PART TWO:

GOVERNMENT HEALTH EXPENDITURE

CHAPTER 3:

SPENDING ON HEALTH BY DEVELOPING COUNTRY GOVERNMENTS

With the steady growth in development assistance for health (DAH) going to developing countries, there has been a parallel rise in interest regarding how that money is impacting the budgets of recipient countries. It has not been clear whether the money provided for health was being used in addition to what countries would normally spend from their national treasuries, or whether it was replacing those national funds.

In this chapter, we show that spending on health by governments within their own countries amounts to a far greater sum than DAH. For developing countries to make progress toward the Millennium Development Goals by 2015, country spending on health and health-related sectors will be a more important factor than DAH, given the magnitude of country spending. Spending decisions by governments have a long-term impact on the sustainability of the health sector, decreasing poverty, and increasing the level of educational attainment. All of these factors have a health impact.

It has long been understood that some countries use donor funds to replace their own health spending, and donors differ in their views about whether that is acceptable. Other countries use outside donations as a supplement to their domestic spending and, in some cases, actually spend more of their own money on health after receiving donor funding.

Determining the final destination of those funds has proven difficult. Many developing countries do not specify how they use donor funds, and there are few publicly available databases published by these countries that would help clarify the relationship between donor funds and national government spending. Estimates of national public expenditures on health from the International Monetary Fund (IMF) and the World Health Organization (WHO) often differ.[51,52]

To improve our collective understanding of the global financial investment in health, the Institute for Health Metrics and Evaluation (IHME) and its collaborators undertook a study. Using data from 1995 to 2006 for nearly every country in the world, we generated the most accurate estimates to date of country spending on health. Because of the conflicting data sources, we present some of these estimates as a range of possibilities. The data for spending in developing countries have a longer lag time than data for DAH, and we therefore did not produce estimates for more recent years.

As shown earlier in the report, DAH increased dramatically over the past two decades. Although donors are increasingly contributing to the health resources of developing countries, governments in those countries are also committing more of their own resources to the cause. Notably, health spending by the poorest countries doubled between 1995 and 2006. For this section of the report, we use DAH data from our 2009 *Financing Global Health* report because these data were the basis for our country spending study published in *The Lancet* in April 2010.[53]

Conceptual framework and definitions

The first two chapters of this report examined how DAH flows to developing countries to address health needs. But there are two additional sources of health funding that complete the health expenditure picture: spending by governments of developing countries and private health spending by individuals, including out-of-pocket payments by households. These two funding streams make up the vast majority of health expenditure.[54] In Chapters 3 and 4, we analyze financing by governments of developing countries. In future years, we intend to study private health expenditure.

BOX 3:
List of acronyms

DAH	Development assistance for health
DR	Debt relief
GDP	Gross domestic product
GGE	General government expenditure
GHE-A	Government health expenditure as agent. This consists of domestic- and donor-funded health spending.
GHE-S	Government health expenditure as source. These are funds spent by the government that come only from domestically financed public spending on health.

In trying to understand the relationship between DAH and country spending on health, it is important to note that a number of factors influence what developing countries spend. Among these factors are gross domestic product (GDP), size of government, HIV prevalence, debt, and debt relief.[51,55-62] There are also variables in policy choices that set priorities for health relative to other sectors.

For the purposes of this report, we set aside the policy choices and focused on the money flowing in and out of country government budgets, intending to construct a complete time series for low-income and lower-middle-income countries of their spending on health. In undertaking this exercise, there were numerous challenges to overcome.

The first challenge was settling on a simple list of acronyms for different types of funding. That list can be found in Box 3.

The second challenge was separating spending on health financed by DAH from spending financed by developing countries from their own treasuries. There are two primary sources of information on country spending on health: WHO and IMF.[51,52] Both WHO and IMF track country spending on health with a two- to three-year lag, and, in principle, both collect data on government health expenditure as agent (GHE-A), meaning all spending on health financed by both domestic resources and DAH. A true compilation of all domestic public resources for health would include only government health spending as source (GHE-S). Because domestic and international funds – as well as public and private funds – are commingled in the data, it is difficult to identify the origins of government spending on health. This lack of distinction between source and agent persists not only in IMF and WHO accounting, but in other studies as well.[61] To keep this distinction clear, IHME and its collaborators developed a method to distinguish between GHE-A and GHE-S. Our approach to data collection and modeling is summarized in Box 4.

Trends in country spending on health programs

There were notable differences at the regional and country levels between the data from WHO and IMF. These differences were not explained by documentation from either organization, although the overall trends were roughly consistent. Still, because of the measurement uncertainty, we present our findings from both datasets.

As can be seen in Figures 28 and 29, the trend in constant 2006 US dollars has been a substantial increase in country spending on health from domestic sources. According to WHO data, spending on health by developing countries grew from $128.18 billion in 1995 to $241.33 billion in 2006, an increase of 88%, and, according to IMF data, the increase is 120%, from $99.09 billion in 1995 to $218.86 billion in 2006. In both cases, the year-to-year growth is steady and shows that developing country governments are spending more of their own money on health.

BOX 4:
Data collection and modeling

We collected GHE-A data from WHO's published National Health Accounts data from 1995 to 2006 for its 193 member countries.[52] These included tax-funded health expenditures, social security for health, and DAH captured in government accounts. We estimate that 35% of the data were missing, and, in low-income countries, 44% were missing.

IMF provided a dataset of GHE-A as a percentage of GDP for countries from 1985 to 2007. These data were mainly from IMF staff reports, government finance statistics, spending outlays, and World Bank public expenditure reviews. We estimate that 25% of the data were missing from 1995 to 2006. Between the WHO and IMF datasets, we found a 0.65 correlation, indicating significant measurement uncertainty in GHE-A.

We compensated for missing data by utilizing a replicable imputation process for both the WHO and IMF datasets, including data from 111 developing countries and spanning the period 1995 to 2006. Yet the degree of measurement uncertainty in the underlying data made it difficult to draw conclusions at the country level. Thus, we decided to analyze GHE-A and GHE-S data at the regional level in order to draw strength from aggregated trends.

To extract GHE-S from GHE-A, we subtracted DAH disbursed to government from GHE-A estimates for each year. We standardized our estimates across a range of currencies by using GHE-S as a percentage of GDP. We then tested the relationship between government health spending as source and determinants, including GDP per person, government size, debt relief, and DAH itself.[51,55-57,60,61] Because of concerns from members of our Advisory Panel about the effect of HIV on government budgets, we also tested the relationship between government health spending and the size of the HIV epidemic in specific countries.

For DAH estimates, we created a new variable based on the IHME DAH Database 2009 created by IHME researchers for *Financing Global Health 2009*.[1] We isolated DAH to governmental or non-governmental organizations by reviewing detailed project descriptions in financial data from the Organisation for Economic Co-operation and Development's Creditor Reporting System; development banks; the Global Fund to Fight AIDS, Tuberculosis and Malaria; the GAVI Alliance; the US President's Emergency Plan for AIDS Relief; and the Bill & Melinda Gates Foundation. We excluded DAH in the form of loans. All results are presented in 2006 US dollars.

By analyzing country spending at the Global Burden of Disease developing region level, we can see substantial growth in North Africa and the Middle East, Latin America, and East Asia. The latter is largely due to increased spending on health in China.

The amount of resources committed by governments to health was much larger than total DAH from 1995 to 2006, especially among the poorest countries. For all low-income countries, GHE-S grew from $9.03 billion in 1995 to $18.07 billion in 2006, a 100% increase, according to WHO data. Using IMF's dataset, GHE-S grew from $7.96 billion to $17.81 billion, a 124% increase, but the steeper growth curve may be an artifact of incomplete data in earlier years.

In low-income countries in sub-Saharan Africa, GHE-S increased 132% from 1995 to 2006, according to WHO, and 242%, according to the IMF. In the lower-middle-income countries of sub-Saharan Africa, GHE-S increased 92% (WHO) and 78% (IMF) in that period.

To better understand the drivers behind increased government spending on health, we analyzed three components of government financing: GHE-S, GDP, and general government expenditure (GGE). The results can be seen in Table 4.

The first column shows that, according to WHO data, absolute health spending from government sources went up in every region except Oceania between 2003 and 2006 (compared with 1999 to 2002).

FIGURE 28:
GHE-S by Global Burden of Disease developing region (based on WHO data), 1995-2006

- Sub–Saharan Africa, West
- Sub–Saharan Africa, South
- Sub–Saharan Africa, East
- Sub–Saharan Africa, Central
- Oceania
- North Africa / Middle East
- Latin America, Tropical
- Latin America, South
- Latin America, Central
- Latin America, Andean
- Caribbean
- Asia, Southeast
- Asia, South
- Asia, East
- Asia, Central

Source: IHME Government Health Spending Database (Developing Countries) 2010

Note: Government health expenditure as source (GHE-S).

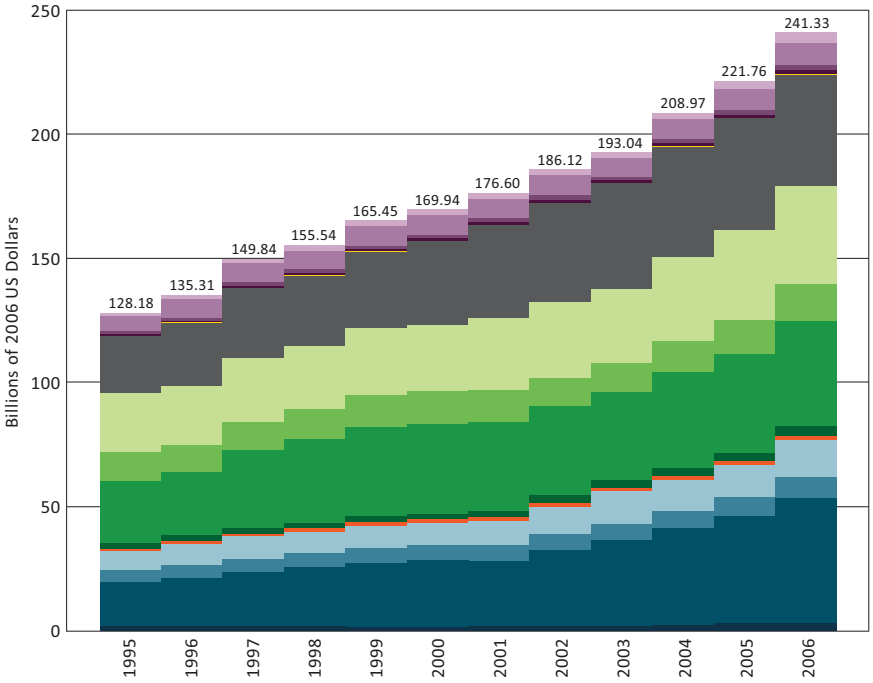
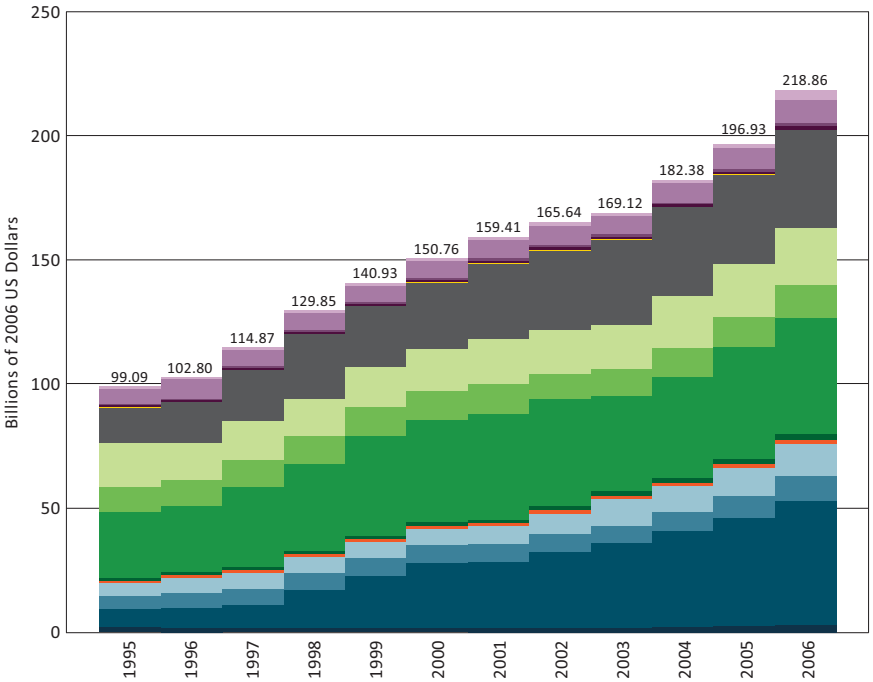


FIGURE 29:
GHE-S by Global Burden of Disease developing region (based on IMF data), 1995-2006

- Sub–Saharan Africa, West
- Sub–Saharan Africa, South
- Sub–Saharan Africa, East
- Sub–Saharan Africa, Central
- Oceania
- North Africa / Middle East
- Latin America, Tropical
- Latin America, South
- Latin America, Central
- Latin America, Andean
- Caribbean
- Asia, Southeast
- Asia, South
- Asia, East
- Asia, Central

Source: IHME Government Health Spending Database (Developing Countries) 2010

Note: Government health expenditure as source (GHE-S).



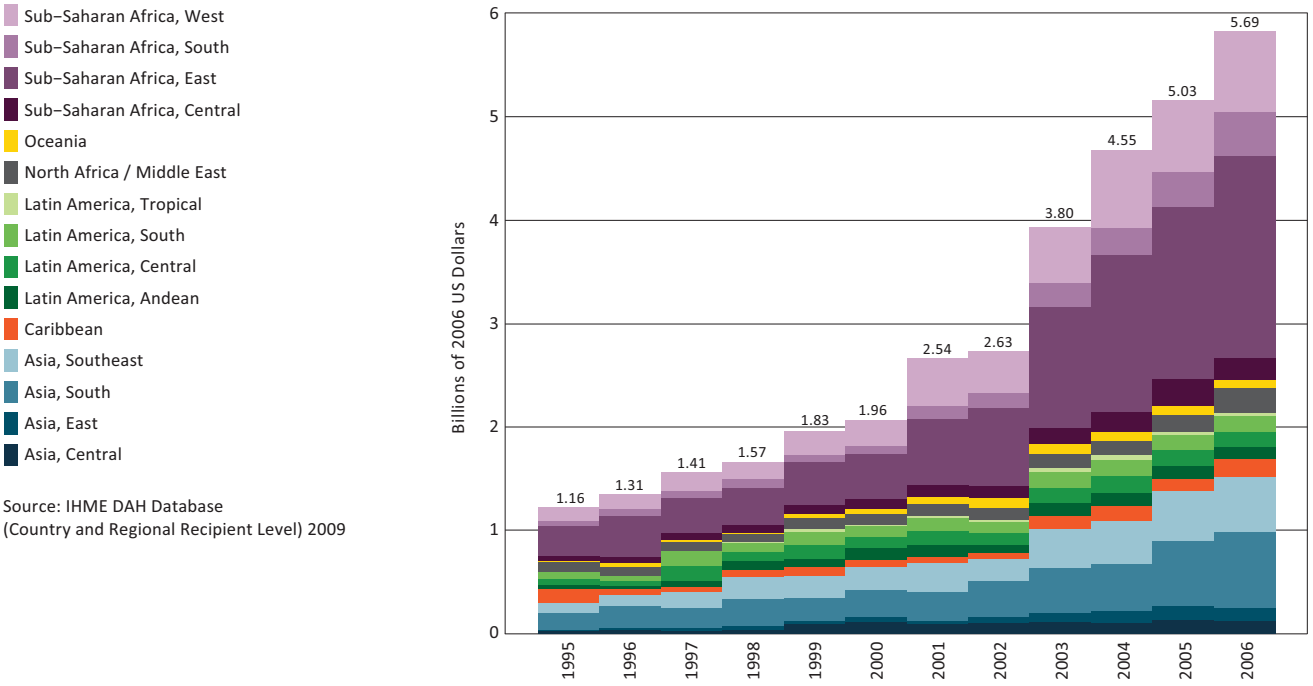
In the last column, we see that GDP rose in all regions. In theory, this should have led to similar increases in GHE-S, but this was not the case. As seen in the second-to-last column, in all regions except Southeast Asia and all of sub-Saharan Africa, GDP growth was greater than growth in government spending. This is because the size of government has been stable or contracting. The crucial measure is the share of GGE going to health (GHE-S/GGE). Table 4 shows that in most regions, that share is going up, meaning the government commitment to health is on the rise worldwide, both in absolute terms and as a measure of all government spending.

However, both datasets show the share of GGE for health is going down in three regions: Central, East, and South sub-Saharan Africa. As we will discuss in the next chapter, the most policy-relevant factor to understand is that these also were the regions where governments had received the largest amount of DAH.

When compared to government health spending, the growth of DAH in absolute terms has been more dramatic, but health aid has yet to rival country spending on health programs in size. Using the data from our 2009 report, the total envelope of DAH to all recipients, including governments, NGOs, and bilateral agencies, was $8.01 billion in 1995 and $18.99 billion in 2006. Although this represents more than a doubling, the total in 2006 is still less than one-tenth the size of country spending on health by developing countries that year.

To analyze the trend more closely, Figure 30 shows the percentage of DAH that could be traced directly to developing regions. The total grew from $1.16 billion in 1995, or 15% of all DAH, to $5.69 billion in 2006, or 31% of all DAH. Most of that money in 2006 went to low-income countries in sub-Saharan Africa. Even in those countries, government spending on health was significantly more than what they received in DAH: $6.68 billion, according to WHO data, and $5.90 billion, according to IMF data.

FIGURE 30:
DAH by Global Burden of Disease developing region, 1995-2006



Source: IHME DAH Database
(Country and Regional Recipient Level) 2009

TABLE 4:
Percentage change in key health-expenditure-related indicators, 1999-2002 compared with 2003-2006

GBD region	GHE-S, WHO	GHE-S, IMF	GHE-S/GGE, WHO	GHE-S/GGE, IMF	GGE/GDP	GDP
Asia						
Central	52	52	15	15	-9	44
East	52	58	14	18	-8	45
South	19	20	5	6	-12	28
Southeast	38	54	7	18	6	23
Caribbean	17	24	3	9	-3	18
Latin America						
Andean	25	47	7	26	-2	19
Central	9	2	4	-2	-6	11
South	3	5	4	5	-12	13
Tropical	25	20	13	9	-2	12
North Africa / Middle East	24	29	9	13	-6	21
Oceania	-1	3	2	7	-9	8
Sub-Saharan Africa						
Central	16	14	-10	-11	2	27
East	22	5	-12	-24	15	23
South	2	17	-15	-3	5	16
West	32	52	0	15	1	31

Sources: IMF World Economic Outlook, IHME Government Health Spending Database (Developing Countries) 2010, World Bank World Development Indicators

Notes: Analysis of trends from 1999-2002 and 2003-2006 for government health expenditure as source (GHE-S); share of general government expenditure spent on health (GHE-S/GGE); share of gross domestic product spent by government (GGE/GDP); and GDP.

Our results show that for low- and middle-income countries in most regions of the world, government spending on health is increasing in absolute terms. The growth is not simply due to increases in GDP but is also attributed to rising GGE devoted to health, even as the overall size of governments in most regions is decreasing.

Efforts to accurately estimate the amount of country spending on health programs are hindered by a lack of complete data. A clear set of reporting standards for GHE-S and spending in other health-related sectors, such as education, water, and sanitation, is vital to a more thorough understanding of country spending trends. Any improvements in that reporting would require leadership from the two main data sources – WHO and IMF – as well as the World Bank. They also would require new investments in building the capacity of governments – particularly in low-income countries – to report their spending data using common definitions and standards.