Republic of Yemen

Health Sector Review

A WORLD BANK COUNTRY STUDY

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CONTENTS

Page No.

Page No.

CURRENCY EQUIVALENTS

Currency Unit = Yemeni Rial (YR)
Official Exchange Rate: US $1=YR 12
Market Rate (August 1992): US $1=YR 30

Abbreviations and Acronyms

CSO:	Central Statistical Organization
FP:	Family Planning
GNP:	Gross National Product
HIHS:	Higher Institute of Health Sciences
HIS:	Health Information System
HMI:	Health Manpower Institute
IMR:	Infant Mortality Rate
LCCD:	Local Cooperative Councils for Development
MCH:	Mother and Child Health
MOPH:	Ministry Of Public Health
PHC:	Primary Health Care
SBDMA:	Supreme Board for Drugs and Medical Appliances
TBA:	Traditional Birth Attendant
UNDP:	United Nations Development Programme
UNICEF:	United Nations Children's Educational Fund
UNFPA:	United Nations Family Planning Association
USAID:	United States Agency for International Development
U5MR:	Under 5 Mortality Rate
WHO:	World Health Organization
YFCA:	Yemeni Family Care Association

Acknowledgments

This report is based on the findings of a mission which visited Yemen in July 1992. The mission was composed of Messrs. S. Rangachar (Mission Leader), F. Golladay (Principal Economist), Ms. P. Maughan (Operations Assistant) and O. Maiss, P. Mahanti, H. Anten (Consultants). The report was discussed with the Government in May 1993. In the preparation of this report, the mission worked closely with Dr. Abdulla Saleh Assaiedi, Permanent Secretary & Deputy Minister, Ministry of Public Health. The several discussions with Dr. Assaiedi provided a basis for outlining the strategy for the health sector. The mission wishes to acknowledge with thanks the support and guidance of Dr. Assaiedi and his staff.

At headquarters, Randa El-Rashidi, Shobhana Sosale and Jeannine Greene assisted in the preparation of the report.

BASIC COUNTRY DATA

Resident Population (1991)	**11.6 mln.**
of which: 0-14 years	52.5%
urban/rural	23/77%
Crude birth rate	52
Crude death rate	21
Population growth	3.1% p.a.
Estimated Returnees and Refugees	1 mln. plus
Country area (1,000 sq. km)	555
of which arable land	16
Population density (No of people per sq. km arable land including returnees and refugees)	794

Health Indicators (1991)

Life expectancy, males	46 years
females	47 years
Infant mortality rate	131 per 1,000
Child mortality rate (below 5 yrs)	190 per 1,000
Maternal mortality (per live birth)	1%
Fertility rate (live births per woman)	8
Access to health services, total	45%
(of population) urban	68%
rural	35%
Potable water supply, total	31%
(of population) urban	88%
rural	17%
Population per physician	4,430
Population per hospital bed	1,485
Government expenditure for health	
as % of total government budget	4
as % of GNP	2
Use of contraceptives	5%

Education (1991)

Literacy rates, total population	45%
males	68%
females	22%
Enrollment in primary education	
boys	85%
girls	32%

EXECUTIVE SUMMARY

1. With its low per capita income and poor social indicators the Republic of Yemen belongs to the group of least developed nations. Per capita GNP in 1991 was approximately $540. Average life expectancy is less than 50 years; fertility and mortality rates are high, as is illiteracy among adults, especially females. A rugged topography and widely scattered settlements make it difficult to extend basic social services, including primary health care, to rural areas.

Population and Health

2. Population growth and public health are closely interrelated. Introducing modern health services usually results in a reduction of mortality rates long before fertility rates are affected. This in turn accelerates population growth, often straining limited natural resources and production capacities. Yemen is no exception to this pattern which can be found in many developing countries. To ease population pressure, family planning programs have to become an integral part of the health care system. More importantly, traditional attitudes need to be adjusted and the role of women strengthened. Education and aspirations for improved living standards could be important agents of change.

3. Despite significant improvements over the past two decades, the health status of the population remains precarious. At this stage, mothers and small children are especially at risk while older children and most of the adult population suffer from a variety of infectious diseases that impair their well-being and undermine the productivity of their labor.

4. Present information indicates a maternal mortality of about 10 per 1,000 live births, an infant mortality of 130 and under 5 mortality of 190. Maternal mortality in Yemen is one of the highest in the world. With an average of close to 8 live births per woman, the cumulative risk of mothers dying during childbirth is an appalling 8 percent. Leading causes are complications during pregnancy, child birth and puerperium as well as anemia, malnutrition, tetanus infection and other endemic diseases. Stillbirth rates, which are indicative of the health of mothers, are also high. Several local studies have found them to be up to 74 per 1,000 live births.

5. Infant and under 5 mortality rates (IMR and U5MR) are reported to have declined substantially since the 1960s, although they are still very high by international comparison. Major immediate causes for both IMR and U5MR are acute respiratory infections, diarrheal diseases, malnutrition, neo-natal tetanus and other infectious and parasitic diseases. The underlying causes involve poverty, low personal hygiene, and lack of safe water supplies and sanitation. In addition, the lives of new-born are at risk from intra-uterine growth retardation, birth defects, bleeding from the umbilical cord, and hazardous delivery conditions. Demographic factors that have an impact on IMR include the mother's age at the time of birth - with higher risks for mothers under 20 years and over 35 years - as well as short intervals between births.

6. The IMR is a sensitive indicator of the health status not only of infants but also of the whole population and the socio-economic conditions under which people live. While the pattern of adult morbidity is not well documented, available information suggests a high incidence of endemic diseases due to infectious and parasitic attack. With close to half the population above 14 years of age, this is an important issue. Children depend on adults for their support and so does the economy. Loss of a breadwinner due to death or disease can be devastating, while improvements in health conditions can lead to productivity gains.

7. The principal causes for morbidity and mortality in Yemen need to be dealt with at the source. Rather than spending the bulk of available resources on curative health services as is now the case, it would be more cost effective to concentrate on preventive and promotive health care, giving more attention to immunization programs, mother and child health care, family planning, health education, and a better health environment including safe drinking water and sanitation.

Present Health Services

8. Two factors have had a strong influence on the present state of Yemen's health services: one of them is the late start in modern socio-economic development, including national health programs, which began only in the 1960s. The other factor is the open and market oriented society which traditionally existed in the northern part of the country and after unification, has permeated to the southern governorates. As a result, a dual system of health delivery has evolved that consists of:

- A weak public sector that still shows the growing pains of a rapid expansion during the past two decades, and is now severely constrained by the present budgetary crisis; and

- An expanding private sector that is largely self-financing and caters to those who can afford to pay for medical services.

9. As in many other developing countries, the system is predominantly curative, even in the public sector, with little emphasis on preventive and promotive health care. In this form, health services in Yemen have a sub-optimal impact on the general health status of the population. Moreover, many poor people especially in rural areas remain without modern health care.

10. Public health care is organized in three levels: primary health care (PHC) supported by secondary and tertiary referral care. Although some differences remain between northern and southern governorates, this structure exists throughout the country. PHC starts at the village level where PHC units are run by paramedical staff; the units are backed up by PHC centers, most of which are managed by one physician and have some laboratory and X-ray facilities. Patients who cannot be properly cared for at the PHC level are referred to rural, district or governorate hospitals (secondary care) for further diagnostic and curative treatment. Some of these hospitals also provide support for national or regional immunization and disease control programs. Finally, tertiary hospitals provide specialized care and serve as teaching hospitals for the medical faculties of the country's two universities.

11. Private health care is essentially curative and is available mainly in and around urban areas. Physicians practice either individually or in groups. There are also a number of private clinics which are well equipped and may have up to 50 beds. Private health care is strictly commercial and charges substantial fees to its patients. A considerable number of Yemenis also seek specialized treatment abroad.

Major Issues and Policy Options

12. The past twenty years have brought great improvements in Yemen's health services. Public health facilities have expanded rapidly, both in urban and rural areas; private health services have sprung up and are offering a broad range of modern health care; and an increasing number of Yemenis are being trained to become physicians, nurses and other health workers. But there are still major weaknesses in the outreach and quality of health delivery systems which are aggravated by rapid population growth, and increasingly severe financial limitations.

13. Among the most pressing issues are shortcomings in the regional coverage and quality of PHC which caters mainly to the poor and should be the principal agent for preventive and promotive health programs, including immunization, mother and child health care (MCH), nutrition and health education. Related to that are problems in sector organization and management, in the training of health personnel and last but not least, the financing of health programs.

14. The basic question that needs to be addressed is: How can health services be made more effective and more accessible to the poor? In answer to this question the Government has decided to give priority to PHC, a strategy which appears to be well chosen. With its focus on preventive and promotive health service, future investments in strengthening PHC can be expected to produce high returns. Given the present shortcoming of PHC facilities, this would involve both a geographic expansion of the PHC network to areas not yet served and an upgrading in the quality of existing services. At first sight, geographic expansion would seem to be a poor policy choice as long as existing services are less than satisfactory. But there are compelling social reasons to build new PHC units and centers in the outlying regions, provided they can be operated at acceptable levels of effectiveness. This implies additional staffing and adequate funding for salaries, medicines and other current cost items. On the other hand, improving the quality of existing facilities may prove to be more cost-effective and have a greater impact on the general health status of the population, especially if emphasis is given to preventive and promotive health care. In practice, however, there is no real policy choice and both options will have to be pursued simultaneously.

Immunization Programs

15. Immunization is one of the most cost-effective health interventions and forms an essential component of PHC. The principal target group are new-born children who are protected against six vaccine-preventable diseases: diphtheria, whooping cough, tetanus, poliomyelitis, tuberculosis and measles. In 1987, the northern part of Yemen had one of the lowest immunization rates in the world with less than 25 percent of all children being protected. The following year a national immunization program was launched with the support of

UNICEF and WHO. As a result immunization levels in the North rose dramatically to about 60 to 80 percent by 1990, more or less matching the standard that had already been achieved in the South.

16. After the initial backlog has been cleared up, the important issue now is to sustain a high level of coverage for children born after 1990. This requires regular follow-up either through repeated national programs such as the one in 1988/90, or a more systematic and continuous program of immunization through the existing PHC network (integrated approach). National programs, as the recent experience shows, can be very effective but need a special effort and tend to be costly. Integrated programs, on the other hand, offer the advantage of continuous and sustained follow-up at relatively little expense. They require, however, fully functional PHC facilities and responsive parents who understand the need, and make the effort to have their infants immunized. In many parts of the country, these conditions are still not yet met. Policy makers therefore may have to continue national programs at three to five year intervals while at the same time strengthening the immunization capability of PHC units and centers. Both approaches would need the support of an active health education program.

MCH and Family Planning

17. Immunization of infants is an important aspect of the broader issue of MCH. At this point, only some 20 percent of the PHC facilities are offering MCH services, most of them in urban areas. Moreover, MCH care is often weak and suffers from inadequate training of health workers and shortages of supplies. Improving the situation requires a major effort to strengthen pre and post-natal care, reduce the risk of deliveries, and provide infants with better health care. In addition, there is need for counselling on family planning to reduce fertility rates and prolong birth spacing.

18. So far, few family planning (FP) services are available in Yemen. Although the concept is not new to the Arab world, the Yemeni response to it has often been one of suspicion and caution. This was in part due to lack of understanding of the potential benefits that could be derived from FP, but it also reflects deepseated social values, especially among males who dominate decisions at the family level. Family planning activities are well established in the South. In the northern governorates they were initiated through voluntary work by the Yemeni Family Care Association (YFCA), which in 1984 established the first health center in Sana'a that provided comprehensive MCH and FP services. In 1987 a similar center was opened in Taiz. The Association now operates outpatient clinics and provides contraceptives, health education as well as a variety of pamphlets and publications. In November 1992, the Government endorsed a comprehensive population strategy to be implemented by a National Population Council. In addition, private physicians and pharmacies are offering FP services and supplies.

19. The Government has taken a clear decision in favor of MCH and FP, and is developing programs designed to implement this policy. But building up these services and making them acceptable to people takes time and sustained effort. It involves training of health workers, providing facilities and supplies, and educating people through the media and other channels of communication. Creating awareness of services and their benefits and breaking down traditional barriers against acceptance will be a major challenge. When designing and implementing specific action programs the Government can continue

to count on the support of international and bilateral agencies, notably UNICEF, UNFPA and WHO, as well as from private organizations.

Controlling Endemic Diseases

20. While mothers and young children represent the most vulnerable population group, there is also a high incidence of morbidity among older children and adults. Endemic diseases are a major cause; controlling them requires a national surveillance system which monitors the ever changing pattern of disease incidence and identifies areas of concentration. In some cases this would be followed by national or regional control programs that are managed by specially trained health personnel. These programs can be very effective and can yield quick results. Follow-up and maintenance could be left to the regular PHC network. For better results and sustained impact, disease control programs need the support of appropriate health education which teaches people how to create a better health environment, avoid contamination and informs them about possible methods of treatment.

Health Education

21. Modern concepts of health care have only recently been introduced to Yemen, and are not yet fully understood by large segments of the population. Health education therefore has a crucial role to play in explaining the benefits of modern health principles and procedures, and in making them acceptable to the people. Present programs are conducted through the PHC network and governorate hospitals. They need to be strengthened and require the support of mass media, schools, mosques and community organizations (e.g. women, workers' and farmers' associations, YFCA).

Referral Facilities

22. Primary health care is being supported by secondary and tertiary health care facilities (see para. 10 above). At present, the referral chain is weak and patients often seek treatment in hospitals, bypassing the PHC system. To avoid overloading of referral facilities, procedures need to be streamlined and PHC facilities upgraded so that they can perform the full range of services for which they are designed. Otherwise, the unnecessary spill-over of patients to the secondary level will continue and some of the PHC functions will be pushed to district and governorate hospitals.

Training of Health Personnel

23. The delivery of health services is essentially a team function involving different categories of health personnel, each of which has its own role and responsibility. Moreover, the quality of a health service crucially depends upon its staff: their general education, job specific training, dedication to the profession and, last but not least, commitment to the people they serve.

24. Although great strides have been made over the past two decades to establish local training facilities, Yemen still has a shortage of trained health manpower and continues to rely on expatriate staff mainly in the

categories of physicians and middle level personnel. Preparing Yemenis for health service professions therefore commands high priority and requires careful selection of candidates and extensive pre- and in-service training. At present, all training programs are in the public sector, under the jurisdiction of the Ministries of Education and Public Health.

25. Some basic principles for future training of health personnel could be defined as follows:

- Training programs should be oriented to the needs of the people--their social, cultural and economic conditions and their health profiles;
- Candidates should be selected and trained on the basis of specific job requirements;
- Lower level trainees should be recruited from the community they are destined to serve after graduation;
- More female candidates should be admitted to training programs; and
- Part of the training should be given at PHC facilities and secondary hospitals.

Improving Sector Management

26. Sector management has become a major issue which needs to be addressed if health services are to be improved. Recent efforts to establish an appropriate legal framework are clearly a step in the right direction. But they need to be supplemented by changes in organizational structures and management processes. The increasing size and complexity of health administration and the tendency to retain decision-making powers at the center have led to bureaucratic procedures, time delays and waste of scarce human and material resources.

27. To enhance management effectiveness, the Ministry of Public Health (MOPH) is planning to delegate administrative functions to the level of governorates, districts and local bodies. Such a decentralization of management structures could make health services more responsive to local conditions, and more acceptable to the local population. It would provide opportunities for the recruitment and training of health workers from the communities they are expected to serve; enhance the effectiveness of interpersonal health education; and strengthen maintenance and supply programs. These functions, however, can only be built up with appropriate financial and technical support. They also require a strong commitment to accountability and effective supervision.

28. There are also logistical problems which call for measures to streamline procurement procedures for drugs and other medical supplies; strengthen storage and distribution capacity, including cold chain facilities; and improve control and auditing procedures.

29. Access to reliable health information is an important management tool. But present information systems are weak or non-existent. They would have to be set up and maintained, starting at the level of PHC units.

Financing of Health Sector

30. There are three major sources from which the health sector in Yemen is financed: the government budget which covers public health expenditures, payments of patients for private health services, and foreign assistance. In addition, there are marginal contributions to public health facilities at the local level, while a growing number of insurance schemes ease the cost of health care for employees in the modern sectors.

31. Public health services are largely financed through the government budget. Over the next two to three years, these expenditures are unlikely to grow much in real terms. A short-term objective, therefore, could be to maintain the present share of health in total government spending (about 4 percent) and to rely on community participation and foreign assistance as additional sources of finance. Equally important would be a more efficient use of available resources.

32. There are better prospects for the second half of the decade. Large scale exploration and development activity by foreign oil companies in several parts of the country is yielding promising results. Oil production could triple or even quadruple between the early and late 1990s, boosting both foreign exchange earnings and government revenue. Even allowing for a gradual deficit reduction, public expenditure could thus grow at a rate of 6 to 7 percent p.a. between 1992 and 2000. This would enable the Government to spend more on health, and offer the opportunity to raise its share in total public spending from currently 4 percent to about 5 percent. Much of the increment could be allocated to primary health care, improving its quality and regional coverage. There is also scope for some savings through more efficient use of resources. Areas where efficiency could be increased include sector organization, personnel management or logistics for medical supplies. Additional resources could further be mobilized through user charges and community participation.

33. Until the mid-1980's, community participation was an important factor contributing to the development of Yemen's primary health care system. They were largely financed through a local tax which in 1986, became part of the general tax revenue. The result was a sharp decline in local support for health projects. Restoring the proceeds from local taxes to the communities where they are raised would be an essential element in the revival of local initiative. In addition, some user charges could be introduced to support PHC facilities.

34. Private health services are self-financing. Fees charged by private physicians and clinics are determined by market forces and subject to a fair amount of competition. They are relatively low by western standards although quite high in relation to local incomes. Still, demand for private health services appears to be strong and growing, suggesting that many families can afford to pay for modern health care, especially in cases of emergency or acute illness.

35. Foreign assistance from UN agencies and bilateral donors plays a major role in the development of Yemen's health services. While this support will continue to be needed in the foreseeable future, there appears to be a case for more effective aid coordination to accommodate Government priorities. Another issue associated with foreign assistance concerns the sustainability of donor supported projects: timing and modality of handing them over to local authorities need to be carefully considered. If donors phase out their support before the Government is able to assume full responsibility for management and

operating cost, the project could suffer and its impact be weakened. In some cases this would mean that donor support is required for much longer periods than originally anticipated.

Development Priorities

36. Public and private health services in Yemen have grown vigorously during the past, starting from a very low level in the early 1970s. Sustaining this development over two decades is a remarkable achievement for which the country and external donors deserve much credit. But the task of establishing an adequate and satisfactory health delivery system is far from completed and continued efforts are needed in the foreseeable future.

37. The overall objective would be to achieve a gradual improvement in the health status of people through quality improvements in health services and reductions in regional disparities of health care facilities. To meet this objective would require extending and strengthening the PHC network, giving more emphasis to preventive and promotive health care. Major areas of priority would be MCH combined with family planning, immunization, disease control and health education. Past policies of channelling the bulk of resources available to the sector into secondary and tertiary health care will need to be changed. The important issue here is to streamline referral procedures so as to avoid overburdening regional and specialized hospitals. These changes will have to be supported by improvements in sector management, more and better trained health personnel, technical assistance and additional sources of finance.

38. The following matrix summarizes key sector objectives, actions already taken, and policy recommendations for the future.

KEY OBJECTIVES, ACTIONS AND RECOMMENDATIONS

	Objectives	Actions Taken or Recommended
1.	Improve health status of population.	To achieve this basic objective, the Government decided to (a) give greater emphasis to preventive and promotive health programs, and (b) improve access of the poor to health services, especially in rural areas. Principal instrument to implement this strategy would be Primary Health Care (PHC).
2.	Strengthen PHC network through:	Government is developing a 5 year program to:
	(a) Geographic expansion,	(a) Build 600 new PHC units supported by 70 new PHC centers; this would raise access to PHC facilities from presently 45% to about 60% of the population; beneficiaries would mainly be the rural poor.
	(b) Upgrading quality of PHC services.	(b) Strengthen the range of services offered by PHC units and centers, mainly in areas of preventive and promotive health care; priority will be given to:
		• Expanding mother/child health (MCH) care and family planning services;
		• Achieving higher immunization level for infants;
		• Controlling endemic diseases through specially focused programs;
		• Expanding health education through decentralized programs emphasizing inter-personal relations;
		• Upgrading nutrition standards especially of mothers and infants;

		• Improving health environment through safe water supplies and sanitation.
3.	**Back up PHC services with secondary and tertiary hospitals.**	Government plans to strengthen secondary hospitals supporting geographic expansion of PHC system. There is need for streamlining referral procedures to avoid overloading of hospitals.
4.	**Provide adequate training of health personnel to support quantitative and qualitative strengthening of health delivery systems.**	Government plans more pre and in-service training for all categories of health personnel. Training programs should serve the needs of PHC facilities and secondary hospitals, and should give priority to female health workers.
5.	**Strengthen sector management which suffers from over-centralization and administrative inefficiency.**	The Ministry of Public Health (MOPH) is committed to regional decentralization of management functions, giving more responsibilities to governorates and local bodies. This would reduce present administrative constraints and make sector management more responsive to local needs. Other management issues that need to be addressed are: • Strengthen accountability and supervision; • Improve personnel management; • Improve logistics for medical supplies; • Improve maintenance of buildings and equipment; • Establish a reliable health information system; • Direct private health services into areas where they supplement public health facilities.

6.	Public health services are constrained by severe shortages of funds. Mobilizing additional resources will be essential if sector objectives are to be met.	Government budget allocations for health sector are unlikely to be increased over the short term. However, additional resources could become available in the second half of the 1990s from: • The expected increase in oil revenue; • A possible increase in the share of health in total government spending from 4 percent at present to 5 or 6 percent; • More community participation and user charges.
7.	Foreign assistance should continue to play a major role in the development of Yemen's health sector. But its effectiveness and impact could be enhanced.	Government will invite donors for a round table conference to review future aid requirements. Two issues stand out and need to be addressed: • Need for improved aid coordination both among donors and to accommodate government priorities; • Sustainability of foreign aid; i.e., donors should not phase out their support for specific programs or projects before the Government is able to assume full responsibility for management and operating cost.

INTRODUCTION

Country Background

0.01. With its low per capita income and poor social indicators the Republic of Yemen belongs to the group of least developed nations.[1] Scant rainfall and desert conditions in many areas severely restrict agriculture so that only about 70 percent of domestic food requirements are produced locally. Given the country's small industrial sector, most manufactured products have to be imported. A rugged topography and widely scattered settlements make it difficult to extend social services to rural areas, including primary health care. Yemen's per capita GNP in 1991 as estimated by the World Bank was approximately $540. The average life expectancy is less than 50 years; fertility and mortality rates are high as is illiteracy among adults, especially females. Traditional attitudes are still prevalent throughout the country, holding back social change and family planning.

0.02. Modern economic and social development on a national scale started only in the late 1960s, after people in both the northern and southern parts of the country achieved political independence. During the 1970s and early 1980s, Yemen experienced rapid economic growth financed largely from remittances of emigrant labor who worked in neighboring oil exporting countries. Foreign assistance supported the development of infrastructure and social services.

0.03. With the sharp fall of international oil prices in the mid 1980s, the flow of remittances and foreign aid to Yemen slowed down significantly, creating serious imbalances in foreign trade and government budgets. When the northern and southern parts of the country united in May 1990, the new Republic of Yemen inherited severe economic and social pressures. These problems were exacerbated by the Gulf crisis which caused large numbers of Yemeni emigrants to return to their country at very short notice. In addition, political tensions in Ethiopia and Somalia drove successive waves of refugees into Yemen. Together, these dislocations of people increased the country's resident population by over one million or close to 10 percent. As little foreign assistance came forward to absorb the flood of returnees and refugees, it was left to the authorities and individuals to care for the uprooted people as best they could.

0.04. The result of these pressures was a further increase in the financial burden of the Government, widespread unemployment, growing poverty

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1/. Human Development Report 1991, UNDP, New York, p. 199

and declining real incomes. During 1991 alone, per capita GNP is estimated to have fallen by about 14 percent. The economic and financial constraints are now affecting all sectors, and threaten to overwhelm the still fragile social institutions and services. With population growing at over three percent a year, it has become impossible to meet the basic needs of many people especially in the rural areas.

0.05. While there is little relief in sight for the next two to three years, prospects are better for the second half of the 1990s. Unification has resolved previous border disputes between North and South, and opened the whole country to foreign investors. This has led to a surge in oil exploration which is expected to result in a substantial increase of domestic oil production and exports during the mid and late 1990s. Additional oil revenue could provide resources for a resumption of vigorous economic growth, and could broaden the tax base for public expenditures. Economic prosperity and the recent resumption of emigration to Arab oil countries could ease unemployment and improve living standards for large segments of the population. Programs for human development, including primary health care, would be able to grow at a similar pace, making it possible to address present limitations in coverage and quality.

Objectives of Sector Review

0.06. The main purpose of this review is to assess the present state of the health sector, and to review major issues and possible policy options. Emphasis is given to primary health care and its principal components as the most effective way to improve the general health status of people, and to tackle one of the major factors contributing to poverty at its source. The report also highlights two other key issues: population policy which is just emerging as a major element of the Government's development strategy, and the crucial role that women can play in the health sector.

0.07. The findings of this review could assist the Government in designing an effective health sector strategy for the future which overcomes present weaknesses in the system and focuses on areas that have been neglected in the past. The review is also intended to help World Bank staff as well as other potential donors, identify future health projects in Yemen. Finally, by pointing out priorities and possible areas of intervention, the review would support the Government's efforts in aid coordination with a view of optimizing the potential benefits of foreign assistance to the health sector.

0.08. The review has been financed largely from UNDP sources with the World Bank serving as executing agency. The Ministry of Public Health (MOPH) as well as various UN agencies active in the health sector strongly supported this endeavor, and provided valuable information and guidance to the review team. Support obtained from the Netherlands, the largest bilateral aid donor in the sector, deserves special mention. While the report has been extensively discussed with government representatives and peer readers inside and outside the World Bank, the ultimate responsibility for its findings and recommendations rests with the Task Manager, Mr. S. Rangachar, and his team.

0.09. The principal sources used by the review team in preparing this report are listed in the bibliography. Sector data are shown in the Statistical Appendix. Preliminary findings of recent surveys by MOPH are summarized in Annex 1 and Annex 2. The paucity of past data and the political separation of the country until 1990 make it impossible to develop consistent historical series for the sector. There is some information on the growth of health institutions and personnel over the past two decades, but in the absence of reliable data on the health status of the population this does not permit a detailed impact analysis.

PART ONE: PRESENT SITUATION OF THE HEALTH SECTOR

I. POPULATION AND HEALTH

1.01. Population growth and health care are closely interrelated. Introducing modern health services usually results in a reduction of mortality rates long before fertility rates are affected. This in turn accelerates population growth, often straining limited natural resources and production capacities. Yemen is no exception to this pattern which can be found in many developing countries. To ease population pressure, family planning programs have to become an integral part of the health care system. More importantly, traditional attitudes need to be adjusted and the role of women strengthened. Education and aspirations for improved living standards could be important agents of change.

Population: Size and Demographic Trends

1.02. Yemen is still in the early phases of demographic transition. Birth rates are very high, reflecting traditions that date back to the times when child mortality was also extremely high. With the introduction of modern health services in the 1970s and 1980s, mortality rates dropped significantly while birth rates hardly changed. As a result, natural population growth increased from about two percent a year two decades ago to more than three percent in recent years. As health services are further extended to rural areas and as their quality improves, average life expectancy will continue to increase and, unless there is a significant decline in fertility rates, the population will grow even faster than in the recent past.

1.03. In mid-1991, the population of Yemen was estimated to have been 11.6 million (Statistical Appendix, Table 1). This estimate is based on earlier census results in the northern (1986) and southern (1988) governorates. It shows a youthful age structure with more than half the people being less than 15 years of age. The above figure does not include, however, former emigrants who returned to the country in the wake of the Gulf crisis and of political tensions in East Africa, and who add up to probably more than one million people. The total resident population in 1991 therefore was somewhere in the order of 12.7 million, a figure which was about 12 percent higher than the estimate for mid-1990, just before the wave of return emigrants started to arrive. By any standard, this is a very large increase which places a major burden on society aggravating the country's already difficult economic and financial situation.

Table 1.1: DEMOGRAPHIC INDICATORS, 1991

Estimated population, mid-1991	11.6 million
(of which under 15 years of age)	(6.1 million)
Estimated return migrants	1.1 million
Estimated resident population, mid-1991	12.7 million
Natural population growth rate (% p.a.)	3.1
Crude birth rate (per 1,000)	52
Crude death rate (per 1,000)	21
Fertility rate (live births per woman)	8
Life expectancy at birth (years)	46

1.04. Population estimates will be refined in 1994, when the first census for the united Yemen is scheduled. In the meantime, it can be assumed that the main demographic variables will not change significantly during the rest of the decade, leading to a natural population increase of about 4 million between 1991 and 2000. On the other hand, net emigration - a major outlet for Yemen's surplus labor in the past - could resume in the coming years, although on a smaller scale than before. The resident population could thus reach a level of about 16 million by the year 2000, some 25 to 30 percent more than in 1991. Demand for health services therefore will continue to grow at a fast rate creating the need for sustained expansion of health facilities just to keep up with population growth.

Health Status of Population

1.05. Disease surveillance and epidemiological screening in Yemen are still in their infancy. Accurate data on specific disease prevalence, incidence and secular trends are not available. Ad hoc surveys, small scale studies and reports of vertical disease control programs, however, suggest that the country has only entered the first stage of epidemiological transition. At this stage, mothers and small children are especially at risk while older children and most of the adult population suffer from a variety of infectious diseases that impair their well-being and undermine the productivity of their labor.

1.06. Present information indicates a maternal mortality rate of about 10 per 1,000 live births, an infant mortality of 130 and under 5 mortality of 190 per 1,000 live births. These rates would be similar to or higher than the average for all least developed countries. [2]

2/. Human Development Report 1991, p.141 and 143.

Table 1.2: MORTALITY RATES
(per 1,000 live births)

	Republic of Yemen	Least Developed Countries
Maternal Mortality	10	5
Infant Mortality	130	120
Under 5 Mortality	190	200
Memo Item: Life Expectancy at Birth (Years)	46	51

1.07. Maternal mortality in Yemen is one of the highest in the world. With an average of close to 8 live births per woman,[3] the cumulative risk of mothers dying during childbirth is an appalling 8 percent. Leading causes are complications during pregnancy, childbirth and puerperium, as well as anemia, malnutrition, tetanus infection and other endemic diseases (e.g. malaria). Still birth rates which are indicative of the health of mothers, are also high. Several local studies have found them to be up to 74 per 1,000 live births.

1.08. It has been estimated that for each case of maternal death, there are 15 to 20 cases of severe maternal morbidity. The principal causes are vesico and recto-vaginal fistula, ruptured uterus from neglected obstructed labor, and pelvic inflammatory diseases. Other causes are child bearing at a young age, short birth intervals, poor ante and post-natal care and unhygienic environment during delivery.

1.09. Infant and under 5 mortality rates (IMR and U5MR) are reported to have declined substantially since the 1960s, although they are still very high by international comparison. Regional disparities of IMRs are significant, ranging from highs of about 170 in Al-Jawf and 160 in Shabwah to around 100 in Taiz and even less in Aden. The reasons given for these variations are differences in education levels, fertility rates, health care, safe water and sanitary facilities as well as nutrition and environmental conditions.

1.10. Despite recent improvements, the child survival situation remains bleak. Major immediate causes for both IMR and U5MR are acute respiratory infections, diarrheal diseases, malnutrition, neo-natal tetanus, and other infections and parasitic diseases (see Statistical Appendix, Table 4). The underlying causes involve poverty, low personal hygiene, and lack of sanitation and safe water supplies. In addition, the lives of new-born are at risk from intra-uterine growth retardation, prolonged and difficult labor, birth defects, bleeding from the umbilical cord, and hazardous delivery conditions. Demographic factors that have an impact on IMR include the

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3/. A recent survey reports average fertility rates of 5.6 in urban areas, 8.1 in rural areas, and 7.6 nationwide. (Yemen Demographic and MCH Survey 1991/92, CSO, Sept. 1992)

mother's age at the time of birth (with higher risks for mothers under 20 years and over 35 years) as well as short intervals between births.

1.11. The IMR is a sensitive indicator of the health status not only of infants but also of the whole population and the socio-economic conditions under which people live. While the pattern of adult morbidity is not well documented, available information suggests a high incidence of endemic diseases due to infectious and parasitic attack. The most prevalent are intestinal parasites, gastroenteritis, respiratory diseases, malaria, tuberculosis and schistosomiasis (Statistical Appendix, Tables 4 & 5). With close to half the population above 14 years of age, this is an important issue. Children depend on adults for their support and so does the economy. Loss of a breadwinner due to death or disease can be devastating, while improvements in health conditions can lead to productivity gains of labor. [4]

1.12. The principal causes of morbidity and mortality in Yemen need to be dealt with at the source. Rather than spending the bulk of available resources on curative health services as is now the case, it would be more cost effective to concentrate on preventive and promotive health care, giving more attention to immunization programs, MCH, family planning, nutrition and health education, and a better health environment including access to safe drinking water. These issues will be reviewed in the second part of this report.

4/. World Development Report 1990, p. 78.

II. SECTOR STRATEGY AND ORGANIZATION

1.13. After unification, the Government set out to review its development strategy, including that for the health sector. The broad outlines of such a strategy were presented in a National Reform Program that was approved by Parliament in January 1992. A national development plan designed to translate the overall strategy into specific policies, programs and projects is under preparation.

National Health Policy and Targets

1.14. The central objective of Yemen's health policy is to improve the health status of the population, in both rural and urban areas, and to reduce regional disparities in access to health care facilities. Special emphasis will be given to Primary Health Care (PHC), which is to be the main instrument through which the overall objectives are to be achieved.[5] More specifically, this involves further strengthening of the PHC network, improving maternal and child health care, control of endemic diseases, adequate nutrition, safe water, sanitation and health education.

1.15. These efforts are to be supported by appropriate training of health personnel, especially female health workers, better management of health facilities, adequate supplies of medicines and equipment, and sufficient funds for investment and current operations. Acceptability of health services would be enhanced by greater community participation, while the widely dispersed population and a rugged topography call for more decentralized sector organization. PHC facilities are backed up by secondary and tertiary health care and increasing private health services.

1.16. Quantitative health targets set for the current decade and summarized in the table on the following page appear to be optimistic in light of current weaknesses of the PHC system and continuous financial constraints.

5/. General Economic Memorandum, ROY Round Table Conference, Geneva, June/July 1992, p. 37.

Table 1.3: HEALTH SECTOR TARGETS

	Bench Mark 1990	Target for 2000
Accessibility to health services (%)	45	90
Population per physician	4,350	3,000
Immunization below 1 year (%)	60-80	85
Infant mortality a/	130	60
Under 5 mortality a/	190	90
Maternal mortality a/	10	5
Fertility (live births per woman)	8	6
Use of contraceptives (%)	5	35
Crude birth rate	52	38
Crude death rate	21	10
Population growth (% p.a.)	3.1	2.8
Life Expectancy (years)	46	60

a/ Per 1,000 live births

Legal Framework

1.17. Over the past two years, considerable effort has been spent by the Government and legislature to establish a legal framework for the health sector. Although the current, post-unification constitution makes no specific reference to the provision of health services, the National Reform Program states that the "human being's right to life axiomatically implies the right to medical care; that is, protection against sickness and disease and from environmental calamities". The program upholds humanitarian objectives of the medical profession and endorses private practice and community participation as means to strengthen and expand health services. It advocates control of endemic diseases, preventive health care, and proper usage of drugs. It also refers to the need for improved health sector management.

1.18. These principles are to be spelt out in greater detail in a Public Health Law which is not yet enacted. In its present form, the draft law proposes to regulate the containment of communicable diseases; to address environmental health issues including safe drinking water, waste and sewage disposal; to set health standards for foodstuffs and food industries; and to regulate health conditions in trade, industry and housing.

1.19. A law on medical practice has recently been passed (Law No. 32 of 1992) and regulates the registration and practice of medical and paramedical professions, and the prevention of malpractice. It limits medical practice to qualified Yemeni nationals, but allows non-Yemeni specialists to work for limited renewable periods. The law gives medical professionals the right to private practice and to establish private health institutions. It envisages setting up a Yemeni Medical Council, chaired by the Minister of Health and

including representatives of the public sector, medical schools and the main medical professions. The Council which is yet to be formed, would be charged with supervising the correct application of this law; the observance of medical standards; the evaluation and approval of medical and paramedical degrees; the granting or withdrawal of individual and institutional licenses; and the imposition of sanctions against violators of the law and of professional ethics and standards.

1.20. Another law is being prepared which would legalize the operations of the Supreme Board for Drugs and Medical Supplies. The Board already exists and is responsible for the organization, supervision and control of the supply and pricing of all medicines and medical equipment. This concerns mainly imports but also covers locally produced drugs.

1.21. At this point, the legal framework for the health sector remains incomplete. This creates some legal uncertainties, although in practice they have not significantly affected the development of health services in the country. However, over the longer term it will be essential to complete health legislation and to develop institutions and mechanisms necessary to ensure compliance with the laws.

Sector Organization

1.22. The health care system in Yemen consists of a large public sector along with a sizable private sector. Public health care is organized in three levels: PHC supported by secondary and tertiary referral care. Although some differences remain between North and South, this structure exists throughout the country (see Statistical Appendix, Table 6). PHC focuses on preventive and promotive health programs (immunization, MCH and family planning, health education, etc.) and provides first curative care. It starts at the village level where PHC units are run by paramedical staff; the units are backed up by PHC centers, most of which are managed by one physician and have laboratory and X-ray facilities. Patients who cannot be properly cared for at the PHC level are referred to rural, district or governorate hospitals (secondary care) for further diagnostic and curative treatment. Some of these hospitals also provide support for national or regional immunization and disease control programs. Finally, tertiary hospitals provide specialized care and serve as teaching hospitals for the medical faculties of the country's two universities.

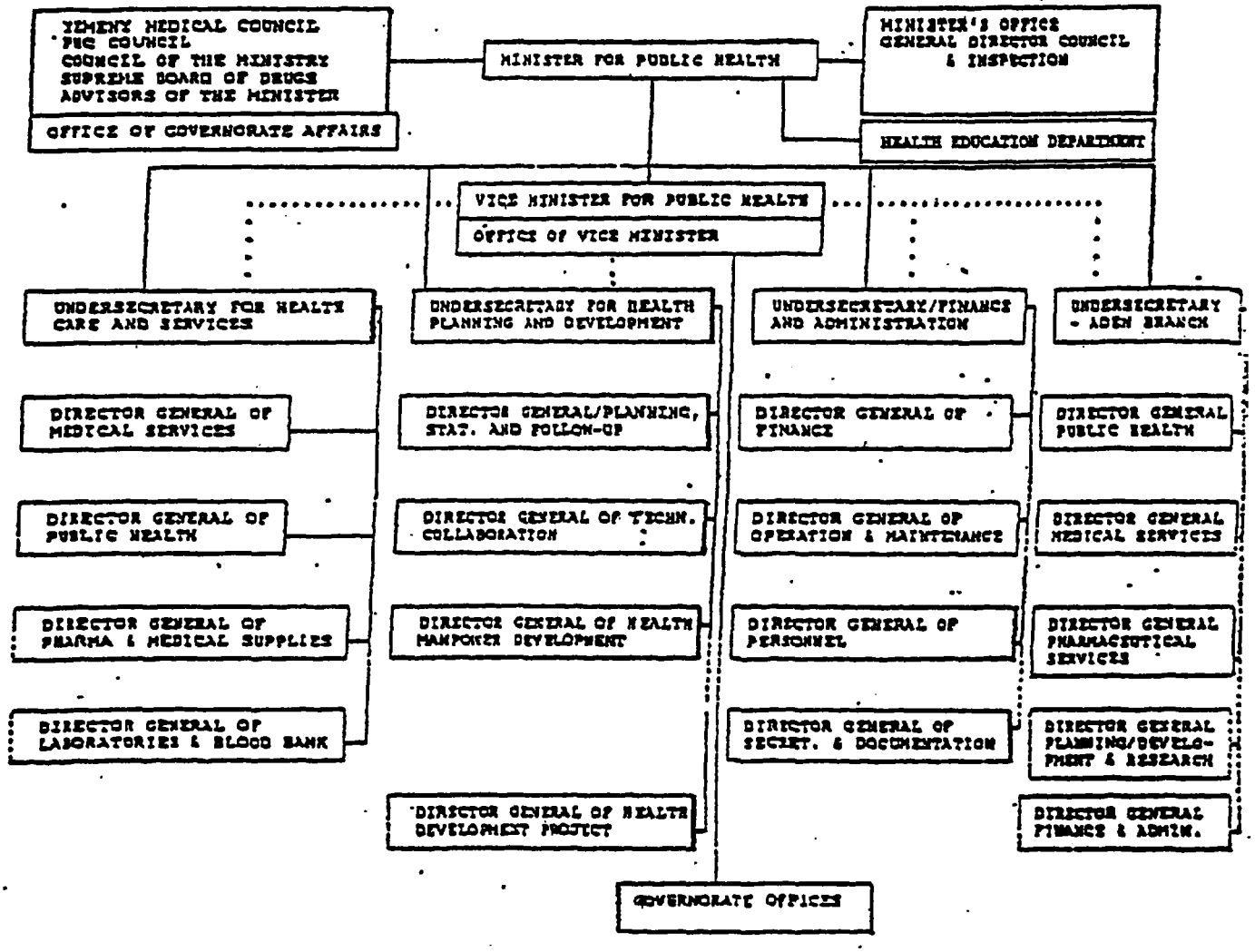
1.23. Private health care is essentially curative and is available mainly in and around urban areas. Physicians practice either individually or in groups. There are also a number of private clinics which are well equipped and may have up to 50 beds. Private health care is strictly commercial and charges substantial fees to its patients.

1.24. The Ministry of Public Health (MOPH) has overall responsibility for the health sector. Its functions have recently been spelled out in a Presidential Decree (No. 114, July 1992) and require the Ministry to:

- Determine health policies based on PHC and aiming to provide health care for all people;
- Develop health services at all levels and in all regions of the country;
- Prepare and issue health legislation, regulations and instructions;
- Develop and train health personnel; and
- Organize and enhance participation of communities and other sectors in the development of health services.

Other functions include support for health research, establishing technical standards for health professionals and facilities, and coordinating environmental health programs. Chart 2.1 shows the present organizational structure of the Ministry.

Chart 2.1: ORGANIGRAM OF MOPH



Planning and Budgeting

1.25. MOPH prepares annual and medium-term development plans for the health sector following guidelines issued by the Ministry of Planning. These plans reflect government health policies and are put together in consultation with health authorities in the governorates. Programs financed from external sources are given priority. Since unification, only annual plans have been prepared. The first medium-term plan is likely to cover the period 1996-2000. In the meantime, however, MOPH has identified tentative targets and programs for 1993-97 which will help establish priorities for the first five-year plan.

1.26. Criteria for allocating budget resources are agreed upon with the Ministries of Planning and Finance. Budget estimates are prepared on the basis of requests from different public health institutions, and include expenditures for personnel, current material inputs, and development programs. In the current budget, wages and salaries - including incentive payments - claim by far the largest share of resources. They are subject to the same severe financial constraints that govern all public expenditures. As the cost of living has been rising sharply since 1990, real incomes of public health employees have dropped dramatically in the past three years. At the same time, budget allocations for medical supplies and maintenance have been less than adequate. Capital expenditures depend largely on foreign financing.

1.27. Employees who hold approved positions are being paid regularly, even if their duty station is in remote areas. Qualified health workers who want to enter government service, however, must wait until an approved position becomes vacant or a new one is created. In the present budgetary situation this can take a long time. As a result, there are now a number of graduates from health training institutions who cannot find employment in the health sector.

1.28. Overall, less than one third of the health budget is allocated to primary health care while secondary and tertiary hospitals claim the bulk of available resources. Eventually, this could cause major distortions in the public health system and appears inconsistent with government policy which gives priority to PHC and preventive health programs.

The Emergence of a Population Policy

1.29. Until recently, Yemen had no explicit population policy and lacked demographic goals to reduce fertility rates.[6] The Government passively consented to family planning if it was presented as a health measure to promote maternal and child health. Initial programs focusing mainly on urban areas were developed and managed by private organizations such as the Yemen Family Planning Association and the Yemen Red Crescent Society. They were

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6/ This statement refers only to the northern part of the country. The South developed a population policy in the 1970s.

supported by the United Nations Fund for Population Activities (UNFPA), the International Planned Parenthood Federation and other foreign donors.[7]

1.30. In the late 1980s, population issues began to be recognized more clearly. The analysis of the 1986 and 1988 census data revealed disturbing findings concerning future population growth and its impact on people's welfare. Policy makers and planners became interested in demographic indicators and began discussing programs to reduce fertility rates. More attention was given to the regional distribution of population and to the accelerating migration to urban areas. In March 1989, a conference on "Islam and Population," attended by religious leaders from Yemen and other countries, recommended: (i) the adoption of a national population policy; (ii) the expansion of family planning services; and (iii) a reduction of the high population growth rate to bring it more into line with the country's capacity for social and economic development.

1.31. The growing interest in population issues led to the First National Population Conference in October 1991, sponsored by the Prime Minister and attended by key representatives from government, private and international organizations. The conference supported a number of broad policy goals and objectives, including a reduction in fertility and mortality rates and the enhancement of women's participation in economic and social activities. The participants proposed a detailed action plan and the establishment of a National Population Council. The Government subsequently endorsed the plan (November 1991), and issued a decree setting up the Council and a technical secretariat (July 1992).

1.32. The action plan outlines a national population strategy for the current decade, and calls for a broad inter-sectoral approach to the population issue. [8] This includes specific proposals in four areas:

- Community health with emphasis on maternal and child care and family planning;
- Human development including illiteracy eradication, education, job training and support for women;
- Economic development, access to safe drinking water, and environmental protection;
- Institutional and legislative arrangements supporting the strategy and raising awareness about population issues among political and religious leaders, educators, public and private organizations.

7/. Including UNICEF, WHO, and bilateral assistance from USAID, the Netherlands, Britain, China, Ireland and Germany.

8/. National Population Strategy 1990-2000 and Population Action Plan, Sana'a, March 1992.

Family planning itself is to remain a free choice for parents with the Government providing the supporting infrastructure and education.

1.33. The National Population Council is chaired by the Prime Minister and includes cabinet members responsible for different aspects of the evolving strategy. The Council coordinates the activities and programs of different agencies and organizations, monitors their progress, and decides on appropriate follow-up. Although agreement has now been reached on a broad strategy and a national supervisory body has been established, specific policies and programs still need to be designed and implemented. Moreover, as less than half the population has access to primary health care and only about 20 percent of those can be reached by maternal/child health and family planning services, the impact of future programs on population growth is likely to be small for some time.

III. HEALTH DELIVERY SYSTEM

1.34. Two factors have had a strong influence on the present state of Yemen's health services: one of them is the late start in modern socio-economic development, including national health programs, which began only in the 1960s. The other factor is the open and market oriented society which traditionally existed in the northern part of the country and after unification, has permeated to the southern governorates. As a result, a dual system of health delivery has evolved that consists of:

(a) A weak public sector that still shows the growing pains of a rapid expansion during the past two decades, and is now severely constrained by the present budgetary crisis; and

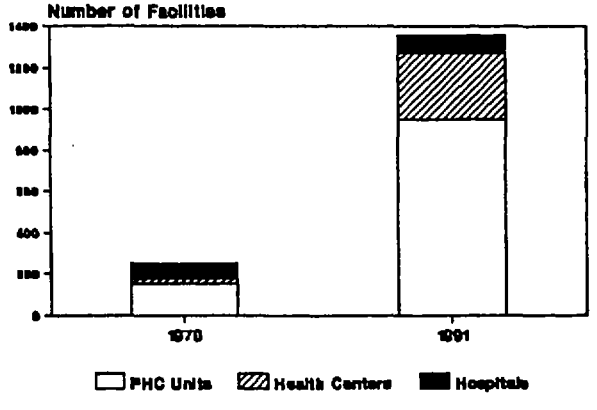
(b) An expanding private sector that is largely self-financing and caters to those who can afford to pay for medical services.

1.35. As in many other developing countries, the system is predominantly curative, even in the public sector, with little emphasis on preventive and promotive health care. In this form, health services in Yemen have a sub-optimal impact on the general health status of the population. Moreover, many poor people, especially in rural areas, remain without modern health care.

Public Health Facilities

1.36. In 1992, there were 949 PHC units in Yemen, supported by 321 health centers, 24 health centers with beds (rural hospitals) and 63 government hospitals (See Statistical Appendix, Table 7). Most of these facilities were built or enlarged during the past 20 years, financed in large part with the help of foreign donors.

Chart 3.1: PUBLIC HEALTH FACILITIES



1.37. This is an impressive achievement. Within two decades, the system managed to deliver basic health services to 45 percent of the people compared with only 10 percent in 1970, even though the population nearly doubled during that period. Yet, rapid growth has created problems in sector management; together with recent shortfalls in government revenue it also made it increasingly difficult to finance the operating cost of existing facilities. Not surprisingly, many health stations, especially those concerned with primary health care in rural areas, are short of qualified staff and lacking essential drugs and supplies (see Annex 1). Very few units and centers are in a position to offer the full range of PHC services. Partly because of this but also due to prevailing traditional attitudes, the number of people making use of PHC facilities is less than could be expected.

1.38. The situation is somewhat better with respect to secondary and tertiary health care as hospitals are located in urban areas and receive about three times as much budgetary funds from the Government as PHC facilities. But even hospitals are facing financial constraints, shortages of staff and materials, and usually have little money left to adequately maintain buildings and equipment.

Private Health Services

1.39. Private health services play an active role in providing medical care for the sick. For the most part, they are located in cities and larger towns with little presence in rural areas. Patients are charged fees which are essentially determined by market forces.

1.40. There are no hard data available on the size of the private sector, but a growing number of physicians appear to depend on private practice. The more successful among them operate small- to medium-size clinics.

1.41. The private health sector is mostly curative and operates on a commercial basis. Demand for its services is high partly because competition from public health facilities is weak. While this leads to inequalities leaving many poor without access to modern medical care, the existence of a vigorous private sector widens the choice for consumers and often results in more efficient use of resources.

1.42. Most services provided by private physicians are of acceptable or even high quality. Their offices and clinics are equipped with modern diagnostic tools, and patients are treated with up-to-date procedures. But even less professional help is quite popular and in many cases effective. Especially pharmacists or their assistants play the role of poor man's doctor, diagnosing ailments and selling medicines without prescription to people who are reluctant or cannot afford to see a physician.

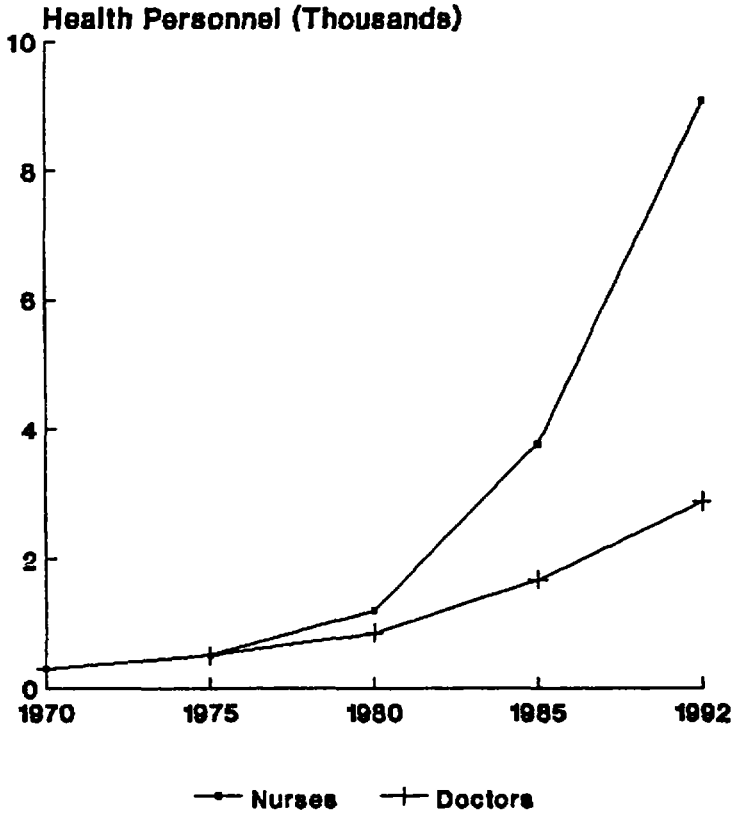
1.43 A considerable number of Yemenis also seek specialized treatment abroad, many of them in Jordan. Although this creates a drain on foreign exchange resources, the absence of adequate medical facilities within the country often leaves no alternative to the patient.

Health Personnel

1.44. In 1991, there were over 3,000 professionals working in the public and private health sectors, most of them physicians but also including some dentists and about 200 fully trained pharmacists (Statistical Appendix, Table 8). They were assisted by more than 9,000 nurses and midwives as well as a fair number of medical technicians (Table 9). Most of the medical staff are stationed in urban areas working in hospitals and health centers or as private practitioners.

1.45. Together with PHC facilities and hospitals, the number of health personnel has grown rapidly over the past two decades. In the beginning, many physicians and nurses had to be recruited abroad to meet urgent requirements. With the establishment of domestic education and training programs and additional scholarships abroad, however, a growing number of Yemenis became qualified to join the medical staff. Over the years, therefore, the share of foreigners in total health personnel (physicians and nurses) declined from 40 percent in 1970 to 22 percent in 1990, even though their absolute numbers continued to increase.

Chart 3.2: GROWTH OF HEALTH PERSONNEL



Traditional Medicine

1.46. Traditional medicine still plays an important role in Yemen. In many rural areas it is the only medical assistance available to people, but it also competes with modern public and private health care which is either more expensive or regarded with suspicion.

1.47. Medical practices are rooted in the Greco-Arabic tradition and have physical as well as spiritual dimensions. Illnesses are believed to be caused by personal actions, environmental factors or evil spirits, and require different expertise and treatment. Some of the more common procedures are cupping to draw off blood, cautery, bone setting and minor surgical techniques. In addition, local plant and animal products, some minerals and changes in dietary habits are used to treat ailments. Local birth attendants assist with deliveries and provide post-natal care.

1.48. There are many aspects of traditional health care which are beneficial to individuals and the community, and which could complement modern medical practice. Traditional cures are often effective although they fail with most of the endemic diseases. The concept of preventive health care is not alien to traditional practices and could be strengthened through further health education. Traditional birth attendants could benefit from additional training. The issue, therefore, is not to replace traditional medicine but to improve its quality and impact.

PART TWO: MAJOR SECTOR ISSUES

2.01. The past twenty years have brought great improvements in Yemen's health services. Public health facilities have expanded rapidly, both in urban and rural areas; private health services have sprung up and are offering a broad range of modern health care; and an increasing number of Yemenis are being trained to become physicians, nurses and other health workers. But as has been pointed out in the first part of this report, there are still major weaknesses in the outreach and quality of health delivery systems which are aggravated by population pressure, including the return of migrants from neighboring countries, and increasingly severe financial limitations.

2.02. Among the most pressing issues are shortcomings in the regional coverage and quality of primary health care which caters mainly to the poor and should be the principal agent for preventive and promotive health programs, including immunization, MCH, nutrition and health education. Related to that are problems in sector organization and management, in the training of health personnel and last but not least, the financing of health programs. These issues are being reviewed in the following chapters. A special section is devoted to the role of women in the health sector, both as recipients and providers.

IV. PRIMARY HEALTH CARE: REGIONAL COVERAGE AND AVAILABILITY OF SERVICES

2.03. Although the number of PHC units and centers has grown at a compound rate of more than 20 percent p.a. since 1970, the present network still suffers from regional maldistribution and deficiencies in the services that are provided. One of the factors that has led to this situation is the rugged terrain and geographic dispersion of people. Coupled with this are administrative and management weakness; a strong urban bias of government employees working in the health sector; insufficient community participation and inadequate supplies of medicines and equipment.

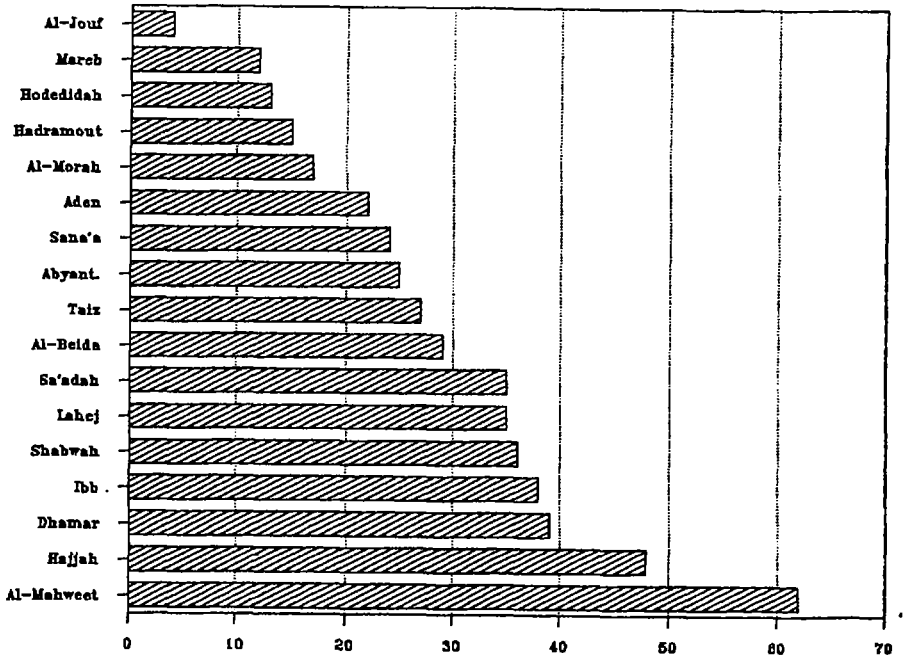
Inequality in Access to PHC

2.04. Access to public health facilities remains limited. Overall, it is estimated that about 45 percent of the population live within reach of health services; access is higher in urban areas (about 70 percent) and lower in rural areas (35 percent). These averages mask even larger regional variations reflecting a population that is widely scattered in some 33,000 villages and towns (Table 3 of Statistical Appendix).

2.05. A rough approximation of regional inequalities can be obtained if the number of PHC units and centers in each governorate is related to the number of communities (towns, villages, hamlets) that have to be served. The results are shown in the chart below. They show a range from 62 communities

per PHC unit/center in Al-Mahweet to some 20 communities in Sana'a and Aden, and less than 10 communities in Al-Jouf.

Chart 4.1: COMMUNITIES SERVED BY ONE PHC UNIT/CENTER



2.06. Even where PHC facilities are available, their utilization appears to be low. A recent survey by MOPH shows that one-third of the PHC stations receive less than three outpatient visits a day (see Annex 1). There are different reasons for this underutilization. Rural people with their traditional attitudes and beliefs do not easily accept the modern concept of health care. In some instances, women have to be accompanied by a male member of the family when they seek help, while others are not allowed to be seen by a male health worker. Transportation is another problem as there are few roads and the terrain can be difficult. People may therefore prefer to consult traditional healers or rely on medicines that family members buy at a pharmacy or drug store.

Deficiencies in Services Provided

2.07. Another obstacle to the use of PHC facilities is the poor quality of services provided. Many units and centers suffer from shortages of health personnel, especially female health workers, equipment and medicines (Annex 1). This damages the credibility of the system and leaves potential patients without proper advice and treatment.

2.08. Moreover, there is little understanding of the benefits and need for preventive and promotive health care which should be a major focus of PHC. This includes:

- Educating people about local health problems;
- Adequate nutrition, supply of safe water and basic sanitation;
- Immunization against major infectious diseases;
- Prevention and control of endemic diseases;
- Maternal and child health care and family planning;
- Initial treatment of sick and injured patients;
- Promotion of mental health;
- Dispensing essential drugs.

2.09. In many cases, however, some of these services are unavailable or their quality is less than satisfactory. The recent survey by MOPH shows that more than 90 percent of existing PHC facilities offer curative services and some 70 percent are able to perform vaccinations, but only about 20 percent of them provide MCH care. Actual utilization rates are even lower (Annex 1).

2.10. Access to health services and their utilization, therefore, is not a simple concept. It implies not only that the facilities exist, but that people have the information they need to use them properly; that the PHC units or centers can be reached by patients; that supplies and equipment are adequate; and that services are provided in a manner acceptable to the local population. Equally important is the presence of qualified health personnel, especially female nurses and midwives.

Box 1: Visiting a PHC Unit

A PHC unit was visited in the vicinity of Sana'a. The surroundings are clean and the building is in good condition. The unit is manned by a midwife and a male PHC worker, who are also husband and wife. Their place of residence is adjacent to the PHCU, which is convenient for both health workers and patients.

The midwife and PHC worker are trained in immunization, while the former is also trained in family planning. The PHCU serves roughly 5,000 people who live in 17 villages. The male PHC worker travels to the villages on a motor cycle; the midwife occasionally accompanies him. The PHCU is provided with sufficient water from a deep well. It is equipped with electricity, furniture and basic medical equipment. A refrigerator permits the storage of vaccines used in immunization.

The role of the midwife is to provide MCH services and maintain registers for immunization and ante-natal care. The male PHC worker treats minor ailments and maintains the outpatient register. Family planning services are not provided by the unit, despite the existing demand. Medicines are in short supply. Only 4 people visited the PHCU that day.

V. PRINCIPAL PHC FUNCTIONS

2.11. There are several functions in the PHC system which are critical to its effectiveness and impact. They include immunization programs, mother and child health care, control of endemic diseases, health education, nutrition, safe water and sanitation. Improvements in these areas promise high returns and should be given priority in future sector programs.

Immunization Programs

2.12. Immunization is one of the most cost-effective health interventions, and forms an essential component of PHC. The principal target group are new-born children who are protected against six vaccine-preventable diseases: diphtheria, whooping cough, tetanus, poliomyelitis, tuberculosis and measles. In 1987, the northern part of Yemen had one of the lowest immunization rates in the world with less than 25 percent of all children being protected. The following year a national immunization workshop was organized that aimed at preparing and implementing a child immunization program. The mechanism used to carry out the program focused on a decentralized and vertical approach at the governorate level. Planning and implementation were left to regional health directors while MOPH was responsible for supplies, social mobilization, monitoring and evaluation. A number of international agencies, notably UNICEF and WHO, and bilateral donors assisted the program by way of supplying hardware and software, including vehicles, vaccines, cold chain equipment and technical assistance.

2.13. For the success of any program with such national dimensions, local support and community participation became most vital. This support was organized by the Governor of each governorate who mobilized political and community participation through meetings with tribal chiefs and local leaders. Efforts were focused on designated target groups with due regard to their specific needs, traditional attitudes and aspirations. Information on the program and its potential benefits was disseminated to people in a language they could understand, using a variety of mass media and community channels besides inter-personal communication.

2.14. A national plan of action was drawn up that included regional targets, social mobilization efforts, training programs, reporting and monitoring systems, cold chains, logistics and deployment. Immunization schedules were drawn up for the first, second and third round and implementation proceeded largely as programmed. As a result, national immunization levels in the North rose dramatically to about 60 to 80 percent by 1990, more or less matching the standard that had already been achieved in the South.

2.15. After the initial backlog has been cleared up, the important issue now is to sustain a high level of coverage for children born after 1990. This requires regular follow-up either through repeated national programs such as the one in 1989/90, or a more systematic and continuous program of

immunization through the existing PHC network (integrated approach). National programs, as the recent experience shows, can be very effective but need a special effort and tend to be costly. Integrated programs, on the other hand, offer the advantage of continuous and sustained follow-up at relatively little expense. They require, however, fully functional PHC facilities and responsive parents who understand the need, and make the effort to have their infants immunized. As has been pointed out above, these conditions are still not yet met. Policy makers therefore may have to continue national programs while at the same time strengthening the immunization capability of PHC units and centers. Both approaches would need the support of an active health education program. Strengthening the immunization function of existing PHC facilities involves an adequate number of trained health workers, especially females, vaccines and refrigeration facilities as well as effective surveillance of pregnancies and births.

MCH and Family Planning

2.16. Immunization of infants is an important aspect of the broader issue of MCH. Mothers and infants form the most vulnerable population group and are facing severe health risks during delivery and in the pre and post-natal periods. In Yemen, these risks translate into some of the highest mortality rates in the world: for mothers it is estimated to be 10 per 1000 live births, and for infants it is about 130 per 1,000 live births. In addition, there is a high incidence of morbidity among mothers and young children. The underlying causes are malnutrition, frequent pregnancies, exposure to endemic diseases, absence of proper pre- and post-natal care, complications during pregnancy and hazardous deliveries. Most births take place at home, almost all of them helped by traditional birth attendants or female family members. Only about one in eight women are delivered by qualified medical personnel. Most deliveries occur in an unsanitary environment, leading to post-natal infections and neo-natal tetanus.

2.17. To deal with these problems, more effective MCH programs are needed. At this point, only some 20 percent of the PHC facilities are offering MCH services, most of them in urban areas. Moreover, MCH care is often weak and suffers from inadequate training of health workers and shortages of supplies. Improving the situation requires a major effort to strengthen pre and post-natal care, reduce the risk of deliveries, and provide infants with better health care. In addition, there is need for counselling on family planning to reduce fertility rates and prolong birth spacing.

2.18. Major components of prenatal care are physical examination of pregnant women, their immunization with tetanus toxoid, and advice on nutrition to expecting mothers. Deliveries should be conducted under aseptic conditions either at home or at a PHC facility in the presence of a trained birth attendant. Post-natal care involves physical check ups, advice on breast feeding and nutrition, lactation and weaning practices. Infants require immunization, monitoring of growth, detection of anemia and vitamin deficiency, and treatment of early childhood diseases of the digestive and respiratory system. Referral facilities and transport are needed for emergency cases.

2.19. Family Planning (FP) should be an integral part of MCH. Improving the quality of life has always been a central issue in the philosophy of FP. It reduces the incidence of poverty and allows parents to provide better for the future of their children. At the national level, FP can have a significant impact on economic growth and development. In medical terms, FP can significantly reduce maternal mortality by limiting the number of pregnancies and the risks associated with deliveries. It also contains maternal morbidity since many mothers are disabled by frequent birth at short intervals.

2.20. So far, few FP services are available in Yemen. Although the concept is not new to the Arab world, the Yemeni response in the past has been one of suspicion and caution. This was in part due to lack of understanding of the potential benefits that could be derived from FP, but it also reflects deep-seated social values, especially among males who dominate decisions at the family level. Family planning activities are well established in the South. In the northern governorates they were initiated through voluntary work by the Yemeni Family Care Association (YFCA), which in 1984 established the first health center in Sana'a that provided comprehensive MCH and FP services. In 1987, a similar center was opened in Taiz. The Association now operates outpatient clinics and provides contraceptives, health education as well as a variety of pamphlets and publications. More recently, the Government has started to develop a national FP program (see page 13). In addition, private physicians and pharmacies are offering FP services and supplies. Still, the overall impact remains small and nationwide use of contraceptives is estimated not to exceed 5 percent.

2.21. The Government has taken a clear decision in favor of MCH and FP, and is developing policies and programs designed to implement this policy. But building up these services and making them acceptable to people takes time and sustained effort. It involves training of health workers, providing facilities and supplies, and educating people through the media and other channels of communication. Creating awareness of services and their benefits and breaking down traditional barriers against acceptance will be a major challenge. In designing and implementing specific action programs the Government can continue to count on the support of international and bilateral agencies, notably UNICEF, UNFPA and WHO, as well as from private organizations.

Controlling Endemic Diseases

2.22. While mothers and young children represent the most vulnerable population group, there is also a high incidence of morbidity among older children and adults. Endemic diseases are a major cause of such morbidity and controlling them constitutes an important function of the PHC system. The most prevalent of these diseases are gastro-enteritis, tuberculosis, malaria, eye infections, schistosomiasis, respiratory tract infections, Iodine deficiency and goiter. But there are also cases of cerebrospinal meningitis and occasional outbreaks of cholera. Many of these diseases are associated with poverty, malnutrition, deficiency of micronutrients, unsafe water and lack of sanitation. They tend to weaken the body of affected persons, undermining their ability to learn and work.

2.23. Controlling endemic diseases requires a national surveillance system which monitors the ever changing pattern of disease incidence and identifies areas of concentration.[9] In some cases this would be followed by national or regional control programs that are managed by specially trained health personnel. These programs can be very effective and can yield quick results. Follow-up and maintenance could be left to the regular PHC network. For better results and sustained impact, disease control programs need the support of appropriate health education which teaches people how to create a better health environment, avoid contamination and informs them about possible methods of treatment.

Health Education

2.24. Modern concepts of health care have only recently been introduced to Yemen, and are not yet fully appreciated by large segments of the population. Health education therefore has a crucial role to play in explaining the benefits of modern health principles and procedures, and in making them acceptable to the people. Health education was started in the mid-1970s under WHO guidance. Priority was initially given to centrally designed programs which were disseminated through TV and other mass media. In the following years, the institutional capability of the Health Education and Information Department in MOPH was gradually built up. More recently, the policy of the department has been defined to rely on channels within and outside the Ministry. Within MOPH, health education is conducted through the PHC network and governorate hospitals. Outside MOPH, the department plans to operate through mass media, schools, mosques, the Ministries of Agriculture and of Youth and Sports, as well as a variety of community organizations (e.g., women's, workers' and farmers' associations and the Yemen Family Care Association).

2.25. An important new step was taken in May 1992 when a pilot scheme was launched to train PHC workers, midwives, teachers, students, community/religious leaders and rural mothers. The program covers three governorates and is supported by USAID. It supplements existing health education programs, and relies on decentralized, participatory training methods. The pilot scheme will be conducted in two phases:

- First, training will be given to trainers at the level of governorate health centers;
- Second, the trainers will visit villages in their catchment areas to pass on the training to suitable contact persons.

In this way, a health communications program is conducted which works through inter-personal channels, and is closely linked to the PHC network. The decentralized approach tried by the pilot scheme could eventually be introduced in all Governorates.

9/ At present, USAID is funding a project that is working towards establishing such a surveillance system.

2.26. In addition, two other programs are presently being considered by the department:

- A regional center for health education training offering one year courses for approximately 25 students; and
- Field offices in three governorates that produce and distribute health education material.

2.27. As has been mentioned before, preventive health care is not a new concept in Yemen, and health planners could take advantage of this tradition. Many villagers and town people see the connection between health and diet, personal hygiene, and the environment. But health educators could easily run the risk that their messages are not understood, particularly if they are based on western medical concepts. Health education therefore has to be phrased in terms that ordinary people can grasp, and needs to address their particular concerns.

Nutrition and Health Environment

2.28. The nutrition situation in Yemen has recently been ranked by UNICEF as the fourth most grave in the world. Malnutrition is especially prevalent among infants and small children. Its symptoms are anemia, iodine and vitamin deficiencies all of which inhibit physical growth and development and weaken resistance to infections and diseases.

2.29. Yemen's nutritional problems occur despite adequate supplies of food. The FAO recently reported that in 1988, an average of 2315 Kcal was available per capita. This represented a 14% increase in per capita availability of food since 1965. The Yemeni diet tends to be monotonous. More than two-thirds of calories are derived from cereals. Fruits and vegetables supply only about 7% of calories. The present supply if equitably shared would have met 93% of internationally accepted energy requirements and more than 100% of protein needs. Since most Yemeni are both short in stature and small framed, the international standards are generous, implying that nutritional requirements are being fully supplied.

2.30. There are several factors which could explain the anomaly of adequate food supplies and wide-spread malnutrition in Yemen. During the first day or two, mothers often feed their baby water only; this practice deprives the infant of colostrum, which is rich in antibodies. Many mothers also rely extensively on breast milk substitutes, particularly after the sixth month of age. Because infant formula is very expensive relative to income, the supplemental food is typically reconstituted dried, skim milk. Powdered milk has a low caloric density and hence often fails to provide the infant with an adequate supply of energy. In addition, the reconstituted milk is often contaminated during preparation or feeding; unsafe water is frequently used to reconstitute the dried milk, and poorly washed feeding bottles are often employed in order to serve it. Diarrheal disease then further reduces the absorption of nutrients.

2.31. Another factor is the use of qat by lactating mothers which curbs their appetite and leads to low milk production. Food customs also play a causal role in child malnutrition. Mothers are provided a special diet and additional opportunities for rest for 40 days following the birth of a child. Thereafter they return to their normal responsibilities, which often include heavy manual labor in agriculture and to the traditional diet. During the 40 days, the mother's diet is supplemented with eggs, meat and dairy products. On the other hand, protein-rich foods are customarily withheld from infants and small children. Because it is believed that children will acquire traits from the foods they eat during their most formative period, eggs and fish in particular are denied to them. Finally, young mothers are widely reported to restrict their own intake of food during pregnancy in order to reduce the size of the baby and therefore ease delivery. The resulting malnutrition of the baby makes him or her less likely to thrive following birth as well as more susceptible to disease.

2.32. Because malnutrition is the outcome of a complex, multifactorial process, the resolution of the problem will require intervention in several areas. The problems of micronutrient deficiencies - iron, iodine, vitamin A and Vitamin D - can be resolved at low cost if a workable system for the delivery of supplements can be devised. Most of these supplements can be administered at long intervals in large dose formulations. Delivery of micronutrients through the fortification of foods is technically possible, but often those who are most at risk either cannot afford the fortified form of the commodity or because of their age customarily do not eat foods that might be easily fortified. Improvements in diet would help to control iron and vitamin deficiencies. Finally, control of malaria and schistosomiasis and better maternal care would help to eliminate the problem of anemia.

2.33. A safe health environment, especially safe drinking water and sanitation, is essential to the well-being of people. At present, only about a third of the Yemeni population have access to safe water and a much smaller fraction to a sanitary facility. Two-thirds of the population must rely on shallow wells and a variety of rainwater catchment devices in order to satisfy needs for water.

2.34. Yemen is endowed with very limited water resources. Annual rainfall ranges from less than 100 mm p.a. along the southern coast to as much as 1000 mm in some areas of the highlands. The topography and geology of the country result in very rapid runoff of rain water and evaporation rates are very high. Therefore, the replenishment of the aquifer occurs very slowly. The development of irrigation based upon deep wells has further lowered the water table, thereby rendering many traditional shallow wells useless. Especially in the more densely populated areas over-exploitation of ground water is endangering water supplies. The quality of water obtained from wells is often poor. For example, analyses of water samples from wells serving Aden have revealed unsafe concentrations of fluorides, sulfates, salt and calcium. Over-pumping of the aquifer in coastal areas has resulted in serious problems of salt water intrusion into the aquifer.

2.35. Lack of sanitation is a pervasive problem. Only the largest cities are served and even there new residential developments often rely on either cess pits or manual collection. In rural areas of the country, many people continue to defecate in open fields. While sanitation is a serious problem, its importance pales alongside the need for drinking water and domestic hygiene. The scarcity of water for bathing, food preparation, and cloths for washing may be a greater threat to health than the quality of drinking water.

2.36. The leading policy priority for the water and sanitation sectors is to achieve control of the exploitation of groundwater in order both to protect aquifers and to ensure a reasonable allocation between domestic, industrial and agricultural uses. This will require not only effective regulation of abstraction but also improved knowledge of the structure and properties of the aquifer itself. The second most important initiative is to begin to recycle municipal waste water. However, irrigation with treated waste water might create serious health problems if not properly managed and controlled. Therefore, great care must be exercised in developing a waste water recycling program. Third, expansion of systems for the provision of safe water for domestic use must be pursued.

Box 2: Chewing Qat - A Harmless Pastime?

The habit of chewing the leaves of qat, a mildly narcotic plant similar to the South American coca plant, is widespread among Yemenies. Most people consider it a harmless pastime which temporarily enhances the well-being of users and stimulates discussions in "qat sessions." The effect of chewing qat lasts for a few hours and is usually followed by tiredness and a slightly depressed mood.

While qat has not proven to be addictive, its use has some serious consequences for families and the society as a whole. First, growing qat in the highlands of Yemen diverts valuable land and water resources which could be used to produce food and export crops. Second, chewing qat directly affects people's health. It causes loss of appetite, constipation and other gastro-intestinal problems. Expecting mothers are especially at risk since the use of qat can lead to anemia and maternal malnutrition which in turn increases the chance of delivering under-weight babies. Third, and perhaps most important is the impact of qat on family budgets. In urban areas, a bundle of qat leaves needed for one "serving" costs the equivalent of 3 to 10 US$, depending on quality. Paying this price which corresponds to or exceeds the average daily wage of a Yemeni worker, consumes a large part of the family income and could be more usefully spent on food and other necessities, including health care.

VI. SECONDARY AND TERTIARY HEALTH CARE

2.37. Primary health care is being supported by secondary and tertiary health care facilities. They include rural, district and governorate hospitals (secondary level) and specialized hospitals located in major urban centers (tertiary level). These referral facilities employ more highly trained staff capable of dealing with a progressively wider range of specialized medical interventions that require more sophisticated technology than can be provided at the PHC level.

Secondary Health Care

2.38. In 1992, Yemen had more than 80 rural, district and governorate hospitals. Although they differ in size, with a capacity ranging from 20 to 100 beds, their functions are basically the same: they provide the first line of support to PHC facilities. More specifically, they treat patients that cannot be properly cared for at the PHC level; offer better diagnostic facilities and specialized health interventions in obstetrics and gynecology, pediatrics, general medicine and surgery; and follow up cases that have been treated and discharged. In addition, secondary health facilities provide training and guidance to PHC workers; visit community health facilities offering advice and training to staff; organize logistical support and supply systems; and help medical students gain field experience.

Tertiary Health Care

2.39. The specialized hospitals form the top in the pyramid of public health care. They deal with the more difficult health problems that cannot be treated at the secondary level and are staffed with highly qualified personnel who have sophisticated diagnostic and curative facilities at their disposal. In Sana'a and Aden, tertiary hospitals also serve as training institutions for medical students (teaching hospitals). At this point, however, the tertiary hospitals in Yemen are not yet equipped to treat all medical cases that are referred to them. Some patients therefore have to go abroad to seek specialized treatment (see para. 1.43).

Referral System

2.40. Secondary and tertiary hospitals are called referral facilities as they take care of medical problems and patients referred to them by the next lower level of health care. This arrangement ensures that each part of the referral chain performs first and foremost the functions for which it is intended, bearing in mind that as far as possible health interventions should take place at the PHC level. Following these procedures avoids overloading of the referral institutions with patients who could be looked after in PHC units or centers. In addition, transportation of patients to and from referral services has to be organized.

2.41. At present, this is not always the case and there is need to strengthen and streamline the referral chain. By implication, it also requires upgrading of PHC facilities so that they can perform the full range of services for which they are designed. Otherwise, the unnecessary spill-over of patients to the secondary level will continue and some of the PHC functions will be pushed to district and governorate hospitals. Responsibilities for different levels of health care will have to be clearly defined, and more attention needs to be given to effective feedback.

Box 3: Al-Thawra Hospital

Al-Thawra is the largest and best equipped hospital in Yemen. Located in Sana'a, it provides tertiary health care and serves as a clinical training facility for medical students.

The hospital has a capacity of 550 beds and employs over 1,100 staff, including 240 physicians. There are various specialties in the disciplines of medicine and surgery, including open heart and neuro-surgery. Intensive care units are provided for medical and surgical emergencies. Research is conducted on children's diseases, nutritional disorders and vitamin A deficiencies.

Al-Thawra operates independently of MOPH as a public enterprise. It has a separate budget allocated by the Ministry of Finance and is allowed to import drugs directly. The hospital is equipped with modern diagnostic and curative instruments such as CTSCAN or dialysis machines. But maintenance is a problem and there are frequent breakdowns or malfunctions.

Services are provided free of charge, a policy that has contributed to an overflow of patients. A large number of cases treated Al-Thawra could be dealt with at lower level referral centers.

VII. TRAINING OF HEALTH PERSONNEL

2.42. The delivery of health services is essentially a team function involving different categories of health personnel, each of which has its own role and responsibility. Moreover, the quality of a health service crucially depends upon its staff: their general education, job specific training, dedication to the profession and last but not least, commitment to the people they serve.

2.43. Although great strides have been made over the past two decades to establish local training facilities, Yemen still has a shortage of trained health manpower and continues to rely on expatriate staff mainly in the categories of physicians and middle level personnel. Preparing Yemenies for health services therefore commands high priority and requires careful selection of candidates and extensive pre and in-service training. So far all training programs are in the public sector, under the jurisdiction of the Ministries of Education and Public Health.

Training of Physicians

2.44. Physicians and dentists are trained at two medical faculties, one in Sana'a and the other in Aden. Between these two schools about 50 to 70 doctors graduate annually, almost half of them females (Statistical Appendix, Table 10). They are qualified to work in PHC centers and secondary level hospitals or as private practitioners. There are also good number of students who are trained abroad, including Arab countries like Egypt, Jordan and Syria, some of whom acquire specialized skills.

2.45. Most doctors are urban based, working in hospitals and in private practice. There is insufficient congruence between the placement of physicians (and their training) and the needs of society, especially in rural areas.

2.46. Efforts to change this situation have already begun and will have to be reinforced. There is great demand for doctors who can work in PHC centers and whose education has the required community orientation. Training programs have to adjust their curricula, taking into account specific social needs and technical skills that are not necessarily acquired in hospitals. The role of a community based doctor would also include training and leadership of lower level health workers.

Nurses and Medical Assistants

2.47. The medical faculty at the University of Sana'a also conducts training programs for pharmacists, nurses and laboratory staff. Other training facilities are provided by the Higher Institute of Health Sciences (HIHS) and the Health Manpower Institute (HMI).

2.48. HIHS, located in Aden, was established in the 1960s. It maintains five branches - at Lahej, Abyan, Shabwah, Hadramout and Al-Mahra. Training courses are for 15 categories of health personnel, including nurses, midwives, health inspectors, and medical and dental staff.

2.49. HMI has its headquarters in Sana'a and maintains five branches - at Taiz, Ibb, Dhamar, Hodeida and Hajja. HMI trains eight categories of health personnel (including nurses, midwives, different types of medical technicians, health inspectors and pharmaceutical technicians); the branches train nurses and midwives. HMI also gives in-service training to trainer supervisors and statisticians.

PHC Workers

2.50. There are also training programs for male and female PHC workers. They are conducted in special training centers as well as in PHC facilities. Students are recruited from primary level graduates (6 years) both male and female, and courses last for 9 months. Teachers are usually nurses and medical assistants who have undergone three weeks training in teaching methodology and supervisory skills. Traditional birth attendants are trained by mobile teams over a one-month period.

2.51. During the past, there has been a proliferation in the number and types of paramedical personnel who, like physicians, have tended to reside mainly in urban areas. On the whole, it can be said that the growth and regional dispersion of such health personnel, and with it of basic health services, has not been sufficiently related to the needs of the poor and rural people who stand most to gain from modern health care. Top-heaviness and compartmentalization continue to weaken the system and call for a more decentralized and comprehensive approach to health care.

Guiding Principles for Future Training

2.52. Some basic principles for future training of health personnel could be defined as follows:

- Training programs should be oriented to the needs of the people--their social, cultural and economic conditions and their health profile;
- Candidates should be selected and trained on the basis of specific job requirements;
- Lower level trainees should be recruited from the community they are destined to serve after graduation;
- More female candidates should be admitted to training programs; and
- Part of the training should be given at PHC facilities and secondary hospitals.

2.53. Medical training must rest on scholarly foundations and intellectual content, if it is to attract qualified students and their enthusiasm. An interdisciplinary holistic approach is needed which highlights human evolution, population dynamics, control of prevalent local diseases, ecology, nutrition and health education. At the same time, training has to be practical. Physicians, for example, must have knowledge of treating simple injuries and fractures, first aid, and the use of forceps deliveries. They must also be trained in organizing and supervising PHC teams. An important aspect of their medical education should be field oriented training in epidemiology and health education, and they should have basic knowledge of sociology and human behavior.

VIII. ROLE OF WOMEN IN THE HEALTH SECTOR

2.54. The role of women in the health sector is a critical one, both as beneficiaries and providers. Major issues that need to be addressed are access to health services, especially for mothers and infants; training and recruitment of female health workers; as well as cultural barriers that impact on women's utilization of health services, family planning, nutrition programs and health education. This section also looks at the legal framework that protects and promotes women's health, the ongoing and proposed programs of international agencies and volunteers active in Yemen's health sector and presents some recommendation on approaches to improving women's health status.

Status of Women's Health

2.55. The health status of Yemeni women is at a precarious stage. Fertility rates are extremely high as is maternal mortality. Access to PHC is limited and the services offered are perfunctory. In addition, cultural factors inhibit women's use of health services. More often than not a male member of the family has to take the women to the health facility and be in attendance when she is looked after by a health worker. In many cases it is considered inappropriate for male health staff to treat women; yet, there are not enough female health workers. Few women are able to deliver their babies in the presence of a trained midwife or under sanitary conditions.

2.56. A good proportion of pregnant and lactating mothers suffer from varying degrees of malnutrition and anemia. Some specific nutritional vitamin deficiencies also exist. UNICEF reports that protein-energy malnutrition which rarely causes death on its own is usually a leading contributing factor to morbidity and mortality. Breast-feeding duration appears to be getting shorter. Four surveys in the period 1985-88 indicate that the percentage of children weaned from the breast by the age of six months ranged from 27 to 43 percent. Yemeni women in general are aware of the value of breast-feeding, to themselves and to their children but the rural woman's workload is not always conducive to proper lactation management.

2.57. Yemen still has one of the highest fertility rates in the world, although demand for family planning appears to be increasing as evidenced by the growing market for contraceptives. However, family services are limited and primarily available in urban areas. Moreover, family planning messages have yet to make a significant impact on the real decision makers - the male members of households - and need to enlist the support of community leaders.

2.58. High illiteracy levels, exceeding 80 percent in rural areas, and limited access by rural Yemeni women to education, contribute to continuing poor health coverage. Very few families are adequately informed about the causes of illnesses, preventive care, early diagnosis of illness and home-based health care management. The result often is a tendency by families to rely on traditional remedies and health providers for curative care.

Government's Response/Donor Assistance

2.59. The Government has committed itself to improving the health of women and infants and has adopted a national population strategy which represents the first integrated national plan for MCH issues in Yemen. The strategy provides targets for MCH and population activities by the year 2000 and is to be implemented through a special action plan. In addition, the Government has pledged itself to reducing adult illiteracy, raising female age at marriage to age 18, and increasing access of women to quality health services particularly during pregnancy and childbearing.

2.60. The donor community is contributing a significant amount of foreign assistance to Yemen and particularly to the MOPH. The health sector received US$27.4 million in external assistance in 1990 with donor efforts primarily benefitting the PHC initiatives, including maternal and child health care, health education, and training of health personnel. IDA, WHO, UNICEF and UNFPA are the major contributors to improving the health status of mothers and children. Since 1982, IDA has contributed approximately US$35 million through four credits aimed at improving the health sector.

2.61. Despite significant commitments by the Government, the impetus to provide adequate health care for Yemeni women has been slowed down by administrative inertia and funding problems. A number of other factors also converge to hamper the attainment of critical health targets for women. The public sector health infrastructure is still at a relatively low level and ill-equipped to deal adequately with women's health needs particularly those related to family planning and maternal health. Poor access by women to health services at all levels particularly the primary level, lack of timely and appropriate utilization of services when available, limited quality of care including availability of trained personnel, and an inadequate supply and logistics system are serious barriers to the achievement of national health targets.

2.62. Supply side problems are compounded by significant socio-cultural barriers which influence women's use of the health care system. Preference for the male child and cultural practices which limit women's use of the health system particularly for female preventive health care will continue to confound progress in the attainment of health targets. Unless attempts are made to counter and change particularly negative and dysfunctional attitudes and behaviors impacting on health practices, limited progress will be made in enhancing women's health in Yemen.

Recommendations

2.63. To improve the health status of Yemeni women, there is urgent need to improve access and quality of MCH and family planning services. MCH services, particularly at the primary level, should be expanded. However, a priority should be for the government to lay out an explicit strategy with a time-bound plan of action for attaining MCH goals and targets. Attention should be given to government strategies to expand manpower levels and increase the proportion of skilled female health workers. It is crucial also to ensure that such a strategy explores opportunities to incorporate other complementary sector programs and initiatives. For example, literacy campaigns are more likely to have efficacy if they use information on health or sanitation that are of direct relevance and use to the community.

2.64. Training of personnel in safe motherhood and family planning clinical techniques is critical. The focus should be on skills development for female health workers at all levels of the service delivery system. As a first step there is need for an inventory update of levels of female workers throughout the system. A training strategy needs to be developed and implemented for increased manpower training and skills development particularly in the family planning, safe motherhood and nutrition areas. However, a priority need would be to conduct a coordinated donor training needs assessment to determine categories and numbers of personnel to be trained, skills needs, training of trainers, competency levels and other key factors impacting on training development. The skills of private physicians particularly in safe motherhood and family planning areas need to be enhanced. A study on private sector training needs for enhanced maternal health would also be useful.

2.65. Yemeni women need to be motivated and educated to properly utilize existing health services. Public perception, particularly among the rural population, of the need to use health services in a timely and appropriate manner needs to be improved. Seventy percent of health users are women and children. However, only a small part of this population is currently using available MCH services. The linkage between women, population, education, family life and development should be emphasized through well-focused information, education and communication initiative.

2.66. Family planning services need to be integrated with MCH and the choice of contraceptives available to be expanded. A study to examine issues, ways and means related to expanding and/or diversifying the contraceptive method mix could be undertaken to assist planning and decision-making. The private sector's role in providing family planning services is vital. The Government should be assisted in examining obstacles to improving and expanding service delivery functions in this area.

2.67. Community involvement in expanding maternal care is essential. As demonstrated by the success of the immunization effort in 1989/90, there are viable roles for a variety of indigenous community groups and voluntary organizations in the process. For example, the General Yemeni Women's Union has a wide membership and participates in increasing awareness among women regarding MCH activities. A specific strategy would be to encourage village health improvement projects through task forces established under the Ministry of Local Administration in all districts. The function of the task forces would be to implement programs designed within the directions of a supreme health council. One such project could be the establishment of an emergency transportation system to facilitate timely access by women needing attended delivery.

2.68. At the community level, community health workers and TBAs are the front line workers. These workers are often selected by the community who help organize and institute training. However, care needs to be taken to examine which are the most appropriate organizations and groups to facilitate women's health care development. Based on collaborative planning between community groups, private voluntary organizations and the public sector investments can be made to provide suitable resources and institutional strengthening assistance to key groups and agencies. Moreover, Government should examine the feasibility of establishing a national task force for health education for creating awareness of healthy behaviors, life styles and motivating proper utilization of health services.

2.69. Improving female education, literacy levels, changing dysfunctional attitudes and behaviors among decision makers, service providers, community leaders and clients will contribute significantly to the advancement of female status and improvements in women's health. Communication activities can increase awareness, inform, teach, and motivate key target groups to adopt new and functional behaviors. Attention needs to be put on teaching and motivating clients to adopt health-benefitting behaviors such as timely antenatal care, birth spacing practices and the health benefits of delaying pregnancy. At the service delivery level, the emphasis should be on providing enhanced training in counseling and motivation techniques to various categories of health workers. The mass media can be of use to promote public awareness of healthful behaviors and practices.

Research and Evaluation Activities

2.70. Accurate statistics and information is needed to facilitate the strategic targeting of health interventions and programs aimed at promoting women's health care. The Government, in coordination with a number of donor agencies, is currently collaborating on a variety of studies which will provide critical data and information germane to women's health needs and issues. IDA can contribute to this body of knowledge by supporting research studies to provide information on: a) the nutritional status and habits of rural women and in particular pregnant and lactating women; b) contributing factors associated with maternal mortality rates including dietary habits; c) implications for increasing contraceptive use and increasing the mix of contraceptives available to clients; d) qualitative research including ethnographic studies on behaviors, attitudes and practices impacting on improve health practices and compliance; and e) research on existing laws and legislation needed to improve women's status. Operations research studies could be conducted on the tracking and statistical reporting of maternal morbidity and mortality at tertiary centers and on MCH/FP clinical utilization patterns in rural areas and service provider care delivery patterns.

IX. IMPROVING SECTOR MANAGEMENT

2.71. Sector management has become a major issue which needs to be addressed if health services are to be improved. Recent efforts to establish an appropriate legal framework are clearly a step in the right direction, but they need to be supplemented by changes in organizational structures and management processes. The increasing size and complexity of health administration and the tendency to retain decision-making powers at the center have led to bureaucratic procedures, time delays and waste of scarce human and material resources. Specific areas that would need attention, are reviewed in the following sections.

Amalgamating Northern and Southern Health Services

2.72. Before unification, health services in the northern and southern parts of the country both relied on a system of primary health care supported by secondary and tertiary referral hospitals. Although there were some organizational differences, amalgamating the two services did not pose major institutional or policy problems.

2.73 The first step was the merger of the two previous health ministries and the establishment of a new MOPH in Sana'a which is responsible for public health services in the whole country. This has now been achieved and subsidiary administrative structures as well as salary scales have largely been assimilated. The proposed decentralization of health services and associated organization changes will provide the opportunity to eliminate the remaining differences. Some special features of the southern system such as village based health guides or the active involvement of women's associations in health programs, may be worth pursuing on a national scale. Private health services, which were previously unknown in the South, are in the process of becoming well established in southern governorates.

Regional Decentralization

2.74. Yemen has 18 governorates, 227 districts and over 33,000 villages and hamlets. There are great varieties in landscape, climate, population density, economic activity and epidemiological characteristics. Together with the rough terrain and inaccessibility of many areas, these features inhibit effective management from the center. At the same time, Yemen has a tradition of community participation in local development projects. In the northern governorates, Local Cooperative Councils for Development (LCCD) have played a major role during the 1970s and early 1980s in building the country's rural infrastructure, including roads, schools, PHC units, electrification and water supply. In the South, People's Defense Committees played a similar role. With the centralization of the cooperative movement in the mid-1980s, and the simultaneous erosion of their tax base, the involvement of local bodies in the development process has been substantially reduced.

2.75. MOPH is now trying to revive local initiative as a means of enhancing management effectiveness. This would involve decentralizing administrative responsibilities to the level of governorates and districts, and increasing community participation through LCCDs. The proposed

decentralization includes provisions for regional planning, budgeting and operational management. It needs to be accompanied by strengthening the administrative capacity of health authorities in the governorates and districts in areas such as planning and budgeting, financial and personnel management, information and logistics. The delegation of management functions to regional and local bodies would relieve the administrative burden on MOPH, enhancing its regulatory and coordination responsibilities.

2.76. Involving governorates, districts and LCCDs in a participatory management process could make health services more responsive to local conditions as well as more acceptable to the local population. It would provide opportunities for the recruitment and training of health workers from the communities they are expected to serve; enhance the effectiveness of interpersonal health education; and strengthen maintenance and supply programs. These functions, however, can only be built up with appropriate financial and technical support. They also require a strong commitment to accountability and effective supervision. Implementation plans need to be closely monitored at every level of the health care system and experience fed back into the design of future development programs.

Sector Organization

2.77. The present organizational structure of the public health sector is top-heavy. There are over 100 senior management positions in MOPH and regional offices (from director to vice-minister) with not well-defined and sometimes over-lapping responsibilities. This is partly the result of the unification which led to a certain degree of duplication in staffing. But it also reflects the rapid expansion of health services which often demanded improvising managerial structures and processes. To strengthen administrative effectiveness, the following issues would need to be addressed:

- Clarify objectives and responsibilities for different functions and levels of administration;
- Remove ambiguities in duties and responsibilities by defining the content and scope of different positions in the administrative hierarchy in clear job descriptions. This task will have to be undertaken in conjunction with the Ministry of Civil Service and Administrative Reform which is preparing standard descriptions and classifications for all public sector positions;
- Establish standards of performance and hold managers and officials accountable for their actions;
- Provide incentives for good performance, both financially and as fringe benefits such as affordable housing;
- Strengthen managerial and administrative training.

2.78. There is also need to improve coordination with other ministries and organizations whose programs have an impact on the health sector (e.g. water supply or sanitation). Equally important would be efforts to better utilize available funds and technical assistance from external donors.

Personnel Management

2.79. Personnel management is a key area of sector administration. It involves manpower planning, policy formulation, recruitment and staff allocation, training and staff development, job description and classification, salary and wage determination, other forms of compensation, performance evaluation, staff records, etc. These functions have gradually been developed over the past two decades, although they still show weaknesses in a number of areas.

2.80. Despite many difficulties in the past, MOPH and its predecessor organizations as well as the ministries in charge of education and training have been remarkably successful in building a fairly large and competent workforce for the health sector. But the challenge to further improve the staffing of public health facilities continues, with three major problems now facing the administration. One of them is manpower training to meet the growing demand for health services and to reduce the still very large number of expatriates working in the health sector. This issue has been reviewed in a special section above (pg.32).

2.81. Another problem is the maldistribution of available staff among different levels of health care. At present, there is a major imbalance in staffing between primary health care on one hand and regional or central hospitals on the other. Staff shortages at the PHC level remain a serious issue which may require further staff incentives and greater involvement of regional and local administrations. The third problem concerns overstaffing, often with untrained people holding nondescript positions. The answer to this would be clearer job descriptions, weeding out of unwarranted positions, and transferring redundant qualified personnel to health facilities that are understaffed.

2.82. Overcoming these problems will take time and patience. People need to be motivated especially for service in rural areas, and living conditions should meet acceptable standards. Effective personnel management could ease the transition to a more balanced distribution of staff while additional budget allocations would have to provide funds for needed incentives.

Systems Research

2.83. In an effort to strengthen its capability for sector management and planning, MOPH recently started a computer based program which analyses factors that facilitate or inhibit the effectiveness of health services. The 1992 health facilities and personnel surveys, for instance, collected extensive background material for further research on public health care delivery. Major topics under investigation deal with the adequacy of medical buildings, supply of drugs and medical equipment, availability of staff in PHC facilities and hospitals, training of medical and support staff, or regional imbalances in access to health services. The results of this research will be used to shape future policies, action programs and development plans.

Logistics for Medical Supplies

2.84. The supply of drugs and medical goods to public health facilities is the responsibility of MOPH which controls procurement, storage and distribution. Supplies for the private sector come under the jurisdiction of

the Supreme Board for Drugs and Medical Appliances (SBDMA). Resources to purchase medical supplies are provided through the government budget while foreign exchange for imports is allocated by the Central Bank. In addition, UN agencies, notably WHO and UNICEF and a number of bilateral donors such as the Netherlands and Germany, donate substantial quantities of drugs and medical equipment.

2.85. While these arrangements look reasonable on paper, they do not work well in practice. Procurement procedures are cumbersome, storage facilities are inadequate, distribution systems are inefficient, and inventory control is poor. The result is delays in purchases of essential medicines and equipment, wastage and losses during distribution and most disturbingly, severe shortages of drugs and medical supplies at PHC facilities in rural areas. Streamlining procurement procedures and strengthening the distribution system therefore would be a critical factor in raising the effectiveness of the public health network.

2.86. Up to 20 signatures may be required before a purchase order is signed by the Minister. Tendering has to go through a number of stages and pass several committees before an import license is granted by the Central Bank of Yemen, and funds are allocated by the Ministry of Finance. Thus several months may elapse before an order is actually placed, and additional months may pass to ship the goods, clear them with customs, and deliver them to designated storage facilities. In the process, annual budget allocations are not fully utilized and supplies are short of approved targets.

2.87. To improve procurement procedures, bureaucratic red tape would have to be cut drastically. The purchasing agency should have full authority in contract negotiations and approval, provided they stay within given budget and foreign exchange entitlements. Supervision could be limited to one oversight committee covering all relevant functions; occasional audits would ensure appropriate use of resources. At the same time, an effort could be made to rationalize purchasing procedures especially for medicines. Concentrating on essential basic drugs and substituting generic for brand-name products could result in significant savings. [10]

2.88. Storage is another weak link in the logistics of supplies. Central facilities in Sana'a, Aden and Hodeida are basically sound but need improvements in layout and workflow, in handling and the provision of special storage conditions for perishable items. But the biggest problems are found at regional and local storage facilities which are frequently unsuited and in a state of disrepair. Improvements in this area could significantly reduce damage and losses.

2.89. Central medical stores are responsible for distributing supplies to all health facilities within their regional coverage. But distribution is inefficient, transport facilities inadequate, and cold chains interrupted or non functional. Even more important than these technical deficiencies is the fact that PHC facilities are obliged to hand out medicines to patients free of charge. While this procedure may be desirable on social grounds, more often than not it leads to unexplained "losses," which in reality find their way into private distribution channels that sell drugs and are thus more profitable.

10/. Human Development Report 1991, p. 63.

2.90. To establish and maintain reliable supply lines one needs an effective inventory control system. Here again, the situation is less than satisfactory. Inventory registers are poorly maintained and information on stock levels, turnover and supplies is hard to come by. There is need for better staff training, monitoring and supervision. In the longer run, a computerized inventory system would be preferable.

2.91. Quality control of drugs and raw materials used in local drug manufacture, for both the public and private sector, is exercised by special laboratories in Sana'a and Aden attached to the SBDMA. Present procedures are somewhat deficient, however, and proposals have been made to introduce more up-to-date technology, including microbiological tests, supported by staff training programs. The laboratories could also be separated from SBDMA to attain greater impartiality.

Maintenance of Equipment and Buildings

2.92. MOPH operates workshops in Sana'a and Aden for maintenance and repair services to public health facilities throughout the country. A workshop in the Health Manpower Institute maintains biomedical equipment. Other repair facilities are planned in Hodeida and Taiz. The private sector also offers some maintenance services, especially for equipment used in radiology and intensive care.

2.93. Still, these services are inadequate to meet current requirements. Equipment and vehicles are often out of use because of missing spare parts and shortage of trained technicians. Bureaucratic hurdles and budgetary constraints contribute to the problem. Many buildings especially in rural areas are in disrepair as little or no funds are allocated for their maintenance. In this situation it is often less difficult for health officials to purchase new equipment - much of it is foreign financed - than to obtain funds for maintenance or spare parts, even though the latter would be more cost-effective. Strengthening maintenance services and making adequate budget provisions, therefore, could significantly reduce cost over the longer term.

Health Information System

2.94. Access to reliable health information is an important management tool. It can facilitate disease surveillance, monitor the utilization of health services, and identify development priorities for future health programs. There are a number of Health Information Systems (HIS) in Yemen, but they are fragmented and of inferior quality. No comprehensive system covering the whole sector and all public and private facilities is in existence. Health sector planning and management therefore is more often than not based on vague impressions and unsubstantiated reporting rather than reliable information and factual situations.

2.95. It is now generally recognized that a major overhaul of the present information systems is urgently required. The issue has been studied by Yemeni staff and international consultants before and after unification. In fact, a special task force in MOPH has recently reviewed this subject.[11] But putting in place a more reliable and comprehensive information system is

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11/. MOPH, Department of Planning: Health Information System, June 1991.

no easy task and would require major changes in procedures, new equipment and staff training. Almost every health establishment and unit, every manager and administrator, and a large number of health personnel would be involved, skills and attitudes would have to be changed, and substantial costs would be incurred.

2.96. There seems to be broad agreement on the objectives of such a system: it should be standardized and comprehensive while at the same time reasonably simple to comprehend and apply. Initially, the HIS would cover basic health and epidemiological information; later on it could be extended to cover management information as well. The volume of data to be collected and analyzed should match the ability of information providers and users. Core indicators could first be selected, then increased as is needed and warranted. Quality and timeliness of information rather than just quantity, is of paramount importance. The system should remain flexible and useful not only for routine surveillance but also for sentinel and special surveys.

Integrating Vertical Programs

2.97. Vertical health programs have a narrow focus and their staff are trained to perform few distinct tasks. They are usually well funded and enjoy the commitment of government authorities as well as the support of multi- or bilateral donors. The rate of success therefore is generally high, although these programs are difficult to sustain over a longer period. A recent example is the Expanded Program for Immunization sponsored by UNICEF which from 1988 to 1990 achieved a coverage of up to 80 percent for children under five in the northern governorates. Since then, immunization rates for infants have declined.

2.98. To enhance sustainability and also reduce costs, MOPH pursues a policy of integrating the functions of vertical programs such as immunization of infants or eradication of malaria into the regular PHC system. This requires availability of adequate supplies and equipment at PHC facilities, and multi-discipline training of health workers. Depending on local and regional conditions such as the incidence of malaria or schistosomiasis, some functions can be developed selectively. But staff working in PHC units and centers should at least be able to immunize infants and protect mothers against tetanus.

Regulating Private Health Sector

2.99. There is a notable absence of information on private health services as private physicians are not required to report to MOPH or any other authority on their practice. Following the recent survey on public health services (Annex 1), however, the Ministry is now planning another survey that will cover private health facilities and personnel.

2.100. Law No. 32 of 1992 regulates the registration and practice of medical professions (see para. 1.19). Its purpose is to ensure the observance of professional standards, and protect patients against malpractice; it also regulates individual and institutional licenses. There appears to be no need for further legislation or regulatory intervention. The present legal framework already makes it possible for the authorities to direct private health services into priority areas by licensing, for instance, private clinics that specialize in fields not covered by the public sector. Moreover, as and when a more comprehensive health information system is developed, it

may be necessary to extend reporting requirements to the private health sector.

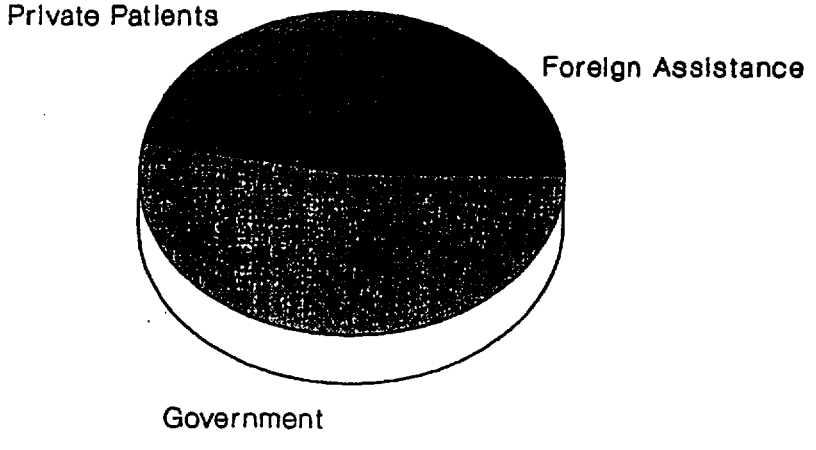
2.101. A number of drugs are produced locally. The Yemen Drug Company, which is partly privately owned, is the largest manufacturer. The Government encourages further expansion of local production to reduce dependence on imports. This opens another area for private participation in the health sector.

X. FINANCING OF HEALTH SECTOR

2.102. There are three major sources from which the health sector in Yemen is financed: the government budget which covers public health expenditures, payments of patients for private health services, and foreign assistance. In addition, there are marginal contributions to public health facilities at the local level, while a growing number of insurance schemes ease the cost of health care for employees in the modern sectors.

2.103. The magnitude of total health expenditures can only be broadly gauged as no data exist on the payments for private health services. But it can be estimated that the latter amount to at least one fourth of all health spending, with budgetary sources accounting for more than half, and foreign assistance for about one fifth.

Chart 10.1: HEALTH EXPENDITURES, 1991



2.104. In 1991 the Government spent approximately YR 2 billion for the health sector. Another YR 1 billion can be added for private health services. Disbursements of foreign assistance are estimated at US $28 million or the equivalent of YR 0.8 billion at the free market exchange rate for that year. Together, these expenditures correspond to almost 4 percent of GNP, a figure that compares favorably with the average for least developed countries.[12] Yet, in relation to the country's needs, the resources remain inadequate. While health services in urban areas are now quite satisfactory for people who can afford to pay private physicians, basic health care still remains out of reach for many poor including a large part of the rural population.

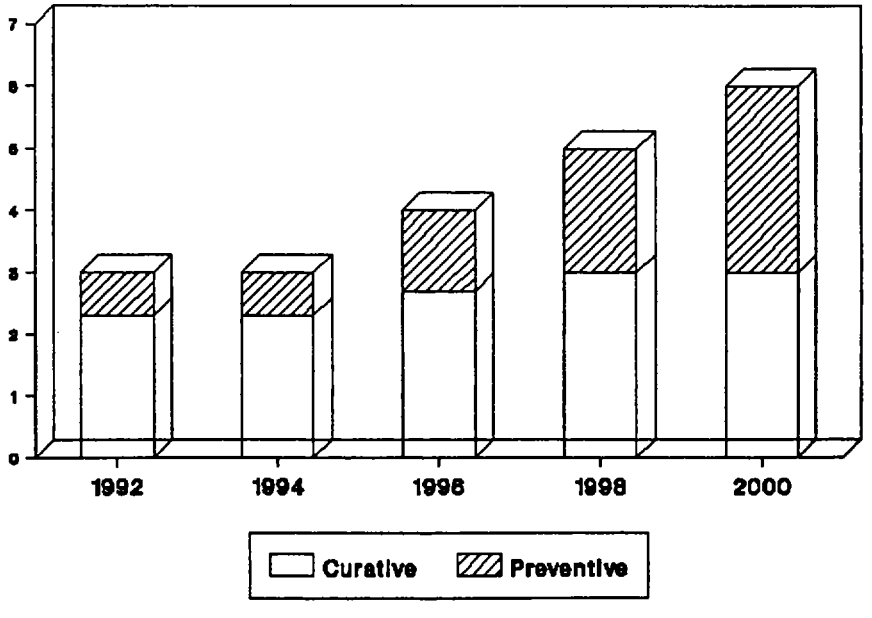
12/ Human Development Report, 1992, p. 151

Government Resources: Present and Future

2.105. This leaves the country with a difficult question: How can additional resources be mobilized to finance existing gaps in the health system, and provide for the expected population growth in future years? For public health services, the government budget will continue to be the main source of finance. Over the next two to three years, however, little real growth can be expected in government expenditures considering the slow growth of the economy, and the need to reduce current budget deficits. A short-term objective, therefore, could be to maintain the present share of health in total government spending (about 4 percent, see Statistical Appendix, Table 11) and to rely on community participation and foreign assistance as additional sources of finance. Equally important would be a more efficient use of resources.

2.106. But the situation may change significantly during the second half of the decade. Large-scale exploration and development activity by foreign oil companies in several parts of the country is yielding promising results. Oil production could triple or even quadruple between the early and late 1990s, rising from about 200,000 barrels per day (b/d) in 1991 to perhaps 600,000 b/d or more in the year 2000. At present prices, annual oil revenue would then increase from US$454 million (1991) to a range of US$1.4-1.8 billion, boosting both foreign exchange earnings and government revenue. Even allowing for a gradual deficit reduction, public expenditure could thus grow at a rate of 6 to 7 percent p.a. between 1992 and 2000. This would enable the Government to spend more on health, and offer the opportunity to raise its share in total public spending from currently 4 percent to about 5 percent. Much of the increment could be allocated to primary health care, improving its quality and regional coverage. At the same time, the balance between preventive and curative health services could be significantly improved. The following chart illustrates the magnitudes involved.

Chart 10.2: GOVERNMENT EXPENDITURES FOR HEALTH
(YR billion, 1992 prices)



Community Participation

2.107. Until the mid-1980's, community participation was an important factor contributing to the development of Yemen's primary health care system. LCCDs helped build PHC units, financing up to 50 percent of construction costs, and subsequently contributed to maintenance and other recurrent expenditures. The councils derived most of their income from the Zakat, a traditional islamic tax, whose proceeds were also used to fund the construction of local schools and rural roads. In addition, community members contributed to local projects in kind, mostly by providing free labor.

2.108. Since 1986, however, proceeds from the Zakat have to be surrendered to the Ministry of Finance where they become part of the general tax revenue. Although in theory, the funds collected through the Zakat are to be used to support local development projects, they are now financing general budget expenditures. The previous close link between taxpayer and beneficiary has thus been effectively severed. As a result, revenue from the Zakat has dropped as people try to avoid paying a tax which no longer benefits their community. This has been accompanied by a sharp decline in local support for health projects.

2.109. Restoring the Zakat to LCCDs and the villages they serve would be an essential element in the revival of local initiative, one of the principal objectives of the Government's health policy. Without an independent source of finance, local communities would be unable to participate in development projects as they have done so successfully in the past. While such a transfer of tax authority may not be feasible in the near future because of present budgetary constraints, it could become reality in the second half of the decade when the expected increase of oil revenue materializes.

2.110. User charges, another form of community participation, are only of marginal significance in Yemen. During 1990/91, they financed not more than two percent of the Government's expenditures for health. Although the preliminary Constitution of the Republic of Yemen does no longer obligate the state to provide free health services for all people - as earlier constitutions have done - the Government remains reluctant to charge patients for basic health care in public facilities.

2.111. Yet other developing countries faced with similar financial constraints have taken this approach with some measure of success. In Ghana, for instance, up to 15 percent of recurrent public health expenditures are recovered through user charges. Other examples can be found in Bolivia, Mauritania, Ethiopia and Rwanda.[13] Experience shows that user charges are quite acceptable for curative health services offered in hospitals and major health centers, but that they tend to discourage participation in preventive health care. A recent survey by MOPH shows that almost half the persons interviewed would be willing to pay for public or private health services, especially for medicines and laboratory tests (Annex 2). These findings deserve to be followed up by a policy review and pilot programs which test the feasibility of higher user charges.

13/ Human Development Report 1991, p.67

Private Health Services

2.112. Private health services are self-financing and do not benefit from direct government subsidies. In some instances, however, health personnel employed by the Government use public facilities when they see private patients after regular office hours. In such cases, the authorities may consider charging the physician (or paramedic) a fee for the use of the consultation room and equipment.

2.113. Fees charged by private physicians and clinics are determined by market forces and subject to a fair amount of competition. They are relatively low by western standards although quite high in relation to local incomes. Still, demand for private health services appears to be strong and growing, suggesting that many families can afford to pay for modern health care, especially in cases of emergency or acute illness. Prices for major drugs sold in private pharmacies are set and controlled by MOPH, a system that seems to work quite effectively.

Health Insurance

2.114. Most private firms operating in Yemen contract private physicians and/or clinics to provide medical services for their employees. Payment usually takes the form of a flat fee per month rather than specific charges for each consultation performed. Some public sector enterprises have made similar arrangements.

2.115. Retired government employees are covered by a health insurance that is financed through member contributions deducted from the pensions and general budget resources. Introducing a similar scheme for active government employees is being reviewed and likely to put into effect in the near future.

Foreign Assistance

2.116. Foreign assistance plays a major role in the development of Yemen's health services. As mentioned above, it finances about one-fifth of all health expenditures. Most of the assistance is channeled into primary health care (see Statistical Appendix, Table 12). Major contributors besides IDA (see Box 4) are the Netherlands, Germany and other bilateral donors as well as UNICEF and WHO. There are good prospects that such assistance will increase in the coming years.

2.117. While this support has been essential for the development of health services in Yemen and will continue to be needed in the foreseeable future, there appears to be a case for more effective aid coordination to accommodate Government priorities. A round table conference with major donors planned by the Ministry of Planning and MOPH for February 1994 will provide an opportunity for coordinating aid programs. Another issue associated with foreign assistance concerns the sustainability of donor supported projects: timing and modality of handing them over to local authorities need to be carefully considered. If donors phase out their support before the Government is able to assume full responsibility for management and operating cost, the project could suffer and its impact be weakened. In some cases this would mean that donor support is required for much longer periods than originally anticipated.

Box 4: IDA Lending to the Republic of Yemen for the Health Sector

The First Health Project (Credit 1294)

The project, for which a credit of approximately US$10.48 million was approved for the YAR in September 1982 was completed in June 1989 about three years behind the original implementation target date and only 75 percent of the credit was disbursed. The overall objective of the project was institution building and the project focussed on strengthening the ability of the Ministry of Health (MOH) to plan, manage, implement and evaluate its health care system. This was to be achieved through structural reorganization, formation and development of new units, introduction of new procedures in established units, training of staff, development of the Health Manpower Institute (HMI) through strengthening of management capabilities, upgrading of teaching staff, improvement of curricula, introduction of new methodologies, and expanding training of women. These goals were accomplished through, inter alia, construction, furnishing and equipping a warehouse for drugs, medical supplies and equipment, dormitories for the HMI and its branches; and the purchase of vehicles for support of MOH management units and the HMI.

The Health Development Project (Credit 1377)

The project was the first IDA operation for the health sector of the former People's Democratic Republic of Yemen (PDRY). A credit in the amount of US$7.6 million was approved in May 1983 and the credit closed in December 1989. The general objective of the project was to improve the health status of the population in the southern governorates of Lahej, Abyan and Hadramout, through the concentration of health interventions on the ten priority disease groups identified in the National Health Program. Specific objectives were to (a) extend the coverage of basic health care services through construction, repair, equipping and furnishing of health care facilities; (b) improve health services through health manpower development; (c) promote health education and community participation in health-related activities through seminars, development of materials and provision of technical assistance; and (d) support the management of the Ministry of Public Health (MOPH) through the provision of technical assistance and the construction and equipping of a project implementation unit and the national and regional health directorate offices. Cofinancing, in the amount of US$ 1.0 million from the Kingdom of Norway (NORAD) and parallel financing (US$5.3 million) from the Islamic Development Bank (IDB) was also provided.

The Second Health Development Project (Credit 1972)

The project was the second for the former PDRY's health sector and included regional and central health development operations and focussed on the least served areas of the country which had not been covered by the first project (Cr.1377). These areas, with an overall population of 400,000 have scattered communities involved largely in agriculture, livestock holding and fishing. The project's objectives were to (i) support the upgrading and extension of primary health care in the Governorates of Shabwa, Al Mahra, and the island district of Socotra; (ii) develop and upgrade health manpower in these areas; (iii) promote family planning and health education in the country; and (iv) strengthen the management capabilities of the public health sector. To accomplish these targets, the project is financing the repair, upgrading and reconstruction of 26 existing health units; the construction of 19 new health units, 3 medical stores, a regional nursing school with dormitories, and the provision of drugs, medical supplies, drug information system, health education materials, as well as furniture, equipment and vehicles. It is also providing for the in-service training of about 350 technical staff, 30 administrative health personnel, 10 maintenance staff, 500 health guide volunteers and 60 traditional birth attendants. The project also expects to provide 18 overseas fellowships and 10 man-months of consultant services for developing management skills, family planning and community health information programs. The credit, in the amount of US$4.5 million was approved in December 1988, implementation began in September 1989 and is expected to be completed by June 1994.

The Health Sector Development Project (Credit 2151)

This is the second project for the former YAR and it is intended to increase the quality, effectiveness, level of services of the existing health care system and facilitate the extension of health services to underserved communities. To accomplish these objectives, the project is developing regional administrative capacities and support services, mid-level health professionals and a program to strengthen hospital management and health care administration. The three main components of the project are Health Care Administration (HCA), Training of Health Care Professionals (THCP) and Hospital management (HM). The credit is for an equivalent amount of US$15.0 million and includes the collaboration of UNICEF on procurement of materials. Implementation began in July 1991 and is expected to be completed by June 30, 1996. For the HCA component, approximately nine maintenance workshops for medical equipment and pharmaceutical stores are to be constructed and spare parts for medical equipment for health sector facilities will be provided; under the THCP component three regional HMI schools in Dhamar, Ibb and Sa'ada will be constructed for the training of nurses and midwives; the HM component will include the construction and equipping of a maternal and child health emergency unit and blood bank at the Al-Thawra Hospital; development of a national action plan for strengthening hospital and health management throughout the public health systems; a preinvestment study for a suitable future health project and for coordination and development of the health sector. The Al-Thawra Hospital will also receive support for strengthening its capabilities as a center for health management training. In this connection, a training program for hospital management, clinical services management and referrals, planning, management information systems, materials and supplies management, maintenance, medical records and nursing administration will be designed.

The Family Health Project (Credit 2525)

The project, for which a credit of approximately US$26.6 million has been approved by the Board on June 4, 1993, proposes to assist the MOPH in contributing to the implementation of the national population policy, articulated in 1991, to reduce fertility and maternal and infant mortality. The objectives of the project are: (i) to improve the access to, and quality of, maternal-child health and family planning (MCH/FP) services within the PHC system; and (ii) to improve more broadly, the management effectiveness in the health sector. The credit is not yet effective.

PART THREE: DEVELOPMENT PRIORITIES AND POLICY OPTIONS

3.01. Public and private health services in Yemen have grown vigorously during the past, starting from a very low level in the early 1970s. Sustaining this development over two decades is a remarkable achievement for which the country and external donors deserve much credit. But the task of establishing an adequate and satisfactory health delivery system is far from completed and continued development efforts are needed in the foreseeable future.

3.02. The overall objective as spelled out in the Government's most recent strategy document [14] is to achieve a gradual improvement in the health status of people through quality improvements in health services and further reductions in regional disparities of health care facilities. To meet this objective would require a major reorientation of the health delivery system which is predominantly curative, even in the public sector, with insufficient emphasis on preventive and promotive health care. In addition, as has been pointed out before in this report, many poor people especially in rural areas are left without access to modern health care. The basic question therefore is: How can health services be made more effective and more accessible to the poor?

Precedence of Primary Health Care

3.03. In answer to this question the Government has decided to give priority to primary health care, a strategy which appears to be well chosen. With its focus on preventive and promotive health services, future investments in strengthening PHC can be expected to produce high returns. Given the present shortcoming of PHC facilities, this would involve both a geographic expansion of the PHC network to areas not yet served and an upgrading in the quality of existing services. At first sight, geographic expansion would seem to be a poor policy choice as long as existing services are less than satisfactory. But there are compelling social reasons to build new PHC units and centers in the outlying regions, provided they can be operated at acceptable levels of effectiveness. This implies additional staffing and adequate funding of salaries, medicines and other current cost items. On the other hand, improving the quality of existing facilities may prove to be more cost-effective and have a greater impact on the general health status of the population, especially if emphasis is given to preventive and promotive health care. In practice, however, there is no real policy choice and both options will have to be pursued simultaneously.

3.04. MOPH is now in the process of preparing a medium-term development plan for the health sector. Tentative targets have been set which reflect the above priorities. They envisage the construction of 600 new PHC units to accommodate population growth and extend the regional coverage of health care facilities to unserved or underserved areas. In addition, some 250 dilapidated or unsuitable buildings are to be reconstructed or renovated. Considerable investments are also planned for the construction and upgrading of PHC centers which support and supervise the activities of PHC units.

14/. General Economic Memorandum, op. cit. page 37.

3.05. Strengthening the range of services offered by both PHC units and centers would require further investment. Priority is to be given to MCH services which are planned to be extended to all centers and a large number of units. Other preventive and promotive health services such as immunization, disease control and health education would also be upgraded. The development costs would include construction, equipment and manpower training.

Investment Priorities

3.06. Past policies of channelling the bulk of resources available to the sector into secondary and tertiary health care will need to be changed. The important issue here is to streamline referral procedures so as to avoid overburdening regional and specialized hospitals. The success of such a policy reorientation would be contingent on the strengthening of PHC services. Otherwise, referral facilities would continue to suffer from an undesirable overflow of patients who should normally be treated at the PHC level.

3.07. Still, referral services will have to keep pace with the planned expansion of the PHC network. The Ministry therefore proposes the construction of one new governorate hospital and upgrading facilities in five others. Further investments are planned for supporting services, including laboratories and bloodbanks, drug distribution, maintenance workshops, research facilities and environmental health programs. Tentative estimates of the capital costs of these investments over a five year period are given in Table 3.1 below. Detailed cost estimates of individual components, however, still need to be undertaken.

Table 3.1: DEVELOPING PUBLIC HEALTH FACILITIES
(Cost Estimates for 5-Year Program)

	US $ mln. [a/]
Primary Health Care	76
of which	
PHC units	(27)
PHC centers	(38)
MCH services	(11)
Hospital Development	20
Support Programs (including health education)	28
Total Investment Cost	124

a/ Exchange rate US$=30 Yemen Rials
Source: MOPH

3.08. Much of these development expenditures could be financed through external assistance, including IDA credits. In fact, if recent disbursements of foreign aid for health projects and programs (US $27 million p.a.) are any guidance for the future, they would just about match the investment requirement of MOPH over the coming five years (average of $25 million, p.a.). Some of this assistance, however, would be earmarked for current operating expenses. The Government therefore, may have to cover part of the development expenditures from its own budgetary resources.

Financing Operating Expenses

3.09. Implementing such a development program would increase the capacity of public health facilities by approximately two-thirds between now and the end of the decade, providing services for the expected population growth and increasing access of people to primary health care from presently 45 percent to about 60 percent. But expanding system capacities is only the first step which needs to be followed by a commensurate increase in the recurrent budget. MOPH estimates that operating the proposed new facilities and raising the quality of care in existing public health establishments would cost an additional YR 2.4 billion a year. This includes base salaries for new staff, bonuses and allowances to reward staff efficiency, better supplies of drugs and medical equipment, and adequate provisions for maintenance.

3.10. Total recurrent budget requirements would thus increase from an estimated YR 2.5 billion in 1992 to almost YR 5 billion by the year 2000. While some of these expenditures could be met through external assistance programs, most of them would have to come from the government budget. The analysis in the previous chapter shows that financing such an increase appears to be feasible, assuming that revenue from the oil sector is growing as expected, and that the share of the health sector in total government spending can be somewhat increased. The following table illustrates the magnitudes involved.

Table 3.2: FINANCING OF RECURRENT HEALTH EXPENDITURES

	YR billion (1992 prices)
Recurrent budget expenditures, 1992	2.5
2000	4.9
Increase 1992/2000 financed through	+2.4
General increase in revenue (mostly from oil sector)	+1.5
Raising the share of health sector spending from 4% to 5% of total government expenditure	+0.9

3.11. It should be emphasized that the figures shown in Tables 3.1 and 3.2 do not represent official projections. Those would have to be based on an approved development plan which at this time is still in its early stages of preparation. Moreover, keeping in mind that additional revenue from the oil sector is likely but not yet certain, there is need for prioritizing public expenditures under present budgetary constraints. Core budget expenditures should clearly reflect the growing resource requirements associated with the expansion of PHC services. In addition, a strong case could be made for a shift in the balance of health spending towards PHC at the expense of secondary and tertiary health services. Potential new oil proceeds could then be used for expenditures which are classified as less urgent, but will still need to be earmarked according to clear spending or investment criteria applicable to public spending as a whole. The choice between using them for

current or capital expenditures should, inter alia, be determined on the basis of the permanent character of the oil proceeds.

3.12. There is also scope for some cost savings through more efficient use of resources. The chapter on sector management (pg. 38) suggests a number of areas where efficiency could be increased, e.g. sector organization, personnel management or logistics for medical supplies. Additional resources could further be mobilized through user charges and community participation (pg. 47), a potential that deserves early exploration.

3.13. A program as outlined above is likely to have a significant impact, although the targets mentioned earlier in this report (Table 1.3 on page 9) may not be fully met. The success of the program would also be contingent on a number of procedural and policy changes, notably in the following areas:

- Increase management efficiency of MOPH through regional decentralization;
- Involve governorates and local communities to make health services more responsive to local conditions, and more acceptable to the people;
- Strengthen preventive and promotive health services, including:
  - MCH care and family planning,
  - sustained immunization of infants,
  - control of endemic diseases, and
  - health education (especially for women);
- Adjust training programs for health personnel to meet the special needs of primary health care;
- Strengthen logistics for medical supplies;
- Establish an effective health information system;
- Direct private health services to areas where they can complement the public health system; and
- Complete health legislation.

3.14. In addition, there is need for more effective coordination with other sectors. The ministries responsible for education, for example, will have to work closely with MOPH in designing training programs for health personnel. School curricula should offer health information courses informing students about potential benefits of preventive health care and family planning. Government agencies in charge of water supply and sanitation should be encouraged to maximize the impact of their programs on public health.

3.15. A major effort is needed to carry out these reforms. Political support will have to be gathered, organizations strengthened, management procedures streamlined, and financial resources mobilized. Much of the burden of developing the health sector will have to be carried by the Government and other parts of Yemen society. But the country will also require continued support from external donors in the form of financial transfers, material inputs and technical assistance.

STATISTICAL APPENDIX

Population

Health Status of Population

Health Delivery Systems

Financing of Health Sector

REPUBLIC OF YEMEN

Table 1: ESTIMATED POPULATION BY AGE GROUP AND SEX, 1991
(1000s)

Age Group	Total	Females	Males
0-4	2,404	1,187	1,217
5-9	2,073	1,015	1,058
10-14	1,614	766	848
15-19	1,137	542	595
20-24	817	419	398
25-29	633	353	280
30-34	576	332	244
35-39	502	286	216
40-44	424	232	192
45-49	340	181	159
50-54	296	154	142
55-59	249	124	125
60-64	181	92	89
65-69	137	71	66
70-74	87	44	43
75+	142	75	67
Total	11,612	5,873	5,739

Source: Statistical Yearbook, 1991

REPUBLIC OF YEMEN

Table 2: ESTIMATED RURAL AND URBAN POPULATION, 1991
(1000s)

Age Group	Rural	Urban	Total
0-4	1,939	465	2,404
5-9	1,664	409	2,073
10-14	1,236	378	1,614
15-19	805	332	1,137
20-24	575	242	817
25-29	475	158	633
30-34	434	142	576
35-39	378	124	502
40-44	323	101	424
45-49	262	78	340
50-54	236	60	296
55-59	201	48	249
60-64	148	33	181
5-69	111	26	137
70-74	76	11	87
75+	117	25	142
Total	8,980	2,632	11,612

Source: Statistical Yearbook, 1991

REPUBLIC OF YEMEN

Table 3: POPULATION AND SETTLEMENTS BY GOVERNORATE, 1991

Governorate	Population (1000s)	Cities/Towns	Villages/Hamlets
Sana'a	1,986	5	4,503
Aden	453	23	677
Laheg	552	3	3,921
Taiz	1,712	4	2,677
Abyan	367	2	2,198
Ibb	1,480	10	2,697
Shabwah	234	6	1,960
Al-Hodeidah	1,218	19	1,871
Hadramout	704	15	2,232
Hajjah	839	4	3,042
Al-Mahrah	103	2	317
Dhamar	801	3	3,366
Sa'adah	367	3	1,062
Al-Beida	351	2	1,165
Al-Mahweet	302	3	1,231
Mareb	112	2	401
Al-Jouf	49	1	123
Total	11,612	96	33,443

Source: CSO, 1991

REPUBLIC OF YEMEN

Table 4: LEADING CAUSES OF MORBIDITY, 1990
(Percentage of All Causes)

A. All Ages

	Males	Females	Total
Complications of Pregnancy, Childbirth and Puerperim	0.0	45.8	19.6
Infectious and Parasitic Diseases	22.4	12.3	18.4
Injuries and Poisoning	18.7	7.6	13.9
Diseases of the Digestive System	16.1	6.6	12.0
Diseases of the Respiratory System	10.3	6.3	8.6
Diseases of the Circulatory System	8.0	4.4	6.5
Other	24.5	17.0	21.0

B. Infants Below One Year

	Males	Females	Total
Infectious and Parasitic Diseases	39.4	44.6	41.0
Diseases of the Respiratory System	28.3	20.6	25.8
Diseases of the Digestive System	5.0	2.7	4.2
Injuries and Poisoning	1.6	1.8	1.7
Other	25.7	30.0	27.3

Source: MOPH and WHO

REPUBLIC OF YEMEN

Table 5: INFECTIOUS DISEASES REPORTED IN 1991

	Thousands of Cases
Enteritis	219.7
Malaria	153.9
Respiratory Diseases	102.8
Intestinal Parasites	86.8
Anaemia	66.4
Kwashiorkor	63.6
Pneumonia	54.9
Tuberculosis	21.5
Schistosoma	18.4
Mumps	18.3
Hepatitis	14.4
Measles	9.3

Source: Statistical Yearbook, 1991

REPUBLIC OF YEMEN

Table 6: PUBLIC HEALTH CARE DELIVERY NETWORK

		Northern Governorates	Southern Governorates
Primary Health Care Unit (PHCU)	Hamlet	Out reach from PHCU	1. Health Guide Volunteer 2. Trained Birth Attendant 3. Out reach from PHCU
	Villages	PHCU (one for 500-2500 persons. Staff:3 Tech. Trained persons-2 PHC workers and 1-Trained local birth attendant	PHCU (one for about 3000 persons, Staff: 3 Techn. trained persons. 1-health Asst. 1-medical asst. 1-community midwife. Support to HG & TBA)
	Bigger Villages	Health Sub-Center (one for 5000-15000 persons Staff: nurses and Asst. nurses	
		Health Center (one for 50,000 persons. Staff: 2 Physicians & 10 nurses & Technicians has 20 beds 1 laboratory & an X-ray section)	Health Center (one for 15,000 persons. Staff: 12 Tech. trained persons including one physician, has about 10 beds & laboratory support)
Secondary Care	Main town of the District	District Hospital (Secondary Care about 40 Tech. staff members, 40 beds)	District Hospital (Secondary Care about 40 Tech. Staff members, 40 beds)
	Capital of Governorate	Governorate Hospital (some better equipped & staffed than District Hospitals, 60-100 beds)	Governorate Hospital (somewhat better equipped & staffed than District Hospital, 60-100 beds)
Tertiary Care	Sana'a & Aden	Specialized & University Hospitals for specialized Care	Polyclinics in 2 main towns to screen referral cases
			Specialized & University hospitals for specialized care

Source: MOPH

REPUBLIC OF YEMEN

Table 7: PUBLIC SECTOR HEALTH ESTABLISHMENTS, 1992

Governorates	Primary Health Units	Health Centers 1 (no beds)	Health Centers (with beds)2	Government Hospitals
Sana'a	123	67	0	5
Aden	24	8	2	4
Laheg	108	4	6	9
Taiz	29	72	1	6
Abyan	84	3	0	8
Ibb	40	31	0	4
Shabwah	53	1	1	5
Al-Hodeidah	115	35	0	3
Hadramout	139	11	11	6
Hajjah	45	19	0	3
Al-Mahrah	19	0	3	1
Dhamar	65	22	0	1
Sa'adah	24	7	0	3
Al-Beida	32	8	0	2
Al-Mahweet	12	8	0	1
Mareb	18	16	0	2
Al-Jawf	19	9	0	-
Total	949	321	24	63

1/ Including polyclinics
2/ To be converted to rural hospitals

Source: MOPH

REPUBLIC OF YEMEN

Table 8: HEALTH PROFESSIONALS BY SPECIALIZATION & GOVERNORATE, 1991

Governorate	Doctors	Dentists	Pharmacists	Others Professionals
Sana'a	930	67	115	16 1/
Aden	599	27	34	-
Laheg	74	2	6	-
Taiz	428	19	10	-
Abyan	57	1	6	-
Ibb	132	17	7	-
Shabwah	27	1	-	-
Al-Hodeidah	187	5	14	-
Hadramout	129	4	9	-
Hajjah	57	3	1	-
Al-Mahrah	16	-	-	-
Dhamar	48	6	1	-
Sa'adah	89	-	-	-
Al-Beida	45	-	-	-
Al-Mahweet	17	-	1	-
Mareb	23	1	2	-
Al-Jawf	10	-	-	-
Total	2,868	153	206	16

Source: Statistical Yearbook, 1991

1/ Nutritionists, Bio-Chemists and Social Officers

REPUBLIC OF YEMEN

Table 9: MEDICAL SUPPORT STAFF IN PUBLIC SECTOR, 1992

Governorate	Nursing			Technical		
	Total	Male	Female	Total	Male	Female
Sana'a	1,058	546	512	293	226	67
Aden	1,584	1,045	539	515	277	238
Laheg	1,050	708	342	192	175	17
Taiz	852	551	301	260	236	24
Abyan	790	523	267	146	122	24
Ibb	413	268	145	92	82	10
Shabwa	374	350	24	47	46	1
Al-Hodeidah	633	393	240	103	89	14
Hadramout	1,007	879	128	224	217	7
Hajjah	252	164	88	35	34	1
Al-Mahrah	201	161	40	31	29	2
Dhamar	316	229	87	44	44	0
Sa'adah	171	111	60	42	36	6
Al-Beida	144	89	55	16	15	1
Al-Mahweet	73	56	17	17	17	0
Mareb	110	83	27	13	13	0
Al-Jawf	65	48	17	3	3	0
Total	9,093	6,204	2,889	2,073	1,661	412

Source : MOPH

REPUBLIC OF YEMEN

Table 10: OUTPUT OF YEMENI DOCTORS BY THE FACULTIES OF MEDICINE

Year	Male	Female	Total
1982	39	13	52
1983	33	18	51
1984	41	18	59
1985	27	28	55
1986	20	39	59
1987	14	47	61
1988	24	30	54
1989	29	43	72
1990	42	19	61
1991*	39	18	57
Total	308	273	581

Source: Deans, Faculties of Medicine, Sana'a and Aden

* Preliminary

REPUBLIC OF YEMEN

Table 11: GOVERNMENT EXPENDITURES FOR HEALTH
(Million Yemen Rials)

	1990 Actual	1991 Preliminary
Current Expenditure, total	27,877	40,344
of which: Health	1,285	1,690
Health as % of total	4.6	4.2
Capital Expenditure, total	8,090	10,635
of which: Health	157	345
Health as % of total	1.9	3.2
Total Government Expenditures	35,967	50,979
of which: Health	1,442	2,035
Health as % of total	4.0	4.0

Source: Statistical Yearbook, 1991

REPUBLIC OF YEMEN

Table 12: DISBURSEMENTS OF EXTERNAL ASSISTANCE
(US $ Millions)

	1989	1990	1991
		Actual	
Planned			
Primary Health Care	20.0	15.1	15.5
Hospitals & Clinics	2.1	4.4	1.5
Immunization	1.3	1.7	0.4
Family Planning	0.7	0.3	0.0
Other	2.7	5.9	10.6
Total Health Sector	26.8	27.4	28.0
of which			
UN Organizations		4.6	
(UNICEF & WHO)		(4.1)	
Bilateral Assistance		20.6	
(Netherlands)		(11.6)	
NGOs		2.2	

Source: UNDP

PRELIMINARY FINDINGS OF THE 1992 HEALTH INSTITUTIONS AND MANPOWER SURVEY

1. The survey was conducted by the Ministry of Public Health (MOPH) and covers 1,270 primary health care (PHC) facilities, including 949 units, 310 PHC centers and 11 polyclinics. This represents more than 90 percent of all PHC establishments in existence at that time. Following is a summary of the survey's preliminary findings. They focus on average national data; regional and unit data are in the Ministry's computer file.

PHYSICAL FACILITIES

2. Three out of five PHC units consist of one or two rooms; the other 40 percent have three or four rooms. PHC centers and polyclinics generally have five or more rooms. About half the establishments have their own electricity supplies and drainage; around 60 percent of them have water supply and toilets.

No. of Rooms		%	Utilities		%
One	283	22	Electricity	624	49
Two	275	22	Water	739	58
Three	221	17	Drainage	633	50
Four	159	13	Toilets	770	61
Five and more	332	26			
Total	1,270	100			

3. Four out of five buildings are reasonably or moderately well maintained; a similar ratio has been found for the cleanliness of the facilities.

Status of Buildings		%	Cleanliness of Facilities		%
Good	469	37	Good	493	39
Moderate	582	46	Moderate	629	49
Poor	219	17	Poor	148	12
Total	1,270	100	Total	1,270	100

EQUIPMENT AND SUPPLIES

4. Less than two-thirds of the establishments had a basic set of equipment that was in working order.

Establishments with Working Equipment

	No.	%
Exam Beds	916	72
Sterilization	846	67
Refrigeration	825	65
Thermometers	766	60
Stethoscopes	707	56
Surgical Equipment	755	59
Adult Scale	625	49

5. The supply of drugs appears grossly inadequate: stocks are low, many drugs are expired and replenishments are infrequent or irregular. The situation is especially critical in PHC units.

Drugs in Stock

		%
None	142	11
Less than 10	359	28
10-19	431	34
20 and more	338	27
Total	1,270	100
Of which expired	411	32

Drug Supplies

		%
Monthly	50	4
Every 3 months	584	46
Every 6 months	142	11
Irregular	494	39
Total	1,270	100

6. Working gowns are available only in PHC centers, not for employees of PHC units. Transportation is also in short supply.

Vehicles

		%
None	1,146	90
One	102	8
More than one	22	2
Total	1,270	100

STAFFING OF PHC FACILITIES

7. Most PHC facilities are under-staffed. About 240 PHC units have no permanent employees in attendance - that is, one out of every four units. Another 520 units are staffed with only one nurse, while 190 units have two health workers. Most PHC centers have three or more employees, but only 230 have a doctor in attendance.

Permanent Employees	Establishments	
	No.	%
None	240	19
One	520	41
Two	190	15
Three and more	320	25
Total	1,270	100
Of which doctors	230	18

8. All together there were some 3,100 nurses, midwives, medical assistants and doctors employed in PHC facilities. This is only about 30 percent of all medical staff in Yemen; the other 70 percent work in hospitals and in the private sector.

Employment of Medical Staff

	PHC System	Other	Total
Nurses/Midwives/ Medical Assistants	2,730	4,720	7,450
Doctors	370	2,500	2,870
Total	3,100	7,220	10,320

AVAILABILITY OF SERVICES

9. The PHC system in Yemen offers primarily curative services. Most PHC establishments are also able to vaccinate patients. Other services such as health care for expectant mothers, disease control or laboratories are essentially limited to PHC centers. A fair number of PHC units provide health education, but there is very little in-service training.

Services Offered

	Number of Establishments	% of Total
Curative	1,199	94
Vaccinations	919	72
Antenatal	374	29
Deliveries	265	21
Postnatal	227	18
Disease control		
Malaria	122	10
TB	93	7
Schistosomiasis	69	5
Laboratories	126	10
X-ray	39	3
Health education	596	47
Training of		
Health workers	114	9
Health guides	30	2
TBA	10	1

UTILIZATION OF SERVICES

10. Utilization of services as recorded by the survey is rather low. Most establishments reported few outpatient visits, although there may have been additional visitors "after hours" seeking private treatment that they are willing to pay for. The number of child vaccinations seems to have picked up since the national program in 1989/90, and there is also a fair amount of health education. On the other hand, few deliveries are performed at PHC facilities, a fact that contributes to the very high maternal mortality rate.

Outpatient visits per day
(during last month)

	Number of Establishments	% of Total
None	106	8
Less than 3	332	26
3 - 15	606	48
16 - 30	150	12
More than 30	76	6

Children vaccinated
(during last month)

None	455	36
Less than 50	388	31
50 - 99	182	14
100 and more	245	19

Deliveries per month

	Number of Establishments	% of Total
None	1,044	82
Fewer than 10	192	15
10 or more	34	3

Health education sessions
(during last 3 months)

None	711	56
Fewer than 10	314	25
10 or more	245	19

WILLINGNESS OF PEOPLE TO PAY FOR MEDICAL SERVICES

1. During the third quarter of 1992, a survey was undertaken by MOPH to determine:

- the extent to which people are paying for medical services;
- the type of services people are paying for; and
- their willingness to pay more in the future.

2. The survey covered a random sample of close to 4,000 people in four governorates (Aden, Sana'a, Taiz, Lahej). It included people who worked for the Government or private sector or were unemployed; whose monthly income ranged from zero to more than 10,000 YR; who were male and female and belonged to different age groups; and who had attained different educational levels.

3. Almost 90 percent of those interviewed use public health services. Close to 60 percent of this group, however, also frequently use private health services. Only 10 percent rely exclusively on private health care.

4. The reasons given for using private health services, in addition to or instead of public health services, were:

- superior quality of private services;
- availability of laboratory and X-ray services in the private sector; and
- long waiting time and shortage of drugs in public health facilities.

5. Public health services are basically free although some fees are charged for services that are not specified. Private health services, on the other hand, have to be paid for. The following tables indicate the range of payments that were actually made during the month before people were interviewed. A significant part of those questioned, of course, did not use any medical services; hence, the 30 percent who paid nothing but would have gone to the private sector if they had needed medical care.

Payments for Private and Public Health Care
(in percent of total interviewed)

Amount (YR per month)	Private Sector	Public Sector
Nothing	30	78
Up to 300	29	16
More than 300	41	6

6. Actual payments were made mostly for medicines and laboratory services.

Services paid for by patients
(in percent of total services used for each category)

Purchasing medicines	73
Laboratory services	39
Medical examination	36

7. Finally, the question was asked whether patients would be willing to pay up to 5 percent of their monthly income for medical services. The answer was affirmative in almost half the cases (46 percent). Again, people would be most willing to pay for medicines and laboratory services.

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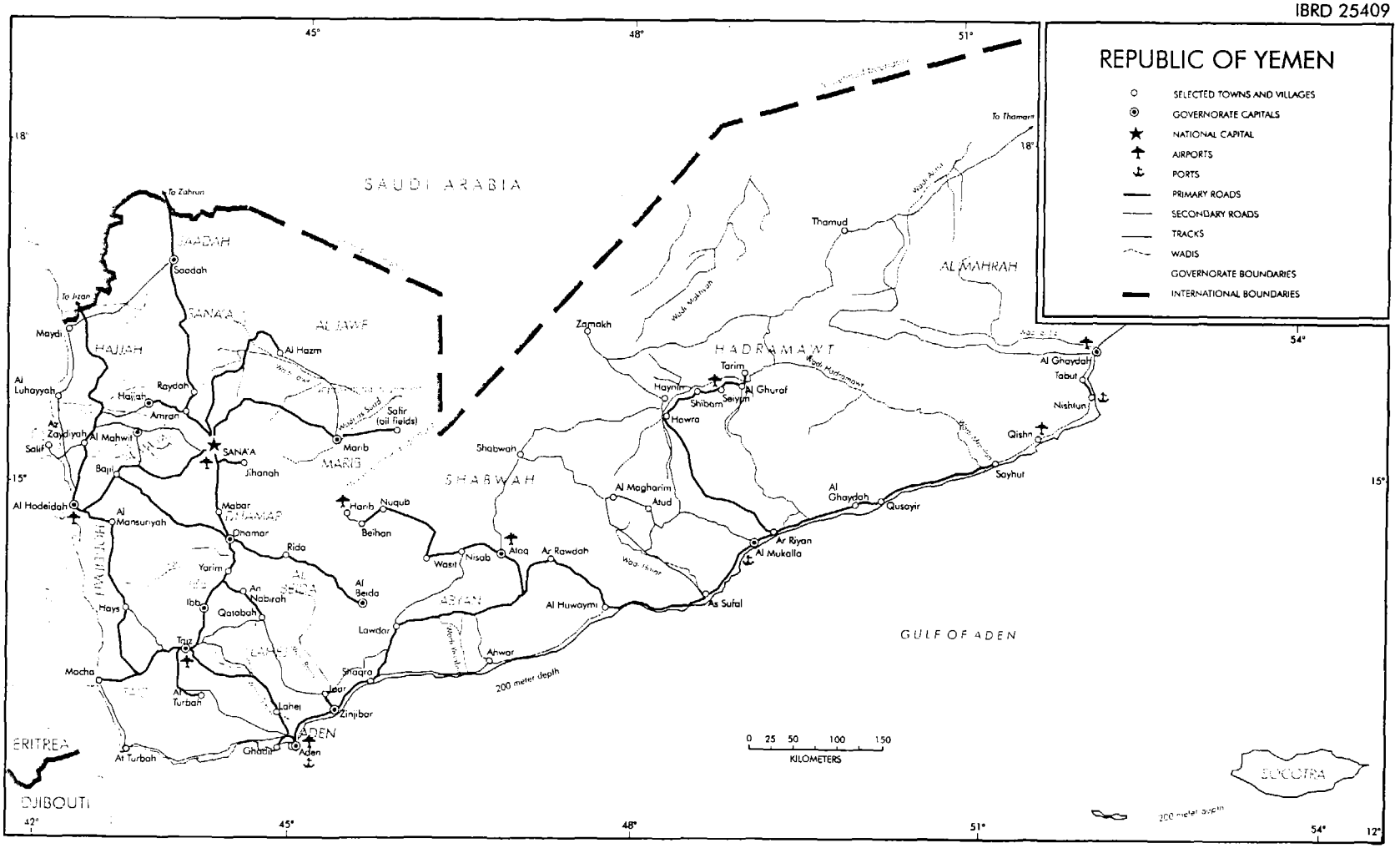

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