European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol 3, No.3

National health accounts of the Republic of Botswana: 2000-2002

Ontlametse Mokopakgosi
Ministry of Health, Gaborone, Botswana
E-mail: omokopakgosi@gov.bw

Onkemetse Mathala
Ministry of Health, Gaborone, Botswana
E-mail: omathala@gov.bw

Shenaaz El-Halabi
Ministry of Health, Gaborone, Botswana
Email: sel-halabi@gov.bw

Eyob Zere Asbu
Intercountry Support Team
World Health Organization Regional Office for Africa, Harare, Zimbabwe
E-mail: zeyob@yahoo.com

Joses Muthuri Kirigia (Corresponding author)
World Health Organization Regional Office for Africa, Brazzaville, Congo
Email: kirigiaj@afro.who.in

Abstract

The objective of this study was to estimate the total health expenditure by various health financing sources and make recommendations for national health accounts (NHA) institutionalization. Data was obtained from government ministries, National AIDS Coordinating Agency, private for-profit/not-for-profit health care providers, public and private health insurance schemes, employers/firms, non-governmental organizations, and donors. NHA questionnaires were sent to all the 225 employers/private companies, 58 private health facilities, 27 NGOs, 12 donors and 8 insurance companies with health expenditures. The data were entered into NHA dummy matrix tables and analyzed using Excel software. The matrices were built in accordance to the International Classification of NHA to facilitate international comparison, but customized to the local situation.

Total health expenditure (THE) was approximately P1172.3 million (US$218.6M) in year 2000; P1717.1 million (US$284.7M) in 2001; and P2139.3 million (US$342.9M) in 2002. That expenditure represented 6.43%, 9.27% and 10.54% of the Gross Domestic product (GDP) during the three years, respectively. NHA evidence is useful for health system governance and decision-making, design of comprehensive health financing policies and strategic plans, financial planning, monitoring and evaluation.

Keywords: Botswana, national health accounts, total health expenditure, government expenditure on health

1. Introduction

The scarcity of resources is increasingly forcing countries in the WHO African Region to take stock of national health resources, examine allocation patterns, review how equitably they are distributed, assess the efficiency of existing resource use, and evaluate health financing options (Berman 1996). Countries for a long-time have relied on Public Expenditure Reviews (PER). Unfortunately, PER enables countries to know only the monies invested into health by the government, and not the total investment made by all the stakeholders, e.g. all relevant government sectors, households, private firms, and donors. Thus, at best PER is a partial expenditure analysis. Instead, a number of countries in the Region have employed the National Health Accounts (NHA) tool to take stock of the national health resource investment with a view to support health system governance and decision-making.

NHA is a tool for health sector management and policy development that measures total public (all relevant sectors), private (including households, enterprises, non-governmental organizations) and donor (rest-of-the-world) health expenditures. NHA consists of a set of tables presenting various aspects of a nation's health expenditure. Its distinguishing features include (WHO 2003; p.2):

(a) a rigorous classification of the types and purposes of all expenditures and of all the actors in the health system;
(b) a complete accounting of all spending for health, regardless of the origin, destination, or object of the expenditure;
(c) a rigorous approach to collecting, cataloguing, and estimating all those flows of money related to health expenditure; and
(d) a structure intended for ongoing analysis (as opposed to a one-time study).

In principle, NHA tracks all expenditure flows from the sources of funds to financing agents, service providers, public health functions and inputs. It seeks to answer questions such as (WHO 2003): Who pays and how much is paid for health services? How are resources mobilized and managed for the health system? Who provides health goods and services, and what magnitudes of resources do they use? How are health care funds distributed across the different services (e.g. prevention, treatment, care, rehabilitation), interventions and activities that the health system produces? How are the health funds distributed across the different inputs (e.g. human resources for health, pharmaceuticals and non-pharmaceutical supplies, equipment, buildings, vehicles, maintenance)? Who benefits from health care expenditure (e.g. by income groups, age/sex, geographical regions, diseases or health conditions)?

NHA information empowers policy-makers (decision-makers) to effectively execute the stewardship functions of generation of financial intelligence, formulating sound strategic policy framework (national health policy, national strategic health development plan, comprehensive health financing policy and plan), monitoring programme implementation, ensuring a fit between policy objectives and available resources, and ensuring accountability in use of all health sector resources (WHO 2000). According to Berman (Berman 1996; p.vii), "NHA are a powerful tool that can be used to improve the capacity of decision-makers to identify health sector problems and opportunities for change and to develop and monitor reform strategies". NHA can provide some of the important information needed for strengthening health system performance of its functions of stewardship, health financing, input (or resource) creation and services provision, and ultimately, the achievement of health system goals of health improvement (or maintenance), responsiveness to people's non-medical expectations and fair financial contributions (WHO 2000; Murray and Frenk 2000).

The study reported in this paper was the first NHA exercise in Botswana. Its specific objectives were to estimate the total health expenditure by various sources and make recommendations for NHA

institutionalization.

2. Study area

2.1 Geographic, demographic and economic overview

Botswana is a landlocked country, sharing borders with Namibia, South Africa, Zambia and Zimbabwe. It has a surface area of 589,730 square kilometres. Botswana is one of the 14 countries of the Southern Africa Development Community (SADC). In 2004 the total population of Botswana was 1.769 million, i.e. 0.74% of the SADC population (WHO 2006). Botswana had an adult literacy rate of 79% and a combined gross enrolment ratio of 70%. Those statistics were higher than the average SADC adult literacy rate of 74% and combined gross enrolment ratio of 56% (UNDP 2005). Botswana is classified as a medium human development country. In 2003 the country had a human development index (HDI) of 0.565, which was slightly higher than the average HDI for SADC of 0.505. However, Botswana's HDI was lower than those for Mauritius (0.791), South Africa (0.658) and Namibia (0.627), which are also medium human development countries (UNDP 2005).

The economy of Botswana is one of the strongest in the SADC. In the period 1999/2000 and 2004/2005, the total gross domestic product (GDP) (at constant prices) grew from P15238.8 million to P22742.2 million (Republic of Botswana 2006c), i.e. a total growth rate of 49% (an annual growth rate of 8%). In 1999/2000 financial year, the gross total value added for Botswana was P14557.9 million (Republic of Botswana 2006c). The top five contributors of the value added were mining (35%); general government (17%); banks, insurance and business (12%); trade, hotels and restaurants (11%); and construction (6%).

2.2 Health profile

Health status in Botswana, until the advent of the HIV/AIDS epidemic, had been improving steadily and the vital health indicators were among the best in the WHO African Region until the late 1980s (WHO Regional Office for Africa 2003). There was a general decline in the incidence of childhood vaccine preventable diseases. Most of those achievements were eroded by the HIV/AIDS epidemic. Average life expectancy declined from 65 years in 1991 to 54.4 years (48.8 males: and 60 females) year in 2007 (Botswana 2007).

The under-5 mortality rate (for both sexes) in Botswana was 116 per 1000, which was higher than that of Lesotho, Mauritius, Namibia and South Africa but lower than the average for SADC of 132 per 1000. The adult mortality rate for Botswana was 778 per 1000, which was higher than that of SADC average of 595 per 1000 (WHO 2006).

The maternal mortality ratio for Botswana of 100 per 100000 live births was far much lower than the average for SADC of 783/100000. Botswana stillbirth rate was 44 per 1000, which was higher than the SADC average stillbirth rate of 30/1000. The Botswana neonatal mortality rate per 1000 live births was 40 (WHO 2006). It was equal to that of Malawi and Zambia, but higher than that of Lesotho, Madagascar, Mauritius, Namibia, South Africa and Swaziland.

HIV/AIDS remains the leading causes of mortality and morbidity in Botswana. In 1992 around 18% of pregnant women tested positive for the HIV. The number increased to 37.4% in 2003 before it declined to 33.4% in 2005. The declining HIV trend has been found to be more visible among the 15-19 age groups where the prevalence rate declined from 28.6% in 1998 to 17.8% in 2005 (WHO Regional Office for Africa 2003). Other major causes of mortality and morbidity are pneumonia, pulmonary tuberculosis, ill-defined intestinal infections, meningitis, others (diseases of the nervous system), acute but ill-defined cerebrovascular disease, nephritis, nephrotic syndrome, nephrosis, diseases of pulmonary circulation and heart disease (Republic of Botswana 2002). Malaria is one of the leading causes of morbidity especially in

the Northern and Western regions of Botswana.

2.3 Health system overview

A health system performs four functions: stewardship (oversight), delivering (providing) personal and non-personal services, creating resources/inputs, and health financing (WHO 2000). Firstly, health stewardship focuses on the role of country's government, through its health ministry, in taking responsibility for the health and well-being of the population, and guiding the health system as a whole, in order to achieve its goals (Murray and Frenk 2000). In order to exercise its stewardship role, the Government of the Republic of Botswana developed the Vision 2016 (Republic of Botswana 1995); National Development Plan (Republic of Botswana 2006a); National Health Policy (Republic of Botswana 1995); the Private Hospitals and Nursing Homes Act and the Medical, Dental and Pharmacy Act (Republic of Botswana 2001); and the Ministry of Health Corporate Performance Plan (Republic of Botswana 2000) to guide health development.

Secondly, provision of health services refers to combination of inputs within a production process (e.g. hospital, clinic, public health programme) that leads to the delivery of personal health services (consumed directly by the individual) and non-personal health services (e.g. national vaccination campaigns, mass health education) or to the non-human components of the environment (e.g. basic sanitation, water, air-pollution control) (WHO 2000). The Botswana health system consists of 3 referral hospitals, 14 district hospitals, 17 primary hospitals, 102 clinics with maternity services, 159 clinics without maternity services, 318 health post with nurse, 23 health post with family welfare educators, and 461 mobile stops (Republic of Botswana 2006b). The Ministry of Health (MOH) manages the referral, district and primary hospitals, while the Ministry of Local Government (MOLG) oversees the running of clinics, health posts and mobile stops.

Thirdly, resource generation includes a diverse group of organizations that produce health services inputs, particularly human resources for health, medicines, physical facilities and equipment, and knowledge (WHO 2000). In 2004, Botswana had a total of 715 (0.40 per 1000) physicians, 4753 (2.65 per 1000) nurses, 38 dentists (0.02 per 1000), 333 (0.19 per 1000) pharmacists, 172 public and environmental health workers (0.10 per 1000), 277 (0.15 per 1000) laboratory technicians, and 829 (0.46 per 1000) health management and support workers (WHO 2006). The densities of doctors and nurses per 1000 population were higher than those of the other SADC countries, except those for Mauritius and South Africa.

The Central Medical Stores (CMS) procures and distributes medicines, vaccines and health technologies to both MOH and MOLG health facilities. The network of district laboratories in the country is supported by a state of the art laboratory in the country's referral hospital. Safe blood transfusion services have been maintained, with a good quality control system in place (WHO Regional Office for Africa 2002).

Lastly, health financing has been defined as the raising or collection of revenue to pay for the operation of the health system. It has three functions: revenue collection from various sources, pooling of funds and spreading of risks across larger population groups, and allocation or use of funds to purchase services from public and private providers of health care (WHO 2000). In the Republic of Botswana, there are three sources of health sector funding. (i) Majority of the health funds comes from government tax revenues, allocated by the Ministry of Finance and Development Planning to various financing agents, e.g. MOH, MOLG. (ii) Households contribute to health funding through premiums (and co-payments) into medical aid schemes and direct out-of-pocket payments (OOPs) for health goods and services. (iii) Employers provide medical cover for their employees, either through self-operated health services (e.g. Debswana and Bamangwato Concessions Limited companies) or paying premiums into health insurance schemes. (iv) International donors (e.g. bilateral and multi-lateral agencies, GAVI and Global Fund for AIDS, Tuberculosis and Malaria) also contribute to health funding in the country.

3. Methods

3.1 NHA conceptual framework

Figure 1 presents the national health accounts framework which shows that total health expenditure (THE) is the sum of public expenditure on health (PHE) and private health expenditure (PvtHE). PHE is the sum of government tax-funded health expenditure (GGEH), social security health expenditure (SSHE) and external resources for health (EHE). On the other hand, PvtHE is the sum of private health insurance (PHI), private firms and employers' health expenditure (MEHE), non-profit institutions expenditure health expenditure (NPIHE), households' out-of-pocket expenditure on health (OOP) and private investment in health services (PIHS).

Figure 2 show how NHA tool tracks health funds from financing sources, agents, providers, functions to beneficiaries. Financing sources are institutions or entities that provide funds used in the health system by financing agents. Financing agents are institutions or entities that channel funds provided by financing sources and use those funds to pay for, or purchase, the activities inside the health accounts boundary (i.e. all activities whose primary purpose is to promote, restore or maintain health). The sum of the funds channelled through all the financing agents should be equal to the total amount of money provided by the financing sources (WHO 2003).

Providers are entities that receive money in exchange for or in anticipation of producing the activities inside the health accounts boundary. Ideally, the sum of the funds received by all the providers should be equal to the total amount of money provided by the financing agents (WHO 2003).

Functions are the types of goods and services provided and activities performed within the health accounts boundary. Ideally, the sum of the funds spent in the performance various functions should be equal to the total amount of money received by providers from the financing agents (WHO 2003).

Resource costs are the factors or inputs used by providers or financing agents to produce the goods and services consumed or the activities conducted in the health system. Beneficiaries are the people who receive those health goods and services or benefit from those activities (WHO 2003).

The NHA consists of tables that cross-tabulate various dimensions. The first NHA table is on financing sources and type of financing agents (FS x FA). The second table is on financing agent and type of provider (FA x P). The third table shows provider expenditures on different health functions (P x F). The fourth table (F x RC) illustrates the share of health functions expenditure accounted for by various health systems inputs, e.g. human resources for health, medicines, non-pharmaceutical supplies, equipment and buildings. The last set of tables presents health expenditure by age and sex of the population, socio-economic status, and by geographic region (WHO 2003).

In the current study, it was not possible to obtain expenditure data disaggregated by providers, functions and resource costs. Thus, it was only possible to complete the table on health expenditure by financing source and type of financing agent (FS x FA).

3.2 Field work methodology

To facilitate the data collection process a NHA sensitization workshop was held in June 2003. Potential NHA stakeholders were invited to a one day workshop where they were introduced to NHA, the usefulness of NHA and its relevance to Botswana. Another more exhaustive workshop was held to train the NHA Working Group (NWG).

The Botswana NHA study relied on primary and secondary data. A wide range of data and information was collated from various government publications/sources and medical aid scheme brochures. In addition, the

NWG adapted the generic WHO NHA questionnaires and used them in the surveys of:

- Government ministries: Ministry of Finance and Economic Development, Office of the President (under which Department of Defence falls), Ministry of Health, Ministry of Local Government, Ministry of Labour, and Ministry of Education;
- National AIDS Coordinating Agency (NACA);
- Health care providers: Private for-profit/Mission (not-for-profit) Facilities;
- Insurance (Public and private), including medical Aid Schemes;
- Employers/firms (including parastatals);
- Non-Governmental Organisations (NGOs involved in health); and
- Donors (both bilateral and multilateral).

Table 1 shows the numbers and percentages of different organizations that responded. Out of 330 questionnaires administered (hand delivered or through mail) to various organizations by categories, the total number of well-completed questionnaires was 191. This gives a response rate of 58% of the total.

Due to scarcity of resources, it was not possible to undertake a household health expenditure and utilization survey, which would have provided more detailed information. Instead, household health expenditure data contained in the Household Income and Expenditure Survey for 2002/2003, undertaken by the Central Statistics Office (CSO) was used. The CSO household questionnaire contained the following health-related question: "List below the total medical costs that you and your household have paid during the past six months on major medical items only and for which you will not be reimbursed by an employer or medical aid scheme. If the medical aid scheme requires you to pay a certain amount for every claim, you should record below the amount paid by you. For instance, if the total cost of surgery was P1500 and medical aid paid P1350 and you paid P150 then you should record against 'Cost of Surgery' the amount paid by you – P150. Include medical costs incurred outside as well as inside Botswana." The questionnaire asked for the total amount paid for consultations with private sector; consultations with traditional doctor; consultations with spiritual healers; dental treatment; cost of surgery; accommodation in private hospital or clinic; consultation with optician, cost of eye tests; cost of spectacles, contact lenses, etc ; purchase of drugs and medicines (excluding painkillers, cough mixture, other common medicines); and other major medical expenses (which they were requested to specify). The average monthly expenditure on health was obtained and multiplied by 12 months and then by the total population for year 2000, 2001 and 2002.

3.3 Data collection

Five trained research assistants visited and administered the data collection tools. To facilitate the data collection process the tools were sent to all institutions selected for the study prior to fieldwork. This was to enable the participants to familiarise themselves with the data requirements, complete the questionnaires where possible, and put together some institutional materials such as annual reports. The actual visit by the team assisted in clarifying issues and ensuring that the tools received were complete. Not all questionnaires were collected during the teams visit and those that were not able to complete the tool at the time of the visit were advised to send them by mail or facsimile to the Ministry of Health Headquarters.

3.4 Data analysis

After checking for completeness of the questionnaires filled by various organizations, the data were entered into NHA dummy matrix tables and analyzed using Excel software. The matrices were built in accordance to the International Classification of NHA to facilitate international comparison, but customised to the local situation.

3.5 Limitations of the NHA study

There were five main limitations of the study reported in this article. Firstly, some of the private sector

respondents were reluctant to complete the questionnaires because they were suspicious that the data being collected may be used for tax purposes. The delays in submission of the completed questionnaires and incomplete responses were among the hurdles faced during the data collection stage.

Secondly, no specific survey was undertaken among the public health facilities. The initial assumption was that the information on public health facilities would be available at the MOH and MOLG headquarters in disaggregated form. However, since the data at Headquarters is kept in aggregated form, it was not possible to disaggregate the expenditures by public health functions, services and inputs. Thus, as a result it was not possible to populate the second, third and fourth NHA matrices mentioned in Methods section.

Thirdly, prior to 2002 NACA was operating under the Ministry of Health Headquarters; therefore, it was difficult to obtain its expenditure data for years 2000 and 2001.

Fourthly, the format in which the expenditure data was routinely recorded by the Government Ministries, NACA, other financing agents, and providers was not in the form required for NHA. Thus, many organizations found it quite difficult to provide detailed flow of expenditures to functions and inputs.

Fifthly, it was not possible to obtain health expenditures from a number of pertinent Ministries. For example, it was not possible to obtain information on the bursaries provided by the Ministry of Education to students training locally as human resources for health. Also expenditure data on School Health Programme, which is run by the MOE, was lacking. Furthermore, the NHA Working Group encountered problems in obtaining health expenditure information from the Department of Defence, inspite of sustained follow-up. The persons contacted at the DOD felt that the information was of sensitive nature.

4. Results and Discussion

4.1 Total health expenditure

Figure 3 presents the total health expenditure (THE) for Botswana and the contributions from government, private spending and donors. THE was approximately P1172.3 million (US$218.6M) in year 2000; P1717.1 million (US$284.7M) in 2001; and P2139.3 million (US$342.9M) in 2002. THE for the three years represent 6.43%, 9.27% and 10.54% of the GDP, respectively. Among the SADC countries, it were only Botswana, Malawi, South Africa and Zimbabwe that invested over 8% of their GDP on health development in years 2000 and 2001 [1]. Four SADC countries consistently allocated less than 5% of their GDP on health. In SADC, the average percentage of GDP allocated to health grew slightly from 5.5% in year 2000 to 5.9% in year 2002.

The per capita THE for 2000, 2001 and 2002 was P710 (US$132), P1022 (US$169) and P1232 (US$197) respectively. Thus, there was a 73.5% nominal growth in the per capita THE between years 2000 and 2002. *Figure 4* presents the per capita THE for SADC countries of years 2000, 2001 and 2002. The data for Botswana were derived from the NHA exercise undertaken in the country. The data for the other SADC countries were obtained from the WHO World Health Report 2006 estimates (WHO 2006).

The only SADC countries that experienced an increase in per capita total expenditure on health between year 2000 and 2002 were Botswana, Mauritius and Zimbabwe. Average per capita expenditure in SADC increased slightly from US$62 in 2000 to US$67 (WHO 2006). In 2002 Botswana's per capita total health expenditure was second largest, after South Africa.

4.2 Public funds

General government expenditure on health includes health expenditure at all levels (and ministries) of government. In 2000, out of the THE of P1172.3 million incurred in the country, total government health expenditure (TGHE) was P847.6 million (US$158.1 million), which represented 72.30 percent of the THE.

The TGHE as a percentage of total health expenditure for Botswana was higher than the average for SADC, which was 55% (with a minimum of 13.1% in DRC and a maximum of 83.1% in Lesotho). The per capita TGHE for Botswana was P513 (US$95.7) (see *Figure 5*).

In 2001, out of the THE of P1717.1 million incurred in the country, TGHE was P1301.0 million (US$215.7 million), which represented 75.77 percent of the THE. The per capita TGHE was P774 (US$128.3) (see *Figure 6*).

In 2002, out of the THE of P2139.3 million incurred in the country, TGHE was P1601.4 million (US$256.7M), which represented 74.86 percent of the THE. Per capita TGHE was P922 (US$147.8) (see *Figure 7*). This analysis clearly shows that the Government of Botswana is the main source of funding for the health sector.

Figure 8 depicts the trends of per capita TGHE for SADC countries between years 2000 and 2002. It is clear that the Government of Botswana invested far much more money per person for health development than all the other SADC countries. Botswana, Mauritius and Zimbabwe are the only countries in SADC where per capita government expenditure grew consistently between 2000 and 2002.

Figure 9 presents the trend of general government expenditure on health as a percentage of total government expenditure among the SADC countries. In the Republic of Botswana, the share of the total government expenditure spent on health increased from 8.2% in 2000 to 10.3% in 2001, and then decreased to 9.2% in 2002 (mainly due to an increase in donor funding for HIV/AIDS). The average general government expenditure on health as a percentage of total government expenditure among the SADC countries was 8.7% in 2000, 9.6% in 2002 and 9.8 in year 2002.

By end of 2002, none of the SADC countries had met the commitment that the Heads of State of African countries made in Abuja (in April 2001) to allocate at least 15% of their annual budgets to the health sector (Organization of African Unity 2001). This means there will be need for all SADC countries to take appropriate steps to honour the commitment made by their respective Heads of State. If African governments cannot fulfil their own commitments, it would be difficult to hold their health development partners accountable, when they default on their promises. In the Maputo Declaration (African Union 2003) African Heads of State reaffirmed their commitment to achieve the target of allocating 15% of national budget to health, which reflects sustained resolve to strive towards the target.

Some scholars have criticized government source of funding as inefficient and inequitable (Akin et al 1987). However, given that about 23.4% of the people in the Republic of Botswana live below the poverty line of US$1 per day (Republic of Botswana 2005), there is obviously a role for government financing as a force for equity in sharing health care costs and for government provision of services to improve equity in access for the poor, majority of whom live in rural areas and urban villages.

4.3 Private Funds

This source of funding includes employer funds, household funds, and nongovernmental organizations. The funds provided by parastatal entities acting as employers were also included under private funds (WHO 2003). In 2000, out of THE of P1172.3 million incurred in the country, a total of P283.1 million (US$52.8M) came from Private Funds; which represented 24.15 percent of the THE. The per capita private expenditure on health was P171 (US$31.9). In 2001, out of THE of P1717.1 million incurred in the country, a total of P326.1 million (US$54.1M) came from Private Funds; which represented 18.99 percent of the THE. Per capita private expenditure on health was P194 (US$32.2). In 2002, out of THE of P2139.3 million incurred in the country, a total of P391 million (US$62.7M) came from Private Funds; which represented 18.28 percent of the THE. Per capita private expenditure on health was P225 (US$36.1). The percentage of private spending on health in Botswana decreased by about 6% between year 2000 and 2002.

Figure 10 shows the pattern of private expenditure on health as a percentage of THE across the SADC countries. In Angola, Botswana and Lesotho private spending contributes less than 20% to the THE in 2001 and 2002. In DR Congo, Malawi, South Africa and Zimbabwe private spending contributed over 50% of the THE. The average private spending in SADC fell from 44.8% in 2000 to 43.0% in 2002 (WHO 2006).

4.3.1 Employer funds (including parastatal funds)

The employer funds comprises of contributions to insurance programmes for the employees (e.g. medical aid schemes) and to social security schemes and direct financing of health care by employer through self-insurance or operating own health care facilities (WHO 2003). Approximately P29.6 million (2.53%), P40.4 million (2.35%) and 84.2 million (3.93%) of the THE in year 2000, 2001 and 2002 came from the private employer funds. About 10.47%, 12.38% and 21.52% of the total private health funds in year 2000, 2001 and 2002 were from private employers. Thus, the role of private employers in the private health spending has been growing steadily.

Almost P9.87 million (0.84%), P13.4 million (0.78%) and P22.5 million (1.05%) of the THE in year 2000, 2001 and 2002 were provided by parastatal (government corporation) entities acting as employers. Those entities provided about 3.49%, 4.10% and 5.75% of the total private health funds in year 2000, 2001 and 2002.

4.3.2 Household Funds

Household funds consist of household payments for health goods and services (includes direct payments to providers to cover insurance amounts or services not covered under insurance schemes), and household payments through financing agents. They include premium payments for private health insurance (WHO 2003).

Approximately P243.58 million (20.78%), P272.38 million (15.86%) and P284.39 million (13.29%) of the THE in year 2000, 2001 and 2002 were from household funds. The total household expenditure on health per person per year was P148 in 2000, P162 in 2001 and P164 in 20002. The household health funds formed 86.04%, 83.52% and 72.73% of the total private health funds in years 2000, 2001 and 2002 respectively. Thus, households are the second most important source of health financing after the government; and the first most important contributor to the total private health spending.

Household premium contribution to private health insurance amounted to P54.6 million in year 2000, P80.0 million in 2001 and P85.7 million in 2002. Those contributions constituted 19.30%, 24.54% and 21.92% of the total private health funds; and 22.43%, 29.38% and 30.14% of the total household health expenditure in 2000, 2001 and 2002 respectively.

Household out-of-pocket payments (OOPs) contributed around P188.9 million (16.12%), P192.4 million (11.20%) and P198.7 million (9.29%) to THE in years 2000, 2001 and 2002. OOPs constituted 66.74%, 58.98% and 50.81% of the total private health expenditure in years 2000, 2001 and 2002. Sadly, 77.57%, 70.62% and 69.86% of the total household health funds in 2000, 2001 and 2002 came from direct out-of-pocket payments. The direct out-of-pocket payment per capita spending is P114 per year.

Figure 11 shows the OOPs as a percentage of private expenditure on health among the SADC countries in years 2000, 2001 and 2002 (WHO 2006). The average OOPs as a percentage of private expenditure for SADC was 60.6% in 2000, 59.3% in 2001 and 58.7% in 2002.

4.3.3 Nongovernmental Organizations

The nongovernmental organizations (NGO) category captures funds provided by national NGOs or non-profit institutions serving individuals (WHO 2003). In Botswana, the NGOs are not a source of

funding for health, but health financing agents.

4.4 External Funds

The Rest-of-the-world category captures funds that come from outside the country for use in the current year. It includes external resources from bilateral and multilateral international grants as well as funds contributed by institutions and individuals outside the country. The bilateral and multilateral loans made to national government are not included here, since they represent a change in debt position of the government (WHO 2003).

The rest-of-the-world makes a fairly modest but growing contribution to health financing of the health system in Botswana. For example, about P41.6 million (3.55%), P89.9 million (5.24%) and P146.5 (6.85%) of the THE in the years 2000, 2001 and 2002 respectively consisted of external donor resources.

Figure 12 presents the pattern of external resources for health as a percentage of total expenditure on health for the SADC in years 2000, 2001 and 2002 (WHO 2006). Botswana is among the 8 (57%) SADC countries that receive less than 10% of their THE from external sources. Madagascar, Mozambique and Tanzania receive at least 30% of their THE from donors; thus, they are comparatively more donor dependent. The average external resources for health as a percentage of THE for the SADC was 15.3% in 2000, 16.2% in 2001, and 13.4% in 2002.

4.5 Health Financing Agents

The financing agents are institutions or entities that channel the funds provided by financing sources (e.g. Government, private employers, households, donors) and use those funds to pay for, or purchase, the activities whose primary intent is to improve or maintain health status (WHO 2003). In Botswana the financing agents include: ministry of health (MOH), Ministry of local government, Lands and Housing (MOLGL), National AIDS Coordinating Agency (NACA), Ministry of Education (MOE), private social insurance for government employees, private insurance (medical aid schemes), households out-pocket payments (OOPs), NGOs, private firms (enterprises), and rest of the world (donors). *Figure 13* shows the percentage of total health expenditure by financing agents in Botswana.

In 2000, out of the total health expenditure P1172.3 million: Ministry of Health received 57.73%; Ministry of Local Government received 9.74%; National AIDS Coordinating Agency (NACA) received 0%; Ministry of Education received 3.89%; private social insurance scheme for government employees received 7.84%; private insurance (medical aid schemes) received 1.75%; households out-pocket payments spent 16.12%; NGOs received 0.72%; private firms (enterprises) received 2.20%; and rest of the world (donors) received 0%.

In 2001, out of the total health expenditure P1717 million: Ministry of Health received 63.07%; Ministry of Local Government received 8.35%; National AIDS Coordinating Agency (NACA) received 0.00%; Ministry of Education received 4.44%; private social insurance scheme for government employees received 8.15%; private insurance (medical aid schemes) received 1.69%; households out-pocket payments spent 11.20%; NGOs received 1.31%; private firms (enterprises) received 1.78%; and rest of the world (donors) received 0.01%.

In 2002, out of the total health expenditure 2139.3 million: Ministry of Health received 56.36%; Ministry of Local Government received 7.88%; National AIDS Coordinating Agency (NACA) received 9.42%; Ministry of Education received 2.96%; private social insurance scheme for government employees received 6.87%; private insurance (medical aid schemes) received 1.77%; households out-pocket payments spent 9.29%; NGOs received 2.01%; private firms (enterprises) received 3.43%; and rest of the world (donors) received 0.01%.

4.5.1 Public Health Financing Agents

The four public health financing agents (i.e. MoH, MoLG, NACA, MoE) handled approximately 74.4%, 75.9% and 76.6% of the total health expenditure in the Republic of Botswana during years 2000, 2001 and 2002. Over 56% of THE was used/administered by the MoH to purchase health goods and services. The MoE share includes only the amounts incurred annually for production of human resources for health. It was not possible to obtain data on other health programmes, such as the Health Promoting Schools Initiative (School Health Programme), which are run by the MoE. In addition, the data on health expenditures incurred by the State President's office (including the Botswana Defence Force and the Police) and the Ministry of Labour and Home Affairs (under which the prisons fell) were not available for analysis. Thus, the magnitudes of the percentage of THE handled by public financing agents would be higher than those reported here.

Since the Ministry's of Health Corporate Performance Plan (2001-2005) states that "The Ministry of Health (and by default the Government of the Republic of Botswana) is committed to the Primary Health Care strategy for ensuring equity, accessibility and community involvement in the delivery of health care" (Republic of Botswana 2000), the public financing agents should use the health finances under their control as a lever for promoting equity in health financing and access to health services. Those resources should specifically be targeted to improving the health status of the 23.4% of the Botswana population living below the international poverty line of a dollar per day (Republic of Botswana 2005). That would entail pursuit of multi-pronged health promotion strategies for addressing the broad determinants of health to prevent disease and cost-effective approaches for managing diseases prevalent among the poor.

4.5.2 Private health financing agents

The five private health financing agents (private social insurance for government employees, medical aid schemes, household out-of-pocket payments, NGOs and private firms/enterprises) administered approximately 28.64%, 24.13% and 23.36% of THE.

Household out-of-pocket payments (OOPs): A major cause of concern to the MoH is that majority of the private health expenditure - 66.74% in 2000, 58.98% and 50.81% - are incurred by households through direct out-of-pocket payments for health goods and services.

Private health insurance: Private insurance, which is usually voluntary, represents all risk-sharing arrangements that are based on a private contract between the insurance entity and the insured individual which cover health care costs. In the Republic of Botswana, private insurance (mainly the medical aid schemes) administered an insignificant 1.75%, 1.69% and 1.77% of the total health expenditure during years 2000, 2001 and 2002.

Private Insurance for Government Employees: The Republic of Botswana employees are covered within the private medical aid schemes. The employee contributes 50% of the premium and the government then pays the remaining 50%. The private insurance for Government employees managed about 7.84%, 8.15% and 6.87% of the total health expenditure during years 2000, 2001 and 2002 respectively.

In Botswana, the private prepaid schemes (medical aid schemes) spending constituted 33% of the total private health expenditure in 2000; 41% in 2001; and 49% in 2002. Those figures include the premium contributions from the government (for government employees), the parastatals (for their employees), the private employers, and the households into the medical aid schemes.

Figure 14 shows the patterns of private prepaid plans spending as a percentage of total private expenditure on health among the SADC countries in years 2000, 2001 and 2002 (WHO 2006). It was only in Botswana, Namibia and South Africa where private prepaid plans contributed over 40% of the total private spending

on health. The private prepaid plans were almost non-existent in Angola, Democratic Republic of Congo, Lesotho, Mauritius and Zambia.

4.6 Recommendations

On the basis of the experience acquired in the process undertaking this first NHA exercise in the Republic of Botswana, the following recommendations were made for improving subsequent NHA exercises:

1. There is need to sustain the current efforts being made by the Ministry of Health to cultivate an evidence-based decision-making culture in the health sector. That would help to create demand for health information, including information on NHA. The health systems managers (public and private) at various levels need to be held accountable for generating evidence and information (including NHA) for use in decision-making and planning.

2. There is need to institutionalise NHA such that it can be undertaken on a regular and sustained basis. Institutionalisation is an ongoing process in which NHA activities, structures, and values become an integral and sustainable part of the government operations. With institutionalisation, a department or other unit is designated to oversee the collection, analysis, and reporting of health expenditure data in a routine and systematic fashion, with the full support of the government. The complex process can take years and multiple estimates before it is fully integrated into the country's formal structure, but in order to ensure that NHA remains an effective policy tool in the future, institutionalisation should be a goal from the initiation of NHA (WHO 2007). The NHA institutionalisation process entails four steps:

    (a) Creating demand on the part of policymakers for institutionalisation;
    (b) Determining a location where NHA is housed: in Botswana NHA is housed in the Department of Policy, Planning, Monitoring and Evaluation of the MOH;
    (c) Establishing standards for data collection and analysis;
    (d) Instituting data reporting requirements for all stakeholders (public and private).

    In the NHA institutionalization process, it would also be worthwhile to integrate the NHA data collection within the national health information management systems. It will be necessary for the MOH to strengthen the capacity of the unit responsible for undertaking NHA.

3. There is need to develop a system within the Ministry of Health and the Ministry of Local Government (and other relevant ministries) for tracking actual health expenditures from the ministries headquarters all the way to districts, individual health facilities, public health functions and services (prevention and curative care). In addition, it will be necessary for NACA to develop a system for tracking expenditure of HIV/AIDS control resources; the recipient organizations need to report systematically on what the HIV/AIDS related activities (prevention, treatment and care) that they spend NACA resources on. NHA requires more disaggregated data than currently reported in the Estimates of Expenditures from the Consolidated and Development Funds reports.

4. In order to facilitate the process of instituting data reporting, there may be need to expand the membership of both the NHA Advisory Committee (NHAAC) and NHA Working Group (NHAWG) to include representatives of all relevant Government ministries (including Office of the President, Ministry of Education, Ministry of Labour and Home Affairs) and representatives of health financing agents.

5. Once membership of NHAAC and NHAWG has been expanded there will be need for sensitisation workshop for NHAAC members and a technical workshop for NHAWG. This is to ensure that all the memberships have a common understanding of what NHA is, why it is

critically important to have it institutionalised, how to use the NHA evidence to inform national health policy and strategic plans development and health financing reforms, and how to use NHA for monitoring and evaluation.

6. There is need to undertake another NHA exercise covering 2003, 2004 and 2005 to clear up backlog, and thereafter to decide on the frequency of subsequent NHA studies. In the process of doing that, it will be necessary to strengthen the existing set of data collection instruments for use among sources, financing agents, and health care providers (including functions and inputs). It is critically important to ensure that all the relevant data (e.g. expenditures from all sources, flow of resources from sources to: financing agents, providers of health services, public health functions, and inputs), some of which was missed in the first NHA exercise, would be collected subsequent NHA exercises.

7. For subsequent NHA studies, it is important to collect data in a highly disaggregated form to facilitate estimation of expenditures on priority programmes, e.g. HIV/AIDS, Tuberculosis, Malaria, Maternal and Child Health.

8. It is important that major national health documents, such as the corporate plan, take into account the health financing aspects of revenue collection, revenue pooling, resource allocation and services provision. This is because the way a health system is financed affects the performance of its other functions of stewardship, input (or resource) creation and services provision, and ultimately, the achievement of health system goals of health improvement (or maintenance), responsiveness to people's non-medical expectations and fair financial contributions.

9. The MOH should consider developing a comprehensive health financing policy and health financing strategic plan with a roadmap of how the Government intends to realize the vision of universal coverage of health services and universal protection from potentially catastrophic and impoverishing out-of-pocket payments for health care.

10. NHA tool cannot tell the policy-makers whether the country is getting value for funds spent. To get that kind of incite, there would be need for detailed costing of health services, and estimation of their cost effectiveness. The WHO-CHOICE project provides technical support to countries (at no cost) for estimating cost, population effectiveness and cost-effectiveness ratios of various health services and interventions (WHO 2009).

5. Conclusion

The manner in which a health system is financed affects its stewardship, input creation, service provision and achievement of goals such as good health, responsiveness to people's non-medical expectations (short waiting times, respect for dignity, cleanliness of physical facilities, quality meals) and fair financial contributions, so that individuals are not exposed to great financial risk of impoverishment. National health accounts evidence is critical for the support of health system governance and decision-making, design of comprehensive health financing policies and strategic plans, financial planning, monitoring and evaluation.

There is need to undertake another NHA exercise covering 2003, 2004 and 2005 to clear up backlog, and thereafter to decide on the frequency of subsequent NHA studies. In the process of doing that, it will be necessary to strengthen the existing set of data collection instruments for use among sources, financing agents, health care providers (including functions and inputs). It is also critically important to ensure that all the relevant data (e.g. expenditures from all sources, flow of resources from sources to financing agents, providers of health services, public health functions, and inputs), some of which were missed in the first NHA exercise, would be collected in subsequent NHA exercises.

Acknowledgement

We owe gratitude to the Ministry of Health in Botswana for having supported and facilitated the inaugural national health accounts study. We do thank the WHO Country Office Team in Botswana for having facilitated NHA support missions to Botswana from both the WHO Regional Office for Africa and the WHO Eastern and Southern Africa Inter-Country Support Team. JMK and EZ wish to acknowledge the support of Dr Alimata Diarra-Nama former WHO/AFRO Director for Health Systems and Services Development towards their missions to Botswana. The authors are profoundly grateful to God for meeting their needs at all stages of the study reported in this article. This article contains the analysis and views of the authors only and does not represent the decisions or the stated policies of the institutions they work for.

References

African Union (2003). *Maputo declaration on Malaria, HIV/AIDS, Tuberculosis, and other related infectious diseases.* Addis Ababa: African Union.

Akin, J.S., & Birdsall, N., & de Ferranti, D. (1987). *Financing health services in developing countries: an agenda for reform.* Washington, D.C.: World Bank.

Berman, P., & Cooper, D.M. (1996). *National health accounts: Software manual. Ver 1.01*. Boston: Harvard School of Public Health.

Murray, C.J.L., & Frenk J. (2000). A framework for assessing the performance of health systems. Bulletin of the World Health Organization, 78(6), 717-731.

Organization of African Unity (2001). *Abuja declaration on HIV/AIDS, tuberculosis and other related infectious diseases.* Addis Ababa: Organization of African Unity.

Republic of Botswana (1995). *National health policy.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (1997). V*ision 2016: Towards prosperity for all.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2000). *Ministry of Health Corporate performance plan (2001-2005).* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2001). *Laws of Botswana: Health Professionals Act.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2002). *Health statistics report. Central Statistics Office.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2005). *Household income and expenditure survey: 2002/2003.* Central Statistics Office. Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2006a). *National Development Plan.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2006b). *Master Health Facility List 2005.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2006c). *2006 Annual Economic Report Published as a supplement to the 2006 budget speech.* Gaborone: Department of Printing and Publishing Services.

Republic of Botswana (2007). *Botswana Family Health Survey.* Gaborone: Central Statistics Office.

United Nations Development Programme (2005). *The Human Development Report 2005.* New York: Oxford University Press.

World Health Organization (2000). *The world health report 2000 – health systems: improving performance.* Geneva: WHO.

World Health Organization (2003). *Guide to producing national health accounts: with special applications for low-income and middle-income countries.* Geneva: WHO.

World Health Organization Regional Office for Africa (2002). *WHO Country Cooperation Strategy for Botswana: 2003-2007.* Brazzaville: WHO/AFRO.

World Health Organization (2006). *The World Health Report 2006: working together for health.* Geneva: WHO.

World Health Organization, (2007), National Health Accounts [Online] Available: http://www.who.int/nha/ (November 25, 2007)

World Health Organization, (2009), WHO-CHOICE. Available: http://www.who.int/en/ (December 8, 2009)

Table 1: NHA survey response rate

Categories	Total number with Health Expenditure	Number of Responded	Percentage collected
Employers/Private Companies	225	121	54
Private Facilities	58	47	81
NGOs	27	13	48
Donors	12	6	50
Insurance Companies	8	4	50
Total	330	191	58

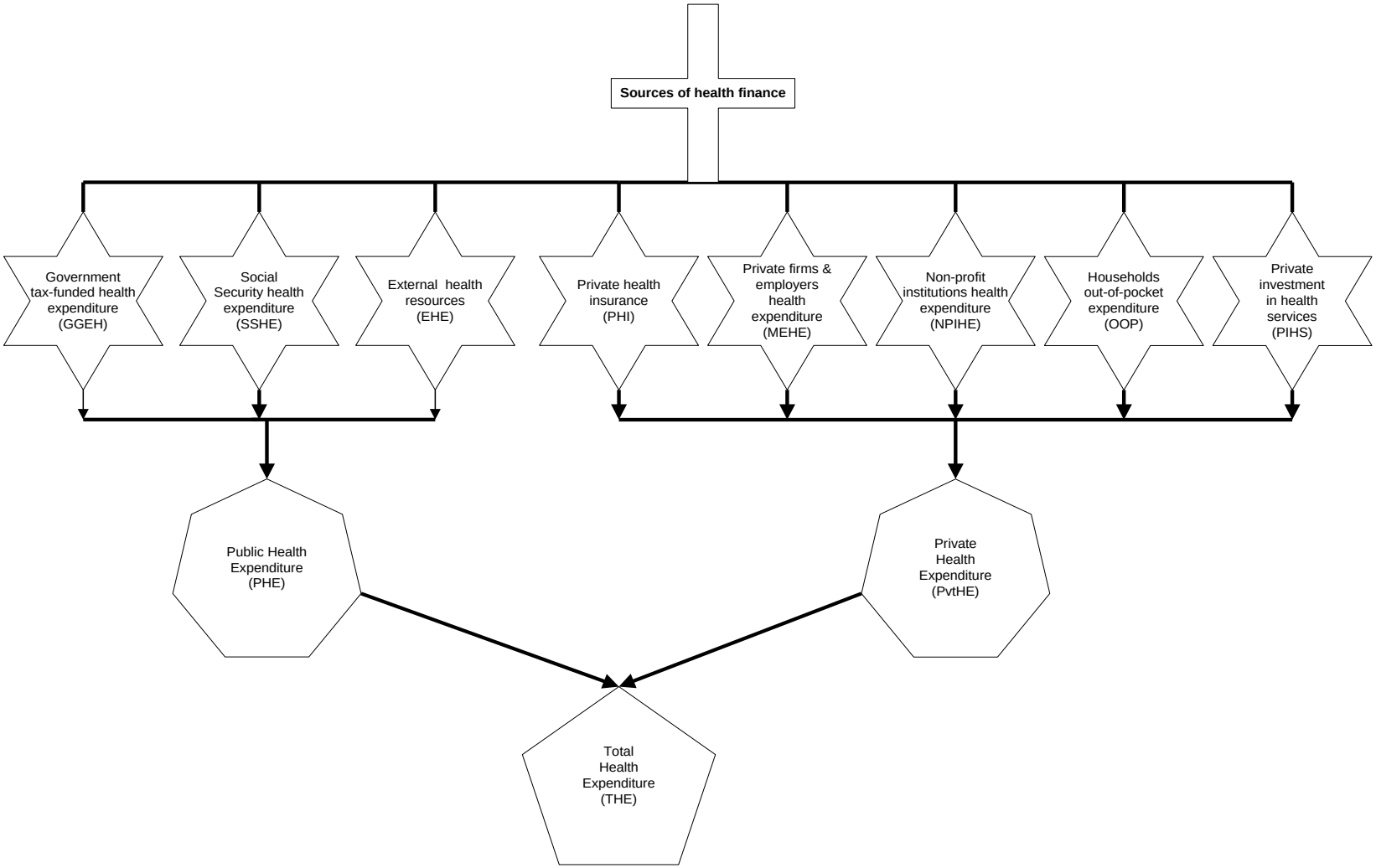
Sources of health finance
Government tax-funded health expenditure (GGEH)
Social Security health expenditure (SSHE)
External health resources (EHE)
Private health insurance (PHI)
Private firms & employers health expenditure (MEHE)
Non-profit institutions health expenditure (NPIHE)
Households out-of-pocket expenditure (OOP)
Private investment in health services (PIHS)
Public Health Expenditure (PHE)
Private Health Expenditure (PvtHE)
Total Health Expenditure (THE)

Figure 1: National health accounts framework

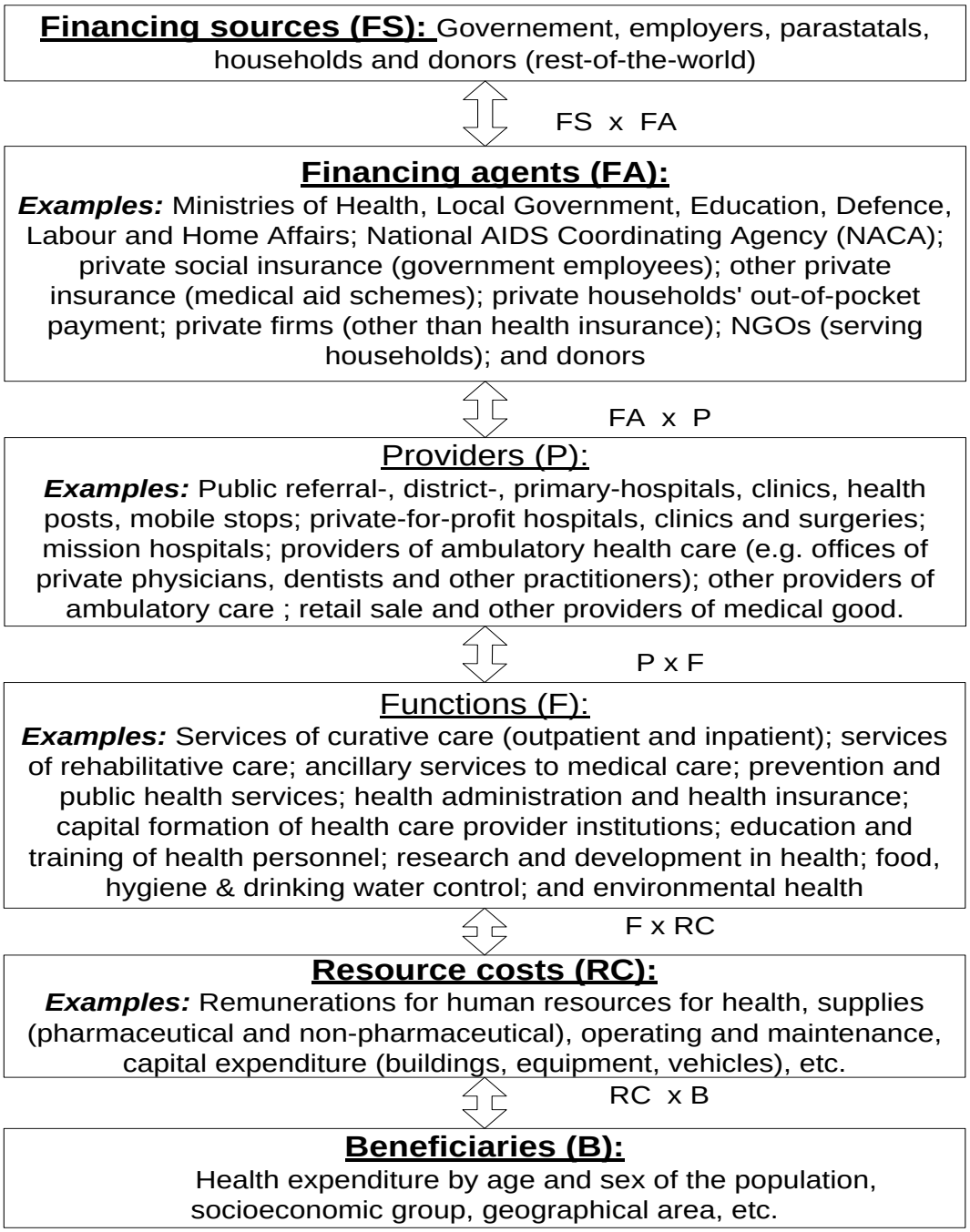

Figure 2: NHA tracking of funds from sources, agents, providers, functions to beneficiaries

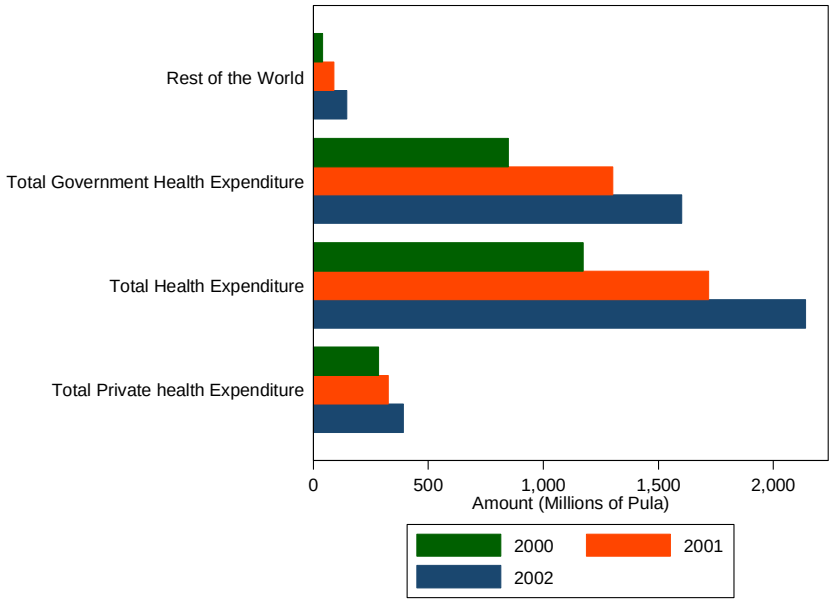

Figure 3: Total health expenditure by sources (in millions of Pula), 2000-2002

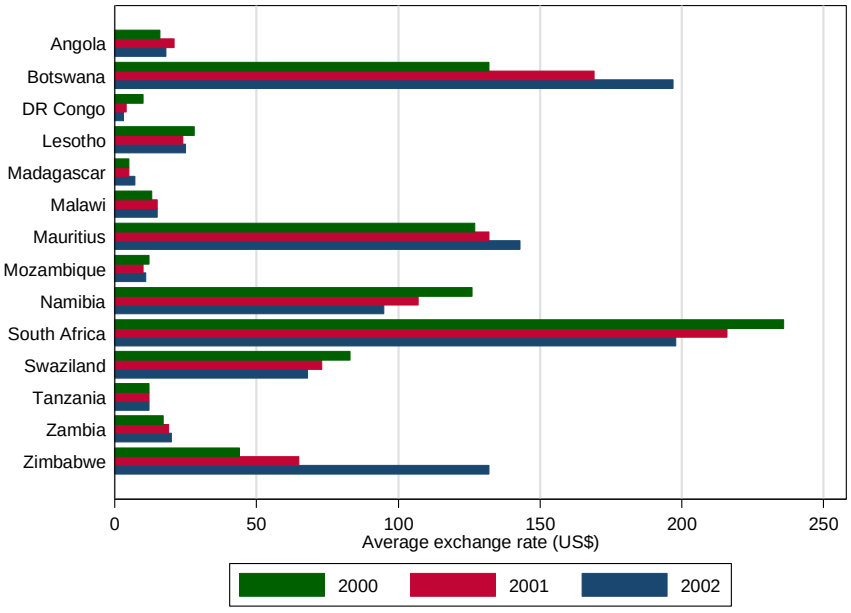

Figure 4: Per capita total health expenditure for health for SADC countries (US$)

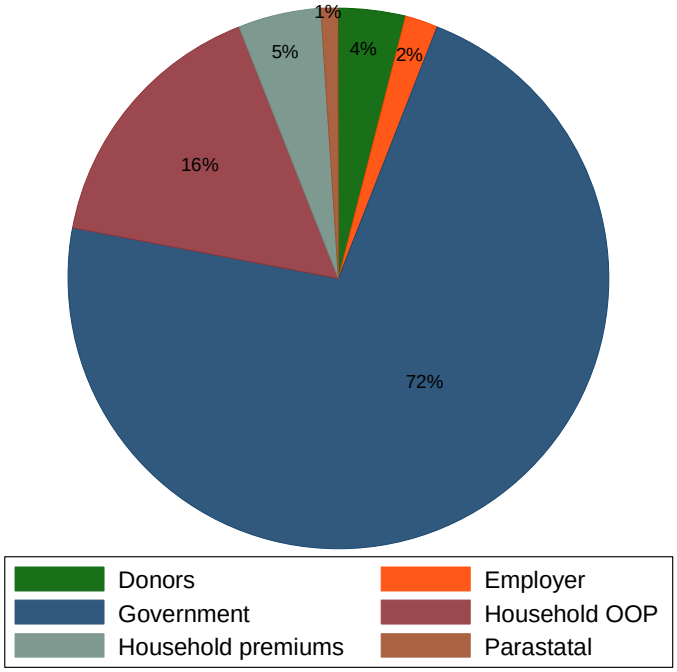
1%
4%
2%
5%
16%
72%
Donors
Employer
Government
Household OOP
Household premiums
Parastatal

Figure 5: Health financing by source in Botswana, 2000

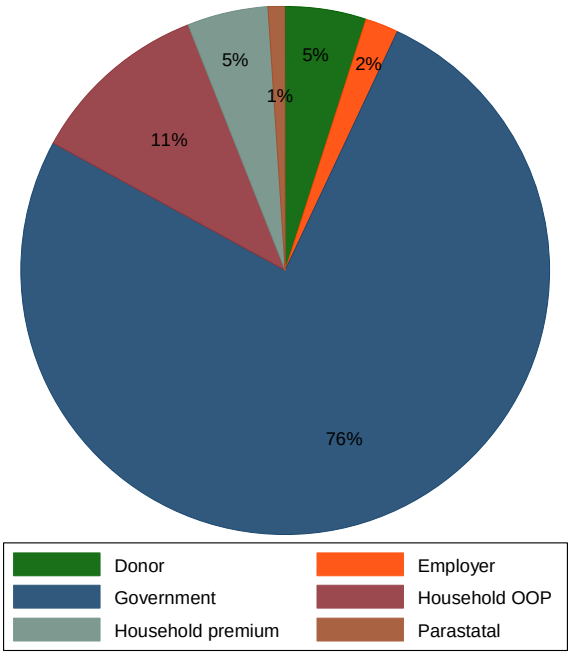

Figure 6: Health financing by source in Botswana, 2001

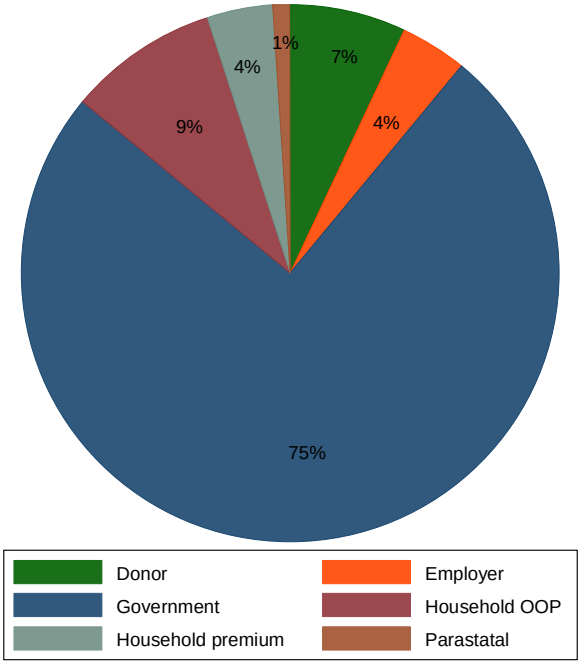

Figure 7: Health financing by source in Botswana, 2002

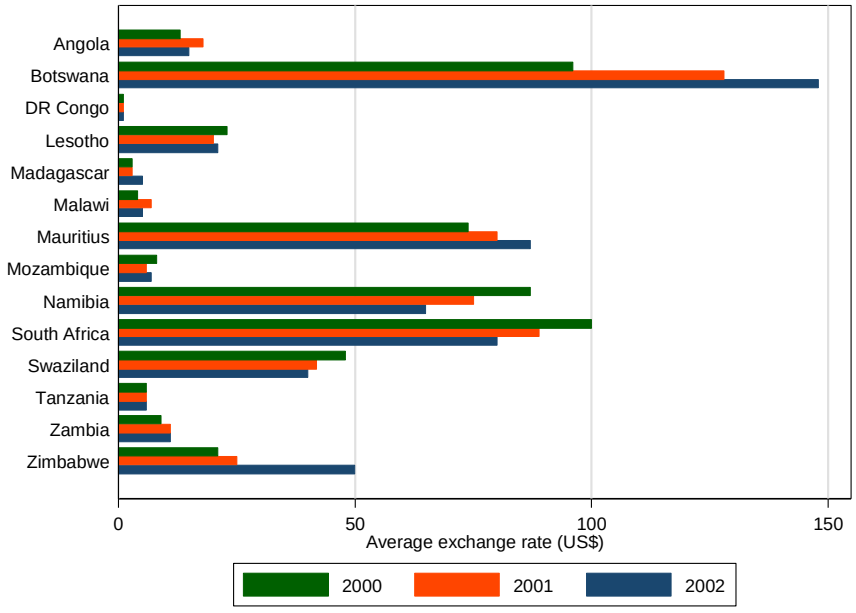

Figure 8: Per capita government expenditure on health in SADC

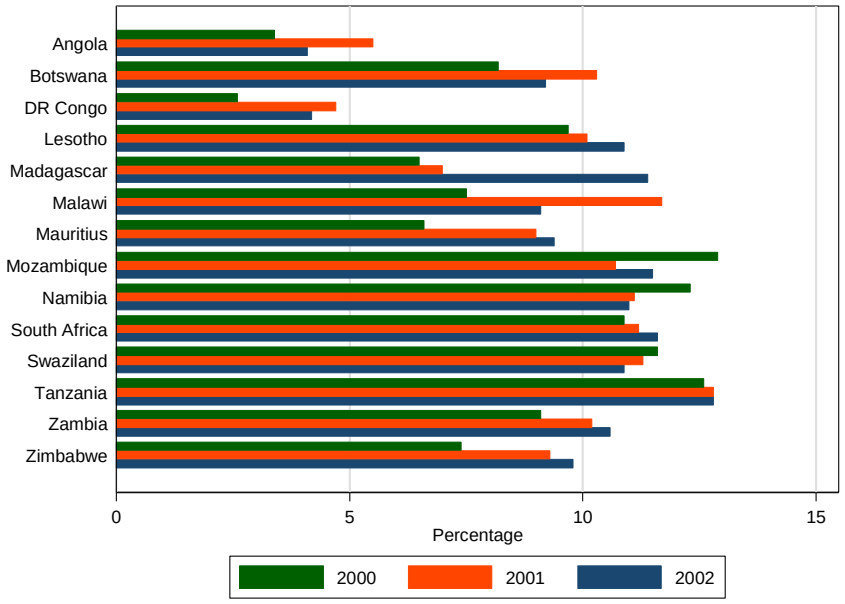

Figure 9: Government expenditure on health as percentage of total government expenditure

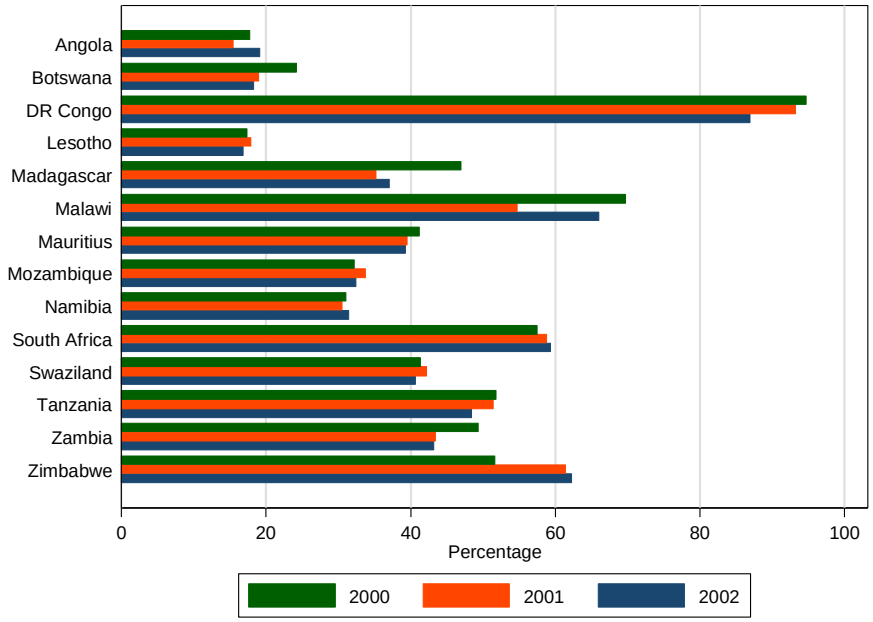

Figure 10: Private expenditure on health as percentage of total expenditure on health in SADC

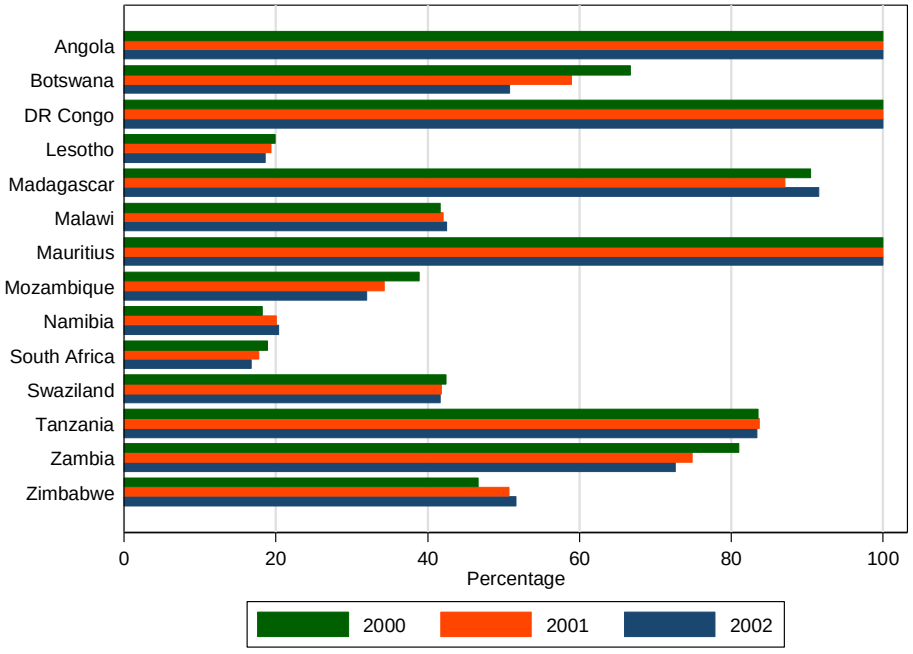

Figure 11: Out-of-pocket expenditure on health as percentage of total expenditure on health in SADC

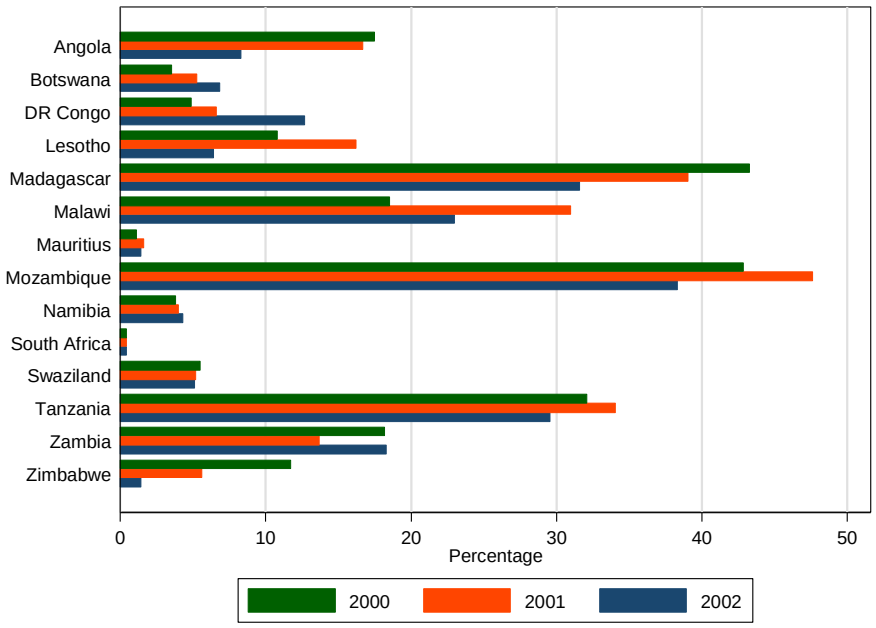

Figure 12: External resources for health as a percentage of total expenditure on health

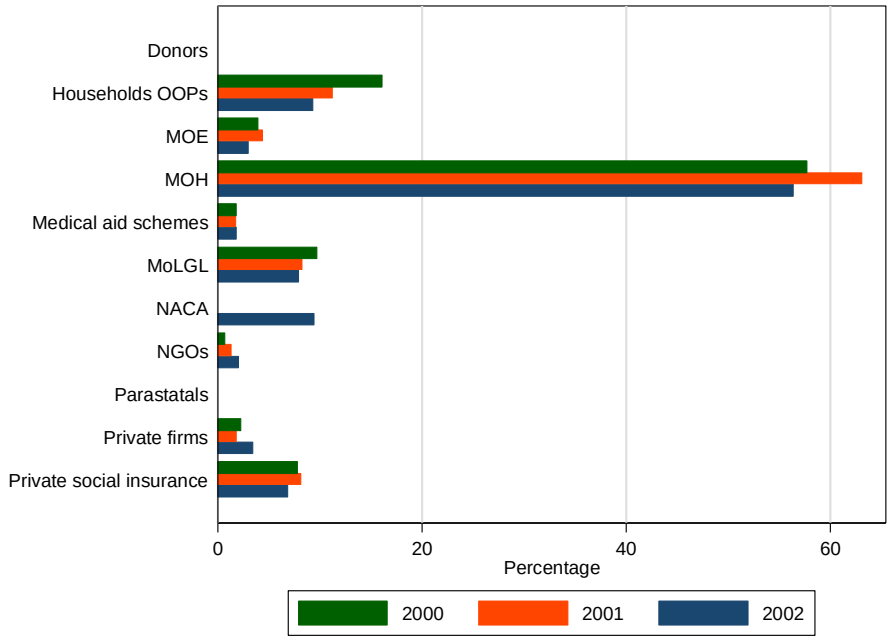

Figure 13: Percentage of total health expenditure by financing agents

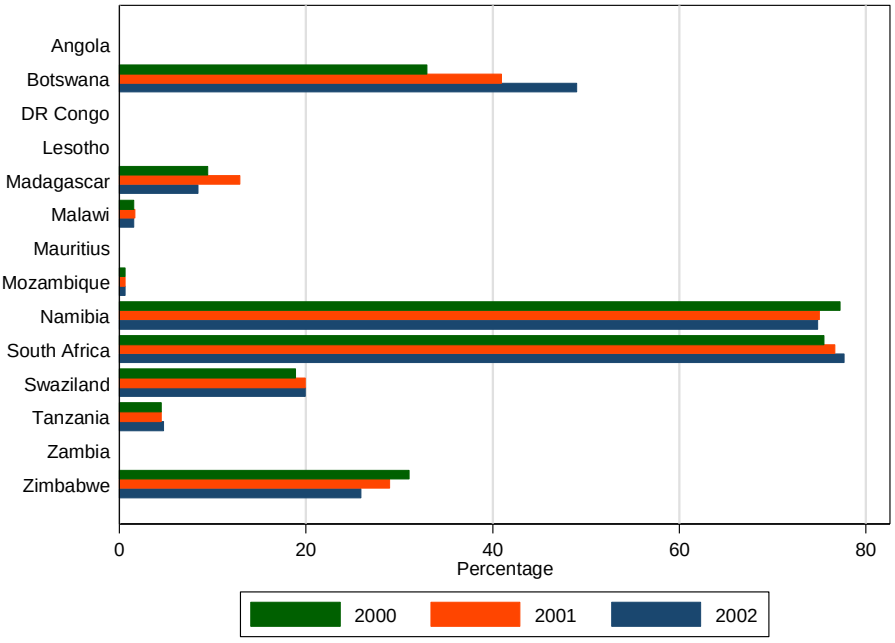

Figure 14: Private prepaid plans as percentage of private expenditure on health in SADC

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:
http://www.iiste.org

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a fast manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar