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# **Public Expenditure Review, Health Sector Republic of Yemen, 1999-2003**

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*April 2006*

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Prepared by:

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# Abstract

This Public Expenditure Review (PER) reports and analyzes the levels and trends in government financing of the health sector in Yemen during the period 1999 through 2003. Total government spending on health increased substantially during the five-year period, doubling from 15.2 billion Yemeni rials (YR) in 1999 to YR 30.8 billion in 2003. These aggregates translate into per capita spending of YR 898 (US\$5.77) in 1999 and YR 1,611 (US\$8.78) in 2003. But, as a percent of total government expenditure, government health spending declined slightly over the period, from 4.4% in 1999 to 4.0% in 2003—though it rose briefly to 4.5% in 2001. As a percent of gross domestic product (GDP), total government health spending rose slightly over the same period, from 1.3% of GDP in 1999 to 1.5% of GDP in 2003. Because cumulative growth in real GDP per capita over the whole period was only 4%, real government health spending per capita was only modestly greater in 2003 than it was in 1999. Recurrent government spending on health averaged about three-fourths of total government health spending from 1999 through 2003, growing by 95% in that period, although its year-over-year growth was highly variable. Growth in government investment spending for health was also uneven and partly responsible for the large increases in total government spending for health that occurred in 2000 and again in 2003. The share of investment composed of foreign aid dropped significantly over that period, from two-thirds of government investment spending in 2000 to one-fourth of government investment spending in 2003. Cost-sharing has become a very significant source of revenue supporting many facilities sponsored by government (topping up government budget transfers), being responsible for up to one-fourth of total recurrent expenditures (excluding drugs). Investment in building and equipping new facilities has outpaced the government's budgetary capacity to staff them adequately. The associated needs of the new facilities likely exceed the availability of trained personnel even if budget were available. If trained staff were available, the new facilities would likely require increments in the government's recurrent budget at roughly two to three times the rate it has experienced in recent years. At the same time investment spending has ballooned, the share of the budget devoted to maintenance and repair of existing equipment and facilities has not only been too low (at about 3%–4% of total recurrent spending), but even those low budgeted amounts have not all been spent.

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# Table of Contents

Acronyms .....	xi
Acknowledgments .....	xiii
Executive Summary .....	xv
1. Background.....	1
1.1 Health Status Indicators.....	1
1.2 The Health Services Delivery System.....	1
1.3 The Health Sector Reform Strategy.....	3
1.4 The Scope and Organization of this Public Expenditure Review.....	4
2. Government Spending on Health through the MoPHP .....	7
2.1 Public Spending on Health: Context .....	7
2.2 Government Spending on Health: Aggregate Levels and Trends .....	7
2.2.1 Total Spending on Health .....	7
2.2.2 Recurrent Spending .....	8
2.2.3 Investment Spending .....	8
2.3 Government Spending on Health: Detail.....	10
2.3.1 Among Line Items of the Budget .....	10
2.3.1.1 Allocation of Recurrent Spending .....	10
2.3.1.2 Allocation of Investment Spending .....	10
2.3.2 Allocation among Geographic Regions.....	11
2.3.3 Sources and Uses of Investment Spending in Health .....	12
3. Issues in Allocation and Disbursement of Health Funds: Findings and Analyses .....	15
3.1 Planning for Health Sector Reform: Past Experience, Future Prospects.....	15
3.2 Implementing the Health Sector Reform Strategy .....	16
3.2.1 Requirements and Impacts of Decentralization .....	16
3.2.2 Actual Expenditures versus Approved Budgets .....	16
3.2.3 The Role of Cost-Sharing.....	17
3.3 Estimating Resource Requirements.....	20
3.3.1 Planning for Health Investments .....	20
3.3.1.1 Calculating Need for Facilities .....	20
3.3.1.2 Calculating Need for Future Recurrent Budget.....	20
3.3.1.3 Matching Staff to Facilities .....	21
3.3.1.4 Ensuring Sufficient Resources for Operations and Management of Facilities .....	21

3.3.2 Role of External Assistance.....	21
3.4 Organizational Structure and Financial Management .....	22
4. Findings and Recommendations.....	23
4.1 Findings.....	23
4.1.1 Health Sector Reform Strategy, Planning, and Implementation.....	23
4.1.2 Decentralized, District Health System.....	23
4.1.3 Cost-sharing.....	23
4.1.4 Low Level of Public Spending onHealth.....	23
4.1.5 Inequitable Distribution of Spending.....	24
4.1.6 Poorly Functioning Budget Structure/Process.....	24
4.1.7 Poorly Planned Investments .....	24
4.2 Recommendations .....	24
4.2.1 Level and Composition of Spending on Health.....	24
4.2.2 Program and Investment Planning.....	24
4.2.3 Cost-sharing and Cost-recovery .....	25
Annex A: Tables.....	27
Annex B: Bibliography .....	51

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## List of Tables

Table 1: Health Financing Indicators, 1998 and 2002 Selected Middle East and North African Countries .....	28
Table 2: Levels and Trends of Spending by the Government on Health Republic of Yemen, 1998-2003.....	29
Table 3: Public Spending on Health Related to Macroeconomic Statistics Republic of Yemen, 1999-2003.....	30
Table 4: Levels and Trends in Government Expenditure on Health Republic of Yemen, 1999-2003 (in YR millions).....	31
Table 5: Levels and Trends in Investment Expenditures on Health from all Sources Republic of Yemen, 1999-2003 (in YR millions), including Foreign Assistance .....	32
Table 6: Levels and Trends in MoPHP and Governorate Investment Expenditure on Health Republic of Yemen, 1999-2003 (in YR millions), including Foreign Assistance.....	33
Table 7: Distribution of Recurrent Budget Among Line Items MoPHP and Governorates, 1999-2003 ...	34
Table 7A: Distribution of Recurrent Budget Among Line Items MoPHP, 1999-2003 .....	35
Table 7B: Distribution of Recurrent Budget Among Line Items Governorates, 1999-2003 .....	36
Table 8: Distribution of Current and Capital Health Expenditure by Governorate and Per Capita Health Expenditure by Governorate, As Compared to Distribution of Governorate Population Republic of Yemen, 1999-2003 .....	37
Table 9: Number of Health Facilities Currently Receiving Investment Funds, by Type of Facility, Republic of Yemen, 1999-2003.....	39
Table 10: Magnitude of Investment Spending by Source of Funding, by Type of Facility, Republic of Yemen, 1999-2003, (in YR millions).....	40
Table 11: Magnitude of Investment Spending, by Source of Funding, by Year, Republic of Yemen, 1999-2003, (in YR millions).....	40
Table 12: Magnitude of Investment Spending, by Type of Facility, Republic of Yemen, 1999-2003, (in YR millions).....	41

Table 13: Actual Expenditures Compared to Approved Annual Budgets for Expenditures on Health, Ministry of Public Health and Population Republic of Yemen, 2000-2003 .....	42
Table 14: Actual Expenditures Compared to Approved Annual Budgets for Recurrent Expenditures on Health, Ministry of Public Health and Population Republic of Yemen, 2000-2003 Details .....	43
Table 15: Cost-sharing at Selected Hospitals and Health Centers Republic of Yemen, 2003 (Results of an NHA Survey).....	45
Table 16: Estimated Future Recurrent Cost Budget Required of Current Investments .....	47
Table 17: Projected New Staff Needed for New Facilities to Scheduled to Open 2005-2009 Republic of Yemen .....	48
Table 18: Calculating the Future Operating Cost Implications of Current Investments in Facilities Republic of Yemen, 2005-2009, as Compared to Situation in 2002 .....	50



# Acronyms

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>CSO</b>	Central Statistical Organization
<b>GDP</b>	Gross Domestic Product
<b>HIV</b>	Human Immunodeficiency Virus
<b>HSRS</b>	Health Sector Reform Strategy
<b>MCH</b>	Maternal Child Health
<b>MDG</b>	Millennium Development Goals
<b>MoPHP</b>	Ministry of Public Health and Population
<b>MoP&amp;IC</b>	Ministry of Planning and International Cooperation
<b>NGO</b>	Nongovernmental Organization
<b>NHA</b>	National Health Accounts
<b>PER</b>	Public Expenditure Review
<b>PHR<i>plus</i></b>	Partners for Health Reform <i>plus</i>
<b>PRS</b>	Poverty Reduction Strategy
<b>PWP</b>	Public Works Project
<b>SFD</b>	Social Fund for Development
<b>STD</b>	Sexually Transmitted Disease
<b>USAID</b>	United States Agency for International Development
<b>YemenDAP</b>	Yemen Drug Action Program
<b>YR</b>	Yemeni Rial



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# Executive Summary

This Public Expenditure Review (PER) reports and then discusses the levels and trends in government financing of the health sector in Yemen during the period 1999 through 2003. It is the first comprehensive PER for the health sector in Yemen in six years,<sup>1</sup> and provides accurate data as provided by the Ministry of Finance (MoF) on the allocation of resources by government to and within its health sector in that period.

Total yearly government spending on health increased substantially during the five-year period, doubling from Yemeni rials (YR) 15.2 billion in 1999 to YR 30.8 billion in 2003. These aggregates translate into per capita spending of YR 898 (US\$5.77) in 1999 and YR 1,611 (US\$8.78) in 2003.<sup>2</sup> The growth in spending was uneven, with large increases over the previous year occurring in three of the five years—a 31% increase in 1999, a 36% increase in 2000, and a 27% increase in 2003. However, because gross domestic product (GDP) and total government spending (in all sectors) grew at similar rates in those years, the share devoted to health was relatively unchanged. As a percent of total government expenditure, government health spending actually declined slightly over the period, from 4.4% in 1999 to 4.0% in 2003—though it rose briefly to 4.5% in 2001. As a percent of GDP, total government health spending rose slightly over the same period, from 1.3% of GDP in 1999 to 1.5% of GDP in 2003. After accounting for consumer price inflation of 58% over the same period, and exchange rate devaluation of 35% over that period, the increases both in health spending and in GDP did not translate into very much real growth (real GDP grew 21% over the period). Because cumulative growth in real GDP per capita over the whole period was only 4% (population growth was 16%), real government health spending per capita was only modestly greater in 2003 than it was in 1998.

Recurrent government spending on health averaged about three-fourths of total government health spending from 1999 through 2003. The average annual increase over the five-year period was 18.4%. But there were two early years of high growth (33% in 2000 and 22% in 2001) followed by virtually no growth (1%) in 2002. This stagnation in 2002, however, was followed by a relatively large 20% increase for 2003—generating an overall 95% increase for the entire period.

Government investment spending for health was responsible for the large increases in total government spending for health that occurred in 2000 and again in 2003—even though the portion contributed by foreign aid dropped significantly during this period. From 1999 to 2000, government investment spending grew by 49%, from YR 3.7 billion to YR 5.5 billion—with two-thirds of the 2000 total composed of foreign aid (the peak year for foreign aid). Similarly, from 2002 to 2003, government investment spending grew by 53% from YR 5.5 billion to YR 8.4 billion—although foreign aid by then constituted only one-fourth of the 2003 total.

Cost-sharing has become a very significant source of revenue supporting many facilities sponsored by government (topping up government budget transfers). Preliminary results from a small survey undertaken by the National Health Accounts team in 2004 do not permit national

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<sup>1</sup> Previous PERs for health were: World Bank, 1998 and World Bank, 2000.

<sup>2</sup> US\$1.00 = Yemeni rials 155.75 in 1999; US\$1.00 = Yemeni rials 183.45 in 2003.

generalizations, but they showed, for the particular facilities surveyed, that cost-sharing was a major contributor of resources for health services. Four hospitals, one selected from each of four regions, raised an average of almost one-fourth of total recurrent expenditures by charging fees for diagnostic investigations and for services (costs and revenues for drugs were not included). The average fee revenue per admission was YR 5,732 (US\$31.25) for the four hospitals. In the nine health centers surveyed, the share of recurrent expenditures (except for drugs) recovered by fee revenue averaged 19%, or YR 48 (US\$0.26).

Recent and ongoing investments in building and equipping new health facilities have been excessive. These new facilities cannot be staffed given the current budgetary capacity of the MoPHP and the currently available pool of skilled personnel. If trained staff were available, the new facilities would likely require increments in the recurrent budget of the MoPHP at roughly two to three times the rate it has experienced in recent years. Moreover, the share of the budget devoted to maintenance and repair of equipment and facilities has not only been too low (at about 3%-4% of total recurrent spending), but even the budgeted amounts have not all been spent. A significant increase in budgets and spending for these purposes is urgently needed in order that past investments do not fall into disrepair and are wasted before they have been properly and appropriately used.

The MoF has an inordinate degree of influence over how much is budgeted, how much is spent, and when it is spent in the health sector. This has remained the case even after authorities over programming, planning, and project implementation have devolved (since 2002) to local administrations. The traditional line-item budget structure is not supportive of district-level efforts to move towards performance-based budgeting and functional budget categorization.

Among the findings of this PER, the most significant are that decentralized efforts to link spending to performance are only just beginning, that the MoF continues to exercise dominant control over budgeting and disbursement in ways that hinder better linkage of planning and programming, that cost-sharing needs improved accountability and transparency as well as a consistent policy of authority over its use, that current levels of spending on health need to be increased and more equitably distributed, that investments in health infrastructure are poorly planned and poorly coordinated leading to too many unstaffed and understaffed facilities, and that decentralization has aggravated deficiencies in the planning and programming process by devolving spending authority to many more lower levels of government—without adequate oversight, enforcement of standards, and recognition of the future recurrent budget requirements of present investment decisions.

# 1. Background

Yemen's health system is still in the early stages of development, and is trying—using extremely limited resources—to address a long list of serious health problems among its people and a wide array of service delivery gaps. Despite a number of setbacks experienced during the 1990s, however, there has been progress in improving both population health status and in improving its health care delivery system. There is reason to believe that the Health Sector Reform Strategy (HSRS) initiated in 1999 will lead to better management of the system and improvements in some of the key indicators.

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## 1.1 Health Status Indicators

Yemen is still at an early stage in its epidemiological and demographic transition toward lower total fertility rates and toward a disease pattern less dominated by communicable diseases. Since 1992, the number of children born per woman has declined from 7.7 to 6.2, and the infant mortality rate declined 103 to 75 live births.<sup>3</sup> Population growth continues to be among the highest in the world at 3% per year (Central Statistical Organization [CSO], 1994), and the contraceptive prevalence rate is low at about 23 percent among married women of reproductive age. Communicable diseases such as malaria and tuberculosis continue to be prevalent, particularly in rural areas. In addition, diarrheal diseases, malnutrition, acute respiratory infections, and complications of pregnancy are also very commonly seen. Child malnutrition is reflected in the recent finding (2003) that 12% of children were found to be moderately or severely underweight for their height. HIV prevalence is becoming an increasingly serious problem, with 2% of those tested at sexually transmitted disease (STD) clinics in 2000 testing positive for HIV.<sup>4</sup> There are wide regional disparities in health status indicators, and significant differences between urban and rural areas.

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## 1.2 The Health Services Delivery System

The Ministry of Public Health and Population (MoPHP) operates a four-tiered system of health care facilities, delivering primary health care in health centers and health units at the village and district levels, secondary care at rural (district) and governorate hospitals, and tertiary care at referral hospitals in Sana'a and Aden. However, the system has been characterized by a number of serious problems—many of which are addressed by the HSRS adopted in 1998 (and discussed below):

*Limited institutional capacity and lack of financing:* The HSRS of 1998 is targeted specifically to address the numerous problems arising from the weak institutional framework of the health sector, which comprises an underequipped and understaffed public health system and a rapidly growing (and

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<sup>3</sup> Data for 1992 are from: Central Statistical Organization and Macro International, 1998. Data for 2000 and after are from: Pan Arab Project for Family Health, 2003.

<sup>4</sup> From USAID, 2005: p. 2. Other sporadic samples of female sex workers in Yemen reported infection levels between 2.7% and 7.0% during the period 1998 to 2001.

largely unregulated) private sector.<sup>5</sup> In the past, the MoPHP has been overly centralized and unable to coordinate effectively either its own departments or the efforts of donors to provide assistance in health and development. The core functions of the MoPHP, such as regulation, policy analysis and planning, evaluation and monitoring, and management of service delivery, are performed poorly. The budgeting and disbursement systems, largely controlled by the Ministry of Finance (MoF), do not serve to reinforce the current efforts to promote decentralized planning and management of service delivery at the district level. In addition, the government's ability to finance its health system is increasingly questionable, as costs are rising much faster than revenues and cost-sharing recovers only a small fraction of total costs. In 2003, estimates of Yemen's National Health Accounts (NHA) (MoPHP, forthcoming) were that 25% of total spending on health (estimated at US\$8.47 per capita) was financed by the MoF; 58% of spending was out-of-pocket spending by households (estimated at about US\$19.23 per capita); the rest was from employers (7%, or US\$2.18 per capita) and from donors (11%, or US\$3.52 per capita. NHA 2003 estimated total national health spending at US\$639 million, or US\$33.40 per capita.

*Inefficiency in the allocation of scarce funds:* Allocation of funds is highly centralized, and has been traditionally directed disproportionately to hospitals and to urban areas. While the decentralization initiative of 2000 has devolved authority for spending to the governorate and district levels, one effect of this decision has been to increase opportunities for misallocation of resources. During the past decade, infrastructure and medical equipment have been overfunded (particularly so in certain years), and operations and maintenance have generally been underfunded. The Yemen government spent about Yemeni rials (YR) 12 billion on health in 1998, with about 30% of that total spent on capital spending.<sup>6</sup> Of the YR 8.3 billion spent in the recurrent budget, very little was devoted to operations and maintenance, which has led to inadequate supplies and poor utilization—especially at peripheral facilities, many of which remain unstaffed. By 2003, total health spending had risen to YR 31.8 billion, with 27% of that total spent on capital investments. Of the YR 22.5 billion spent in the recurrent budget, only some 3% was spent on operations and maintenance of facilities. In fact, more of the government's recurrent spending in 2003 went for “treatment abroad” (5%) than went for maintenance of public facilities in Yemen.

*Lack of accessibility to facilities for most of the population:* In rural areas, only 24% of the people have access to government facilities, and in all areas, about 42% of the people have access. Lack of access due to limited geographic coverage is compounded to some extent by lack of access due to need for cash payments required to receive care: the indirect costs of transportation to facilities are added to the direct costs of paying the fees required for consultations and/or prescription drugs. Access to needed care for women is also limited by social constraints in traditional areas—their need for male escorts to facilities and their need to be seen by women health workers, who are not readily available at health facilities in most of the country.

*Poor quality of health services:* There is a pervasive inadequacy of needed supplies and equipment, even where there is adequate staffing (which is itself not common). There is also a lack of standards of care, treatment protocols, basic regulations (and their enforcement), and poor maintenance of facilities and equipment. These factors are compounded by insufficient supervision, poor management practices, lack of planning, and low morale among health personnel. All of these

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<sup>5</sup> See Table, “Distribution of Private Health Facilities in Republic Governorates for 2002,” in MoPHP, 2002: p. 28. It shows the distribution among governorates of a total of 92 hospitals, 336 polyclinics, 534 physicians' clinics, 709 specialty clinics, 744 laboratories, and 1,601 pharmacies, among other entities, operating in the private sector in Yemen.

<sup>6</sup> World Bank, 1998: Table 13, p. 46.

factors lead to underutilization of existing staffed facilities, and to poor health outcomes among the population intended to be served by those facilities.

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### 1.3 The Health Sector Reform Strategy

In 1998, the MoPHP initiated a comprehensive effort to develop a long-term plan to reform its health sector in order to address the evident shortcomings of health system. After a period of collaborative study and analysis in conjunction with major international partners, the government decided upon a health sector reform strategy that would take place within the overall context of other government reforms. Acknowledging many of the challenges it faced, the new strategy admitted, at that time, that the “government’s health system is in a state of prolonged crisis, a crisis which has worsened dramatically in the past decade” (MoPHP, Yemen, 1998: Executive Summary, p. b). In response to the evident problems in the health sector, the MoPHP designed and launched a comprehensive health sector reform strategy in 1998. This reform strategy has 11 components:<sup>7</sup>

- ▲ Decentralization of planning, decision making, and financial management;
- ▲ Redefinition of the role of the public sector with a stronger emphasis on policy, regulation, and public health, and the establishment of limits on its role as service provider;
- ▲ A district health system approach;
- ▲ Community co-management of local health systems;
- ▲ Cost-sharing by patients, with provisions for exemptions for poor patients;
- ▲ Essential drugs policy, and realignment of the logistics system for drugs and medical supplies (with formation of a semi-autonomous Drug (and Medical Supplies) Fund);
- ▲ Decentralized, outcomes-based management system from the central to the community level;
- ▲ Hospital autonomy and eventual basic health facility autonomy;
- ▲ Encouragement of responsible participation by the private sector and nongovernmental organizations (NGOs) through appropriate policy design regulation;
- ▲ A sector-wide approach to planning and development; and
- ▲ Innovative approaches to project/program design and implementation.

The long-term objectives of the health sector reform program were (World Bank, 2001):

- ▲ Adequate and universal access to health care services;
- ▲ Equity in both the delivery and eventually the financing of health care;
- ▲ Improved allocative and technical efficiency of the service delivery system;

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<sup>7</sup> A comprehensive description of the strategy and of its requirements and implications were presented in: World Bank, 2001.

- ▲ Improved quality of health services; and
- ▲ Long-term financial sustainability of the system.

The implementation of the strategy was to begin with an “initiation” phase which would seek to implement reforms covering about 40% of the country’s districts. The second “consolidation” phase, which has recently begun, is being implemented in the rest of the country coincident with implementation of the Second Five-year Plan (2001-2005) and with the Republic of Yemen’s Poverty Reduction Strategy (2003-2005). Implementation of the strategy has been affected by the implementation of the Law on Local Administration, passed in 2001 and effective in 2002, which devolved authority for planning and implementation of the budgets of local authorities (districts and governorates).

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## 1.4 The Scope and Organization of this Public Expenditure Review

This Public Expenditure Review (PER) introduces and then discusses the major dimensions of public financing of the health sector in Yemen. It is the first comprehensive PER for the Health Sector in six years,<sup>8</sup> and will serve to provide accurate public spending data for Yemen’s NHA. In addition to its incorporation of the findings and data of two previous PERs, this PER provides an update on the fiscal data for government health spending for the five-year period 1999 through 2003, and analyzes several of the important policy issues that are raised and highlighted in these data. This PER concludes by offering the author’s recommendations for adjustments to resource allocation decisions that are both implicit and explicit in the fiscal data that are presented. Data presented here were gathered and processed by the MoPHP NHA team, which worked closely in support of the author during his three-week visit to Yemen in December 2004.<sup>9</sup>

This report is divided into four parts. Following this **Section One**, which gives relevant background information on Yemen’s health sector, **Section Two** displays and discusses, in summary and in detail, government spending on health during the five-year period 1999 through 2003. **Section Three** addresses particular issues in the allocation and distribution of financial resources for health in Yemen as are indicated by the data and from interviews with principal officials in the sector. The main issues addressed are:

- ▲ Planning health sector reform
- ▲ Implementing health sector reform
- ▲ Estimating resource requirements for reform; and
- ▲ Organizing and managing the financing needed for reform.

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<sup>8</sup> Previous PERs for health were: World Bank, 1998 and World Bank, 2000.

<sup>9</sup> Revisions to the data were made on the basis of refinements made during 2005, including the incorporation of up-to-date population estimates derived from the 2004 preliminary Census data (CSO 2004). But this report’s account of the policy and program implications of these data was not changed, as the effects of the changed data were very minor.

**Section Four** concludes with findings and recommendations that derive from the foregoing analyses of the data presented and the policy issues raised and discussed. The tables referred to can be found in Annex A of the report.



## 2. Government Spending on Health through the MoPHP

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### 2.1 Public Spending on Health: Context

Now at the end of its Second Five-Year Health Development Plan (2001-2005), the MoPHP is beginning to evaluate its progress to date and to assess the country's needs in preparation for development of the Third Five-Year Plan (2006-2010). The Second Five-Year Plan contained ambitious plans for YR 32 billion in investments, only moderately lower than the high rate of investment promoted during the First Five-Year Plan (1996-2000). But, this relatively high level of proposed investment in health infrastructure (as compared to the total health budget) did not appreciably increase the share of income spent by the government (or by the nation as a whole) on health. Throughout the period of both Five-Year Plans, total public spending on health remained among the lowest in the Middle East region—both as a percentage of all public spending and as a percentage of national income. As an introduction to a detailed discussion below of the trends in Yemen's health spending, Table 1 shows Yemen's financial and health data in comparison to those of other countries in the region.

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### 2.2 Government Spending on Health: Aggregate Levels and Trends

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#### 2.2.1 Total Spending on Health

Total government spending on health has risen substantially during the five-year period 1999 through 2003, doubling from YR 15.2 billion in 1999 to YR 30.8 billion in 2003 (see Table 2). The growth was uneven, with large increases over the previous year occurring in three of the five years—a 31% increase in 1999, a 36% increase in 2000, and a 27% increase in 2003.

However, these impressive nominal increases in government health spending in 1999, in 2000, and in 2003 did not constitute significant relative changes in resource allocation to health when compared to two important benchmarks, because both gross domestic product (GDP) and total government spending (in all sectors) grew at similar rates. As a percent of total government expenditure, therefore, government health spending declined slightly over the period, being 4.4% in 1999 and 4.0% in 2003—even though it rose briefly to 4.5% in 2001. On the other hand, as a percent of GDP, total government health spending rose slightly over the same period, being 1.3% of GDP in 1999 and 1.5% of GDP in 2003 (see Table 3).

Over the five-year period (using 1998 as the base year), total government health spending grew by 164%, with the recurrent budget growing somewhat faster than the capital budget (171% versus 149%, respectively) (see Table 2). Growth in nominal GDP during the period grew, cumulatively, by 147% (see Table 3). After accounting for population growth (16% over the five-year period), nominal

government health spending per capita in 2003 was 127% greater than in 1998 (Table 2), while nominal GDP per capita in 2003 was 112% greater than in 1998 (Table 3).<sup>10</sup>

After accounting for consumer price inflation of 58% and exchange rate devaluation of 35% over the same period (both shown in Table 3), the increases both in health spending and in GDP did not translate into very much real growth (real GDP grew 21% over the period). Cumulative growth in real GDP per capita over the period was only 4% (see Table 3), so it is safe to assume (given the above data) that real government health spending per capita was only modestly greater in 2003 as compared to 1998.

The relative stability of total government health spending as compared to macroeconomic benchmarks reflects a continuation of the relatively low levels of spending that have been obtained since 1990. While the levels of health spending during the recent five-year period (1999-2003) did constitute an increase from the depressed levels that occurred during the period of civil unrest in 1993 and 1994, they remain among the lowest in the Middle East (as shown in Table 1), in which many countries have typically allocated from 5% to 15% of total government expenditures on health (as compared to roughly 4% in Yemen).

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### 2.2.2 Recurrent Spending

Recurrent government spending on health has averaged about three-fourths of total government health spending from 1999 through 2003—ranging from a low 73% in 2000 and in 2003 to a high of 79% in 2001 and 2002 (see Table 4)—averaging 76% over the five-year period. The average annual increase over the five-year period was 18.4%. But there were two early years of high growth (33% in 2000 and 22% in 2001) followed by virtually no growth (1% in 2002). This stagnation in 2002, however, was followed by a relatively large 20% increase for 2003—generating an overall 95% increase for the entire period.

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### 2.2.3 Investment Spending

While government investment spending for health averaged about one-fourth of total MoPHP spending during the 1999-2003 period, there were considerable variations in its proportion of the total, and in its growth rates, from year to year (see Table 4). In fact, the large increases in total government spending for health that occurred in 2000 and again in 2003 were largely driven by substantial increases in government investment spending, helped substantially by increases in foreign assistance. From 1999 to 2000, government investment spending grew by 49%, from YR 3.7 billion to YR 5.5 billion. Similarly, from 2002 to 2003, government investment spending grew again by 53% from YR 5.5 billion to YR 8.4 billion.

There are six major sources of funds for government health investment spending:

- ▲ The central MoPHP budget,
- ▲ Foreign assistance;

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<sup>10</sup> “Nominal” refers to spending at current prices, that is, not accounting for price inflation. If and when price inflation is accounted for, spending is referred to as “real.”

- ▲ Governorate health budgets,
- ▲ The Social Fund for Development (SFD) (under the Prime Minister’s Office);
- ▲ The Public Works Project (PWP)<sup>11</sup> (under the Ministry of Planning and International Cooperation (MoP&IC)); and
- ▲ The Ministry of Finance, which directly funds the central MoPHP budget, the governorate budgets, as well as Al-Kuwait and Al-Thawra Hospitals in Sana’a and the Supreme Drug Authority.

The amounts of expenditures by each source is shown in Table 5. The amounts spent by the MoPHP (central and governorate levels), including foreign assistance, are shown in Table 6.

The central MoPHP and governorate budgets are included in a combined MoPHP budget, but the responsibility for execution of the projects is divided between the center and the governorates and districts. Foreign assistance funds are channeled through a number of institutions (including the SFD and the PWP), but the bulk of foreign assistance (including loans) is provided in support of the investment projects of the MoPHP. Investment projects funded by foreign assistance are typically approved by the MoPHP, but are usually executed in conjunction with the MoP&IC and the donors. The SFD and the PWP have budgets that are independent of those of the MoPHP and of each other.<sup>12</sup> Both receive funds from foreign assistance sources that are not included under the “foreign assistance” category, since they have multiple sources of funding. Thus, foreign assistance funds are channeled through various institutional budgets, although the distinction between the first three categories (central MoPHP budget, foreign assistance, and governorate health budgets) means, for purposes of the analysis in this section, that the central MoPHP and governorate health budgets referred to below are those funded from the general revenues of the Republic of Yemen, and the foreign assistance (when labeled as such) is that which is not channeled otherwise through the SFD nor the PWP.

The relative sources and uses of government investment spending in the health sector, and the various institutional channels through which such spending flows, are discussed in detail in Section 2.3.

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<sup>11</sup> The PWP began operations in 2000.

<sup>12</sup> “Independent” in the sense of authority to make the budgetary decision to allocate the funds. All investments in the health sector, however, require that the MoPHP sign an agreement that it will equip, furnish, and staff the facility once its construction is completed. Enforcement of these agreements, upon completion, is typically dependent upon the availability of sufficient recurrent (operations) budget and of appropriately trained personnel.

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## 2.3 Government Spending on Health: Detail

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### 2.3.1 Among Line Items of the Budget

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#### 2.3.1.1 Allocation of Recurrent Spending

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For the 1999 through 2003 period, of the three-fourths of the MoPHP's and the governorates' budgets that were spent on operations (the recurrent budget), just under 60% was spent on wages and salaries (see Table 7), about one-third was spent on "goods and services" (including drugs and medical supplies), and about one-seventh was spent on "current transfers and support".<sup>13</sup> On average over the five-year period, only about 4% of the recurrent budget (3% of the total budget) was spent on "maintenance" of facilities and equipment.

However, the distribution of spending in the recurrent budgets are very different between the MoPHP and the governorates—as shown in Table 7A (MoPHP) and Table 7B (governorates). These differences derive mostly from the separate and distinct roles the two levels of government play in responsibilities for procurement within the health system. The MoPHP has a dominant role in the procurement of drugs and medical supplies. This factor may explain why the shares of the recurrent budget going to salaries and to goods and services (and drugs) are so different:

- ▲ Salaries account for roughly three-fourths of the governorates' budgets versus only for one-third of the MoPHP budget; and
- ▲ Goods and services account for less than 20% of the governorates' budgets (very little of which is for drugs) but about 30% of the MoPHP budget (most of which is for drugs).

The substantial change in amounts paid for goods and services in 2001 (by the MoPHP) was likely associated with the advent of decentralization. This change was caused by a substantial decline in the amount of drugs procured by the MoPHP, which declined by 54% in 2001 (from YR 1.9 billion to YR 0.9 billion), which seemed like a complete reversal of the growth in the previous year. There had been a substantial 96% increase in 2000 (from YR 1.0 billion in 1999 to YR 1.9 billion in 2000), before the drop back to YR 0.9 in 2001. Procurement of drugs by governorates was very uneven from 1999 through 2003, changing substantially from one year to the next, but at a much lower level than procurement by the MoPHP (governorates procured only YR 0.5 billion in drugs during the period compared to YR 6.3 billion procured by the MoPHP).

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#### 2.3.1.2 Allocation of Investment Spending

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About one-fourth of total government spending on health is spent on investments in health facilities and equipment (mainly, by "acquiring fixed capital assets"<sup>14</sup>) (see Tables 3 and 4.) The levels and trends in such spending has been quite variable over the five-year period, particularly as

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<sup>13</sup> More than half of "current transfers and support" goes for budgetary support of Al-Thawra Hospital in Sana'a, and most of the rest comprises contributions on behalf of MoPHP employees for pensions and social insurance.

<sup>14</sup> There are three budget chapters that are considered "investment spending": Chapter 2 is "Investment and Capital Expenditure," which includes acquisition of land; Chapter 3 is "Government Loans and Contributions in Capital Equity," and Chapter 4 is "Loan Reimbursements." Subchapter 1 of Chapter 2 ("Acquiring Fixed Capital Assets") accounts for about 90% of spending in all three chapters.

they reflect changes in the distribution between central MoPHP investment spending and investment spending by the governorates (Table 5) and also as other sources of investment are included in the totals (Table 6).

It was noted above that there were substantial year-over-year increases in investment spending in 2000 and in 2003—roughly in the range of 60%—with a decline of 18% in 2001 and stagnation (+1%) in 2002. This uneven growth, however, reflects two underlying trends in the three major sources of investment spending (as shown in Table 6): first, there was a large (91%) increase in central MoPHP investment spending in 2000 while there was a large drop (-32%) in governorate investment spending in that same year; second, the large drop in investment spending in the following year (-29% for central MoPHP spending, -18% overall) was marked by a reversal in the trend just two years later (+40% in 2003 versus 2002 for the central MoPHP, +56% overall). The spike in spending in 2000 was also characterized by a large (92%) increase in foreign assistance—from about YR 2.0 in 1999 to about YR 3.8 billion in 2000, which accounted for more than three-fourths of the government's investment spending on health in that year. After 2000, foreign assistance declined dramatically for two years running (-31% in 2001 and -33% in 2002) before increasing by 25% in 2003.

These variations in investment spending are due to a number of factors (to be discussed in more detail below in Section 2.3.2). First, the process of decentralization that began in 2001 disrupted traditional investment allocation patterns, and the distribution of funds reflected some one-time effects in the budgets of the transition process. Decentralization coincided to some extent with a political disruption in the leadership of the MoPHP (when the outgoing minister was not immediately replaced), which had the effect of slowing the rate of approvals for expenditures. Second, at the same time decentralization was being initiated, the central MoPHP suspended new construction in 2001 in order to focus on completion of ongoing projects. This shift in policy led to some disruption of the allocation pattern. Third, attribution of the responsibility for funds (center or governorate) may have been somewhat arbitrary for budget purposes during the decentralization transition period. (The 2003 distribution between central MoPHP and the governorates was roughly the same as it was in 1999). However, the portion contributed by foreign assistance had declined substantially and was only one-third of the 2003 total, as compared to the two-thirds it contributed to the 1999 total. Another perspective on the 2003 investment budget, however, is to note that the YR 1.0 billion investment spending in health by the government in 1999 had increased to almost YR 4.3 billion by 2003.

When one considers total investment spending in health from all sources (Table 5), one can see two major trends: first, as the share of government's contribution to such spending has risen (from 21% in 2000 to 40% in 2003), the share of foreign assistance has dropped (from 68% in 2000 to 26% in 2003); and, second, during this same period, other sources of investment spending in health have increased their collective share (from 10% in 2000 to 20% in 2003).

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### **2.3.2 Allocation among Geographic Regions**

Control over budget and expenditure decisions has devolved to governorates and the districts (effective in 2001) as a result of decentralization. The portion of the government budget controlled by the central MoPHP has therefore declined. In 1998, the central MoPHP retained direct control over 46% of the total budget while by 2003 it controlled only 33% of the total. While there will be a transitional period before adequate administrative capacity and expenditure controls are developed at governorate and district levels, the central MoPHP will retain some level of control over budgetary allocations to them for several years.

In order to assess the recent trends in distribution of the MoPHP budget among the geographic regions, recurrent expenditures (Chapter 1 of the budget) and investment expenditures (Chapter 2 of the budget) were calculated by governorate, in the aggregate, for the five-year period (see Table 8). The geographic distribution of expenditures for the period was then compared to the geographic distribution of the population using two methods: first, per capita spending by governorate was compared to per capita spending nationwide; and, second, the percentage distribution of spending by governorate was compared to the percentage distribution of the population by governorate.<sup>15</sup>

As seen in Table 8, annual per capita recurrent spending through governorate budgets was YR 520 for the five-year period, while annual per capita investment spending through governorate budgets was YR 47. During that same period, annual per capita recurrent spending through the MoPHP budget was YR 245, while annual per capita investment by the MoPHP (including foreign assistance) was YR 206. There is a wide range of annual per capita spending figures by governorate around these national averages. The differences are also evident when the percentage distribution of spending is compared to the percentage distribution of population. The last column of Table 8 also shows that the intended distribution of health investments for the Second Five-Year Plan was not realized, with often considerable differences arising between the planned distribution and the actual distribution of investment spending in the health sector.

While these data imply an uneven distribution of funds by government, it should be said that a proper or fair distribution of the MoPHP budgets by governorate might not necessarily correspond to the distribution of the population by governorate. (Indeed, the distribution of investment funds proposed in the Second Five-Year Plan does not follow population distribution either.) Population centers in Sana'a City, Aden, and Hadramout are the location of regional referral and specialized hospital facilities that serve catchment areas that go beyond the governorate borders, including, to some degree, most of the nation. There are also bound to be differences in health problems from one region to another, and these differences could, to some degree, justify differences in how the MoPHP allocates its resources. Furthermore, there are certainly differences in the size, technological intensity, and quality of the health services infrastructure (number and types of facilities, number of staff, sophisticated equipment, etc.) that would inevitably be associated with differences in costs (as noted, due to the concentration of secondary and tertiary care facilities in population centers).

To be sure, more detailed analysis would be needed to draw any conclusions about the fairness or appropriateness of the distribution—which would be a matter of judgment in any event. There is no question, however, that, in general, most resources and staff are highly concentrated in and around urban areas, while services in rural and remote regions remain several understaffed and underfinanced. As will be seen, increasing the investment budget to focus on the peripheral areas does not necessarily improve access to services—if (and when) the recurrent budget and/or availability of trained staff are not increased concomitantly.

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### 2.3.3 Sources and Uses of Investment Spending in Health

As mentioned above, there are six major sources of funds for investments in health: the central MoPHP, foreign assistance, governorate and districts, the SFD, the PWP, and the MoF. For purposes

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<sup>15</sup> The distribution of population by governorate was derived by taking the percentage distribution among governorates as counted in the 2004 Census and applying it to the estimate of the total population for 2001—the mid-point of the five-year period covered in this PER (1999-2003)

of our analysis, we have collapsed these categories to four classifications: the central MoPHP budget, governorate health budgets, the SFD, and the PWP.

The first two are in a combined MoPHP budget, but the responsibility for execution of the projects is divided between the center and the governorates and districts. The SFD and the PWP have budgets that are independent of that of the MoPHP and of that of each other.<sup>16</sup> All four of these sources channel foreign assistance funds to one degree or another. A wide variety of projects are targets of investment funds from these sources, and are shown in Table 9. But they are all designed, to one degree or another, to construct, rehabilitate, to furnish, and/or to equip health facilities of five major types. Moving from the tertiary care level on down, there are central hospitals, governorate hospitals, district/rural hospitals, maternal and child health (MCH) centers (sometimes physically incorporated within other institutions), health centers, and health units.

The budget data do not provide information on the status of these investment projects with respect to their start dates or project completion dates. Inclusion in this table, in fact, means that an existing facility was only receiving new furniture and/or equipment, or may just be adding rooms or a wing (in the year for which the data are provided). It is not possible to distinguish, by number, the facilities that represent new construction (not necessarily free-standing facilities) and those that represent rehabilitation of existing buildings. It is probably fair to say, however, that the large number of facilities in the “Governorate Health” column represent mostly new projects because governorates have only recently received authority to administer such investments independently of central MoPHP after decentralization took effect in 2001 (subject to certain threshold limitations on the amounts of the investments).

Table 10 provides data on the magnitude of the budget funding that was spent in period 1999 through 2003 in each category of “type of facility” according to the source of budget funds. (For more detail on the breakdown by type of expenditure and source of funds for other years, see the Annex.)

Table 11 shows the aggregate amounts of investment expenditures by source of funding during the five-year period 1999 through 2003.

Table 12 shows the magnitudes of investment spending by all sources by type of facility, 1999 through 2003.

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<sup>16</sup> “Independent” in the sense of authority to make the budgetary decision to allocate the funds. All investments in the health sector, however, require that the MoPHP sign an agreement that it will equip, furnish, and staff the facility once its construction is completed.



## 3. Issues in Allocation and Disbursement of Health Funds: Findings and Analyses

### 3.1 Planning for Health Sector Reform: Past Experience, Future Prospects

Although the government adopted a comprehensive health sector reform strategy in 1998, one that had been designed in collaboration with Yemen's development partners, the MoPHP has never developed a sufficient consensus on how to implement it and, thus, has never completed the detailed planning that is required for implementation of that strategy. Having been initiated during the last two years (1999 and 2000) of the First Five-Year Health Development Plan (for 1996-2000), the HSRS was not incorporated into that plan. That plan, in any event, had concentrated on increasing investment in the health services infrastructure and led to imbalances in sectoral resource allocation (excessive investment spending, insufficient recurrent spending) that were a major impetus to the movement towards reform. But, while the HSRS was responsive to evident needs at the time to reorient development of the sector,<sup>17</sup> and while it represented a high degree of consensus among policymakers in the government and among collaborating professionals representing the technical partners, it did not serve subsequently as the basis for the Second Five-Year Health Development Plan (2001-2005), when it was developed during 2000.

In fact, this Second Five-Year Health Development Plan has not served as the basis for resource allocation in the health sector, nor as a foundation upon which Yemen's technical partners designed their own programs of assistance to the sector. However, despite the absence of a national plan for its implementation, the strategic framework and goals embodied in the HSRS have served as the basis for most, if not all, foreign assistance in the health sector. Most notably, the second World Bank credit for US\$27.5 million signed in 2002, entitled a "Health Reform Support Project (HSRP)" was designed, in part, to advance the HSRS (World Bank, 2001). But, even while they have generally supported one or more specific aspects of the HSRS, this World Bank project and most other foreign assistance projects have been designed independently of one another, and have also been implemented with very little coordination. For that matter, the MoPHP's investment decisions during the past five years do not seem to have been designed to implement either the Second Five-Year Plan nor the HSRS.

As is evident from the data presented in this PER, the need for a comprehensive plan for health sector reform and development is as great as ever. The MoPHP does have the capacity to address this need. There is a sizeable professional cadre of experienced professionals having the requisite backgrounds and training. The former Health Sector Reform Unit is now operating as the Health Policy and Technical Support Unit and has the capacity to promote harmonization of the MoPHP's strategic framework and resources with those of its technical partners. There is an effort underway that would be supportive of a concerted effort to develop a more comprehensive plan. The Minister of

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<sup>17</sup> The executive summary of the 1998 HSRS stated that the "government's health system is in a state of prolonged crisis, a crisis which has worsened dramatically in the past decade" (MOPHP, 1998).

Health has appointed a Task Force for developing the Health Investment Plan to achieve the Millennium Development Goals (MDGs). This Plan has been compiled with other sector plans to comprise the National Investment Plan for achieving the MDGs. Also, the MoPHP has contributed to the development of a multisectoral Poverty Reduction Strategy (PRS), which is intended to be the strategic basis for the National Investment Plan. These two efforts have diverted attention and resources (of the Health Policy and Technical Support Unit), which would otherwise have been focused on an evaluation of the Second Five-Year Plan and on the development of an MDG-based, PRS-oriented Third Five-Year Plan

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## 3.2 Implementing the Health Sector Reform Strategy

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### 3.2.1 Requirements and Impacts of Decentralization

One of the persistent difficulties faced by the efforts of the MoPHP to design and implement a reform strategy has been the lack of support from other government agencies, particularly the Ministry of Finance. Moreover, the process of transitioning from a highly centralized political and administrative structure to a decentralized governmental and political structure has created new problems for the health sector. For example, the creation of many Local Authorities under decentralization has made it more difficult for the MoPHP to control past excesses in investments in health infrastructure. While it may now decide to restrain its own infrastructure investment spending, on which it does not itself seem to be consistent, decentralization has given governorates and districts independent authorities to devote resources to building new health centers and hospitals without prior approval from the MoPHP, and without adhering to MoPHP design and construction standards.

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### 3.2.2 Actual Expenditures versus Approved Budgets

Actual expenditures of government funds, by ministry, and by line item as approved in the annual budgets of the current and investment accounts, are reported annually by the MoF. While the approved budgets may constitute the blueprint for spending, the reports of actual expenditures reveals the true allocation and application of government resources. Approval of official requests to spend budgeted funds is overseen by Directors General for Finance within the MoPHP and within each governorate, and recently within each district (or groups of districts). These finance officers are appointed and supervised by the MoF. Each follows a process that in many instances leads to actual expenditures being at variance with the approved budgets.

In order to establish where these differences were significant, they were calculated and are presented in Table 13, which shows differences by all line items, and in Table 14, which shows the differences by detailed components of individual line items for recurrent spending only. (Reference to the process by which these variances occur is made briefly in Section 3.4 below.) Data for these calculations were not available for 1999, and for the remaining four years were calculated in two separate two-year sets; the first set includes spending by the central MoPHP and the governorates for the years 2000 and 2001, and the second set includes spending by the central MoPHP *only* for the years 2002 and 2003 (both sets exclude any MoPHP spending on Al-Kuwaiti and Al-Thawra Hospitals and the Supreme Drug Authority).

Table 13 shows that actual expenditures slightly exceeded approved budgets for the aggregated spending of the MoPHP (including governorates) for 2000 and 2001. The 5% deficit in 2001 amounted to about YR 1.0 billion. It is also evident that the deficit spending is concentrated in the

line items for capital expenditures, which exceeded the 2000 approved budget by 38% and the 2001 approved budget by 22%. For most recurrent line items, actual expenditures for these two years were less than approved budgets—sometimes by significant amounts. One explanation that was given for these differences is that availability of donor funding is not always known in advance, and amounts sometimes spent during a given year may have become available after the budget was approved, thus making their actual expenditures, if made during the same year, exceed the amount of spending that the budget anticipated. This explanation, however, could not be confirmed by evidence, and it is not clear how unexpected amounts could have been received and spent so quickly, especially given the typically lengthy design and approval process for foreign assistance project expenditures.

Central MoPHP spending (excluding governorate expenditures) for the following two years (2002 and 2003), however, show a different pattern, both years ending with significant surpluses in the budget—YR 1.8 billion in 2002 (16% of the approved budget) and YR 6.3 billion in 2003 (33% of the approved budget). In no category of spending (with one minor exception) did actual expenditures exceed the approved budget. Two explanations were offered for these surpluses. The first was that the needs were not as great as anticipated. The other was that the Directors General for Finance were responding to a financial incentive given them by the MoF for keeping spending lower than the approved budgets. Neither explanation, however, could be confirmed by evidence.

Table 14 provides a detailed picture of the how actual expenditures differed from the approved recurrent budgets by line items. There are numerous substantial differences, with large variations amongst them. The only significant deficit spending items are for “utilities” in three out of the four years (accounting for 6% of the approved budget), and for “bonuses and overtime” (accounting for only 1% of the approved budget). There is ample evidence that, for whatever reason, the actual expenditures were consistently lower than the approved budgets. It is worth noting that actual spending on maintenance (very low to begin with, in the approved budget) is regularly less than budgeted (a surplus of YR 1.5 billion for central MoPHP in 2002, or about half of what was budgeted), even though the amount budgeted is inadequate for the needs of the health care system (averaging between 2% and 4% of the approved budget).

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### 3.2.3 The Role of Cost-Sharing

Out-of-pocket payments of user fees by patients—known as cost-sharing (when paying for services) and cost-recovery (when paying for drugs) have become an increasingly important component of financing health services in Yemen.<sup>18</sup> While a number of steps were taken during the 1990s to develop and test approaches to cost-sharing and cost-recovery, a formal legal foundation for them did not exist until January 1999, after the efforts to develop the HSRS had built momentum and developed a consensus that such a financing reform was needed. At that time, the MoPHP proposed a Cabinet resolution, subsequently passed by the Cabinet (as Resolution #15), which enabled health facilities to charge for health services. This decree provided a legal foundation for wide implementation of cost-sharing. By then also, the National Revolving Drug Fund had been established to improve access to quality drugs at affordable prices. It was intended that a “financially and administratively” independent Drug Fund would supply drugs and medical supplies to government facilities “at their request and against payment of costs of the goods plus a service fee.” It

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<sup>18</sup> The government has never been obligated legally to provide health services free of charge and for many years did not impose form charges for them, even though user fees have been a reality on an informal basis for some time. It was the economic crisis of the early 1990s that forced the government to charge patients formal user fees to supplement falling government resources for health.

was thought that donor funding would enable purchase of an initial stock of medicines, while revolving revenues from fees charged (which were to be used only to buy drugs again) would facilitate continuing procurement.<sup>19</sup> Subsequently, by-laws were developed to facilitate implementation of the new policies, which were tempered by a general policy that authorized exemptions for those who could not afford to pay.

There have been several significant developments with respect to cost-sharing and cost-recovery in recent years. First, devolution of power from the center to the governorates and the districts occurred through the creation of elected Local Councils and associated Local Authorities. The first elections were in 2001, the first exercise of decentralized decision making in 2002. While the original resolution authorizing cost-sharing had given individual facilities (i.e., their governing bodies) the right to allocate user fee revenues as they saw fit,<sup>20</sup> the Law on Local Administration explicitly authorized Local Authorities to collect the government revenue from all government services and to decide how they would be allocated (within the jurisdiction of the authority). Since this policy was at odds with the original decree, which had been put into practice in many locations, there was uneven compliance. Many facilities refused to remit fees to the Local Authorities and continued to collect and allocate them as they saw fit. In some places, Local Authorities took control of the revenues. Practices now vary across the country from one place to the next, and there is transparency and accountability neither for collection of fees nor for distribution of the revenues.

Second, while the Drug Fund reduced leakage of drugs and somewhat improved the availability of drugs in government facilities, a number of serious problems remain. The costs of drugs (where available) in public facilities are still high (though much lower than in private pharmacies<sup>21</sup>), exemptions policies (for the poor) are inconsistent and not well-administered,<sup>22</sup> the distribution system remains extremely inefficient,<sup>23</sup> and the “revolving” nature of the Drug Fund is not functioning.<sup>24</sup> That is, revenues from sales of Drug Fund-supplied medicines in public facilities are used for other purposes besides purchasing new stocks of drugs. In fact, it is not part of the mandate of the Drug Fund to ensure that revenues collected from the sale of its drugs are used to purchase replacement drugs. The locus of accountability for those revenues is not clear. Earlier this year, the MoF completely cut off financing for the Drug Fund, noting that it had accumulated debts said to be

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<sup>19</sup> Financial and technical assistance to the Drug Fund was almost exclusively from the Netherlands, which contributed almost Eur 13 million during the period 1996 through 2002. See Haak, Bafrillas, and Soeters, 2002.

<sup>20</sup> The by-laws suggested a distribution: 40% as incentives to motivate staff (salary supplements); 40% for improvements to the facilities (infrastructure, supplies, etc.); 10% for outreach activities; 8% for costs of board members attending meetings; and 2% for printing materials. (This formula was not necessarily followed.)

<sup>21</sup> The above-cited YemDAP Evaluation found that “median prices in the private pharmacies were, on average, 665% of prices in public pharmacies” (p. 5), “the lowest prices in private facilities were still 3.5 times higher than those in public pharmacies” (p. 14), and government facilities often offered “other drugs at a variety of prices, sometimes significantly more expensive than the stipulated cost price plus 10%” (p. 14).

<sup>22</sup> A household survey conducted by the above-cited Final Evaluation found that the “very poor” (17% of the sample) spent on average US\$19.8 per health care visit on drugs—“which was more than the average for all socio-economic groups in the sample” (p. 6).

<sup>23</sup> Although the Drug Fund can only sell drugs to government facilities, it is commonplace for those facilities to purchase and sell (at hefty mark-ups) additional (even competing, branded) drugs from the private sector. Moreover, the Drug Fund delivers to its four regional stores only, and the inefficient distribution system from those stores to the facilities “remains unchanged and very inefficient” (p. 17).

<sup>24</sup> Facilities were supposed to deposit revenues from sales of drugs into a central bank account, and local proprietary accounts were not allowed. But not all facilities opened central bank accounts, and yet most of them continued to get drugs from the Fund. Without a bank account, however, facilities had an incentive to stock and sell drugs purchased from the private pharmacies, undercutting the purpose of the Drug Fund.

over YR 2 billion for drugs it had distributed and was supposed to have been paid for.<sup>25</sup> After convening a workshop to deliberate on the problems and alternative solutions, the MoPHP was able to achieve a consensus on a drug financing policy that had three elements:

1. Drugs are to be given free-of-charge to persons suffering from certain chronic diseases, like diabetes, tuberculosis, and malaria (it was estimated that 30% of the total spending for “drugs and medical supplies” would be taken up by these drugs);
2. Consumable supplies and medical appliances (disposable syringes, bandages, etc.) would be supplied free-of-charge and would not be supplied from a revolving fund (it was estimated that about 20% to 30% of total spending for “drugs and medical supplies” would be taken up by these items); and
3. Drugs from the essential drug list would be supplied on a revolving basis and must be paid for, with an exemption made for the poor (after exemptions for the poor, it was estimated that an amount equivalent to 20% to 30% of the total drug bill would be recovered—and revolved towards purchase of new stocks of the same drugs).

It was noted by one observer that this consensus was essentially an approximation of practices that had developed up until that time. The Drug Fund, however, continues to have no responsibility for ensuring that funds collected for its drugs are used only to repurchase drugs from the Fund. In any event, the by-laws drafted by the MoPHP to implement these policies have not yet been finally approved by the MoF.

Preliminary results from a survey undertaken by the NHA team of cost-sharing in four hospitals and nine health centers shows that cost-sharing has become a very significant source of revenue supporting many facilities sponsored by government. While this survey was not large enough to permit national generalizations, it does show for the particular facilities surveyed, that cost-sharing is a major contributor of resources for health services, and it shows the rates at which services have been priced by facilities.

Table 15 shows that four hospitals, one selected from each of four regions, raised almost one-fourth of its total *recurrent* expenditures by charging fees for diagnostic investigations and for services. (The facilities also charge for drugs, but these data are not included in these results, either for expenditures or for revenues.) The percentage covered by fees ranged from 20% to 29% with an average of 24%. The average revenue per admission was YR 5,732 for all four hospitals, and ranged from YR 3,309 to YR 7,727 (these data include revenues from the outpatient departments).

Table 15 also shows revenue and expenditure data for nine health centers, where the share of *recurrent* expenditures covered by fee revenue ranged from 7% to 78%, and averaged 19%. It can be seen from the table that the facilities that covered high proportions of their expenditures from fees were those that charged high fees. The average payment per visit ranged from YR 29 to YR 127, and averaged YR 48.

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<sup>25</sup> The MoF does not finance the Drug Fund directly, but does provide funds through a budget line item for “drugs and medical supplies” that provides funds to facilities to purchase drugs from the Drug Fund. This line item, however, was being used to pay for only a fraction of the drugs actually supplied to the facilities, which either relied on donated drugs or on the willingness of the Drug Fund to provide replacement drugs in return for promises to pay later. The Drug Fund supply and financing facility was never supported by all donors. As noted in the above-cited Final Evaluation, “most donors (UNICEF, UNFPA, World Bank) still have their own procurement and distribution chains,” p. 12).

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## 3.3 Estimating Resource Requirements

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### 3.3.1 Planning for Health Investments

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#### 3.3.1.1 Calculating Need for Facilities

Although expenditures on construction and equipping of health facilities have been a major part of the MoPHP budget for the past decade, there has never been a detailed, comprehensive plan that identifies the needs in different areas of the country, and there has never been an attempt made to match available resources with those needs in a deliberate way.

#### 3.3.1.2 Calculating Need for Future Recurrent Budget

Insufficient budgets and inadequate expenditures for operating existing facilities were the primary reasons for Yemen's initiation of cost-sharing in health financing in 1997. To some extent, as discussed above, the additional resources that were generated by cost-sharing have accomplished at least part of what was intended—an increase in the capacities of individual facilities to provide basic services and medicines. However, despite a moratorium declared on new projects in 2000, the over-investment in facilities that characterized the late 1990s has apparently resumed, and, under decentralization, has become an even larger problem. Excessive spending on construction of new facilities, and on furnishing and equipping them, have resulted in the prospect that more facilities will exist than can be operated given the approved recurrent budget (even if it were completely spent), not to mention the need for trained staff that do not exist (and could not be employed even if they did).

In order to illustrate how severe the gap is between the recurrent budgets that are needed in order to operate the facilities that are being built today, a calculation was made of the future implications of today's actual investment expenditures. This calculation was made in three steps. First, estimates were made of the average operating costs of each type of facility, given standard patterns for services offered and staffing required at each (as determined by the MoPHP and its District Health System Model and Essential Services Package). Second, the number of each type of facility that is likely to be ready to be staffed and operated over the next five years was calculated on the basis of the number of such facilities that are currently receiving investment funding (with the assumption made that no new facilities that have not yet been started would come on line during that time). Third, the total costs of operating all new constructed and equipped facilities were calculated by multiplying the numbers of each type of facility by the average cost for each type of facility—giving the total new operating costs that would be required to be accommodated by the recurrent budget. These added costs are expressed as a percentage of the recurrent budget for 2003. Table 16 shows the results of these three steps.

It was shown previously that the average annual real increase in the recurrent budget of the MoPHP has been roughly the same (on the average) over the five-year period, 1999 through 2003. But there has been considerable variation. While there was a significant slowing of the growth of investment spending in 2002 (with investment for 2001 actually contracting by 8% [see Table 2]), investment spending for 2003 jumped by 53% over 2002, while recurrent spending increased only 20% in that year. The MoF has so far been unconvinced that the recurrent budget should be increased faster than it has in the past, simply to accommodate the increase in the number of facilities. It is evident from the above table that recent and ongoing investments in health infrastructure are likely to require increases in the recurrent budget on MoPHP at roughly two to three times the rate it has

experienced in recent years—assuming that adequate numbers of needed personnel are trained and available to work (at the salaries offered) during the next five years. We now turn to an estimate of the number of trained personnel that will be needed, presuming that the recurrent budget would be available to hire them.

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### **3.3.1.3 Matching Staff to Facilities**

Table 17 illustrates the gap between the needs for professional and technical staff in MoPHP facilities, given the investments currently being made, and the actual number of staff that are available. Overall, there is a need for a 15% increase in available professional and technical staff by 2009 in order to fully staff the new facilities expected to come online. However, a further analysis of staffing needs that takes into account the current staffing of existing facilities reveals a more disturbing picture. In the aggregate, some types of personnel are in extremely short supply, and the needs are great for those types at existing facilities, even before the needs at new facilities are taken into account.

In particular, there is a need to more than double the cadre of personnel in the following personnel categories (needed number as a percentage of existing number is in parentheses): medical assistants (306%); pharmacist technicians (148%); x-ray technicians (156%); dental assistants (407%); midwives (232%); primary health care workers (178%); and operating technicians (249%). These increases are needed just to bring current staffing levels up to the levels needed in existing facilities. For new facilities, the need is additive to these numbers.

While this table does not compare these needs of government facilities with the output of training institutions, it should be kept in mind that the private sector demand for professional and technical personnel will also grow and private institutions will be competing for those personnel as they are produced by the government training institutions—making it even more difficult to staff public facilities.

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### **3.3.1.4 Ensuring Sufficient Resources for Operations and Management of Facilities**

The share of the budget devoted to maintenance and repair of equipment and facilities has not only been too low (at about 3%-4% of total recurrent spending), but, as has been noted, even the budgeted amounts have not been spent. A significant increase in budgets and spending for these purposes is urgently needed in order that past investments do not fall into disrepair and thus are wasted before they have been properly and appropriately used.

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## **3.3.2 Role of External Assistance**

The level of foreign assistance to the health sector has fluctuated considerably during the past five years; in addition, there has been very little coordination among donors, and very little coordination of donors' activities with a consistent development plan. If foreign assistance is to have a significant role in developing the health sector, there needs to be better planning of government spending and better harmonization of those plans with external assistance.

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### 3.4 Organizational Structure and Financial Management

The MoF has been found to have an inordinate degree of influence in how much is spent in the health sector and when it is spent. This has remained the case even after significant devolution of authority over programming, planning, and program implementation has been given (at least in theory) to local authorities. The traditional line item budget structure is not supportive of district-level efforts to move toward performance-based budgeting and functional budget categorization. Until the MoF begins to give more support to the need for functional budgets, all efforts at implementing rational planning and performance-based budgeting and disbursement will be ineffective.

## 4. Findings and Recommendations

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### 4.1 Findings

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#### 4.1.1 Health Sector Reform Strategy, Planning, and Implementation

The Health Sector Reform Strategy provides a sound basis for the development of a Third Five-Year Plan that would guide both government and donor decision making on investments in health. However, there is a need for greater focus on harmonization among donor agencies and the various government institutions involved in health sector development. Recent and current activities are poorly coordinated with each other. The Ministry of Finance continues to exercise dominant control over budgeting and disbursement, and has not allowed the flexibility needed to promote real decentralization of authority and responsibility in the programming, planning, and budgeting processes.

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#### 4.1.2 Decentralized, District Health System

There is solid potential for bottom-up planning and programming at the district level that could link spending to performance and achievements. However, there has been limited progress in implementing this aspect of the HSRS.

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#### 4.1.3 Cost-sharing

Cost-sharing has become well-established in principle and in practice, but needs improved accountability and transparency. There seems to be little data available at any level on how much revenue is generated by cost-sharing and on what it is used for. Moreover, responsibility for collecting and disbursing the cost-sharing revenue is different from place to place. The MoPHP by-law on cost-sharing gives facilities the right to collect and retain user fees, while the law on decentralization has given local authorities the right to collect and distribute user fees. These contradictory policies have led to different practices in different places, and confusion among health officials and patients about what the law is.

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#### 4.1.4 Low Level of Public Spending on Health

During the five-year period 1999 through 2003, the level of public spending on health has remained very low, averaging just over 4% of total government spending and only 1.4% of gross domestic product. These low levels have consistently tracked the ups and down both of the economy and of government general revenue.

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#### **4.1.5 Inequitable Distribution of Spending**

There continues to be a maldistribution of government health spending in the health sector type of service and by region, with too much being spent on investments and on acute care facilities in urban areas, and too little being spent on current operations, primary health care, and maintenance and repair.

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#### **4.1.6 Poorly Functioning Budget Structure/Process**

There is very little coordination, at all levels of government, of budgets with plans (and vice versa). Moreover, actual spending differs, often considerably, from approved budgets, and there is no accountability for budgets or spending levels. MoF representatives seem to exercise a disproportionate degree of control over spending at all levels of the government health system, and the budgeting and disbursement practices do not seem to support implementation needs of government programs. The timing of the release of investment funds is counterproductive to smooth execution of planned projects, and the release of funds for current operations, requiring invoices in advance of disbursement, makes it very difficult for health managers to have the resources they need when they need them.

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#### **4.1.7 Poorly Planned Investments**

Investment spending is poorly planned and poorly coordinated across the multiple agencies involved in health investment activities. There is inadequate attention to the need to invest in staff training, and to plan better for staffing of facilities once they have been constructed and equipped. Under decentralization, Local Councils are now building many new health centers and health units, some of them not conforming to MoPHP standards, and almost all of them not planned in coordination with the MoPHP. The lack of planning for the staffing and for the future operating costs needs of these facilities means that the resources spent on many of these facilities will end up wasted if the facilities remain unequipped and unstaffed for long periods of time—as seems likely.

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### **4.2 Recommendations**

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#### **4.2.1 Level and Composition of Spending on Health**

Current operating budgets should be raised considerably, particularly for maintenance, and investment budgets should be reduced. Overall, the level of government spending should be raised as a share of total government spending, but only after the development of a plan to match the increased budgets to identified needs has been developed. The investment budgets should reduce the current focus on buildings and equipment, and, instead, should focus on training of health personnel, particularly non-physicians.

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#### **4.2.2 Program and Investment Planning**

Program planning processes (at all levels) need to be linked to budgeting decisions, with enhanced accountability for spending. At the same time, budget expenditures need to be linked to

sector functions and to progress toward desired program results. New investments in buildings and equipment should be made only if needed staffing and operating budgets are available (MoPHP promises should be documented)—to apply also to Local Councils’ building. Any new investment program should be preceded by a *master plan* that includes both a comprehensive examination of current needs versus current capacities (in terms of facilities, equipment, and staff) and also a national plan for infrastructure development that relates human resource and physical plant expansion with needed operating and maintenance budgets that are financed by a commitment of the necessary resources by the MoF, MoP&IC, and international donors.

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### 4.2.3 Cost-sharing and Cost-recovery

By-laws and guidelines for collection and allocation of payments for services and drugs need to be made consistent. Policies on exemptions from fees, and locus of responsibility for granting them, need to be clarified. Responsibility for implementing clarified policies, and accountability for doing so, needs adequate enforcement. A study of the level of fees/charges, and of their uses and relationships to other financing sources, is needed. In view of the current lack of clarity in these areas (fees for services, charges for drugs, exemptions, collection and allocation of revenues), large financing reform initiatives, e.g., health insurance, should be approached with extreme caution, and, in any event, should be preceded by exhaustive studies and collection of needed data on the medical and financial risks currently faced by the population due to injuries and sickness.



# Annex A: Tables

**Table 1: Health Financing Indicators, 1998 and 2002  
Selected Middle East and North African Countries**

Country	1998						2002*					
	Total Spending on Health		Public Spending on Health		Private Spending	External Resources	Total Spending on Health		Public Spending on Health		Private Spending	External Resources
	As a % of GDP	Per Cap In PPP\$	As % of Total Govt	As % of Total Health	As % of Total Health	As % of Total Health	As a % of GDP	Per Cap In PPP\$	As % of Total Govt	As % of Total Health	As % of Total Health	As % of Total Health
Djibouti		\$127		27%	44%	29%	6.3%	\$78	10.1%	33%	47%	20%
Egypt		\$93		41%	56%	3%	4.9%	\$192	6.0%	35%	63%	2%
Iran		\$313		30%	70%	0%	6.0%	\$432	9.0%	48%	52%	0%
Iraq							1.5%	\$44	0.7%	16%	83%	1%
Jordan		\$309		45%	47%	8%	9.3%	\$418	12.5%	41%	54%	5%
Lebanon		\$581		18%	80%	2%	11.5%	\$697	9.1%	30%	70%	0%
Libya							3.3%	\$222	5.0%	47%	53%	0%
Morocco		\$136		32%	67%	1%	4.6%	\$186	4.9%	31%	67%	2%
Somalia							2.6%	na	4.2%	35%	55%	9%
Sudan*							4.9%	\$58	6.3%	18%	79%	3%
Syria							5.1%	\$109	6.5%	46%	54%	0%
Tunisia		\$263		35%	65%	0%	5.8%	\$415	7.5%	49%	50%	1%
Yemen		\$45		35%	57%	8%	3.7%	\$58	3.5%	24%	73%	3%
Average		\$233		31%	67%	2%						
Averagew/o Lebanon		\$184										

Sources: 1998 Nandakumar, A.K., et al., "Synthesis of Findings from NHA Studies in Twenty-six Countries," Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates, Inc., July 2004.

2002 WHO, "Core Health Indicators", WHO Statistical Information System, World Health Report, Geneva: WHO, 2002 [Accessed at: [http://www3.who.int/whosis/core/core\\_select.cfm](http://www3.who.int/whosis/core/core_select.cfm)]

Sudan data is for 2001.

Note: "PPP" means "Purchasing Power Parity" expressed in dollars. It is a measure of the purchasing power expressed in dollars of the amount expressed in a country's own currency. It is intended to make the measure comparable across countries.

**Table 2: Levels and Trends of Spending by the Government on Health  
Republic of Yemen, 1998-2003**

<b>Levels and Trends of Spending</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>Cumulative Increase 1998-2003</b>
Levels of Spending in Health							
(In millions of current YR)							
Total Government Health Expenditures	11,660	15,233	20,790	23,642	24,210	30,832	
Recurrent*	8,299	11,501	15,241	18,556	18,737	22,459	
Capital & Development	3,362	3,732	5,549	5,086	5,474	8,373	
Local**	2,229	1,761	1,757	2,466	3,721	6,187	
Foreign	1,133	1,972	3,792	2,620	1,753	2,186	
Government Health Expenditures/capita							
In current prices YR	708	898	1,189	1,312	1,304	1,611	
In current YR as US\$ (base = 1998)	\$5.21	\$5.77	\$7.35	\$7.78	\$7.42	\$8.78	
Trends in Spending in Health							
% Change Year-over-Year							
Government Health Expenditures (YR)	28%	31%	36%	14%	2%	27%	164%
Recurrent*	19%	39%	33%	22%	1%	20%	171%
Capital & Development	57%	11%	49%	-8%	8%	53%	149%
Local**	111%	-21%	0%	40%	51%	66%	178%
Foreign	4%	74%	92%	-31%	-33%	25%	93%
Government Health Expenditures/capita							
In current prices YR	24%	27%	32%	10%	-1%	24%	127%
In current YR as US\$	24%	11%	28%	6%	-5%	18%	68%
Population, millions	16.458	16.962	17.481	18.016	18.567	19.136	
Yearly growth, population	3.1%	3.06%	3.06%	3.06%	3.06%	3.06%	16%

Sources:

1998: World Bank, "Republic of Yemen, Public Expenditure Review for the Health Sector," December 14, 1998

1999-2003:

\* Chapter 1 of Republic of Yemen Consolidated Budget

\*\* Chapters 2,3 & 4 of Republic of Yemen Consolidated Budget

Totals include spending by MoPHP Central Ministry, Governorates, Al-Thawra & Al-Kuwaiti

Hospitals, Supreme Drug Authority, Ministry of Interior (and other government agencies on treatment abroad),

Social Development Fund, and Public Works Project. (Ministry of Defense and local spending by Ministry of Interior (police) excluded.)

Source of population estimates: Central Statistical Organization (based on Census of 2005)

**Table 3 : Public Spending on Health Related to Macroeconomic Statistics  
Republic of Yemen, 1999-2003**

Public Spending on Health Related to Macroeconomic Statistics	1998	1999	2000	2001	2002	2003	Average Percent 1999-2003	Cumulative Percent 1998-2003
In millions of current YR								
Government Expenditures	256,100	342,932	502,440	522,367	597,788	777,087		
Recurrent	208,800	266,568	381,913	394,249	441,378	526,351		
Capital & Development (incl loans, reimb)	47,300	76,365	120,527	128,118	156,411	250,736		
Government Health Expenditures	11,660	15,233	20,790	23,642	24,210	30,832		
Recurrent*	8,299	11,501	15,241	18,556	18,737	22,459		
Capital & Development**	3,362	3,732	5,549	5,086	5,474	8,373		
Local	2,229	1,761	1,757	2,466	3,721	6,187		
Foreign	1,133	1,972	3,792	2,620	1,753	2,186		
Nominal GDP at Market Prices	844,240	1,172,790	1,539,630	1,615,940	1,803,390	2,081,640		
Yearly Growth in GDP at Market Prices	na	38.9%	31.3%	5.0%	11.6%	15.4%		147%
Real GDP (in 1990 prices)	202,389	207,315	216,965	227,080	235,938	245,405		
Yearly Growth in real GDP	na	2.4%	4.7%	4.7%	3.9%	4.0%		21%
As % of Government Expenditure								
Government Health Expenditures	4.6%	4.4%	4.1%	4.5%	4.0%	4.0%	4.2%	
Recurrent*	4.0%	4.3%	4.0%	4.7%	4.2%	4.4%	4.4%	
Capital & Development** (incl. for. asst.)	7.1%	4.9%	4.6%	4.0%	3.5%	2.6%	2.6%	
As % of GDP at current market prices								
Government Health Expenditures	1.4%	1.3%	1.4%	1.5%	1.3%	1.5%	1.4%	
Recurrent	1.0%	1.0%	1.0%	1.1%	1.0%	1.1%	1.1%	
Capital & Development (incl. for. asst.)	0.4%	0.3%	0.4%	0.3%	0.3%	0.4%	0.3%	
Consumer Price Index (1990=100)	783.6	851.5	890.6	996.6	1,118.6	1,239.7		
Yearly Change in CPI	6.0%	8.7%	4.6%	11.9%	12.2%	10.8%		58%
GDP deflator (1990=100)	417.1	565.7	709.6	711.6	764.3	848.2		
Currency Exchange Rate (YR/US\$)	135.88	155.75	161.73	168.69	175.63	183.45		
Yearly change in exchange rate	5.1%	14.62%	3.84%	4.30%	4.11%	4.45%		35%
Population, millions	16.458	16.962	17.481	18.016	18.567	19.136		
Population growth rate, annual	na	3.06%	3.06%	3.06%	3.06%	3.06%		16%
Nominal GDP per capita, current YR	51,297	69,144	88,075	89,695	97,126	108,782		
Yearly growth in per capita nominal GDP	na	34.8%	27.4%	1.8%	8.3%	12.0%		112%
Real GDP per capita, real YR (base=1990)	12,297	12,223	12,412	12,604	12,707	12,824		
Yearly growth in real GDP per capita	na	-0.6%	1.5%	1.6%	0.8%	0.9%		4%

Sources: 1998: World Bank, "Republic of Yemen, Public Expenditure Review for the Health Sector," December 14, 1998

1999-2003: \* Chapter 1 of Republic of Yemen Consolidated Budget

\*\*Chapters 2,3 & 4 of Republic of Yemen Consolidated Budget

Totals include spending by MoPHP Central Ministry, Governorates, Al-Thawra & Al-Kuwaiti

Hospitals, Supreme Drug Authority, Ministry of Interior (and other government agencies on treatment abroad),

Social Development Fund, and Public Works Project. (Ministry of Defense and local spending by Ministry of Interior (police) excluded.)

Source of population estimates: Central Statistical Organization (based on Census of 2005)

Source of GDP, CPI, and GDP Deflator: IFS of IMF at URL [www.econstats.com/IMF/IFS\\_Yem1x.htm](http://www.econstats.com/IMF/IFS_Yem1x.htm)

**Table 4: Levels and Trends in Government Expenditure on Health  
Republic of Yemen, 1999-2003 (in YR millions)**

Chapter	Sub Chapter	Expenditure Category	1999		2000		2001		2002		2003		TOTAL 1999-2003		Avg Grth 1999-2003
			Expenditure	% of Total	Expenditure	% of Total									
1		Current Expenditure	10,910	76%	14,279	73%	17,633	79%	17,555	79%	21,352	75%	81,729	76%	
	1	Wages and Salaries	6,272		7,988		9,504		9,854		11,848		45,466		
	2	Goods and Services (excl drugs)	2,841		3,246		3,907		4,468		5,003		19,466		
		Drugs	1,135	8%	1,480	8%	2,400	11%	1,309	6%	2,222	8%	8,547	8%	
	3	Maintenance	385	3%	496	3%	673	3%	635	3%	747	3%	2,935	3%	
	4	Current Transfers and Support*	278		1,069		1,148		1,288		1,531		5,315		
2		Investment & Capital Expenditure	3,425	24%	5,357	27%	4,721	21%	4,741	21%	7,213	25%	25,457	24%	
	1	Acquiring Fixed Capital Assets	3,395		5,318		4,669		4,612		7,183		25,178		
	3	Acquiring Lands and Invisible Assets	30		39		52		128		30		279		
		Grand Total (excl below)	14,335	100%	19,636	100%	22,354	100%	22,296	100%	28,565	100%	107,186	100%	
		Other recurrent (treatment abroad)**	591	5%	962	6%	923	5%	1,181	6%	1,108	5%	4,765	6%	
		Other investment (SFD & PWP)***	307	8%	192	3%	365	7%	733	13%	1,160	14%	2,757	10%	
		Social Fund for Development	307	8%	131	2%	229	5%	477	9%	810	10%	1,953	7%	
		Public Works Project	0	0%	61	1%	136	3%	257	5%	350	4%	803	3%	
		Total Recurrent Expenditure	11,501	75%	15,241	73%	18,556	78%	18,737	77%	22,459	73%	86,494	75%	
		Total Investment Expenditures	3,732	25%	5,549	27%	5,086	22%	5,474	23%	8,373	27%	28,214	25%	
		Total Expenditures	15,233	100%	20,790	100%	23,642	100%	24,210	100%	30,832	100%	114,708	100%	
		Annual Rate of Growth, Recurrent	na		33%		22%		1%		20%		95%		18.4%
		Annual Rate of Growth, Investment	na		49%		-8%		8%		53%		124%		26.4%
		Annual Rate of Growth, Total	na		36%		14%		2%		27%		102%		20.6%

Excluding transfers to Al-Thawra Hospital, which are included in the totals for the other current expenditure categories.

\*\* Percent of total is "treatment abroad" as a percent of total recurrent expenditures.

\*\*\* Percent of total is "Other investment (SFD & PWP)" as a percent of total investment expenditures.

Note: In 2002, there was YR 10.7 billion in "Current Central Support" deducted from Governorate budgets and, hence, excluded above. [Yearly totals include Central and Governorate expenditures by the MoPHP, as well as spending by Al-Thawra and Al-Kuwaiti Hospitals and the Supreme Drug Authority.]

Source: Ministry of Finance, Annual Expenditure Reports, 1999-2003, Sana'a, Yemen, MoF, respective years.

Note: Investment totals include capital spending by the Social Fund for Development, the Public Works Project, the Supreme Drug Authority, as well as capital spending on Al-Thawra and Al-Kuwait Hospitals in Sana'a, in addition to capital spending (supported by foreign aid) by the central MoPHP and the governorates.

**Table 5 : Levels and Trends in Investment Expenditures on Health from all Sources  
Republic of Yemen, 1999-2003 (in YR millions), including Foreign Assistance**

Source of Investment Expenditure	1999		2000		2001		2002		2003		1999-2003	
	Expenditure	% of Total	Expenditure	% of Total								
Central MoPHP Expenditure	449	12%	716	13%	581	11%	1,738	32%	2,715	32%	6,199	22%
Foreign Assistance	1,972	53%	3,792	68%	2,620	52%	1,753	32%	2,186	26%	12,323	44%
Governorate Expenditure	674	18%	458	8%	891	18%	633	12%	1,546	18%	4,203	15%
Social Fund for Development	307	8%	131	2%	229	5%	477	9%	810	10%	1,953	7%
Public Works Project	0		61	1%	136	3%	257	5%	350	4%	803	3%
Al-Kuwait and Al-Thawra Hospitals**	331	9%	344	6%	579	11%	568	10%	708	8%	2,530	9%
Supreme Drug Authority**	0		47	1%	49	1%	48	1%	59	1%	202	1%
<b>TOTALS</b>	<b>3,732</b>	<b>100%</b>	<b>5,549</b>	<b>100%</b>	<b>5,086</b>	<b>100%</b>	<b>5,474</b>	<b>100%</b>	<b>8,373</b>	<b>100%</b>	<b>28,214</b>	<b>100%</b>

Notes:

\* The Public Works Project began in 2000.

\*\* Funded by the Ministry of Finance.

**Table 6: Levels and Trends in MoPHP and Governorate Investment Expenditure on Health  
Republic of Yemen, 1999-2003 (in YR millions), including Foreign Assistance**

Source of Chapter 2 Expenditure	1999		2000		2001		2002		2003		1999-2003	
	Expenditure	% of Total										
Central MoPHP Expenditure	2,420	77%	4,507	91%	3,202	78%	3,491	85%	4,901	76%	18,522	82%
Yearly Growth Rate			86%		-29%		9%		40%			
Governorate Expenditure	674	23%	458	9%	891	22%	633	15%	1,546	24%	4,203	18%
Yearly Growth Rate			-32%		95%		-29%		144%			
TOTAL Central & Governorate	3,094	100%	4,966	100%	4,093	100%	4,125	100%	6,447	100%	22,725	100%
Yearly Growth Rate			60%		-18%		1%		56%			
Foreign Assistance (included above)	1,972	67%	3,792	76%	2,620	64%	1,753	43%	2,186	34%	12,323	54%
Yearly Growth Rate			92%		-31%		-33%		25%			
Net Investment by Y.A.R.	1,122	33%	1,174	24%	1,473	36%	2,372	57%	4,261	66%	10,402	46%
Yearly Growth Rate			5%		25%		61%		80%			

Notes:

"Central MoPHP Expenditure" does not include Chapter 2 expenditures for Al-Thawra, Al-Kuwait, nor Supreme Drug Authority.

Chapter 2 is "Investment and Capital Expenditure" and includes the Subchapters:

1. Acquiring Fixed Capital Assets
3. Acquiring Lands and Invisible Assets

**Table 7: Distribution of Recurrent Budget Among Line Items  
MoPHP and Governorates, 1999-2003**

Expenditure Category	in millions of Yemeni Rials						
	1999	2000	2001	2002	2003	1999-2002	1999-2003
Current Expenditure	8,948	12,052	15,250	14,593	17,985	50,843	68,828
Wages and Salaries	5,371	6,971	8,448	8,572	10,390	29,362	39,752
Goods and services, excl drugs	2,130	2,485	3,093	3,271	3,595	10,979	14,574
Drugs	877	1,121	1,979	973	1,845	4,951	6,796
Maintenance	321	438	616	574	667	1,950	2,617
Current Transfers and Support	249	1,036	1,114	1,202	1,488	3,602	5,090
Expenditure Category	As a percent of total current expenditure						
Current Expenditure							
Wages and Salaries	60%	58%	55%	59%	58%	58%	58%
Goods and services, excl drugs	24%	21%	20%	22%	20%	22%	21%
Drugs	10%	9%	13%	7%	10%	10%	10%
Maintenance	4%	4%	4%	4%	4%	4%	4%
Current Transfers and Support	3%	9%	7%	8%	8%	7%	7%
	100%	100%	100%	100%	100%	100%	100%
Drugs (Totals)	877	1,121	1,979	973	1,845	4,951	6,796
Drugs (as % of Recurrent Spending)	10%	9%	13%	7%	10%	10%	10%
Drugs (yr-over-yr growth)*	NA	28%	77%	-51%	90%	3%	20%

\* 1999-2002 and 1999-2003 are average compound growth rates for the period

**Table 7A: Distribution of Recurrent Budget Among Line Items  
MoPHP, 1999-2003**

Expenditure Category	in millions of Yemeni Rials						
	1999	2000	2001	2002	2003	1999-2002	1999-2003
Current Expenditure	3,467	4,068	5,957	3,510	5,071	17,001	22,072
Wages and Salaries	1,271	1,212	1,647	1,212	1,698	5,341	7,039
Goods and services, excl drugs	1,240	1,489	1,940	948	992	5,616	6,608
Drugs	845	985	1,927	880	1,687	4,636	6,324
Maintenance	82	122	177	170	257	551	808
Current Transfers and Support	29	261	266	301	436	857	1,293
Expenditure Category	As a percent of total current expenditure						
Current Expenditure							
Wages and Salaries	37%	30%	28%	35%	33%	31%	32%
Goods and services, excl drugs	36%	37%	33%	27%	20%	33%	30%
Drugs	24%	24%	32%	25%	33%	27%	29%
Maintenance	2%	3%	3%	5%	5%	3%	4%
Current Transfers and Support	1%	6%	4%	9%	9%	5%	6%
	100%	100%	100%	100%	100%	100%	100%
Drugs (Totals)	845	985	1,927	880	1,687	4,636	6,324
Drugs (as % of Recurrent Spending)	24%	24%	32%	25%	33%	27%	29%
Drugs (yr-over-yr growth)*	NA	16%	96%	-54%	92%	1%	19%

\* 1999-2002 and 1999-2003 are average compound growth rates for the period

**Table 7B: Distribution of Recurrent Budget Among Line Items  
Governorates, 1999-2003**

Expenditure Category	In millions of Yemeni Rials						
	1999	2000	2001	2002	2003	1999-2002	1999-2003
Current Expenditure	5,482	7,984	9,293	11,083	12,914	33,842	46,756
Wages and Salaries	4,100	5,760	6,801	7,360	8,692	24,021	32,713
Goods and services, excl drugs	890	996	1,153	2,324	2,603	5,363	7,966
Drugs	32	137	53	93	157	314	472
Maintenance	239	316	439	404	410	1,399	1,809
Current Transfers and Support	220	775	848	902	1,052	2,745	3,797
Expenditure Category	As a percent of total current expenditure						
Current Expenditure							
Wages and Salaries	75%	72%	73%	66%	67%	71%	70%
Goods and services, excl drugs	16%	12%	12%	21%	20%	16%	17%
Drugs	1%	2%	1%	1%	1%	1%	1%
Maintenance	4%	4%	5%	4%	3%	4%	4%
Current Transfers and Support	4%	10%	9%	8%	8%	8%	8%
	100%	100%	100%	100%	100%	100%	100%
Drugs (Totals)	32	137	53	93	157	314	472
Drugs (as % of Recurrent Spending)	1%	2%	1%	1%	1%	1%	1%
Drugs (yr-over-yr growth)*	NA	328%	-61%	76%	69%	43%	49%

\* 1999-2002 and 1999-2003 are average compound growth rates for the period

**Table 8 : Distribution of Current and Capital Health Expenditure by Governorate and Per Capita Health Expenditure by Governorate, As Compared to Distribution of Governorate Population Republic of Yemen, 1999-2003**

										% Distribution of Spending By Governorate as Compared to				
			Total Health Expenditures			Per Cap Health Expenditures			Distribution of Population					
			(in YR millions)			(in YR, yearly average)			(% of 5-year total vs % of pop)					
No.	Governorate		Current	Capital	Total	Current	Capital	Total	Current	Capital	Total	% of	Second	
	Name	Pop.	Chap. 1	Chap. 2	Expndtre	Chap. 1	Chap. 2	Expndtre	Chap. 1	Chap. 2	Expndtre	Pop.	Five-Year	
		2001	99-'03	99-'03	99-'03	99-'03	99-'03	99-'03	99-'03	99-'03	99-'03	2001	Plan*	
	MoPHP Central	18,015,950	22,081	18,522	40,603	245	206	451						
	Governorates													
1	Sana'a City	1,596,478	2,290	380	2,670	287	48	334	5%	9%	5%	9%	10%	
2	Sana'a + Raimah	1,199,856	1,904	223	2,127	317	37	355	4%	5%	4%	7%	8%	
3	Aden	539,349	7,689	188	7,877	2,851	70	2,921	16%	4%	15%	3%	5%	
4	Taiz	2,194,775	4,742	375	5,117	432	34	466	10%	9%	10%	12%	8%	
5	Hadramout	940,425	5,430	221	5,651	1,155	47	1,202	12%	5%	11%	5%	7%	
6	AL-Hodeidah	1,974,445	3,072	267	3,339	311	27	338	7%	6%	7%	11%	4%	
7	Lahj	664,308	3,822	468	4,289	1,151	141	1,291	8%	11%	8%	4%	5%	
8	Ibb	1,952,673	2,286	496	2,782	234	51	285	5%	12%	5%	11%	7%	
9	Abyan	400,717	3,116	42	3,158	1,555	21	1,576	7%	1%	6%	2%	5%	
10	Hajjah	1,352,817	1,569	166	1,736	232	25	257	3%	4%	3%	8%	6%	
11	Dhamar	1,223,401	1,842	205	2,047	301	33	335	4%	5%	4%	7%	3%	
12	Shabwah	426,509	2,053	414	2,467	963	194	1,157	4%	10%	5%	2%	5%	
13	AL-Mahrah	81,387	859	44	902	2,110	107	2,217	2%	1%	2%	0%	4%	
14	Saadah	633,262	663	173	837	210	55	264	1%	4%	2%	4%	3%	
15	AL-Baida	522,326	953	136	1,089	365	52	417	2%	3%	2%	3%	3%	
16	AL-Mahwit	452,978	731	64	795	323	28	351	2%	2%	2%	3%	2%	
17	Mareb	220,787	1,030	65	1,094	933	58	991	2%	2%	2%	1%	4%	
18	AL-Jawf	412,383	625	90	715	303	44	347	1%	2%	1%	2%	2%	

										<b>% Distribution of Spending By Governorate as Compared to</b>				
			<b>Total Health Expenditures</b>			<b>Per Cap Health Expenditures</b>			<b>Distribution of Population</b>					
			<b>(in YR millions)</b>			<b>(in YR, yearly average)</b>			<b>(% of 5-year total vs % of pop)</b>					
<b>No.</b>	<b>Governorate</b>		<b>Current</b>	<b>Capital</b>	<b>Total</b>	<b>Current</b>	<b>Capital</b>	<b>Total</b>	<b>Current</b>	<b>Capital</b>	<b>Total</b>	<b>% of</b>	<b>Second</b>	
	<b>Name</b>	<b>Pop.</b>	<b>Chap. 1</b>	<b>Chap. 2</b>	<b>Expndtre</b>	<b>Chap. 1</b>	<b>Chap. 2</b>	<b>Expndtre</b>	<b>Chap. 1</b>	<b>Chap. 2</b>	<b>Expndtre</b>	<b>Pop.</b>	<b>Five-Year</b>	
		<b>2001</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>99-'03</b>	<b>2001</b>	<b>Plan*</b>	
19	Amran	797,303	1,203	103	1,307	302	26	328	3%	2%	3%	4%	4%	
20	AL-Dhala	429,771	968	83	1,050	450	38	489	2%	2%	2%	2%	6%	
Total Governorates		18,015,950	46,848	4,203	51,050	520	47	567	100%	100%	100%	100%	100%	
	<b>GRAND TOTALS</b>	18,015,950	68,929	22,725	91,653	765	252	1,017						

Chapter 1 is "Current Expenditure" and includes the Subchapters:

1. Wages and Salaries
2. Goods and Services
3. Maintenance
4. Current Transfers and Support

Chapter 2 is "Investment and Capital Expenditure" and includes the Subchapters:

1. Acquiring Fixed Capital Assets
3. Acquiring Lands and Invisible Assets

Population of governorates was deduced from the percentages found in the 2005 Census applied to the estimated total population in 2001—midpoint of 1999-2003.

(Note: Raimah is a new governorate, the 21st. It is assumed that it is created by dividing the former Sana'a governorate. The estimated population was added there.

\* The total proposed investment in the Governorates according to the Second Five-Year Plan was YR 31,822 million, and was proposed to be distributed "according to the requirements of the Governorates, considering a great deal of distribution equality in accordance with the population density, the health situation, and the purposes of covering the inhabitants' services". The proposed distribution was listed by governorate on page 146 of the Plan Report.

Actual investment of YR 22,723 was about 70% of the targeted amount, but the distribution among governorates was quite different.

**Table 9: Number of Health Facilities Currently Receiving Investment Funds, by Type of Facility, Republic of Yemen, 1999-2003**

Source of Investment Funds for Current Investment Projects								
Type of Facility	Number*		Central MoPHP	Foreign	Governorate Health	SFD	Public Works	Totals
	'99	'02						
Health Units	1,860	2,028	241		274	175	41	731
Health Centers	469	614	322	9	171	57	31	590
MCH Units	Na	32	4		3	6	2	15
Rural (District) Hospitals	84	111	108	21	55	3	4	191
Governorate Hospitals	34	37	16	3	11	1	1	32
Central Hospitals**	3	3	2	1	3	1	1	8
Undefined	Na	Na	2	1	26			29
Others***	Na	Na	88	4	71	42	22	227
<b>TOTALS<sup>δ</sup></b>	<b>2,450</b>	<b>2,825</b>	<b>693</b>	<b>34</b>	<b>517</b>	<b>243</b>	<b>80</b>	<b>1,577</b>

\* Indicates the number of facilities reported to be open and operating in year. Source is MoPHP "Annual Health Statistical Report" for year. The number for 2002 would include *some* of those in "Totals" for 1999-2003 investment projects. The actual number of facilities open and operating will be better known upon completion of current health facilities survey.

\*\* Al-Kuwaiti Hospital is directly funded by the MoF, and Al-Thawra Hospital is funded through a budget transfer from the central MoPHP budget. Both are administratively autonomous.

\*\*\* Public laboratories, blood banks, manpower institutes, etc.

δ Excluding "Undefined" and "Others."

**Table 10: Magnitude of Investment Spending by Source of Funding, by Type of Facility, Republic of Yemen, 1999-2003, (in YR millions)**

Type of Facility	Central MoPHP	Foreign	Governorate Health	SFD	Public Works	Al-Kuwait Al-Thawra	Supr. Drug Auth	Totals	%
Health Units	175		890	650	225			1,939	7%
Health Centers	1,277	177	1,116	507	305			3,382	12%
MCH Units	119		15	32	14			181	1%
Rural (District) Hospitals	1,501	2,149	1,202	22	53			4,929	17%
Governorate Hospitals	150	559	87	15	23			834	3%
Central Hospitals	237	10	7	64	8			326	1%
Undefined	1,347	6,022	233				202	7,805	28%
Others	1,392	3,406	652	663	176			6,289	23%
Al-Kuwait Hospital						1,089		1,089	4%
Al-Thawra Hospital						1,441		1,441	5%
<b>TOTALS</b>	<b>6,199</b>	<b>12,323</b>	<b>4,203</b>	<b>1,953</b>	<b>803</b>	<b>2,530</b>	<b>202</b>	<b>28,214</b>	<b>100%</b>
% of Total	22%	44%	15%	7%	3%	9%	1%	100%	

Notes:

Excluding "Undefined" and "Others."

Totals may not add due to rounding.

Al-Kuwaiti Hospital is directly funded by the MoF, and Al-Thawra Hospital is funded through a budget transfer from the central MoPHP budget. Both are administratively autonomous.

**Table 11: Magnitude of Investment Spending, by Source of Funding, by Year, Republic of Yemen, 1999-2003, (in YR millions)**

Year	Central MoPHP	Foreign	Governorate Health	SFD.	Public Works	Al-Kuwait Al-Thawra	Supreme Drug Auth	Totals
1999	449	1,972	674	307	0	331	0	3,732
2000	716	3,792	458	131	61	344	47	5,549
2001	581	2,620	891	229	136	579	49	5,086
2002	1,738	1,753	633	477	257	568	48	5,474
2003	2,715	2,186	1,546	810	350	708	59	8,373
Subtotals	6,199	12,323	4,203	1,953	803	2,530	202	28,214
% of Total	22%	44%	15%	7%	3%	9%	1%	100%

**Table 12: Magnitude of Investment Spending, by Type of Facility,  
Republic of Yemen, 1999-2003, (in YR millions)**

Type of Facility	1999	2000	2001	2002	2003	TOTALS 1999-2003
Health Units	255	194	261	358	871	1,939
Health Centers	454	303	438	1,010	1,177	3,382
MCH Units	7	13	7	30	124	181
Rural (District) Hospitals	925	1,296	872	1,018	818	4,929
Governorate Hospitals	8	598	43	104	82	834
Central Hospitals*		10	8	97	211	326
Undefined**	1,241	737	1,061	1,576	3,188	7,903
Others	511	2,053	1,817	713	1,195	6,292
Al-Kuwait Hosp	125	180	318	224	242	1,089
Al-Thawra Hosp	206	165	261	344	465	1,441
<b>TOTALS</b>	<b>3,732</b>	<b>5,549</b>	<b>5,086</b>	<b>5,474</b>	<b>8,373</b>	<b>28,214</b>

\* From sources other than MoPHP and MoF.

\*\* All investment by Supreme Drug Authority included here.

**Table 13: Actual Expenditures Compared to Approved Annual Budgets  
for Expenditures on Health, Ministry of Public Health and Population  
Republic of Yemen, 2000-2003**

Category of Spending	Central & Governorates			Central MoPHP Only		
	Average Portion of Spending 2000-2001	Actual Spending/ Approved Budget in %		Average Portion of Spending 2002-2003	Actual Spending/ Approved Budget in %	
		2000	2001		2002	2003
Total Expenditures	100%	102%	105%	100%	84%	67%
Yearly Budget Surplus (Deficit) (in YR millions), of which....		-290	-1,030		1,766	6,251
Recurrent Expenditures	75%	92%	101%	55%	76%	75%
Capital Expenditures	25%	138%	122%	45%	97%	60%
Type of Spending						
Wages and Salaries	38%	87%	99%	13%	86%	61%
Goods and Services	22%	97%	110%	21%	62%	73%
Maintenance	3%	71%	87%	2%	53%	80%
Current Transfers & Support	13%	107%	95%	19%	92%	92%
Investment & Capital Spending	22%	158%	127%	38%	101%	56%
Govt Loans & Contributions in Equity	3%	54%	96%	7%	75%	94%
	100%			100%		

Note:

2000, 2001: Includes all government health spending/spending (Central & Governorates).

2002, 2003: Includes Central government health spending/budgets only.

**Table 14: Actual Expenditures Compared to Approved Annual Budgets  
for Recurrent Expenditures on Health,  
Ministry of Public Health and Population  
Republic of Yemen, 2000-2003  
Details**

Category of Spending	Central & Governorates			Central MoPHP Only		
	Average Portion of Recurrent Spending 2000-2001	Actual Spending/ Approved Budget in %		Average Portion of Recurrent Spending 2002-2003	Actual Spending/ Approved Budget in %	
		2000	2001		2002	2003
Wages and Salaries	51%	87%	99%	24%	86%	61%
Yearly Budget Surplus (Deficit)		1,058	45		1,897	1,088
(in YR millions)						
(Line Items under "Wages and Salaries")						
Basic Salaries	26%	92%	93%	5%	95%	68%
Temporary Wages & Salaries	5%	68%	113%	12%	88%	87%
Bonuses & Overtime	1%	138%	151%	1%	86%	139%
Allowances	20%	83%	104%	7%	70%	42%
Goods and Services	29%	97%	110%	37%	62%	73%
Yearly Budget Surplus (Deficit)		118	-448		11,320	1,004
(in YR millions), of which....						
(Line Items under "Goods and Services")						
Utilities	6%	345%	330%	1%	222%	56%
Office Supplies	1%	98%	157%	1%	60%	19%
Communications	0%	81%	82%	1%	143%	91%
Entertainment	3%	104%	110%	4%	99%	90%
General Transportation	2%	85%	78%	5%	85%	98%
Rents	1%	90%	131%	1%	79%	63%
Materials & Services	16%	77%	92%	26%	51%	73%
o/w Drugs and Medical Supplies	10%	75%	99%	21%	44%	88%
Maintenance	2%	71%	87%	4%	53%	80%
Yearly Budget Surplus (Deficit)		177	89		1,479	66
(in YR millions), of which....						
(Line Items under "Maintenance")						
Buildings	1%	69%	82%	1%	73%	61%

Category of Spending	Central & Governorates			Central MoPHP Only		
	Average Portion of Recurrent Spending 2000-2001	Actual Spending/ Approved Budget in %		Average Portion of Recurrent Spending 2002-2003	Actual Spending/ Approved Budget in %	
		2000	2001		2002	2003
Vehicles	2%	71%	90%	3%	49%	84%
Operations	0%	na	na	0%	na	na
Current Transfers and Support	17%	107%	95%	35%	92%	92%
Yearly Budget Surplus (Deficit)		-163	134		1,487	218
(in YR millions), of which....						
(Line Items under "Current Transfers...")						
Support to not-for-profit govt Institutions	10%	89%	95%	29%	90%	98%
Transfers to families & individuals	7%	146%	96%	6%	108%	67%
(contributions to pensions and social insurance)						
Total Current Expenditures	100%	92%	101%	100%	76%	75%
Yearly Budget Surplus (Deficit)		1,191	-180		16,183	2,375
(in YR millions)						

Notes:

2000, 2001: Includes all government health spending/spending (Central & Governorates).

2002, 2003: Includes Central government health spending/budgets only.

**Table 15: Cost-sharing at Selected Hospitals and Health Centers  
Republic of Yemen, 2003  
(Results of an NHA Survey)**

	Name of Facility													
	Selected Hospitals					Selected Health Centers								
	Al-Gomhori	Al-Thawra	Al-Gomhori	Aden Gen	Total for	Al-Ahgar	Al-Rogam	Al-Tahrir	Ideal MC	HC-15	Al-katea	Al-Moala	Al-Madea	Total for
	Muhwait	Hodeidah	Sana'a	Aden	Hospitals	Muhwait	Muhwait	Hodeida	Hodeidah	Capt Sec	Aden	Aden	Aden	HCs
Inpatient Care (data for 2003)														
No of Beds	100	301	400	199	1,000									
Admissions in 2003	1,379	4,673	17,359	3,969	27,380									
Outpatient (data for 2003)														
Visits	9,689	91,885	162,480	68,115		4,800	2,324	7,921	16,636	5,888	14,485	46,560	9,757	108,371
Chemistry	6,260	1,768	37,843											
Urine Tests	4,624	6,790	15,548	7,700										
Blood Tests	17,095	3,835	272,217	13,556										
UltraSound	342		17,423	4,924										
Simple X-ray	5,546	5,375	25,073	13,656										
Fees (in Yemeni Rial)														
Visits	1,200	3,000	1,000	600		50	30	50	30	50	20	20	20	
Chemistry	600	200	380	na										
Urine Tests	100	100	100	20		80	100	100	110	100	20	20	20	
Blood Tests	100	250	100	60		80	60		110	200	30	35	75	
UltraSound	500	na	1,000	500										
Simple X-ray	250	300	300	150										
(In millions of Yemeni Rials)														
Fee Revenue-Diagnostics	8.3	4.1	68.0	6.1	86.5	0.1	0.2	0.3	0.2	0.3	0.3	0.4	0.5	2.3
Fee Revenue-Services	2.4	29.2	31.9	7.0	70.5	0.2	0.1	0.4	0.5	0.3	0.3	0.9	0.2	2.9
Total Fee Revenue	10.7	33.3	99.9	13.1	156.9	0.3	0.3	0.7	0.7	0.6	0.6	1.3	0.7	5.2

	Name of Facility													
	Selected Hospitals					Selected Health Centers								
	Al-Gomhori	Al-Thawra	Al-Gomhori	Aden Gen	Total for	Al-Ahgar	Al-Rogam	Al-Tahrir	Ideal MC	HC-15	Al-katea	Al-Moala	Al-Madea	Total for
	Muhwait	Hodeidah	Sana'a	Aden	Hospitals	Muhwait	Muhwait	Hodeida	Hodeidah	Capt Sec	Aden	Aden	Aden	HCs
Expenditures, TOTAL	52.5	137.2	430.5	45.2	665.4	2.9	4.4	1.5	1.4	0.8	1.3	14.3	1.1	27.7
Capital Expenditures	0.0	10.4	2.6	0.3	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Recurrent Expenditures	52.5	126.9	427.9	44.9	652.2	2.9	4.4	1.4	1.4	0.8	1.3	14.3	1.1	27.6
Fee Revenue as % of Recurrent Expenditure (excl fees paid for drugs)	20%	26%	23%	29%	24%	11%	7%	47%	48%	78%	43%	9%	64%	19%
Avg Revenue per Admission* (YR)	7,727	7,120	5,754	3,309	5,732									
Avg Revenue per Outpatient Visit (YR) * Includes revenue from outpatients						66	127	85	39	106	40	29	72	48
Fee Revenue-Diagnostics	8,264,950	4,098,550	68,001,740	6,122,560	86,487,800	78,320	224,640	280,000	156,530	327,600	284,370	406,825	505,350	2,263,635
Fee Revenue-Services	2,390,750	29,172,150	31,882,000	7,012,600	70,457,500	240,000	69,720	396,050	499,080	294,400	289,700	931,200	195,140	2,915,290
Total Fee Revenue	10,655,700	33,270,700	99,883,740	13,135,160	156,945,300	318,320	294,360	676,050	655,610	622,000	574,070	1,338,025	700,490	5,178,925
					0									0
Expenditures, TOTAL	52,472,463	137,239,544	430,539,583	45,193,674	665,445,264	2,930,899	4,383,600	1,479,212	1,376,026	801,000	1,329,690	14,277,597	1,093,890	27,671,914
Capital Expenditures	0	10,363,525	2,636,676	291,101	13,291,302	0	15,000	46,800	0	0	0	0	0	61,800
Recurrent Expenditures	52,472,463	126,876,019	427,902,907	44,902,573	652,153,962	2,930,899	4,368,600	1,432,412	1,376,026	801,000	1,329,690	14,277,597	1,093,890	27,610,114

**Table 16: Estimated Future Recurrent Cost Budget Required of Current Investments**

	<b>Current Number of Facilities</b>	<b>Facilities to be added 2005-2009</b>	<b>Estimated** Annual Recurrent Cost/facility</b>	<b>Total Annual Recurrent Costs*</b>	<b>Expected Additional Recurrent Costs* Yrly</b>	<b>Expected Increase in Recurrent Costs</b>
Large Governorate Hosps	17	1	125,000,000	4.8	0.5	9%
Small Governate Hosps	12	0	47,000,000	0.6	0	
Rural (District) Hosps	123	43	30,000,000	3.7	1.3	35%
Health Centers	614	133	10,000,000	6.1	1.3	22%
Health Units	2,028	259	3,000,000	5.1	0.6	13%
<b>TOTALS</b>				<b>20.3</b>	<b>3.7</b>	<b>18%</b>

\* In YR billions.

\*\* Estimated recurrent costs when fully staffed and delivering standard services as planned; actual recurrent costs differ by facility, and in total, because some are not fully staffed, nor operating at capacity (Note: Current number of facilities is based on 2002 data from the MoPHP Annual Statistical Report). [Detail is shown in Table 18]

**Table 17: Projected New Staff Needed for New Facilities to Scheduled to Open 2005-2009  
Republic of Yemen**

Type of Staff	# Needed per Facility						Additional Staff Needed To Staff New Facilities					TOTAL STAFF NEEDED FOR NEW FACILITIES	Total as % of Existing Cadre	Total Staff Needed To Fully Staff Existing Facilities						TOTAL STAFF NEEDED FOR ALL EXISTING FACILITIES	Total as % of Existing Cadre
	Current Number	Large Hospital	Small Hospital	District Hospital	Health Center	Health Unit	Large Hospital	Small Hospital	District Hospital	Health Center	Health Unit			Large Hospital	Mareb Hospital	Small Hospital	District Hospital	Health Center	Health Unit		
	Year																				
Number of such facilities, now	2002	17	12	123	614	2,028															
Average bed size of each type	2002	337	88	25	*	na															
Number of such facilities, planned	2003	1		43	133	259	1	0	43	133	259			17	1	12	123	614	2,028		
Average bed size of planned facilities		140	na	60	10	na															
TOTAL																					
Specialist Physicians	990	25	3	3			21		129	0	0	150	15%	425	10	36	369	0	0	840	85%
Generalist Physicians	3,394	54	9	1	1		73		43	133	0	249	7%	917	22	108	123	614	0	1,783	53%
Expatriate Physicians	635	35	3				5					5	1%	595	14	36	0	0	0	645	102%
Dentists	274	10	2	1			4		43	0	0	47	17%	172	4	24	123	0	0	323	118%
Medical Assistants	1,050	15	5	2	1	1	6		86	133	259	484	46%	255	6	60	246	614	2,028	3,209	306%
Nurses	8,043	101	3	5	2	1	41		215	266	259	781	10%	1,717	49	36	615	1,228	2,028	5,673	71%
Pharmacists	948	3	2	1			1		43	0	0	44	5%	51	1	24	123	0	0	199	21%
Pharmacist Technician	725	10	3	2	1		4		86	133	0	223	na	172	4	36	246	614	0	1,072	148%
Anesthetists	341	7	2	1			3		43	0	0	46	13%	115	3	24	123	0	0	264	78%
Laboratory Specialists	329	8	1				3					3	1%	136	3	12	0	0	0	151	46%
Lab Technicians	1,336	8	4	3	1		4		129	133	0	266	na	136	3	48	369	614	0	1,170	88%
Mental Health Personnel	652						0		0	0	0	0	0%	0	0	0	0	0	0	0	0%
Public Health Personnel	896	5	2				2		0	0	0	2	0%	85	2	24	0	0	0	111	12%
X-ray Technicians	695	10	4	2	1		4		86	133	0	223	32%	172	4	48	246	614	0	1,084	156%
Dental Assistants	220	7	3	1	1		4		43	133	0	180	82%	119	3	36	123	614	0	895	407%
Nurses (training)	1,167						0		0	0	0	0	0%	0	0	0	0	0	0	0	0%
Midwives	1,919	24	15	5	2	1	9		215	266	259	749	39%	401	9	180	615	1,228	2,028	4,461	232%
Health Guides (PHC worker)	2,048	6	3	2	2	1	2		86	266	259	613	30%	102	2	36	246	1,228	2,028	3,642	178%
Administrators	6,164	55	15	8	2		22		344	266	0	632	10%	935	22	180	984	1,228	0	3,349	54%

Type of Staff	# Needed per Facility						Additional Staff Needed To Staff New Facilities					TOTAL STAFF NEEDED FOR NEW FACILITIES	Total as % of Existing Cadre	Total Staff Needed To Fully Staff Existing Facilities						TOTAL STAFF NEEDED FOR ALL EXISTING FACILITIES	Total as % of Existing Cadre
	Current Number	Large Hospital	Small Hospital	District Hospital	Health Center	Health Unit	Large Hospital	Small Hospital	District Hospital	Health Center	Health Unit			Large Hospital	Mareb Hospital	Small Hospital	District Hospital	Health Center	Health Unit		
	Year																				
Operating Technicians	223	15	4	2			6	86	0	0	92	41%	255	6	48	246	0	0	555	249%	
Support Staff	3,343	50	12	7	2		20	301	266	0	587	na	850	20	144	861	1,228	0	3,103	93%	
Maintenance	737	15	5	2	1		6	86	133		225	31%	255	6	60	246	614	0	1,181	160%	
Technical Assistants	203	6	2				2				2	1%	102	2	24	0	0	0	128	63%	
Midwifery (training)	138	15					6				6	4%	255	6	0	0	0	0	261	189%	
Statistics Personnel	24	1	1				0				0	2%	17	0	12			0	29	123%	
Others	646																				
GRAND TOTAL	37,140	485	103	48	17	4	250	2,064	2,261	1,036	5,611	15%	8,238	202	1,236	5,904	10,438	8,112	34,130	92%	

**Note:**

\*Number of beds in health centers does not appreciably alter the optimal staffing size or mix.

Above estimates include staffing needs of Health Centers and Health Units currently under construction by Local Councils, Social Fund for Development and Public Works Department of the President's Hospital in Mareb Governorate, scheduled to be opened soon. Number of beds to be initially operated is not decided; it could be 120 (minimum) to 240 (maximum).

Estimate here assumes 140 beds and cuts the number of staff by 60%.

**Sources:**

Current staff counts from "Annual Statistical Report", MoPHP, 2002.

Estimated new facilities from Table 9.

Estimated needed staff from:

Grant Rhodes, "Costing and Finance Issues with Respect to the Essential Service Package," Consultancy to the European Commission,

(Support to Health Sector Reform in the Republic of Yemen), April 4 - 21, 2004

Estimates of large hospital staffing requirements derived from averaging the number actually on staff at a sample of large hospitals (by NHA Team).

**Table 18: Calculating the Future Operating Cost Implications of Current Investments in Facilities  
Republic of Yemen, 2005-2009, as Compared to Situation in 2002**

Type of Facility	No. of Facilities Operating 2002	2002 Current Number of Beds (average)	Current Facilities and Estimated Costs			Facilities Expected to Become Operational with Five Years							Yrly Increase Needed In MoPHP Operating Budget, 2005-2009 (beyond price inflation)	
			Estimated Operating Costs 2003	Total Operating Costs 2003	Est. New Construction Costs 2003	Number To Open During 2005	Total Capital Costs During 2001-2004	Yearly Operating Costs During 2005	Number to Open During 2006-2009	Total Capital Costs During 2002-2009	Additional Operating Costs During 2006-2009	Total	% Yrly Incr	
			YR millions	YR millions	YR millions		YR millions	YR millions		YR millions	YR millions	YR millions	YR millions	(over 2003)
Large hospitals (governorate & other)	17	337	125	4,776	400	1	Donated	200	2	800	250	450	9%	
Small governorate hospitals	12	88	47	563	150									
Rural (district) hospitals	123	25	30	3,702	83	9	749	271	34	2,831	1,023	1,294	35%	
Health Centers	614	na	10	6,140	15	35	518	350	98	1,450	980	1,330	22%	
Health Units	2028	na	3	5,070	5	2	9	5	257	1,189	643	648	13%	
<b>TOTALS</b>	<b>2794</b>			<b>20,251</b>		<b>47</b>	<b>1,277</b>	<b>826</b>	<b>391</b>	<b>6,270</b>	<b>2,896</b>	<b>3,722</b>	<b>18%</b>	

Notes:

- Capital costs include construction and equipment needed.
- Operating costs of 233 MCH units are included in host institution costs.
- Operating costs are author's estimates based on #7 below and on 2003 budget apportioned to facilities by type.
- It is assumed that there are roughly 6 million outpatient visits per year and that outpatient depts account for 25% of total hospital budgets.
- Cost-sharing revenues devoted to operating expenditures are not included in the totals.
- Operating cost increases presume both availability of budgeted funds and availability of trained staff willing to serve.
- Estimated capital and operating costs of district hospitals, health centers, and health units based on data in:  
Grant Rhodes, "Costing and Finance Issues with Respect to the Essential Service Package," Consultancy to the European Commission, (Support to Health Sector Reform in the Republic of Yemen), April 4 - 21, 2004
- Estimate of YR 200 million annual operating cost of President's Hospital in Mareb (soon to open) is a rough guess by the author.
- "Current Number (of Facilities) Operating" from Table on page 27 of MoPHP, "Annual Health Statistical Report for 2002".
- Estimated operating costs of "large hospitals" include large operating costs (YR 2.9 million for 2003) of Al-Thawra and Al-Kuwait (tertiary) hospitals in Sana's

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