

# Synthesis of Findings from NHA Studies in Twenty-Six Countries

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*July 2004*

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- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

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# Abstract

National Health Accounts (NHA) is a tool designed to inform the health policy process. It aims to do so by providing policymakers with valuable information on the distribution of health funds within the system. NHA was introduced and implemented in a number of low- and middle- income countries in the mid- to late 1990s. This study synthesizes NHA findings from 26 countries in the Eastern and Southern Africa network, the Middle East and North Africa network, and the Latin America and Caribbean network in order to provide a comprehensive picture of health spending and how it is financed in these countries. Comparisons are drawn within and across the regions, paying special attention to, among other things, the sources of financing, the role of insurance, households and donors in financing health expenditures, and expenditures on pharmaceuticals.

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# Acronyms

<b>DHE</b>	Donor Health Expenditure
<b>ESA</b>	Eastern and Southern Africa
<b>GDP</b>	Gross Domestic Product
<b>LAC</b>	Latin America and the Caribbean
<b>MENA</b>	Middle East and North Africa
<b>MOH</b>	Ministry of Health
<b>NGO</b>	Nongovernmental Organization
<b>NHA</b>	National Health Accounts
<b>PHE</b>	Public Health Expenditure
<b>PHR</b>	Partnerships for Health Reform
<b>PHR<i>plus</i></b>	Partners for Health Reform <i>plus</i>
<b>PPP</b>	Purchasing Power Parity
<b>RMS</b>	Royal Medical Service
<b>THE</b>	Total Health Expenditure
<b>USAID</b>	United States Agency for International Development



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# Executive Summary

Many low- and middle-income countries are in the process of reforming their health systems in an effort to improve equity, contain costs, and ensure financial sustainability of health services. With health systems that are growing both in scope and complexity, policymakers need tools that help assess and manage health care resources. National Health Accounts (NHA) is one such tool; by helping countries to clearly visualize the flow of funds through the health sector, NHA contributes to “better informed” health policy decision making.

NHA is a framework for measuring total – public, private, and donor – national health expenditures. Formatted in a standard set of tables, NHA methodology organizes, tabulates, and presents various aspects of a nation’s health expenditures. It is only in the past decade that developing countries have begun to appreciate the value of NHA and its importance in informing policy. The U.S. Agency for International Development has supported this effort through the Data for Decision Making, Partnerships for Health Reform (PHR), and Partners for Health Reform*plus* (PHR*plus*) projects.

Under PHR and PHR*plus*, regional networks of countries were established in collaboration with the World Bank, World Health Organization (Geneva, and EMRO and AFRO), Swedish International Development and Cooperation Agency, and Pan American Health Organization. These networks have been effective in creating local capacity to conduct NHA, facilitating cross-country transfer of experience, and increasing the use of data to inform policy formulation. The networks are:

- ▲ The Eastern and Southern Africa (ESA) network comprising Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
- ▲ The Middle East and North Africa (MENA) network comprising Djibouti, Egypt, Iran, Jordan, Lebanon, Morocco, Tunisia, and Yemen
- ▲ The Latin America and Caribbean (LAC) network comprising Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Peru

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## Purpose, Data, and Methods

The 26 countries that were the founding members of the three networks were pioneers in conducting NHA in low- and middle-income countries. The first round of NHA reports and the recognition it brought to the value and utility of such information for policy purposes has led to the spread, adoption, and institutionalization of NHA by other countries. NHA reports exist at the level of each country, and regional reports have been produced comparing countries within the region. To date, no attempt has been made to synthesize the findings from all 26 countries. The purpose of this report is to fill this gap.

The synthesis compares health expenditure patterns among the 26 countries in order to provide a comprehensive picture of health spending and how it is financed in these countries. It draws comparisons within and across the regions, paying special attention to, among other things, the

sources of financing; the role of insurance, households, and donors in financing health expenditures; and expenditures on pharmaceuticals. It also looks to see if the following hypotheses that appear to hold for high-income countries also hold for low and middle-income countries:

1. Total Health Expenditure (THE) as percent of gross domestic product (GDP) increases with an increase in the GDP per capita.
2. Public Health Expenditure (PHE) as a percent of THE increases with an increase in GDP per capita.

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## Discussion

A key finding from the first round of NHA was the fact that, in all 26 countries, it was found that expenditures both in per capita terms as well as percentage of GDP were higher than previous estimates. Some key findings also emerge from the comparison of per capita health expenditures among the 26 countries. For example, there was a large variation observed across countries. While Ethiopia spent almost \$24 per capita on health, countries such as South Africa, Lebanon, and Mexico spent over \$500 per capita on health. This large difference in availability of resources is bound to affect the ability of countries to adequately address the health needs of the population.

The analysis of the flows of funds through financing agents also led to some key findings. In all three regions, public financing agents accounted for the largest proportion of funds spent on health care.

The flow of funds through public financing agents reflects the level of decentralization in these countries. As an example, in South Africa, Ethiopia, and Tanzania, the share of regional and local governments exceeded that of the Ministry of Health. At the other extreme, in Mozambique, Malawi, and Kenya, the Ministry of Health was the dominant public financing agent with regional and local governments accounting for a negligible share of expenditures. When the NHA exercise was conducted in Rwanda, the country was going through a phase of decentralizing the health system, and this is reflected in the distribution of funds going through public financing agents.

Even though countries profess that their main focus is primary health care, this study found that expenditures tend to be skewed towards hospital-based services. Some countries have already used the information provided by NHA to address this imbalance. For example, in South Africa a moratorium was placed on the construction of private hospitals as these tended to be built in richer neighborhoods and also shifted resources to primary health care.

In many countries, donors have supported key health programs including immunization, family planning, maternal and child health services, and HIV/AIDS services. While donor assistance is critical to improving the health status of populations, an understanding of its magnitude is of great importance to policymakers in countries. It helps them assess the sustainability of programs and this information in turn can help them better allocate resources. Donor funding to countries is not something that is guaranteed and can change with either changing priorities of the donors or because donors cut back overall assistance to health care. A key contribution of the first round of NHA studies was a systematic assessment of donor assistance. In spite of the efforts of NHA teams in countries, the figures given here underestimate donor assistance. ESA countries had the highest levels of donor dependence. In both MENA and LAC countries, donor assistance averaged less than 5 percent of total health expenditures. This points to the fact that donors tend to target their assistance more to low-



income countries, and, as per capita incomes rise, donor contributions decrease. When researchers regressed donor assistance against per capita GDP a strong negative relationship was observed.

Some key findings emerged in examining the relationship of total health expenditures as a percentage of GDP and the relationship between public health expenditure as a share of total health expenditures and GDP per capita. Traditional wisdom as well as the experience of high-income countries had posited a positive correlation in both cases. For the countries in this sample, there was a weak and positive between total health expenditures as a percent of GDP and GDP per capita this did not hold true for the LAC countries.

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## Key Policy Issues

While concerns about equity, resource mobilization, and building better public-private partnerships were shared by all three regions, ESA countries expressed much greater concern about equity issues and reducing dependence on donor assistance whereas countries in the MENA and LAC regions were worried about improving efficiency and expanding insurance coverage.

The key policy issues identified by region are listed below:

### ESA Regional Network

- ▲ Government should explore alternate financing mechanisms to increase resource for health sector
- ▲ Reduce dependency on donors
- ▲ Reduce discrepancies between per capita expenditures and health outcomes through better targeting of resources
- ▲ Improve resource allocation criteria to address regional inequities
- ▲ Build better links with the private sector and develop public-private partnerships to increase access of health services
- ▲ Better coordination of stakeholders to attain policy goals
- ▲ Improve accounting systems to capture spending at different levels of use in the health system

### MENA Regional Network

- ▲ Need to address the sustainability of the health system given demographic and epidemiological transition
- ▲ Reduce the burden on households' out-of-pocket spending
- ▲ Control health spending in the pharmaceutical sector
- ▲ Standardize the level of coverage of the insured and un-insured population
- ▲ Increase insurance coverage

- ▲ Improve coordination between the private and public sectors – reduce oversupply and duplication of services

#### **LAC Regional Network**

- ▲ Reduce dependency on households' out-of-pocket spending
- ▲ Government should explore alternate financing mechanisms to increase resource available for health care
- ▲ Improve efficiency of health system through better use of hospital capacity and control of capital investment
- ▲ Improve the quality of the services provided
- ▲ Establish strategic commercial alliances
- ▲ Reform social security system with a view to create universal social security

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### **Concluding Remarks**

Quite clearly, NHA studies are starting to shed new light on the organization of health systems in low- and middle-income countries and are calling into question some of the traditionally held beliefs.

The methodologies used in the first round of the NHA exercise raised a number of methodological issues and these in turn provided important input for the Producers Guide and informed the approach being proposed for low- and middle-income countries. For the second round of NHA, training and technical assistance have emphasized that, while countries can establish as many subclassifications as they want in order to reflect the special characteristics of their health systems, at the broader aggregate levels classifications have to be consistent across countries. We hope to see a much greater level of consistency and comparability in NHA studies being done from this point on.

It was clear even from the first round of NHA studies that these data are starting to be used by countries to inform policy making. As more countries conduct NHA studies and the process is institutionalized one would hope to see an increase in policy impact.

# 1. Introduction

Many low- and middle-income countries are in the process of reforming their health systems in an effort to improve equity, contain costs, and ensure financial sustainability of health services. With health systems that are growing both in scope and complexity, policymakers need tools that help assess and manage health care resources. National Health Accounts (NHA) is one such tool; by helping countries to clearly visualize the flow of funds through the health sector, NHA contributes to “better informed” health policy decision making.

NHA is a framework for measuring total – public, private, and donor – national health expenditures. Formatted in a standard set of tables, NHA methodology organizes, tabulates, and presents various aspects of a nation’s health expenditures so that the expenditures can be easily understood and interpreted by all policymakers. NHA has gained global acceptance for use in measuring the “financial pulse” of national health systems. It does so by answering questions like:

- ▲ How is health care being financed? Who pays? How much? And for what types of services?
- ▲ How are resources for health and health care organized and managed?
- ▲ How are funds distributed across different providers, and functions?
- ▲ Who benefits from health expenditure?

It is only in the past decade that developing countries have begun to appreciate the value of NHA and its importance in informing policy. The U.S. Agency for International Development (USAID) has supported this effort through the Data for Decision Making, Partnerships for Health Reform (PHR), and Partners for Health Reform*plus* (PHR*plus*) projects.

Under the PHR and PHR*plus* projects regional networks of countries were established in collaboration with the World Bank, World Health Organization (Geneva, and EMRO and AFRO), Swedish International Development and Cooperation Agency, and Pan American Health Organization. These networks have been effective in creating local capacity to conduct NHA, facilitating cross-country transfer of experience, and increasing the use of data to inform policy formulation:

- ▲ The Eastern and Southern Africa (ESA) network comprising Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
- ▲ The Middle East and North Africa (MENA) network comprising Djibouti, Egypt, Iran, Jordan, Lebanon, Morocco, Tunisia, and Yemen
- ▲ The Latin America and Caribbean (LAC) network comprising Bolivia, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Peru

The regional NHA networks comprise country teams made up of representatives from governmental, nongovernmental, and research institutions. Over the course of nearly two years, network members have participated in NHA workshops, training seminars, policymakers' dissemination conferences, and utilized each other's expertise in developing comparative NHA findings report. Country teams have worked together during their regional meetings to find solutions to common problems faced in NHA implementation.

## 2. Purpose, Data, Methods

The 26 countries that were the founding members of the three networks were pioneers in conducting National Health Accounts (NHA) in low- and middle-income countries. Their first round of NHA and the recognition they brought to the value and utility of such information for policy purposes has led to the spread, adoption and institutionalization of NHA by other countries. NHA reports exist at the level of each country, and the regions have produced reports comparing their respective countries (De and Shehata 2001, Partnerships for Health Reform 1998). To date, no attempt has been made to synthesize the findings from all 26 countries. The purpose of this report is to fill this gap.

This synthesis compares health expenditure patterns among the 26 countries in order to provide a comprehensive picture of health spending and how it is financed in these countries.<sup>1</sup> It draws comparisons within and across the regions, paying special attention to, among other things, the sources of financing; the role of insurance, households, and donors in financing health expenditures; and expenditures on pharmaceuticals. It also looks to see if the following hypotheses that appear to hold for high-income countries also hold for low- and middle-income countries.

1. Total Health Expenditure (THE) as percent of gross domestic product (GDP) increases with an increase in the GDP per capita.
2. Public Health Expenditure (PHE) as a percent of THE increases with an increase in GDP per capita.

The principal sources of data are NHA reports produced by the countries,<sup>2</sup> and socio-economic indicators published by the World Bank and the International Monetary Fund. The NHA data used are from the most recent NHA reports wherever possible. Because this report relies entirely on NHA data, it does not discuss how primary data were collected or estimation methods. Annex B presents country expenditure amounts (total, and by public, private, and donor sectors, and notes for which year) gleaned from the country NHA reports. In order to standardize the findings across the different countries, researchers did the following:

- ▲ Used 1998 as the base year for which findings would be presented, because the majority of reports used data from this year
- ▲ Used country-specific general inflation rates to either inflate or deflate numbers to the base year. Health sector specific inflation rates were not available
- ▲ Used appropriate conversion factors to convert to purchasing power parity adjusted dollars

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<sup>1</sup> To give the reader an idea of health status in these countries, Annex A contains selected health indicators.

<sup>2</sup> See Bibliography for list of country NHA reports, organized by region. Other sources of information are in the "general" section of the bibliography.

They also used definitions contained in the *Guide for Producing National Health Accounts* (Producers' Guide), jointly released by the World Health Organization, World Bank, and USAID in 2003. "Financing sources" refers to those institutions or entities that provide the funds used in the health system by "financing agents." Financing agents are those institutions or entities that channel the funds provided by financing sources and use these funds to pay for or purchase health services. Some entities can appear both as a financing source and a financing agent. An example of this is households. Households are a major source of health financing in developing countries. Households both transfer funds to insurance schemes (when they pay premiums) and spend directly on health care services (payments made out-of-pocket to providers). In order to capture the latter category of expenditures and to assure that the NHA tables balance, households are shown as transferring the portion that they spend directly on providers to themselves as a financing agent.

Given the nature of data contained in the NHA reports, it was necessary to decide to either present the comparison by type of provider or by type of function. After carefully analyzing the information, researchers felt that it would be more appropriate to present the comparative findings by the following four categories: hospitals, outpatient facilities, pharmacies, and others. In some instances the "other" category is fairly large, reflecting the fact that it was impossible to classify the information from the reports into one of the other categories.

There were many reasons for the inability to disaggregate expenditures by function. A key reason was that, in the first round of NHA, many countries tended to blur the line between providers and functions. As an example, all hospital expenditures were classified as inpatient care. Similarly, all care at outpatient clinics was classified as primary health care spending. Countries also tended to use different definitions and categories to capture health expenditures. One common practice was to include all preventive care provided at outpatient clinics under a broad category of outpatient services. Some countries in the MENA and LAC regions developed very detailed classifications for their health expenditures. The classification systems that were used reflected, in a sense, how the countries perceived their health systems were organized. Insurance schemes, both public and private, were treated as financing agents.

The methodologies used in the first round of the NHA exercise raised a number of methodological issues and these in turn provided important input for the Producers Guide and informed the approach being proposed for low- and middle-income countries. For the second round of NHA, training and technical assistance have emphasized that, while countries can establish as many subclassifications as they want in order to reflect the special characteristics of their health systems, at the broader aggregate levels classifications have to be consistent across countries. We hope to see a much greater level of consistency and comparability in NHA studies being done from this point on.

In many instances, it was necessary to analyze the data contained in the reports and reinterpret some of the figures in order to create comparable estimates across countries and regions. The reader should bear in mind that the quality of data varied significantly across countries. Appropriate caveats have been included for the readers' benefit. Similarly, in the first round of NHA, one does not see the standardization in definition of expenditures that is starting to emerge as the second round of NHA studies are being conducted. The release of the Producers Guide will greatly help in this effort. These observations are in no way meant to detract from the tremendous efforts of each of the 26 NHA country teams.

## 3. Key Findings

### 3.1 Health Expenditures as Percent of Gross Domestic Product

In this section we present information on total health expenditures as percent of GDP. Table 1 shows that among the ESA countries Ethiopia (4 percent) and Mozambique (4 percent) spent the least on health as a percentage of GDP while Zimbabwe (7.8 percent) spent the highest. Of the 10 countries, four spent either 5 percent or less of their GDP on health, three spent between 5 and 7 percent and three spent over 7 percent of GDP on health care.

**Table 1: Health Expenditures as Percent of GDP: ESA Countries**

Eastern and Southern Africa	Percent
Ethiopia	4.0%
Kenya	5.3%
Malawi	7.2%
Mozambique	4.0%
Rwanda	5.0%
South Africa	7.5%
Tanzania	6.8%
Uganda	4.1%
Zambia	6.2%
Zimbabwe	7.8%

Source: NHA reports

Table 2 shows the percent of GDP that the MENA countries spent on health. Egypt, with 3.7 percent of GDP spent on health, ranks the lowest, and Lebanon, at 12.3 percent of GDP, is the highest. Morocco was the only country other than Egypt to spend less than 5 percent of its GDP on health. Yemen, Djibouti, Iran, and Tunisia all spent between 5 and 6 percent of GDP on health whereas Jordan spent over 9 percent of its GDP on health care. In Jordan and Lebanon, the NHA estimates reflected much higher expenditures on health care than any previous studies and this led to a reevaluation of their health reform priorities.

**Table 2: Health Expenditures as Percent of GDP: MENA Countries**

Countries	Percent
Djibouti	5.1%
Egypt	3.7%
Iran	5.7%
Jordan	9.1%
Lebanon	12.3%
Morocco	4.5%
Tunisia	5.9%
Yemen	5.0%

Source: NHA reports

Table 3 shows the expenditures in the LAC countries as percent of GDP. Guatemala, with 2.2 percent of GDP spent on health, ranks as the lowest spender on health care and Nicaragua, at 12.9 percent, is the highest spender on health care. The extremely low expenditures on health care as percent of GDP in Guatemala needs to be examined further. Barring this aberration, expenditures amongst the LAC countries is more in line with that observed in the MENA region.

**Table 3: Health Expenditures as Percent of GDP: LAC Countries**

Countries	Percent
Bolivia	4.5%
Dominican Republic	7.3%
Ecuador	4.6%
El Salvador	7.4%
Guatemala	2.2%
Mexico	5.5%
Nicaragua	12.9%
Peru	4.2%

Source: NHA reports and authors' analysis

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### 3.2 Per Capita Health Expenditures

This section presents information on total health expenditures per capita by country and region. Table 4 shows that on average the ESA countries spent \$112.24 per capita on health. The average is skewed by the presence of South Africa. Excluding South Africa, average per capita health expenditures were only \$45.90 for the remaining ESA countries. The lowest per capita health expenditures were in Tanzania at \$18.50 and the highest in South Africa at \$709.22. Even though Zimbabwe spent more as a percent of GDP than South Africa, in terms of per capita expenditures it spent significantly less than South Africa. Countries such as Malawi, Ethiopia, Uganda, Rwanda and Zambia not only spend less than \$50 per capita on health care they also face a significant burden from HIV/AIDS, TB and Malaria.



**Table 4: Per Capita Health Expenditures: ESA Countries**

Countries	Per Capita Expenditures US\$ (Purchasing Power Parity [PPP] for 1998)
Ethiopia	\$23.78
Kenya	\$74.99
Malawi	\$33.30
Mozambique	\$31.51
Rwanda	\$44.29
South Africa	\$709.22
Tanzania	\$18.50
Uganda	\$42.53
Zambia	\$43.00
Zimbabwe	\$101.27
Average	\$112.24

Source: NHA reports and authors' analysis

Table 5 presents per capita health expenditures in the MENA countries. It is observed that the MENA countries spent on average \$233.40 per capita on health care. As with the case of ESA, the MENA average is skewed by the presence of one country, in this case, Lebanon. Excluding Lebanon, the average per capita expenditures were \$183.76. Per capita expenditure in MENA is more than two times the per capita average for the ESA countries. Yemen, with per capita expenditures of \$44.65, is the lowest spender on health care, and Lebanon, at \$580.86 per capita, is the highest.

**Table 5: Per Capita Health Expenditures: MENA Countries**

Countries	Per Capita Expenditures US\$ (PPP for 1998)
Djibouti	\$126.56
Egypt	\$92.67
Iran	\$313.47
Jordan	\$309.25
Lebanon	\$580.86
Morocco	\$136.26
Tunisia	\$263.47
Yemen	\$44.65
Average	\$233.40

Source: NHA reports and authors' analysis

Table 6 presents per capita health expenditures for the LAC countries. The average per capita expenditure for all countries in the study was \$376.18. This is more than the average per capita health expenditures for the ESA and MENA countries. Guatemala spent the least among the countries in the region both in terms of the percentage of GDP allocated to health as well as the per capita expenditures. The highest per capita expenditures were in Mexico, with \$612.30 being spent per person.

**Table 6: Per Capita Health Expenditures: LAC Countries**

<b>Countries</b>	<b>Per Capita Expenditures US\$ (PPP for 1998)</b>
Bolivia	\$591.68
Dominican Republic	\$456.09
Ecuador	\$310.16
El Salvador	\$313.28
Guatemala	\$95.80
Mexico	\$612.30
Nicaragua	\$381.06
Peru	\$249.06
Average	\$376.18

Source: NHA reports and authors' analysis

## 4. Financing Sources, Financing Agents, and Uses of Funds

### 4.1 Sources of Funds

Table 7 shows that the primary source of funding for all regions is the private sector. However, the proportion of private funding is significantly higher for the LAC and MENA countries than for the ESA countries. On average the private funds account for over 60 percent of the health care expenditures in LAC and MENA. The lower proportion of private financing in ESA is compensated by high donor assistance. ESA countries depend far more on donor assistance than the LAC or MENA countries, approximately 4 percent of the funding for health care in ESA is from donors. The public share of the financing is more comparably distributed in the three regions. In each of the regions, the governments seem to contribute one-third of the total health expenditures.

**Table 7: Distribution of Sources of Funding for Each Region**

	Percent Distribution of Health Expenditure		
	Public	Private*	Donor
<b>ESA Average</b>	<b>44%</b>	<b>52%</b>	<b>4%</b>
Ethiopia	39%	53%	9%
Kenya	28%	64%	9%
Malawi	34%	33%	33%
Mozambique	22%	26%	52%
Rwanda	10%	40%	41%
South Africa	47%	53%	0%
Tanzania	23%	52%	25%
Uganda	21%	36%	43%
Zambia	42%	33%	25%
Zimbabwe	37%	50%	13%
<b>MENA Average</b>	<b>32%</b>	<b>67%</b>	<b>2%</b>
Djibouti	27%	44%	29%
Egypt	41%	56%	3%
Iran	30%	70%	0%
Jordan	45%	47%	8%
Lebanon	18%	80%	2%
Morocco	32%	67%	1%
Tunisia	35%	65%	0%
Yemen	35%	57%	8%

	Percent Distribution of Health Expenditure		
	Public	Private*	Donor
<b>LAC Average</b>	<b>35%</b>	<b>64%</b>	<b>1%</b>
Bolivia	56%	34%	10%
Dominican Republic	14%	84%	2%
Ecuador	35%	56%	9%
El Salvador	22%	72%	5%
Guatemala	27%	65%	8%
Mexico	36%	64%	0%
Nicaragua	42%	41%	18%
Peru	38%	62%	1%

\* Private health expenditure includes household health expenditure

In the ESA region, Zambia (42 percent) and Malawi (34 percent) were the two countries where the public sector was the primary source of funding. Countries where private funding was the dominant source included Kenya (64 percent), Ethiopia (53 percent), South Africa (53 percent), Tanzania (52 percent), Zimbabwe (50 percent), Rwanda (40 percent), and Uganda (36 percent). In Mozambique, the private sector has the lowest distribution of funding (26 percent), which is offset by donors (52 percent) as the largest share of funding source both in the country and in the region. Both Rwanda's and Uganda's source of funds mirrors Mozambique's in that donor health expenditure is the largest source of funds. Malawi is the only country in the region that has a fairly proportional distribution of sources of funds among the categories. With the exception of South Africa, countries in the ESA region showed a much higher dependence on donor assistance than countries in the LAC and MENA regions.

In all countries in the MENA region, private health expenditures were the primary source of funding. The highest share of private funding was in Lebanon (80 percent) followed by Iran (70 percent), Morocco (67 percent), Tunisia (65 percent), Yemen (57 percent), Egypt (56 percent), Jordan (47 percent), and Djibouti (44 percent). A surprising finding from the MENA countries was that private expenditures were the largest source of finances in Iran, a country that reported that nearly 95 percent of its population was covered by insurance. Barring Djibouti, which reported receiving 29 percent of its health expenditures from donors, the countries showed a much lower dependence on donor assistance than countries in the ESA region. Iran and Tunisia reported having received no measurable assistance from donors. Donor assistance also was low in Morocco (1 percent), Lebanon (2 percent), and Egypt (3 percent). Yemen and Jordan both reported receiving 8 percent of health funding from donors.

In the LAC region, Bolivia had the highest public source of funding among all countries (56 percent) and was one of two countries in the region where the private sector did not serve as the primary source of funding. The only other country where public funding was higher than private funding was Nicaragua. Countries where private funding was the dominant source were Dominican Republic (84 percent), El Salvador (72 percent), Guatemala (65 percent), Mexico (64 percent), and Peru (62 percent). The highest donor assistance as share of overall health expenditures was in Nicaragua (18 percent) followed by Bolivia (10 percent), Ecuador (9 percent), and Guatemala (8 percent).

## 4.2 The Role of Financing Agents in the Health System

Table 8 shows that, in all three regions, public financing agents accounted for the largest proportion of funds spent on health care. This ranged from 63 percent in MENA to 47 percent in ESA. Private financing agents represented between 32 percent and 47 percent of the funds that flowed through the health system. As expected, the share of donor assistance was highest for the ESA countries.

**Table 8: Share of Funds Channeled through Financing Agents**

	Public	Private	Donors
ESA	47%	41%	12%
MENA	63%	32%	5%
LAC	53%	47%	1%

Source: NHA reports

Table 9 shows the share of funds channeled through financing agents for the ESA countries. The share of public financing agents ranged from a low of 38 percent in Kenya to a high of 67 percent in Zambia. With the exception of South Africa, households were the main private financing agent in all the countries. In South Africa, private insurance accounted for 41 percent of all funds that flowed through financing agents, significantly higher than the 11 percent accounted for by households.

**Table 9: Share of Funds Channeled through Financing Agents: ESA Countries**

	Public Financing Agents						Private Financing Agents				Rest of the World
	Ministry of Health	Other Ministries	Social Insurance	Regional or Local Govt	Public/ Para-statals	Public Total	Households	Private Employers	Private Insurance	Private Total	NGOs Donor
<b>ESA Average</b>	<b>26%</b>	<b>3%</b>	<b>1%</b>	<b>15%</b>	<b>2%</b>	<b>47%</b>	<b>32%</b>	<b>4%</b>	<b>5%</b>	<b>41%</b>	<b>11%</b>
Ethiopia	5%	6%	0%	28%	1%	40%	53%	0%	0%	53%	7%
Kenya	24%	1%	4%	1%	8%	38%	49%	8%	3%	60%	2%
Malawi	42%	4%	0%	2%	0%	48%	17%	15%	1%	33%	18%
Mozambique	54%	3%	0%	0%	0%	57%	18%	7%	0%	25%	19%
Rwanda	19%	2%	0%	16%	1%	38%	33%	7%	0%	40%	23%
South Africa	1%	3%	1%	42%	0%	47%	11%	1%	41%	53%	0%
Tanzania	19%	1%	0%	24%	0%	44%	47%	0%	3%	50%	7%
Uganda	27%	1%	0%	10%	1%	39%	33%	2%	0%	35%	25%
Zambia	46%	2%	0%	9%	10%	67%	32%	0%	0%	32%	2%

Source: NHA reports

Table 10 gives a detailed breakdown of the share of funds channeled through financing agents for the MENA countries. The MENA table is slightly different from the ESA table because of how the entities were grouped. Universities and teaching institutions play a key role in Egypt and Jordan and hence appear separately in the table. Other ministries and parastatals, for example, have been combined. Consolidation reflects the difficulty in obtaining information from some entities. The share of the Ministry of Health as a public financing agent ranged from a low of 13 percent in Lebanon to a high of 54 percent in Djibouti. Tunisia (41 percent) and Jordan (37 percent) were other countries where the share of the Ministry of Health exceeded 30 percent. The share of other ministries and public organizations was the highest in Jordan, 18 percent. This is primarily because of the Royal Medical Services, which covers not only service personnel but also their dependents. The RMS covered over 25 percent of the Jordanian population. Social insurance is a key financing agent in Tunisia (35 percent), Djibouti (20 percent), Iran (19 percent), and Lebanon (35 percent). This was not the case in Jordan, Morocco, and Yemen. Jordan's Civil Servants Insurance scheme is funded through the Ministry of Health budget and is not accounted for separately. As expected, households were the main source of funds that flowed through financing agents in many of the countries. Only in Djibouti, Jordan, and Tunisia was the percent of funds flowing through households less than that flowing through the Ministry of Health. Certain other findings stand out. The Iran NHA report states that 94 percent of the population was insured. However, even though nearly everyone was insured, social insurance schemes accounted for less than a fifth (19 percent) of total health expenditures.

**Table 10: Share of Funds Channeled through Financing Agents: MENA Countries**

	Financing Agents						
	Households	Ministry of Health	Other Ministries and Public Organizations	Social Insurance	Other Insurance Schemes + Private Firms	Universities and Teaching Facilities	Other
<b>MENA Average</b>	<b>42%</b>	<b>31%</b>	<b>5%</b>	<b>13%</b>	<b>6%</b>	<b>2%</b>	<b>2%</b>
Djibouti	24%	54%	2%	20%	0%	0%	0%
Egypt	50%	20%	3%	12%	5%	8%	0%
Iran	52%	27%	2%	19%	1%	0%	0%
Jordan	33%	37%	18%	0%	4%	4%	4%
Lebanon	50%	13%	6%	16%	15%	0%	1%
Morocco	54%	22%	3%	3%	16%	0%	2%
Tunisia	17%	41%	1%	35%	5%	0%	0%
Yemen	57%	31%	7%	0%	0%	0%	5%

Source: De and Shehata (2001)

Note: May not add to 100% because of rounding

Table 11 gives a detailed breakdown of the share of funds channeled through financing agents for the LAC countries. As with the ESA and MENA tables, Table 11 is organized to reflect the expenditure categories used by the countries. A key finding is the role that social health insurance plays in the LAC countries. Among public financing agents, the share of social health insurance even exceeded that of central government departments in Bolivia and Mexico. Central government departments were, however, the main public financing agent in the other countries: Dominican Republic (16.1 percent), Ecuador (23.5 percent), El Salvador (23 percent), Guatemala (31.3 percent), Nicaragua (57.5 percent), and Peru (31.6 percent). In Ecuador, other government departments accounted for nearly 10 percent of funds channeled through financing agents. Household out-of-pocket expenditure remained the main private financing agent in all the LAC countries ranging from a low of 28.4 percent in Peru to a high of 55.2 percent in Mexico. In Ecuador private health insurance

accounted for over 10 percent of funds that flowed through financing agents. In all three regions, only South Africa had a higher percentage of total expenditures accounted for by private insurance. Another interesting finding for the LAC countries was the fact that, in the Dominican Republic, direct payments by private firms accounted for nearly 43 percent of all funds channeled through financing agents and was higher than the amount that flowed through any other financing agent.

**Table 11: Share of Funds Channeled through Financing Agents: LAC Countries**

	Public Financing Agents					Private Financing Agents				
	Central Govt Depts	Other Govt Depts	State-owned Firms	Social Health Insurance	Total Public	Private Insurance	NGO	Private Firms' Direct Payments	Households' Direct Payments	Total Private
<b>LAC Average</b>	<b>27%</b>	<b>3%</b>	<b>0.31%</b>	<b>23%</b>	<b>53%</b>	<b>4%</b>	<b>2%</b>	<b>6%</b>	<b>36%</b>	<b>47%</b>
Bolivia	23.9%	1.4%	2%	37.7%	<b>65%</b>	2.5%	4%	-	28.5%	<b>35%</b>
Dominican Republic	16.1%	-	0.3%	4.8%	<b>21.2%</b>	7.5%	1.9%	42.7%	26.62%	<b>78.7%</b>
Ecuador	23.5%	9.6%	-	21.5%	<b>54.6%</b>	10.3%	1.3%	0.7%	33.1%	<b>45.4%</b>
El Salvador	23%	2.2%	-	20.5%	<b>45.7%</b>	1.1%	0.2%	-	53%	<b>54.3%</b>
Guatemala	31.3%	-	0.2%	27.8%	<b>59.3%</b>	3.9%	4%	-	32.8%	<b>40.7%</b>
Mexico	9.1%	-	-	34.3%	<b>43.4%</b>	1.4%	-	-	55.2%	<b>56.6%</b>
Nicaragua	57.5%	-	-	10.5%	<b>68%</b>	-	-	-	32%	<b>32%</b>
Peru	31.6%	9.6%	NA	24.6%	<b>65.8%</b>	3.1%	0.8%	1.9%	28.4%	<b>34.2%</b>

Source: NHA tables

### 4.3 Uses of Health Expenditures by Type of Provider

Table 12 gives the expenditures by providers for the ESA countries. This breakdown by provider could be done with a reasonable level of confidence only for six of the countries. Expenditures on hospitals ranged from 22 percent in Ethiopia to 61 percent in South Africa. Other countries where hospitals accounted for over half of all health expenditures were Malawi and Tanzania. Expenditures on outpatient facilities and clinics ranged from 11 percent in Malawi to 35 percent in Tanzania. In all the countries for which researchers could disaggregate the information, expenditures on hospital-based care exceed expenditures incurred at outpatient facilities (public and private). Expenditures on pharmacies ranged from 17 percent in Malawi to 53 percent in Ethiopia. Some of these numbers should be treated with caution. For example, the high expenditure on pharmacies in Ethiopia might include expenditure on drugs incurred at hospitals and outpatient facilities. Similarly, countries such as Kenya and Rwanda have a large “others” category.

**Table 12: Expenditures by Providers: ESA Countries**

Country	Hospital	Outpatient Clinics	Pharmacies	Other
Ethiopia*	22%	21%	53%	4%
Kenya	27%	22%	23%	28%
Malawi**	54%	11%	17%	18%
Mozambique	-	-	-	-
Rwanda	26%	12%	25%	37%
South Africa	61%	12%	-	28%
Tanzania***	53%	35%	-	12%
Uganda†	-	-	-	-
Zambia†	-	-	-	-
Zimbabwe†	-	-	-	-

Source: NHA reports and authors' analysis

\* Ethiopia: expenditure on drugs shown under pharmacy; "other" includes administration, research and information, education, and communication.

\*\* Malawi: Tertiary and secondary care shown as hospitals. It was necessary to adjust for expenditure on pharmaceuticals from other sections of NHA. This reduced the total expenditures shown against hospitals.

\*\*\* Further breakdown not possible for Tanzania.

† Information for other countries not available

Table 13 gives the breakdown by provider for the MENA countries. In most instances, it was possible to disaggregate information by type of provider from the NHA reports. However, as with the case of the ESA countries, there was a blurring of the lines between functions and providers. In the MENA region Tunisia and Yemen both spent 56 percent of all health expenditures on hospital-based care. Amongst all the 26 countries only South Africa (61 percent) spent more on hospitals. The numbers for Tunisia might be an overestimate given no separate estimate exists for expenditure incurred at pharmacies. Overall, the MENA countries spent more at Outpatient Clinics as a percentage of overall health expenditures than the ESA countries. Egypt (43 percent), Lebanon (42 percent) and Tunisia (43 percent) spent the highest proportion on outpatient facilities. In five of the eight countries hospitals accounted for a greater proportion of health expenditures than outpatient facilities. The only exceptions to this were Egypt, Lebanon, and Morocco. While this is better than the situation observed amongst the ESA countries it still points to the fact that a significant proportion of health expenditures in these countries goes to hospitals. Expenditures at pharmacies ranged from 14 percent in Djibouti to 37 percent in Morocco.

**Table 13: Expenditures by Providers: MENA Countries**

Country	Hospital	Outpatient Clinics	Pharmacies	Other*
Djibouti	47%	35%	14%	4%
Egypt	35%	43%	15%	7%
Iran	37%	31%	15%	3%
Jordan	39%	27%	26%	11%
Lebanon	25%	42%	25%	9%
Morocco	20%	34%	37%	9%
Tunisia**	56%	43%	-	-
Yemen***	56%	9%	35%	-

Source: De and Shehata (2001), Berman et al. (1998), Rannan-Eliya et al. (1997)

\* "Other" includes all other health care services such as administration, education, research, and development.

\*\* Information on pharmaceutical and other expenditures was not available for Tunisia

\*\*\* For Yemen, information on hospital care and pharmacies was available. This was used to estimate expenditure on outpatient facilities.



Table 14 gives the breakdown by provider for the LAC countries. Again data are presented only for the countries (in this case, five) where it was possible to disaggregate expenditures by type of provider with some confidence in the estimates. Ecuador (49 percent) spent the most as percentage of total expenditures on hospital-based care. This was followed by Guatemala (47 percent), Nicaragua (37 percent), Bolivia (30 percent), and Mexico (30 percent). As with the MENA countries, there is less disparity between hospital and outpatient care than among the ESA countries. Mexico spent nearly half (48 percent) of its expenditures on care provided at outpatient facilities, followed by Nicaragua (45 percent), Guatemala (33 percent), Bolivia (31 percent), and Ecuador (13 percent). Though Mexico's share is similar to the percent in Lebanon (42 percent), Mexico has a much larger network of public outpatient clinics through which care is provided. In Ecuador and Guatemala, hospital expenditures exceeded those at outpatient facilities, while the opposite was true for Bolivia, Mexico, and Nicaragua. The "other" category is fairly large for most countries, ranging from 18 percent for Nicaragua to 39 percent for Bolivia.

**Table 14: Expenditures by Providers: LAC Countries**

Country	Hospital	Outpatient Clinics	Pharmacies	Other
Bolivia	30%	31%	0*	39%
Ecuador	49%**	13%	24%	15%***
Guatemala	47%	33%	0	20%
México	30%	48%	21%	-
Nicaragua <sup>†</sup>	37%	45%	n/a	18%

Source: NHA reports.

\* Expenditure on pharmacies was not included in the comparison of hospital and outpatient care. Spending on pharmacies was 17.87 percent of total health care spending, paid for by households.

\*\* This figure includes a category of "Hosp. Clinicas con Privadas." Researchers assume these are clinical hospitals.

\*\*\* This sum includes NGO payments, private providers, and municipal funds, which were not broken down by inpatient/outpatient care.

<sup>†</sup> For further information of the breakdown of spending by type of services, see LAC Initiative (1999: 18).



## 5. Patterns of Private Health Expenditures, Role of Donor Assistance, and Expenditure on Pharmaceuticals

### 5.1 Analysis of Private Health Expenditures

Private health expenditures are made up of household out-of-pocket spending on health care, employer contributions and expenditures on health care, and other private sources of health care financing. In all of the countries studied, households are the largest contributors to private expenditures: On average, expenditures by households made up 87 percent of private expenditures for the ESA countries, 82 percent for the MENA countries, and 83 percent for LAC countries.

Table 15 shows the share of private expenditures to total health spending in the ESA countries. On average, private spending accounted for nearly 52 percent of health spending, the lowest average among the three regions. An important reason for this is the high dependence of many of the ESA countries on external assistance (which affects private as well as public spending levels). In Kenya, nearly 64 percent of health expenditures comes from the private sector. In Ethiopia, South Africa, Tanzania, and Zimbabwe, private expenditures accounted for over half of total health expenditures. In Malawi, Rwanda, Uganda and Zambia private expenditures accounted for less than 40 percent of total health expenditures. As mentioned above and discussed in greater detail below, these countries were dependent on donors to fund their health expenditures.

**Table 15: Private Share of Total Health Expenditures: ESA Countries**

Countries	Percent
Ethiopia	52.68%
Kenya	63.54%
Malawi	33.25%
Mozambique	25.65%
Rwanda	39.59%
S Africa	52.86%
Tanzania	51.86%
Uganda	36.02%
Zambia	33.11%
Zimbabwe	50.13%
Average	51.94%

Source: NHA reports and authors' analysis

Table 16 shows that, on average, private spending accounted for nearly 67 percent of total health expenditures in the MENA region. In Lebanon, over 80 percent of total health spending comes from private sources.

**Table 16: Private Share of Total Health Expenditures: MENA Countries**

Country	Percent
Djibouti	44.00%
Egypt	56.00%
Iran	70.00%
Jordan	47.00%
Lebanon	80.10%
Morocco	66.70%
Tunisia	65.00%
Yemen	57.30%
Average	66.60%

Table 17 shows that, on average, private spending accounted for over 64 percent of total health expenditures in the LAC region. Bolivia and Nicaragua are the only two countries where private spending was less than half of total health expenditures. Private spending was the highest in the Dominican Republic, at 84 percent. This is even higher than in Lebanon. Some of the reasons for this high private share have to do with how expenditures are accounted for. Like the United States, many of the countries count employer (including government as an employer) premium contributions, as private expenditures. This necessarily increases the private share of health expenditures.

**Table 17: Private Share of Total Health Expenditures: LAC Countries**

Country	Percent
Bolivia	34.00%
Dominican Republic	84.00%
Ecuador	56.00%
El Salvador	72.43%
Guatemala	65.00%
Mexico	64.00%
Nicaragua	41.30%
Peru	61.34%
Average	64.25%

Some of the countries have analyzed out-of-pocket expenditures by income quintiles. Data were available on four of the 26 countries – Egypt, Jordan, Lebanon, and Malawi. Malawi is the only country of the four where the proportion of household income spent on health increases with income. In Egypt, Jordan, and Lebanon, those in the lower income quintiles bear a disproportionately high burden of health expenditures. In other words, households in the lower income quintiles were found to spend a higher proportion of their incomes on health care as compared with households in the higher income quintiles. This is true in spite of the fact that Jordan and Lebanon have explicit safety

nets for the poor and in Egypt the Ministry of Health has established an extensive network of health care facilities where care is either provided free or for a very nominal fee. All of these countries have insurance programs that cover a significant proportion of the population. The findings on equity point to the need for countries to pay special attention to protect the poor from catastrophic health expenditures. In middle-income countries, this means better targeting resources to the poor and increasing risk-pooling mechanisms to include the poor.

**Table 18: Percent of Household Income Spent on Health Care**

Country	Poorest Quintile	2 <sup>nd</sup> Income Quintile	3 <sup>rd</sup> Income Quintile	4 <sup>th</sup> Income Quintile	Richest Quintile
Egypt	9.9%	8.7%	7.6%	7.1%	7.4%
Jordan	12%	7%	6%	5%	4%
Lebanon	18.5%	16%	15%	14%	13%
Malawi	15.5%	17.9%	18.4%	27.9%	20.4%

Sources: Egypt–Rannan-Eliya et al. (1997), Jordan–Brosk et al. (2001), Lebanon–Ammar et al. (2000), Malawi–Ministry of Health and Population (2001)

## 5.2 Donor Contribution to Health Expenditures

In many countries, donors have supported key health programs including immunization, family planning, maternal and child health services, and HIV/AIDS services. While donor assistance is critical to improving the health status of populations, an understanding of its magnitude is of great importance to policymakers in recipient countries. It helps them to assess the sustainability of programs, and this information in turn can help them better allocate resources. Donor funding to countries is not something that is guaranteed and can change with either changing donor priorities or because donors cut back overall assistance to health care. A key contribution of the first round of NHA studies was a systematic assessment of donor assistance. In many countries it was not easy to obtain this information for a variety of reasons. One was that donor assistance did not necessarily pass through government agencies. As a matter of fact, in many countries, donors are increasingly channeling resources through nongovernmental institutions, making it harder to capture them. Similarly, donor assistance can be in-kind and local offices of donors do not necessarily have the value of these contributions. Many external nongovernmental organizations play a role in funding health services; it was very difficult to capture these expenditures. In spite of the efforts of country NHA teams, the figures given here underestimate donor assistance. ESA countries had the highest levels of donor dependence (excluding South Africa, 22.6 percent). In both MENA and LAC countries, donor assistance averaged less than 5 percent of total health expenditures. This points to the fact that donors tend to target their assistance more to low-income countries, and, as per capita incomes rises, donor contributions decrease. When researchers regressed donor assistance against per capita GDP, a strong negative relationship was observed (Figure 1).

**Figure 1: Donor Share of Health Expenditures by GDP Per Capita (PPP): All Countries**

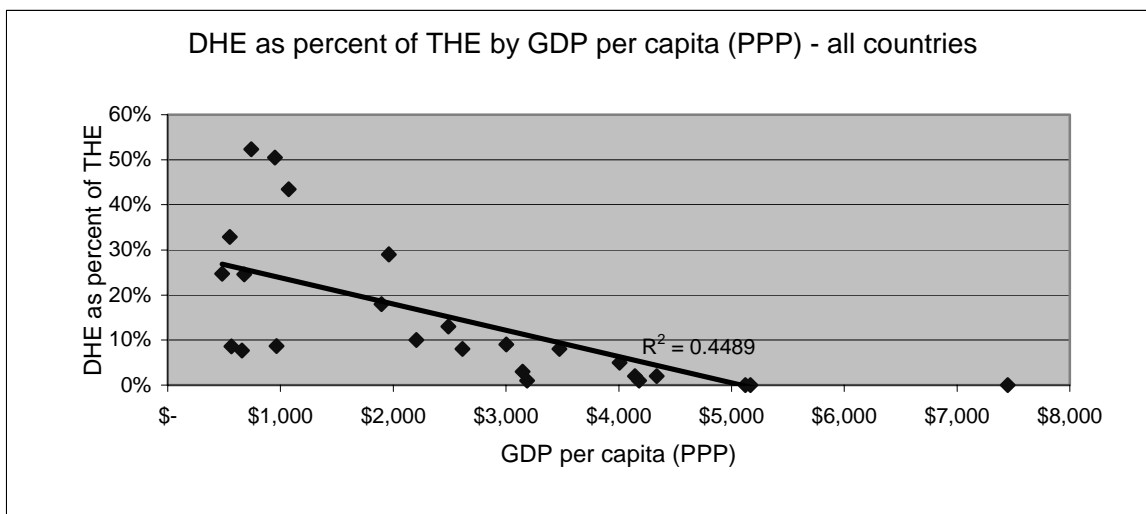


Table 19 gives the share of donor expenditures to total health expenditures in ESA countries. This study confirmed with the authors of the ESA synthesis report that this was indeed the case. In the case of South Africa, donors do support some programs but, as a share of total health expenditures, this was negligible. Excluding South Africa the donors contributed, on average, 22.6 percent to health expenditures. Mozambique and Rwanda both received over half of their health funding from donors. This shows a very high level of dependence on external funding. Uganda and Malawi also can be viewed as donor-dependent countries. Only in Kenya and Ethiopia did donor assistance account for less than 10 percent of total health expenditures.

**Table 19: Donor share of Total Health Expenditures: ESA Countries**

Ethiopia	8.62%
Kenya	8.67%
Malawi	32.86%
Mozambique	52.31%
Rwanda	50.47%
South Africa	0.00%
Tanzania	24.74%
Uganda	43.41%
Zambia	24.61%
Zimbabwe	12.99%
Average (excluding South Africa)	22.60%

Source: NHA reports and authors' analysis

Note: In the case of South Africa it was verified that donor assistance was negligible

Table 20 gives the share of donors to total health expenditures in the MENA region. It was not possible to obtain figures for external assistance in the case of Iran and Tunisia. Excluding those countries, donor assistance averaged 3 percent of total health expenditures. Djibouti, with 29 percent of health expenditures attributable to donor assistance, is the outlier in the region. As noted above,

MENA countries were far less dependent on donor assistance to support their health systems than were ESA countries.

**Table 20: Donor Share of Total Health Expenditures: MENA Countries**

Country	Percent
Djibouti	29.00%
Egypt	3.00%
Iran	na
Jordan	8.00%
Lebanon	2.00%
Morocco	1.00%
Tunisia	na
Yemen	7.70%
Average (excluding Iran and Tunisia)	3.01%

Source: NHA reports and authors' analysis

Note: Donor assistance figures not available for Iran and Tunisia

Table 21 shows that, on average, donor financing contributed 4 percent of total health expenditures in the LAC countries (excluding Mexico). This is more in line with MENA countries and significantly less than ESA countries. Nicaragua, at 18 percent, is the most dependent on donor assistance. Donor assistance as a percent of total health expenditures was negligible for Mexico.

**Table 21: Donor Share of Total Health Expenditures: LAC Countries**

Bolivia	10.00%
Dominican Republic	2.00%
Ecuador	9.00%
El Salvador	5.00%
Guatemala	8.00%
Mexico	0.00%
Nicaragua	18.00%
Peru	1.00%
Average (excluding Mexico)	4.07%

Source: NHA reports and authors' analysis

Note: For Mexico donor assistance is negligible

### 5.3 Expenditures on Pharmaceuticals

A separate analysis compared how much countries spent on pharmaceuticals. In the case of developed countries expenditures' the median expenditure on drugs is 16 percent of total health care expenditure (Anderson and Poullier 1999). In contrast, in the low- and middle-income countries in the present sample, the median expenditure on drugs was 25 percent of total health care expenditures. Most of the expenditures in developing countries on pharmaceuticals are made out-of-pocket. If one were to hypothesize that the rate of diffusion and adoption of new drugs is becoming quicker in these countries, then there is a need for much greater attention being given to the procurement, distribution, and pricing of pharmaceuticals in developing countries.

Table 22 gives information on the share of pharmaceuticals to total health expenditures for the ESA countries. The figures of 2 percent for Zimbabwe and 5 percent for Mozambique need to be treated with caution; in all likelihood these are gross underestimates. In Mozambique, it is possible that donor assistance might be offsetting some of the private expenditures on drugs. Excluding these two countries, expenditures on pharmaceuticals ranged from 14 percent in South Africa to 53 percent in Ethiopia. Since the first round of NHA was completed in Ethiopia, the country has relaxed the rules governing the import and manufacture of pharmaceuticals. Ethiopia is currently undertaking the second round of NHA and it would not be surprising to see an increase in these expenditures. In some countries (Kenya, for example), medical supplies were included in the cost of pharmaceuticals, and it was not possible to disaggregate these figures any further. Another fact to keep in mind is that, in Africa, there is a very extensive and parallel system of traditional medicine. Very little is known about this sector of the health system. The expenditures on pharmaceuticals capture only what is spent on modern medicine.

**Table 22: Expenditures on Pharmaceuticals: ESA Countries**

Country	Percent of Total Health Expenditures
Ethiopia	53%
Kenya	26%
Malawi	17%
Mozambique	5%
Rwanda	25%
South Africa	14%
Zimbabwe	2%

Source: NHA reports and authors' own analysis

Note: Figures not available for Zambia and Tanzania

Table 23 provides information on pharmaceutical expenditure as a share of total health expenditures for the MENA countries. Estimates were particularly difficult in the case of Djibouti and Yemen. This was because of the various means by which pharmaceuticals make their way into and out of these countries. Only Iran and Djibouti reported spending just 15 percent of total health expenditures on pharmaceuticals. Lebanon and Jordan spent 25 percent and 27 percent respectively while Egypt, Morocco, and Yemen all spent at least 35 percent of their total health expenditures on pharmaceuticals. In Lebanon, the findings from the NHA study have already resulted in the government examining the issue of pharmaceutical procurement and distribution very closely.



**Table 23: Expenditures on Pharmaceuticals: MENA Countries**

Country	Percent of Total Health Expenditures
Djibouti	15%
Egypt	36%
Iran	15%
Jordan	27%
Lebanon	25%
Morocco	37%
Yemen	35%

Source: NHA reports and authors' own analysis

Note: Figures not available for Tunisia

Table 24 gives the expenditure on pharmaceuticals in the LAC countries. The figures for the Dominican Republic need to be treated with caution because private expenditures account for nearly 84 percent of total health expenditures. This would, prima facie, posit that expenditures on pharmaceuticals should be much higher than the reported 4 percent. Further analysis is needed to reconcile this issue and this study encourages special attention be given to this when the next round of NHA estimates are prepared for that country. Bolivia also reported spending only 6 percent of total health expenditures on pharmaceuticals. This too needs to be interpreted with caution because all other countries in the LAC region (with the exception of the Dominican Republic) reported spending between 20 percent and 33 percent of health expenditures on pharmaceuticals.

**Table 24: Expenditure on Pharmaceuticals: LAC Countries**

Country	Percent of Total Health Expenditures
Bolivia	6%
Dominican Republic	4%
Ecuador	26%
El Salvador	29%
Guatemala	20%
Nicaragua	33%
Peru	28%

Source: NHA reports and authors' analysis

Note: Figures not available for Mexico



## 6. The Role of Insurance in the Health Care System

This section assesses the extent of formal insurance coverage for the countries in the three regions. Insurance included both social insurance schemes as well as private insurance. Social insurance schemes primarily covered those employed in the formal sector. While some social insurance schemes covered both the employee and family members, others covered only the employee. In some countries there were social insurance schemes for specific population segments (schoolchildren and newborns, for example). In many instances social insurance schemes were running large deficits. A key reason for this is that premiums tended to be a percentage of salaries. With salaries not keeping up with health costs, a deficit was to be expected. In many countries the social insurance schemes, though autonomous in law, lacked the power to either change benefits or premiums.

Private insurance was an important financing agent in South Africa, Ecuador, Lebanon, and Jordan. Elsewhere, private insurance coverage tended to be very small. Private insurance schemes tended to be offered primarily by employers. Private insurance markets were not well regulated and private insurance companies were reluctant to share information with NHA. In Lebanon, which places a strong emphasis on private markets, the private insurance market is growing rapidly, with approximately 70 private insurance companies providing health insurance. One report places the percent of the population covered by private insurance at 16.6 percent. There is anecdotal evidence that private insurance companies transfer the burden of high-cost cases to the Ministry of Health, as the latter does not have the ability to verify whether applicants have insurance or not.

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### 6.1 Extent of Insurance Coverage

Barring South Africa, insurance, either social or private, was minimal in the ESA countries.

Table 25 presents information on the percent of the population covered by either social or private insurance among the MENA countries. Iran reported that 94 percent of the population was covered under an insurance scheme. Tunisia had nearly three-quarters of the population covered by insurance, followed by Jordan at 60 percent and Lebanon at 54 percent. Morocco and Djibouti had the lowest rates of insurance coverage, at 15 percent and 18 percent respectively.

**Table 25: Insurance Coverage: MENA Countries**

Country	Percent
Djibouti	18%
Egypt	31%
Iran	94%
Jordan	60%
Lebanon	54%

Morocco	15%
Tunisia	71%
Yemen	NA

Source: NHA reports

Table 26 provides information on the proportion of the population covered by insurance schemes in the LAC region. Once again information is presented for those countries for which this was available from their NHA reports. Private insurance was the dominant risk pooling mechanism in the Dominican Republic (12 percent) whereas El Salvador reported that over 94 percent of the population was covered by social insurance.

**Table 26: Insurance Coverage: LAC Countries**

Country	Percent		
	Private	Public	Other
Dominican Republic	1%	5%	1.7%
Bolivia	n/a	30%*	14-21%**
Ecuador	3.9%	n/a	n/a
El Salvador	n/a	94.4%***	n/a
Guatemala	n/a	n/a	n/a
México	n/a	n/a <sup>†</sup>	n/a
Nicaragua	4.5%	n/a	10.5% <sup>‡</sup>
Peru	n/a	n/a <sup>§</sup>	n/a

Source: NHA reports

\* This 30 percent is covered by public subsector.

\*\* 14 percent according to CNPV and 21 percent according to the National Social Insurance Institute.

\*\*\* The Instituto Salvadoreño del Seguro Social covers 14.4 percent of this amount.

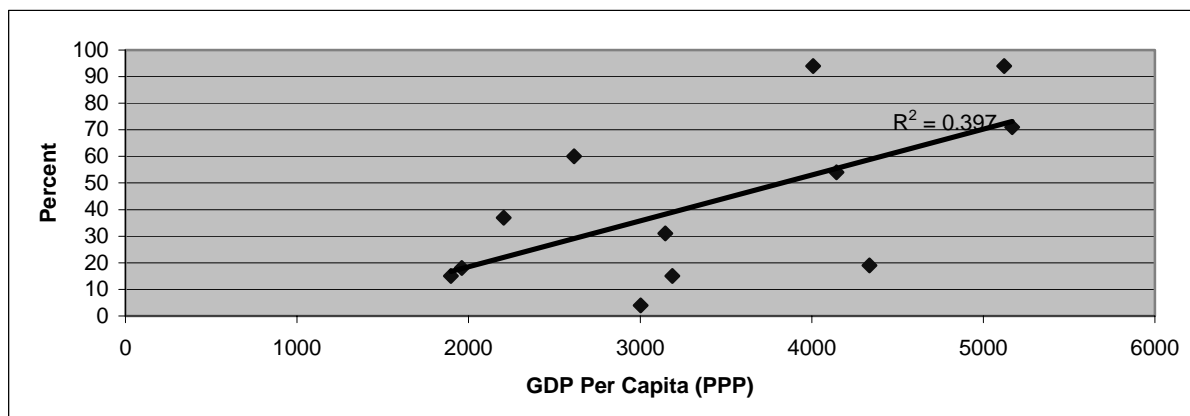
<sup>†</sup> Mexico has two sets of public institutions; one for the uninsured and another for the insured. The report does not break down by population the percent number in each category. Mexico also has a diverse private sector divided into for- and non-profit groups. Unfortunately, the population of insured in the private sector is also not reported. The Social Security Institute and Ministry of Health have as beneficiaries 94.4 percent of the population of the country.

<sup>‡</sup> This percentage is a compilation of social security through a provisional system of health services covering 6 percent while other insurers cover 4.5 percent, specifically the health services of the Governance Ministry and the Army of Nicaragua.

<sup>§</sup> The Peru report does not break down the percentage of the population covered by insurance. The report does break down the cost components by financing unit: 41 percent household out-of-pocket; 28 percent government; 24 percent Peruvian social insurance scheme. 3 percent businesses through insurance; and 4 percent market producers.

The study tested whether there was a relationship between the per capita GDP of a country and the proportion of the population covered by formal insurance; Figure 2 shows a strong positive correlation. This probably reflects the fact that, as countries become wealthier, a greater proportion of their labor force is employed in the formal sector, making it easier to enroll them in insurance schemes. It also might reflect the fact that, as per capita incomes increase, health systems tend to become more sophisticated in terms of the financing mechanisms they use, how services are procured, and information and data systems.

**Figure 2: Percent Covered by Insurance by GDP Per Capita (PPP): LAC and MENA Countries**



## 6.2 Role of Insurance as a Financing Agent

By their very nature insurance schemes (either social or private) tend to be financing agents: They receive funds from employers, households, and the government and use these funds to purchase health care for their beneficiaries. This section analyzes the role insurance schemes played in the financing of health care services.

Table 27 presents what proportion of the funds that flowed through financing agents were accounted for by insurance in ESA countries. Barring South Africa, where private insurance accounted for 41 percent of the funds going through financing agents, neither social nor private insurance funds a significant proportion of health expenditures.

**Table 27: Share of Insurance in Funds Flowing through Financing Agents: ESA Countries**

Country	Percent Social Insurance	Percent Private Insurance
Ethiopia	0%	0%
Kenya	4%	3%
Malawi	0%	1%
Mozambique	0%	0%
Rwanda	0%	0%
South Africa	1%	41%
Tanzania	0%	3%
Uganda	0%	0%
Zambia	0%	0%
Average	1%	5%

Source: NHA reports

Table 28 presents information for the MENA countries. Social insurance schemes accounted for roughly 13 percent of the funds that flowed through financing agents, and private insurance accounted for about 6 percent. Most countries in the region had social insurance schemes that covered civil servants and those employed in the formal sector. More funds were channeled through private insurance schemes in Morocco than through social insurance schemes and, in Lebanon, social and

private insurance schemes accounted for about the same proportion of expenditures. In Iran, Jordan, Egypt, Lebanon, and Tunisia, the proportion of expenditures accounted for by social insurance schemes was significantly less than the populations they covered. In most instances the schemes offer comprehensive benefits. This leads to the conclusion that beneficiaries tend not to use these schemes, a premise supported by the high out-of-pocket expenditures one observed in these countries.

**Table 28: Share of Insurance in Funds Flowing through Financing Agents: MENA Countries**

Country	Percent Social Insurance	Percent Private Insurance
Djibouti	20%	-
Egypt	12.4%	<1.0%
Iran	19.0%	1.0%
Jordan	0%	<4%
Lebanon	16%	15%
Morocco	2.6%	16.2%
Tunisia	35%	5%
Average	13%	6.0%

Source: NHA reports (Iran and Morocco – NHA tables)

Note: For Jordan, only Civil Insurance Scheme expenditures are counted

Table 29 shows that of all the three regions, LAC had the most developed social insurance markets. Social insurance is a key purchaser of health services in Bolivia and Mexico, accounting for over a third of financing agent funds. In Ecuador, El Salvador, Guatemala, and Peru, social insurance accounted for over 20 percent of funds that flowed through financing agents. The Dominican Republic was an interesting case in that private insurance appears to account for a larger share than social insurance. Barring Ecuador and the Dominican Republic private insurance is not a major financing agent in the LAC region.

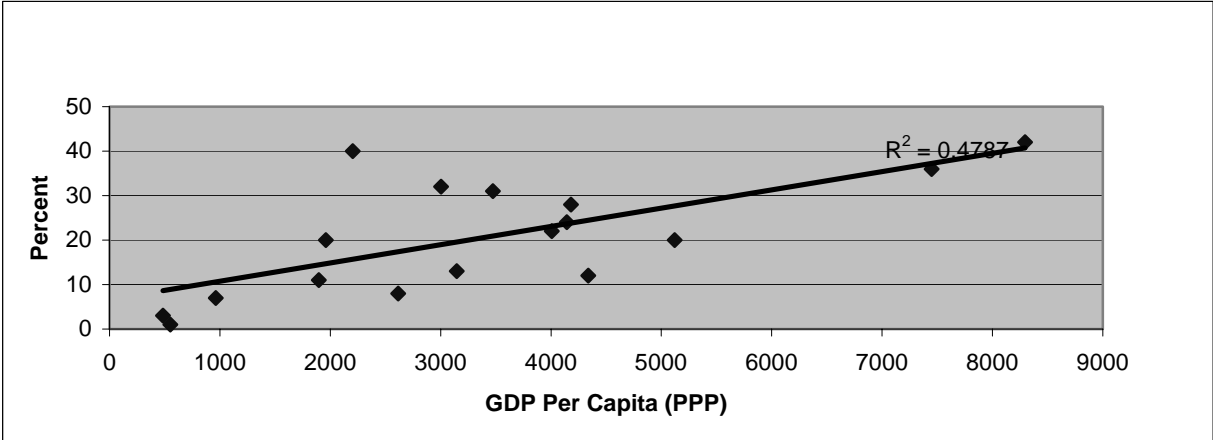
**Table 29: Share of Insurance in Funds Flowing through Financing Agents: LAC Countries**

Country	Percent Social Insurance	Percent Private Insurance
Bolivia	37.7%	2.5%
Dominican Republic	4.8%	7.5%
Ecuador	21.5%	10.3%
El Salvador	20.5%	1.1%
Guatemala	27.8%	3.9%
Mexico	34.3%	1.4%
Nicaragua	10.5%	NA
Peru	24.6%	3.1%
Average	22.7%	4.3%

Source: NHA reports

The study wanted to test whether the share of total health expenditures channeled through insurance schemes was related to the per capita GDP of a country. Figure 2 showed that, as per capita GDP rose, so did the proportion of the population covered by insurance. Figure 3 shows a very strong relationship between per capita GDP and the percent of total health expenditures accounted for by insurance. (The figure includes all the countries in the study for which there was relevant information.)

Figure 3: Percent of Total Health Expenditures Paid by Insurance by GDP Per Capita







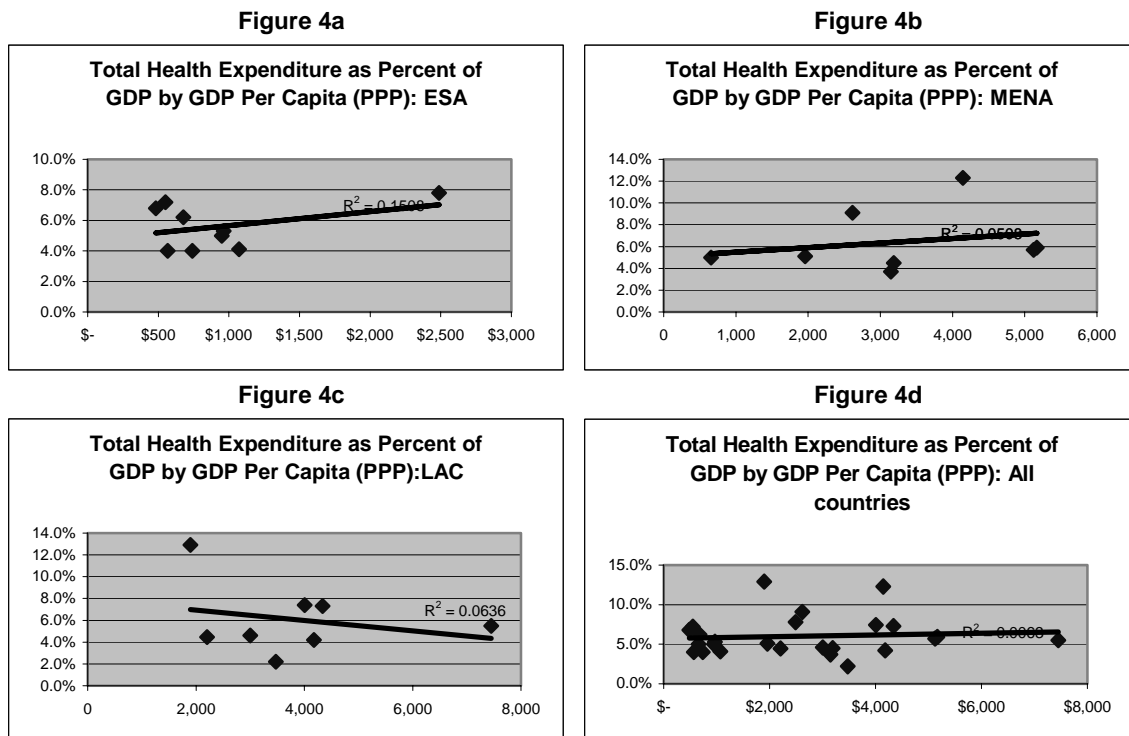
# 7. Relationship Between Total Health Expenditures and Per Capital Income

Existing studies suggest that there exists a positive correlation between the percent of GDP a country spends on health care and the per capita income of that country. In other words, as per capita incomes increase, so does the proportion of GDP spent on health care. This study tried to see if this holds true for the low- and middle-income countries in its sample.

Figures 4a-4d show that this hypothesis holds true for ESA ( $R^2 = 0.1508$ ) and MENA ( $R^2 = 0.0508$ ) countries (Figures 4a, 4b). However, it appears as though this relation may not hold for the LAC region ( $R^2 = 0.0636$ ). Figure 4c shows a negative correlation, implying a decline in THE as a percent of GDP, as incomes increase. Mexico is an outlier among LAC countries, so researchers regressed the data excluding Mexico to isolate its effect. Even after excluding Mexico, the hypothesis does not hold for LAC. Further, because of the aberration in LAC, a weak but positive relationship is observed when data for all countries in the sample are used ( $R^2 = 0.0063$ ) (Figure 4d). The counter-intuitive findings from the LAC countries need to be further examined.

Thus, while there is some evidence (at least in ESA and MENA) that countries with higher GDP per capita spend a greater share of GDP on health there are many other factors that appear to affect health spending.

**Figures 4a-4d: Total Health Expenditure as a Percent of GDP per Capita PPP for 1998**





## 8. The Relationship between Per Capita Income and Public Share of Total Health Expenditures

Existing literature suggests that, as per capita incomes of countries go, so goes the share of public expenditures to total health expenditures. This study examined whether this was true in the case of the countries in the sample. Results (Figures 5a-5d) show that, while the hypothesis holds true of all countries when regressed together (Figure 5d), it appears to be less convincing for the regional subcategories.

The hypothesis holds for ESA countries that are mostly characterized by low-income countries (except South Africa) (Figure 5a); the correlation between income and PHE appears to be positive ( $R^2 = 0.0121$ ). However, the most interesting finding is the aberration observed in the LAC region, which is characterized by upper-middle-income countries by the World Bank definition. The LAC countries reveal practically no correlation between rise in income and proportion of PHE ( $R^2 = .1177$ ) (correlation is now negative) (Figure 5c). We observe this peculiarity in the MENA countries as well. The MENA countries also fall in the middle of the economic spectrum, just below the LAC. (As per the World Bank definition, they are profiled as low middle-income.) In the MENA region (Figure 5b) the trend line shows a slight negative correlation between PHE and income ( $R^2 = 0.0541$ ). It appears as though the stronger correlation in ESA countries compensates for the weaker correlation of LAC and MENA countries, thereby making the hypothesis hold when regressed for all countries.

For MENA countries, one possible explanation of this phenomenon is how health care financing is organized. While the government plays a key role in the provision of health care services, the majority of health financing comes from out-of-pocket expenditures. While some of these countries have social insurance schemes for those employed in the formal sector or for specific population segments, these expenditures tend to be small when compared with private expenditures.

For the LAC countries, a possible explanation may be the organization of the health systems. Discussions with those responsible for the NHA studies pointed to deliberate strategies by some Latin American governments to first rationalize and optimize existing public spending before increasing the public spending. Several of the countries studied, particularly, Bolivia, Dominican Republic, and Mexico, are undertaking significant social security reforms. Part of the reform involves reallocation of resources to increase efficiency. For example, in Bolivia, the government has decreased subsidies to the social security fund, but increased spending to municipalities to provide direct care in rural areas. This strategy of decentralization is aimed at improving access to care for people but does not substantially increase the overall funding.

In summary, the hypothesis that the public share of total health expenditures increases with per capita income appears to hold for the low-income countries in ESA; it does not hold for the middle-income countries in MENA and LAC. As more countries do NHA, it will be interesting to see if these patterns continue to hold.

Figures 5a-5d: PHE as a Percent of THE by GDP Per Capita

Figure 5a

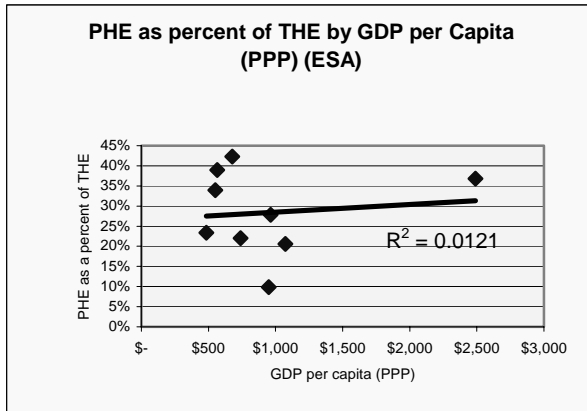


Figure 5b

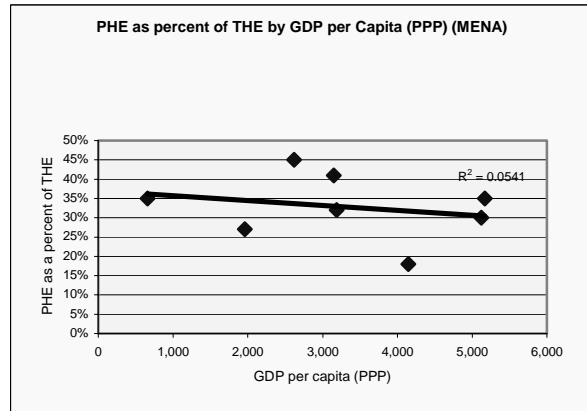


Figure 5c

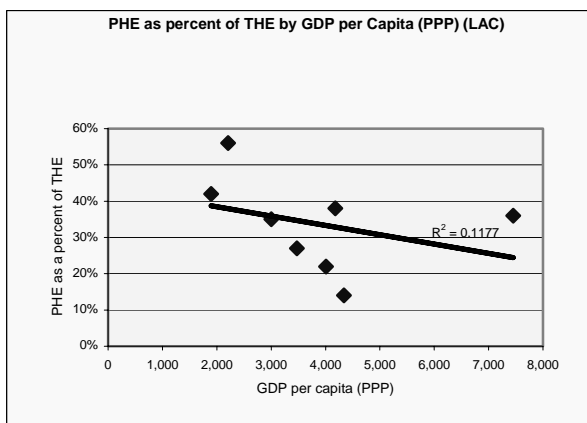
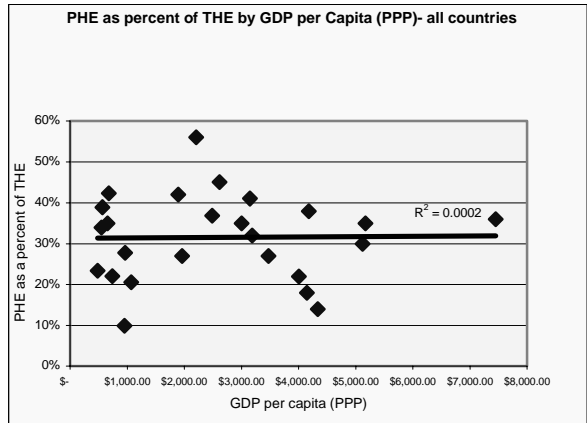


Figure 5d



## 9. Key Policy Issues

This section summarizes the key policy issues that emerged from NHA studies in each of the three regions. These findings are taken from the individual country reports. In some instances, these might not appear to flow directly from the data presented in the other sections on the report. However, this study did not want to reinterpret the main policy issues that individual country reports had identified. While concerns about equity, resource mobilization and building better public-private partnerships were shared by all three regions, ESA countries expressed much greater concern about equity issues and reducing dependence on donor assistance whereas countries in the MENA and LAC regions were worried about improving efficiency and expanding insurance coverage.

The key policy issues identified by region are listed below:

### **ESA Regional Network**

- ▲ Government should explore alternate financing mechanisms to increase resource for health sector
- ▲ Reduce dependency on donors
- ▲ Reduce discrepancies between per capita expenditures and health outcomes through better targeting of resources
- ▲ Improve resource allocation criteria to address regional inequities
- ▲ Build better links with the private sector and develop public-private partnerships to increase access of health services
- ▲ Improve coordination of stakeholders to attain policy goals
- ▲ Improve accounting systems to capture spending at different levels of use in the health system

### **MENA Regional Network**

- ▲ Address the sustainability of the health system given demographic and epidemiological transition
- ▲ Reduce the burden on households' out-of-pocket spending
- ▲ Control health spending in the pharmaceutical sector
- ▲ Standardizing the level of coverage of the insured and un-insured population
- ▲ Increase insurance coverage

- ▲ Improve coordination between the private and public sectors; reduce oversupply and duplication of services

#### **LAC Regional Network**

- ▲ Reduce dependency on households' out-of pocket spending
- ▲ Government should explore alternate financing mechanisms to increase resources available for health care
- ▲ Improve efficiency of health system through better use of hospital capacity and control of capital investment
- ▲ Improve the quality of the services provided
- ▲ Establish strategic commercial alliances
- ▲ Reform social security system with a view to create universal social security

## 10. Discussion of Findings

A key finding from the first round of NHA was the fact that in all 26 countries, expenditures both in per capita terms as well as percentage of GDP tended to be higher than previous estimates. There were a number of reasons for this with the key being that the NHA studies attempted to fully capture private expenditures on health. The second reason was that countries listed all of the entities and institutions in the health sector, providing a far more comprehensive picture of the health system than prior studies. The third reason was the effort put into capturing information on donor or external assistance. Some key findings emerge from the comparison of per capita health expenditures among the 26 countries. The first is the large variation observed across countries. For example, while Ethiopia spent nearly \$24 per capita on health, countries such as South Africa, Lebanon, and Mexico spent over \$500 per capita on health. This large difference in availability of resources is bound to affect the ability of countries to adequately address the health needs of the population.

The comparison of sources of funds in the 26 countries leads to some key findings. First, irrespective of the region and socio-economic status, private health expenditures are the main source of funding in these low- and middle-income countries. Second, public expenditures on health care constitute roughly a third of total health expenditures. Third, low-income countries are significantly more dependent on external assistance as compared with middle-income countries. Even though the cultural attributes of MENA and LAC countries differ quite extensively, they are closer in terms of socio-economic development and how their health systems are organized. This might explain the similarity in their distribution of sources of funding.

The analysis of the flows of funds through financing agents leads to some key findings. First, in all three regions public financing agents accounted for the largest proportion of funds spent on health care. Among the public financing agents, the Ministry of Health received the most funds. Second, social health insurance schemes were key financing agents in LAC (23 percent) and MENA (13 percent) but were insignificant in ESA. Third, households were the primary private financing agent. Second were private insurance schemes in ESA (5 percent) and MENA (6 percent) and private firms' direct payments in the LAC region (6 percent).

The flow of funds through public financing agents also reflects the level of decentralization in these countries. As example, in South Africa, Ethiopia, and Tanzania, the share of funding by regional and local governments exceeded that of the Ministry of Health. At the other extreme, in Mozambique, Malawi, and Kenya, the Ministry of Health was the dominant public financing agent with regional and local governments accounting for a negligible share of expenditures. When the NHA exercise was conducted in Rwanda, the country was going through a phase of decentralizing the health system and, this is reflected in the distribution of funds going through public financing agents.

Even though countries profess that the main focus is primary health care, this study found that expenditures tend to be skewed towards hospital-based services. In all six ESA countries for which information was available, hospital-based expenditures exceeded those of outpatient clinics, and, in three of the cases, hospital-based expenditures exceeded half of all health expenditures. These findings, while troubling, probably reflect the fact that people tend to bypass outpatient clinics and go directly to hospitals for care; they also point to weak primary health care systems. For MENA

countries, in five out of the eight instances hospital-based expenditures exceeded those at outpatient clinics, and, in two of the eight cases, hospital expenditures exceeded half of national health expenditures. Among LAC countries, hospital expenditures exceeded those at outpatient clinics in two out of the five countries. Some countries have already used the information from the NHA to address this imbalance. For example, South Africa first placed a moratorium on the construction of private hospitals as these tended to be built in richer neighborhoods, and it also shifted resources to primary health care.

The median expenditure on pharmaceuticals among the countries in this sample was 25 percent of total health expenditures, whereas that for high-income countries is 16 percent. Most of these expenditures are incurred out-of-pocket. In one country, expenditures on pharmaceuticals exceeded 40 percent of total health expenditures; in four countries they exceeded 30 percent, and in eight cases they exceeded 20 percent. The high expenditures on pharmaceuticals probably reflect health seeking behavior by individuals in these countries. Pharmacists are permitted to dispense most drugs and patients tend to use their pharmacist as a key provider of health services. Further, even when patients go to public facilities, drugs are not always available and individuals have to procure drugs from private providers. While some attempts have been made to introduce essential drug lists and increase the use of generic medicine, these efforts have focused on government providers. Given that most expenditures occur in the private sector, the NHA studies point to a need for governments to increase their focus on the procurement, pricing, and distribution of drugs.

In many countries, donors have supported key health programs including immunization, family planning, maternal and child health services, and HIV/AIDS services. While donor assistance is critical to improving the health status of populations, an understanding of its magnitude is of great importance to policymakers in countries. It helps them assess the sustainability of programs, and this information in turn can help them better allocate resources. Donor funding to countries is not something that is guaranteed and can change with either changing priorities of the donors or because donors cut back overall assistance to health care. A key contribution of the first round of NHA studies was a systematic assessment of donor assistance. In many countries it was not easy to obtain this information for a variety of reasons. One was that donor assistance did not necessarily pass through government agencies. As a matter of fact, in many countries, donors are increasingly channeling resources through nongovernmental institutions, making it harder to capture them. Similarly, donor assistance can be in-kind and local offices of donors do not necessarily have the value of these contributions. Many external nongovernmental organizations play a role in funding health services. It was very difficult to capture these expenditures. In spite of the efforts of country NHA teams, the figures given here underestimate donor assistance. ESA countries had the highest levels of donor dependence. In both MENA and LAC, donor assistance averaged less than 5 percent of total health expenditures. This points to the fact that donors tend to target their assistance more to low-income countries, and, as per capita incomes rises, donor contributions decrease. When donor assistance was regressed against per capita GDP, a strong negative relationship was observed.

There was a strong positive correlation between per capita GDP and the proportion of the population covered by insurance. This probably reflects the fact that, as countries become wealthier, a greater proportion of their labor force is employed in the formal sector, making it easier to enroll them in insurance schemes. It also might reflect the fact that, as per capita incomes increase, health systems tend to become more sophisticated in terms of the financing mechanisms they use; how services are procured; and information and data systems. Similarly, there was a very strong relationship between per capita GDP and the percent of total health expenditures accounted for by insurance.



Some key findings emerged when examining the relationship of total health expenditures as a percentage of GDP and the relationship between public health expenditure as a share of total health expenditures and GDP per capita. Traditional wisdom as well as the experience of high-income countries had posited a positive correlation in both cases. While, for the countries in the sample, there was a weak and positive between total health expenditures as a percent of GDP and GDP per capita this did not hold true for the LAC countries. Section 7 discussed some potential reasons for this, but this issue needs to be studied and investigated in greater detail. Similarly, the hypothesis that the public share of total health expenditures increases with per capita income appears to hold for the low-income countries from ESA but not for the middle-income countries from the MENA and LAC regions. This issue too needs to be studied in much greater detail.



## 11. Concluding Remarks

Quite clearly, NHA studies are starting to shed new light on the organization of health systems in low- and middle-income countries and calling into question some traditionally held beliefs. The private sector is a major player in the health system and, in many of the countries, accounts for the majority of outpatient contacts in the health system. Governments need to develop policies that build appropriate public-private partnerships with a view to increasing access to affordable health services for the entire population. Equity remains a concern in low- and middle-income countries. However, the high level of expenditures as a percent of GDP in some of the middle-income countries, coupled with low macro-economic growth, has raised concerns about long-term sustainability and the ability of these countries to build on the impressive gains in reducing maternal and infant mortality.

The methodologies used in the first round of the NHA exercise raised a number of methodological issues and these in turn provided important input for the Producers Guide and informed the approach being proposed for low- and middle-income countries. For the second round of NHA, training and technical assistance have emphasized that, while countries can establish as many subclassifications as they want in order to reflect the special characteristics of their health systems, at the broader aggregate levels classifications have to be consistent across countries. We hope to see a much greater level of consistency and comparability in NHA studies being done from this point on.

It was clear even from the first round of NHA studies that these data are starting to be used by countries to inform policy making. As more countries conduct NHA studies and institutionalize implementation of the methodology, one would hope to see an increased use of findings in policy making.



# Annex A. Selected Health Indicators, by Country

	IMR <sup>4</sup> (per 1,000 live births) 1995-2000	CBR <sup>3</sup> (per 1000) 1999	TFR per 100 <sup>1</sup>	Population <sup>2</sup> (000) 2001	Year of NHA data
<b>ESA</b>					
Ethiopia	108.9	44.4	6.8	64458	1996
Kenya	68.3	34.7	4.3	31292	1994
Malawi	125.4	45.9	6.5	11571	1998
Mozambique	130.3	40.4	6.0	18644	1997
Rwanda	121.1	44.9	5.9	7948	1998
S Africa	48.0	26.3	2.9	43791	1998
Tanzania	-	40.0	-	-	2000
Uganda	96.0	46.3	7.1	24022	1998
Zambia	109.6	40.8	5.8	10648	1998
Zimbabwe	61.7	30.1	4.7	12851	1999
<b>MENA</b>					
Djibouti	109.8	36.7	5.9	643	1995
Egypt	49.0	25.5	3.0	69079	1998
Iran	41.1	20.6	2.9	71368	1998
Jordan	28.3	30.1	4.4	5050	1998
Lebanon	20.0	20.7	2.2	3555	1998
Morocco	52.2	24.5	3.1	30430	1998
Tunisia	27.6	16.8	2.2	9561	1998
Yemen	80.0	39.8	7.6	19113	1998
<b>LAC</b>					
Bolivia	66.7	32.4	7.7	8516	1995
Dom. Republic	40.9	24.0	2.8	8506	1996
Ecuador	45.6	24.4	2.9	12879	1995
El Salvador	32.0	26.9	3.0	6399	1996
Guatemala	46.0	33.8	4.6	11686	1995
Mexico	31.0	26.6	2.6	100367	1995
Nicaragua	39.5	30.4	4.0	5207	1995
Peru	42.1	24.4	2.7	26092	1995

1. World Health Report 2002 – data selected as the same year as the estimates used in the NHA Report

2. World Health Report 2002

3. World Development Indicators 2001

4. United Nations Population Information Network (POPIN), United Nation Population Division of Economic and Social Affairs [Online] [www.un.org/esa/population](http://www.un.org/esa/population); 2001



## Annex B. Expenditure Data, by Country

	PPP per Capita 1998	Total Health Expenditure per Capita	Public Health Expenditure per Capita	Private Health Expenditure per Capita	Donor Health Expenditure per Capita	Year of NHA Data
<b>ESA</b>						
Ethiopia	\$ 566.00	\$ 23.78	\$ 9.26	\$ 12.53	\$ 2.05	1996
Kenya	\$ 964.00	\$ 74.99	\$ 20.84	\$ 47.64	\$ 6.50	1994
Malawi	\$ 551.00	\$ 33.30	\$ 11.31	\$ 11.07	\$ 10.94	1998
Mozambique	\$ 740.00	\$ 31.51	\$ 6.95	\$ 8.08	\$ 16.48	1997
Rwanda	\$ 950.00	\$ 44.29	\$ 4.37	\$ 17.53	\$ 22.35	1998
S Africa	\$ 8,296.00	\$ 709.22	\$ 333.14	\$ 374.92	\$ 1.15	1998
Tanzania	\$ 483.00	\$ 18.50	\$ 4.33	\$ 9.60	\$ 4.58	2000
Uganda	\$ 1,072.00	\$ 42.53	\$ 8.75	\$ 15.32	\$ 18.47	1998
Zambia	\$ 678.00	\$ 43.00	\$ 18.18	\$ 14.24	\$ 10.58	1998
Zimbabwe	\$ 2,489.00	\$ 101.27	\$ 37.32	\$ 50.77	\$ 13.15	1999
<b>ESA Avg</b>		<b>\$ 112.24</b>	<b>\$ 45.44</b>	<b>\$ 56.17</b>	<b>\$ 10.63</b>	
<b>ESA Avg. w/o S. Africa</b>		<b>\$ 45.91</b>	<b>\$ 13.48</b>	<b>\$ 20.75</b>	<b>\$ 11.68</b>	
<b>MENA</b>						1995
Djibouti	\$ 1,960.00	\$ 126.56	\$ 34.17	\$ 55.69	\$ 36.70	1998
Egypt	\$ 3,146.00	\$ 92.67	\$ 38.00	\$ 51.90	\$ 2.78	1998
Iran	\$ 5,121.00	\$ 313.47	\$ 94.04	\$ 219.43	\$ -	1998
Jordan	\$ 2,615.00	\$ 309.25	\$ 139.16	\$ 145.35	\$ 24.74	1998
Lebanon	\$ 4,144.00	\$ 580.86	\$ 104.55	\$ 465.27	\$ 11.62	
Morocco	\$ 3,188.00	\$ 136.26	\$ 43.60	\$ 90.89	\$ 1.36	1998
Tunisia	\$ 5,169.00	\$ 263.47	\$ 92.21	\$ 171.25	\$ -	
Yemen	\$ 658.00	\$ 44.65	\$ 15.63	\$ 25.58	\$ 3.44	
<b>MENA Avg.</b>		<b>\$ 233.40</b>	<b>\$ 70.17</b>	<b>\$ 153.17</b>	<b>\$ 10.08</b>	
<b>MENA Avg. w/o Lebanon</b>		<b>\$ 183.76</b>	<b>\$ 65.26</b>	<b>\$ 108.58</b>	<b>\$ 9.86</b>	
<b>LAC</b>						
Bolivia	\$ 2,205.00	\$ 591.68	\$ 331.34	\$ 201.17	\$ 59.17	1995
Dom. Republic	\$ 4,337.00	\$ 456.09	\$ 63.85	\$ 383.11	\$ 9.12	1996
Ecuador	\$ 3,003.00	\$ 310.16	\$ 108.56	\$ 173.69	\$ 27.91	1995
El Salvador	\$ 4,008.00	\$ 313.28	\$ 71.75	\$ 226.91	\$ 15.66	1996
Guatemala	\$ 3,474.00	\$ 95.80	\$ 25.87	\$ 62.27	\$ 7.66	1995
Mexico	\$ 7,450.00	\$ 612.30	\$ 220.43	\$ 391.87	\$ 0.91	1995
Nicaragua	\$ 1,896.00	\$ 381.06	\$ 146.71	\$ 157.36	\$ 76.21	1995
Peru	\$ 4,180.00	\$ 249.06	\$ 93.82	\$ 152.77	\$ 1.71	1995
<b>LAC Avg.</b>	<b>\$ 3,819.13</b>	<b>\$ 376.18</b>	<b>\$ 132.79</b>	<b>\$ 218.65</b>	<b>\$ 24.80</b>	
<b>LAC Avg. w/o Mexico</b>	<b>\$ 3,300.43</b>	<b>\$ 342.45</b>	<b>\$ 120.27</b>	<b>\$ 193.90</b>	<b>\$ 28.21</b>	





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