the financing framework, making a clear distinction from the financing agents (FA), institutional units administering the schemes (OECD 2012a). The SHA 2011 Manual does not expect that countries will implement all elements of the Guidelines. It is a long process specific for all countries and the most advanced systems have developed in more than 15 years.

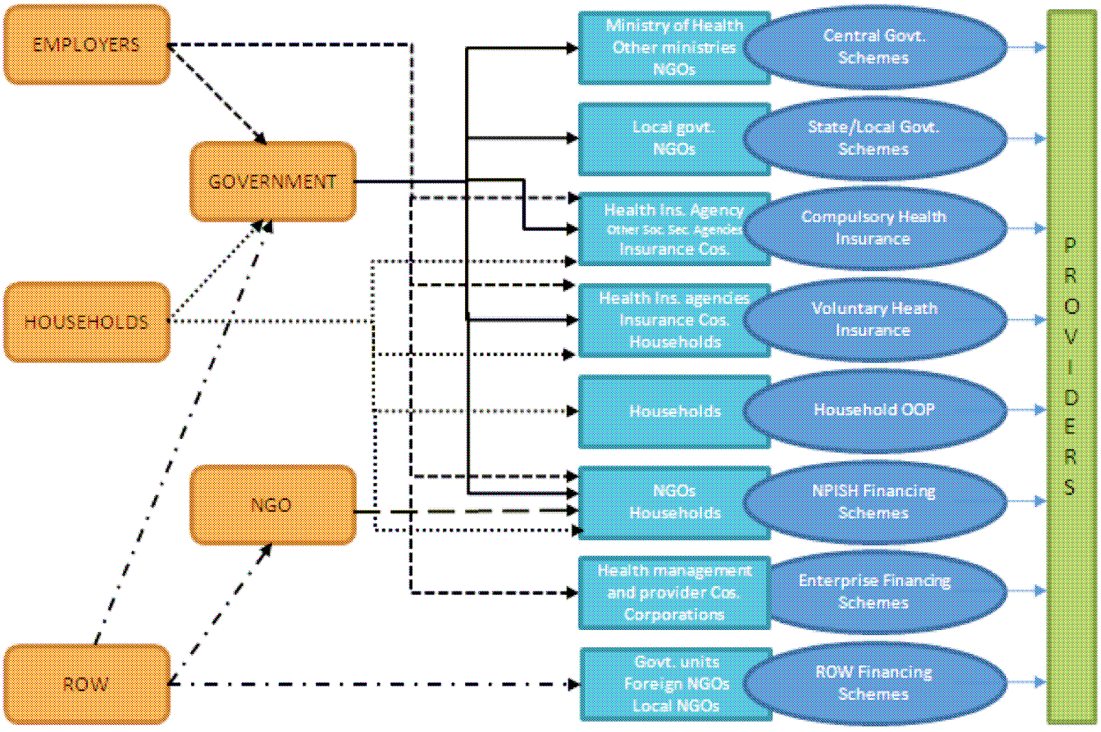
However, it is essential for the South African System of Health Accounts (SASHA) to be compiled at the beginning in the tri-axial core framework of expenditures, that is at the root of the SHA framework and its description of health care and long-term care expenditure – that is, what is consumed has been provided and financed. This triangulation maintains the guiding principles of SHA 1.0 and the Producers Guide (OECD 2000, WHO, World Bank, USAID 2003).

Therefore, the aim of this report is mainly to give an overview about national data relevant for the health expenditure accounts, which is related to the so-called purchasing function.

Purchasing reflects the key societal function of securing access to health care services. For example, subcategories of Government schemes and compulsory contributory health care financing schemes (HF.1) aim at ensuring access to basic health care for the whole society or a large part of society, while voluntary health care payment schemes (HF.2) provide access to care based primarily on the discretion of private actors. The SHA 2011 financing framework is able to compare increasingly complex health financing arrangements encompassing a mix of publicly and privately regulated revenues, financing schemes with compulsory or voluntary participation that are in turn operated by a mix of publicly and privately owned institutions.

The other two operations of a health financing system following SHA 2011 - revenue-raising and pooling, e.g. the payment of social insurance contributions to a single national fund and risk equalisation, are not part of this report. As revenue raising and pooling are central functions of a national health insurance system, these functions should be included in the SASHA in a further step in the future. It would also offer to strengthen the link to the sector accounts of the South African National Accounts including the Rest of the World (ROW) Accounts.

Figure 1: An example of a country's health financing system and money flows under SHA 2011 framework



Source: OECD 2012a.

The health accounts are derived from various data sources, including surveys, administrative and census data and official records. They are structured in a sequence of records and accounts components that include current accounts (financing and provision), capital

accounts, disease accounts, and other accounts. Totals of current accounts and disease accounts are equal. Balancing items exist in the financial accounts and capital accounts.

This report focuses on the current accounts of health expenditures, which serve as source for comparisons of countries by the International Organisations and is recommended by SHA 2011 Manual. Presently, international comparison of health expenditures by OECD and WHO ranks South Africa below OECD average related to the Gross Domestic Product (GDP) (OECD 2013a). On the other side, per capita expenditures on health in South Africa are high relative to other countries in the region. Total health spending amounted to 8.5% of GDP or US$ 689 per person in 2011 (WHO South Africa Country Office 2013).[1] These estimates follow the general rules of SHA 2000 and of the WHO Producers Guide (WHO, World Bank 2003), but are not done so far according to the international classification of SHA 2011 and may thus be incomparable.

There are several particularities one has to take into count in such comparisons at the supply and demand side apart from the quality of health care services provided. For example, the particular burden of diseases in South Africa, the demographic structure of the population, the infrastructure investments, the public/private mix of organisation of health care and the countrywide access to services. The international SHA 2011 accounting standards help to clarify these differences. Following the international standards in the compilation is therefore of utmost condition to compile international comparable data.

The report is divided into nine chapters. After the introduction the second chapter deals with the principles of the compilation of SASHA. Health accountants are advised to thoroughly think about these principles as they serve as accounting standards. The chapters three and four list main data sources relevant for the compilation. The choice of the best data sources is very much linked to the financing and organisation of the health care system. No one data source will fit all needs. The technical organisation of these data sources is discussed in chapter five.

Chapter six shows the mapping between the national data sources and the international classifications. Due to differences in concepts and definitions national categories are often difficult to link with international classifications. Allocation keys are a critical tool to reach the correspondence in practice. Chapter seven illustrates some examples of the construction of such allocation keys. After all these preparatory work chapter eight outlines the accounting tables and the main outputs. Finally, chapter nine gives some recommendations for the institutionalisation of SASHA.

[1] World Health Organization National Health Accounts for South Africa, http://www.who.int/nha/database; the exchange rate (NCU per US$ = 7,26).

2. Principles of South African System of Health Accounts

The proposed South African System of Health Accounts (SASHA) is built on the principles of SHA 2011 framework. The SASHA shares the goal of the System of National Accounts (SNA) to constitute an integrated system of

- comprehensive,
- internally consistent, and
- internationally comparable accounts,

which should be compatible with other aggregate economic and social statistics as far as possible.

For national purposes SASHA will use the national classification systems which are defined by the South African Classifications of Health Accounts (SACHA) in order to be consistent with national regulations and the national information systems[2]. Presently, an official South African Classifications of Health Accounts (SACHA) does not exist. One of the tasks, while implementing health accounts, will be to develop these standards.

The starting point for SHA 2011 is the definition of the **consumption of health services and goods by the resident population** of a country or region. The boundaries of health care are set based on this consumption purpose. It is therefore important to have a clear understanding of what consumption with a health purpose is, and which are the relevant categories to be identified. This influences the structure of the items in the accountings system. The final consumption by the population is given priority, over production. For example, as in most countries, more pharmaceuticals are used in South Africa than locally produced. In SHA, the consumption of all pharmaceuticals of the population has to be taken into consideration.

In practice, however, the legal obligation, the right to healthcare according to the South African constitution is not limited to residents only, but section 27 of the Constitution provides that every person has the right "to have access to health care services, including reproductive health care."

SHA follows **a functional approach** to what is provided and consumed in health care services and goods. The functional classification of health care (ICHA-HC) delineates the boundaries of health care activities from an international perspective. Following the concept underlying the design of the ICHA-HC classification, the boundary contains all activities with the primary purpose of improving, maintaining and preventing the deterioration of the health status of persons and mitigating the consequences of ill-health through the application of qualified health knowledge [medical, paramedical and nursing knowledge, including

[2] It should be kept in mind that not only the boundaries of SHA might differ because of the benefits included but also the meaning of the terminology. For example, the National Health Act defines "health care provider" as a person providing health service. In contrast, SHA defines "health care providers" as supplier of health services including prevention and administration.

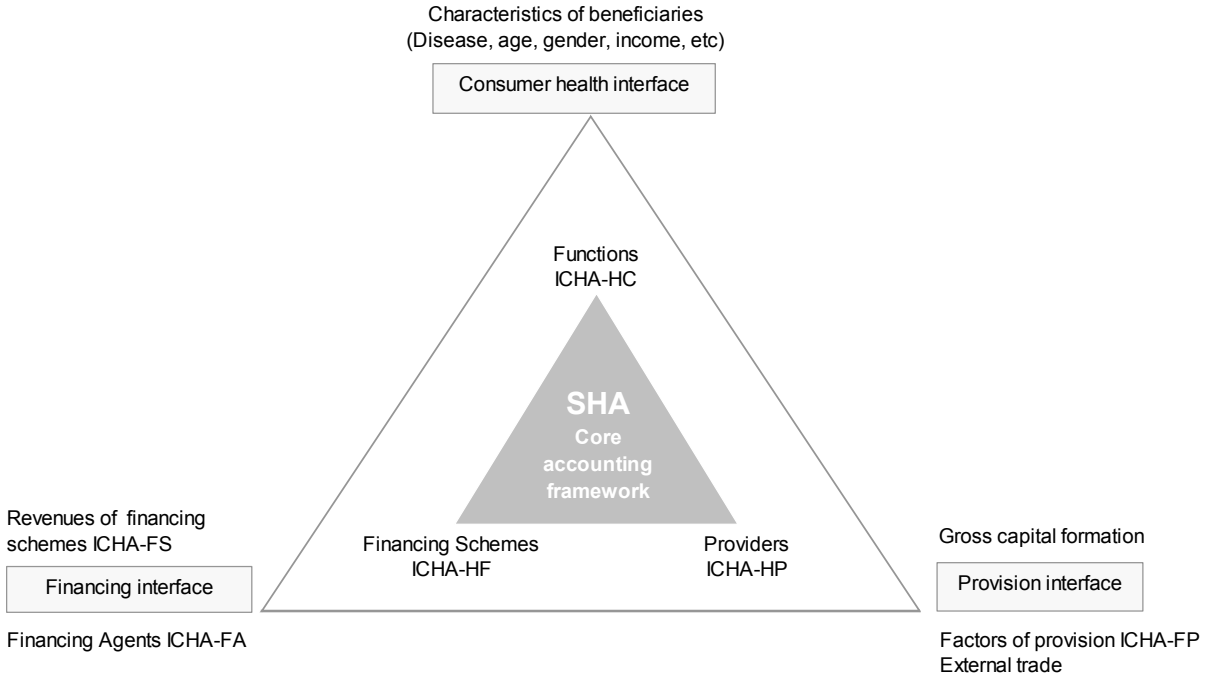
technology, and traditional, complementary and alternative medicine (TCAM)]. This primary purpose is pursued by the following groups of health care activities:

- Health promotion and prevention;
- Diagnosis, treatment, cure and rehabilitation of illness;
- Caring for persons affected by chronic illness;
- Caring for persons with health-related impairment and disability;
- Palliative care;
- Providing community health programmes;
- Governance and administration of the health system.

Figure 2 shows the core health expenditure account of SHA 2011 and their extensions. The three core classifications in the middle of this figure represent the consumption of health care goods and services, which equals their provision and financing. Each of the three dimensions provides interfaces to further breakdowns or dimensions.

SHA distinguishes between **current expenditure** and **capital expenditure**. The core health expenditure account of SHA only deals with current expenditure. Expenditures for capital formation, like investments in hospital and infrastructure, are separately recorded in the capital account (see SHA 2011, chapter 11).

Figure 2: The SHA core accounting framework and extensions



Source: OECD, Eurostat, WHO 2011.

The functional approach means that health expenditures are included regardless of how or by whom the service or good is funded, or how and by whom it has been provided. For example, health services provided and consumed outside the SNA-defined health branch (such as

occupational health services or medical services in residential long-term care) are part of the final consumption of health services of the resident population, and thus included in SHA. The way health care is financed, for example, whether or not the final consumed health service is paid for or reimbursed by a public entity, is not decisive for inclusion or exclusion in the health accounts.

The accounting framework of SHA, with its set of expenditure tables, is designed to be **methodologically compatible** in basic terms with the System of National Accounts. This methodological compatibility with the SNA enables the calculation of a number of expenditure ratios that compare health expenditure aggregates with appropriate aggregates of the economy as a whole so as to facilitate international comparisons. SASHA provides basic data for the compilation of health expenditure indicators in relation to the System of National Accounts (SNA) as "health expenditures as % of Gross Domestic Product (GDP)". The SNA 2008 and the SHA 2011 gives guidance how to integrate health accounts into a full satellite account (see EC, IMF, OECD, UN and World Bank 2009; chapter 29, OECD, Eurostat, WHO 2011, Annex B).

Box 1: SHA Principles

Coherence, conceptual consistency: The accounting approach should be compatible to the concept laid down in the SHA manual. The estimates should be consistent derived along the different dimensions of the SHA: provision, consumption and financing of health care.

Comprehensiveness: The borderlines defined by SHA should be considered. In accordance with the functional approach, all programmes designed with a health purpose or a substantial amount should be included, whether labelled "health services" or not in national statistics.

Time Consistency: The resulting time series should be capable of monitoring past structural changes and serve as input for simulation and forecasting models. Health accounts are consistent if they are comparable over time.

Timeliness and precision: Considering a statistical survey in health accounting and health care resources as timely means that data are available with a specifically defined time limit, which corresponds to the intended use of the accounts. Timeliness conflicts with precision when large data sets and a multiplicity of surveys have to be combined, which is typically the case in health expenditure estimates. Precision relates to a minimum level of detail judged necessary in regular reporting.

Comparability: The comparability component aims at measuring the impact of differences in applied statistical concepts and definitions when statistics are compared between geographical areas, non-geographical domains, or reference periods. The sources of distortion of comparability in statistics, increasing or reducing it, are mainly twofold: use of different concepts/definitions, or use of different measuring tools or procedures.

3. Expenditure Data Sources

There are mainly four data holders of expenditure data relevant for national health accounts. These are the National Treasury (NT), the National Department of Health (NDoH), the Council of Medical Schemes (CMS) and Statistics of South Africa (StatsSA). Other data sources include commercial employers (e.g. mines, car producing factories), NGOs and other private health insurance companies (voluntary health insurance not regulated by the CMS).

3.1 National Treasury

The National Treasury (NT) has information on all public expenditures in South Africa. The budget information is mainly recorded at cash basis; i.e. mainly cash transactions are included in the account. Estimates for consumption of fixed capital and remuneration-in-kind are not included in the account. In addition, the time of recording reflects the cash flow. For example, goods and services are recorded when they are purchased.

3.1.1 National level

Based on the Basic Accounting System (BAS), the National Treasury possesses a comprehensive data base which allows tracking the financial flows of all public expenditure programmes by economic characteristics in a standardized way. In the 2012 Open Budget Index Survey, conducted independently by the International Budget Partnership, South Africa was rated second out of the 100 countries participating in this assessment of budget transparency (see National Treasury 2013). For SASHA it is possible to extract a data record with the items listed in the BAS system. Such items are

- Source,
- Year,
- Region,
- Budget Code,
- Programme Description,
- Economic Code,
- Economic Description, and the
- Value.

In Vote 16 ‘Health’, there are expenditures for six programmes with several subprograms and for public entities and other agencies. Additionally, health expenditures are recorded in the Programs of other votes.

Programme 1: Administration

- Office Accommodation,
- Financial Management.

Programme 2: National Health Insurance, Health Planning and Systems Enablement

- Technical Policy and Planning,
- Health Information Management, Monitoring and Evaluation,
- Sector-wide Procurement,

- Health Financing and National Health Insurance,
- International Health and Development.

Programme 3: HIV and AIDS, TB and Maternal and Child Health

- HIV and AIDS,
- Tuberculosis,
- Child, Youth and School Health,
- Women's Maternal and Reproductive Health.

Programme 4: Primary Health Care Services

- District Services and Environmental Health,
- Communicable Diseases,
- Non-Communicable Diseases,
- Health Promotion and Nutrition,
- Violence, Trauma and EMS.

Programme 5: Hospitals, Tertiary Health Services and Human Resource Development

- Health Facilities Infrastructure Management,
- Tertiary Health Care Planning and Policy,
- Hospital Management,
- Human Resources for Health,
- Nursing Services,
- Forensic Chemistry Laboratories.

Programme 6: Health Regulation and Compliance Management

- Food Control,
- Pharmaceutical Trade and Product Regulation,
- Public Entities Management,
- Office of Standards Compliance,
- Compensation Commissioner for Occupational Diseases and Occupational Health.

Public entities and other agencies

- National Health Laboratory Service,
- South African Medical Research Council,
- Compensation Commissioner for Occupational Diseases in Mines and Works,
- Council for Medical Schemes.

For each of the programs the current expenditures are further classified by economic characteristics (see below "Provincial level").

Most of the expenditures of the NDoH are distributed to provinces by conditional grants. Two major reforms on conditional grants have been effected. First, the three health infrastructure grants – hospital revitalisation, health infrastructure, and nursing colleges and schools – have been consolidated into a single direct grant, the health facility revitalisation grant. Second, a new national health grant has been established. This grant has two components, one for national health insurance and one for health facility revitalisation. From 2014/15 a third component for roll-out of HPV vaccines is added. Although, all these three types of grants

have a regional component and they belong to the federal budget, the decision making process differs for the resource allocation. SHA 2011 gives the possibility to allocate the expenditures further into *Central government schemes* (HF.1.1.1) and *Regional/local government schemes* (HF.1.1.2).

3.1.2 Provincial level

The nine provinces of South Africa finance their health services through the money from national government using the equitable share formula, conditional grants and by provincial owned revenue.

A considerable amount of funding is provided through conditional grants:

- the health facility revitalisation grant,
- the national tertiary services grant,
- the health professions training and development grant, and
- the HIV and AIDS conditional grant.

The expenditures of the provinces (except conditional grants) are structured in eight programs:

1 Administration,
2 District Health Services,
3 Emergency Medical Services,
4 Provincial Hospital Services,
5 Central Hospital Services,
6 Health Science And Training,
7 Health Care Support Services, and
8 Health Facilities Management.

As many subprogrammes in District Health Services are quite different in nature it would be essential for the quality of the NHA to develop as part of the South African Classification of Health Accounts –Functions a more detailed program classification (see Table 30).

For each of the programs the current expenditures are further classified by economic characteristics:

- Compensation of employees
  - Salaries and wages,
  - Social contributions.
- Goods and services
  - Administrative fees,
  - Advertising,
  - Assets less than the capitalisation threshold,
  - Audit cost: External,
  - Bursaries: Employees,
  - Catering: Departmental activities,
  - Communication (G&S),

  - Computer services,
  - Consultants and professional services: Business and advisory services,
  - Consultants and professional services: Infrastructure and planning,
  - Consultants and professional services: Laboratory services,
  - Consultants and professional services: Legal costs,
  - Contractors,
  - Agency and support / outsourced services,
  - Entertainment,
  - Fleet services (including government motor transport),
  - Housing,
  - Inventory: Food and food supplies,
  - Inventory: Fuel, oil and gas,
  - Inventory: Learner and teacher support material,
  - Inventory: Materials and supplies,
  - Inventory: Medical supplies,
  - Inventory: Medicine,
  - Medsas inventory interface,
  - Inventory: Military stores,
  - Inventory: Other consumables,
  - Inventory: Stationery and printing,
  - Operating leases,
  - Property payments,
  - Transport provided: Departmental activity,
  - Travel and subsistence,
  - Training and development,
  - Operating payments,
  - Venues and facilities,
  - Rental and hiring.
- Interest and rent on land
  - Interest,
  - Rent on land.

For SASHA it is possible to combine the provincial data records with the national data records. The SACHA should reflect the regional dimension.

3.1.3 District level

According to compilations of the health barometer group the District Health Services (DHS) constituted 42.6% of provincial health expenditure in the financial year 2011/12. Data for public expenditure on health at district level were extracted from the government's basic accounting systems (BAS), re-coded to the latest district health information system (DHIS) facility information and aligned (where possible) with 2011 district demarcation boundaries. Demarcation of districts is a precondition for district health accounts.

District per capita expenditure refers to the amount of money spent per person medically "not voluntary insured".[3] In general, health accounts refer to all residents of a defined region in order to reach consistency in compilation and comparisons.

All Primary Health Care (PHC) facilities must submit monthly data to the district health information system (DHIS). The quality of data provided by the PHC facilities is the most critical factor in the DHIS. The DHIS software has gradually expanded to cover hospital data, Emergency Medical Services (EMS) data, Environmental Health System (EHS) data, Client Satisfaction Surveys (CSS), Core Standards and Measures of quality of care, survey data sets, and data sets related to infrastructure and populations. It provides a large proportion of the information used for planning, budgeting, health service management, monitoring and evaluation at all levels of the South African health care system (see NDoH 2012).

BAS includes also district codes. However, the analysis of financial indicators of BAS by Candy Day and colleagues shows that not all expenditures are clearly allocated to districts (Day et al. 2011: 230), because regional identifiers in BAS can conflict with geographic information in other fields. Currently over 20% of expenditure in the North West and Free State cannot be coded directly to districts, which reduces the accuracy of the district expenditure estimates for the districts in these provinces. In these cases the Day at al. recorded the expenditure against overall provincial expenditure and then allocated to districts based on population share rather than actual expenditure. Furthermore, the data quality may have been influenced by differences in coding practices between provinces and districts and discrepancies between DHIS and BAS data due to the lack of a common identifier for facilities[4] (see HST 2011: District Health Barometer, Section A: Indicator Comparisons per programme by District). The development of such common identifiers would be of great value for the standardized accounting within the scope of a NHA development.

The compilation of Health Accounts at provincial level seems to be feasible in line with principles applied in the national accounts. However, compilation of Health Accounts at district level requires further investigations how to secure integrity and reliability of the accounts. Based on the results of the Provincial Health Accounts the compilation of health accounts at district level might start in the Provinces with advanced statistics.

3.1.4 Municipality level

The *Local Government Budgets and Expenditure Review* of the National Treasury contains both financial and non-financial information relating to key municipal functions. The 2011 review states: "While it is evident that the ability of municipalities and municipal entities to collect financial data has improved, it must be acknowledged that a lot still needs to be done to improve local government non-financial data" (National Treasury 2011).

[3] The not-voluntary insured population was calculated from medical schemes coverage rates and DHIS population estimates.

[4] A complete registry of healthcare providers is particularly relevant for control and the reconciliation of the financing side with the provider side

The role of Local Governments to contribute to improved health and Life expectancy includes

- Many municipalities perform health functions on behalf of provinces;
- Strengthen effectiveness of health services managed by municipalities by specifically enhancing TB treatments and expanding HIV and AIDS prevention and treatments;
- Municipalities must continue to improve Community Health Service infrastructure, by providing clean water, sanitation and waste removal services.

The current legal framework for structuring local government of the Municipal Structures Act (1998) provides for metropolitan, district and local municipalities[5]. There are eight metropolitan areas (Category A)[6], 44 district municipalities (Category B), and 226 local municipalities (Category C). The categories to a large extent determine the powers and functions of the municipality, and so must form the basis of any further differentiation between municipalities. Furthermore, the Municipal Structures Act provides for functions to be allocated between category B and C municipalities on a differential basis, depending on their capacity – which is assessed by the Municipal Demarcation Board on an annual basis. This allocation of functions must also be taken into account when considering any approach to differentiating between municipalities.

From a financial point of view, it is essential to address those expenditures for health services by municipalities which is financed from own resources. Following Schedule 4 of the Constitution the provision of health services is a concurrent function, which means more than one sphere of government is responsible for making policy, legislating, administrating or monitoring performance in relation to that function. There are only few exclusive legislative competencies at the municipality sphere. Provinces have exclusive legislative competence over the functions listed in Part A of Schedule 5 of the Constitution, which include ambulance services and provincial planning. However, national government may legislate in these 'exclusive' provincial functions if it is necessary to maintain essential national standards or for reasons of national security.

Section 152 of the Constitution, which sets out the 'Objects of local government', lists among others the following objects relevant for health:

- to ensure the provision of services to communities in a sustainable manner;
- to promote social and economic development;
- to promote a safe and healthy environment.

[5] Category A is described in section l55 (1) of the Constitution as „Metropolitan municipality", which means a municipality that has exclusive executive and legislative authority in its area. Category B municipality shares municipal executive and legislative authority in its area with a category C municipality. Category C municipality has municipal executive and legislative authority in an area that includes more than one municipality.

[6] The eight metropolitan municipalities are: Buffalo City (East London), City of Cape Town (Cape Town), Ekurhuleni (East Rand), eThekwini (Durban), City of Johannesburg (Johannesburg), Mangaung (Bloemfontein), Nelson Mandela Bay (Port Elizabeth), and City of Tshwane (Pretoria).

A municipality must strive, within its financial and administrative capacity, to achieve the objects. The provision of Municipal health services is considered by the Demarcation Board as Priority 1 function.

Functions can be devolved from national and provincial government to local government by delegation or assignment. Often, provinces delegate the administration of clinics and emergency medical services to municipalities.

Municipalities are generally represented on the national intergovernmental structures by 'organised local government' in the form of the South African Local Government Association (SALGA). At the provincial level, municipalities are either represented directly or through the provincial local government associations.

The measurement of expenses for Municipal Health Services is of great importance in the area of prevention and primary care (see 4.4 Prevention). Whether it is possible to build up health expenditure accounts for municipalities requires further analysis of the data structures and data quality of the respective areas. The South African Institute of Environmental Health (SAIEH) and the South African Local Government Association (SALGA) carried out survey on the status of municipal health services at the whole country. The summary of the results are discussed in SALGA 2013.

3.2 National Department of Health

The data of NDoH contain information about expenditures of foreign aid, for infrastructure projects, procurement of goods and services, and human resources. The National Health Act sets out the functions of the three levels of government as they relate to health services.[7]

3.2.1 District Health Information System (DHIS)

The DHIS, established in 1996/97 as a routine system for tracking health service delivery in the public health sector, generates essential non-expenditure data for health service planning, monitoring and reporting. The DHIS software plays a pivotal role in the collection, capturing, storage, analysis and reporting of routine data, which would consist of at least five components namely:

(i) Population-based information,
(ii) Health services based information,
(iii) Health resources records,
(iv) vital registration data, and
(v) transversal (government-wide) support systems (NDoH 2012).

[7] Following Art 74. (1) of the National Health Act must the NDoH facilitate and co-ordinate the establishment, implementation and maintenance of Health Information System by provincial departments, district health councils, municipalities and the private health sector of health information systems at national, provincial and local levels in order to create a comprehensive national health information system.

The DHIS software has gradually expanded to cover hospital data, Emergency Medical Services (EMS) data, Environmental Health System (EHS) data, Client Satisfaction Surveys (CSS), Core Standards and Measures of quality of care, survey data sets, and data sets related to infrastructure and populations (NDoH 2011). Future development of the National Health Management Information System will include data from the private sector, to portray a comprehensive picture of the performance of the entire health system.

District Health Accounts can use these data for the compilation of indicators and to check the consistency of the accounts. Furthermore, it is an invaluable source for the analysis of differences among districts.

Furthermore, DHIS offers selected information about the regional distribution of diseases.

A part of the DHIS (see NDoH 2012) is the **National Indicator Data Set (NIDS)** of the NDoH.[8] It comprises various data sources including registers of core healthcare facilities, reports, and international data sets. Presently, it distinguishes between 113 monthly and 53 quarterly core indicators as well as 49 monthly health services indicators compiled not directly related to facilities. The NIDS comprises information about utilization of services, incidence and prevalence, but no expenditure data. The data are mainly relevant for the analysis of the expenditure accounts and the further development of disease accounts.

The monthly indicators are grouped into:

- Chronic,
- Delivery,
- Eye Care,
- Mental Health,
- EPI,
- HIV,
- IMCI,
- Management Inpatients,
- Management PHC,
- Nutrition,
- Oral Health,
- PMTCT,
- Quality,
- Reproductive Health, and
- TB.

The quarterly Core Indicators are grouped into:

- ART baseline,

[8] Closely related to the NIDS is the Provincial Indicator Data Set (PIDS), "which shall contain all indicators in the NIDS and any other Province-specific indicators that may be required for monitoring the performance of the health system" (NDoH 2011: para. 5.2.3, p. 21).

- ART at 3 months,
- ART at 6 months, and
- TB.

The monthly Non-Facility Health Services Indicators are grouped into:

- Environmental Health,
- EMS,
- School Health,
- PHC WBOT.

3.2.2 National Core Standards (NCS) database

The National Core Standards (NCS) database comprises meta-information which is relevant for the structure of flows of the current accounts and the capital accounts. From May 2011 to May 2012, with funding from the National Department of Health, an audit of every health facility in the public health sector was conducted by a consortium of partners. The audit assessed infrastructure, classification of facilities, compliance to priority areas of quality and function, human resources, access and range of services offered, and geographic positioning (GPS) for location of facilities. Five functional areas (Clinical Services, Infrastructure, Management, Patient Care, Support Services and Clinical Care) are distinguished. The information can be valuable for regional accounts. Presently, it is unclear, whether the information is sufficiently detailed, but it could be used to develop allocation keys. It is also very useful while preparing codebooks and national classifications of providers.

3.2.3 Foreign Aid

Foreign assistance and other foreign resource flows play an important role in financing health care in South Africa. The accurate tracking of foreign resource flows is of great importance both from the perspective of the recipient country and the donor organisations. Donor assistance where money flows through the SA government systems can be tracked through BAS. However, in-kind support and support to non-governmental entities cannot.

A more comprehensive picture provides the Annual Planning Tool (APT). APT developed with assistance of the Clinton Health Access Initiative (CHAI) aims to collect standardized expenditure, budget and output data from all health programmes in South Africa. APT is managed by the National Department of Health. It tracks the following information:

1) financial health care resources among those who contribute to them (the 'financing agents') and those who implement them (the 'implementing agents', e.g. above or below facility level);
2) where the resources are spent programmatically (e.g. HIV, MNCH) and geographically (Province, District); and

3) what these resources are spent on (in terms of cost categories, how much goes to service delivery, and programmatic outputs).[9]

The development of APT has been a quite useful investment for the accountability and co-ordination of foreign funds. The APT is a new system, and has only been populated once in 2012 but no update was done in 2013. For SASHA a regular update of the APT would be very helpful. It would be possible to extract a data record with the following items listed:

- Source,
- Yearstamp,
- Programme,
- Cost Code,
- Regional Code,
- Description, and
- Value.

The following Development Partners are considered in the APT Tool:

Bilateral:

- Belgium,
- Great Britain,
- Canada,
- France,
- Germany (GIZ and KfW),
- Ireland,
- Italy,
- the Netherlands,
- Sweden, and the
- US Government (PEPFAR).

Multilateral:

- European Union,
- Global Fund,
- UNAIDS,
- UNFPA, and
- UNICEF.

In SASHA, data are not kept by the Development Partners. However, the information about should be kept under the metadata (keep in mind that the Municipality level is presently not available in APT).

3.2.4 National Health Information Repository and Data warehouse

The National Health Information Repository and Data warehouse (NHIRD) is the technical platform for integrating data from various specialist information systems of the NDOH so that it can be used by national and provincial health departments to plan and strengthen the delivery of health services. The contents are described by the above data sets. Health Accounts might be integrated into the system, if expenditures will be become a part of the national health information system. This platform seems particularly relevant for compilations at the provincial and district level.

[9] The APT data is already being used in a gap analysis for the Global Fund to Fight Aids, Tuberculosis and Malaria (GFATM) reapplication process, as well as to validate Estimates of the National Expenditure for Treasury (see CHAI 2013: 6).

3.3 Other national departments

Within the public financing sphere are other financing units of health care, also with own facilities of health care provision. This includes the Ministry of Defence, the Department of Labour, The Department of Mineral Resources, the Correctional Services, The Workmen's Compensation, the Ministry of Basic Education, and other departments as the National Treasury, or the Department of Home Affairs, which have special budget lines for health and wellness of their employees. Data of these financing units are included in BAS. It should be further mentioned those departments focusing on related issues as health related education and research, e.g. biotechnology and health by the Department of Science and Technology.

3.3.1 Department of Defence and Military Veterans (Vote 22)

Programme 6: Military Health Support: A comprehensive multidisciplinary military health service to a projected patient population of 302,000 members. Specialist/Tertiary Health Service provides a specialist health service to develop and maintain tertiary military health capabilities within the parameters of relevant legislation, as contained in the South African military health service strategy. Funding is distributed according to the number and size of military hospitals and specialist units, systems and equipment operating requirements, maintenance requirements, the number and type of patient health services rendered, and force preparation activities. In 2012/13, 784,000 health care activities were carried out at the military hospitals. This subprogram had a staff complement of 2,448 in 2012/13.

3.3.2 Department of Correctional Services (Vote 21)

Health Care Services in Correctional Centres promote the health of inmates and awaiting trial detainees, identify inmates with health problems, assess their needs and deliver treatment or refer to specialist services as appropriate. The majority of the health care services and programmes in Correctional Centres are of a primary care nature. All inmates are entitled to health care at State expense except for treatment for cosmetic purposes. An inmate may be granted permission to be treated by his or her private medical practitioner or dentist at own cost and risk. There are several subprograms under Vote 21 which are health related:

- Rehabilitation: Psychological, Social and Spiritual Services (only health part),
- Care: Health Services, and
- Care: Hygienic Services.

3.3.3 Department of Labour (Vote 18)

Further health expenditures are spent by the National Department of Labour. The NDoL has to ensure an environment that is not harmful to the health and wellbeing of those in the workplace. The Occupational Health and Safety Act aims to provide for the health and safety of persons at work and for the health and safety of persons in connection with the activities of persons at work and to establish an advisory council for occupational health and safety. The Compensation for Occupational Injuries and Diseases Act 130 of 1993 (COIDA) provides for compensation for disablement caused by occupational injuries or diseases sustained or contracted by employees in the course of their employment, or for death resulting from such injuries or diseases; and to provide for matters connected therewith.

3.3.4 Department of Mineral Resources (Vote 32)

Promotion of Mine Safety and Health is part of the expenditures of the Department of Mineral Resources, which is regulated by the Mine Health and Safety Act (1996). The Department of Mineral Resources is advised by the Mine Health and Safety Council (MHSC).

Furthermore, expenditures by the employers have to be considered. For example the Mining industry has developed its own health care system to complain with occupational standards and to secure productivity of their human capital. The association of mines carried out a survey about expenditure for occupational survey. This information should be further researched and developed in the future while producing national health accounts.

3.3.5 Department of Cooperative Governance and Traditional Affairs (Vote 3)

Section 152 of the Constitution enjoins that local government must promote a safe and healthy environment. The programme 6 of COGTA budget: Infrastructure and Economic Development includes expenditures to promote environmental health outcomes within municipalities. In South African context "environmental health" encompasses those aspects of human health, including quality of life that is determined by physical, chemical, biological, biological, social and psychosocial factors in the environment.

Information about environmental health is fragmented. Following the National Environmental Health Policy, Metropolitan and District Municipalities should compile an Annual Environmental Health Status Report and submit it to the Provincial Department of Health for further submission to the National Department of Health (NDoH 2013c). Insufficient revenue base/generation – i.e. the ratio between the demand for services and the revenue that can be generated for environmental health services is an issue for discussion (COGTA 2009, SALGA 2013).

3.3.6 Department of Basic Education (Vote 15)

The programme 5 "Educational Enrichment Services" of the Department of Basic Education focuses on the improvement of special health issues as the reduction of sexual violence and abuse as well as infections. It has a conditional grant for HIV focusing on life-skills education. Beyond the boundary of SHA, however health related, is the "National School Nutrition Programme".

3.3.7 Department of Social Development (Vote 19)

The Department of Social Development has expenditure for HIV but related to care of orphans and vulnerable children. In NHA only the health part has to recorded.

3.4 Public entities

There are several public entities, which can provide relevant information for health expenditure accounts. It would be helpful to review all public entities regarding their involvement in health activities. Data of these public entities are also included in BAS.

3.4.1 Council of Medical Schemes

The Council of Medical Schemes (CMS) is a juristic person defined in the Medical Schemes Act, No. 131 of 1998. All Members of the Council are to be appointed by the Ministry of Health. The Council receives Transfers from Budget for selected projects. However, the majority of funding for Council activities are from levies imposed on the members of medical schemes.

3.4.2 Road Accident Fund

The Road Accident Fund RAF provides compulsory cover to all users of South African roads, citizens and foreigners, against injuries sustained or death arising from accidents involving motor vehicles within the borders of South Africa. This cover is in the form of indemnity insurance to persons who cause the accident, as well as personal injury and death insurance to victims of motor vehicle accidents and their families. The RAF, as established by the RAF Act, is owned by the South African public. It is listed as a national public entity in accordance with schedule 3A of the PFMA. Contributions to the RAF are done by way of a levy on fuel used for road transportation.

In the medical scheme environment the medical scheme would fund the healthcare related costs, and when the RAF has made a payment to the member, the medical scheme would recover its costs from the member. The cost would then be reflected in the gross claims data, and the recovery in the net claims data. Double counting could therefore occur in the National Accounts dependant on whether gross or net claims data is used (i.e. medical scheme pays, and RAF pays).

The RAF is paying medical and healthcare services available in South Africa on a fee-for-service tariff or on the basis of capitation (see RAF 2013). The RAF distinguishes between

- supplier claims: a claim submitted directly to the RAF by a person/institution that provided medical treatment and accommodation to the victim of the accident.
- medical compensation: represents past and future medical costs incurred by the accident victim as a result of a motor vehicle accident.

The further breakdown for the use in the health accounts has to be clarified in future.

3.4.3 Mine Health and Safety Council

Mine Health and Safety Council (MHSC) is a national public entity (Schedule 3A) established in terms of the Mine Health and Safety Act, No 29 of 1996, as amended. The entity comprises a tripartite board represented by State, Employer, and Labour members under chairmanship of the Chief Inspector of Mines. The MHSC is funded by public revenue and is accountable to Parliament. The main task of the Council is to advise the Minister of

Mineral Resources on occupational health and safety legislation and research outcomes focused on improving and promoting occupational health and safety in South African mines. The Council also oversees the activities of its committees; promotes a culture of health and safety in the mining industry; arranges a summit every two years to review the state of occupational health and safety at mines; and liaises with the Mining Qualifications Authority and any other statutory bodies about mining health and safety.

3.5 Medical Schemes

Private financing of health care in South Africa dates back to 1889. The Medical Schemes Act was introduced in 1967. 1993 saw major changes to the Act. The actual Rules of Medical Schemes, laid down in the Medical Schemes Act, No. 131 of 1998, distinguish profoundly this type of insurance from private risk-based medical insurance (see 3.6.1 Medical Insurance). Underlying principles are:

Community rating

(Access to healthcare is enhanced by the pooling of health risks to prevent risk-rating by medical schemes. Furthermore, members on the same benefit option must pay the same contribution, regardless of their age and/or health status.)

Minimum prescribed benefits

(No limitation shall apply to the reimbursement of any relevant health service obtained by a member from a public hospital where this service complies with the general scope and level as defined as minimum benefit package. This pillar seeks to protects the interest of members of medical schemes regardless of the benefit option purchased with an objective of addressing unfair risk selection by schemes.)

Not for profit

(All medical schemes are mutual funds not-for-profit entities managed by boards of trustees.)

Cross-subsidisation

(Contributions payable by members are set only on the basis of income, number of dependants so as to enable cross–subsidisation.)

Open enrolment

(This provision is more relevant to the open schemes than restricted schemes. Medical schemes are not allowed to choose their members based on age and/or health status. Open enrolment protects members from unfair discrimination. Promotes cross subsidisation between young and healthy with the old and sick.)

Risk equalisation is a further principal that is still under discussion.

3.5.1 Expenditure data

One has to distinguish between the information gathered by medical aid schemes and by the Council for Medical Schemes (CMS). In medical schemes, the insured event is the provision of a healthcare services to a member. Consequently, claims are recognized in the period that services are delivered to a member (i.e. on a day-by-day basis) (SAICA 2013).

The CMS gathers quarterly and annually information about the expenses from the medical schemes[10] at the respective level of benefit options offered by each scheme. In principle, therefore, data collection at the beneficiary level would be possible, but because of the huge number of records this is not yet realized. Expenses are coded ensuring compliance with the Prescribed Minimum Benefit (PMB) conditions.[11] This means it can be distinguished whether supplementary coverage above the PMB is provided. The type of provider/establishment can be derived from the Practice Code Numbering System (PCNS) which is supervised after by the Board of Health Care Funders (BHF).[12]

The regional information refers to the residential place of living of the beneficiary and not to the place of treatment. As a consequence, one can conclude only indirectly on the cost of the supply side. (In principle, the PCNS code of the provider should allow also to aggregate the data by providers.) All applicants for the practise number have to fill in the physical address, VAT number, discipline and subdiscipline which could be used for the creation of a national codebook of providers (HP) and types of care (HC).

Information on patient characteristics is gathered by CMS either by age and gender or by disease groups. This information is collected per benefit option:

- Utilisation of private hospitals by age group and gender,
- Utilisation of public hospitals by age group and gender,
- Total PMB expenditure paid per age band: in-hospital and out-of-hospital.

Disease related information on claims is collected from PBM chronic conditions and the ICD Codes. Later includes only major principal diagnosis (22 groups including not reporting):

- Utilisation of hospitals in respect of selected principal diagnosis types per ICD10 codes, and
- Total benefits paid in respect of selected principal diagnosis types per ICD10 codes.

As a consequence, the CMS data allows a rough breakdown of health expenditures by either diseases or age and gender. More detailed disease accounts require the expansion of data reporting by the schemes.

[10] The CMS is classified under 3.1.2 Extra-budgetary institutions in National Accounts (see SARB 2011). The CMS is the national medical schemes regulatory authority established in terms of the Medical Schemes Act (1998).

[11] Categories (Diagnosis and Treatment Pairs) constituting the Prescribed Minimum Benefits Package under Section 29(1)(o) of the Medical Schemes are listed by "Organ-System chapter" in the Annexure A of the regulation to the Medical Schemes Act 131 of 1998.

[12] "The practice number, allocated to all registered healthcare providers is a legal requirement for the process of reimbursement of a claim to either a medical scheme member or service provider. This is in accordance with the requirement of the Medical Schemes Act 131 of 1998 wherein it is stated that a medical scheme may only reimburse a member or a provider of relevant healthcare services for services rendered against a valid practice code number" (see – http://www.bhfglobal.com/practice-code-numbering-system-pcns).

The annual expenditure record used for SASHA will include the following items:

- Source
- Yearstamp
- Code of PMB
- ICD-10 (currently CMS only collect data on major groupings of ICD10 codes, and not on individual ICD10 codes)
- Facility
- Region
- Description
- Value

For mapping and linking the public and private sector data it is important to clarify the differences of definitions on what is a hospital, what is expenditure on acute care between the public and private sector, etc.

3.5.2 Compulsory/mandatory and voluntary coverage

SHA 2011 requests to distinguish between compulsory/mandatory and voluntary schemes. Compulsory/mandatory coverage is defined as:

- Coverage of the population is automatic, universal for all citizens/residents (for example, national health services);
- Participation (contribution payment) is mandatory by law for all of the population or for defined groups within the population (social health insurance or compulsory private insurance).

Voluntary health insurance (VHI) schemes have the following characteristics:

- Mode of participation: voluntary, at the discretion of individual or a firm;
- Benefit entitlement: contributory: based upon the purchase of the voluntary health insurance policy (usually on the basis of a contract);
- Basic method for fund-raising: usually non-income-related premiums (often directly or indirectly risk-related,); may be directly or indirectly subsidised by the government (e.g. through tax credits).

The membership in Medical Schemes is voluntary, however, it comprises some compulsory elements. First, all benefit options, which medical schemes offer as health insurance package, must cover the prescribed minimum benefits (PMB). PMB's are minimum benefits which by law must be provided to all medical scheme members and include the provision of diagnosis, treatment and care costs for: any emergency medical condition and a range of conditions as specified in Annexure A of the General Regulations (Medical Schemes Act, 131 of 1998).[13]

[13] The Prescribed Minimum Benefit package is a list of some 270 diagnosis and treatment pairs (PMB-DTP) primarily offered in hospital (introduced 1 January 2000); all emergency medical conditions (clarified from 1 January 2003); diagnosis, treatment and medicine according to therapeutic algorithms for 26 defined chronic conditions on the Chronic Disease List (PMB-CDL) (introduced 1 January 2004 and amended in 19 July 2004 and 3 December 2004).

In total, close to 300 conditions are covered, thereof the following 26 chronic illnesses:

1 Addison's Disease
2 Asthma
3 Bi-polar Mood Disorder
4 Bronchiectasis
5 Cardiac Failure
6 Cardiomyopathy Disease
7 Chronic Renal Disease
8 Coronary Artery Disease
9 Crohn's Disease
10 Chronic Obstructive Pulmonary Disorder
11 Diabetes Insipidus
12 Diabetes Mellitus Type 1 & 2
13 Dysrhythmias
14 Epilepsy
15 Glaucoma
16 Haemophilia
17 HIV / AIDS
18 Hyperlipidaemia
19 Hypertension
20 Hypothyroidism
21 Multiple Sclerosis
22 Parkinson's Disease
23 Rheumatoid Arthritis
24 Schizophrenia
25 Systemic Lupus Erythematosis
26 Ulcerative Colitis

Beneficiaries must be covered in full for these conditions with no limits or co-payments. Schemes may insist on the use of a contracted network of providers and formularies of drugs to manage care.[14]

Second, employees working in companies which offer a restricted scheme might face a degree of compulsion and restriction to selected providers. If member voluntarily makes use of out-of-network providers or non-formulary drugs a co-payment could apply.

Studies about health care coverage in Africa distinguish between the "insured" and the "uninsured" population[15] or public sector dependent population. This is an adjustment of the total population to the number assumed to be dependent on services in the public health sector based on medical scheme (health insurance) coverage. It is calculated by subtracting the number of people with medical scheme cover (determined from medical scheme membership reports, or surveys indicating percentage of population on medical schemes) from the total population (see Day C. et al 2013).

The HF classification of SHA 2011 provides a proposal how further to classify voluntary health insurance. As there is only very limited international experience about the application of SHA 2011 in the area of voluntary health insurance, this is not more discussed here. About the classification of medical schemes see also Roubal 2013. In SHA 2011, voluntary health

[14] Following Econex 2011a "South Africa's medical scheme environment was in the process of becoming a social health insurance environment. The Department of Health has introduced three of the five reform pillars (i.e. open enrolment, community rating and PMBs), but have not as yet introduced mandatory membership and a risk equalisation fund (REF). The system is therefore voluntary, but also has design features of SHI systems."

[15] The distinction between "insured" and "uninsured" is confusing in a National Health Service System (NHS). In SA, there is a NHS system with voluntary insurance. All people can use the public facilities where they might have various levels of co-payments. The term "uninsured" looks like that the people do not have any financial cover which they in the NHS have by default.

insurance but primary/substitutory health insurance schemes (and not supplementary insurance schemes) as Medical Schemes are classified in the class HF.2.1.1.1 Employer-based insurance (other than enterprises schemes).

Data collected by CMS about pharmaceutical prescriptions from medical schemes are neither classified by ATC-Codes nor by diagnoses.

3.5.3 Out-of pocket expenses

CMS provides also information about out-of-pocket expenditures (OOP) of their members by type of services. But, these figures underestimate OOP because of under-reporting of medical schemes and members (see CMS 2013: p. 233). For example, depending on the options claims are not sent to medical schemes for reimbursement; or, prices of the providers are above the National Health Reference Price List (NHRPL) and not covered by the option of the insured person. It also does not include private OOP expenditures on medicines, sanitary goods bought in pharmacies etc. not covered by the medical aid schemes. Information about OOP by CMS could be used for triangulation of private OOP expenditures.

Voluntary insurance may further reimburse cost-sharing by the patient. This case should be treated similarly to the case when voluntary insurance reimburses the bill of a service not covered by compulsory insurance. The payment is considered as expenditure by the voluntary insurance. Consequently, the part of cost-sharing reimbursed by voluntary insurance should be accounted as expenditure by voluntary insurance and should not be taken into consideration under OOP payment by the households.

3.6 Other private Financing

3.6.1 Medical Insurance

For-profit-medical insurance schemes are of minor role for health financing in South Africa. The key difference between these types of health insurance products and those offered of medical schemes is that the benefit design within these products encourage “risk rating” and premiums are therefore risk-related. Medical schemes offers protection through a comprehensive set of benefits – with a common set of minimum benefits; whilst most medical insurance products only cover specific events.

Financing of health services by private for-profit health insurance is increasing but rather small (see Blecher et al. 2011: p. 33). Data about expenditures of private for-profit health insurance for health care needs to be further clarified. Minimal information about private health insurance is available from the IES of Statistics South Africa and South African Insurance Association (SAIA). Furthermore, the Financial Services Board Insurance Division publishes in its Quarterly Report aggregated information about net premiums of short-term accident & health insurance (FSB 2013). This information should be insofar included in

national health accounts as it is used for the financing of health services. But it is necessary to check the insurance products in detail.

3.6.2 Employers

Financing of health services by employers which are provided by own or contracted health services is also rather small. Data about expenditures on health care services needs to be clarified (see Blecher et al. 2011: p. 33) in future but should be surely included in the national health accounts. It concerns expenditures on health services by the largest employers - mines, airlines, car producers and others.

Following the discussion of survey results with the chamber of mines expenditures for safety at workplace might be higher than in the current estimates available. A general survey with the employers can help to collect further evidence.

3.6.3 Non-profit Institutions

NPIs are separately identified as institutional units in the System of National Accounts. Statistics South Africa (Stats SA) has developed an own classification of NPIs for South Africa for a Non-profit institutions satellite account (Stats SA 2013d). This classification includes a detailed grouping of NPIs in the health sector. In 2012, more than 85,000 NPIs have been registered with the Department of Social Development.

Any organisation that is not-for-profit and is not part of the government can apply for registration with the Department of Social Development. The breakdown of data and possible alignment with SHA requires further investigations. The list of NGO hospitals and clinics should be available from the Department of Health or National Treasury.

See also the following section of Stats SA (chapter 3.6.2) and NDoH.

3.7 Statistics South Africa

Statistics South Africa provides several data sources relevant for the compilation of national health accounts, particularly for the compilation of the private expenditures and non-market output. Most of these data are linked to national accounts which is compiled by Stats SA and the South African Reserve Bank (SARB).[16]

3.7.1 Out-of-pocket expenditures

In the public health sector, primary health care is available free of charge and co-payments for hospital services are dependent on the income level of the patient (the care is not free for people earning above 6000ZAR a month, for more see Uniform Patient Fee Schedule – http://www.health.gov.za/uniform.php), with further exemptions provided for children under six, pregnant women and social grant beneficiaries. In the private sector, out-of-pocket

[16] SARB is focusing on the expenditure approach and Stats SA on the production approach. For further information see SARB 2010.

expenditures (OOP) depend on the insurance coverage. The conception, monitoring and assessment of financial protection require a clear distinction between the share of costs covered by insurance (or a government scheme) and the share of costs paid by the patients. Statistics South Africa (StatsSA) provides information on coverage by insurance and on OOP by various surveys:

- The Income and Expenditure Survey (IES),
- The General Budget Survey (GHS), and
- The Living Conditions Survey (LCS).

Table 1: Characteristics of the IES, GHS, and LCS

The Income and Expenditure Survey (IES)	The General Budget Survey (GHS)	The Living Conditions Survey (LCS)
Done: five years	annually	August 2008 –September 2009
With: 25,328 households	25,330 households (2012)	25,075 households
The primary objective of the IES is to provide relevant statistical information on household consumption expenditure patterns that will inform the updating of the consumer price index (CPI) basket of goods and services.	Main objective to measure the level of development in the country and to measure, on a regular basis, the performance of programmes and projects that were implemented to address these needs. The survey is specifically designed to measure multiple facets of the living conditions of South African households, as well as the quality of service delivery in a number of key service sectors: ▪ education, ▪ health and social development, ▪ housing, ▪ household access to services and facilities, ▪ food security, and ▪ agriculture.	Main objective to measure poverty and progress in reducing poverty; address the multidimensional character of poverty. There were seven modules in this questionnaire ▪ composition and structure of the household ▪ information on health, disability, education and employment ▪ welfare, assets and information on dwellings and services ▪ consumption expenditure ▪ subsistence and living circumstances. ▪ savings, investments, debt, remittances and income ▪ anthropometric measurements (height, weight and waist)
The IES included all domestic households, holiday homes and all households in workers' residences, such as mining hostels and dormitories for workers. It did not include institutions such as hospitals, prisons, old-age homes, student hostels and dormitories for scholars. Boarding houses, hotels, lodges and guesthouses were also excluded from the sample.	The survey does not cover other collective living quarters such as students‟ hostels, old-age homes, hospitals, prisons and military barracks, and is therefore only representative of non-institutionalised and non-military persons or households in South Africa.	All domestic households, holiday homes and all households in workers' residences, such as mining hostels and dormitories for workers. It did not include institutions such as hospitals, prisons, old-age homes, student hostels and dormitories for scholars. Boarding houses, hotels, lodges and guest houses were also excluded from the sample.

The health section of the IES comprises questions about

- the health insurance coverage (medical schemes, private health insurance);
- who makes payment for the insurance?
- what is the monthly payment?
- does the employer partially or fully pay for the insurance?
- the consultation of medical practitioner/spiritual healer/traditional healer not covered by medical aid;
- the consumption of medicines and their coverage;
- who prescribed the medicines?
- whether the households could not afford to pay for them;
- the actual cost paid at a hospital/clinic not covered by insurance.

In contrast to the IES, the health section of the GHS comprises questions about the health status, injuries and disability, which complements the questions of the IES. For example, questions about the following items are included:

- provision of care to someone in the household who cannot manage without help because of frailty, old age, disability or ill-health;
- suffering from any illnesses or injuries during the last 12 months;
- sort of illnesses or injuries suffered from (15 items):
- information about chronic illnesses or conditions by a medical doctor or nurse (7 items):
- medication for these chronic illnesses or conditions (7 items):
- pregnancy and status of pregnancy:
- difficulties in doing general functions and their duration:
- use of medical devices.

There are further questions related to insurance status and utilisation of healthcare services.

The analysis of the GHS 2011 by Statistics South Africa provides information about the variation of both communicable diseases and non-communicable diseases observed by age, sex, population group and province of usual residence (Stats SA 2013a). Since 2007, the GHS has not provided information below the provincial level (Day et al 2011: 230).

The Living Conditions Survey (LCS) conducted over a period of 12 months from September 2008 to August 2009 was the first LCS by Stats SA and it was published in 2011. The sample included 25,075 households across the country. The next survey is nearly prepared and only financial constrains block the survey to be conducted. The survey used a combination of the diary and recall methods. Households were required to complete their daily acquisitions in diaries provided by Stats SA for a period of a month and to answer a variety of questions from the household questionnaire administered by a Stats SA official on a variety of areas. It uses the COICOP classification of expenditure items. The main aim of this survey has been to look at the poverty in South Africa.

The LCS 2008/2009 sought to establish whether or not people consult health facilities in their local areas, such as community health clinics and local public hospitals, as opposed to private

health facilities outside their local areas. Furthermore, it should be mentioned, the LCS includes also the reasons why population who was sick and consulted a health worker but did not consult at the nearest facility by reasons. Additionally, it comprises OOP expenditures, whereas the amounts exclude medical aid payments, as well as all services and medicines received but covered by medical aids or any medical benefit schemes. The amounts also do not include estimations on services (e.g. consultations) not paid for.

For SASHA, information from all three surveys is relevant: As a consequence annual raw data sets from all three surveys should be compiled. In principle, it would be possible to merge the information of the health module into a common micro-data file. Such merging requires to some extent micro-simulation and might only be realized in mid-term. The raw data-files from the IES and GHS are listed below. One should distinguish between sets comprising disease and not disease related information.[17] In case the new LCS will be conducted its information should be used for calculation of health expenditures primarily.

The annual expenditure record used for SASHA will include the following items:
IES:

- Source
- Yearstamp
- Code of service
- Description of service
- Value of expenditure

Disease related information from GHS:

- Source
- Yearstamp
- Code of service
- Description of service
- Code of disease
- Description of disease
- Value of expenditure

It should be mentioned, that the Census 2011 also includes information about health functioning relevant in the case of expenditure accounts by disease: Whether a person has difficulty in seeing, hearing, communicating, walking or climbing stairs, remembering or concentrating, and self-care such as washing all over, dressing or feeding. Furthermore, the Census 2011 comprises information about disability: Difficulties encountered in functioning due to body impairments or activity limitation, with or without assistive devices. As a result of changes in the approach of asking disability questions the Census 2011 data are not comparable with previous Censuses. For the list of items included and interpretation see StatsSA 2012a, StatsSA 2012b. This information can be used for expenditure accounts by age, gender and disease.

[17] Disease specific information is relevant for the expenditure accounts by disease.

3.7.2 Non-governmental Organisations and Non-Profit-Institutions

NGOs and NPIs present a wide spectrum of institutions. Stats SA defines NPI as an associated term for civil society organisations that range from faith and community-based organisations, charities (welfare), traditional organisations like social and sports clubs, to a host of other development and social forms of organisations working tirelessly on the social fabric of society. These organisations are commonly referred to as non-governmental organisations (NGOs), community-based organisations (CBOs) and faith-based organisations (FBOs). Statistics South Africa has started to develop a non-profit institutions satellite account (see Stats SA 2013d).[18]

One has to consider the overlap with foreign aid. Following SHA 2011 and SNA 2008, a foreign aid programme set up by an external aid organisation to handle resources in a foreign country is to be considered as a resident NGO or corporation in that country (see SNA 2008: 26:43, SHA 2011: 180).

- Source
- Yearstamp
- Code
- Description
- Value

3.7.3 Reconciliation

Balancing expenditures of financing schemes (demand side) with the revenues of providers (supply side) is a central issue in the compilation of the tri-axial system. Reconciliation is necessary because the values of the aggregates of various data sources vary. For example, the values of private health expenditures reported by CMS and in the various surveys in StatSA differ either because of definition or statistical approach.

One important source of data of the supply side can be found in Supply and Use Tables, Input-Output Tables and respective business surveys behind theses tables. The Supply and Use Tables of national accounts describe in detail the sale and purchase relationships, both final and intermediate, between producers and consumers, either in terms of industry or product outputs. The unpublished SU-Tables contain 292 industries and 105 products (see Statistics South Africa 2013b). The industries are classified according to Standard Industrial Classification of all Economic Activities (SIC), while the products are classified according to the Central Product Classification (CPC). In general, the information about the breakdown of health care industries is limited. However, from the perspective of SHA, the Use-Table can help to compile the aggregate of OOP expenditures and align it with the compilations of national accounts (see 6.3.2 Out-of-Pocket Expenditures – HF.3).

[18] The institutions that play pivotal roles to ensure the successful compilation of the Non-Profit-Institutions Satellite Accounts for South Africa are: 1. Statistics South Africa (Stats SA); 2. Department of Social Development (DSD); 3. Social Survey Africa; and 4. South African Reserve Bank (SARB).

In the functional classification of Government expenditures used by StatsSA Public health care expenditures are reported under 'Community and social services' (see Statistics South Africa 2005). National health accounts can help to provide more structural information.

3.7.4 Retail Sale

It is useful to mirror the data about OOP for pharmaceuticals and medical devices from IES or GHS with business information from retail sales. Stats SA conducts a monthly survey of the retail trade industry, covering retail enterprises. This survey is based on a sample drawn from Stats SA's 2012 business sampling frame (BSF) that contains businesses registered for value added tax (VAT). Unfortunately, published data from both retail and tax statistics are not detailed enough to serve for national health accounts (see National Treasury and SARS 2012). Stats SA Retail statistics publishes "pharmaceutical and medical goods, cosmetic and toiletries" in one group. The triangulation with National Accounts requires more detailed information.

4. Other data sources relevant for the compilation of SASHA

In order to link the above mentioned data to the ICHA-HC it is necessary to take additional data into consideration. The following section gives an overview about additional data sources which can be used for the calculation of allocation keys if the data items of the main data sources are not detailed enough.

4.1 Inpatient / outpatient cure and care

Public hospitals in South Africa do not regularly report on the cost of inpatient and outpatient services they render. In SHA, the categories relating to cure, rehabilitation and long-term care (HC.1-HC.3) are broken down at the second level of classification by a mode-of-provision (MoP) approach, which is based on the specific organisational and technological arrangements of the services consumed. Estimates are possible by applying utilization rates and unit costs.

For private hospitals separate estimates are necessary too. Data are available from Medical Aid schemes and surveys of the Hospital Association of South Africa.[19] Private hospitals in South Africa are prohibited from employing health professionals registered with the Health Professionals Council of South Africa (HPCSA) in terms of the HPCSA's ethical rules. Econex 2011 provides the following information from healthcare funders as estimate for the split between in-hospital claims (i.e. costs related to hospital visits, including associated specialist or other costs) and out-of-hospital claims (i.e. doctors' visits at their private practices, for instance) is about 54/46.[20]

4.1.1 Utilization

The GHS Survey provides information about both the utilization[21] of the public and the private sector:

Public Sector

- Hospital,
- Clinic, and
- Other in public sector.

Private Sector

- Hospital,
- Clinic,
- Private doctor/specialist,
- Traditional Healer,

[19] The Hospital Association of South Africa (HASA) was established in 1996. In 2011, HASA members have comprised a total of 209 private hospitals representing 27,789 beds; that is more than 85% of the private hospital industry in South Africa (in terms of operational beds).

[20] It has to be checked whether in-hospital visits include hospital out patient care.

[21] Eventually see also DHIS.

- Spiritual healers workplace/church,
- Pharmacy/chemist,
- Health facility provided by the employer,
- Alternative medicine e.g. Homeopath,
- Other in private sector.

The analysis of the GHS 2010 data shows, that only a low proportion of African patients make use of the traditional health practitioners (Day et al. 2011: 216).

4.1.2 Unit cost

A study commissioned by the Hospital Association has compared unit costs for inpatient stays in the public and private sector (Ramjee 2013) by using data on public sector hospitals from the Annual Performance Plans published by each provincial Department of Health, the indicators of South African Health Review published by the Health System Trust (Day et al. 2011, 2013), and the District Barometer Report.

The compilations show, that the underlying information about hospital care can be used to compile unit cost. One should be aware, that the "Cost per Patient Day Equivalent (PDE)" is not appropriate in the case of national health accounts, because inpatient and outpatient information is aggregated.[22] In health accounts, in the functional classification, expenditures for inpatient cases, day cases, and outpatient cases should be separated by type of hospitals. The unit costs combined with the number of cases give estimates inpatient expenditures, outpatient expenditures and day care expenditures.

The observation of unit costs and prices in the health sector will become increasingly relevant for the general measurement of inflation in the country with the further growth of health care, a basic task of Statistics South Africa. In the health sector, prices by disease are particular of interest, e.g. related to pharmaceutical cost, if one wants to monitor expenditure developments by disease. The inclusion of price measurement in health accounts is a long-term effort (see SHA 2011, chapter 13).

4.1.3 Long-term nursing care

Long-term nursing care is not yet developed in SA but will certainly play an increasing role in the future. Statistics in this area need to be developed in the future.

4.2 Rehabilitation

Rehabilitation aims at empowering persons with health conditions who are experiencing or are likely to experience disability so that they can achieve and maintain optimal functioning, a decent quality of life and inclusion in the community and society. The scope of rehabilitation

[22] PDE is the Inpatient days total + Day Patients * 0.5 + (Emergency headcount + OPD headcount total) * 0.33333333 (see Day et al. 2013: 294).

is wide and includes psychological, assistive technological, environmental, cardiopulmonary, geriatric, neurological, orthopaedic and paediatric rehabilitation, among others. Sometimes, rehabilitative services can be identified directly the type of ward (e.g. balneology) or the therapist (ergotherapy).

Rehabilitation is further broken down, as the categories relating to cure and long-term care are broken down at the second level of classification by a mode-of-provision (MoP) approach, which is based on the specific organisational and technological arrangements of the services consumed. Rehabilitation is recorded as special service item in the Road Accident Fund. The link to health care providers has to be further elaborated.

4.3 Ancillary Services

4.3.1 Laboratory Services

Expenditures for laboratory services in the public sector are a separate item in the BAS system either under the item "goods and services" in the economic classification or in the institutional classification as "Forensic Chemistry Laboratories" or "National Health Laboratory Service". Presently, these are paid on a fee-for-service basis (although NDOH proposes to move towards global budgets). If NHA requires more disaggregated data, NHLS should be able to provide tariff schedules and test volumes.

Currently, a part of the lab test revenue is used to cross-subsidise research institutes for communicable diseases and occupational health. As research is falling outside NHA boundary only NHLS services should be valued only with the health part in NHA. Further information can be found in the annual reports (see e.g. NHLS 2013). Forensic Chemistry Laboratories contains the three forensic chemistry laboratories managed by the department located in Johannesburg, Pretoria and Cape Town. The item "Laboratory Services" should also consider laboratories operating in the private sector.

Laboratory services financed from private funders can be extracted from frequency statistics of Medical Schemes which reimburse by fee-for-service tariffs. In the case Managed Care options a special analysis is recommended.

4.3.2 Imaging services

The health facility audit of the NDoH has collected information about the health technology available in health facilities. The data about imaging services rendered is limited.

Regarding private financing of imaging services see above "laboratory services".

4.3.3 Patient transportation

Emergency medical treatment is a universal and absolute right section in South Africa. Following 27(3) of the Constitution no individual may be refused. Data about public expenditures for emergency services are a separate item in the BAS system. The CMS files

contain information about the number of admissions to Emergency Units (See CMS 2012). Further information on unit cost in the private sector might be available on request or collected in the future.

Expenditure data of the financing schemes should be reconciled with data of the supply side. Annual reports provide information about revenue structure of providers which should mirror the expenditure structure of financing schemes for private emergency services. Public air ambulance service is delivered by the Red Cross Air Mercy Service and Netcare (SA Red Cross Air Mercy Service Trust 2011).

4.4 Prevention

South Africa has various datasets about prevention. The function preventive care includes

- Information, education and counselling programmes
- Immunisation programmes
- Early disease detection programmes
- Healthy condition monitoring programmes
- Epidemiological surveillance and risk and disease control programmes
- Preparing for disaster and emergency response programmes

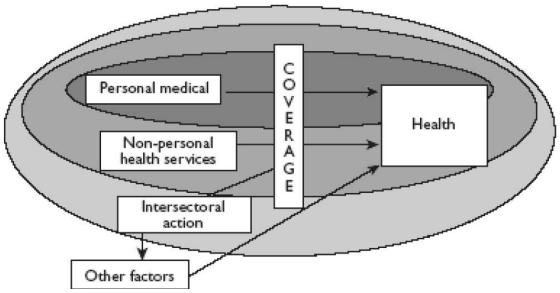
including their administration. Both the BAS data sets and CMS data comprise information about preventive activities.

The SHA 2011 Manual has introduced a number of changes compared with SHA 1.0 in setting the boundaries of health spending (and that of prevention). There has been some shift in emphasis in the ranking of the criteria used to define health care between SHA 1.0 and SHA 2011: SHA 2011 explicitly gives primacy to the criterion of purpose or intent of health (SHA 2011, pp. 55-56). Figure 2 illustrates the distinction between the health care system and the health system. Many preventive activities are part of "intersectoral action" – and part of the health system (wider circle of Figure 3), but not the health care system.

Prevention is a vital investment in health. Important areas touching the global boundary of health and prevention include environmental health, transport safety, and health protection and safety at work; while food safety and individual behaviour touch the health-related boundary; the guidance proposals given by OECD 2012 can be used to clarify what should be included as prevention expenditure. Key points include: that enforcement of regulations should be classed as health-related; and except where health services invite patients to take the initiative, other actions at the initiative of individuals, firms or workers should normally be put outside the boundary of "healthcare", but might be classified as "health-related" activities below the line.

SHA 2011 clearly states that health protection and accident prevention at work are within the SHA boundary (SHA 2011, p. 105), which means to include the occupational health expenditures

Figure 3: Boundaries of the health system



Source: WHO Health Systems Performance Assessment (HSPA).

It is necessary carefully to review the various programmes of the NDoH by the preventive characteristics of the expenditures. For example, the purpose of programme 3 "HIV and AIDS, TB and maternal, child and women's health" is to coordinate, manage and fund HIV and AIDS, TB and maternal, child and women's health programmes. The functional breakdown requires splitting the public administration of these programmes from the curative and preventive functions.

Furthermore is necessary to classify the cross-sectoral programmes as the Integrated School Health Programme (ISHP): The Departments of Health, Basic Education and Social Development have jointly revised the School Health Policy. The ISHP package of services targets all educational phases (including early childhood development, primary and secondary schools), and includes provision of a range of services including identification of chronic diseases and counselling and referral for sexual and reproductive health services for learners in the later education phases.

In SHA 2011, preventive care (HC.6) is limited to primary and secondary prevention. Tertiary prevention is counted as curative care in SHA 2011, e.g. the antihypertensive therapy would be defined as tertiary prevention, and therefore part of HC.1, not HC.6 in the SHA.

4.4.1 Environmental health

Environmental Health Services includes, but not limited to anticipation and identification of environmental health, hazards and risks regarding:

a) Water quality monitoring,
b) Food control
c) Waste management
d) Surveillance of premises
e) Communicable disease control
f) Vector control (e.g. Yellow fever)
g) Environmental pollution control,
h) Disposal of the dead,
i) Chemical safety and noise control,

j) Port health, and
k) Malaria control
l) Hazardous Substances control
m) Air Quality management.

Each of these areas require careful analysis of the expenditures.

4.4.2 Health and safety at workplace

Enhancing occupational health and safety awareness and compliance in the workplace is mainly under the responsibility of the Department of Labour, the Department of Mineral Resources, and the Department of Health. Expenditure data are recorded in the BAS system. Not included are the preventive health and safety activity of enterprises. These expenditures need s a special investigation (see e.g. in the area of construction).

4.5 Pharmaceuticals and medical devices

4.5.1 Medicines

Expenditure data on pharmaceuticals are available either from the financing or the provision side. Both aspects are compiled to some extent in the supply and use tables of national accounts. But these estimates include also pharmaceuticals in agriculture and veterinary medicine. However, supply and use tables show the overall picture. Data of the financing side were already discussed in chapter 3. Data about the supply side are usually collected at the level of wholesalers or from retail industry (see Stats SA 2011). Several pharmacy chains exist, distributing pharmaceuticals in supermarkets (MediRite Pharmacy, Pharmacy at Spar).

Market data analysed by Mediscore PBM 2010 provide information about the cost of most prescribed drugs in the private sector.[23] Expenditures for pharmaceuticals should reflect the gross cost, which includes the single exit price (SEP), the VAT component and dispensing fees normally payable. Expenditures in health accounts are recorded at market prices irrespective of how the payment is divided between the medical scheme and the patient. Rebates on prices are deducted.

Data about registered pharmacies are available from the South African Pharmacy Council (SAPC), which is the regulator established in terms of the Pharmacy Act, 1974 (Act 53 of 1974) to regulate pharmacists, pharmacy support personnel and pharmacy premises in South Africa. The mandate is to protect, promote and maintain the health, safety and wellbeing of patients and the public ensuring quality pharmaceutical service for all South Africans. In

[23] The analyses performed for this publication were done on the 2007 to 2009 medicine claims database of Mediscor PBM. Only fee-for–service medical schemes for which claims processing was performed by Mediscor for three consecutive years were included. Due to growth in the Mediscor client base over the last few years, the data sample used in this publication is larger than it was in previous years. This approach ensured the inclusion of the medicine claims data of approximately one million beneficiaries. Mediscor PBM processes claims submitted by providers from various specialities, which include pharmacies (retail and courier), general practitioners (GPs), medical specialists and other disciplines.

needs to be researched which relevant information could be used best for HP.5.1 Pharmacies in national health accounts.

4.5.2 Medical supplies

In the public sector expenditures for medical supplies are listed in the economic classification of the BAS system. A recent analysis by the National Treasury and the Health System Trust on Non-Negotiable goods and services (NT, HST 2013) showed a wide variation of expenditures on medical supplies in clinics and hospitals, partly as result of data quality.

Information about private expenditures for medical supplies offer various data sources as CMS statistics, retail statistics and the health section of the GHS.

4.5.3 TCAM

The classification of Traditional, Complementary and Alternative Medicines (TCAM) falls under drugs with facultative prescription status. According to the SHA 2011 Manual they should be included in the pharmaceuticals if they fulfil the healthcare boundary.

About the utilization rates of traditional healers, like "sangomas", very different, partly contradicting results from surveys are available.[24]

4.6 Administration

Administration is an embedded activity in the provision of health care goods and services, for example, the administrative activities carried out in a hospital or a physician's practice, and as such it is included as an inherent part of the functions specified as health activities in ICHA-HC. The functional classification does, however, distinguish separate categories of the health system governance and administration performed, for example, by ministries of health or health insurance enterprises, as follows:

- Governance and health system administration (HC.7.1): necessary for the design, operation, management and control of health care policy;
- Administration of health care financing (HC.7.2): necessary for managing the process of health care financing.

Information about both types of administrative expenditures comprise the statistics listed under chapter 3. As for the other health activities it is necessary to distinguish between current expenditures and capital formation.

[24] In general, the utilisation of TCAM services seems nowadays to be rather low as compared to earlier studies (0,1%; see 2011 General Household Survey). However, the financial burden of the utilization of TCAM can be substantial for certain households. "Almost three-quarters of the poorest quintile spent more than 10 per cent of their household expenditure in the previous month on traditional healers."(see Nonhlanhla et al 2011).

4.6.1 Governance and health system administration

The BAS system can be used for the identification of Public financing at the national, provincial and district level. For the health related administrative cost at the municipality level further investigations are necessary as municipalities use a different accounting system based on accrual basis.

4.6.2 Administration of health care financing

This item contains the management of the collection of funds and the administration, monitoring and evaluation of such resources. Among the specific services linked to resource mobilisation are the identification of members of the schemes; their enrolment; the billing and collection of contributions; and the management of exemptions. General taxation is excluded (see SHA 2011).

A special feature of the South African health system are the administrators managing medical schemes. Administrators are contracted to provide administration services to the majority of medical schemes. The board of trustees is still responsible to manage the scheme. These administrators are appointed by the schemes and paid administration fees from which they may derive profits. The same applies to managed care organisations, also for-profit entities that manages claims on the scheme's behalf.

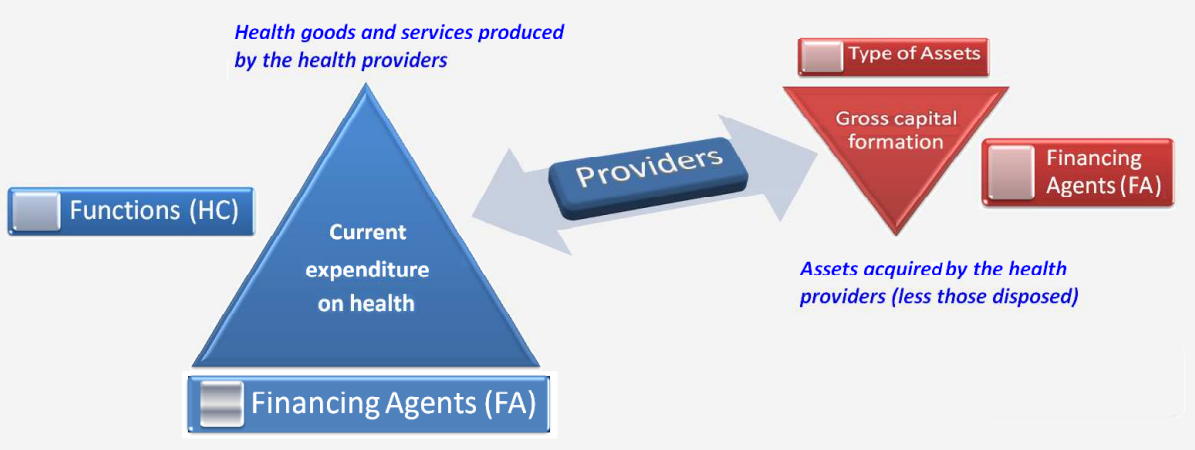
Expenditure data on the payment of administrators are included in the CMS records. In order to avoid double counting the accounts should only use consolidated data. The same holds for brokers.

4.7 Infrastructure - Capital formation

Reflecting the distinct treatment of current and capital spending and in an effort to avoid some of the previous ambiguities surrounding capital spending, the SHA 2011 manual introduced a new separate chapter on the accounting of capital formation in health systems.

SHA records the value of assets acquired, and disposed of, by all health care providers except health care providers classified under the rest of the world. The guiding principle for the recording of gross capital formation in health accounts is the legal ownership of the assets by health care providers. When dealing with current health expenditure, health care providers represent the supply side; when capital formation is analysed, they represent the demand side (see Figure 3).

Figure 4: Current health expenditure and gross capital formation in the SHA



Source: OECD, Eurostat, WHO 2011.

Capital formation is measured by the sum of three components:

- Gross fixed capital formation (e.g. hospital buildings or ambulances);
- Changes in inventories (e.g. vaccinations kept in stock); and
- Acquisitions less disposals of valuables (e.g. artworks).

Infrastructure[25] in the health care system includes two components: "Residential and non-residential buildings" and "Other structures". Infrastructure expenditure in the public sector is well documented.[26] Less transparent are the investments in the private sector.

One important area of infrastructure development which is health relevant is the **sanitation infrastructure**. Municipalities are prioritising the rollout of sanitation infrastructure. Good sanitation includes acceptable, affordable and sustainable sanitation services and appropriate health and hygiene awareness and behaviour.

Although effective **water supply** is highly health relevant, these services are not part of SHA. The same holds for another important area of health infrastructure in the wider sense, which is **solid waste management**. Effective solid waste management systems can contribute to improving public health outcomes. Solid waste management in South Africa is primarily a local government function. However, general solid waste management[27] is not part of SHA. It is therefore proposed to keep expenditures on nutrition, water supply and sanitation as separated items in the wider boundary of what is traditionally defined as health expenditures

[25] By convention, all infrastructures within the economic territory are owned by the resident unit regardless of whether the economic owner (or lessee under a financial lease) is resident abroad. For example, if the construction of a new building (e.g. a new hospital) is completely funded by transfers from abroad, a resident health provider is automatically established in the economic territory for statistical purposes.

[26] Check: LOGIS: The asset management system used by all national and provincial public health services in South Africa.

[27] Special solid waste management as Hospital waste management has to be included (see AGSA 2007).

by SACHA (see also Table 11: Mapping programmes of the National Department of Health – HF.1.1.1).

Investments in **eHealth** are of increasing importance in South Africa (see NDoH 2012). Funding for eHealth implementation is located within the provincial and municipal budgets, although there is no specific allocation from NDoH for eHealth. Financial investment in eHealth has varied from province to province and the result has been a marked inequity of eHealth expenditure across provinces.

In SHA 2011, expenditure on "Research and development in health" and "Education and training of health personnel" are considered as investments and as such are recorded as additional memorandum items to the capital account.

4.8 Human resources

Expenditures for human resources are the most important share of current health expenditures in the economic classifications. Health labour accounts facilitate the reconciliation of health care financing with health care provision.

Presently, health labour accounts do not exist in South Africa. Labor force statistics distinguish between the formal and informal sector. The South African Health Review 2011 provides an overview about the supply of health professionals in South Africa (see Matsoso, Strachan 2011 and Day et al. 2011). National data on human resources can be linked to the International Classification of Professions – ISCO. Labour Accounting Systems, National Accounts and Health Accounts are using various data sources to compile coherent aggregates. Some statistics focus on the total, others on parts of the total (see Table 2).

Table 2: Example of statistics used in health labour accounts

Classification of data sources by BASYS	Classification by Skoglund	Contain information on
Establishment register (1)	Central and local government Accounts	Compensation of employees Industry
	Register of employees in central and local government	Employed persons/jobs Average earnings per month Gender Industry
	Register-based employee Statistics	Employed persons (employees) Gender Industry
Business survey (2)	Establishment/enterprise surveys	Employed persons/jobs Part-time employment Compensation of employees Industry
	Survey-based wage statistics	Average earnings per month/hour Working hours Gender Industry
Census (3)	-	Head Counts
	-	Full-time equivalent
	-	Profession
	-	Gender
	-	Age
Micro census (4)	Labour force survey	Employed persons/jobs Occupational status Part-time employment Working hours Gender Industry
Register (individuals) (5)	Register of wages and salaries	Wage totals per year Type of wages Industry
Composite Statistics (6)	-	Head Counts
	-	Full-time equivalent
	-	Profession
	-	Gender
	-	Age

Source: BASYS 2001.

Perhaps the most important link between health labour accounts and health accounts are productivity ratios. The importance of productivity analyses in the health sector becomes evident if considering that health care is an important welfare factor. There is a national and an international dimension of productivity analysis. At the national level, the following instruments are used:

- instruments for keeping track of the efficiency in the production of health care services, and
- instruments for resource allocation between different public sectors.

4.9 Expenditures by patient characteristics

The presentation of health care expenditure by patient characteristics (e.g. age, gender, socioeconomic status or diseases/condition of beneficiaries) provides valuable insights for health policy. Prerequisite for the compilation of expenditures by patient characteristics is the compilation of the tri-axial core accounts and a robust health information system, preferably based on individual records (patient identifier) and reliable IT system. Health Insurance Systems where individual pay contributions/premiums have often developed such IT systems.

4.9.1 Demographic characteristics

Expenditure profiles by age and gender are not available in the public sector because financial data are still mainly collected at the facility level not at the patient level. CMS publishes detailed demographic data about their members. The demographic profiles of their members show a bimodal distribution, clear different form the general demographic profile of South Africa. In general, the average age of persons subscribed in medical schemes is higher than in the general population. Due to the introduction of GEMS the average age in restricted schemes has been fallen about 2 years (see CMS 2013: p. 230).

Gender can be captured only by estimates in the public expenditures, whereas the CMS is following this information.

Indicators that require population denominators use the mid-year population estimates for the relevant year that were available at the time of calculation.

4.9.2 Burden of disease data

Performance measurement and disease specific accounts require information about the incidence and prevalence of diseases. South Africa has developed various disease related statistics, often related to certain programs, which historically result from the burden of diseases of the population. The country faces a quadruple Burden of Diseases (BoD) made out of:

(1) HIV and TB prevalence
(2) Maternal mortality ratio, Infant and Child Mortality rate that are higher than the global average
(3) High prevalence of Non-Communicable Diseases (such as Cardiovascular Disease and Metabolic Disorders like Asthma and Diabetes)
(4) Unacceptable high rate of violence and injuries prevalence.

There is the Health Data Advisory Coordination Committee (HDACC) reporting to the Ministry of Health which deals with standards of disease related data. The aims of the HDACC are to improve the quality and integrity of data on health outcomes, establish consensus on indicator values; and identify reliable data sources to be used by the health sector in future. A priority was to advise on the indicators for the Negotiated Service Delivery Agreement (NSDA), the baseline values and the targets (see NDoH 2012). On the one side,

the development of the expenditure accounts by disease can built on these specific data already collected, on the other side on the international standards (OECD 2008, OECD, Eurostat, WHO 2011).

There are two general approaches internationally used: top-down and bottom-up (OECD 2012e). The top-down method uses actual expenditure data, such as total hospital expenditures, and then attempts to allocate the expenditures across all diseases or diagnostic categories. In contrast, the bottom-up approach classifies individual records by disease categories. In each case a reconciliation with the total health expenditures are necessary.

Information about specific prevalence rates is available from registers. For example, exclusive data sources as the Electronic TB Register (ETR.Net) provide disease specific information. Prevention of mother-to-child transmission (PMTCT) is monitored by a special surveillance system (see HDACC 2012). Of great help are furthermore the results of the disease specific investigations, e.g. by National AIDS Spending Assessment (NASA).

In the private sector comprehensive information about the burden of disease is collected by medical schemes. But, only a part of this information is nationally available. The CMS annual report 2012-13 presents for expenditures by major ICD 10 groups for selected schemes.[28] It is therefore recommended compare in more detail the coding practice in both sectors and derive samples which can be used for disease specific accounts.

It is recommended to direct the future development also in this direction as it provides relevant information for policy-makers. This work require changes in some data sources and inclusion of expert opinion since the very beginning and in development of allocation keys as is described in chapter 7.

4.9.3 Regional demarcation

Regional accounts are a regional specification of the corresponding accounts of the nation. Thus regional accounts make use of the concepts used for national accounts. There are substantial conceptual and practical difficulties in compiling a health accounts at regional level (see WHO 2008). In South Africa, there are 9 provinces and 52 districts. Regional demarcation are defined by the Municipal Demarcation Board. At the level of the 9 provinces regional health accounts can profit from the experience of South African compilations of the GDP by provinces. As the provinces play a very important role in financing and provision of health services, it is highly policy-relevant to develop health accounts by province.[29]

The further breakdown of the provincial health accounts data to district accounts might be decided by the provinces. From a health policy perspective tracking of the district health

[28] There is also a Schemes Risk Measurement prevalence database, which has been used for analysis of the development of chronic diseases (CMS 2013: p 71).

[29] Although, presently, the CMS data cannot be disaggregated by province, estimates can made based on the number of members by province together with the age profiles and the unit cost per province.

expenditures assumes more importance where fiscal or managerial responsibilities are devolved to district administrative units. A basic health reporting system at the district level is the District Health Barometer which includes 42 indicators with trend illustrations and profiles of South Africa, the nine provinces and the 52 districts (HST 2013).[30] All the indicators of the District Health Barometer are categorised according to the 2013 National Indicator Data Set (NIDS).

Regional health accounts should include, insofar possible, two perspectives:

- the region defined based on the location of the provider, and
- the region defined by the residence of the patient.

Data sets based on facilities allow to achieve the first approach without detailed population and patient registries and robust data linkages among several databases (e.g. of hospitals and Department of Home Affairs).

Data sets based on households, users/patients, and individuals facilities makes it easier to achieve the second approach. In order to compare both perspectives it is necessary to follow the migration of patients between the places of residence and treatment.

During the missions a specific request on the public-private mix was requested and is described in the next section.

4.10 Public-private mix

The public-private mix is also one of the issues which need special attention. SHA 2011 records the public-private mix at the financing side, not at the supply side. It has to be decided whether the accounting should include the public-private mix at the supply-side. Certainly, this will make the accounts not easier, but further development of the National Health Insurance requires sound data taking the public and the private sector into consideration. Because of differences of the two sectors the aggregation of both sectors needs special attention in order not to produce biased figures for national health policy.

Of particular interests are the developments in the following two fields

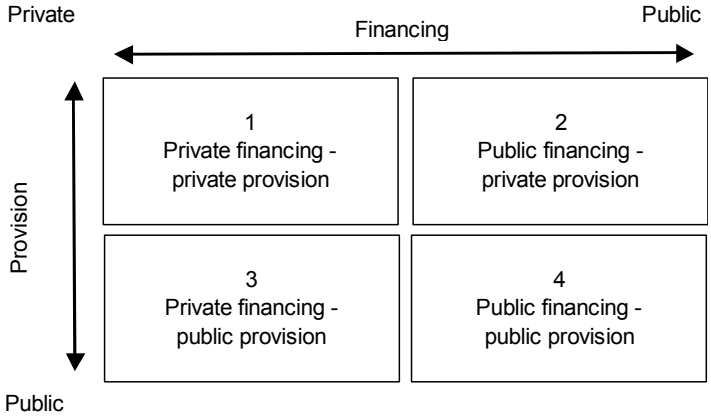
- "public financing-private provision" (see Figure 5, field 2), and
- "private financing-public provision (see Figure 5, field 3).

Social health insurance systems are characterised by public financing (by income solidarity) and private provision (by service contracts). Contracting of public providers (model 3) is in general only realized for highly complex services, in special domains as prevention, or in remote areas, where only public supply exists. Health systems are usually mixed systems with more resources coming from the public system at the financing side and less provision at the

[30] In the case of primary care even a further breakdown would be of interest. There are 4277 wards, which have been identified as the level of service delivery for PHC.

supply side, because most services can be contracted to private providers. In South Africa, the share of private financing is rather high as compared to other countries (This is further discussed in 8.4.4 Public-private mix).

Figure 5: Public-private mix



It has to be considered that private health care suppliers also provide services for the non-insured population.[31] Furthermore, medical care for foreigners coming to South Africa should be measured as exports, but more in depth analysis needs to be done. The success of this work stems in the underlying data sources. In case information on the provision of services to these groups is available, it can be included in the National Health Accounts.

In the next part we will elaborate on the organization of data into databases.

4.11 International data sources

4.11.1 OECD DAC

OECD DAC estimates that total international aid flows to South Africa increased in nominal terms to 1.27 billion in 2011, and just over half of DAC aid flows were dedicated to the health sector. The information deviates from the figures reported by the APT tool of the NDoH. Explanations could be

- different exchange rates used (e.g. US Dollar versus SA Rand)
- the different accounting of overhead cost (DAC is usually quite generous with including overhead costs etc. while the APT only includes the amounts that directly benefits South Africa)

This needs to be further investigated.

[31] Private hospital data indicate that about 15% of patients are not medical scheme beneficiaries. This implies that about 9.77 million people are served by the private hospital sector, rather than the much published 8.31 million medical scheme beneficiaries (Econex 2011: p. 8).

5. Organisation and documentation

5.1 Technical issues of data organisation

5.1.1 Data Inventory

As mentioned in the discussion of the data sources, there are mainly four data holders of expenditure data relevant for national health accounts. These are the National Treasury (NT), the National Department of Health (NDoH), the Council of Medical Schemes (CMS) and Statistics South Africa (StatsSA).

Presently, governmental schemes in the SHA are split into

- HF.1.1.1 Central government schemes, and
- HF.1.1.2 Provincial/district/municipal governmental schemes.

For the purpose of compilation of SASHA it is recommended to distinguish further the various departments and regional levels (central, regional and district levels). The next table shows a list of institutions and contact persons for compilation of SASHA as of 2013.

Table 3: Main Data Sources

No	Description	Institution	1st_year	Last_year	Contact
D01	Health Expenditure Vote 16	National Treasury	2009	2011	Aparna Kollipara
D02	Provincial Health Expenditure	National Treasury	2009	2011	Aparna Kollipara
D03	Health Expenditure Vote 16	National Treasury		2011	
D04	Health Expenditure Vote 17	National Treasury		2011	
D05		National Treasury		2011	
D06		National Treasury		2011	
D07	Health facilities	National Ministry of Health		2011	
D08	District data	National Ministry of Health		2012	
D09	Foreign Aid	National Ministry of Health		2012	
D10		National Ministry of Health			
D11	Medical Schemes	Council of Medical Schemes	2009	2011	Tebogo Maziya
D12	Risk Measurement	Council of Medical Schemes		2011	Tebogo Maziya
D13	Out-of-Pocket Expenditures	Statistics South Africa	2011	2011	Dan Kibuuka
D14	Household consumption	SARB/Stats SA	2000	2011	Karen Kuhn
D15	HIV and AIDs spending	CEGAA		2009	Teresa Guthrie

For each of the data sources a more detailed metadata file should be kept including the following information

- Full Name of the data source;
- Administrator/Institution;
- Type of data source (registers, business surveys, etc.);
- Method of collection (e.g. administrative source, statistical full-scope or sample survey; national source versus standardised international survey);
- Availability of data (for which years data is available / data is used for the SHA);
- Concept of the measuring units (costs, expenditures, turnover);
- Breaks in time (main methodological changes);

- Coverage of health actors (i.e. which categories of providers or financiers by HP and HF are covered; whether public or private institutions; national accounts sectors);
- Configuration of data (i.e. what dimensions of data are available: by HP, HC, HF, age, gender, diagnosis, geography, ownership, etc.);
- Contact information.

The list should be regularly updated and kept up to date and the main data providers should be given the opportunity to participate in the development and refinement of SASHA in the future. The feedback received from these data providers (mainly planned changes in their sources) gives invaluable information for the compilers of SASHA.

5.1.2 National and International functional classification

Building up the SASHA must thoroughly consider deviations of national from international definitions. For example, the South African National Health Act includes under "health services" the following four types of services:

(a) health care services, including reproductive health care and emergency medical treatment, contemplated in section 27 of the Constitution;
(b) basic nutrition and basic health care services contemplated in section 28(l)(c) 25 of the Constitution;
(c) medical treatment contemplated in section 35(2)(e) of the Constitution; and
(d) municipal health services.

In contrast, the definition of health services by ICHA-HC does not comprise basic nutrition.[32] Therefore, it is proposed to build up the system with both

i. national classifications, and
ii. international classifications.

In practice, this means, that health accounts include two boundaries:

i. the national boundary defined by the national regulations and classifications, the South African Classification of Health Accounts (SACHA),
ii. and the international boundary defined by ICHA.

The differences between the two systems are recorded as balancing item. This will also allow developing a system that can be more flexibly adapted to local environment and policy needs on the one hand and for international comparisons on the other hand.

5.2 Data files by financing schemes

Organisation of data and documentation is essential for the health accounts database. In a first step the raw data records have to be extracted from the respective data base systems of the financing schemes. Depending on the information available the raw data files will comprise

[32] But, health expenditures include nutrition in hospitals or any other inpatient stay or at day care.

per year several hundred records or only few[33]. It is important that these records include the most detailed economic and functional information based on national classifications.
The following tables provide an example of organization of the data.

Table 4: Possible Expenditure Record of the National Treasury Data

Source	Year	Region	Budget Code	Programme Description	Economic Code	Economic Description	Value
NT	2011			Office Accommodation			
NT				Financial Management			
NT				Financial Management			

Table 4 presents a particular extraction of data of the BAS system prepared for health accounts. The table should include all records relevant for health accounts, which means defined by the national health accounts classification (SACHA) and the international classifications of SHA. It should comprise the fiscal year (and calendar year if possible), the region (in the case of regional accounts), the budget codes, the economic codes, and the values of the respective years. Descriptive information about the codes might be added or separated in another table depending on the organisation of the system.

It is important that the basic data input tables of SHA mirror the functional and economic items used in the national data structures, so that the tables can be easily updated each year.

Table 5 presents a particular extraction of data of the APT system prepared for health accounts. The structure follows table 4 but has to be adapted to the administrative items of the APT system. For international purposes the accounting period must be the calendar year, for national purposes the fiscal year might be used as additional option. But, both approaches require more technical inputs. In any case, to keep the comparability with national accounts and international reporting, the calendar year is recommended.

[33] In the case of disease accounts linked to beneficiary characteristics the raw data sets might comprise several million records.

Table 5: Possible Expenditure Record of the APT

Source	Yearstamp (Fiscal year)	Regional Code	Programme	Cost_Code	Description	Value ZAR
IES	2011-12	A	HIV			
	2011-12	B	MNCH			

The conversion of fiscal year data to calendar year data should be done if possible by the respective institutions producing the data because usually they can use their monthly data to make the adjustments.

Tables 5 – 8 show similar data structures for other data sources used as basic input tables for the health accounts.

Table 6: Possible Expenditure Record of the CMS

Source	Yearstamp	Code of PMB	ICD-10	Facility	Region	Description	Value ZAR
CMS	2011						

Table 7: Possible Expenditure Record of the IES

Source	Yearstamp	Code	Description	Value ZAR
IES				

Table 8: Possible Expenditure Record of the GHS

Source	Yearstamp	Code	Description	Value ZAR
GHS				

Table 9: Possible Expenditure Record for NGOs

Source	Yearstamp	Code	Description	Value ZAR
NGO No				

5.3 Metadata

5.3.1 Data items, data collection, and data processing

Metadata is "data about data". It is descriptive information about a particular data set, object, or resource, including how it is formatted, and when and by whom it was collected. An example of metadata for international purposes is in the Annex, for Turkey.

For the national purposes of construction and updating of NHA at a minimum, background information should include the sources of data, data items, how data were validated (especially in the case of multiple data sources), the reasoning behind the selection of the data used in the estimation, the procedures applied to make the data usable, and more. Solid, comprehensive metadata facilitates an appropriate interpretation and use of the health accounts results. For example, trends in health expenditures can be analysed better when there is knowledge about, say, changes in the accounting system.

As a general principle the production of additional meta data in a meta data template should not be redundant and should minimize inputs from users. The metadata are part of the data inventory which includes the list of data used and the data providers. Metadata should be available on an annual basis.

Table 10: Possible record for metadata files

Source	Source Name	Data_items	Data collection		Changes
			1st year	Last year	
1					
2					

In order be able to interpret the compiled data it is necessary to gather not only the data which enable the compilation of the tri-axial system, but also information on the methods used to compile the data (see e.g. Table 17: Allocation Key 2: Tuberculosis spending).

5.3.2 Validation

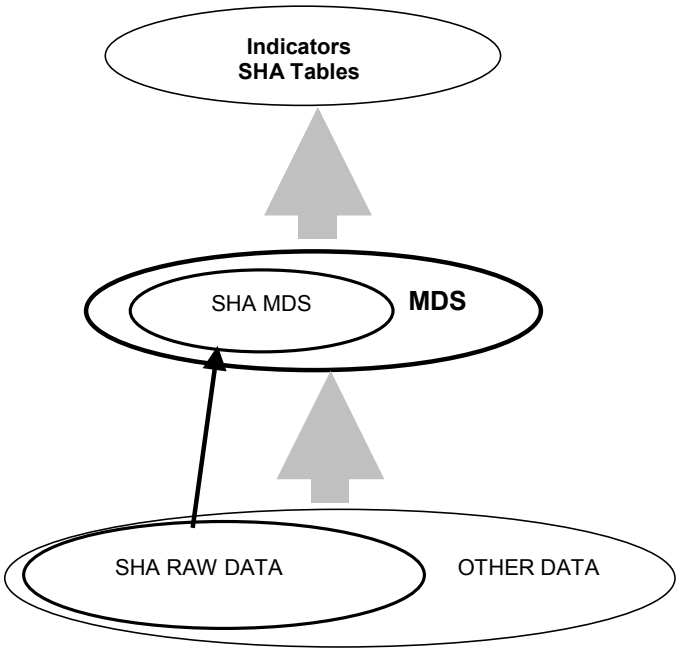
The selection of the data sources is an important part of the health accounting exercise. Accounting and statistical principles can help in the selection process. The health accounts data must be complete. Completeness can be checked by items covered in the two core classifications ICHA-HF (financing units) or to ICHA-HP (provider units). The data sources are linked to either of these economic units.

The next checks are about vertical congruence. If the data sources cover the whole range of economic units they might however overlap. To avoid double accounting clear relations has to be established. For that the horizontal congruence regarding the coverage of functions (ICHA-HC) has to be checked too. Furthermore, data should be congruent with time period and geographical border.

5.4 Organisation of the data

The national health accounts has physically to be organised in a data base which includes both the respective input data (raw data sets), the compilation rules (codebook), and the output data (SHA tables, indicators). We define the SHA Minimum Data Set (MDS) as the appropriate data set in order to be able to compile SHA indicators over time. This means that the conceptual approach should be used to define the MDS. The specific conditions of South Africa should determine only the detail of the breakdown of the indicator, but not the indicator as such (except for balancing items between the national and international boundary). Figure 6 below shows this relationship between raw data, a minimum data set and indicators produced from the MDS.

Figure 6: Relationship between raw data, a minimum data set and indicators



Source: BASYS, CEPS-INSTEAD, IRDES, IGSS (2005), p. 25.

6. Mapping

The mapping of categories of national health expenditures to the International Classification of Health Accounts (ICHA) has to be down for each raw data set. In order to avoid duplication of work not the values are classified as such but “only” the categories of the respective national classifications. The full potential of the national classifications should be used.

In the case of South Africa, it is recommended to start the mapping from the main data sources at the financing side. Usually, these data sources represent one type of financing schemes. The following exercise lists four data sources of financing schemes.

Crucial for the compilation are the links with international classifications of SHA 2011, particularly the three core dimension of the International Classification of Health Accounts (ICHA). This step includes a detailed mapping of present national classifications with the international classifications.

6.1 Classifications

6.1.1 The International Classification of Health Accounts (ICHA)

This first version of the Compilation Guide concentrates on the three core classification of health expenditures by financing schemes (ICHA-HF), healthcare providers (ICHA-HP) and health functions (ICHA-HC).

- ICHA-HF: The classification of health expenditures by financing schemes provides basic insight into the compulsory and voluntary coverage of health services. It is easily possible to add the classification of financing agents ICHA-FA. A further extension is the classification of financing sources ICHA-FS. These two additional financing dimensions of SHA 2011 will be discussed in chapter 8.4.4.

- ICHA-HP: The classification by providers defines the universe and the structure of providers of the system. If necessary, link to ISIC/SNA can simultaneously be coded. Basic work is already done by Statistics South Africa in the context of SNA. Furthermore, the possible break down with respect to the mode of provision has to be discussed.

- ICHA-HC: The classification of health functions defines the boundary of the health account system. Each relevant national data item has to be mapped with the functional classifications. The interpretation of functions in a broader context includes cost-of illness and a breakdown of expenditures by age and gender. Furthermore, special accounting systems as HIV accounts will be reviewed here.

As any other classification scheme, the health expenses have to be allocated to exactly one category without duplication or omission; the ICHA classification is therefore mutually exclusive and exhaustive.

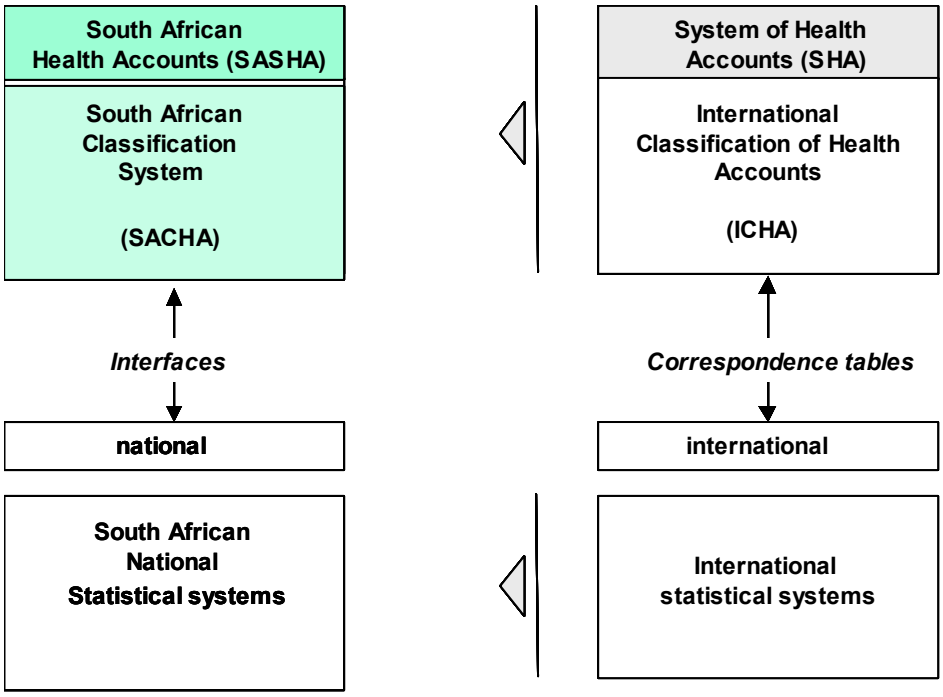
As the system will be built up from the financing side, the data from the various financing schemes are the starting point. The consistent breakdown of total health expenditure will require a multi-dimensional system of compilations linked with the ICHA. The output should be a data file which allows filling the basic cross-classification tables of SHA 2011.

If possible, the SASHA should be directly linked to the existing data systems so that up-dates are integrated in the annual budget cycle and statistical program.

6.1.2. Relation between national and international classifications

National and international classifications serve different purposes. Most general statistical classifications of the South African Statistical System have been developed based on international classifications. Figure 7 sketches these relations. This facilitates the development of SASHA in South Africa significantly.

Figure 7: SASHA in national and international context



The use of national classifications should use the full capacity of existing statistics and available data sources.

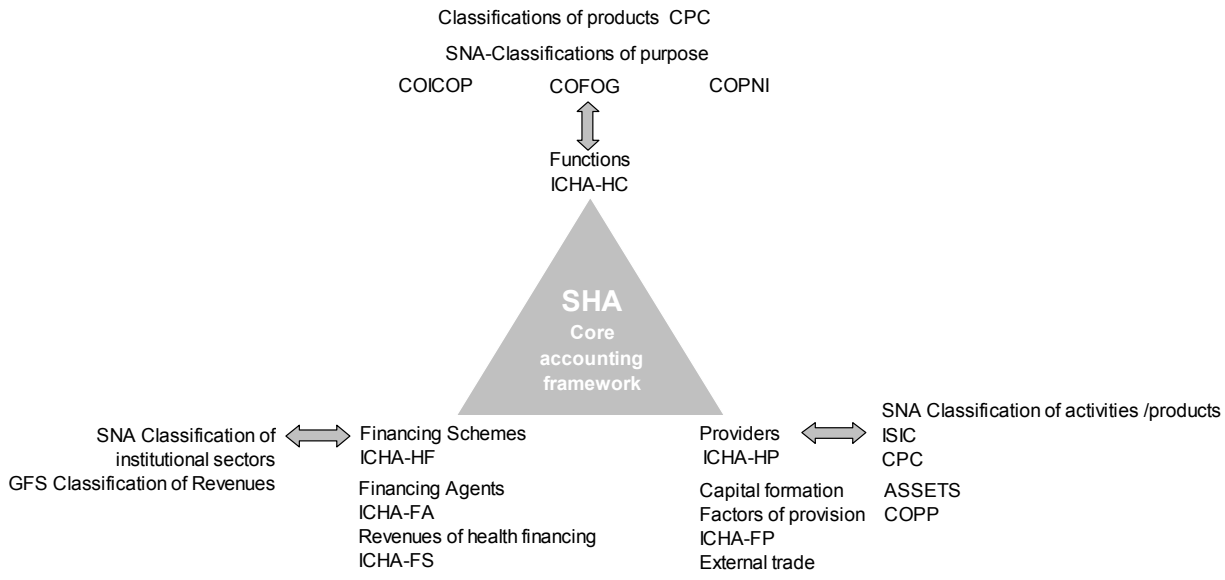
As mentioned above SASHA is firstly organised between relations HF-HP (payer-provider) by adding in a second step the functional classification HC (type of care) which leads to a tri-axial system for the recording of health expenditure. Presently, the HC coding in South Africa is not completed because the data sources for splitting transactions by function are rather

limited. The main reason is that there is neither a comprehensive payment system by activities implemented nor a system of cost accounting by cost centres in health care provider units.

6.1.3. Relation among international classifications

Many national statistics use international classifications. Figure 8 shows in an illustrative way some of the potential linkages that can be made between classifications of the core accounting framework of the SHA and international classifications used by other statistical systems that encompass information related to health care expenditure. From the SNA perspective, the top of the triangle represents final demand of health care goods and services by residents, while the bottom right illustrates the supply side of health care. In SNA, to structure supply and use the Industrial classifications of economic activities (ISIC), which classifies enterprises and establishments into groups of industrial branches, and Product classification (CPC) is used. Furthermore, to analyse economic behaviour, these enterprises and establishments are classified as mutually exclusive "institutional units" and grouped into "institutional sectors" in the sector accounts of SNA. The providers in SHÁ and the institutional sectors of SNA could be linked by grouping the providers according to SNA rules. However, one should note that SHA classifies each financing organisation (except households) into two separate statistical units; providers of administration (HP.7) and financing schemes (HF), while SNA classifies each organisation as only one institutional unit grouped into one of the five institutional sectors and further subsectors (see SHA 2011, Annex 1).

Figure 8: Correspondence between Classifications of the SNA and the SHA



Source: Adapted from SHA 2011.

The functional classifications of private expenditures (COICOP) and government expenditures (COFOG) are widely used. For example, Table 14 shows Out-of-pocket expenditures of South Africans by COICOP codes and possible links to SHA codes (see also SHA 2011, Annex 1).

The bottom left of the triangle shows the potential relationship of the financing interface with the SNA Classification of institutional sectors and the Government Finance Statistics (GFS) Classification of revenues.

In the next part we will describe the estimation of government expenditures.

6.2 Government expenditures – HF.1

In principle, all raw health expenditure data extracted from the BAS can be kept in one file (see Table 4). However, because of the various national responsibilities and related performance indicators one might split this file into several tables. The split should be decided based on the experience to extract Table 4 from the BAS system. It should be not split by territory or responsibilities, in order to secure consistency, but by criteria of the accounting tables, like current expenditures and capital expenditures.

6.2.1 National Treasury/Department of Health (Vote 16)

It is recommended to map the data of the National Department of Health at the level of the programmes, because programmes are close to the functional classification (see Table 11).

Particular items to be considered include

- In the current accounts, the mapping with the international codes excludes infrastructure administration of programme 1 “Administration”.
- Financial Management includes also revenue collections (not yet included)
- Sector-wide procurement should clearly distinguish between current activities and capital formation.
- Health Financing and National Health Insurance
- International Health and Development
- HIV and AIDS, TB and Maternal and Child Health (to be split by functions)
- Human Resources for Health should be classified like capital formation.
- South African Medical Research Council is outside the boundary
- District Services and Environmental Health (to be split by functions),
- Communicable Diseases (to be split by functions),
- Non-Communicable Diseases (to be split by functions),
- Health Promotion and Nutrition,
- Violence, Trauma and EMS.
- Food Control (as a part of the national classification),
- Pharmaceutical Trade and Product Regulation,

- Public Entities Management[34],
- Office of Standards Compliance,
- Compensation Commissioner for Occupational Diseases and Occupational Health.
- National Health Laboratory Service,
- Compensation Commissioner for Occupational Diseases in Mines and Works,
- Council for Medical Schemes (to be classified under government administration)[35].

The following table list the various programmes of the NDoH, which is coded as HF.1.1.1. The two columns SHA and SASHA show whether the programmes are part of the core accounts of SHA or SASHA. In the case of SHA the table adds the HP and HC codes of ICHA. This allows a full compilation of the 3-dimensional cube[36].

It is absolutely necessary, to reconsider the assumptions used for the classification of all items below, e.g. Financial management, Health Information. Furthermore, all keys need to be checked. One might consider a key for Tertiary services, as they both transfer conditional grant to hospitals and do policy and monitoring. However, the cost of administration of services within provider units are not part of HP.7 Administration, but part of the overhead cost of services.

Box 2: Time of recording

The timing of recording of final consumption expenditures within SHA has two elements:
- Calendar year versus fiscal year;
- Accrual versus cash accounting.

For the purposes of international comparability, the calendar year is preferred.

Furthermore, SHA 2011 recommends "health accounts should use the accrual method, in which expenditures are attributed to the time period during which the economic value was created, rather than the cash method, in which expenditures are registered when the actual cash disbursements took place. In the cash basis of accounting a transaction is recorded only if cash has been exchanged and at the time that this exchange takes place. As the BAS system is mainly based on cash basis, in practice, both cash and accrual might be used. The method should be documented.

[34] Public Entities Management provides policy frameworks for health public entities and statutory health professions councils with regard to planning, budgeting procedures, ownership, governance, remuneration, accountability, and financial reporting and oversight. The bulk of this subprogramme's budget is transferred to the Medical Research Council, the National Health Laboratory Service and the Council for Medical Schemes. The subprogramme supports the executive authority's oversight responsibility for the following statutory health professional councils: the Allied Health Professions Council of South Africa, the Health Professions Council of South Africa, the South African Pharmacy Council, the South African Dental Technicians Council of South Africa, the South African Nursing Council and the Interim Traditional Health Practitioners Council.

[35] Only the NDoH expenditures for the CMS have to classified as HF.1 not the administration financed by the contributions of their members.

[36] In practice, one might add additional dimensions, depending on the classifications considered. For the purpose of this study a 4-dimensional vector space was compiled including HC; HP, HF, and SACHA-C (see chapter 8. Compilations and Output).

Table 11: Mapping programmes of the National Department of Health – HF.1.1.1

CODE	OBJECTIVES	SHA	ICHA-HP	ICHA-HC	SASHA
11	Ministry	x	HP.7.1	HC.7.1	x
12	Management	x	HP.7.1	HC.7.1	x
13	Corporate Services	x	HP.7.1	HC.7.1	x
14	Office Accommodation				x
15	Financial Management	x	HP.7.2	HC.7.2	x
21	Technical Policy and Planning	x	HP.7.1	HC.7.1	x
22	Health Information Management, Monitoring and Evaluation	x	HP.6	HC.6	x
23	Sector-wide Procurement	x	HP.7.1	HC.7.1	x
24	Health Financing and National Health Insurance				x
25	International Health and Development				x
31	HIV and AIDS	x	Key 01	Key 01	x
32	Tuberculosis	x	Key 02	Key 02	x
33	Women's Maternal and Reproductive Health	x	Key 03	Key 03	x
34	Child, Youth and School Health	x	Key 04	Key 04	x
41	District Services and Environmental Health	x	Key 05	Key 05	x
42	Communicable Diseases	x	Key 06	Key 06	x
43	Non-Communicable Diseases	x	Key 07	Key 07	x
44	Health Promotion and Nutrition	x	Key 08	Key 08	x
45	Violence, Trauma and EMS	x	Key 09	Key 09	x
51	Health Facilities Infrastructure Management				x
52	Tertiary Health Care Planning and Policy	x	HP.1.1	HC.1	x
53	Hospital Management	x			x
54	Human Resources for Health	x			x
55	Nursing Services	x			x
56	Forensic Chemistry Laboratories	x	HP.4.2	HC.4.1	x
61	Food Control	x			x
62	Pharmaceutical Trade and Product Regulation	x			x
63	Public Entities Management	x	HP.7.1	HC.7.1	x
64	Office of Standards Compliance	x	HP.7.1	HC.7.1	x
65	Compensation Commissioner for Occ. Diseases / Health	x			x

In some cases it is not possible to link the expenditures of the programmes 100 per cent to one classification item of ICHA. In those cases it is necessary to split the expenditures by keys. The respective keys have to be listed in the table (see chapter 7. Allocation keys).

It is proposed to keep all programmes of the NDoH in the file and include those items not falling in the international boundary of ICHA in the wider system of SASHA as separate items.

6.2.2 National Treasury/Provincial Departments of Health

The mapping follows the programme items received from the National Treasury. Please take in note that in the excel sheet, the compilations are made at the level of the 8 provincial programmes. The further compilations should be made at a more detailed level.

Table 12: Mapping programmes of the Provincial Departments of Health – HF.1.1.2

CODE	OBJECTIVES	SHA	ICHA-HP	ICHA-HC	SASHA
100	Administration				
101	Management	x	HP.7.1	HC.7.1	x
200	District Health Services				
201	District Management	x	HP.7.1	HC.7.1	x
202	Community Health Clinics	x	HP.3.4	key_1.2.1	x
203	Community Health Centres	x	HP.3.4	key_1.2.2	x
204	Community Based Services	x	HP.3.4	key_1.2.3	x
205	Other Community Services	x	HP.3.4	key_1.2.4	x
206	HIV/Aids	x	HP.3.4	key_1.2.5	x
207	Nutrition				x
208	Coroner Services	x	HP.7.1	HC.6	x
209	District Hospitals	x	HP.1.1	key_1.2.6	x
300	Emergency Medical Service				
301	Emergency Transport	x	HP.4.1	HC.4.3	x
302	Planned Patient Transport	x	HP.4.2	HC.4.3	x
400	Provincial Hospital Services				
401	General (Regional) Hospitals	x	HP.1.1	key_1.2.6	x
402	TB Hospitals	x	HP.1.3	key_1.2.7	x
403	Psychiatric Mental Hospitals	x	HP.1.2	key_1.2.8	x
500	Central Hospital Services				
501	Provincial Tertiary Services	x	HP.1.1	key_1.2.9	x
600	Health Science & Training				
601	Nursing Training Colleges				x
602	EMS Training College				x
603	Bursaries				x
604	Other Training				x
700	Health Care And Support Serv				
701	Orthotic & Prosthetic Serv	x	HP.5.2	HC.5.2	x
702	Medicine Trading Account	x	HP.5.1	HC.5.1	x
800	Health Facilities Management				
801	Community Health Facilities				x
802	Emergncy Medical Rescue Serv				x
803	District Hospital Services				x
804	Provincial Hospital Services				x
805	Other Facilities				x

Table 12 has the same structure and logic as Table 11. The codes listed under the headings ICHA-HP and ICHA-HC are only tentative and need to be verified. The keys need to be elaborated in more detail.

The next part will map the private expenditures on health into the SASHA.

6.3 Private Expenditures

6.3.1 Medical Schemes – HF.2.1

The classifications developed by the CMS comprise detailed information -both financial and non-financial – about utilisation about hospitals, medical specialities as well as support professions. In international comparisons such detailed information is not requested. It is therefore necessary to decide what information must be kept for valid coding of the data record to the ICHA.

Table 13 provides a first mapping exercise which is only a suggestion. The structure has to be discussed in detail with CMS, and further improved. For example, some expenditures are currently classified as HC.9 "Other health care services not elsewhere classified". Most of these expenditures might be attributed to specific HC codes.

Table 13: Mapping the Health Expenditure of Medical Schemes – HF.2.1

Group of Services	Type of Services	SHA	ICHA-HP	ICHA-HC	SASHA
General practitioners	General practitioners	x	HP.3.1	HC.1	x
Medical specialists	Medical specialists	x	HP.3.1	HC.1	x
Medical specialists	Dermatologists	x	HP.3.1	HC.1	x
Medical specialists	Gynaecologists	x	HP.3.1	HC.1	x
Medical specialists	Pulmonologists	x	HP.3.1	HC.1	x
Medical specialists	Surgeons	x	HP.3.1	HC.1	x
Medical specialists	Thoracic surgeons	x	HP.3.1	HC.1	x
Medical specialists	others	x	HP.3.1	HC.1	x
Clinical support specialists	Anaesthetists	x	HP.1.1	HC.1	x
Clinical support specialists	Radiologists	x	HP.1.1	HC.1	x
Clinical support specialists	Pathologists	x	HP.1.1	HC.1	x
Clinical support specialists	Other medical & clinical support specialists	x	HP.1.1	HC.1	x
Dentists	Dentists	x	HP.3.2	HC.1	x
Dental specialists	Dental therapists	x	HP.3.2	HC.1	x
Dental specialists	Dental technicians	x	HP.3.2	HC.1	x
Dental specialists	Maxilla, facial & oral surgeons	x	HP.3.2	HC.1	x
Support & allied health	Art therapy	x	HP.3.3	HC.2	x
Support & allied health	Audiologists	x	HP.3.3	HC.2	x
Support & allied health	Homeopaths	x	HP.3.3	HC.2	x
Support & allied health	Naturopaths & phytotherapists	x	HP.3.3	HC.2	x
Support & allied health	Massage, aromatherapy & reflexology	x	HP.3.3	HC.2	x
Support & allied health	Other support & allied health professionals	x	HP.3.3	HC.2	x
Unattached operating theatres &	Ward fees	x	HP.1.1	HC.1	x
Unattached operating theatres &	Theatre fees	x	HP.1.1	HC.1	x
Provincial hospitals	Consumables	x	HP.1.1	HC.1	x
Provincial hospitals	Equipment	x	HP.1.1	HC.1	x
Provincial hospitals	Procedure	x	HP.1.1	HC.1	x
Provincial hospitals	Medicine	x	HP.1.1	HC.1	x
Provincial hospitals	Other	x	HP.1.1	HC.1	x
Total medicine	Medicine dispensed by pharmacists	x	HP.5.1	HC.5.1	x
Total medicine	Medicine dispensed by practitioners	x	HP.3.1	HC.5.1	x
Total medicine	Medicine dispensed by medical specialists	x	HP.3.1	HC.5.1	x
Total medicine	Medicine dispenced by support & allied health	x	HP.3.3	HC.5.1	x
Total medicine	Medicine dispensed by other health	x	HP.3.3	HC.5.1	x
Ex gratia payments	Ex gratia payments				
Other benefits	Basic life support	x	HP.3.5	HC.5.1	x
Other benefits	Intermediate life support	x	HP.3.5	HC.5.1	x
Other benefits	Mental health institution	x	HP.4.9	HC.9	x
Other benefits	Subacute / step-down facilities	x	HP.4.9	HC.9	x
Other benefits	Other	x	HP.4.9	HC.9	x
Managed care (out-of-hospital)	Primary network	x	HP.4.9	HC.9	x
Managed care (out-of-hospital)	Staff model	x	HP.4.9	HC.9	x
Managed care (out-of-hospital)	Other	x	HP.4.9	HC.9	x

6.3.2 Out-of-Pocket Expenditures – HF.3

The compilation of total OOP expenditures requires both determining the total and the structure of OOP (Rannan-Eliya 2008). OECD Guidelines ((Rannan-Eliya, Lorenzioni 2010) recommend an integrated approach which uses information about financing rules and revenues of providers. Cross-validation is an important part of the compilation process of private expenditures.

In South Africa, the different co-payment structures for members of the medical schemes and in the public system should be considered. For example, Mctyre, Thiede 2007 report that pharmacists were charging patients an extra 'administration fee', not covered by medical schemes, in order to maintain their income levels. However, this practice is now illegal, and an issue of recording illegal practices.

A two step approach is used here. In the first step, the total OOP expenditures are determined by applying the share of OOP from IES to total household consumption. In the second step the IES structure is used to compile the structure of OOP expenditures. By this, consistency with national accounts is kept.[37]

Table 14: Mapping Out-of-Pocket Expenditures – HF.3

Code	Type of Services	SHA	ICHA-HP	ICHA-HC	SASHA
601	Pharmaceutical products	x	HP.5.1	HC.5.1	x
602	Other medical products	x	HP.5.2	HC.5.2	x
603	Therapeutic appliances and equipment	x	HP.1.1	HC.5.2	x
604	Medical services	x	HP.3.1	HC.1	x
605	Dental services	x	HP.3.2	HC.1	x
606	Paramedic services	x	HP.3.3	HC.2	x
607	Hospital services	x	HP.1.1	HC.1	x

Table 14 presents in the first column COICOP Codes. For example, "603 Therapeutic appliances and equipment" is here linked to HP.1.1, which assumes that these appliances are provided by hospitals (HP.1.1). However, in reality a part might be provided by sanitary shops (HP.5.2). In that case, the allocation should be made by a key (e.g. 70% HP.1.1 and 30% HP.5.2).

[37] Any further elaboration of this procedure requires close co-operation with national accounts.

7. Allocation keys

In order to map the above mentioned data with the ICHA-HC it is necessary to take additional information into consideration. The following section gives an overview about allocation keys for those national classification items which cannot be mapped directly 1:1 with the items of ICHA. Allocation keys require always additional information. In the following, examples of keys are discussed.

7.1 List of allocation keys

The list of allocation keys is one output of the mapping exercise. Allocation keys are always coded by the national transaction identifier, which is linked to HF-data source and/or by the HP-codes and HC-codes.

The "No" and "Description" of the keys listed in Table 15 are derived from the keys listed in Table 11: Mapping programmes of the National Department of Health – HF.1.1.1. As the programmes use different types of providers , also the keys need to be adapted.

The column "Application" in the Table 15 describes the relevant records of the data source. Further information should include whether the keys are "fix" or "dynamic", what are the compilation rules and data sources. Insofar possible keys should always be dynamic, which means that keys annually change. For example, the allocation of pharmaceutical expenditures on HIV and TB depend on prevalence rates and prices. Both variables annually change. Therefore the allocation key for pharmaceuticals will likely also change.

Table 15: List of allocation keys

No	Description	Application	Mode
K01	HIV and AIDs spending	31, 201	fix
K02	TB	32, 202	fix
K03	Women's Maternal and Reproductive Health		
K04	Child, Youth and School Health		
K05	District Services and Environmental Health		
K06	Communicable Diseases		
K07	Non-Communicable Diseases		
K08	Health Promotion and Nutrition		
K09	Violence, Trauma and EMS		
K10	Outpatient cure of district hospitals		
K11	Rehabilitation		
K12	Laboratory Services		
K13	Imaging services		
K14	Patient transportation		
K15	Compensation Commissioner for Occup. Diseases,		fix
K16	etc.		

7.2 Selected allocation keys

7.2.1 HIV and AIDS

Information about the structure of the HIV and Aids Spending is available from CEGAA (2013). This report uses the classification of the National AIDS Spending Assessments (NASA) for tracking resources of the national responses to the HIV epidemic. The NASA methodology is presented in the NASA Notebook. The AIDS spending categories (ASC) of NASA are closely related to SHA categories (see UNAIDS 2009).

The spending of the item "HIV and AIDS" is highly determined by the numbers of people on antiretroviral treatment. It is recommend using as allocation key the results of the CEGAA report for all financing programmes at this stage of SASHA compilation:

Table 16: Allocation Key 1: Public HIV and AIDS spending

National code	ICHA-HP	%	ICHA-HC	%	explanation
31	HP.3		HC.1.3	6	community based programs
31	HP.5		HC.5.1	70	antiretroviral treatment
31	HP.6		HC.6	17	HIV prevention
31	HP.7		HC.7.1	7	management

Source: Nhlanhla Ndlovu (2012), R1 trillion public spending in South Africa in 2012/13: What's in there for health and HIV/AIDS? CEGAA: Budget Policy Brief 5 : 23 February 2012.

Most development partners are engaged in HIV prevention, treatment, and care, including UNAIDS, UNFPA, UNICEF, WHO, US Government partners, EU, and GIZ. The US President's Emergency Plan for AIDS Relief (PEPFAR) has contributed roughly R4 billion per year towards the South African national HIV and AIDS and tuberculosis response. For analytical reason as well as for the reconciliation of results is important to have the complete overview of the effects of allocation keys.

7.2.2 Tuberculosis

In the case of expenditures for tuberculosis patients investments have to be excluded from the compilation of the key. For example, the NDOH has improved the diagnostic capacity for sputum negative TB by rapid scale-up of GeneXpert coverage, with a target of 800,000 tests during 2013/14. Many agencies are actively supporting high impact interventions in TB (GeneXpert and MDR/XDR supporting systems), including PEPFAR (USAID and CDC), USAID with non-PEPFAR funds, and WHO. The World Bank is also conducting analytical work to estimate the economic benefits of investments in TB control with a focus on the mining industry. WHO and the World Bank are supporting interventions on TB in the mining sector, including harmonization of treatment guidelines; and DfID and the World Bank are supporting private sector involvement in TB care and treatment. GIZ, US Government, UNAIDS and WHO are actively involved in Global Fund proposal preparations, to generate a higher levels of resources for HIV and TB. Much of this expenditure is not relevant for the

compilation of the key. Better is to use costing data from hospitals or special studies about the cost of tuberculosis to derive the allocation structure.

The key might have the following structure for tuberculosis expenditure (see Pooran et al 2013, Figure 2).

Table 17: Allocation Key 2: Tuberculosis spending

National code	ICHA-HP	%	ICHA-HC	%	explanation
32	HP.1.3		HC.1	11	Hospitalization
32	HP.3.1		HC.2	14	Outpatient treatment, rehabilitation
32	HP.4.9		HC.4	37	Diagnostic services
32	HP.5.1		HC.5.1	35	Pharmaceuticals, Anti TB-drugs
32	HP.6		HC.6		(TB prevention)
32	HP.7.1		HC.9	3	Others

Table 17 provides the compilation base for the second allocation key listed in Table 15 which is related to Tuberculosis. As long as not detailed spending structures are available by financing schemes and programmes it is recommend to use the same allocation key independently of the programme. Not yet included are the prevention expenditures which are likely compiled as part of administrative expenditures (to be further analysed in future).

7.2.3 Outpatient cure of district hospitals

In SHA, expenditures for inpatient cases, day cases, and outpatient cases should be separated by type of hospitals. Public hospitals in South Africa do not regularly report on the cost of inpatient and outpatient services they render. In SHA, the categories relating to cure, rehabilitation and long-term care (HC.1-HC.3) are broken down at the second level of classification by a mode-of-provision (MoP) approach, which is based on the specific organisational and technological arrangements of the services consumed. Estimates are possible by applying utilization rates and unit costs. In case that the SASHA will be developed under the national level into provincial level, the calculation should also reflect the specific situation in individual provinces.

(Not yet compiled)

Table 18: Allocation Key 3: Outpatient cure of district hospitals

National code	ICHA-HP	%	ICHA-HC	%	explanation

For private hospitals separate estimates are necessary. Data are available from Medical Aid schemes and surveys of the Hospital Association of South Africa.[38] Econex 2011 provides the following information from healthcare funders as estimate for the split between private in-hospital claims (i.e. costs related to hospital visits, including associated specialist or other costs) and out-of-hospital claims (i.e. doctors' visits at their private practices, for instance) is about 54/46.[39]

A study commissioned by the Hospital Association has compared unit costs for inpatient stays in the public and private sector (Ramjee 2013) by using data on public sector hospitals from the Annual Performance Plans published by each provincial Department of Health, the indicators of South African Health Review published by the Health System Trust (Day et al. 2011, 2013), and the District Barometer Report. One should be aware, that the "Cost per Patient Day Equivalent (PDE)" is not appropriate in the case of SHA, because inpatient and outpatient information is aggregated.[40]

7.3 Data Gaps

Modern national statistics provide a comprehensive picture about demand and supply in health care as well as health care financing. South Africa has developed a very comprehensive statistical system which makes the compilation of national health accounts possible. However, the three key functions (HF, HP, HC, etc.) of the International Classification of Health Accounts (ICHA) of SHA comprise several expenditure terms which require specific estimates. Particularly the combination of these classifications might be challenging to compile. Such an item is, for example, the non-for-profit expenditure for long-term care at home, or the expenditure for preventive care in medical practices by households. Obviously, data gaps increase with the level of detail requested by health accounts. It makes a huge difference if one wants to compile a 8 x 10 x 10 cube (= 800 cells) or a 8 x 15 x 20 cube (= 2,400 cells). In practice it is hardly possible to check all these single cells. Therefore, the compilation has to start with the broad categories, and then step by step refined.

[38] The Hospital Association of South Africa (HASA) was established in 1996. In 2011, HASA members have comprised a total of 209 private hospitals representing 27,789 beds; that is more than 85% of the private hospital industry in South Africa (in terms of operational beds).
[39] It has to be checked whether in-hospital visits include hospital out patient care.
[40] PDE is the Inpatient days total + Day Patients * 0.5 + (Emergency headcount + OPD headcount total) * 0.33333333 (see Day et al. 2013: 294).

8. Compilation and Outputs

The health accounts are structured in a sequence of records and accounts components that include current accounts (financing and provision), capital accounts, disease accounts, and other accounts. Totals of current accounts and disease accounts are equal. Balancing items exist in the financial accounts and capital accounts. This report focuses on the health expenditures of the current accounts, which serve for international comparisons and is recommended by SHA 2011 Manual.

The compilation of the current accounts requires in all countries pooling together multiple data sources based on rules which will lead to national health expenditure estimates in a consistent and reproducible way. As discussed in the last chapters the mapping of data items along the three international core classifications provide the basis for the compilation of the 3-dimensional SHA cube. This chapter will show how in practice the compilation is organised and possible output tables. Please note that this only an exercise of compilation and aims not to compile exactly the health expenditures of South Africa, because much more input and time is necessary for such an compilation than in this project was available.

8.1 Overview

The compilation of Health Accounts requires in all countries pooling together multiple data sources based on rules which will lead to national health expenditure estimates in a consistent and reproducible way. Figure 9 shows major steps in the compilation.

Figure 9: Compilation Steps (from input to output)

	Compilation steps
Input	1. Define universe of health accounts actors, production consumption boundary, classifications;
↓	2. Make physically available all existing data sources;
↓	3. Describe the classifying categories used in these data sources;
↓	4. Identify data gaps
↓	5. Decide how to fill the data gaps, and provide respective estimates;
↓	6. Prepare data sources by separating health items from non-health items;
↓	7. Map data characteristics with health accounts classifications;
↓	8. Identify cases where transformation needs manual adaptation or estimates;
↓	9. Compile keys and estimates for missing categories;
↓	10. Organise the compilation sequence
↓	11. Document the assumptions and the compilation process
Output	12. Compile and reconcile the final national/international health accounts data set

Source: BASYS: Adapted from TOSHA.

As the health accounts mature and the underlying data sources are refined and strengthened, more detail and more aspects of the health system can be introduced. In the first step it is important that the tri-axial accounts are compiled both for the ICHA and the SACHA. Further

dimensions can be added with the growing experience in doing the accounts. Moving to a full satellite accounts will require continuous improvement.

It is possible to start immediately health accounts based on data of BAS, CMS data, and private health expenditure data from StatsSA and SARB at the national level.

8.2 Data tables

The Excel-file SASHA_2014_05_03presents relevant input tables for the compilation, their summary in a pivot table and the output tables. To avoid any corruption the pivot table is not linked to the input tables.

There are different tables necessary for the compilation. In the long-run it would be good to organise these tables in database. The following tables should be distinguishes

A health accounts administrative tables
- data definitions
- data sources
- data units
- population data
- definition of regions
- organisation tables
- classifications
- keys

B Health accounts data sources
- public
- private

C Correspondence and value tables

D Output tables

Usually, the annual update of the Tables B includes changes in the national classifications, e.g. by new government programmes. As a consequence, also health accounts administrative tables (Tables A) and the Correspondence tables C have to be modified. But the work is limited to few items. Establishing the system is the major work.

8.3 Compilation

There are several options to organise the compilation in practice. Obviously the interface to the national data sources is an important criteria. In the case that the accounts are built up from individual records of health insurance huge data volumes are involved. Then compilations based on spread sheets are not more possible. For example, the Czech Ministry of Health have been built up national health accounts using a database of several million records.

Table 19 shows an extract of the SASHA cube (HC,HP, HF) related to the three international core classification. The table allows different views on the tri-axial cube (output). SHA 2011 makes proposals for various tables. We will focus in this report on the three standard tables (see Box 3). By adding national classifications (from SACHA) and additional international classifications further views will be possible (see section 8.4.5).

Table 19: Extract of SASHA (HF, HP, HC Cube)

NC	Programmes	FY2009/10	FY2010/11	FY2011/12	HF_2	HP_2	HC_2
11	Ministry	22,1	25,9	27,3	HF.1	HP.7.1	HC.7.1
12	Management	29,5	29,8	31,4	HF.1	HP.7.1	HC.7.1
13	Corporate Services	134,9	126,2	145,3	HF.1	HP.7.1	HC.7.1
14	Office Accommodation	46,4	55,2	92,1			
15	Financial Management	40,5	25,9	32,2	HF.1	HP.7.2	HC.1,2,6
21	Technical Policy and Planning	–	–	2,6	HF.1	HP.7.1	HC.1,2,6
22	Health Information Management, Monitoring and Evaluation	39,1	21,6	51,9	HF.1	HP.6	HC.1,2,6
23	Sector-wide Procurement	15,2	13,1	15,6	HF.1	HP.7.2	HC.1,2,6
24	Health Financing and National Health Insurance	53,4	26,6	39,8			
25	International Health and Development	35,0	35,9	51,2			
31	HIV and AIDS	4.851,6	6.404,3	7.852,9	HF.1	HP.6	HC.6
32	Tuberculosis	16,4	15,8	16,6	HF.1	HP.1.1	HC.1,2,6
33	Women's Maternal and Reproductive Health	10,3	11,8	15,5	HF.2	HP.3.4.1	HC.6
34	Child, Youth and School Health	45,2	39,4	29,9	HF.1	HP.4.1	HC.4.3
41	District Services and Environmental Health	11,6	28,9	45,0	HF.1	HP.4.2	HC.4.3
42	Communicable Diseases	204,2	14,0	9,7	HF.1	HP.6	HC.6
43	Non-Communicable Diseases	18,3	25,7	24,2	HF.1	HP.1.1	HC.1,2,6
44	Health Promotion and Nutrition	11,3	10,2	12,3	HF.1	HP.1.3	HC.1,2,6
45	Violence, Trauma and EMS	4,2	3,5	3,7	HF.1	HP.1.2	HC.1,2
51	Health Facilities Infrastructure Management	4.198,8	5.191,5	5.985,9			
52	Tertiary Health Care Planning and Policy	6.616,4	7.400,7	8.051,8	HF.1	HP.1.1	HC.1,2,6
53	Hospital Management	3,8	3,0	9,4			
54	Human Resources for Health	1.790,5	1.880,5	2.001,0			
55	Nursing Services	–	–	–			
56	Forensic Chemistry Laboratories	529,8	589,9	650,3	HF.1	HP.4.2	HC.4.1
61	Food Control	5,4	5,8	5,8			
62	Pharmaceutical Trade and Product Regulation	55,2	67,7	71,3			
63	Public Entities Management	334,6	418,0	378,1	HF.1	HP.5.2	HC.5.2
64	Office of Standards Compliance	16,3	18,7	26,2	HF.1	HP.5.1	HC.5.1
65	Compensation Commissioner for Occup. Diseases, Health	28,7	30,6	33,9			
1	ADMINISTRATION	3402,7	2674,1	3091,3	HF.1	HP.7.1	HC.7.1
2	DISTRICT HEALTH SERVICES	37000,1	42485,9	47497,4	HF.1	HP.1.1	HC.1,2,6
3	EMERGENCY MEDICAL SERVICES	3459,2	3863,0	4620,4	HF.1	HP.1.1	HC.1
4	PROVINCIAL HOSPITAL SERVICES	18502,2	20754,4	23060,6	HF.1	HP.1.1	HC.1,2,6
5	CENTRAL HOSPITAL SERVICES	15065,6	16793,0	19793,4	HF.1	HP.1.2	HC.1,2,6
6	HEALTH SCIENCE AND TRAINING	2935,0	3313,8	3467,2			
7	HEALTH CARE SUPPORT SERVICES	1395,2	1496,2	1555,0	HF.1	HP.5.2	HC.5.2
8	HEALTH FACILITIES MANAGEMENT	6704,6	6582,8	8191,4			
1000	General practitioners			6842,0	HF.2	HP.3.1	HC.1
2001	Medical specialists			11043,6	HF.2	HP.3.1	HC.1
2002	Dermatologists			150,2	HF.2	HP.3.1	HC.1

8.4 Outputs

The pivot table includes the full tri-axial approach which guarantees that the value of health care goods and services estimated from the consumption side should coincide with the values estimated from the provision and the financing sides. Thus, the cross-classification of the three axes or dimensions defines a basic set of tables with credible national health accounts estimates that South Africa might expect to produce and report. Experience in countries where health accounts have been created indicates that the application of the three classifications

(functions, providers and financing schemes) is critical to obtaining a realistic estimate of total current health spending.

Box 3: Tri-axial accounts

The tri-axial account of SHA is usually presented by three cross-classifications of expenditures according to the three main dimensions of the tri-axial approach of the SHA: If HC, HP, and HF represent the respective health expenditure vectors, the following equation holds for current health expenditures (CHE):

(1a) CHE = e'*HF = e'*HC =e'HP

e' represents the transposed unit vector, which differs by length depending on the total number of items of the classification.

The following three cross-classifications are standard tables derived from this 3-axial approach.
HCxHP: Health care functions and Health care provision
HPxHF: Health care provision and Health financing schemes
HCxHF: Health care functions and Health financing schemes.

8.4.1 Health care financing and health care providers – HFxHP

The cross-classification table health care financing and health care providers describes how funds are distributed across different types of providers and addresses the question, "who funds who". Table 20 shows first estimates of the exercise at 2-digit level for HP codes and the 1-digit level Foreign Funds not yet included. The table allows the user to identify those providers where resources are concentrated and their funding paths. Experience with health accounting has shown that the HPxHF table is an important tool for estimating total current health spending, and it should be an early focus in the initial work. For example, The preliminary estimates of Table 20 show that most public and voluntary funding goes to "HP.1.1 General hospitals".

A further decomposition of HF.3 out-of-pocket expenditure into CMS-Members and the rest of the population and HP into public and private providers could give a more accurate as well as policy-relevant estimate.

Table 20: Health care financing and health care providers (HFxHP), Rmillion, (to be further developed)

Summe - FY2011/12	HF_1digit				
HP_2digit	HF.1	HF.2	HF.3	HF.4	total
HP.1.1	83254	44388	861		128504
HP.1.2	19797				19797
HP.1.3	14				14
HP.2.2		376			376
HP.2.9		108			108
HP.3.1	2	29393	9033		38428
HP.3.2		3257	1887		5145
HP.3.3		7426	880		8306
HP.3.4	471	16			487
HP.3.5		281			281
HP.4.1	30				30
HP.4.2	695				695
HP.4.9	6	4403			4409
HP.5.1	5503	13816	11965		31284
HP.5.2	1555		238		1793
HP.6	1397				1397
HP.7.1	4739				4739
HP.7.2	32				32
HP.7.3		12125			12125
HP.8				0	0
total	117496	115589	24865	0	257950

Table 20 shows some of empty cells, e.g. for Out-of-pocket expenditures for mental hospitals. This might be questioned. In this case always the recording and the keys has to be checked. The table gives only a snapshot of the status of the compilation of the application of compilation procedures, but not the final results, which will go far beyond this study.

One should also notice that figures about HF.4 Rest of the world financing schemes (not part of the BAS) are not yet included. Expenditures of private enterprises for occupational health is a further item not included. As a consequence, the compilations likely under estimate health expenditures. Deviations to the current estimates by Blecher et al 2011 require further review and need to be thoroughly analysed. In any case, there will be some deviations as a consequences of the SHA 2011 definitions and compiling rules as compared to SHA 2000 and as compared to the national standards. It is rather normal that countries have nationally different definitions (see e.g. the health accounts of the Netherlands, CBS 2013). Furthermore, the international boundary of SHA 2011 is a compromise which does not fully reflected the viewpoint of less developed countries. Therefore it is really important to develop a South African Health Accounts Classification which reflects the country legislation (see Table 30).

The way of the presentation of the expenditures for infrastructure, research, training, and other functions items in Table 20 does not show, who receives these expenditures. To present these providers, it is necessary to expand the “Pivot-Table” and add HP-codes to the extended accounts.

8.4.2 Health care financing and health care functions – HFxHC

The table showing health expenditure by type of financing scheme and type of function highlights the resource paths that are key for informing health analysts. It addresses the question of "who funds what" and allows the identification of both these functions where resources are concentrated and their main funding paths. Experience shows this table to be important for validating estimates of the demand side of current health spending.

Table 21: Health care financing and health care functions (HFxHC), Rmillion, (to be further developed)

Summe - FY2011/12	HF_1digit				
HC_2digit	HF.1	HF.2	HF.3	HF.4	total
HC.1	103497	75776	11214		190486
HC.2	2	7431	880		8313
HC.3		22			22
HC.4.1	650				650
HC.4.2	6				6
HC.4.3	75				75
HC.5.1	5503	15441	11965		32909
HC.5.2	1555		806		2361
HC.6	1437	16			1452
HC.6.2	190				190
HC.6.4	170				170
HC.7.1	4379	10289			14667
HC.7.2	32	1837			1869
HC.9	0	4779		0	4780
total	117496	115589	24865	0	257950

8.4.3 Health care functions and health care providers – HCxHP

The table showing current health expenditure by type of provider and by function tells the user "who provides what". This table provides a summary perspective of the health market in a country, i.e. what is the structure of its health care needs and who are the providers involved. This table has been shown to be valuable for validating the provision side of the current health expenditure.

Table 22: Health care functions and health care providers (HPxHC), Rmillion, (to be further developed)

Summe - FY2011/1	HC_1digit								
HP_2digit	HC.1	HC.2	HC.3	HC.4	HC.5	HC.6	HC.7	HC.9	total
HP.1.1	127911	0			568	24			128504
HP.1.2	19793					4			19797
HP.1.3	2					12			14
HP.2.2								376	376
HP.2.9		87	22						108
HP.3.1	37164	2			1263				38428
HP.3.2	5145								5145
HP.3.3		8224			82				8306
HP.3.4	471					16			487
HP.3.5					281				281
HP.4.1				30					30
HP.4.2				695					695
HP.4.9				6				4403	4409
HP.5.1					31284				31284
HP.5.2	1555				238				1793
HP.6					10	1387			1397
HP.7.1						360	4379		4739
HP.7.2							32		32
HP.7.3							12125		12125
HP.8								0	0
total	192041	8313	22	731	33725	1802	16536	4779	257950

8.4.4 Public-private mix

SHA 2011 includes the split between public and private financing schemes at the third-digit level of the HF-classification (see Annex A). It has been recognised that there is no one-to-one correspondence between the public-versus-private split regarding institutional units of the health system and the public-versus-private split regarding the funds used for financing health care (SHA 2011, p. 196). Therefore SHA 2011 has introduced the **FS classification of revenues of financing schemes**. In the case of South Africa, the compilation of the public-private mix by the FS classification alone might be misleading because of the GEMS which is included in CMS. GEMS is providing private healthcare to public servants, but it does not fall in the public health environment. For that reason, further work on SASHA should also include the FS-classification of SHA 2011.

Revenue is an increase in the funds of a health care financing scheme, through specific contribution mechanisms. The categories of the classification are the particular types of transaction through which the financing schemes obtain their revenues. The international FS-classification of SHA 2011 is described in Annex A: Table 29. The objective of this classification is to group types of revenues of health financing schemes into mutually exclusive classes. [41] The classification contains two groups of memorandum items. Domestic

[41] According to the GFS Manual (IMF 2001), revenue is an increase in net worth resulting from a transaction, including both monetary and non-monetary transactions. Every transaction is either an exchange or a transfer. A

of foreign loans are the first group. The second group of memorandum items consists of the institutional units[42] of the economy (non-financial and financial corporations, government, NPISH, and households) that provide revenues to financing schemes.

8.4.5 National Programs and international classifications

SHA 2011 has been mainly developed to allow for international comparison. Both for the control of the SHA compilations but also for monitoring national expenditure structures and developments the link to a standardized national classification of health expenditures would provide additional insights. Table 30 provides a first draft for this national classification of health accounts (SACHA-C) which needs further development. Starting point for the construction has been the structure of the programmes of the National Budget on the one side and the international classification HC on the other side. Cross-classifications between SACHA-C and the three international classification HF, HC, and HP are presented by the Table 23, Table 24, and Table 25). Particularly, if borderlines between national and international accounting practice deviate, as in the case of South Africa, one can learn about these differences.

Table 23: Health Care Functions and national services (HCxSACHA-C), Rmillion, (to be further developed)

Summe - FY2011/1	SACHA-C_1digit							
HC_2digit	C.1	C.2	C.3	C.4	C.5	C.6	C.9	total
HC.1		8052	473	173691	1456	6361	454	190486
HC.2		0	2	6902	1408			8313
HC.3				22				22
HC.4.1		650						650
HC.4.2			6					6
HC.4.3			75					75
HC.5.1			5503			27126	281	32909
HC.5.2		1555				806		2361
HC.6		52	1400					1452
HC.6.2			190					190
HC.6.4		6	165					170
HC.7.1	13586	531	550					14667
HC.7.2	1869							1869
HC.9			0	1712	826	919	1322	4780
infrastructure	92	14187						14279
other		51	31				27	108
training, research		5468						5468
total	15547	30552	8394	182327	3690	35211	2083	277805

transaction is an exchange if one unit provides a good, service, asset or labour to a second unit and receives a good, service, asset or labour of the same value in return. A transaction is a transfer if one unit provides a good, service, asset, or labour to a second unit without receiving simultaneously a good, service, asset, or labour of any value in return.

[42] In SNA "institutional units" and grouped into "institutional sectors" in the sector accounts. One should note that SHA classifies each financing organisation (except households) into two separate statistical units – providers of administration (HP.7) and financing schemes (HF) – while SNA classifies each organisation as only one institutional unit grouped into one of the five institutional sectors and further subsectors.

The Table 23 presenting the current health expenditure by type of International Health Care Functions (ICHA-HC) and by national programmes (**SACHA-C**) shows how expenditures on the various types of programmes are devoted to different international health functions.

As a result of the exercise undertaken by this study, national standards show about 20 Rbillion higher expenditures than by the International Health Accounts Classification of Health Functions. Main expenditure items outside the current expenditure boundary are expenditures for infrastructure, training, and research. But, these types of expenditure are an essential part from a broader perspective of health system development, and should be kept in the national health accounts.

Table 24: Health Care Financing and national services (HFxSACHA-C), Rmillion, (to be further developed)

Summe - FY2011/12	HF_1digit				
SACHA-C_1digit	HF.1	HF.2	HF.3	HF.4	total
C.1	3422	12125			15547
C.2	30552				30552
C.3	8379	16			8394
C.4	94972	76141	11214		182327
C.5		2811	880		3690
C.6		22440	12771		35211
C.9		2083		0	2083
total	137325	115616	24865	0	277805

Table 25: Health Care Providers and national services (HPxSACHA-C), Rmillion, (to be further developed)

Summe - FY2011/1	SACHA-C_1digit							
HP_2digit	C.1	C.2	C.3	C.4	C.5	C.6	C.9	total
HP.1.1		8052	24	111589	1456	6929	454	128504
HP.1.2			4	19793				19797
HP.1.3			14					14
HP.2.2				376				376
HP.2.9				22	87			108
HP.3.1			2	37164		1263		38428
HP.3.2				5145				5145
HP.3.3				6902	1321	82		8306
HP.3.4			487					487
HP.3.5							281	281
HP.4.1			30					30
HP.4.2		650	45					695
HP.4.9			6	1336	826	919	1322	4409
HP.5.1			5503			25781		31284
HP.5.2		1555				238		1793
HP.6		52	1345					1397
HP.7.1	3298	537	904					4739
HP.7.2	32							32
HP.7.3	12125							12125
HP.8							0	0
infrastructure	92	14187						14279
other		51	31				27	108
training, research		5468						5468
total	15547	30552	8394	182327	3690	35211	2083	277805

Table 25 shows the link between national programmes and types of providers. Detailed classifications and registers of providers could help to draw a more precise picture.

Some of empty cells of the tables or the size of some figures above might questioned. In this case always the recording and the keys have to be checked.

8.5 Indicators

8.5.1 Current health expenditure as % of GDP

Health expenditures as percentage of GDP is one of the most commonly used indicator in national health policy discussions and for international comparisons. Changes in the health spending to GDP ratio are the result of both fluctuations in the rate of health spending as well as growth in the economy as a whole. For any interpretation it is important to understand the relation between the two aggregates (see Box 4).

Box 4: Current health expenditures, gross domestic output and value added

Current health expenditure (CHE) of SHA, presented as a percentage of Gross domestic product (GDP), exhibits the share of consumption of health care by the resident population in relation to national income.

(2a) CHE = expenditures for final consumption of resident population

Values of exports are implicitly excluded from the domestic health care providers columns (HP.1 to HP.8).

GDP, compiled by the expenditure approach of SNA amounts final uses of the total economy, which equals consumption plus investment plus exports minus imports. GDP is also a measure of all value added by all producers in the economy.

(2b) GDP = Final consumption + Gross capital formation + Export – Import

(2c) Output = Intermediate consumption + Final consumption + Gross capital formation + Export - Import.

(2d) GVA(health s.) = Output (health sector) – Intermediate consumption (health sector)

(2e) GVA(health s) = $\overline{CHE}$ + Gross capital formation (health sector)
+ exports (health sector) –imports (health sector)
- Intermediate consumption (health sector)

The adjusted $\overline{CHE}$ final consumption expenditures differ from current health expenditures by the following three items (see SHA 2011 p. 48).
(i) Government subsidies to health care providers (net) in order to lower price of output
(ii) Occupational health care (intermediate consumption within establishments) minus an estimated share of occupational health in health providers' and other medical industries net administration
(iii) "Remunerated" unpaid household production in the form of transfer payments (social benefits in cash) for home care of sick, disabled and elderly persons provided by family members.

Total health spending (including capital formation) accounted for 9.3% of GDP on average across OECD countries in 2011 (see OECD 2013c).[43] Based on the preliminary accounts of this study one can expect a ratio for South Africa of around 9% of GDP which is close to Brazil with 8.9% (depending on the borderline: 257.950 / 2973.286 = 8.7% and 277.805 / 2973.286 = 9,3 %)[44]

Health accounts and national accounts can benefit from each other particularly with respect to the compilation of final health consumption expenditures.

[43] In 2011, the United States spent 17.7% (17.0% for current expenditure on health) of GDP on health, remaining well above the OECD average and around six percentage points above the next group of countries, which include the Netherlands, France, Germany, Canada and Switzerland. Of the OECD countries, Mexico, Turkey and Estonia devoted only around 6% of GDP to health – around two-thirds of the OECD average. Outside of the OECD, China and India spent 5.2% and 3.9% of GDP respectively in 2011, while Brazil devoted 8.9% of GDP to health – close to the OECD average (OECD 2013c).

[44] The Budget 2013 estimated the GDP for the fiscal year 2011/12 on Rbillion 2973.286.

8.5.2 Health expenditure per capita

Health expenditure per capita is a further common indicator used in international comparisons. The two-pillar health care system of South Africa makes any interpretation of average expenditure per capita rather opaque. Notably, the estimation of private out-of-pocket expenditures might gain by the distinction between subscribers of medical schemes and the rest of the population. The same holds for the financial burden of different population groups. Health Accounts in combination with the IES can be used to for the further analysis of the distribution of health care financing by population groups.

9. Further development

Implementing national health accounts in a country is a long-term process like the implementation of costing in a firm or a hospital. Therefore, the **organisation of the process** is crucial for success. Fortunately, South Africa can build on several experiences in the development of financial accounts and health expenditure statistics which can be mapped and inter-linked to form a national health accounts data base. In principle, the national health accounts data base should be developed from the financial transactions of the various stakeholders at the most detailed level as discussed in the last chapter.

The possibility of recording expenditures related to their purpose and the providing establishment is obviously a precondition for best practice health accounts. Therefore, detailed classifications and registers of providers are quite important and should be priority in developing the health information system. This would also allow to built up the accounts bottom-up including the municipalities.

The **structure and organisational link** of the health accounts development is a further issue to be considered. It is necessary that the health accounts team has access to the data of the various stakeholders. There must be common understanding about the objectives, tasks and the process of implementation.

Country experiences reveal that one of the major constraints to institutionalization has been the failure to consider national health accounts as part of a complete cycle of activities that include

- demand for data by country leaders;
- production of national health accounts;
- dissemination and translation of national health accounts data; and finally,
- the use and application of national health accounts for policy decisions.

Institutionalization requires a full cycle of health accounts activities to be embedded within a country's planning and financial accounting activities. This cycle extends beyond production, and involves translating the essential information that national health accounts can help provide into insightful, evidence-based policy recommendations for decision makers. The steps in the cycle and their effective linkages to one another are influenced and guided by a country's governance structure, as well as its institutional capacity and financial resources to support national health accounts- related activities.

- Regular use of national health accounts in policy making contributes to more sophisticated policy analysis
- Sustainable production of data and quality assurance
- Dissemination of data
- Translation of data for policy use

- Regular use of the data for policy and research/education purposes provides essential feedback about the quality of the data.

A second major constraint in national health accounts institutionalization has been the absence of attention to developing a long-term strategy for ownership and capacity building that takes realistic account of the country's unique resource environment. Countries need to "learn by doing" and should tailor national health accounts to meet their domestic policy needs. In this, the international development partners who support national health accounts will need to take a longer view on institutionalizing national health accounts, and allow sufficient time and pacing of activities to ensure country ownership.

Annex A: SHA Classifications

Table 26: International classification of health financing schemes ICHA-HF

Code	Description
HF.1	**Government schemes and compulsory contributory health care financing schemes**
HF.1.1	**Government schemes**
HF.1.1.1	Central government schemes
HF.1.1.2	State/regional/local government schemes
HF.1.2	**Compulsory contributory health insurance schemes**
HF.1.2.1	Social health insurance schemes
HF.1.2.2	Compulsory private insurance schemes
HF.1.3	**Compulsory Medical Saving Accounts (CMSA)**
HF.2	**Voluntary health care payment schemes**
HF.2.1	**Voluntary health insurance schemes**
HF.2.1.1	Primary/substitutory health insurance schemes
HF.2.1.1.1	Employer-based insurance (other than enterprises schemes)
HF.2.1.1.2	Government-based voluntary insurance
HF.2.1.1.3	Other primary coverage schemes
HF.2.1.2	Complementary/supplementary insurance schemes
HF.2.1.2.1	Community-based insurance
HF.2.1.2.2	Other complementary/supplementary insurance
HF.2.2	**NPISH financing schemes**
HF.2.2.1	NPISH financing schemes (excluding HF.2.2.2)
HF.2.2.2	Resident foreign government development agencies schemes
HF.2.3	**Enterprise financing schemes**
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.3.1	**Out-of-pocket excluding cost sharing**
HF.3.2	**Cost sharing with third-party payers**
HF.3.2.1	Cost sharing with government schemes and compulsory contributory health insurance schemes
HF.3.2.2	Cost sharing with voluntary insurance schemes
HF.4	**Rest of the world financing schemes (non-resident)**
HF.4.1	**Compulsory schemes (non-resident)**
HF.4.1.1	Compulsory health insurance schemes (non-resident)
HF.4.1.2	Other compulsory schemes (non-resident)
HF.4.2	**Voluntary schemes (non-resident)**
HF.4.2.1	Voluntary health insurance schemes (non-resident)
HF.4.2.2	Other schemes (non-resident)
HF.4.2.2.1	Philanthropy/international NGOs schemes
HF.4.2.2.2	Foreign development agencies schemes
HF.4.2.2.3	Schemes of enclaves (e.g., international organizations or embassies)
Memorandum items	
Financing agents managing the financing schemes	
HF.RI.1.1	Government
HF.RI.1.2	Corporations
HF.RI.1.3	Households
HF.RI.1.4	NPISH
HF.RI.1.5	Rest of the world
Financing schemes and the related cost-sharing together	
HF.RI.2	Governmental schemes and compulsory contributory health insurance schemes together with cost sharing (HF.1 + HF.3.2.1)
HF.RI.3	Voluntary health insurance schemes together with cost sharing (HF.2.1+HF.3.2.2)

Table 27: International classification of health care functions ICHA-HC

Code	Description
HC.1	**Curative care**
HC.1.1	Inpatient curative care
HC.1.1.1	General inpatient curative care
HC.1.1.2	Specialised inpatient curative care
HC.1.2	Day curative care
HC.1.2.1	General day curative care
HC.1.2.2	Specialised day curative care
HC.1.3	Outpatient curative care
HC.1.3.1	General outpatient curative care
HC.1.3.2	Dental outpatient curative care
HC.1.3.3	Specialised outpatient curative care
HC.1.4	Home-based curative care
HC.2	**Rehabilitative care**
HC.2.1	Inpatient rehabilitative care
HC.2.2	Day rehabilitative care
HC.2.3	Outpatient rehabilitative care
HC.2.4	Home-based rehabilitative care
HC.3	**Long-term care (health)**
HC.3.1	Inpatient long-term care (health)
HC.3.2	Day long-term care (health)
HC.3.3	Outpatient long-term care (health)
HC.3.4	Home-based long-term care (health)
HC.4	**Ancillary services (non-specified by function)**
HC.4.1	Laboratory services
HC.4.2	Imaging services
HC.4.3	Patient transportation
HC.5	**Medical goods (non-specified by function)**
HC.5.1	Pharmaceuticals and other medical non-durable goods
HC.5.1.1	Prescribed medicines
HC.5.1.2	Over-the-counter medicines
HC.5.1.3	Other medical non-durable goods
HC.5.2	Therapeutic appliances and other medical goods
HC.5.2.1	Glasses and other vision products
HC.5.2.2	Hearing aids
HC.5.2.3	Other orthopaedic appliances and prosthetics (excluding glasses and hearing aids)
HC.5.2.9	All other medical durables, including medical technical devices n
HC.5.3	Medical goods n.e.c.
HC.6	**Preventive care**
HC.6.1	Information, education and counseling programmes
HC.6.2	Immunization programmes
HC.6.3	Early disease detection programmes
HC.6.4	Healthy condition monitoring programmes
HC.6.5	Epidemiological surveillance and risk and disease control programmes
HC.6.6	Preparing for disaster and emergency response programmes
HC.7	**Governance, and health system and financing administration**
HC.7.1	Governance and Health system administration
HC.7.2	Administration of health financing
HC.9	**Other health care services not elsewhere classified (*n.e.c.*)**

Code	Description
HC Memorandum Items SHA.2	
Reporting Items	
HC.RI.1	Total pharmaceutical expenditure (TPE)
	of which Inpatient pharmaceutical consumption
HC.RI.2	Traditional, Complementary and Alternative Medicines (TCAM)
HC.RI.2.1	Inpatient TCAM
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.RI.3.1	Maternal and child health; family planning and counseling
HC.RI.3.2	School health services
HC.RI.3.3	Prevention of communicable diseases
HC.RI.3.4	Prevention of non-communicable diseases
HC.RI.3.5	Occupational health care
HC.RI.3.9	All other miscellaneous preventive care services
Health care related	
HCR.1	Long-term care (social)
HCR.1.1	In-kind long-term social care
HCR.1.2	Long-term social care cash-benefits
HCR.2	Health promotion with multi-sectoral approach

Table 28: International classification of health care providers ICHA-HP

Code	Description
HP.1	**Hospitals**
HP.1.1	General hospitals
HP.1.2	Mental health hospitals
HP.1.3	Specialised hospitals (other than mental health hospitals)
HP.2	**Residential long-term care facilities**
HP.2.1	Long-term nursing care facilities
HP.2.2	Mental health and substance abuse facilities
HP.2.9	Other residential long-term care facilities
HP.3	**Providers of ambulatory health care**
HP.3.1	Medical practices
HP.3.1.1	Offices of general medical practitioners
HP.3.1.2	Offices of mental medical specialists
HP.3.1.3	Offices of medical specialists (other than mental medical specialists)
HP.3.2	Dental practice
HP.3.3	Other health care practitioners
HP.3.4	Ambulatory health care centres
HP.3.4.1	Family planning centres
HP.3.4.2	Ambulatory mental health and substance abuse centres
HP.3.4.3	Free-standing ambulatory surgery centres
HP.3.4.4	Dialysis care centres
HP.3.4.9	All other ambulatory centres
HP.3.5	Providers of home health care services
HP.4	**Providers of ancillary services**
HP.4.1	Providers of patient transportation and emergency rescue
HP.4.2	Medical and diagnostic laboratories
HP.4.9	Other providers of ancillary services
HP.5	**Retailers and other providers of medical goods**
HP.5.1	Pharmacies
HP.5.2	Retail sellers and other suppliers of durable medical goods and medical appliances
HP.5.9	All other miscellaneous sellers and other suppliers of pharmaceuticals and medical goods
HP.6	**Providers of preventive care**
HP.7	**Providers of health care system administration and financing**
HP.7.1	Government health administration agencies
HP.7.2	Social health insurance agencies
HP.7.3	Private health insurance administration agencies
HP.7.9	Other administration agencies
HP.8	**Rest of economy**
HP.8.1	Households as providers of home health care
HP.8.2	All other industries as secondary providers of health care
HP.8.9	Other industries *n.e.c.*
HP.9	**Rest of the world**

Table 29: International classification of health care revenues ICHA-FS

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.
FS.6.3	Other revenues from 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 TA)
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 organisations
FSR.2	Aid in kind at donor value

Table 30: South African Classification of Health Accounts: Functions SACHA-C (Draft-Proposal - to be further developed)

Code	Description	National Code (Budget, etc)
SACHA-C.1	**Administration**	
C.1.1	General Accommodation	Programm 1
C.1.1.1	Office Accommodation	Programm 1
C.1.1.2	Financial Management	Programm 1
C.1.1.3	Health Regulation	Programm 6
C.1.1.4	Public Entities	Public Entities (except health services)
C.1.2	Information Management	
C.1.2.1	Health Information, Evaluation	Programm 2
C.1.2.2	Planning	Programm 2
C.1.2.3	Health financing tool	Programm 2
C.1.2.4	International relations	Programm 2
C.1.3	Procurement	Programm 6
C.1.2.1	Administrators	Programm 6
C.1.2.2	Managed Care	Programm 6
C.1.4	External Management	
C.1.4.1	Administrators	
C.1.4.2	Managed Care	
SACHA-C.2	**Health System Development**	
C.2.1	National Health Insurance	Programm 2
C.2.2	Infrastructure	
C.2.3	Education and Traing	
C.2.4	Research and development	
SACHA-C.3	**Public health**	
C.3.1	Disease, Condition specific programs	
C.3.1.1	HIV and AIDS	Programm 3
C.3.1.2	Tuberculosis	Programm 3
C.3.1.1	Child and Youth Health	Programm 3
C.3.1.2	Women's Maternal Health	Programm 3
C.3.2	Health and Safety at workplace	NDoL, NDoMR
C.3.3	Environmental Health	SALGA
SACHA-C.4	**Health Care Services**	
C.4.1	Primary Care	Programm 4
C.1.3.1	General outpatient curative care	
C.1.3.2	Dental outpatient curative care	
C.1.3.3	Specialised outpatient curative care	
C.4.2	Emergency Care	
C.4.3	Hospital services	
C.4.4	Other specialized services	
C.4.5	Long-term care (health)	
SACHA-C.5	**Support Services**	
C.5.1	Laboratory services	
C.5.2	Imaging services	
C.5.3	Patient transportation	
SACHA-C.6	**Medical goods (non-specified by function)**	
C.6.1	Pharmaceuticals and other medical non-durable goods	
C.6.1.1	Prescribed medicines	
C.6.1.2	Over-the-counter medicines	
C.6.1.3	Other medical non-durable goods	
C.6.2	Therapeutic appliances and other medical goods	
C.6.2.1	Glasses and other vision products	
C.6.2.2	Hearing aids	

C.6.2.3	Other orthopaedic appliances, prosthetics (excl. glasses)	
C.6.2.9	All other medical durables, incl. medical technical dev.	
C.6.3	Medical goods n.e.c.	
C.6.4	Preparing for disaster and emergency response programmes	
SACHA-C.9	**Other health care services not elsewhere classified (*n.e.c.*)**	

Annex B: Example of sources and Methods used by Turkey as provided by OECD

Health Expenditure and Finance Data presented in OECD Health Data 2013[45] are based on:

- Joint OECD-Eurostat-WHO SHA collection
- SHA-consistent national health accounts
- Locally produced national health accounts
- National accounts estimates 1999-2008 1998

SHA Implementation Weblink

www.oecd.org/document/9/0,2340,en_2649_33929_33884809_1_1_1_1,00.html.

Main Data Sources (most recent data year):

Health Expenditure statistics, which were produced by the Ministry of Health-affiliated Refik Saydam Hygiene Center Presidency School of Public Health for the years 1999-2000 in line with the OECD System of Health Accounts (SHA), were revised by Turkish Statistical Institute (TURKSTAT) for the years 2001-2003 (OECD and EUROSTAT-compatible), re-calculated for the year 2004-2005, and produced for the first time for the years 2006- 2007 and 2008.

State Institute of Statistics - initial estimates for 2001-8.

School of Public Health, Ministry of Health: 1999-2000.

The provisional NHA framework calls for a specific set of provider and functional breakdowns, as well as specific distributional breakdowns. It is also necessary to be able to trace the payment source of funds received at many different types of providers. While some of this information is available from financial accounts at the national level, some of it required additional data collection at the sub-national level and from specific types of providers. Data tools that were used are listed as below:

- Associations
- Foundations
- Private Hospitals
- Private Health Insurance
- Private Firms
- State-owned economic Enterprise (provided through Treasury Directorate of State Owned Enterprises,)
- Privatisation Administration (The information has been only partly reached)

[45] http://www.oecd.org/health/healthdata.

- Social Security Units under the provisional article of 20 of Social Insurance Organization Law (Provided through Ministry of Labor)
- Municipalities (provided through Ministry of Internal Affairs via prepared questionnaires)
- Private Provincial Administrations (provided through Ministry of Internal Affairs via prepared questionnaires)
- Foundation Universities

National Health Accounts studies for year 2001 and following years through Turkish Statistical Institute (TURKSTAT) have been agreed, and TURKSTAT have completed the NHA Study which covers the period of 2001-2004 and developed main tables which are based on Financing Agents-Health Providers.

Notes on Data Comparability:

Departures from SHA boundaries/classifications:

There are certain adaptations based on national priorities and preferences with crosswalks between the Turkish classification and SHA:

- The Turkish NHA includes a Sources (origin of funds) classification although the OECD SHA does not require it.
- For the purposes of Turkey's domestic health policy discussions, expenditures on health-related functions. Are included. In the Turkish NHA, OECD's function-based health expenditure definition and the concept of Total Expenditure on Health (THE) are accepted as the basis for answering the boundary questions for purposes of OECD reporting.
- Turkey NHA framework has been constructed parallel to the International Classification for Health Accounts proposed by SHA at the 1 and 2 digit levels, and in some classifications to the three-digit level. Additional classifications have been added beyond the basic levels to capture specific institutional conditions in Turkey that are relevant for policy. The health expenditure boundary in Turkey expands on that proposed for SHA, but retains additional health expenditure items in separate classifications so that these can easily be removed to create SHA compatible tables. Within OECD Health Data, Turkish health expenditures are reported in an OECD-compatible way.
- The Turkish NHA covers Turkish residents' expenditures for purchase of health care abroad. However the purchase of health care domestically by non-residents are not estimated separately and deducted from the total, as this is accepted as non-feasible and should not significantly affect the results.
- In Turkey's NHA there is a category named as non-specified by kind (nsk.) used to reflect the activities or transactions that fall within the boundaries of the health accounts but which cannot be definitely allocated to a specific category because of insufficient detailed documentation.
- Private health investment expenditure is available 1999-2000 NHA study and after 2004 and following years. Between 2001-2003 years, private health investment expenditures are not available due to technical difficulties.

Breaks in time series:

- Data based on the SHA-ICHA classification refer to 1999 and 2000 only. Data prior to this cannot be considered comparable.

See also Note on general comparability of health expenditure and finance data.

Variables with Specific Notes in Sources and Methods:

1) Health Expenditure

Total expenditure on health

- For years 2001-2008, total expenditure on health were allocated to health care providers. Due to data limitations cannot be allocated to function.
- Data for 2006, 2007 and 2008 were produced for the first time by Turkish Statistical Institute (TURKSAT) with technical assistant of Ministry of Health (School of Public Health).
- Data for 2004 and 2005 were re-calculated by Turkish Statistical Institute (TURKSAT) with technical assistant of Ministry of Health (School of Public Health).
- In 2009, data for 2001 to 2003 (main aggregates only and are preliminary estimates) were revised by Turkish Statistical Institute (TURKSTAT) for the years 2001-2003.
- Data for 2001 to 2003 are for main aggregates only and are preliminary estimates from the State Institute of Statistics.
- 1999-2000: **School of Public Health, Ministry of Health**. Figures based on SHA functional definition of health care expenditure - see notes on Data Comparability above.
- No health accounts were published before 1997 (in 1997, publication for 1992-1995). Total expenditure is an OECD Secretariat estimate, based on the ratio of the share of Health Expenditure to GNP, calculated by State Planning Organisation (SPO). Expenditure financed by voluntary contributions to hospital associations, and from foreign aid is not included. The total size of the private sector is not measured directly; the Secretariat method possibly yields underestimated figures.
- 1990: **Prime Minister State Planning Organisation**: Social Indicators, September 1990; Health Sector Master Plan Study, Report on the Current Situation, 1990.
- 1987: State Institute of Statistics (1987), Household Income and Consumption Expenditure Survey, complemented by Ministry of Health's communications.

Current expenditure on health (total, public, private)

For years 2001-2008, current expenditure on health were allocated to health care providers. Due to data limitations cannot be allocated to function.

- 1999-2000: The observed difference between reported current expenditures and the total of collective + personal health care expenditures is due to a separate category in the Turkish NHA called 'nsk' (not specified by kind) for expenditures which fall within the boundaries of health expenditure but, due to data limitations, cannot be allocated to function (or provider).

Expenditure on prevention and public health (total, public and private)

1999-2005: Source: **School of Public Health**, Ministry of Health.

Total expenditure on health research and development

1999-2000: Source: **School of Public Health**, Ministry of Health.

Expenditure on long term nursing care

- Turkey does not have such a service not only in health care but also under social care institutions so this category was excluded. This kind of health care functions probably takes place within inpatient curative care.

Expenditure on in-patient care (total, public, private)

After 2000, cannot produce functional breakdown.

1999-2000: Source: **School of Public Health**, Ministry of Health.

- Prior to 1999, source of data is the same as for total expenditure on health . Within the context of the methodology described in that section, revolving capital expenditure figures of outpatient and inpatient care of the Ministry of Health hospitals were pro-rated to find inpatient and outpatient care expenditures of total hospitals in Turkey considering operational differences of institutions. Public expenditures on inpatient were calculated by subtracting private inpatient care expenditures from total inpatient care expenditures.
- Data before 1987 data is unavailable.

Expenditure on curative and rehabilitative in-patient care (total, public, private)

1999-2000: Source: **School of Public Health**, Ministry of Health.

- Probably includes long term in-patient care since a separate division in the health care system for Turkey does not exist.

Expenditure on curative and rehabilitative home care (total, public, private)

1999-2000: Source: **School of Public Health**, Ministry of Health.

- As Turkey does not have such a division in the state apparatus this category was excluded. This kind of health care functions probably takes place within partly in inpatient curative care and partly in outpatient curative care categories.

Total expenditure on pharmaceuticals and other medical non-durables

1999-2000: Source: **School of Public Health**, Ministry of Health.

- Data prior to 1999 includes consumption in hospitals. This is inconsistent with the OECD definition.

Current health expenditure by provider

1999-2000: Source: **School of Public Health**, Ministry of Health.

- Only available for 1999-2000.
- The observed difference between reported current expenditures and the total of collective + personal health care expenditures is due to a separate category in the Turkish NHA

called 'nsk' (not specified by kind) for expenditures which fall within the boundaries of health expenditure but, due to data limitations, cannot be allocated to provider (or function).

Current expenditure on nursing and residential care providers

1999-2000: Source: **School of Public Health**, Ministry of Health.

- Turkey does not have such a division in the state apparatus.

Total expenditure on health - Price index (1995=100)

1999-2000: Source: **School of Public Health**, Ministry of Health.

2) Health Financing

General government (excluding social security schemes)

1999-2008: Comprises the following categories:

- Ministry of Health Programs - includes all programs that aim to improve the health status of the general public;
- Green Card - scheme introduced in 1992 to cover health expenditures of those not covered by any other social security schemes and do not have sufficient resources to meet health needs;
- Annexed budget institutions: both get allocations from general budget and generate own resources;
- Civil servants' health services: health expenditure by government bodies of behalf of civil servants and their
- dependants;
- Others: annexed budget institutions other than universities, e.g. Higher Education Council, National Lottery Administration, General Directorate of Coastal Affairs.

Social Security Schemes

2001-2008: SSK, Bag_Kur and GERF. But we would like to remind that in 2006 these 3 social security organisations were combined under the Social Security Institution(SSI). SSI is transferring money to health providers behalf of the former insurance institutions(SSK, Bağ-Kur and GERF).

1999-2000: Comprises the following categories:

- SSK: provides coverage for job-related accident and occupational health, sickness, maternity, invalidity and death to its beneficiaries;
- GERF: provides pension and health benefits to retired civil servants;
- Bag-Kur: provides pension and health benefits to self-employed, artisans, craftsmen and others.

Glossary

Accounting: A systematic recording and display of economic transactions in summary form, that conforms to accepted definitions and rules.

Accrual method: An accounting method in which expenditures are attributed to the time period during which the economic value was created, not to the time period during which actual cash disbursements may take place. (See also Cash method.)

Allocation key: Sometimes national and international classifications cannot be mapped one to one. In that case allocation keys divide the expenditure to the classifications. The basic information can refer to service unit costs or the human resources involved and/or the quantity of specific services provided.

Administrators: Management entity (legal person) that provides key management services to medical schemes. The administrators have been accredited by the CMS in terms of section 58 of the Medical Schemes Act No. 131 ff 1998.

Cash method: An accounting method in which expenditures are attributed to the time period during which actual cash disbursements take place. (See also Accrual method.)

Conditional grants: A conditional grant refers to an allocation made by the national government, from its nationally raised revenue, to a province, local government or municipality, on condition that certain requirements or services are met.

Consumption: Goods and services used by households or the community to satisfy their individual or collective needs or wants.

Double counting: Including an expenditure in more than one category in the accounts for a given stage of the health care system, for example, counting co-payment amounts as both insurance activity and as out-of-pocket activity. By its nature, double counting overstates the actual expenditure on health care.

Financing Agents: are institutional units that actually administer health financing schemes: implement the revenue-collection and/or the purchasing of services. For example, local government, social insurance agencies, private insurance companies, non-profit organisations and so on. (A financing agent can manage one or more financing schemes at the same time.)

Financing scheme: SHA 2011 defines Financing Schemes as the main “building blocks” of a country’s health financing system(the main types of financing arrangements through which health services are paid for and obtained by the population). For example, direct payments by households or third-party financing arrangements, such as social health insurance, voluntary insurance, etc.

Global burden of disease (GBD): The global burden of disease analyses use disability-adjusted life years (DALYs) to measure lost years of healthy life due to mortality and morbidity by cause, age, sex and region.

Institutional sectors: National accounts classify all economic units into institutional sectors. Institutional units of health care systems (such as government, households and insurance corporations, etc.) manage the various functions in the health system: collecting, pooling, redistributing, paying and providing services directly.

Keys: see allocation key.

Long-term care: Ongoing health and nursing care given to inpatients who need assistance on a continuing basis because of chronic impairments and a reduced degree of independence and activities of daily living. Inpatient long-term care is provided in institutions or community facilities.

Medical scheme: Not-for-profit health insurance undertaking registered under section 24 (l) of the Medical Schemes Act No 131 of 1998. Underlying principles are community rating, minimum prescribed benefits, not-for-profit, cross-subsidisation, open enrolment.

Metadata: Data and other documentation that describes objects in a formalized way (United Nations 2000).

Pooling: pooling of funds refers to the accumulation of prepaid revenues on behalf of a population.

Primary prevention involves specific health measures aimed at avoiding diseases and risk factors in order to: reduce the onset of a disease, diminish the number of new cases, and anticipate the emergence and lessen the severity of diseases. The goal of primary preventive measures is the reduction of risks before they generate some effect, e.g. via vaccination.

Purchasing: refers to the transfer of pooled funds to providers on behalf of a population.

Raw data: Figures and information that have not yet been processed to meet the definitions and requirements of the health accounts.

Reconciliation: Process of comparing similarities and differences of the estimates of health expenditures between health care financing and provision and correction of these differences.

Satellite accounts: In the system of national accounts (SNA), a framework linked to the central accounts which enables attention to be focused on a certain field or aspect of economic and social life in the context of national accounts, e.g. environment, tourism.

Secondary prevention: Secondary prevention involves specific interventions aimed at the detection of disease and then therapy as early as possible, e.g. via screening. Examples include screening for diseases such as TB, diabetes and breast cancer.

Short-term insurance: encompasses all types of insurance other than life insurance, e.g. vehicle insurance, property insurance, household insurance, commercial insurance, credit insurance, health insurance and accident insurance.

Survey: An investigation about the characteristics of a given population by means of collecting data from a sample of that population and estimating their characteristics through the systematic use of statistical methodology

Tertiary prevention aims at reducing the negative impact of an already established disease or injury by an attempt to avoid worsening and complications, such as early surgery on a joint damaged by burns. In this example, a tertiary prevention would involve reconstructive surgery to allow for full extension and movement recovery of the joint. (SHA2011, p100).

Triangulation: The process of checking a figure by comparing it to estimates formed using other data or other sources.

References

AGSA (2007), Report of the Auditor-General on medical waste management as well as infrastructure conditions in selected hospitals at the Western Cape Department of Health, August 2007, Pretoria.

Ataguba John and Di McIntyre (2009), Financing and benefit incidence in the South African health system: Preliminary results, Health Economics Unit, School of Public Health and Family Medicine, University of Cape Town, January 2009.

BASYS (2001), Human Resources of European Health Systems, Supported by European Commission, Directorate-General Health and Consumer Protection (G3), Grant No: SI2.304558(2000CVG3-510), December 2001, Augsburg.

BASYS, CEPS-INSTEAD, IRDES and IGSS (2005), System of Health Accounts (SHA) in the EU: Definition of a Minimum Data Set and of Additional Information Needed to Analyse and Evaluate SHA, Eurostat Grant: N°200235100003 ESTAT/R-3/PT/ar/B2002 E-3, Augsburg-Luxembourg, Paris, February 2005.

BASYS, CEPS and IGSS (2006), Feasibility Study of Health Expenditures by Patient Characteristics, Augsburg - Luxembourg.

Blecher Mark, Kollipara Aparna, DeJager Pieter and Nomkoshi Zulu (2011), Health Financing, South African Health Review 2011, 29-48.

CEGAA (2013), South African Consolidated HIV and TB Spending Assessment 2007/08-2009/10, On behalf of SANAC and UNAIDS, April 2012, SA Consolidated NASA Report, 13 November 2013.

CBS (2013), Health Accounts; functions and financing, December 17 2013, statline.cbs.nl.

CHAI (2013), Annual Planning Tool (APT) - Development Partner Report, 14 March 2013.

CMS (2012), Annual Statutory Return in Terms of Section 37 of The Medical Schemes Act 131 of 1998, Medical Scheme: Financial Year End: 31 December 2012, Blank document.

CMS (2013), Annual Report 2012-2013, Annexures.

Cooperative Governance & Traditional Affairs (2009), State of Local Government in South Africa, Overview Report, National State of Local Government Assessments, Working Documents, COGTA.

Day Candy, Gray Andy and Eric Budgell (2011), Health and Related Indicators, South African Health Review 2011: 119-247.

Doherty Jane, Thomas Stephen and Debbie Muirhead (2002), Health Financing And Expenditure in Post-Apartheid South Africa, 1996/97-1998/99, The National Health Accounts Project, Final draft: April 2002.

EC, IMF, OECD, UN and World Bank (2009), System of National Accounts 2008, European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank, New York, Dec. 2009.

Econex (2011a), Private Voluntary Health Insurance under NHI, Health Reform Note 13, April 2011.

Econex (2011b), The Contribution Of Hasa Member Hospitals To The South African Economy, A study conducted by Econex and Quantec Research for the Hospital Association of South Africa, December 2011.

English Rene, Masilena Thulani, Barron Peter and Anzél Schönfeldt (2011), Health Information Systems in South Africa, South African Health Review 2011: 81-89.

Eurostat (2008) Eurostat Manual of Supply, Use and Input-Output Tables, Luxembourg.

Financial Services Board Insurance Division (2013), The Quarterly Report on the Results of the Short-Term Insurance Industry for the Period Ended 30 June 2013,

Hartman, M.B., R.J. Kornfeld and A.C. Catlin (2010), "A Reconciliation of Health Care Expenditures in the National Health Expenditure Accounts and in Gross Domestic Product", Survey of Current Business, BEA.

HST (2011), South African Health Review 2011, Durban, December 2011, www.hst.za.org.

HST (2013), South African Health Review 2012-13, Durban, March 2013, www.hst.za.org.

IMF (2001), Government Finance Statistics Manual 2001 www.imf.org/external/pubs/ft/gfs/manual/

IRDES, BASYS (2007), Tools for data collection on health care statistics, Eurostat Contract number: 35100.2005.012-2005.825, 22 August 2007, Paris – Augsburg.

KPMG (2013), The South African Insurance Industry 2013, August 2013.

Matsoso Malebona Precious and Birgit Strachan (2011), Human Resources for Health for South Africa: HRH Strategy for the Health Sector 2013/13-2016/17, South African Health Review 2011: 49-58.

McIntyre D. (1997), Health Care Financing and Expenditure in South Africa: Towards equity and efficiency in policy making. PhD Dissertation. Cape Town: University of Cape Town; 1997.

McIntyre D. (2010), Private sector involvement in funding and providing health services in South Africa: Implications for equity and access to health care, EQUINET Discussion Paper (vol. 84), Regional Network for Equity in Health in East and Southern Africa (EQUINET).

McIntyre D., Thiede (2007), Health Care Financing and Expenditure, in: South African Health Review 2007: 35-46

Mediscor PBM (2010), Medicines Review 2009, Centurion.

Municipal Demarcation Board (2011), Alignment of Departmental Service Boundaries to Municipal Boundaries. Hatfield.

Nadesan-Reddy Nisha (2010), A Health Expenditure Review of the South African Private Health Care Sector from 2003 to 2006, Nelson R. Mandela School of Medicine, University of Kwazulu-Natal, Durban.

National Department of Health (2011), District Health Management Information System (DHIMS) Policy, Pretoria.

National Department of Health (2012), eHealth Strategy for South Africa 2012-2016, Pretoria.

National Department of Health (2012), District Health Management Information System (DHMIS) 2011, Pretoria.

National Department of Health (2012), Health Data Advisory and Co-ordination Committee (HDACC) Report, February 2012, Pretoria.

National Department of Health (2013a), National Health Care Facilities Baseline Audit - National Summary Report, September 2012, Revised February 2013.

National Department of Health (2013b), Annual Performance Plan 2013/14 - 2015/16, Pretoria.

National Department of Health (2013b), National Environmental Health Policy, Government Notice No. 951, 4 December 2013.

National Health Laboratory Service (NHLS), Annual Report 2012/2013, Johannesburg.

National Treasury (2011), 2011 Local Government Budgets and Expenditure Review 2006/07 – 2012/13, Pretoria.

National Treasury and SARS (2012), Tax Statistics 2012, 25 October 2012.

National Treasury (2013), Estimates of National Expenditure 2013, Abridged Version, 27 February 2013, Pretoria.

National Treasury and Health System Trust (2013), Development and application of benchmark for budgeting of non-negotiable goods and services for the provincial departments of health, Report (16 September 2013).

Nonhlanhla Nxumaloa, Olufunke Alabab, Bronwyn Harrisa, Matthew Chersicha, and Jane Goudgea (2011), Utilization of traditional healers in South Africa and costs to patients: Findings from a national household survey, Journal of Public Health Policy Vol. 32, S1, S124–S136.

OECD (2000), A System of Health Accounts. Version 1.0. Paris.

OECD (2008), Estimating Expenditure by Disease, Age and Gender under the System of Health Accounts (SHA) Framework, Paris.

OECD (2012a), Draft Guidelines on the Implementation of the Health Financing Framework under SHA 2011, 14th meeting of health accounts experts and correspondents for health expenditure data, 10-11 October 2012, OECD, Paris.

OECD (2012b), Expenditure on Prevention Activities under SHA 2011, 14th meeting of health accounts experts and correspondents for health expenditure data, 10-11 October 2012, OECD, Paris.

OECD (2012c), Implementing the Capital Account in SHA 2011, 14th meeting of health accounts experts and correspondents for health expenditure data, 10-11 October 2012, OECD, Paris.

OECD (2012d), Guidelines on Measuring Expenditure on Over-The-Counter Drugs, 14th meeting of health accounts experts and correspondents for health expenditure data, 10-11 October 2012, OECD, Paris.

OECD (2012e), 1.2. Extension of work on expenditure by disease, age and gender, Interim Report, EU Contribution Agreement 2011 53 01, April 2012, Health Division

OECD (2013a), OECD Economic Surveys: South Africa 2013, OECD Publishing, Paris,. http://dx.doi.org/10.1787/eco_surveys-zaf-2013-en

OECD (2013b), AID flows OECD/DAC, http://www.aidflows.org/

OECD (2013c), Health at a Glance 2013: OECD Indicators, OECD Publishing. http://dx.doi.org/10.1787/health_glance-2013-en

OECD, Eurostat and WHO (2011), A System of Health Accounts 2011 Manual, Paris.

Pooran A., Pieterson E., Davids M., Theron G., Dheda K. (2013), What is the cost of Diagnosis and Management of Drug Resistant Tuberculosis in South Africa, PLOS, January 2013, Vol. 8 (1): e54587.

Ramjee Shivani (2013), Comparing the Cost of Delivering Hospital Services across the Public and Private Sectors in South Africa, Research commissioned by the Hospital Asssciation of South Africa, University of Cape Town, October 2013.

Rannan-Eliya, R. P. and L. Lorenzoni (2010), Guidelines for Improving the Comparability and Availability of Private Health Expenditures Under the System of Health Accounts Framework, OECD Health Working Papers, No. 52.

Rannan-Eliya, R. P. (2008), National Health Accounts Estimation Methods: Household Out-of-pocket Spending in Private Expenditure, Draft January 2008, WHO, http://www.who.int/nha/methods/oops_paper_ravi.pdf.

Republic of South Africa (2000), National Health Laboratory Service Act, Pretoria.

Republic of South Africa (2004), National Health Act , Government Gazette, Vol. 469 Cape Town 23 July 2004 No. 26595.

Road Accident Fund (2012), Integrated Annual Report 2012. Centurion.

Rodei Jon E, Shawi Vincent, Calle Hedbergi, Norah Stoopsi, Sonja Venteri,Kobie Venteri, Langa Matshisii (2008), The Role of Information in Primary Care.

Roubal T. (2013), How to classify Medical aid schemes in South Africa in the framework of the System of Health Accounts 2011, unpublished document, WHO, Pretoria.

SAICA (2013), Medical Schemes Accounting Guide for the Year End 31 December 2013, Revised and issued September 2013, Kengray.

SALGA (2013), Local Government Position on MHS Funding Model, Pretoria.

Söderlund Neil, Schierhout Gillian and Alex van den Heever (1998), Private health care in South Africa, Technical Report to Chapter 13 of the 1998 SA Health Review, Centre for Health Policy, University of the Witwatersrand, SAIMR, Johannesburg.

South African Insurance Association (2013), Annual Review 2013, Weltevreden Park.

South African Reserve Bank (2010), South Africa's national accounts 1946-2009, An overview of sources and methods, Supplement to the South African Reserve Bank Quarterly Bulletin March 2010.

South African Reserve Bank (2011), Institutional Sector Classification Guide for South Africa, December 2011.

SA Red Cross Air Mercy Service Trust (2011), Annual report 2010/11, Cape Town International Airport.

Statistics South Africa (2005), Consolidated expenditure by the general government sector 2003/2004, Statistical release P9119, 30 November 2005, Pretoria.

Statistics South Africa (2008), Linking the Social Accounting Matrix to existing government strategies for South Africa, Discussion Document D0403.1, Pretoria.

Statistics South Africa (2012a), Census 2011 Metadata, Pretoria.

Statistics South Africa (2012b), Census 2011, Statistical release (Revised) P0301.4, 30 October 2012, Pretoria.

Statistics South Africa (2012c), National Accounts - The status of the input-output tables for South Africa, Discussion Document D4040, March 2012, Pretoria.

Statistics South Africa (2013a), Use of health facilities and levels of selected health conditions in South Africa: Findings from the General Household Survey, 2011, Report No. 03–00–05 (2011), Pretoria.

Statistics South Africa (2013b), National Accounts - Draft Input-Output-Table for South Africa, 2009, Discussion Document D4040.1, March 2013, Pretoria.

Statistics South Africa (2013c), General Household Survey 2012, Revised: 4 October 2013, Statistical release P0318, Pretoria.

Statistics South Africa (2013d), The status of the non-profit institutions satellite account for South Africa, Discussion document: D0407.1, March 2013, Pretoria.

United Nations Economic Commission for Europe (2008), "Non-observed Economy in National Accounts. Survey of Country Practices", United Nations, New York, Geneva.

United Nations (2000), Terminology On Statistical Metadata, United Nations Statistical Commission and Economic Commission for Europe, Conference of European Statisticians Statistical Standards And Studies – No. 53, Geneva.

UNAIDS (2009), National AIDS Spending Assessment (NASA): classification and definitions, "UNAIDS / 09.23E", Geneva.

USAID (2008), Workers' Compensation in the Republic of South Africa,

WHO (2008), Guide to Producing Regional Health Accounts within the National Health Accounts Framework, Geneva.

WHO (2009), Guide to producing reproductive health subaccounts within the national health accounts framework, Geneva. http://www.who.int/nha/docs/guide_to_rh/en/index.html.

WHO South Africa Country Office (2013), Harmonization for Health in Africa (HHA) South Africa Progress Report, May 29, 2013, Pretoria.

WHO, World Bank and USAID (2003), "Guide to Producing National Health Accounts with Special Applications for Low-income and Middle-income Countries", WHO, Geneva, available at www.who.int/nha/docs/English_PG.pdf.

WHO, World Bank (2013), Monitoring Progress towards Universal Health Coverage at Country and Global Levels: A Framework. Discussion paper. http://www.who.int/healthinfo/country_monitoring_evaluation/universal_health_coverage/en/

World Bank (2011), Where Is The Money And What Are We Doing With It? Creating an evidence base for better health financing and greater accountability, October 2011, Washington D.C.