

**Draft for Discussion**

# Republic of Yemen

## Comprehensive Development Review

### Health Sector – Phase 1

January 2000

---



---

This report was prepared by Ms. Gail Richardson (Health Specialist), Dr. Sameh El-Saharty (Senior Public Health Specialist), and Ms. Nicole Klingen (Health Specialist). Oversight was provided by Mr. George Schieber (Health Sector Manager) and Mr. Jacques Baudouy (Director).

## I. Basic Data and Trends

### A. Introduction

**Overview.** This report was prepared as part of a stock taking phase of the Comprehensive Development Review (CDR). The CDR is a joint Government of Yemen/World Bank initiative that involves taking a critical look at key sectors as a foundation for the development of a revised poverty alleviation strategy.

**Definition of the Sector.** This paper focuses on the health, nutrition, and population sector, hereinafter called health sector which is one of the building blocks of the CDR.

**The report.** This report, for phase I, is divided in three sections. Section I provides the introduction, key sector indicators and trends, role of the sector in development including linkages to other sectors, and overview of the key sector components including sector financing, service delivery system, human resources, health services, and public health programs, as well as an assessment of the sector's performance. Section II covers a number of key indicators for Yemen in comparison to other countries in the world. Section III of the report provides an overview of the development goals and prospects. Phase II of the report will cover an additional two major sections, namely, section IV that covers the factors relevant to sector development goals and section V that provides the policy and program priorities.

**Country Context.** Yemen is a country challenged with limited economic and social development. In particular, health indicators are some of the lowest 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. In 1995, the Government launched an economic reform program with support from the World Bank and the International Monetary Fund (IMF). The government revenues are 37.7 percent of GDP, over 68 percent from oil, 24 percent from taxes, and the remainder from other sources. The external debt to GDP ratio is 74.9 percent (before rescheduling) and gross official reserves account for about 4 months of imports. Yet, another challenge to the Government's efforts to strengthen its economy came in 1998 following a dramatic drop in oil prices. The resulting 15 percent across-the-board cut in the public sector budget, further tightened scarce resources for the health sector. As a result, public spending on health is currently about 2 percent of GDP and 4.8 percent of total government expenditure - the lowest per capita health spending in the region. Limited public resources and poor health indicators are the catalysts from which the Ministry of Public Health (MOPH) is rethinking its strategy in partnership with the World Bank and other key donors.

Yemen's MOPH has recently 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 Sector 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>1</sup> are major contributing factors to poor health as are limited access to potable water and proper sanitation.<sup>2</sup>

The results are alarming. Maternal and infant mortality and total fertility rates<sup>3</sup> are the highest in the MENA region (Table 1).<sup>4</sup>

**Table 1: Middle East and North Africa Health and Demographic Indicators, 1995-2010**

| Country                      | Infant Mortality Rate <sup>a</sup> | Maternal Mortality Rate <sup>b</sup> | Life Expectancy At Birth, 1997 |           | Population Growth Rate |            | Percent of Population over Age 60 |            | Percent of Population Over Age 60 |            | Total Fertility Rate |
|------------------------------|------------------------------------|--------------------------------------|--------------------------------|-----------|------------------------|------------|-----------------------------------|------------|-----------------------------------|------------|----------------------|
|                              |                                    |                                      | Males                          | Females   | 1995                   | 1997-2015  | 1995                              | 1995       | Males                             | females    |                      |
|                              |                                    |                                      | 1997                           | 1990-97   | 1995                   | 1997-2015  | 1995                              | 1995       | 2020                              | 2020       |                      |
| <b>Yemen, Republic</b>       | 85                                 | 1400                                 | 53                             | 54        | 3.2                    | 2.6        | 4.1                               | 4.8        | 2.9                               | 4.1        | 6.5                  |
| Egypt, Arab Republic         | 51                                 | 174                                  | 64                             | 66        | 2.3                    | 1.5        | 5.8                               | 7.1        | 10.0                              | 11.1       | 3.2                  |
| Morocco                      | 53                                 | 370                                  | 64                             | 68        | 1.7                    | 1.5        | 5.9                               | 6.5        | 9.0                               | 10.7       | 3.5                  |
| Syrian Arab Republic         | 31                                 | 180                                  | 66                             | 70        | 3.0                    | 2.2        | 4.2                               | 4.7        | 5.2                               | 6.3        | 4.0                  |
| Iran, Islamic Republic       | 26                                 | 35                                   | 68                             | 71        | 2.7                    | 1.6        | 6.0                               | 5.7        | 9.4                               | 9.1        | 2.8                  |
| Jordan                       | 29                                 | 150                                  | 68                             | 72        | 4.3                    | 2.4        | 4.9                               | 4.9        | 6.6                               | 7.4        | 4.2                  |
| Algeria                      | 32                                 | 140                                  | 68                             | 71        | 2.2                    | 2.0        | 5.4                               | 6.2        | 9.1                               | 10.0       | 3.6                  |
| Tunisia                      | 30                                 | 139                                  | 68                             | 70        | 1.8                    | 1.3        | 6.9                               | 7.1        | 10.4                              | 11.7       | 2.8                  |
| West Bank and Gaza           | 25                                 | ..                                   | ..                             | ..        | 5.6                    | 3.5        | 4.5                               | 4.7        | 4.4                               | 5.1        | 6.0                  |
| Lebanon                      | 28                                 | 300                                  | 67                             | 71        | 1.9                    | 1.3        | 7.8                               | 8.6        | 7.7                               | 11.4       | 2.5                  |
| Oman                         | 18                                 | 190                                  | 68                             | 73        | 5.5                    | 2.4        | 3.6                               | 4.4        | 6.5                               | 5.0        | 4.8                  |
| Saudi Arabia                 | 21                                 | 18                                   | 69                             | 71        | 3.8                    | 3.1        | 4.1                               | 4.5        | 8.4                               | 5.5        | 5.9                  |
| United Arab Emirates         | 8                                  | 26                                   | 73                             | 76        | 5.0                    | 2.0        | 3.0                               | 2.7        | ..                                | 12.4       | 3.5                  |
| Iraq                         | 112                                | 310                                  | 59                             | 62        | 2.1                    | 2.1        | 4.5                               | 5.0        | 6.4                               | 7.1        | 4.7                  |
| <b>MENA Regional Average</b> | <b>34</b>                          | <b>233</b>                           | <b>67</b>                      | <b>70</b> | <b>2.4</b>             | <b>2.1</b> | <b>3.7</b>                        | <b>4.0</b> | <b>6.0</b>                        | <b>6.2</b> | <b>4.1</b>           |

Sources: World Bank estimates, 1999; Yemen Demographic and Maternal and Child Health Survey (YDMCHS), 1997.

Notes: a. Rate per 1,000 live births. b. Rate per 100,000 live births.

<sup>1</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>2</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>3</sup> 1,400 deaths per 100,000 live births, 85 deaths per 1,000 live births, and 6.5 births per woman, respectively.

<sup>4</sup> Yemen is the highest in these three indicators for all but infant mortality rate, for which Iraq is the highest.

Yemen is also one of the few countries in the region where under-nutrition is a major problem, particularly among children.<sup>5</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 TFR in rural areas is 23% higher than the overall total for the country and rural children have a 22% greater chance of dying in their first five years than urban children.<sup>6</sup>

Yemen is at an early stage of the epidemiological transition, with morbidity and mortality from communicable diseases dominating that from non-communicable diseases.<sup>7</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 noncommunicable diseases and injuries.

Additional key human development, health, and reproductive health indicators are provided in (Box 1).

### **C. Role of the Health Sector in Development**

It is widely accepted that the improved health status of the population has a fundamental impact on poverty alleviation and economic development. Health development contributes significantly to poverty reduction and is an integral component of social and economic development. This symbiotic relationship can be viewed through the following attributes of poverty:

***Economic growth and income distribution.*** Healthy and productive human capital constitutes a cornerstone in economic growth and increased capital investment. Reducing the burden of diseases such as malaria, malnutrition, and other public health priorities, as well as efficient use of public health resources, will reduce the burden on the economy. The elimination of infectious diseases and epidemics will help reducing the waste of and possibly increasing exports of animal and agricultural products, in addition to promoting tourism in Yemen. Additionally, family planning services will eventually reduce the dependency ratio and the burden on the Government for job creation thus not aggravating the unemployment rates.

---

<sup>5</sup> At least 30% of Yemeni children are protein-energy malnourished and 40% are moderately to severely underweight. The major causes of malnutrition (in addition to that brought on by infectious diseases) include lack of knowledge about nutrients and improper feeding practices, lack of micronutrients, and in some instances, lack of food. Source: UNICEF State of the World's Children 1998.

<sup>6</sup> Source: Yemen Demographic and Maternal and Child Health Survey 1997 (YDMCHS); (Central Statistical Office, Sana'a, Yemen; November 1998).

<sup>7</sup> The most prevalent conditions are diarrheal diseases, malnutrition, complications of pregnancy, acute respiratory infections, and malaria. Chronic diseases, such as cancer and heart disease and injuries are also on the rise.

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

### **Human Development Indicators**

- The population is 16.5 million, 76 percent of which is rural.
- The annual rate of population growth is 3.6 percent (which is projected to decline to an average of 2.6 percent for the period 1997-2015).
- 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 53 years for men and 54 for women.
- 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 85 deaths per 1,000 live births.
- There is no formal health insurance coverage.

### **Reproductive Health Indicators**

- The total fertility rate is 6.5 children (7.0 for rural areas, and 5.0 for urban areas).
- The maternal mortality ratio is estimated to be 1,400 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.

***Risk and vulnerability.*** Improving equity and access to health services directly improves the life conditions of the vulnerable groups. Improving efficiency leads to cost reductions and therefore provides part of the safety net coverage. Also, strengthening the financial sustainability of health services provides the poor with risk pooling mechanisms and assurances against catastrophic illnesses and major accidents. Promoting family planning services and reducing the prevalence of endemic diseases will contribute to reducing the vulnerability of the underprivileged population in Yemen.

***Delivery of essential services.*** It is needless to mention that health is an essential service that is required for adequate social development. Reducing the size of families, improving the equitable distribution of health resources, increasing access to and improving the quality of health services are important indicators for social development and help promote social stability.

***Voice, transparency, and accountability.*** Given the limited public resources and the difficult geographic and terrain nature of Yemen, the government will have to seek more community participation. Health reforms calling for more decentralization, more efficient use of public resources, more community participation will help foster voice, transparency, and accountability.

#### **D. Linkages of the Health Sector to other Sectors**

As noted earlier, the challenges facing improvements in health status go beyond the health sector. There are a number of sectors that have a fundamental impact on the Government's ability to improve the health of the Yemeni population. Such sectoral linkages include:

- **Education.** It is well documented that a society's health status improves with better access to education. With education comes literacy (and therefore another vehicle for communicating health education messages), an improved environment for health education and the provision of health services (e.g., health messages in the curriculum and school health programs), and improved status of women (who are then better empowered to make decisions about the health of the family particularly its size).
- **Sanitation.** Improved sanitation and waste treatment systems reduce the risk of transmission of diseases by improving the hygienic conditions in the households and communities.
- **Water.** Access to clean water is paramount for good health since water can be a vehicle for many microorganisms, which cause several diseases. In addition, particularly for a country like Yemen, having access to clean water reduces the risk of malaria. A community that does not have a developed water system is likely to rely on stagnate water sources, which are prime breeding areas for malaria-carrying mosquitoes.
- **Roads.** Improving the road network has direct impact on improving physical access to health services particularly for remote, isolated, and under-served communities.
- **Electricity.** Electricity plays an important role in health services on a number of fronts. For example, electricity is needed to maintain the cold chain for vaccines and other pharmaceutical products. With electricity, a community can have access to radios and televisions, which are vehicles for disseminating health education messages. Electricity is a cleaner form of energy for producing heat for cooking and fending off cold weather. Other energy sources, such as wood and coal, can cause respiratory infections.
- **Telecommunication.** Expanding telephone services provide the community with access to health care providers and can provide an effective means for communicating health needs such as epidemics and emergency services for critical conditions.

- Civil service reform. Improving the management of the health sector will depend in large measure on the extent to which staff with appropriate qualifications is working in the MOPH, which will only be achieved through fundamental reform of the civil service.
- Civil Society and Community Development. Given the limited public resources and the nature of the difficult terrain in Yemen, community participation and the development of NGOs will strengthen the partnership in the provision of health services and reduce the burden on the MOPH particularly in rural areas.
- Private sector development (PSD). Similarly, the Government is recognizing that it is not able to meet all the health needs of the population through publicly provided health services. The private sector will need to take a greater role in service provision particularly in urban areas.
- Financial sector reform. Reforming the financial sector is key for the development of the private health insurance market which will help in pooling the financial risks from catastrophic and other health illnesses for a large segment of the population.
- Legal reform. A well-developed legal structure provides the legal framework within which the health sector organizations can operate. For the MOPH, it will provide the foundation for implementing a number of key reform strategies such as increased hospital autonomy, decentralization of resource planning and management, and creating partnerships with the private and NGO sectors. Additionally, the intellectual property rights need to be regulated in order to increase the availability of pharmaceuticals and to encourage private investment in the health sector.

## **E. Key Aspects of the Health Sector**

**Health Sector Financing.** As noted above, resources for health are limited. Total per capita health spending amounts to about US\$19 per capita. Private spending on health is estimated at 3.0 percent of GDP, making Yemen among the countries with the highest share of private expenditures on health in the region. The MOPH has recently 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.

Government health sector employees are salaried and Government facilities are reimbursed based on budgets and nominal user charges (informal cost-sharing, which will be formalized through the cost sharing legislation as per the above) are collected at the facility level. 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.

**Health Delivery System.** The public sector remains the major provider of health care at all levels of services. At present, there are 2177 public health facilities directly under the MOPH including 101 public hospitals which comprise 12 specialized, 18 governorate, 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. Also, it is estimated that the

private sector has 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 the non-governmental organizations (NGO) in the delivery of health services. Although the exact number and scope of their activities are not known, coordination of investments and activities between the public and private sector is a priority of the Government's reform program.

In terms of benefits, all Yemenis are eligible to receive care at MOPH facilities. However, public services are generally regarded as poor and therefore those employees who can afford it, seek care in private facilities. Government employees are not exempt from the recently passed cost sharing by-laws. Some private companies (principally the larger ones or those affiliated with an international company) do either contract with the private sector to provide health services for their employees or provide services through their own facilities.

The health service delivery system is characterized by the lack of planning norms and standards. The investment projects are not based on needs and there is a disconnect between investment and recurrent expenditures which is compounded by the lack of maintenance and supplies. Additionally, there are wide regional variations in infrastructure distribution.

**Human Resources.** There are currently 32,590 staff employed in the MOPH, accounting for 9.6 percent of the civil service employment. There is 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. The human resources are characterized by the lack of staffing norms, right skill-mix, and composition. This underscores the lack of an effective human resource management strategy and the difficulty of effective management under the civil service constraints. For example, MOPH offices and facilities are highly overstaffed in urban areas while remote posts remain vacant. Moreover, there are wide regional variations in manpower distribution as exemplified by the presence of almost 50 % of all physicians in Aden & Sana'a. Additionally, there is lack of adequate training and continuous medical education (CME).

**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. For example, malaria, which has been successfully eradicated in most countries, continues to cause about 1.5 million cases of illness and 15,000 deaths per year. The health services provided by the public sector are mostly focused on curative and hospital based health services. The MOPH primary care services lack adequate resources, particularly public health programs. The MOPH does have a number of public health programs, although their effectiveness is questionable. For example, an Integrated Management of Childhood Illness (IMCI) is underway 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. The health services are characterized by the lack of continuity of care, for example there is no formal referral system or integration between different services at different levels. The quality of health services is poor in both public and private sector. There is more focus on curative rather than more cost-effective primary care services by the MOPH. Finally, the weakness of the public health programs exemplified by the lack of the basic data needed for

program planning such as prevalence, regional variation, and epidemiological trend; 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.

***The Organizational/Institutional Framework.*** The MOPH is the organization responsible for the health sector in Yemen. However, there are a number of public organizations involved in the financing, planning, regulation, management, and provision of health services in Yemen. These include the MOF, MOPD, MOCS, the two autonomous hospitals, the Health Management Institutes, the military health services, and the public drug organizations. The Minister of Health is assisted by three Undersecretaries for Planning and Development, Health Care Services, and Finance and Administration. There are also 20 Directors-General who are heading the health directorates in the governorates. There is little information known about the organization in the private sector and NGOs. The organizational/institutional framework of the health sector may be characterized as being highly centralized, poorly coordinated, and very weak. Further institutional analysis will be required for the identifying appropriate strategies for organizational development and capacity building.

***The Policy Environment.*** The MOPH has launched a comprehensive sector reform initiative aiming at improving 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. However, the proposed government health reform initiative will require the mobilization of large resources that are not yet available and it does not take into consideration the limited capacity of the public sector for underaking such reform program. Additionally, public health programs which are a major weakness in the system, are not addressed in this reform initiative.

## **F. 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 status, 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.

***Health Outcomes.*** The performance of Yemen’s health delivery system with respect to health outcomes is discussed above, both in terms of its own performance and in comparison to other countries. It is clear that Yemen faces major challenges to improved health outcomes. It is equally clear that it can not be done by the MOPH alone. Significant and sustained improvement in health indicators can only be realized in partnership with other key sectors.

**Equity.** The regional and urban/rural variations in a number of factors, such as health outcomes, the distribution of resources, and the availability of resources, illustrates the inequity in the provision of health services. Within the governorates, there are also serious imbalances in the distribution of resources: 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 per the following:

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 than those with a higher income means that the charges are regressive and hence a greater burden for those with a lower income.<sup>8</sup> The problems with not having risk sharing arrangements are further exacerbated by those patients with chronic illness (and hence must pay for regular interactions with the health delivery system) or with a catastrophic illness (when charges for care can mount precipitously).

**Access.** There is inequity in both physical and financial access to health services. Physical access is limited - less than half of the population, particularly those living in the rural areas, have access to basic health services. Inequity in 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. There are also social limitations that hinder access to services. In traditional communities, it may be difficult for women to seek care if the service provider is not female or if she does not have an escort.

**Efficiency.** The lack of efficiency in the management and operations of the health sector is pervasive. Examples include: (i) excessive centralization of resource management (e.g., control of the recurrent budget remains highly centralized (the central MOPH retains direct control over 45 percent of the recurrent budget) with the result that responses to local level needs are slow); (ii) the allocation of public resources is not based on need (e.g., excessive infrastructure investments, very low budget for operations and maintenance); (iii) the basic inputs needed at the facility level for providing proper care are not available (e.g., some facilities are closed while others lack appropriate staff and supplies); (iv) public facilities are staffed by part-time employees, the majority of whom have private practices in the afternoons; and (v) the lack of coordination and collaboration between the public and private sectors.

**Quality.** The quality of existing services is poor, particularly in the public sector, and this contributes to the country’s poor health outcomes. The reasons for poor quality include: (i) poor

---

<sup>8</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 their health care.

management, both at the central and facility levels; (ii) the lack of inputs for providing services (e.g., unavailability of drugs and medical supplies); (iii) the lack of regulation, standards, and protocols; (iv) poor maintenance of facilities and equipment; (v) the lack of coordination among the levels of care; and (vi) poor human resources management (e.g., distribution of staff not based on need, low morale as a result of salary and wage pressures).

Quality of care is generally poor in public facilities, although there have been demonstrable improvements in facilities when proper management systems have been put in place. The quality of services provided by NGOs is generally better than that of the public sector, while care provided in private facilities ranges from quite good to poor. That there is such demand for private services reflects the Government's inability to meet needs through public services.

**Sustainability.** The lack of sustainability of the public health delivery system is of concern along three fronts: (i) financially, given the rising costs of health care (e.g., drugs and technology), low public spending overall, high out-of-pocket spending, and the lack of formal insurance coverage; (ii) the institutional framework is fragmented, and the capacity to plan and manage resources is poor; and (iii) the policy/regulatory framework is not well defined (e.g., with respect to regulation, enforcement of legislation, and unyielding civil service constraints).

## II. International Comparisons

Tables 2-5 compare Yemen's health care system in terms of demography, health status, delivery system, and health expenditure to other countries in the Middle East and North Africa Region. Figures 1-7 compare 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>9</sup> From an international comparative perspective, the following picture emerges:

### *Demographic Indicators*

- Yemen's population growth rate and TFR are above the MENA average.
- Yemen's TFR is among the highest in the world.
- Yemen's share of population over age 65 is below the regional average.

### *Health Indicators*

- Yemen's IMR is the second highest in the region (after Iraq).
- Relative to other comparable income countries of the world, Yemen's IMR is slightly lower (Figure 1).
- Yemen's maternal mortality rate is the second highest in the world and the highest in the MENA region.
- Relative to other comparable income countries of the world, Yemen's MMR is much higher (Figure 2).

---

<sup>9</sup> Data are based on 1999 World Bank estimates.

- 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 with somewhat better relative performance for males.
- In terms of life expectancy at birth, Yemen's figures are well below the regional average.
- In terms of malnutrition, Yemen has the highest level in the region.

| <b>Table 2: Middle East and North Africa: Global Demographic Indicators, 1980-2015</b> |                               |                  |  |             |                             |             |
|--|-------------------------------|------------------|--|-------------|-----------------------------|-------------|
| <b>Country /Region</b>   | <b>Population Growth Rate</b> |                  | <b>Population aged 65 and above (% of total)</b> |             | <b>Total Fertility Rate</b> |             |
|  | <b>1980-97</b>                | <b>1997-2015</b> | <b>1997</b>                                      | <b>2015</b> | <b>1980</b>                 | <b>1997</b> |
| Algeria  | 2.7                           | 2.0              | 3.7  | 4.6         | 6.7                         | 3.6         |
| Bahrain  | 3.2                           | 1.6              | 4.9  | 5.2         | 3.2                         | 3.3         |
| Egypt, Arab Republic   | 2.3                           | 1.5              | 4.4  | 5.5         | 5.1                         | 3.2         |
| Iran, Islamic Republic   | 2.6                           | 1.6              | 4.5  | 4.8         | 6.7                         | 2.8         |
| Iraq   | 3.1                           | 2.1              | 3.0  | 4.1         | 6.4                         | 4.7         |
| Jordan   | 4.2                           | 2.4              | 2.8  | 4.1         | 6.8                         | 4.2         |
| Kuwait   | 1.6                           | 2.3              | 1.8  | 5.0         | 5.3                         | 2.9         |
| Lebanon  | 1.9                           | 1.3              | 5.6  | 6.0         | 4.5                         | 2.5         |
| Libya  | 3.2                           | 2.2              | 2.9  | 4.9         | 7.3                         | 3.8         |
| Morocco  | 2.0                           | 1.5              | 4.3  | 5.2         | 5.4                         | 3.5         |
| Oman   | 4.2                           | 2.4              | 2.6  | 4.8         | 9.9                         | 4.8         |
| Qatar  | 5.8                           | 2.4              | 3.2  | 1.7         | 3.9                         | 5.9         |
| Saudi Arabia   | 4.5                           | 3.1              | 2.8  | 4.0         | 7.3                         | 5.9         |
| Syrian Arab Republic   | 3.2                           | 2.2              | 3.0  | 3.4         | 7.4                         | 4.0         |
| Tunisia  | 2.2                           | 1.3              | 5.6  | 6.2         | 5.2                         | 2.8         |
| United Arab Emirates   | 5.3                           | 2.0              | 2.0  | 8.4         | 5.4                         | 3.5         |
| West Bank and Gaza   | ..                            | 3.5              | 3.5  | 2.8         | ..                          | 6.0         |
| Yemen, Rep.  | 3.7                           | 2.6              | 3.1  | 2.4         | 7.9                         | 6.5         |
| <b>MENA Regional Average</b>   | <b>3.3</b>                    | <b>2.1</b>       | <b>3.5</b>                                       | <b>4.6</b>  | <b>6.1</b>                  | <b>4.1</b>  |

**Source:** World Bank estimates, 1999.

| <b>Table 3: Middle East and North Africa: Health Indicators</b> |                                       |                |                                |             |                                  |                                     |                |
|---|---------------------------------------|----------------|--------------------------------|-------------|----------------------------------|-------------------------------------|----------------|
| <b>Country /Region</b>  | <b>Life Expectancy At Birth, 1997</b> |                | <b>Infant Mortality Rate/a</b> |             | <b>Maternal Mortality Rate/b</b> | <b>Adult Mortality Rate, 1997/c</b> |                |
|   | <b>Males</b>                          | <b>females</b> | <b>1980</b>                    | <b>1997</b> | <b>1990-97</b>                   | <b>males</b>                        | <b>females</b> |
| Algeria   | 68                                    | 71             | 98                             | 32          | 140                              | 160                                 | 125            |
| Bahrain   | 70                                    | 75             | 19                             | 9           | 60                               | 170                                 | 139            |
| Egypt, Arab Republic  | 64                                    | 66             | 120                            | 51          | 170                              | 198                                 | 174            |
| Iran, Islamic Republic  | 68                                    | 71             | 87                             | 26          | 35                               | 165                                 | 162            |
| Iraq  | 59                                    | 62             | 80                             | 112         | 310                              | 198                                 | 174            |
| Jordan  | 68                                    | 72             | 41                             | 29          | 150                              | 160                                 | 121            |
| Kuwait  | 74                                    | 79             | 27                             | 12          | 20                               | 124                                 | 65             |
| Lebanon   | 67                                    | 71             | 48                             | 28          | 300                              | 177                                 | 134            |
| Libya   | 63                                    | 66             | 79                             | 24          | 220                              | 187                                 | 135            |
| Morocco   | 64                                    | 68             | 99                             | 53          | 370                              | 207                                 | 150            |
| Oman  | 68                                    | 73             | 41                             | 18          | 190                              | 143                                 | 108            |
| Qatar   | 69                                    | 75             | 19                             | 12          | ..                               | 177                                 | 139            |
| Saudi Arabia  | 69                                    | 71             | 65                             | 21          | 18                               | 171                                 | 147            |
| Syrian Arab Republic  | 66                                    | 70             | 58                             | 31          | 180                              | 206                                 | 141            |
| Tunisia   | 68                                    | 70             | 69                             | 30          | 139                              | 171                                 | 153            |
| United Arab Emirates  | 73                                    | 76             | 55                             | 8           | 26                               | 127                                 | 93             |
| West Bank and Gaza  | ..                                    | ..             | ..                             | 25          | ..                               | 170                                 | 112            |
| Yemen, Rep.   | 53                                    | 54             | 141                            | 85          | 1400                             | 340                                 | 330            |
| <b>MENA Regional Average</b>                                    | <b>67</b>                             | <b>70</b>      | <b>67</b>                      | <b>34</b>   | <b>233</b>                       | <b>181</b>                          | <b>145</b>     |

**Source:** World Bank *estimates*, 1999.  
**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:

### Global Trends in Infant Mortality, 1997

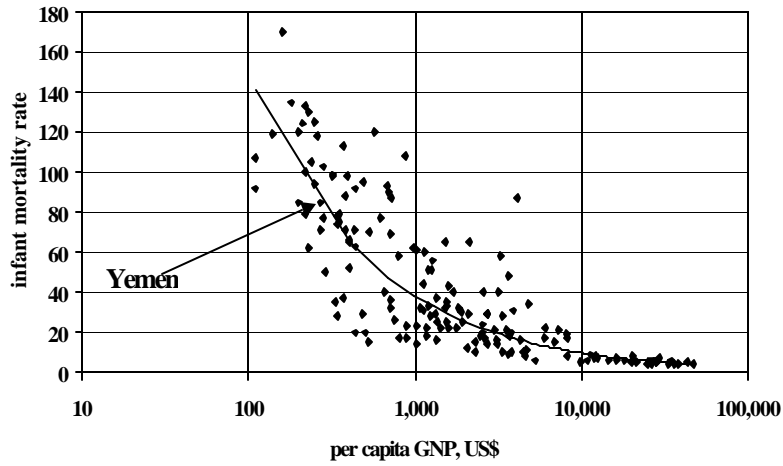
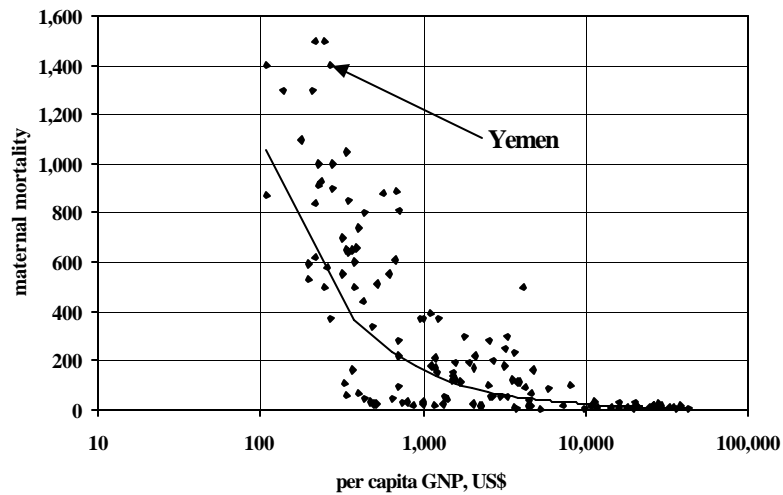


Figure 2

### Global Trends in Maternal Mortality, 1997



*Delivery System Capacity*

- In terms of physicians, Yemen's physician to population ratio is well below the regional average (Table 4).
- 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 is well below the regional average.
- Compared to all other countries in the world, Yemen has as about the average number of beds when compared to other countries of comparable income (Figure 4).

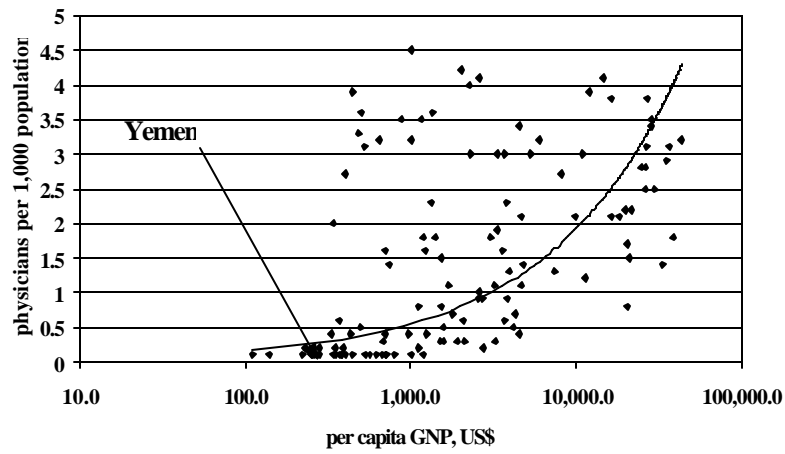
**Table 4. Physicians and Beds per 1,000 Population  
1990-1997**

| Country /Region              | Per 1,000 Population |            |
|------------------------------|----------------------|------------|
|                              | Physicians           | Beds       |
| Algeria                      | 0.8                  | 2.1        |
| Bahrain                      | 1.3                  | ..         |
| Egypt, Arab Republic         | 1.6                  | 2.1        |
| Iran, Islamic Republic       | 0.8                  | 1.6        |
| Iraq                         | ..                   | 1.7        |
| Jordan                       | 1.6                  | 1.6        |
| Lebanon                      | 2.8                  | 2.7        |
| Libya                        | 1.1                  | 4.2        |
| Morocco                      | 0.4                  | 1.1        |
| Oman                         | 1.3                  | 2.1        |
| Palestinian Administration   | ..                   | 1.2        |
| Qatar                        | 1.3                  | ..         |
| Saudi Arabia                 | 1.7                  | 2.3        |
| Syrian Arab Republic         | 1.1                  | 1.5        |
| Tunisia                      | 0.6                  | 2.0        |
| United Arab Emirates         | 1.8                  | 3.1        |
| <i>Yemen, Rep.</i>           | <i>0.2</i>           | <i>0.6</i> |
| <b>MENA Regional Average</b> | <b>1.2</b>           | <b>2.0</b> |

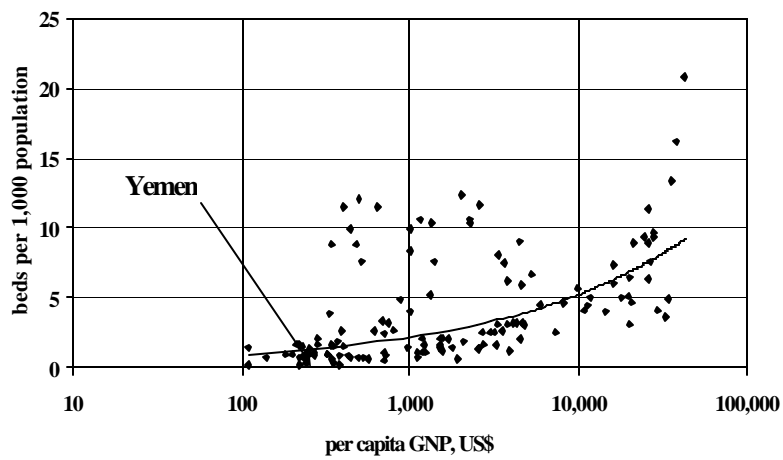
**Source:** World Bank *estimates*, 1999.

Figures 3 and 4

### Global Trends in Physician Number, mid 1990s



### Global Trends in Bed Capacity, mid 1990s



### Health Expenditures

- Yemen's per capita GDP is well below the regional average (Yemen is the only low income country in the Middle East and North Africa Region).
- Yemen's public share of total health spending is well below the regional average (Table 5).
- Yemen's public health expenditure share (2.0 percent of GDP) is slightly below that found in comparable income countries (Figure 5).
- Yemen's per capita health spending is well below the regional average.
- Compared to other countries in the world, Yemen's per capita health spending is at the same level as in comparable income countries (Figure 6).
- As a share of GDP Yemen's health spending is one percentage point 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 5: Middle East and North Africa: Health Expenditure Patterns, 1990-1997/a**

| Country /Region              | Per Capita GDP (US\$) | Per Capita Health Expenditure (in US\$) | Health Expenditure as % of GDP |            |            | Public Share of Health Expenditure (% total) |
|------------------------------|-----------------------|---|--------------------------------|------------|------------|--|
|                              | 1990-97               | 1990-97                                 | Total                          | Public     | Private    |  |
| Algeria                      | 1,470                 | 73                                      | 4.6                            | 3.3        | 1.3        | 73   |
| Bahrain                      | 9,507                 | 497                                     | 5.5                            | ..         | ..         | ..   |
| Egypt, Arab Republic         | 1,031                 | 38                                      | 3.7                            | 1.6        | 2.1        | 43   |
| Iran, Islamic Republic       | 1,776                 | 101                                     | 5.7                            | 2.4        | 3.3        | 42   |
| Jordan                       | 1,571                 | 118                                     | 7.9                            | 3.7        | 4.2        | 47   |
| Kuwait                       | 16,756                | ..                                      | ..                             | 3.6        | ..         | ..   |
| Lebanon                      | 3,608                 | 375                                     | 10.0                           | 3.0        | 7.0        | 30   |
| Morocco                      | 1,299                 | 49                                      | 4.0                            | 1.3        | 2.7        | 33   |
| Oman                         | 6,444                 | 218                                     | 3.5                            | 2.9        | 0.6        | 82   |
| Palestinian Administration   | 1,500                 | 129                                     | 8.4                            | 4.7        | 3.7        | 56   |
| Qatar                        | 11,621                | 319                                     | 2.8                            | ..         | ..         | ..   |
| Saudi Arabia                 | 6,995                 | 536                                     | 8.0                            | 6.4        | 1.6        | 80   |
| Tunisia                      | 2,522                 | 105                                     | 5.9                            | 3.0        | 2.9        | 51   |
| United Arab Emirates         | 18,510                | 1,666                                   | 9.0                            | 4.5        | 4.5        | 50   |
| Yemen, Rep.                  | 356                   | 19                                      | 5.0                            | 2.0        | 3.0        | 40   |
| <b>MENA Regional Average</b> | <b>5,664</b>          | <b>303</b>                              | <b>6.0</b>                     | <b>3.1</b> | <b>3.0</b> | <b>52</b>                                    |

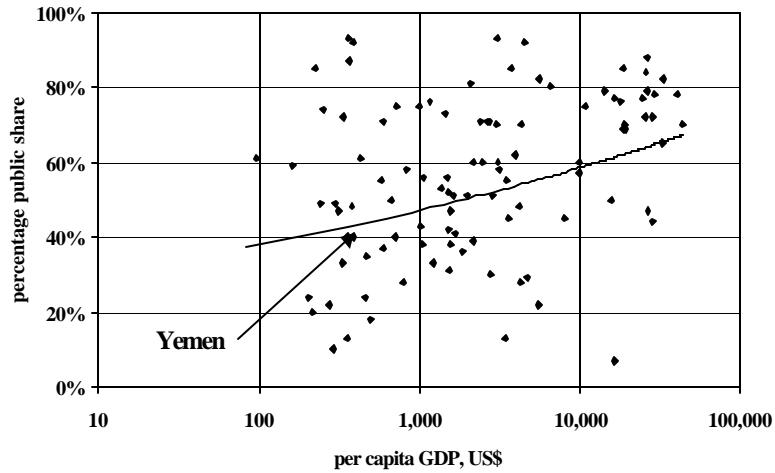
**Source:** World Bank *estimates*, 1999.

**Notes:** a. Figures in this table are taken from the latest available data between 1990-97.

**Note.** Year used for GDP per capita corresponds with year used for health expenditure.

Figures 5 and 6

**Public Health Expenditure Share and Income Levels, Global Trends mid 1990s**



### Per Capita GDP vs. Per Capita Health Expenditure, Global Trends mid 1990s

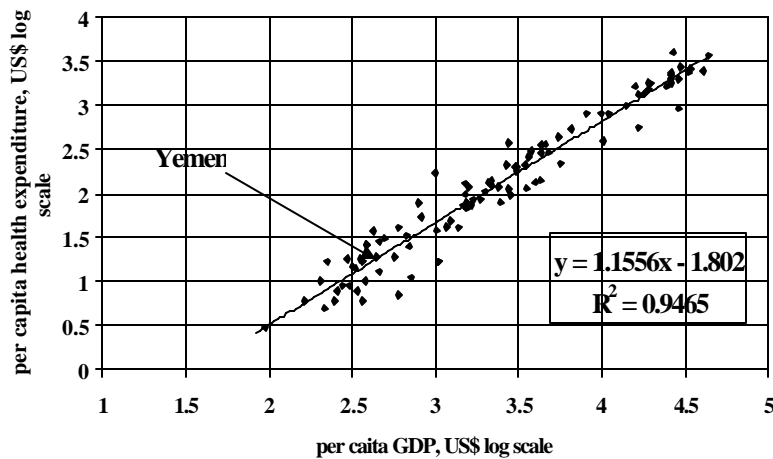
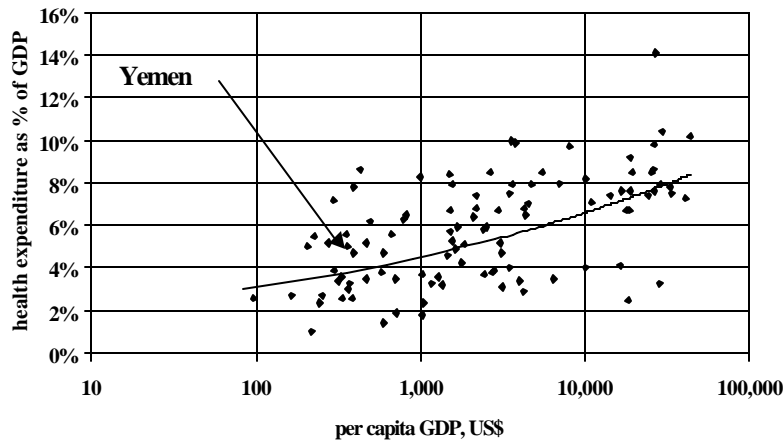


Figure 7

### Health Expenditure as Percent of GDP, Global Trends, mid 1990s



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 and above the level found in other comparable income countries.

### III. Development Goals

The MOPH has launched a reform program consistent with the economic and social realities of Yemen and their administrative capacity to introduce and manage change. The Bank provided extensive technical advice to the strategy along with commitments of support. The following provides a brief description of the key reform objectives:

**Improve efficiency, equity, accountability, and sustainability** of the health sector through: (i) rational allocation and use of public resources; (ii) increased focus on under-serviced areas and poor population; (iii) decentralization of resource planning and management of Government services; and (iv) increased participation of communities, NGOs, and local organizations at the district level in the planning and resource mobilization activities.

**Reform the Government service delivery system** through: (i) introducing greater autonomy of hospitals and health facilities; (ii) improving basic health care service; (iii) establishing a referral system; (iv) improving the supply and efficient use of drugs by establishing a “Drug Fund”; and (v) integrating and implementing public health programs.

**Reform the role and functions of MOPH** to enhance its capacity in: (i) strategic planning and resource allocation; (ii) financial management; (iii) the regulation of the quality of Government and private/NGO health services, including licensing of health professionals and accreditation of health facilities; (iv) monitoring and evaluation; (v) training and continuing education; and (vi) health information systems.

**Prioritize public investments** in health towards cost-effective and priority health interventions by: (i) rationalizing tertiary care hospitals; (ii) strengthening secondary/first referral hospital system; and (iii) strengthening the primary health care infrastructure particularly in under-serviced areas.

**Rationalize the public current expenditures** by: (i) containing the budget for salaries and wages while developing the human resource base; (ii) developing standards to ensure efficiency and equity in allocating the operations and maintenance budget; and (iii) expanding and institutionalizing cost-recovery and cost-sharing programs.