

# Republic of Yemen

## Health Sector Strategy Note

February 2001

---



---

This report was prepared by Sameh El-Saharty (Senior Health Specialist), Gail Richardson (Health Specialist), and Karima Saleh (Health Economist). Oversight was provided by George Schieber (Health Sector Manager) and Jacques Baudouy (MNSHD Director).

## Table of Contents

A.	OVERVIEW .....	1
	1. Introduction.....	1
	2. Country Context.....	1
B.	KEY HEALTH INDICATORS AND TRENDS.....	2
C.	INTERNATIONAL COMPARISONS.....	4
	1. Demographic and Health Indicators .....	4
	2. Delivery System Capacity.....	7
	3. Health Expenditures.....	9
D.	KEY ASPECTS OF THE HEALTH SECTOR.....	11
	1. Health Sector Financing.....	11
	2. Health Delivery System .....	13
	3. Human Resources .....	14
	4. Health Services and Public Health Programs .....	15
	5. The Organizational and Institutional Framework.....	15
	6. The Policy Environment .....	16
E.	HEALTH SECTOR PERFORMANCE.....	16
	1. Health Outcomes.....	16
	2. Equity.....	17
	2. Access .....	17
	3. Efficiency .....	17
	4. Quality.....	18
	5. Sustainability.....	18
F.	MOPH HEALTH SECTOR REFORM PROGRAM .....	18
	1. Long Term Objectives .....	18
	2. Elements.....	19
	3. Phases.....	19
G.	HEALTH SECTOR POLICY DIALOG AND CURRENT ASSISTANCE.....	19
	1. Family Health Project .....	20
	2. Child Development Project.....	20
	3. Public Expenditures Review .....	20
	4. Civil Service Reform Program.....	21
	5. Social Fund for Development .....	21
	6. Other Programs .....	21
H.	DONORS SUPPORT TO THE HEALTH SECTOR.....	22
I.	FUTURE AREAS OF WORLD BANK SUPPORT .....	23
	1. Design Principles .....	23

2. Program Goal and Strategic Objectives .....	23
3. Program Components and Phases .....	24
3.1 Improving Sector Management.....	25
3.1.1 Reforming the role of MOPH and developing its systems .....	25
3.1.2 Decentralizing operational management.....	28
3.2 Strengthening Service Delivery .....	29
3.2.1 Specialized and General Hospitals.....	29
3.2.2 District Hospitals .....	30
3.2.3 Rural Hospitals and Health Centers.....	30
3.2.4 Health Units .....	31
4. Priorities and Rationale for Phase I .....	31

**Annex 1: Estimated Costs of Health Sector Reform**

## **List of Acronyms**

ARI	Acute Respiratory Infection
CAS	Country Assistance Strategy
CDD	Control of Diarrheal Diseases
CME	Continuous Medical Education
CSMP	Civil Service Modernization Program
DHS	District Health System
EC	European Commission
EPI	Expanded Program on Immunization
GDP	Gross Domestic Product
GOY	Government of Yemen
GTZ	Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
HMIS	Health Management Information System
HSR	Health Sector Reform
IMCI	Integrated Management of Childhood Illness
IMR	Infant Mortality Rate
JICA	Japanese International Cooperation Agency
JPY	Japanese Yen
MENA	Middle East and North Africa
MIS	Management Information System
MOCS	Ministry of Civil Service
MOF	Ministry of Finance
MOPD	Ministry of Planning and Development
NGO	Non-Governmental Organization
NHA	National Health Accounts
O&M	Operations and Maintenance
STD	Sexually Transmitted Diseases
TFR	Total Fertility Rate
UNDP	United Nations Development Program
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization

# **REPUBLIC OF YEMEN**

## **HEALTH SECTOR STRATEGY NOTE**

---

### **A. OVERVIEW**

This report is intended to provide a base for discussions of Yemen's health sector strategy with the Government of Yemen (GOY) and other donors in light of the Ministry of Public Health (MOPH) initiative of Health Sector Reform (HSR) as well as the potential areas of World Bank support.

#### **1. INTRODUCTION**

This report is based on a review of a number of documents including an earlier draft of this note, the MOPH/Health Sector Reform program (1998), the Public Expenditures Reviews (1998 and 2000), the Comprehensive Development Review report, Phase I (2000), the National Health Accounts report (2000), and the GTZ technical assistance reports (2000).

The report is divided in nine sections. Section A provides the introduction to the report and the country context. Sections B and C review the key health indicators and trends and the key aspects of the sector in terms of financing, service delivery, human resources, health services, organizational framework, and policy environment. Sections D and E provide international comparisons and an assessment of the sector performance with regard to health outcomes, equity, access, efficiency, quality, and sustainability. Section F is an outline of the MOPH/HSR program. Sections G and H provide an overview of the Bank's current assistance and its response to HSR as well as the different donors' support. Finally, Section I outlines the future areas where the Bank can support the government in its health reform efforts.

#### **2. COUNTRY CONTEXT**

Yemen is a country challenged with limited economic and social development. In particular, health indicators are some of the poorest in the world, and the task of improving them is daunting, particularly in light of the difficult economic situation.

The early 1990's were marked by spiraling inflation, real devaluation, pervasive inefficiency in the public sector, increasing poverty, growing unemployment, and mounting public debt. At the end of the civil war of 1994, Yemen was faced with macro-economic instability, which was threatened by large fiscal imbalances, and price distortions including exchange and interest rate controls. With the arrival of a multi-party democracy, the political consensus could be forged for the urgent economic reforms that had been delayed since unification.

In 1995, GOY launched an economic reform program, supported by the International Monetary Fund as well as the World Bank and other institutions and countries, aiming in its core at enhancing the foundations of a market-based and private sector driven economy, integrated into world markets, and in the context of broad financial stability. During the second half of the 1990's, macro-stability improved in terms of growth and inflation, but considerably less for

social indicators. Total government revenue increased from 19.5 percent of GDP in 1995 to over 30 percent in 1999, mainly as a result of increasing oil revenue which constituted over 68 percent of total revenues whereas 24 percent was from taxes and the remainder from other sources.<sup>1</sup>

However, world oil prices dictate the oil revenue base, and Yemen had faced a sudden decline in their oil revenue from 22.1 percent of GDP in 1997 to 13.8 percent of GDP in 1998 following a dramatic drop in oil prices. As a result, the government budget was cut by 15 percent across-the-board, which further tightened scarce resources for the health sector. Specifically, the low budgetary allocation to the health sector was further reduced resulting in the lowest per capita health spending in the region of US\$20. Limited public resources and poor health indicators are the catalysts from which the MOPH is rethinking its strategy in partnership with the World Bank and other key donors.

In 1998, the MOPH launched a comprehensive sector reform initiative. The objectives of this reform program are to improve equity, quality, efficiency, effectiveness, accessibility, and the long-term sustainability of health services. Its “Health Sector Reform in the Republic of Yemen: Strategies for Reform” (December 1998) provides a framework for this reform. The MOPH acknowledges the constraints people face in affording and accessing care as well as its own budgetary limitations. The reform is to be done in the context of the Government’s broader reform strategy, which supports financial rationalization and restructuring, decentralization, and reform of the civil service.

## **B. KEY HEALTH INDICATORS AND TRENDS**

Yemen faces major challenges to improving the health status of its population, which go beyond the health delivery network. Poverty, low participation in education especially among girls, and high illiteracy<sup>2</sup> are major contributing factors to poor health as are limited access to potable water and proper sanitation.<sup>3</sup>

The results are alarming. Adult mortality and total fertility rates are the highest while maternal and infant mortality rates are the second and third highest in the MENA region, respectively. Yemen is also one of the few countries in the region where under-nutrition is a major problem, particularly among children where about 50 percent are malnourished and stunted.<sup>4</sup> Population growth, at 3.6 percent per year (1998), is among the highest in the world, family planning activities are minimal, and the use of modern contraceptives is particularly low at 13 percent. The situation is compounded by the wide regional disparities and the significant differences between urban and rural conditions. For example, the Total Fertility Rate (TFR) in rural areas is

---

<sup>1</sup> Nominal GDP at market prices. Source: IMF: Republic of Yemen. From Unification to Economic Reform: Yemen in the 1990s. July 2000.

<sup>2</sup> Almost 80% of boys but only 40% of girls between the ages of 6 and 15 are in school while 31% of men and 67% of women are illiterate.

<sup>3</sup> Only 55% of the rural population has access to safe drinking water and only 14% of the rural population has access to adequate sanitation.

<sup>4</sup> Source: UNICEF State of the World’s Children 1998.

23 percent higher than the overall total for the country and rural children have a 22 percent greater chance of dying in their first five years than urban children.<sup>5</sup> Yemen's key human development, health, and reproductive health indicators are provided in Box (1).

### **Box 1: Key Human Development, Health, and Reproductive Health Indicators**

#### **Human Development Indicators**

- The population is 17 million, 74 percent of which is rural.
- The population growth rate is 3.6 percent (which is projected to decline to an average of 2.8 percent for the period 1998-2015).
- 48 percent of the population is below age 15, and more than 3 percent is age 65 and above.
- 58 percent of the population is illiterate.
- 23 percent of the population is poor.
- 19 percent of the population has access to sanitation (14 percent in rural areas, and 40 percent in urban areas).
- 28 percent of children reaching their first birthday are fully immunized.
- The percent of low weight births (less than 2500 grams) is 19 percent.
- About half of children under five suffer from malnutrition, 50 percent are stunted (56 percent in rural areas, and 40 percent in urban areas) and 13 percent show signs of wasting.

#### **Health Indicators**

- Life expectancy at birth is 56 years.
- The crude birth rate is 40 per 1,000 population.
- The crude death rate is 12.6 per 1,000 population.
- The under five mortality rate is 105 per 1,000.
- The infant mortality rate is 82 deaths per 1,000 live births.

#### **Reproductive Health Indicators**

- The total fertility rate is 6.3 children (7.0 for rural areas, and 5.0 for urban areas).
- The maternal mortality ratio is estimated to be 350 per 100,000 births.
- 13 percent of women use family planning (7 percent in rural areas, and 28 percent in urban areas).
- 22 percent women receive assistance from a trained medical practitioner during delivery.

<sup>5</sup> Yemen Demographic and Maternal and Child Health Survey 1997 (YDMCHS); (Central Statistical Office, Sana'a, Yemen; November 1998).

Yemen is at an early stage of the epidemiological transition, with morbidity and mortality from communicable diseases dominating that from non-communicable diseases.<sup>6</sup> These indicators point to difficulty in balancing the urgent need for improved access to basic health services with the rising demand for costly specialized services for non-communicable diseases and injuries.

## C. INTERNATIONAL COMPARISONS

From an international comparative perspective, a more serious picture of Yemen's health care system emerges. Tables 1-3 provide a comparison of Yemen's health care system in terms of demography, health status, delivery system, and health expenditure to other countries in the MENA Region. Figures 1-7 depict the comparison of Yemen's infant mortality, bed to population ratio, physician to population ratio, the public share of total health expenditures, per capita health expenditures, and health to GDP ratio to those of other countries worldwide, as well as those countries with similar income levels.<sup>7</sup>

### 1. DEMOGRAPHIC AND HEALTH INDICATORS

- Yemen's population growth rate of 2.8 and TFR of 6.3, are both above the MENA average of 2.1 and 3.9 respectively. Yemen's TFR is among the highest in the world.
- Yemen's share of population over age 65 of 3 percent is below the regional average of 3.4 percent.
- Yemen's IMR of 82 is the third highest in the region (after Djibouti and Iraq).
- Relative to other comparable income countries of the world, Yemen's IMR is slightly above (Figure 1).
- Yemen's maternal mortality rate of 350 is the second highest in the MENA region (after Djibouti).
- In terms of adult mortality, Yemen's probability of death for males and females in the 15-60 age range is well above the regional average.
- Yemen's life expectancy at birth of 56 years, is well below the regional average of 69 years.
- In terms of malnutrition, 50 percent of children under 5-years of age are malnourished and stunted, which is the highest level in the region.

---

<sup>6</sup> The most prevalent conditions are diarrheal diseases, malnutrition, acute respiratory infections, complications of pregnancy, and malaria. Chronic diseases, such as cancer and heart disease and injuries are also on the rise.

<sup>7</sup> Data are based on 2000 World Bank estimates.



**Table 1: Middle East and North Africa Demographic and Health Indicators, 1998-2015.**

Country/Region	Population Growth Rate	Percent of Population Over Age 65		Total Fertility Rate	Infant Mortality Rate / <sup>a</sup>	Maternal Mortality Rate / <sup>b</sup>	Adult Mortality Rate/ <sup>c</sup>		Life Expectancy at Birth
		1998	2015				Males	Females	
	1998-2015	1998	2015	1998	1998	1990-98	1998	1998	1998
Yemen	2.8	3.0	2.4	6.3	82	350	335	333	56
Egypt	1.5	4.4	5.5	3.2	49	170	195	171	67
Morocco	1.4	4.3	5.2	3.0	49	230	203	147	67
Syria	2.1	---	---	---	28	179	203	138	69
Iran	1.7	4.6	5.0	2.7	26	37	161	150	71
Jordan	2.3	2.9	4.1	4.1	27	41	158	119	71
Algeria	1.7	3.8	4.7	3.5	35	140	158	123	71
Tunisia	1.2	5.6	6.5	2.2	28	70	166	142	72
Palestinian Admin.	3.5	3.5	2.8	5.9	24	70	167	109	71
Lebanon	1.2	5.7	5.9	2.4	27	100	176	132	70
Oman	2.2	2.6	4.6	4.6	18	19	141	106	73
Saudi Arabia	2.9	2.8	4.4	5.7	20	18	165	138	72
Bahrain	1.6	2.2	---	2.6	9	23	175	104	73
Qatar	2.4	---	---	---	18	---	117	111	74
Kuwait	2.5	1.9	4.8	2.8	12	5	125	65	77
UAE	1.9	2.1	8.3	3.4	8	3	127	92	75
Iraq	2.0	3.1	4.2	4.6	103	310	197	171	59
Libya	2.0	3.0	5.0	3.7	23	75	185	129	70
Djibouti	---	3.0	---	5.3	111	570	---	---	50
<b>MENA Average</b>	<b>2.1</b>	<b>3.4</b>	<b>4.9</b>	<b>3.9</b>	<b>37</b>	<b>134</b>	<b>175</b>	<b>138</b>	<b>69</b>

Source: World Bank Estimates, 2000

Notes: a. Rate per 1,000 live births.  
b. Rate per 100,000 live births.  
c. Rate per 1,000 adults, age 15-60.

Figure 1:

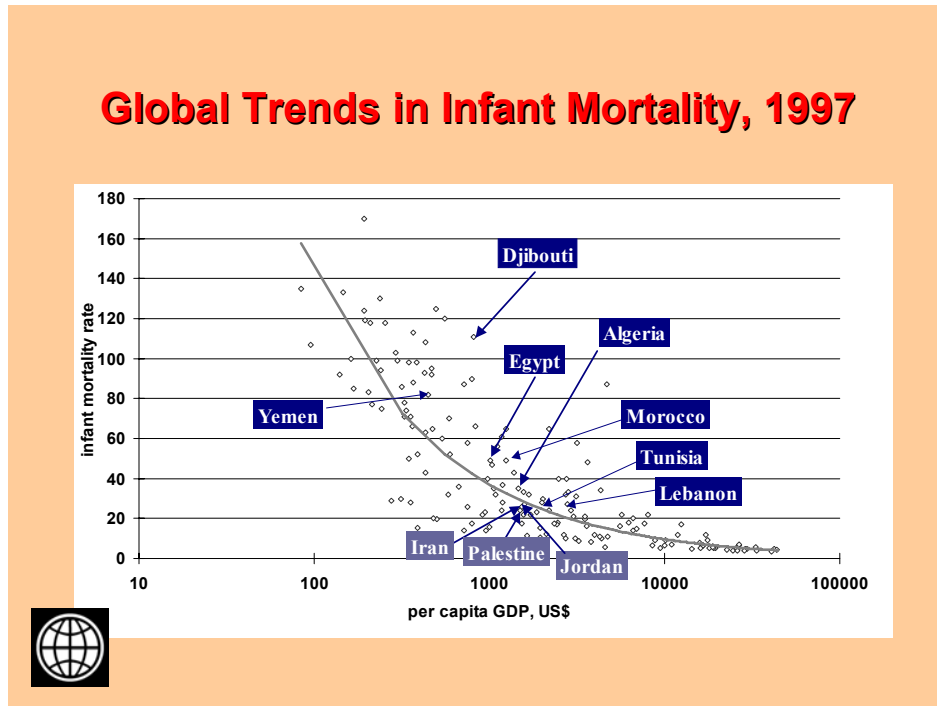
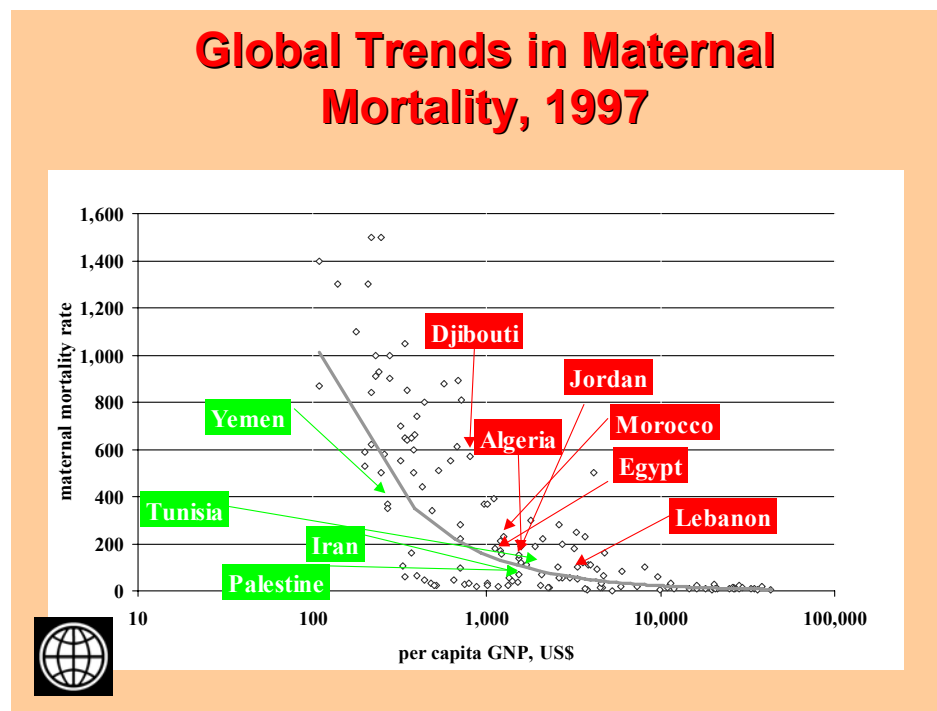


Figure 2:



## 2. DELIVERY SYSTEM CAPACITY

- In terms of physicians, Yemen's physician to population ratio of 0.2 physicians per 1,000 population is well below the regional average of 1.2 (Table 2).
- Compared to all countries in the world, Yemen has less physicians than other countries of comparable income (Figure 3).
- In terms of hospital beds, Yemen's hospital bed to population ratio of 0.6 beds per 1,000 population is well below the regional average of 2.0 (Table 2).
- Compared to all other countries in the world, Yemen has less beds than other countries of comparable income (Figure 4).

**Table 2: Middle East and North Africa Physicians and Beds per 1,000 Population, 1994-1998.**

Country/Region	Per 1,000 Population	
	Physicians	Beds
Yemen, Republic	0.2	0.6
Egypt, Arab Republic	1.6	2.1
Morocco	0.4	1.1
Syrian Arab Republic	1.4	1.5
Iran, Islamic Republic	0.8	1.6
Jordan	1.7	1.8
Algeria	1.0	2.1
Palestinian Administration	0.6	1.2
Tunisia	0.7	1.7
Lebanon	2.3	2.7
Oman	1.3	2.2
Saudi Arabia	1.7	2.3
Bahrain	1.4	2.9
Qatar	1.3	1.7
Kuwait	1.8	2.8
United Arab Emirates	1.9	2.6
Iraq	0.6	1.5
Libya	1.3	4.3
Djibouti	0.1	1.6
<b>MENA regional Average</b>	<b>1.2</b>	<b>2.0</b>

Source: World Bank estimates, 2000 and "Demographic and Health Indicators for Countries of the Eastern Mediterranean" by World Health Organization Eastern Mediterranean Regional Office, 1999.

Figure 3:

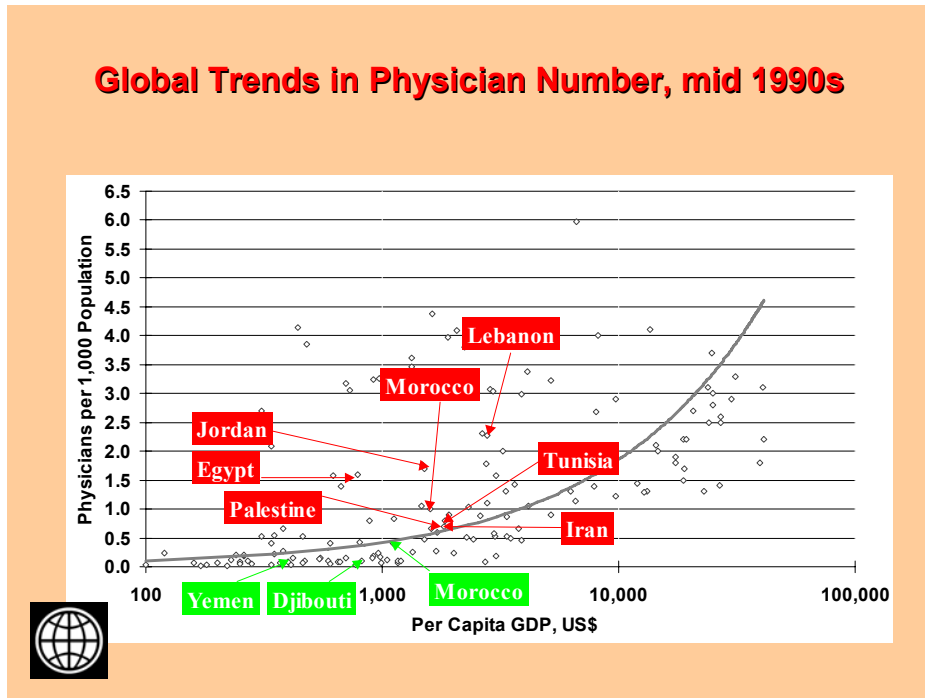
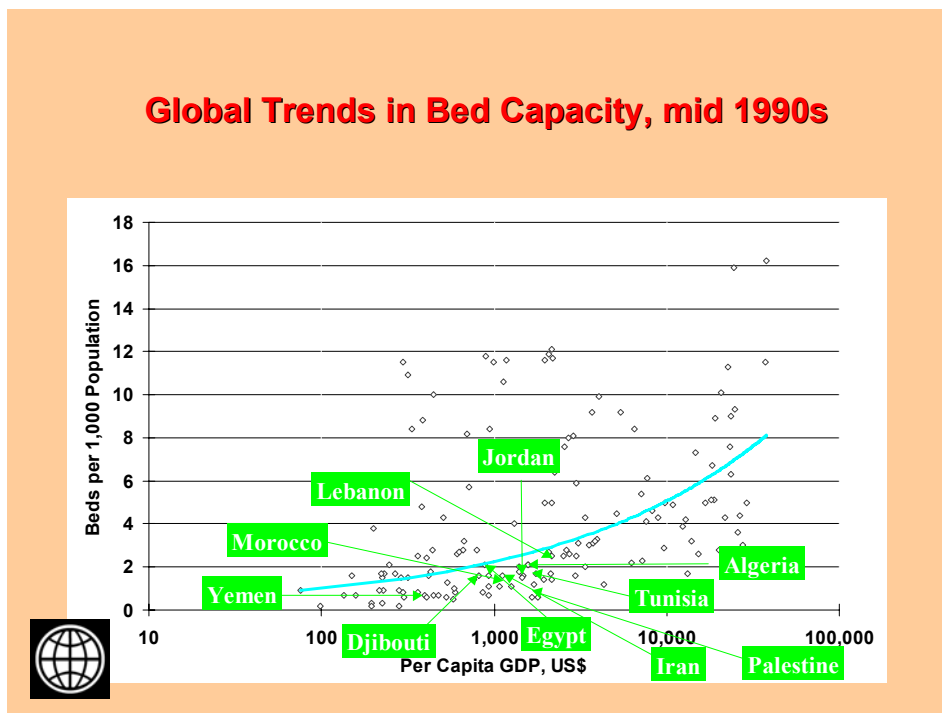


Figure 4:



### 3. HEALTH EXPENDITURES

- Yemen's per capita GDP of US\$361 is well below the regional average of US\$5,818 (Yemen is the only low income country in the MENA Region).
- Yemen's public share of total health spending of 41 percent is well below the regional average (Table 3).
- Yemen's public health expenditure share (2.3 percent of GDP) is below that found in comparable income countries (Figure 5).
- Yemen's per capita health spending of US\$20 is well below the regional average of US\$262.
- Compared to other countries in the world with comparable income, Yemen's per capita health spending is slightly above (Figure 6).
- As a share of GDP Yemen's health spending is below the regional average.
- Compared to other countries in the world, Yemen's health to GDP ratio is above that of other comparable income countries (Figure 7).

**Table 3: Middle East and North Africa: Health Expenditure Patterns, 1995-98/a**

Country	Per Capita GDP (US\$) 1990-1998	Per capita health expenditure (in exchange rate dollars) 1990-1998	Health expenditure as % of GDP			Public share of health expenditure (% total)
			Total	Public	Private	
Yemen, Republic	361	20	5.6	2.3	3.3	41
Egypt, Arab Republic	1,031	38	3.8	1.8	2.0	47
Morocco	1,299	58	4.4	1.2	3.2	28
Iran, Islamic Republic	1,846	107	5.8	2.4	3.4	41
Jordan	1,620	136	9.1	5.3	3.8	58
Algeria	1,625	58	3.6	2.6	1.0	72
Tunisia	2,522	105	5.9	3.0	2.9	51
Palestinian Administration	1,710	122	8.6	4.9	3.7	57
Lebanon	3,608	389	9.8	2.2	7.6	21
Oman	6,266	222	3.5	2.9	0.6	83
Saudi Arabia	6,995	536	8.0	6.4	1.6	80
Bahrain	9,696	513	5.3	---	---	---
Qatar	12,825	835	6.5	3.7	2.8	57
Kuwait	20,167	666	3.3	2.9	0.4	88
United Arab Emirates	20,354	855	4.2	1.5	2.7	36
Djibouti	802	56	7.0	5.4	1.6	77
<b>MENA Regional Average</b>	<b>5,818<sup>b</sup></b>	<b>262</b>	<b>5.9</b>	<b>3.2</b>	<b>2.7</b>	<b>56</b>

Source: World Bank estimates, 2000 and The World Health Organization, World Health Report 2000

Notes: a. Figures in this table are taken from the latest available data between 1990-98. b. Including the Gulf states.

Figure 5:

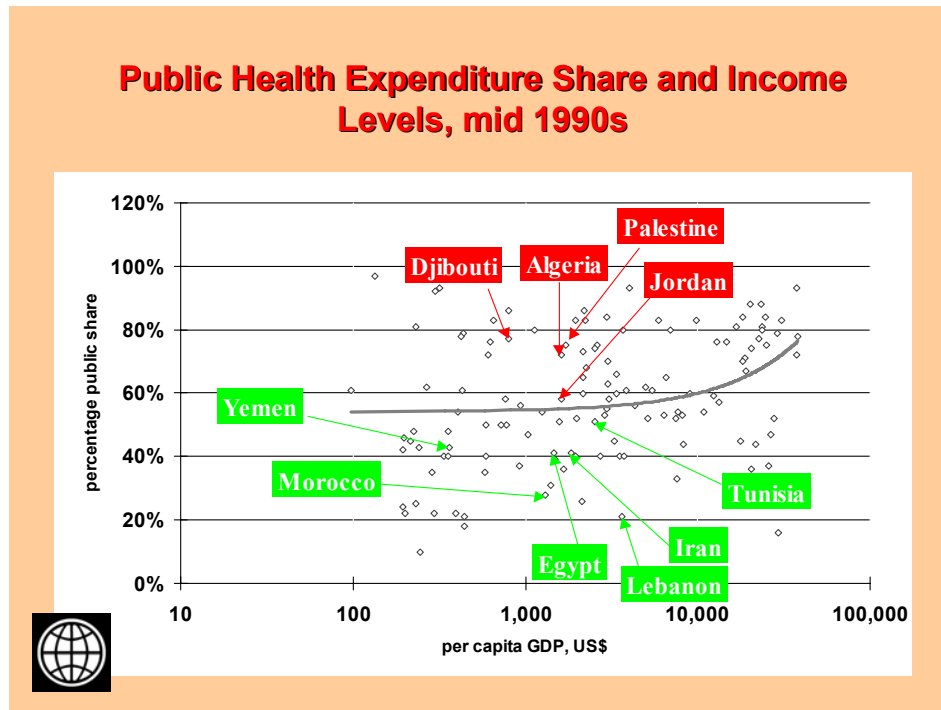


Figure 6:

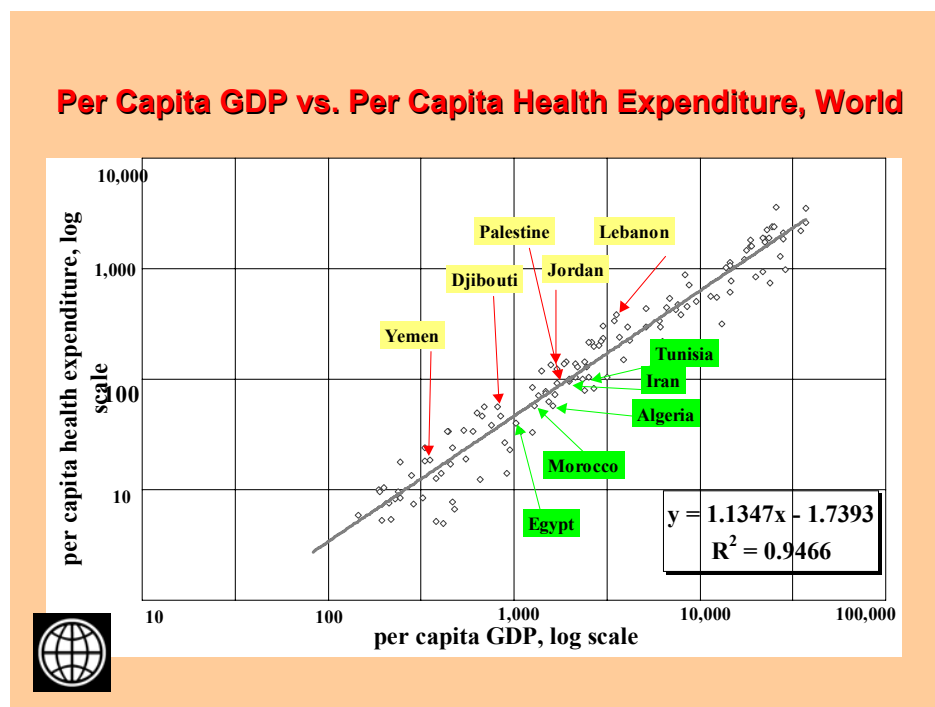
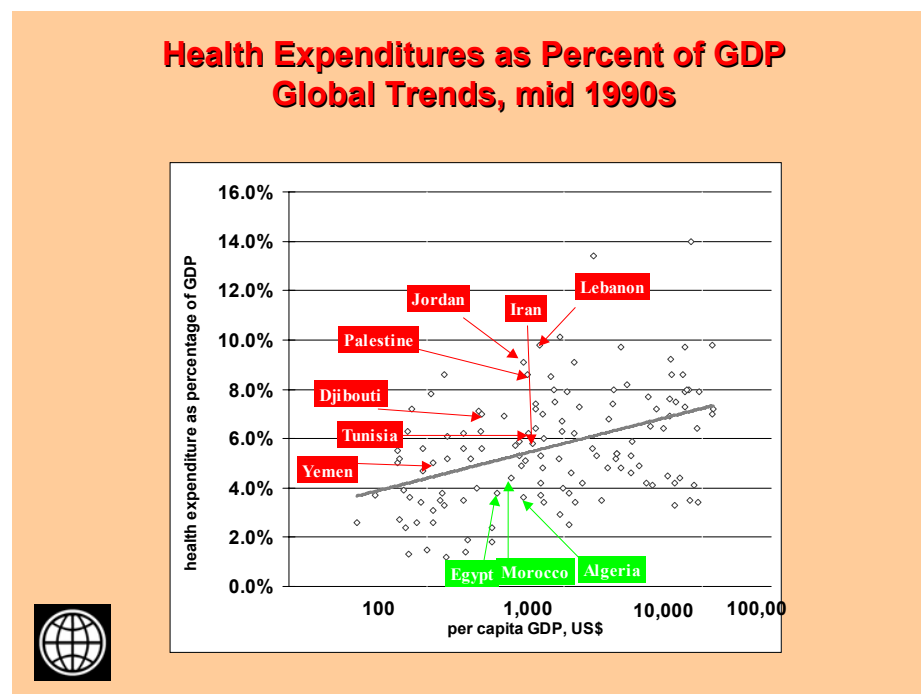


Figure 7:



In summary, in a comparative international context, Yemen's health outcomes are lower than most countries; population growth and fertility is well above many countries in the region; bed and physician to population ratios are below regional averages and below those found in other comparable income countries in the world; and health expenditures are below the regional average, but slightly above the level found in other comparable income countries.

## D. KEY ASPECTS OF THE HEALTH SECTOR

The following section provides an overview of the key aspects of the health sector and the challenges that need to be addressed under the HSR program.

### 1. HEALTH SECTOR FINANCING

As noted above, resources for health are limited. Total health spending is estimated at 5.6 percent of GDP in FY 1997. Total public spending is estimated at 1.9 percent (excluding all foreign assistance)<sup>8</sup> and private spending at 3.3 percent of GDP, making Yemen among the countries with the highest share of private (out of pocket) expenditures on health in the region. Total per capita health spending amounts to about US\$20.<sup>9</sup>

<sup>8</sup> When foreign technical assistance to public sector is included, total public health expenditure rises to around 2.3 percent of GDP. Foreign assistance accounts for about one-quarter of public health spending. Sources: National Health Accounts Report (2000) and Public Expenditure Review for the Health Sector (2000).

<sup>9</sup> National Health Accounts report (2000).

Government health sector employees are salaried and Government facilities are financed based on budgets and nominal user charges collected at the facility level. The MOPH has passed legislation to formalize cost sharing in public facilities, the implementation of which is currently underway. There are provisions for exempting the poor from paying such fees. It is common practice, and permissible by law, for public health care providers to also have a private practice. Private providers are paid on a fee-for-service basis.

**Public Expenditures on Health.**<sup>10</sup> Total public spending on health remains among the lowest in the MENA region, at 1.9 percent of GDP and accounting for about 4.3 percent of total government expenditure, which is also low in comparison to other developing countries that typically allocate for health between 5 and 10 percent of government expenditure. MOPH accounts for almost 86 percent of total public spending on health.

Recurrent expenditure is mostly consumed by salaries, which constitute more than 45 percent of total public spending on health. However, the share allocated to salaries and wages, in real terms, has declined steadily over the past few years, resulting in deteriorating staff morale and forcing providers to augment income by engaging in private practice. In 1996, for example, an analysis of wages and salaries of public health sector employees in four governorates showed that between 50 and 80 percent of these employees received salaries that placed them below the poverty line.<sup>11</sup>

Operations and maintenance budgets are extremely low and estimated in 1998 to fall short by as much as 56 percent of the budget required to adequately finance the operation of the existing facilities. Drugs and medical supplies represent less than 10 percent of the current budget.<sup>12</sup> For example, health centers have revenues equal to 45 percent of their required recurrent costs to operate optimally where only 20 percent come from the government and 25 percent from other sources, including cost-sharing contributions; similarly, health units receive only 9 percent of their required operational costs from the MOPH and 28 percent from cost sharing.<sup>13</sup> Obviously, the recurrent budget allocation has not kept pace with the expansion of physical facilities and staffing. For example, after adjusting for inflation, 1998 current expenditures were at the same expenditure level as in 1993.<sup>14</sup> Moreover, control of the recurrent budget remains highly centralized, as the central MOPH retains direct control over 46 percent.<sup>15</sup>

---

<sup>10</sup> “Public expenditures” in this section refers to the expenditures which are channeled through MOPH, autonomous hospitals that fall outside of the MOPH budget, and overseas treatments financed by all ministries. Not included are health expenditures incurred by other public entities (e.g., the military and police), which are expected to be relatively small compared to the MOPH budget.

<sup>11</sup> Health Sector Reform: Strategy for Reform, Ministry of Public Health, Republic of Yemen, 1998.

<sup>12</sup> The Dutch Government provides budget support of approximately YR286 million per year for essential drugs, which represents about 45 percent of the government budget allocation for drugs.

<sup>13</sup> Health Facilities Operations and Maintenance Study, Republic of Yemen, Waters and Eskesen, April 2000.

<sup>14</sup> Over the same period (1993 – 1998), population increased by about 20%, the number of government health staff by about 50%, and the number of facilities by around 20%. Source: Public Expenditures Review: Health Sector, Maeda (1988).

<sup>15</sup> Public Expenditures Review and Financial Institutional Reform of the Health Sector, El-Saharty and Saleh, Draft Report, 2000.



Investment (capital) expenditure accounted for 8 percent of the total MOPH budget between 1992 and 1995, and then it rose to 30 percent between 1996 and 1998. As a result of the sector dialog with GOY as part of the Public Expenditures Review in the last two years, the MOPH investment budget declined to less than 23 percent in 1999-2000.

***Private Expenditures on Health.*** Private spending on health is estimated at 3.3 percent of GDP in FY 1997, almost 1.4 times the public expenditures on health, making Yemen the country with the fourth highest share (59 percent) of private expenditures on health in the region. It is important to note that this share is financed directly by households (out-of-pocket) and not private firms, as no information is available on private sector financing. On average about 3 percent of household expenditure is spent on health.<sup>16</sup> Spending on pharmaceuticals constitute 68 percent of total household health spending, followed by almost 20 percent on private providers.<sup>17</sup>

*There are major issues facing public financing of the health sector. The most important is the low budget allocation as percent of total government budget. In addition, the investment program does not reflect actual need where decisions on investment priorities are mostly ad-hoc and often in response to political pressure, with the result being an uneven distribution of facilities and types of services offered. Moreover, there is a disconnect between investment and recurrent expenditures where the current budget allocation has not kept pace with the expansion of physical facilities and staffing. The new and existing facilities do not have the operations and maintenance budgets to operate effectively. Furthermore, too few recurrent resources are allocated for public health activities, and drugs are in short supply in most health facilities. Finally, control of the recurrent budget remains highly centralized.*

*With respect to private spending on health, there exists inequity in financial access arising from the cash payments system, both direct and indirect as will be discussed below. Private payments are being made to the unregulated and rapidly expanding private sector as well as to public sector providers through an informal and ad-hoc cost-sharing arrangement. Finally, the lack of an insurance market results in missed opportunities to attract and utilize private expenditures.<sup>18</sup>*

## **2. HEALTH DELIVERY SYSTEM**

The public sector remains the major provider of health care at all levels of services. At present, there are 2,177 public health facilities directly under the MOPH including 101 public hospitals which comprise 12 specialized, 18 general, 41 district, and 30 rural hospitals in addition to 517 Health Centers and 1,559 Health Units. Moreover, there are two autonomous tertiary care hospitals (Al-Thawra and Al-Kuwait Hospitals in Sana'a City), which receive budget allocation from the Ministry of Finance. The secondary level, represented by district and rural hospitals, is

<sup>16</sup> Yemen: Household Budget Survey, Republic of Yemen, 1998.

<sup>17</sup> Health Facilities Operations and Maintenance Study, Republic of Yemen, Waters and Eskesen, April 2000.

<sup>18</sup> The actual level of revenues from cost-sharing is not known since most of the revenues are retained at the facility and not reported to central authorities. Officially, cost sharing contributed just 0.6% of MOPH's current revenues in 1996. Actual revenues are assumed to be considerably higher and increasing.

underutilized as demonstrated by a bypass rate<sup>19</sup> between 42 and 73 percent.<sup>20</sup> With regard to the first level of health care, almost one third of the health units are temporary, one half with neither water supply nor sewage drainage, more than two thirds with no electricity, and almost two thirds have no adequate current budget.

The private sector is estimated to have a total of 6,857 health facilities including 555 hospitals and facilities with beds and 6,302 clinics. There are also 753 private pharmacies and 1,907 drug stores. In 1998, the total number of beds amounted to 10,625 beds (9,103 public and 1,522 private), which represents 0.62 bed per 1000 population. There is evidence, however, of the expanding role of the private sector and non-governmental organizations (NGO) in the delivery of health services.

*The health service delivery system is characterized by the lack of planning norms and standards that result in wide regional variations in infrastructure distribution. In addition, there is lack of vertical continuity of care between the different levels because of deficient referral systems. The quality of infrastructure is deteriorating because of the lack of an effective maintenance system. The health units and health centers are underutilized while rural health units are almost dysfunctional mostly because of lack of drugs and manpower. The exact number and scope of activities of the NGO and private sectors are not known. Coordination of investments and activities between the public and private sector is absent.*

### **3. HUMAN RESOURCES**

There are currently 32,590 staff employed in the MOPH, accounting for 9.6 percent of civil service employment, thus making the MOPH the second largest public sector employer. There are a total of 3,788 physicians and 9,419 nurses in Yemen, which represents a national ratio of 0.23 physician and 0.55 nurse per 1,000 population. MOPH offices are generally overstaffed with administrative and non-medical personnel. Health facilities are highly overstaffed in urban areas while remote posts remain vacant, particularly health units. There is lack of specialized physicians, and foreign medical specialists consume a high share of the current budget. There is considerable lack of female service providers, such as community midwives, particularly in primary health care services. Moreover, there are wide regional variations in manpower distribution as exemplified by the presence of almost 50 percent of all physicians in Aden & Sana'a.

*Human resources are characterized by the lack of staffing norms, right skill-mix, composition, and distribution. In addition, training and continued medical education are inadequate and ineffective. These problems are compounded by the poor work environment including work conditions and morale. This underscores the lack of effective human resources planning and the difficulty of management under the civil service constraints*

---

<sup>19</sup> The bypass rate is expressed in terms of percentage of the population, in a specific catchment area, who use either tertiary level or private health facilities as first contact for primary health care services.

<sup>20</sup> Health Sector Reform: Strategy for Reform, Ministry of Public Health, Republic of Yemen, 1998.

#### 4. HEALTH SERVICES AND PUBLIC HEALTH PROGRAMS

Yemen is at an early stage of its epidemiological transition, which means that communicable diseases continue to be prevalent as demonstrated by the high child and maternal morbidity and mortality rates. For example, malaria, which has been successfully eliminated in most countries of the region, continues to cause about 1.5 million cases of illness and 15,000 deaths per year. MOPH does have a number of vertical public health programs, which lack integration and their effectiveness is questionable. For example, an Integrated Management of Childhood Illness (IMCI) is being initiated by the MOPH to address childhood illnesses, however, reliable governorate-level data to track trends are not available, and the basic inputs to address childhood illness, such as oral rehydration salts for diarrhea, are in short supply.

In terms of health benefits, all Yemenis are eligible to receive care at MOPH facilities. However, public services are generally regarded as poor quality, and therefore those who can afford it, seek care in private facilities as represented by the high rate of public service bypass. Some private companies (principally the larger ones or those affiliated with an international company) either contract with the private sector to provide health services for their employees or provide services through their own facilities.

*Health services are characterized by a lack of continuity of care; for example there is no formal referral system or integration of services at different levels. The quality of health services is poor in both public and private sectors. Health services provided by the public sector are mostly focused on curative and hospital based services rather than more cost-effective primary care services. The MOPH primary care services lack adequate resources, particularly for public health programs. Finally, the weakness of the public health programs is exemplified by a lack of basic data needed for program planning such as disease prevalence, regional variation, and epidemiological trends; lack of national control strategy and coordination; delayed response to outbreaks and epidemics; poor case management; and lack of supplies. Strengthening the public health programs is a major concern and constitutes a priority in reforming the health sector.*

#### 5. THE ORGANIZATIONAL AND INSTITUTIONAL FRAMEWORK

The MOPH is the organization responsible for the health sector in Yemen. However, there are a number of other public organizations involved in the financing, planning, regulation, management, and provision of health services in Yemen. These include the Ministry of Finance (MOF), Ministry of Planning and Development (MOPD), Ministry of Civil Service (MOCS), the two autonomous hospitals, the Health Manpower Institutes, military and police health services, and the Drug Fund. The Minister of Health is assisted by three Undersecretaries for Planning and Development, Health Care Services, and Finance and Administration. There are 20 Directors-General who are heading the health directorates in the governorates, while the health districts are headed by a director supported by a few staff. The MOPH organizational structure was not updated in two decades. The management systems are weak, for example, the inequitable allocation of resources across governorates and services reflects lack of strategic planning and the inefficient use of resources reflects ineffective management.

*The organizational/institutional framework of the health sector may be characterized as being overly centralized, poorly coordinated, and weak. The MOPH core functions such as policy analysis, strategic planning, sector regulation, performance evaluation and monitoring, and*

*sector coordination are under-developed. Management systems such as financial management, human resources, and information systems are weak. The MOPH management structure is outdated and the health districts, on which depends the District Health System model, are rudimentary.*

## **6. THE POLICY ENVIRONMENT**

The MOPH has launched a comprehensive sector reform initiative aimed at improving equity, quality, efficiency, effectiveness, accessibility, and the long-term sustainability of health services. The MOPH acknowledges the constraints people face in affording and accessing care as well as its own budgetary limitations. The reform is to be undertaken in the context of the Government's broader reform strategy, which supports public expenditure rationalization and restructuring, management decentralization, and civil service reform.

*The proposed government health reform initiative however will require the mobilization of large amounts of resources that are not yet available, and it does not take into consideration the limited capacity of the public sector for undertaking such a reform program. Also, there are no clear implementation strategies and most importantly, the costs of the proposed reform program are not indicated. Additionally, public health programs, which are a major weakness in the system, are not adequately addressed in this reform initiative. Moreover, the achievement of the long-term objectives of the health reform will be contingent upon improvements in other sectors such as water, sanitation, education, civil service, finance, roads, and transportation.*

## **E. HEALTH SECTOR PERFORMANCE**

A rational strategy for reform should build upon the strengths of the existing system, while at the same time address its weaknesses. In assessing strengths and weaknesses, one needs to determine both conceptually, and to the extent possible, empirically how well the system performs in terms of the underlying goals of improving health outcomes, assuring equity and access, promoting efficiency of the service delivery system, and assuring quality of care and the sector's financial sustainability. The strengths and weaknesses of Yemen's health system are evaluated along each of these performance parameters.

### **1. HEALTH OUTCOMES**

The performance of Yemen's health delivery system with respect to health outcomes, both in terms of its own performance and in comparison to other countries, was discussed above and demonstrated by the high child and maternal morbidity and mortality indicators. It is clear that Yemen faces major challenges to improve health outcomes. Given its early health transition status, health outcomes may be dramatically improved if public resources are shifted to focus on cost-effective health services and technologies, which become readily available. The main constraint is that the Government's political commitment to improving health outcomes does not translate into making such policy choices in terms of resource allocation to the most cost-effective health interventions.

## 2. EQUITY

The regional and urban/rural variations in the distribution and availability of resources and the disparity in health outcomes illustrate the inequity in the provision of health services. Within the governorates, there are also serious imbalances in the distribution of resources. For example, most of the health staff are highly concentrated in and around the urban areas and in these settings the facilities are highly overstaffed, while services in the rural and remote regions remain severely under-staffed and under-financed.

With respect to equity of financing, in assessing the “fairness” of the contribution/revenue base for financing the health system, one should consider whether individuals’ contributions, both through the general government revenue system and out-of-pocket are based on “ability to pay”. There is inequity in the financing of health services in Yemen as indicated by the fact that only a small portion of the population has access to formal risk sharing arrangements. The remainder of the population pays out-of-pocket when they need care through formal and informal cost sharing arrangements. That the same fees are charged to those with a lower income as well as those with a higher income means that the charges are regressive and hence a greater burden for those with a lower income.<sup>21</sup> The problems with not having risk sharing arrangements are further exacerbated by those patients with chronic illnesses who must pay for regular interactions with the health delivery system, or with a catastrophic illness when charges for care can mount precipitously.

## 2. ACCESS

There are physical, financial, and social factors that impede access to health services where less than half of the population, particularly those living in the rural areas, have access to basic health services. Physical access is limited by lack of transportation, rough terrain, and a dysfunctional health infrastructure (many health units are literally closed, others are open but either not staffed or without adequate supplies or both). Lack of financial access arises from the fact that the availability of health services generally corresponds with the ability to make cash payments (as described above). These payments are both direct (cost sharing in public and fee-for-service in private facilities) and indirect (e.g., transportation). Access to care will be hindered if a patient does not have adequate financial resources to shoulder the cost of care. Social constraints also exist; for example, it may be difficult for women, in traditional communities, to seek care if the service provider is not female or if she does not have an escort.

## 3. EFFICIENCY

Lack of efficiency in the management and operations of the health sector is pervasive. There is excessive centralization of resource management, e.g., control of the recurrent budget remains highly centralized where the central MOPH retains direct control over 46 percent of the recurrent budget. The allocation of public resources is not based on need, e.g., excessive infrastructure investments, usually clustered in certain geographic areas, very low budgets for operations and maintenance, and very low utilization rates. The basic inputs needed at the facility level for providing proper care are not available. Public facilities are staffed by employees, the majority

---

<sup>21</sup> There are provisions to exempt the poor from cost sharing charges, however the application of these rules tends to be arbitrary and therefore one would expect that even the poor are then shouldering the burden of paying for part of their health care.

of whom have private practices in the afternoon. Finally, the lack of coordination and collaboration between the public and private sectors result in duplication of resources particularly in urban areas.

#### **4. QUALITY**

The quality of existing services is poor, particularly in the public sector, thus contributing to the country's poor health outcomes. The poor quality is attributed to many factors. For example, inputs for providing services are inadequate, e.g., unavailability of drugs and medical supplies. In addition, there is lack of regulation, standards, and protocols. Moreover, there is poor maintenance of facilities and equipment. There is also lack of continuity of care both vertical (referral system from one level to another) and horizontal (service integration). These are compounded by the poor management practices at the central and facility levels and low morale of service providers. The quality of services provided by NGOs is generally better than that of the public sector, while it varies significantly in the private sector. However, the high demand for private services reflects the Government's inability to meet needs through public services.

#### **5. SUSTAINABILITY**

The lack of sustainability of the public health delivery system is of concern along four parameters. The financial parameter is exemplified by the rising costs of health care (e.g., drugs and technology), low public spending overall, high out-of-pocket spending (59 percent of total spending and 3 percent of household income), and the lack of formal insurance coverage. The health transition is imposing an increasing dual burden of disease. The institutional framework is fragmented, and the public sector capacity to plan and manage resources is poor. Finally, the policy/regulatory framework is not well defined with respect to regulation, enforcement of legislation, and unyielding civil service constraints.

### **F. MOPH HEALTH SECTOR REFORM PROGRAM**

In light of the serious challenges facing the health sector, the MOPH launched a reform program, in 1998, with long-term goals, which takes into consideration many of the economic and social conditions of Yemen and acknowledges the public sector's limited management capacity to introduce and manage change. The Bank provided some technical advice on the strategy development, along with commitments of support. The long-term goal articulated in the MOPH health sector reform program is to improve health status by fundamentally changing the existing system's approach to meeting the health care needs of the Yemeni people.

Overall, the reform concentrates on greatly improved management systems, decentralization of management functions to the level of the district, cost sharing for the users of health services, stronger policy and management role for the MOPH, and smaller role in direct service provision. The following provides a brief description of the key components of MOPH reform program.

#### **1. LONG TERM OBJECTIVES**

The long-term objectives of the MOPH reform program are:

- Adequate/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
- Improved quality of health services
- System's long run financial sustainability

## 2. ELEMENTS

The key elements of the MOPH reform program are:

- 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 establishment of limits on its role as service provider
- District health system approach
- Community co-management of health systems
- Cost sharing
- Essential drugs policy, and realignment of the logistics system for drugs and medical supplies
- Decentralized, outcome-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 NGOs through appropriate policy design regulation.

## 3. PHASES

MOPH reform will take place in two phases: (i) an *initiation* phase in which all key aspects of the reform will be initiated, lessons learned, key legislation passed, district health systems put in place in at least 40 percent of districts, revisions of the financial system initiated, and major actors brought on board; and (ii) a five year *consolidation* phase in which the lessons learned in the initiation phase can be fashioned into long term systems, policies and regulations, and the remainder of the districts brought into the health district system.

*The proposed MOPH Health Sector Reform program is evidently very ambitious. For example, the period of the initiation phase was completed with little achievement. The program long-term objectives are broad, the time frame of the phases is unrealistic, and the key reform elements are all-inclusive with lack of prioritization. In terms of feasibility, there was little consideration to the capacity required to implement, manage, and monitor the program. As for affordability, there was no reflection on the financial requirements and implications. The MOPH reform program would need to be scaled down to a more realistic and feasible level that takes into account the constraints in management capacity and financial resources within the country's political, economic, and social context. To this effect, a preliminary analysis of the estimated costs of the reform is provided in Annex I.*

## G. HEALTH SECTOR POLICY DIALOG AND CURRENT ASSISTANCE

Since the MOPH issued its Health Sector Reform program in 1998, a sector dialog has been initiated by the Bank with the MOPH and other donors. The purpose of this dialog is to participate in the refinement of the program, contribute to its initiation phase through ongoing and new projects, and coordinate Bank's activities with the other active donors.

Moreover, a number of programs have been initiated and many ongoing programs have been restructured to support preparation of the reform effort as detailed below.

### **1. FAMILY HEALTH PROJECT**

- A team of GTZ advisors has been recruited in the areas of public health, health financing, manpower development, health education, and nursing to assess the situation and develop plans for the reform in these respective areas (interim reports submitted).
- The establishment of a HSR Unit is being supported through the provision of funds for the recruitment of a local HSR Coordinator and an Advisor, as well as for the procurement of basic office equipment and supplies.
- The preparation of a comprehensive survey of MOPH facilities was supported, including their location, availability of staff and major equipment as the first step towards preparation of a health facility master plan.
- Strategy for a pilot hospital autonomy program was prepared.
- The establishment and initial operation of the Drug Fund was supported by financing the preparation of the Business Plan, asset assessment, recruitment of key technical staff, and the initial stock of pharmaceuticals and medical supplies.
- A pilot health information system was developed to improve monitoring and surveillance of health conditions.
- The health education activities were decentralized to ensure that health messages target local communities.

### **2. CHILD DEVELOPMENT PROJECT**

- The District Health System (DHS) will be developed and operationalized in selected governorates and districts.
- Resources at the community level will be mobilized by providing communities with training in needs definition, social mobilization, and community-based management.
- An integrated approach to child development will be provided including child health improvement through ensuring the provision of integrated basic health services such as the Expanded Program on Immunization (EPI), IMCI, and Acute Respiratory Infections (ARI).
- The nutritional status of children will be improved through community-based interventions.

### **3. PUBLIC EXPENDITURES REVIEW**

- Public Expenditures in the health sector were analyzed to ensure the consistency of public resource allocation with sectoral development policies and objectives.
- Technical tools and analysis for improved financial management and budgetary policy development were provided to MOPH.
- Policies were recommended for rationalizing the allocation of public funds and improving the efficiency of their use.



- An Operations and Maintenance Study was financed to develop a standard methodology for estimating operational and maintenance budget of health facilities to substantiate recurrent budget needs.

#### **4. CIVIL SERVICE REFORM PROGRAM**

- At the initiation of the Civil Service Reform program, it was envisaged that the MOPH would participate as a pilot ministry, which was not pursued by the Bank. However, the work initiated has sensitized the MOPH to the needs to improve the management of its human resources. The European Commission (EC) will support this initiative.
- The framework that was developed for other ministries can be used to improve the MOPH's capacity in defining their manpower needs to be consistent with its new role as well as in planning and developing its human resources.

#### **5. SOCIAL FUND FOR DEVELOPMENT**

- Financing for basic equipment and rehabilitation was provided to NGOs and community organizations that define needs and are able to deliver and manage basic health services, which is consistent with the DHS model.
- Technical assistance to NGOs and government agencies is being provided in management capacity building.

#### **6. OTHER PROGRAMS**

- *Public Works Projects (I and II)*. These projects financed the construction of health units and health centers based on community defined needs.
- *The Qat Study*. A study on Qat and its impact on the economy, agriculture, and health was completed. At the request of the Government, this strategy will be used as a basis for the development of a national Qat control program, which will include specific actions to be taken to alleviate the impact of Qat on health in Yemen, a major public health concern.
- *National Health Accounts (NHA)*. This initiative provided the MOPH with a tool for more effective policy making that takes into account the flow of funds to the health sector and their utilization. It is a methodology for measuring and monitoring resource inputs, throughputs, and outcomes for the country as a whole. By combining all the resources for the sector (public and private), policy makers are better equipped to understand the effectiveness of their financial investments in the sector and to model the impact of alternative policy options.<sup>22</sup>
- *Strategies for EPI strengthening and its integration with public health programs.*<sup>23</sup> This study is providing a strategy for strengthening the EPI program as well as integrating it with other public health programs such as reproductive health, malaria, and nutrition.

---

<sup>22</sup> Yemen is one of eight countries in the region which participated in the preparation of National Health Accounts (NHAs) as part of a MNSHD managed regional initiative.

<sup>23</sup> The study is financed by the Gates Foundation and will be finalized by April 2001.

## H. DONORS SUPPORT TO THE HEALTH SECTOR

External assistance accounted for about 25 percent of total health spending in the public sector in 1998. This amounted to US\$33 million, two thirds of which was in the form of technical assistance, 26 percent investment, and 9 percent for direct budget support.

Following is a presentation of the support provided by the key health sector development partners. Other agencies such as the United Nations Development Program (UNDP) and the World Food Program (WFP) provide indirect support to the health sector.

***The Dutch Aide program.*** This program supports health, water, education, and agriculture sectors with a total of US\$5 million per year. In health, the current support is directed towards reproductive health and pharmaceuticals. The future support will be mainly provided to health sector reform as a sector wide approach program; however, the program focus and implementation mechanism is not yet developed but it is expected to continue in line with the current program and proposed Bank activities.

***The European Commission.*** The EC program is directed towards supporting health sector reform and is primarily focused on strengthening the role of the MOPH, particularly in human resources development, in addition to implementing the district health system. The program will be implemented over two phases, preparatory and support, in at least six districts and the MOPH will be provided with technical support. The total budget is €6.7 million over five years.

***World Health Organization.*** The WHO program in Yemen is composed of more than 30 projects covering a wide scope in the health sector ranging from health sector development, policy planning and management to malaria, tuberculosis, and water supply and sanitation. The total budget of the current three-year program is estimated at US\$3.8 that support consultants, training, seminars, fellowships, and equipment.

***United Nations International Children's Emergency Fund (UNICEF).*** The health and nutrition program of UNICEF comprises five projects namely, strengthening the EPI, control of Diarrheal Diseases, control of ARI, safe motherhood, and nutrition. The focus of UNICEF program implementation is Area Based Approach through community participation. UNICEF core funding for its current program (1999 - 2001) is estimated at US\$15 million in addition to another US\$12 to co-finance the Bank's supported Child Development Project.

***The German Technical Cooperation (GTZ).*** The GTZ supports the MOPH decentralization plans and the current program level of funding is estimated at US\$5 million to provide technical assistance and training.

***Japanese International Cooperation Agency (JICA).*** The program supports the EPI through the provision of vaccines and strengthening of the cold chain system with a level of funding estimated at US\$2 million. Also, it supports the tuberculosis control program with a level of funding estimated at ¥2.5 billion.

## I. FUTURE AREAS OF WORLD BANK SUPPORT

The Bank's ongoing assistance is helping the Government to refine and launch its reform program. The next step is to support the reform's implementation. The MOPH took the initiative to draft the reform strategy and the implementation of the first phase is being pursued by the Government. Participating in this reform program presents a unique opportunity for the Bank and other donors to build upon this enthusiasm and bring about fundamental, rather than piecemeal, change.

### 1. DESIGN PRINCIPLES

In preparing the next operation, the following guiding principles need to be considered during the design stage.

**Complementarity.** There are a number of development partners who are actively involved in supporting the health sector and the HSR program in particular. It is therefore crucial to analyze carefully the partners' programs and establish a continuous dialog to avoid duplication and ensure complementarity and synergism. Unlike previous projects that supported vertical programs or focused on a particular approach or geographic area and therefore did not require much coordination, health sector reform is influencing all programs, systems, and service delivery levels and affecting all population groups. Close coordination and collaboration with the other development partners is a key for success.

**Prioritization.** The proposed MOPH HSR program is ambitious and comprehensive and the sector challenges are numerous. It is not therefore possible to resolve all of the sector's problems during a single program. Keeping the overall HSR goals in mind, it is important to identify and select the key priority interventions that would be financed by the Bank to ensure the greatest impact and feasibility of implementation.

**Phasing-In.** Ensuring complementarity with partners and prioritization of interventions will not be sufficient for two reasons. First, while most of the challenges facing the health sector have been identified, not all the interventions to resolve them are known, so there will be a need to experiment with pilots and new modalities. Second, the program complexity requires high managerial capacity to manage it, which is not the current case at the MOPH. Therefore, a phased-in approach for implementing the program should also be considered to develop both the learning curve and the management capacity.

### 2. PROGRAM GOAL AND STRATEGIC OBJECTIVES

It is recognized that health sector reform is a continuous, dynamic and evolving process, and that strategies may need to be reconsidered during implementation. At the outset, however, it is important to have consensus on the *vision* in terms of where the sector would eventually be and on *the model* in terms of what the sector will look like at the end of the program.

Based on the ongoing sector policy dialog, it is envisaged that, in 10 - 15 years, the following will be the characteristics of the health sector. The role of the MOPH in the sector will be redefined and its management structure reorganized where critical functions such as financial management and human resources are strengthened and new functions such as quality assurance

and health information systems are introduced. Resource planning will be decentralized to the governorate level while resource management will be decentralized to the district level where a district health system would be operational. Allocation of resources will be more rational where infrastructure, human resources mobilization, and budget allocation will adhere to specified norms and standards and will consider all available resources (public and private) leading to improvement in efficiency and equity of the health systems. In terms of service delivery, the public service delivery system will focus on strengthening the secondary level of service (district hospitals and health centers), rationalizing and providing more autonomy to large hospitals for eventual phase out, and increasing community participation in financing and managing the primary care facilities (health units) where appropriate. In terms of health services, the MOPH will strengthen its public health programs through mobilizing (adding and/or shifting) resources to cope with the increasing needs of the growing population.

It is important to stress however that it is not envisaged to address issues such as accreditation, certification, licensing, health insurance, privatization, or private sector development during the life span of this reform program.

Another dimension of the policy dialog is to address the program goal(s). Much of the ongoing discussion within the MOPH and among donors on HSR is revolving around systems improvement and efficiency gains. Yet, one should not forget that the ultimate goal of all health systems is to improve the health status of the population. The success of the HSR should be primarily judged by its impact on the population health status, then secondarily by its impact on improving sector performance along the dimensions of efficiency, equity, quality, and sustainability.

The overall *goal* of health sector reform should be to improve the health status of the population, which would be reflected by a decrease in morbidity and mortality particularly from communicable diseases among women and children in underserved areas. However, this should not preclude, for operational reasons, the possibility of targeting non-communicable diseases, entire families in some communities, or piloting a program in a well served area. Towards this end, the Bank's program will have to support health service delivery and public health programs and its program goal indicators should be clearly linked to the health interventions and confined to the geographic areas supported by the Bank.

The *strategic objectives* of health sector reform should reflect an improvement of sector performance as demonstrated by selected qualitative and quantitative indicators for improved efficiency, equity, quality, and sustainability. For the Bank's program such indicators may include, but not be limited to, improved efficiency in resource utilization, improved equity in the allocation of public resources among governorates, increased availability of inputs for basic health services, and increased decentralization of resource planning and management of government services including increased participation of communities, NGOs, and local organizations at the district level in the planning and resource mobilization activities.

### **3. PROGRAM COMPONENTS AND PHASES**

From an operational perspective, the health sector, conceptually, can be divided into two broad components, the *service delivery structure* in which health services are being provided such as hospitals and health centers, and the *health management systems* that support them such as

planning, information systems, human resources development, and financial management. In this context, it is plausible to consider the following two components for the Bank's involvement: Improving Sector Management and Strengthening Service Delivery.

It is envisaged to support these two components during a 10-year program divided into two phases. The first phase will be for five years, extending from 2002 until 2006. This will overlap with the end of GOY second five-year plan (2001 – 2005) and the beginning of the third five-year plan (2006 – 2010). Also, this time frame coincides with the implementation plan of the Child Development Project (CDP) that will provide critical support to primary health care services at the community level and therefore will be complemented by the proposed support of secondary level under the HSR to ensure continuity of care. During the last year of phase I (2006) the design of phase II (2007 – 2011) will be initiated and guided by the lessons learned from implementing the second five-year plan, the CDP, and the first phase of HSR and in line with GOY third five-year plan.

The following section will provide a brief description of the two components and their elements that may be considered for the Bank's support in the proposed 10-year program.

### **3.1 Improving Sector Management**

Much of the failure in ensuring availability of health services to the population is attributed to the lack of systems and management capacity. The need to strengthen MOPH's planning and management capacity should therefore be an overarching theme of the reform program, and is paramount to the success of the reform and the sector's long-term sustainability. To this effect, the focus should be geared towards *reforming the MOPH role and functions* and *decentralizing operational management* both internal and external to the MOPH organizational structure.

#### **3.1.1 *Reforming the role of MOPH and developing its systems***

The role of MOPH in the management and delivery of services will be streamlined to focus on priority sector management areas and divest itself from the direct delivery of some health services such as tertiary health services. As such, the role of the MOPH would shift to focus on the following *functions*: (i) policy analysis and development; (ii) strategic planning; (iii) sector regulation and quality assurance; (iv) sector coordination with other government agencies and development partners; (v) public health management; and (vi) monitoring and evaluation. Implementing this shift in focus will require an institutional development approach that entails three different analyses. The systems analysis would lead to the revision of the existing functions and responsibilities of the different MOPH departments and divisions and the creation of new ones. The legal/structural analysis would suggest changes in the MOPH legal framework and organizational structure consistent with the new MOPH roles and functions. The skill-gap analysis would suggest strategies to bridge the technical and managerial gaps. In this context, the following are the key *systems* that need to be targeted under the Bank's program.

- **Financial management.** Developing financial policies and ensuring discipline in their implementation and how finances are managed are probably the most important of all the systems. In this regard, there are three aspects that need to be addressed: (i) rational and equitable budget allocation, (ii) efficient use of allocated budget, and (iii) effective and transparent financial management procedures including management of cost-sharing

revenues and exemption policies. The Bank's support should build on the work that was previously undertaken: the National Health Accounts (NHA) and the Public Expenditures Review (PER). NHA provided a detailed analysis on total health spending, breakdowns by source and user, and flow of funds. PER provided concrete recommendations to: (i) *increase the overall budget allocation* for the health sector as a percent of total government budget; (ii) *Prioritize public investments* in health towards cost-effective and priority health interventions by rationalizing tertiary care hospitals, strengthening secondary/first referral hospital system, and strengthening the primary health care infrastructure particularly in under-serviced areas; and (iii) *Rationalize the public current expenditures* by containing the budget for salaries and wages, developing standards to ensure efficiency and equity in allocating the operations and maintenance budget, and expanding and institutionalizing the cost-sharing program.<sup>24</sup> An Operations and Maintenance (O&M) study was also conducted to assist the MOPH in determining the O&M budget required for the basic health delivery structure. It is plausible to assume that the Bank will further pursue the NHA framework for reforming the health financing and ensure the implementation of the PER and O&M recommendations to restructure public financing of the health sector as well as the institutionalization of these processes within the MOPH structure and systems.

- Human Resources Development. The reform framework for human resources management will be guided by the principles and guidelines developed under the Civil Service Modernization Program (CSMP), currently underway at the government level, which aims at having fewer, equitably distributed, better paid, and more qualified human capital. The EC may provide support to this element; however, its scope is not yet determined. In such case, the Bank would support human resources development in the second phase while ensuring very close coordination with the EC during the first phase of the program. Support will be needed to assist the MOPH in: i) developing staffing norms and standards for different types of health facilities, ii) developing short-term strategies to adjust the size and distribution of the workforce to ensure efficiency and equity in human resource allocation; iii) developing medium-term strategies to adjust the composition of the workforce to make it both responsive to the priority health needs and appropriate for effective health sector performance; iv) improving the skills of the workforce through management training and continued medical education, v) improving the work conditions particularly for service providers in remote or underserved areas; and vi) improving the information systems on human resources to support policy and strategic decisions.
- Health Infrastructure Planning. The health infrastructure will require the development of policies and institutionalization of systems to rationalize its proliferation by adopting investment planning based on priority population health needs. This will require the development of master plans at the national, governorate, and district levels, to map health infrastructure, identify duplication and gaps, and determine norms and standards for different types of health facilities based on available resources and population health needs. Priority, however, should be given to district master plans in order to support the district health

---

<sup>24</sup> The objectives of the cost-sharing program are to improve accountability to the community (since they will be making an investment in service delivery), and secure supplemental funds for improving maintenance, the supply of drugs, and providing appropriate incentives to health personnel. Revenues will be retained and used at the point of service delivery which will require an effective system to monitor the use of funds.

system. In the first couple of years of HSR program implementation, the MOPH may need to establish a moratorium on construction of new large hospitals and focus its capital investment budget on rehabilitating the existing infrastructure until the master plans are completed. The infrastructure development should be consistent with the new MOPH role in service delivery in which the district hospital will be the backbone of the public service delivery structure. Details on strengthening the service delivery are provided below.

- Infrastructure and Medical Equipment Maintenance. Maintenance systems had been ineffective in maintaining the large investments made by the government and donors in infrastructure and medical equipment. On the one hand, attempts to strengthen the current MOPH maintenance systems were not effective and the approaches to outsource these services were strongly resented. However, the sustainability of capital investments will be always questionable unless the maintenance systems are addressed. It will be therefore critical to develop modalities for the maintenance systems that will balance these views. Outsourcing may be a plausible option, however, further assessment will be needed and its cost-effectiveness demonstrated on a pilot basis.
- Drug and Medical Supply. The availability of drugs and medical supplies is a key input for quality care. The recently established quasi-autonomous Drug Fund, partly supported by the Family Health Project, will be responsible for pharmaceuticals logistics management including procurement, storage, and distribution. Under the reform program, the Fund will assume responsibility for all aspects of drug and medical supply management. The Fund is also currently supported by the Dutch. The role of the Bank should be therefore carefully considered in light of the future support provided by the Dutch.
- Quality Assurance. The need for improving the quality of public and private health services is undeniable. However, the development of facility accreditation system, professional licensing, adoption of clinical protocols, and implementing medical audits require extensive resources and strong management capacity which cannot be realized in the medium-term. The support to the MOPH will need therefore to focus on initiating a quality assurance program. This may include the development of a national quality assurance strategy followed by piloting the development of clinical standards and protocols for essential health services provided at the district level.
- Health Management Information Systems. The development of an effective HMIS will be critical to the success of the MOPH new roles and functions. Three basic systems will need to be considered. The Management Information Systems will support policy development, strategic planning, and management decisions of the above MOPH functions such as financial management, human resources development, and infrastructure planning. Health Information Systems will support disease surveillance, collection and analysis of basic morbidity and mortality health indicators, and service utilization. The Geographic Information System will provide a practical tool for resource planning and allocation. In this regard, it is important to consider simple and basic systems to ensure the feasibility of implementation and sustainability.
- Public Health Programs. The MOPH will need to strengthen its management of public health, as this is its primary role in the sector. The focus should be on: i) priority

communicable diseases such as diarrhea, acute respiratory infections, malaria, hepatitis, and tuberculosis; ii) public health programs such as immunization, malnutrition, family planning, and reproductive health; and iii) other causes of child and maternal morbidity and mortality. At the MOPH central level, a division for public health programs needs to be created and the management and technical capacity in these public health programs enhanced. At the service delivery level, services should be integrated into a package of basic health services to ensure efficiency and horizontal continuity of care. Furthermore, a strong health education program focusing on communication for behavior change is to be initiated to increase health awareness and improve health-seeking behavior.

### **3.1.2 Decentralizing operational management**

Decentralization in the health sector is occurring within the context of the overall Government program, which is delegating some governance functions down to the district level through a newly passed local authority law.<sup>25</sup> The by-laws will be issued by the end of year 2000 and will be executed in the mid-year of 2001. Within the health sector, limited decentralization of financial responsibility to the governorate level began in 1995. The MOPH is envisaging expanding decentralization further down to the district level in the context of the District Health System model and further out to service delivery structures in the context of the hospital autonomy program. Decentralization from the MOPH central level can be made to four different structures: the large specialized hospitals (hospital autonomy), the governorate health offices, the district health offices, and the community organizations. Decentralization may take several forms such as deconcentration, delegation, and devolution. Deconcentration entails the decentralization of certain authorities and hence responsibilities downward within the hierarchy, e.g., from MOPH central level to MOPH governorate level. Delegation denotes the decentralization of certain management responsibilities downward within the hierarchy. Devolution involves the decentralization of certain authorities and responsibilities downward and outward to structures outside the hierarchy, e.g., from MOPH central level to local municipalities.

- Large Hospitals (Hospital Autonomy). Under a hospital autonomy program, any of the three forms of decentralization may be selected. Currently, the two autonomous hospitals in Sanaa are operating under the delegation form where only management responsibilities are decentralized. For these two hospitals, more control on resource allocation and utilization may be deconcentrated and furthermore, the governance function may be devolved to an overseeing hospital board. For the MOPH specialized and governorate hospitals, it is not envisaged to pursue a more decentralized form than delegation, given the limited management capacity and resources available at the level of these hospitals. In addition, the complexity of designing and implementing a hospital autonomy program may dictate the postponement of supporting such initiative to the second phase of the Bank's program.
- Governorate Health Offices. Some of the planning, financial management, human resources, and information systems functions may be deconcentrated to the governorate level. The implementation of the new local authority law will determine the level of authority and responsibility decentralized to the governorate level. Until this is established, it is suggested to confine the Bank's support to a number of governorates where management capacity will

---

<sup>25</sup> Law No. (4) of 2000 concerning the local authority issued in August 2000.



be strengthened and systems developed at the central level be replicated with adaptation at the governorate level, e.g., health management information systems.

- **District Health Offices.** These constitute the lowest administrative level in the MOPH organizational structure and they are the focus of resource management in the District Health System model. However, this is the weakest level in terms of management capacity and resource availability. On the one hand, it is realistic to consider the delegation of most of the management responsibilities to the district level within the context of the District Health System. On the other, the current district level management will need to be restructured, its capacity extensively strengthened and adequate resources mobilized to enable the carryout of these management responsibilities. The Bank's program should therefore focus on strengthening the management structure and capacity, possibly following the GTZ model, before considering systems development. Again, the support should be confined to selected districts within the selected governorates during the first phase of the program.
- **Community Organizations.** As many of the MOPH health units are dysfunctional, there is a need to develop modalities to devolve the management of these health units to local communities. It is expected that the CDP would develop such modalities and the Bank's support may not be necessary except to replicate such modalities in the districts not covered by the CDP.

### **3.2 Strengthening Service Delivery**

Strengthening service delivery entails the support of a package of basic health services provided at different health facilities by ensuring the availability of required resources such as human, financial, equipment, supplies, and drugs to operate effectively. The long-term strategy to strengthening the MOPH health delivery system is to focus on and shift public resources to the district level. Specifically, the shift will be downward from the specialized and general hospitals and upward from the rural hospitals and health units to district hospitals, so that the latter become the backbone of the service delivery structure. This is however a long way to go, given the small number and limited geographic distribution of the district hospitals. This long-term strategy would therefore need to be complemented by short and medium term strategies that deal with the inefficiencies and the lack of continuity of care while the infrastructure master plans are being developed. Meanwhile, construction of new health facilities should be also restrained until the master plans are completed and that the DHS model is proven to be operational.

#### **3.2.1 *Specialized and General Hospitals***

There are 12 specialized and 18 general hospitals. The general strategy is to maintain the *status quo* of most of these hospitals in terms of infrastructure and financial resources during the first phase of the program and eventually to phase them out of the MOPH support to become autonomous during the second phase. Conceptually, interventions at that level may be targeting three selected types of hospitals. A few hospitals with diversified health services and high case-load, that are located in densely-populated urban areas with reasonable ability to pay may be identified to pilot different hospital autonomy models, thus reducing the management and financial burden on the government. In governorates where many districts do not have district hospitals, the general hospital may be considered for support. Other hospitals that are overstaffed, given their resource level and utilization pattern, may be targeted for shifting staff

through incentive mechanisms to district hospitals, particularly in governorates that have good coverage with district hospitals. However, specific HSR interventions at the level of specialized and general hospitals, in general, should be delayed to the second phase of the program until the end of phase one to obtain some indications with regard to the operationability and impact of the DHS model and to complete the development of the infrastructure master plans which should include strategies for hospital rationalization.

### ***3.2.2 District Hospitals***

District hospitals exist only in 41 out of 285 districts and they vary in bed size, staffing, and functions. In line with the proposed HSR/DHS model, the district hospitals should be strengthened in order to become the backbone of the MOPH service delivery structure. The scope of health services provided at the level of district hospitals will need to be defined. Accordingly, the district hospitals will be rehabilitated and equipped for essential health services, which can be supported by the Bank and/or other donors. However, this should be commensurate with mobilizing adequate human and financial resources from MOPH to operate these hospitals. Failure to secure staffing and a reasonable level of O&M will defeat the purpose of rehabilitating and equipping these hospitals and will lead to failure of the entire DHS model.

Short-term strategies can be adopted to compensate for the lack of district hospitals in many districts by strengthening the service delivery capacity at either the general hospital or more importantly the rural hospitals and/or health centers as detailed below.

One of the options that may be considered in selecting the district hospitals to be supported under the HSR program is to operate in the CDP districts. The CDP health interventions are focused at the interface between the community and the health unit level (and selected health centers). The support to the district hospitals will complement the CDP interventions and may have a synergistic impact on the health status in these districts.

### ***3.2.3 Rural Hospitals and Health Centers***

There are 30 rural hospitals, with an average number of 23 beds, and 517 health centers. International experience has demonstrated that small-sized hospitals, below 40 beds, are inefficient and provide poor quality of services. The Bank has already recommended to the MOPH to phase-out these hospitals either by downgrading them to health centers (closing down the inpatient facility) or upgrading them to district hospitals in selected districts, which should be confirmed by the master plans.

The health centers should be strengthened to represent the first line of physician-provided medical services and to complement the district hospitals. In districts where there are no district hospitals, the health centers may be strengthened with specialty services to compensate for this deficiency, where feasible. To this effect, the provision of some non-equipped ambulances in selected health centers may be piloted only to transfer patients in critical conditions to the nearest district or general hospital.

### 3.2.4 Health Units

There exist an estimated number of 1,559 health units, mostly dysfunctional as explained earlier. It is not feasible to rely on a continued support from the MOPH to all health units due to many constraints. Therefore, there will be a need to develop modalities for community involvement in the management of these units. It is expected that the CDP will develop models that will focus primarily on the community co-management of these units, in which case, the MOPH will continue to maintain responsibility of these units.

Further research may be needed to explore the international experience in the devolution of health services management to the community. One would think of a model where the MOPH would agree with a local community that the MOPH will build/rehabilitate the health unit, both MOPH and the community will operate the facility for a period of time, then the MOPH will transfer all resource mobilization and management responsibilities to the community with no further or very minimal MOPH sustaining support. This is a devolution model that can be termed “Build, Cooperate, and Transfer or Sustain”.

Until concrete successful modalities are established, MOPH should be restrained from constructing new health units to avoid further inefficiency in its service delivery structure.

## 4. PRIORITIES AND RATIONALE FOR PHASE I

The above constitutes the operational framework of program interventions for Bank’s support during the proposed 10-year program. One of the lessons learned in implementing health projects in Yemen, though, is the limited management capacity to handle many interventions. It is therefore necessary to determine the *priority* elements, within the above framework, which should be addressed during the first phase (2002 – 2006) of the program. The rationale for selecting these elements is also discussed but it is largely determined by the Bank’s comparative advantage and lack of support by other donors to these elements.

### Component I: Improving Sector Management

- **Element 1: Reforming the MOPH role and developing its systems.** There were eight systems proposed for reform; the following four should be considered for the first phase:
  - ✓ **Financial management:** this constitutes the starting point in improving efficiency and equity in allocation and utilization of health resources. The size and distribution of the work force, the operations and maintenance of health facilities, and the size and type of health infrastructure are all determined through the budget allocation process and expenditures review. This is further justified by the Bank’s comparative advantage, over other donors, in this area and its extensive involvement with GOY in budget restructuring and public expenditures reviews. The Bank is therefore in a strong position to help the MOPH in its dialog with the MOF to streamline the budget process and improve financial transparency.
  - ✓ **Health Infrastructure Planning:** much of the inequity and inefficiency in the system is due to the unplanned proliferation of health infrastructure resulting in “sunk investments” and underutilized resources. Very little can be hoped from HSR if the inefficiency of

both the existing and planned infrastructure is not addressed. The Bank has been involved in the last few years in supporting the rationalization of MOPH infrastructure in addition to providing extensive feedback on the MOPH capital investment program proposed for the second five-year plan (2001 – 2005). This role is highly appreciated and endorsed by the MOPD.

- ✓ **Health Management Information Systems:** information is considered the backbone of all other systems. Financial management, human resources development, and infrastructure planning will require valid information for management decision-making. Similarly, to monitor the health status, one would need reliable data on morbidity and mortality as well as health services utilization for needs and gaps identification and impact evaluation. In addition, there are no other donors planning to be involved in supporting this area.
- ✓ **Public Health programs:** given the health transition stage in Yemen, reforming the public health programs should be a high priority because it can have a direct rapid impact on the health status of the population through adopting cost effective interventions. In Yemen, several donors support either vertical programs such as WHO, UNICEF, and UNFPA or health services in geographically focused areas such as the Dutch Aid and the EC. There is no systematic support provided to MOPH central level, hence the opportunity for the Bank to develop and support a national strategy for integrated management of public health programs.
- **Element 2: Decentralizing operational management.** The newly passed law on local authority and its by-laws, to be issued, will determine the type and level of decentralization that the Bank will support. Until the new law is actually implemented, the Bank can focus in the first two years (2002 – 2003) on supporting the central level of the MOPH in the development of the four systems, i.e., financial management, infrastructure planning, information systems, and public health programs. Meanwhile an assessment of the needs of the governorate and district health offices will be conducted based on the implementation of the new local authority law. Later in phase I, support to the governorate and district health offices will be provided in the four systems above. Anyway, the support will be confined geographically to those governorates and districts where service delivery is supported by the Bank.

## **Component II: Strengthening Service Delivery**

Support during the first phase will be focused on strengthening the first referral level by upgrading the infrastructure of district hospitals and health centers through rehabilitation and equipment provision in support of essential/basic health services in selected pilot districts, preferably where CDP is active to ensure complementarity.

It is assumed that the package of basic health services (inpatient and outpatient) would be provided at the level of district hospital and only the outpatient health services provided at the level of health center. A fundamental prerequisite of infrastructure upgrading is therefore the development of the basic health services package which would be addressed under the public health program element as this will drive the infrastructure requirements at both levels.

- **Element 1: District Hospitals.** During the first phase, the Bank would support the rehabilitation of approximately 10 - 12 district hospitals and the provision of medical equipment and supplies to upgrade the level of health services and ensure the effectiveness of health services delivery. As indicated earlier, this support may entail the provision of ambulances to transport patients in critical conditions from the contiguous health centers to the district hospital or from the district to the governorate hospitals.
- **Element 2: Health Centers.** Similarly, it is proposed to support the rehabilitation of approximately 15 – 20 health centers and the provision of medical equipment and supplies to upgrade the level of health services and ensure the effectiveness of health services delivery.

The above provides a framework for the Bank's strategy in supporting the Health Sector Reform program in Yemen. The next steps would require a continuous sector dialog with GOY and other health development partners to further refine and detail the above components to be supported by the Bank, develop the detailed cost estimates of the different elements, and prepare an implementation plan.

The strategy reveals the exigency for supporting the health needs of the Yemeni people, which are undeniable. The challenge remains however in the implementation approaches and arrangements, which would determine the success in addressing the population health needs.