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# HEALTH SYSTEM PROFILE

J O R D A N



Regional Health Systems Observatory  
World Health Organization

2006

# Contents

FOREWORD .....	4
1 EXECUTIVE SUMMARY .....	6
2 SOCIO ECONOMIC GEOPOLITICAL MAPPING .....	10
2.1 SOCIO-CULTURAL FACTORS.....	10
2.2 ECONOMY .....	11
2.3 GEOGRAPHY AND CLIMATE.....	13
2.4 POLITICAL/ ADMINISTRATIVE STRUCTURE .....	14
3 HEALTH STATUS AND DEMOGRAPHICS .....	16
3.1 DEMOGRAPHIC PATTERNS AND TRENDS .....	16
3.2 HEALTH STATUS.....	20
4 HEALTH SYSTEM ORGANIZATIONS .....	36
4.1 BRIEF HISTORY OF THE HEALTH CARE SYSTEM.....	36
4.2 PUBLIC HEALTH CARE SYSTEM.....	37
4.3 PRIVATE HEALTH CARE SYSTEM: .....	39
4.4 PROFILE OF THE HEALTH CARE SYSTEM .....	42
5 GOVERNANCE/OVERSIGHT .....	45
5.1 PROCESS OF POLICY, PLANNING AND MANAGEMENT .....	45
5.2 DECENTRALIZATION: GREATER PUBLIC HOSPITAL AUTONOMY: .....	46
5.3 HEALTH INFORMATION SYSTEMS .....	46
5.4 HEALTH SYSTEM RESEARCH .....	47
6 HEALTH CARE EXPENDITURE AND FINANCE .....	49
6.1 HEALTH EXPENDITURE .....	49
6.2 SOURCES OF FINANCING .....	55
6.3 TAX-BASED FINANCING .....	56
6.4 BUDGETING .....	56
6.5 INSURANCE .....	56
6.6 PROVIDER PAYMENT MECHANISMS.....	59
6.7 CONTRACTING OUT HEALTH SERVICES .....	59
6.8 EXTERNAL SOURCES OF FINANCE.....	60
7 HUMAN RESOURCES.....	62
7.1 HUMAN RESOURCES AVAILABILITY .....	62
7.2 HUMAN RESOURCE POLICY AND REFORMS: .....	66
8 HEALTH SERVICE DELIVERY .....	67
8.1 PRIMARY CARE .....	67
8.2 SECONDARY AND TERTIARY CARE.....	68
8.3 PHARMACEUTICALS .....	71
9 HEALTH SYSTEM REFORMS .....	76
9.1 BACKGROUND OF HEALTH REFORMS .....	76
9.2 SUMMARY OF RECENT REFORMS .....	77
9.3 HEALTH SYSTEM CHALLENGES .....	81
10 REFERENCES.....	82
11 ANNEXES .....	84

## List of Tables

- Table 2.1: Socio-cultural indicators
- Table 2.2: Economic Indicators
- Table 2.3: Major Imports and Exports
- Table 2.4: Gross Domestic Product
- Table 2.5: Inflation and Foreign Reserves
- Table 2.6: Population by Directorate for 2004 and Projected for 2014
- Table 2.7: Projected Populations by Specific Age Groups for Jordan
- Table 2.8: Demographic indicators
- Table 2.9: General health indicators in Jordan 2001-2004
- Table 2.10: List of Basic Indicators for Jordan (2003)
- Table 2.11: Al Bashir Hospital, Medical admissions ICD10 codes
- Table 2.12: Common disease categories coded at Al Bashir Hospital
- Table 2.13: Morbidity - Visits to MOH PHC Centers during 2004 by ICD 9 Code
- Table 2.14: Prevalence of risk factors for chronic disease, by sex group, 2003
- Table 2.15: Distribution of cause of death by rank order (June-December 2003)
- Table 2.16: Distribution of causes of death by region (%) (June-December 2003)
- Table 2.17: Deaths related to Circulatory system (June-December 2003)
- Table 2.18: Causes of Deaths from Neoplasm's (June-December 2003)
- Table 2.19: Cause of death ranked by male and female
- Table 2.20: Immunization coverage, 1995-2004
- Table 2.21: Cumulative AIDS/HIV/Sero positives as in 31/12/2004
- Table 2.22: Cumulative AIDS/HIV/ by Age Group in Jordan as in 2004
- Table 2.23: Cumulative AIDS/HIV/ by Mode of Transmission as in 2004
- Table 3.1: Profiles of Health Sub-Systems in Jordan
- Table 5.1: Summary of Health Expenditures Statistics, Jordan, 2001
- Table 5.2: Sources of Funds to financing agents, JD, 2001
- Table 5.3: Expenditures in Health, 1998-2003
- Table 5.4: International Comparisons of Health Expenditures, 2001
- Table 5.5: Public Health Expenditures by Program, 1998-2003
- Table 5.6: Government health financing by sources of funds, 1998-2003
- Table 5.7: Population coverage by source
- Table 5.8: Profile of Contractual Arrangements
- Table 6.1: Health Personnel Rate per 10.000 Population (2000-2004)
- Table 6.2: Percent Distribution of Staff by Category
- Table 6.3: Medical Personnel by Sector, 2003
- Table 6.4: Qualifications of MOH Registered Nurses
- Table 6.5: Education Programs for Health Professions
- Table 6.6: Average Cost of Education for Health Professions

Table 6.7: Student Teacher Ratios

Table 6.8: Gender of Students Studying the Health Professions

Table 6.9: National Totals of Intakes/Outputs for Health Professions Education

Table 7.1: Inpatient use and performance

Table 7.2: Utilization Rates for Jordan, 2003

Table 7.3: Utilization of Hospital Services, Jordan, 2004

Table 7.4: Utilization Static in MOH Hospitals (200-2004)

Table 7.5: Total consumption of pharmaceutical in Jordan

Table 7.6: the top 60 generic classes of drugs sold in Jordan

## List of Figures

Figure 2.1: Populations by Age Groups and Dependency Ratio, 1975-2003

Figure 2.2: Ratio of Working-age Population to Dependent Population, Jordan

Figure 2.3: Jordan's Changing Age Distribution

Figure 2.4: Total Fertility Rate, Jordan

Figure 2.5: Crude Birth and Death Rates, Jordan

Figure 2.6: Infant Mortality Rate, Jordan

Figure 3.1: Strategic Analysis for the Private Hospitals Sector Position in Jordan

Figure 5.1: Real Health Expenditures in Jordan, 1998-2003

Figure 5.2: Public Health Expenditures in Jordan and other countries, 2000

Figure 5.3: Trend in Real Public Health Expenditures by Program, 1998-2003

Figure 5.4: Health Expenditures by Sources of Financing, 2003

Figure 7.1: Total Pharmaceutical Consumption in Jordan (1999-2003)

Figure 7.2: Drug cost- Domestic Vs Imports

## FOREWORD

Health systems are undergoing rapid change and the requirements for conforming to the new challenges of changing demographics, disease patterns, emerging and re emerging diseases coupled with rising costs of health care delivery have forced a comprehensive review of health systems and their functioning. As the countries examine their health systems in greater depth to adjust to new demands, the number and complexities of problems identified increases. Some health systems fail to provide the essential services and some are creaking under the strain of inefficient provision of services. A number of issues including governance in health, financing of health care, human resource imbalances, access and quality of health services, along with the impacts of reforms in other areas of the economies significantly affect the ability of health systems to deliver.

Decision-makers at all levels need to appraise the variation in health system performance, identify factors that influence it and articulate policies that will achieve better results in a variety of settings. Meaningful, comparable information on health system performance, and on key factors that explain performance variation, can strengthen the scientific foundations of health policy at international and national levels. Comparison of performance across countries and over time can provide important insights into policies that improve performance and those that do not.

The WHO regional office for Eastern Mediterranean has taken an initiative to develop a Regional Health Systems Observatory, whose main purpose is to contribute to the improvement of health system performance and outcomes in the countries of the EM region, in terms of better health, fair financing and responsiveness of health systems. This will be achieved through the following closely inter-related functions: (i) *Descriptive function* that provides for an easily accessible database, that is constantly updated; (ii) *Analytical function* that draws lessons from success and failures and that can assist policy makers in the formulation of strategies; (iii) *Prescriptive function* that brings forward recommendations to policy makers; (iv) *Monitoring function* that focuses on aspects that can be improved; and (v) *Capacity building function* that aims to develop partnerships and share knowledge across the region.

One of the principal instruments for achieving the above objective is the development of health system profile of each of the member states. The EMRO Health Systems Profiles are country-based reports that provide a description and analysis of the health system and of reform initiatives in the respective countries. The profiles seek to provide comparative information to support policy-makers and analysts in the development of health systems in EMR. The profiles can be used to learn about various approaches to the organization, financing and delivery of health services; describe the process, content, and implementation of health care reform programs; highlight challenges and areas that require more in-depth analysis; and provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries. These profiles have been produced by country public health experts in collaboration with the Division of Health Systems & Services Development, WHO, EMRO based on standardized templates, comprehensive guidelines and a glossary of terms developed to help compile the profiles.

A real challenge in the development of these health system profiles has been the wide variation in the availability of data on all aspects of health systems. The profiles are based on the most authentic sources of information available, which have been cited for ease of reference. For maintaining consistency and comparability in the sources of

information, efforts have been made to use as a first source, the information published and available from a national source such as Ministries of Health, Finance, Labor, Welfare; National Statistics Organizations or reports of national surveys. In case information is not available from these sources then unpublished information from official sources or information published in unofficial sources are used. As a last resort, country-specific information published by international agencies and research papers published in international and local journals are used. Since health systems are dynamic and ever changing, any additional information is welcome, which after proper verification, can be put up on the website of the Regional Observatory as this is an ongoing initiative and these profiles will be updated on regular intervals. The profiles along with summaries, template, guidelines and glossary of terms are available on the EMRO HSO website at [www.who.int.healthobservatory](http://www.who.int.healthobservatory)

It is hoped the member states, international agencies, academia and other stakeholders would use the information available in these profiles and actively participate to make this initiative a success. I would like to acknowledge the efforts undertaken by the Division of Health Systems and Services Development in this regard that shall have the potential to improve the performance of health systems in the Eastern Mediterranean Region.

Regional Director  
Eastern Mediterranean Region  
World Health Organization

# 1 EXECUTIVE SUMMARY

## **Socio-cultural, Political and Economic Factors**

Jordan is a small lower-middle income country with limited natural resources and scarce fresh water supplies (one of the world's 10 most water stressed countries), with only 4% arable land. Jordan has a total land territorial area of 89,300 square kilometers, of which only 7.8% is arable land. Jordan is a constitutional monarchy. Executive authority is vested in the king and his council of ministers. Legislative power rests in the bicameral National Assembly (Chamber of Deputies and Chamber of Senates). Administratively, Jordan is divided into 12 governorates, each headed by a governor appointed by the king. They are the sole authorities for all government departments and development projects in their respective areas. Jordan's population is 5.32 million people (2004). The average annual population growth rate is 2.5%. 70% of the Jordanian population is below the age of 30. Literacy rate for 2005 (15 years of age and older who are able to read and write) was 90. Life Expectancy rate in 2004 is 71.4(70.6 years for men, 72.4 years for women). Infant mortality rate for 2004 was 22.0 per 1000 births. The real GDP grew by 7.5% in 2004 compared with 4.1% in 2000. The GDP of Jordan in 2004 was US\$ 11.19 billion. The per capita GDP of Jordan at current prices was \$ 2,103, in 2004. Rates of price inflation are low, at 2.3% in 2003, and the currency has been stable with an exchange rate fixed to the U.S. dollar since 1995. The unemployment rate in February 2005 was 13.4%. Female unemployment in Jordan stood at 19.7%, as compared to 12.3% for men. Women account for around 13.8% of total employed persons. Poverty line is JD 392.0 (US\$553) per capita per year. Poverty incidence is 14.2% (2002). Jordan's performance is among the better Arab states in terms of life expectancy, adult literacy, school enrolment, female literacy, and according to other basic indicators. Jordan's ranking improved substantially in the Global Competitiveness Index (from 44/80 in 2002 to 34/102 in 2003). The economy's capacity for growth remains vulnerable to external shocks, and the rate of growth is inadequate to resolve long-standing developmental challenges. Despite recent reductions, the stock of external debt remains high. More important, the recent economic growth has not translated into a commensurate increase in job creation or poverty reduction. Unemployment and underemployment remain high, and deep pockets of poverty persist. Jordan also faces serious challenges in natural resources scarcity and human resources development. Overall, the country has made significant progress in meeting the Millennium Development Goals of universal primary education and reduction in child mortality. However, the cost in terms of public expenditures has been relatively high. Given demographic pressure, the significant gains made on human development to date cannot be sustained without major improvements in the quality and efficiency of education and health services.

## **Health Status**

Jordan achieved universal child immunization in 1988 and has made considerable progress in reducing the major health risks to infants and children. The Country has been polio free since 1995. Beginning from the early 1980s; all national socioeconomic plans have emphasized the right to health and health care. Major progress was achieved in lowering the infant and child mortality rates, as well as the maternal mortality rates. Presently, Jordan is one of the countries with the lowest infant and maternal mortality rates in the region. Jordan's current population and epidemiological profiles are a result

of both the demographic and epidemiological transitions that characterize most middle-income countries. Drastic declines in death rates and continued high birth rates along with the shifting composition of illness away from infectious diseases to non-communicable diseases shape Jordan's population and epidemiological circumstances. Available data on morbidity confirms the importance of cardiovascular disease, diabetes and respiratory diseases (pneumonia and asthma). Causes related to cardiovascular/circulatory system were the leading causes of death in Jordan followed by neoplasm and external causes.

### **Health System Organization**

Jordan has one of the most modern health care infrastructures in the Middle East. Jordan's health system is a complex amalgam of three major sectors: Public, private, and donors. The public sector consists of two major public programs that finance as well as deliver care: the Ministry of Health (MOH) and Royal Medical Services (RMS). Other smaller public programs include several university-based programs, such as Jordan University Hospital (JUH) in Amman and King Abdullah Hospital (KAH) in Irbid. In 2003, the total expenditure on health services accounted for about JD 727 million, 10.4 percent of the GDP. Health expenditure per capita was JD 133. Each of the health care sub-sectors has its own financing and delivery system that reflects directly on the delivery of services among these sectors. Problems related to accessibility, equity, duplication of services, poor coordination among major providers, unregulated private sector, low utilization rates in the private sector, limited quality improvement programs, inefficient use of available resources, poor management and inappropriate health information system are the main challenges facing all providers of health care in Jordan. The MOH hospitals face several constraints that hamper their ability to contribute more effectively to providing proper health care to the poor and the uninsured. In addition to the centralized management practices, the lack of incentives to promote efficiency and quality, and inadequate information and communications systems are contributory factors. Hospitals and their staff lack incentives and the basic information on costs and evidence-based medicine to implement standardized treatment protocols or to operate efficiently.

### **National Health Policy**

The general Health Policy is set by the High Health Council that represents all health care providers. The Government of Jordan is committed to making health services available and accessible to all. The national health strategy is aimed at creating a comprehensive health care system, utilizing both public and private service providers covering all levels of care and improving the quality of health services by implementing a national health services accreditation program. As part of the Socio-Economic Transformation Program (SETP), the government is in the process of expanding and improving health care provision to the poor. This includes expanding health insurance coverage from 60% in 2000 to 80% by the end of 2005, upgrading primary healthcare facilities, improving hospital administration to speed up admissions and reduce duplication of services and other waste.

### **Health Care Expenditure and Finance**

Total health expenditure in 2003 –both public and private was estimated at 727million JD or 133 JD per capita (188 US dollars or 428 international dollars). This is equivalent to 10.4% of GDP – public 4.3% and private 6.1%. Curative care, in Jordan like many other developing countries, takes up a disproportionately large share of public spending

on health. During the period 1998-2003, the share of hospital care has remained relatively stable - about 75% of the total state health budget while the proportion spent on primary health care has been steadily declining. The private sector (payroll deductions for insurance, user fees, purchase of pharmaceuticals and other health commodities and private firms which pay health insurance premiums for their employees) was the main source of health finance (58%), while other public sectors including donors finance 42% of the total healthcare expenditures. While the government remains a large provider of health services, its role in the financing of health expenditures has been declining from 51% in 1998 to 42% in 2003. Health spending in Jordan is high when compared to other MENA and middle-income countries. Overall spending has increased in nominal terms over the past six years and has grown slightly more rapidly than GDP. Spending has also increased more rapidly than medical specific inflation. Nevertheless, Jordan's health spending, whether measured in per capita U.S. dollar terms or as a share of GDP, is high compared to countries of comparable income levels. About 68% of the population in Jordan is covered by formal health insurance. The RMS is the largest health insurer (27%) followed by MOH (19.5%), UNRWA (11%), private firms (8.8%) and university hospitals (2%). Implementing universal coverage in Jordan would require additional research and analysis and improved partnerships between public and private sectors, more demographic and health related actuarial data and improved regulation of the health insurance industry.

### **Health Human Resources**

Jordan has 2.3 physicians, 3.0 nurses, 1.2 pharmacists and 0.7 dentists per thousand population. During the last four years the number of all health professions and their percentages to population have been increasing. Physician to population ratio is higher than most of MENA region and other lower middle-income countries. Reforms dealing with the geographic distribution, training of physicians, nurses, and allied and technical personnel, and continuing education, could improve access, quality, and the efficiency of service delivery. Policies and appropriate incentives should be developed to attract and retain physicians in rural areas. In addition there is need to strengthen training, and increase the number of professionals trained, in emergency care and obstetric services.

### **Health Service Delivery**

MOH operates an extensive primary health care network, consisting of 259 village health clinics (VHCs), 340 primary health care (PHC) centers, 353 maternity and child centers, 52 comprehensive health centers, 12 chest diseases centers and 251 dental clinics. With about 2.3 centers per 10,000 populations, and with an average patient travel time to the nearest centre of 30 minutes, this represents a high-density system by international standards. In addition to the MOH network, UNRWA operates 21 primary care centers and 30 special care clinics for Jordan's Palestinian refugees. The private sector is already active in curative primary care, accounting for nearly 40% of all initial patient contacts. Jordan has 1.8 inpatient beds per thousand population; 12.3 percent of the population is admitted annually to hospitals; hospital lengths of stay average 3.3 days; individuals use on average 0.4 inpatient days per year; and the hospital occupancy rate is 63.3 percent. A great variation exists between the occupancy rate in the public sector (72%) and the private sector (46.2%).

### **Pharmaceuticals**

The expenditure on pharmaceuticals in 2003 was JD 211 million (about US\$295 million). Over the last 5 years, the average growth rate has been about 3%. This is due to

increases in both drug costs and consumption rates. Pharmaceuticals are supplied through both the public and private sectors. For the public sector, drugs are acquired through tenders in the generic (or scientific) name. Public sector drug procurement reform is being addressed through establishment of the Joint Procurement Directorate to serve all public agencies. In 2003 the Jordanian pharmaceutical market was made up of imported products (75%) and locally manufactured products (25%). The JFDA, which was established in 2003, is responsible for drug registration, licensing, quality control and pricing.

### **Recent Health Reforms**

During the last eight years many health system reforms have been adopted. The following areas were addressed by these reforms:

- Supporting and strengthening primary health care
- Improving managerial, technical and professional performance in public health sector.
- Enhancing partnership between the public and the private sectors.
- Implementing a National Health Insurance System.
- Improving the health care financing in the country.
- Promoting the regional role of Jordan in providing high quality and inexpensive medical care to attract patients from other countries (Medical Tourism).
- Improving quality of health services and patient satisfaction.
- Improving effectiveness, efficiency and quality of pharmaceutical services.
- Health information system reforms.
- Improving the efficiency of health services and cost containment.
- Human resources development.

### **Health System Challenges**

- The demographic changes representing increase in population and higher life expectancy.
- Considerable changes in lifestyles favoring the development of determinants and risk factors for chronic diseases, accidents, injuries, and substance abuse.
- The epidemiological transition and changes in the pattern of disease characterized by a progressive increase in the magnitude of non-communicable diseases.
- Inefficiencies observed in the provision and financing of health services.
- The lack of a rigorous appraisal (and reorientation) of the current state of human resources development in health
- The negative impact of poverty on accessibility to quality health care particularly in view of the high proportion of uninsured people.
- The increasing demands and expectations of the public for effective and accessible health care.
- The rapid advances in technology and rising health care costs.
- Inadequate coordination between the public sector and the increasingly significant private sector and the lack of effective systems for monitoring and auditing clinical practice.
- The emerging environmental health issues.

## 2 SOCIO ECONOMIC GEOPOLITICAL MAPPING

### 2.1 Socio-cultural Factors

Jordan is a small country with limited natural resources and semi-arid climate. Its strategic position connecting Asia, Africa and Europe has played a major role in shaping its past history and its present. Jordan's position between the two most insecure and politically unstable spots in the region (Palestine and Iraq) constitutes a major development challenge. Jordan has a total land territorial area of 89,300 square kilometers, of which only 7.8% is arable land. Jordan's approximately 5.32 million people (2004) are mostly Arabs; with some Circassians, Chechens and Armenians. More than 92% of the population is Moslems and about 6% are Christians. The average annual population growth rate is 2.5% (down from 3.6% in 1996 and 4.3% during the period 1979 to 1994). Nearly one quarter of the total population growth is attributed to in-migration, particularly the forced migration waves of Palestinian refugees as a result of the Arab-Israeli wars in 1948 and 1967, the Jordanian returnees from the Gulf States following the 1990-1991 Gulf Crisis in addition to other refugees as a result of the US-led war on Iraq. 70% of the Jordanian population is below the age of 30 (i.e. about 3.84 million).

**Table 2.1: Socio-cultural indicators**

Indicators	1990	1995	2000	2002
Human Development Index:	0.68	0.70	0.74	0.75
Literacy Total:	81.5	86.5	89.8	90.9
Female Literacy:	72.0	79.4	84.3	85.9
Women % of Workforce	17.7	21.3	24.6	25.6
Primary School enrollment	70.8	71.3	-	-
Primary education, pupils (% female)	48.3	48.9	-	-
Urban Population (%)	72.2	78.2	78.7	78.9

*Source:* Jordan HSO Profile Template, WHO, EMRO, Feb.2005.

Literacy rate for 2005 (15 years of age and older who are able to read and write) was 90.2 Life Expectancy rate in 2004 remains at the same level in 2003, which was 71.4(70.6 years for men, 72.4 years for women). Infant mortality rate for 2004 was 22.0 per 1000 births compared to 27.0 per 1000 births for 2002. A recent survey done by the Department of Statistics showed that unemployment rate in February 2005 was 13.4% (down from 14.5% in 2003, and 18.8% in 1993). Female unemployment in Jordan stood at 19.7%, as compared to 12.3% for men. Percentage of population participating in the labor force (more than 15 years of age) is 64.3 for men and 11.8% for women (up from 11.2% in 2003, and 6.6% in the period 1991-1994). Women account for around 13.8% of total employed persons. Poverty line is JD 392.0 (US\$553) per capita per year. Poverty incidence is 14.2% (2002) (down from 21.3% in 1997). Population below poverty line: 733.2 (000 persons) (2002). Poverty is significantly higher in rural areas, where 37% are poor compared to 29% in the urban areas. But since 82% of the

population lives in urban areas, the number of the urban poor is three times the number of the rural poor.

## 2.2 Economy

**Table 2.2: Economic Indicators**

Indicators	1990	1995	2000	2002
GNI per Capita (Atlas method) current US\$	1,390	1,560	1,720	1,760
GNI per capita (PPP) Current International	2,960	3,580	3,910	4,190
GDP per Capita: (constant 1995 US\$)	1,506	1,604	1,606	1,662
GDP per Capita annual growth %	-2.66	2.79	1.08	2.15
Unemployment % (estimates)	-	-	13.2	-

Source: Jordan HSO Profile Template, WHO, EMRO, Feb.2005.

**Table 2.3: Major Imports and Exports**

<b>Major Exports:</b>	Clothing, phosphates, fertilizers, potash, vegetables, manufactures, pharmaceuticals
<b>Major Imports</b>	Crude oil, textile fabrics, machinery, transport equipment, manufactured goods

Source: Jordan HSO Profile Template, WHO, EMRO, Feb.2005.

**Table 2.4: Gross Domestic Product**

Indicators	1999	2000	2001	2002	2003	2004
GDP at Market Prices (US\$ bn)	8.13	8.44	8.94	9.45	9.94	11.19
Real GDP Growth Rate (%)	3.1	4.1	4.9	4.8	4.0	7.5
GDP per Capita at Current Prices (US\$)	1,734	1,752	1,809	1,863	1,912	2,103

Source: [http://www.mop.gov.jo/reports\\_studies.php](http://www.mop.gov.jo/reports_studies.php)

**Table 2.5: Inflation and Foreign Reserves**

Indicators	1999	2000	2001	2002	2003	2004	2005
Inflation (%)	0.6	0.7	1.8	1.8	2.3	3.4	3.1
Gross Official Reserves (US\$ bn)	1.99	2.76	2.58	3.49	4.74	4.82	4.86

Source: [http://www.mop.gov.jo/reports\\_studies.php](http://www.mop.gov.jo/reports_studies.php)

### Key economic trends, policies and reforms

Jordan is a small lower-middle income country with limited natural resources and scarce fresh water supplies (one of the world's 10 most water stressed countries). The per capita GDP of Jordan at current prices was \$ 2,103, in 2004. The Government of Jordan has identified poverty and unemployment as two of its most important challenges.

According to the poverty line used, between 15% and more than 30% of the population falls below that line. The collapse of oil prices and subsequent drop in worker remittances from neighboring oil-producing countries has also contributed to the sharp increase of poverty in the 1990s.

Economic growth in Jordan has been erratic over the past decades. Despite a short-term increase in real growth rate of 8.2% registered in 1990–1995 (due to Jordanians returning from the Gulf), since the mid-1990s economic growth has been declining. The GDP growth rate reported its lowest value (1%) in 1996. But over the past three years, despite adverse external factors, Jordan's strategy has produced positive and promising economic development results. Jordan's economic performance in 2004 was characterized by stronger than expected growth, increased gross official reserves and a significant reduction in net public debt in relation to GDP. The real GDP grew by 7.5% in 2004 compared with 4.1% in 2000. The GDP of Jordan in 2004 was US\$ 11.19 billion. GDP composition by sector: agriculture: 3.7%; industry: 17.9%; services: 78.4% (2004 est.).

Per capita real consumption by income level: lowest Quintile 6.92%; highest Quintile 45.16 % (2002). Budget deficit, after grants, was 1.6% of GDP in 2004. Government's budget grew by 11.4% in 2004, to reach US\$4.13 billion. Current expenditures grew by 7.5% in 2004, to reach US\$3.28 billion compared to an increase of 13.9% in 2003 (US\$3.05 billion). Capital expenditures grew by 29.3% in 2004, to reach US\$851.5 million, compared to an increase of 6.4% in 2003 (US\$683.0 million). Inflation rate was 3.4% in the year 2004, compared with 2.3% in the year 2003. The country's external debt burden as a percentage of the GDP is declining from 95.5% in 1999 to 69.1% in 2004. Industrial production increased by 12.1 % in the year 2004.4

One of the most important factors in the government's efforts to improve the well being of its citizens is the macroeconomic stability that has been achieved since the 1990s. Rates of price inflation are low, at 2.3% in 2003, and the currency has been stable with an exchange rate fixed to the U.S. dollar since 1995. The medium term macroeconomic framework for 2002 emphasizes the need for structural reforms and fostering to promote private investment and employment generation, along with emphasis on education and health development and poverty alleviation. The cost of the Plan for Social and Economic Transformation (PSET) is projected to be up to JD 275 million annually for the next four years, on top of the existing allocation for social sector programs in the budget. The government is seeking multi-year financing from donors in order to ensure achievement of the medium-term objectives.6

### **Selected rankings**

Jordan's performance is among the better Arab states in terms of life expectancy, adult literacy, school enrolment, female literacy, and according to other basic indicators.7 Jordan's ranking improved substantially in the Global Competitiveness Index (from 44/80 in 2002 to 34/102 in 2003), in the Business Competitive Index (from 53/80 in 2002 to 41/101 in 2003) and in the World Competitiveness Yearbook (from 48/60 in 2003 to 44/60 in 2004). The main strengths of the Jordanian economy lie in the quality of the educational system (27/102); the availability of scientists and engineers, where Jordan outranks Singapore (12/102); infrastructure quality, where Jordan outranks Israel (23/102); judicial independence (23/102); efficiency of legal framework (29/102); protection of minority shareholder interests (19/102); and intellectual property protection (22/102). Jordan has a mostly free and liberal economy (according to the Economic Freedom Index published by the Heritage Foundation and the Wall Street

Journal). Jordan has a low country risk (according to the Composite Country Risk Rating published by PRS Group).

### Current Challenges

The economy's capacity for growth remains vulnerable to external shocks, and the rate of growth is inadequate to resolve long-standing developmental challenges. Despite recent reductions, the stock of external debt remains high. More important, the recent economic growth has not translated into a commensurate increase in job creation or poverty reduction. Unemployment and underemployment remain high, and deep pockets of poverty persist. Jordan also faces serious challenges in natural resources scarcity and human resources development. Overall, the country has made significant progress in meeting the Millennium Development Goals of universal primary education and reduction in child mortality. However, the cost in terms of public expenditures has been relatively high. Given demographic pressure, the significant gains made on human development to date cannot be sustained without major improvements in the quality and efficiency of education and health services.

## 2.3 Geography and Climate

The territory of Jordan covers about 91,880 square kilometers. Until 1988, when King Hussein relinquished Jordan's claim to the West Bank, that area was considered part of Jordan, although only officially recognized as such by Britain and Pakistan. At that time the West Bank--which encompasses about 5,880 square kilometers--had been under Israeli occupation since the June 1967 War between Israel and the states of Egypt, Jordan, and Syria.

Map of Jordan



Jordan is landlocked except at its southern extremity, where nearly twenty-six kilometers of shoreline along the Gulf of Aqaba provide access to the Red Sea. A great north-south geological rift, forming the depression of Lake Tiberias (Sea of Galilee), the Jordan Valley, and the Dead Sea, is the dominant topographical feature.

The major characteristic of the climate is the contrast between a relatively rainy season from November to April and very dry weather for the rest of the year. With hot, dry,

uniform summers and cool, variable winters during which practically all of the precipitation occurs, the country has a Mediterranean style climate.<sup>9</sup>

## **2.4 Political/ Administrative Structure**

### **Basic political /administrative structure and recent reforms**

Jordan is a constitutional monarchy based on the constitution promulgated on January 8, 1952. Executive authority is vested in the king and his council of ministers. The king signs and executes all laws. His veto power may be overridden by a two-thirds vote of both houses of the National Assembly. He appoints and may dismiss all judges by decree, approves amendments to the constitution, declares war, and commands the armed forces. Cabinet decisions, court judgments, and the national currency are issued in his name. The king, who may dismiss other cabinet members at the prime minister's request, appoints the council of ministers, led by a prime minister. The cabinet is responsible to the Chamber of Deputies on matters of general policy and can be forced to resign by a two-thirds vote of "no confidence" by that body.

Legislative power rests in the bicameral National Assembly. The number of deputies in the current Chamber of Deputies is 110, with a number of seats reserved for various religions, ethnicities, and a women's quota. The Chamber, elected by universal suffrage to a 4-year term, is subject to dissolution by the king. The king appoints the 55-member Senate for a 4-year term. The constitution provides for three categories of courts--civil, religious, and special. Administratively, Jordan is divided into 12 governorates, each headed by a governor appointed by the king. They are the sole authorities for all government departments and development projects in their respective areas.<sup>6</sup>

### **Key political events/reforms**

King Abdullah II succeeded his father Hussein following the latter's death in February 1999. Abdullah moved quickly to reaffirm Jordan's peace treaty with Israel and its relations with the U.S. Abdullah, during the first year in power, refocused the government's agenda on economic reform. Moving toward greater independence, Jordan's Parliament has investigated corruption charges for several regime figures and has become the major forum in which differing political views, including those of political Islamists, are expressed. In June 2001, the King dissolved Parliament. Parliamentary elections were held in June 2003 and municipal elections were held in July 2003. The King dissolved the government in April 2005, appointing a new Prime Minister and ushered in an unprecedented four women and several young technocrats as ministers. Some ministers, the minister of Planning and Development, the minister of Industry and Commerce and the Minister of Health came from the private sector and have no previous experience in the public sector. The cabinet declared its commitment to accelerated economic, social and political reforms.

Since 1989, all elements of the Jordanian political spectrum have embarked together on a road to greater democracy, liberalization and consensus building. These reforms, which were guided by the late King Hussein and continued by King Abdullah II, have placed Jordan on an irreversible road to democratization. The result has been greater empowerment and involvement of citizens in Jordan's civic life, contributing to increased stability and institutionalization, which should benefit the country far into the future. Jordan is witnessing a trend towards increasing decentralization of responsibility to "sub-national" levels through the Governorates Development Plan and the Municipalities Reform Program. Since Governors were mandated to play a greater role in promoting

poverty alleviation at the local level, they report greater co-ordination between stakeholders and an opening up of channels of communication. As a result, the pace of project implementation has increased significantly. Parallel initiatives at the municipal level are also resulting in the identification of local enterprise opportunities. King Abdullah II appointed a committee in 2005 to consider dividing the country into three or four development regions (i.e. states). Every region will have its own development budget. A locally elected board will be responsible for planning and monitoring economic and social development programs in each region. In February 2005, the King formed the Steering Committee for the National Agenda to determine the kingdom's political and socio-economic reform policies and programs over the next 10 years. The King is leading now an anti-corruption effort. In his letter of June 26, 2005 to Prime Minister, the King directed the government to form an independent commission that is to draft a law to combat corruption in a way that ensures more transparency, justice and integrity. For decentralization to bring about significant improvements in well being of people, it needs to be accompanied by increased local democracy and more effective governance structures through which local people can hold service providers and elected representatives accountable. Greater co-ordination can be achieved when service providers, local authorities, the private sector and local communities work together to identify local solutions to local problems. Local development does not necessarily require additional funds but can often result in savings from increased efficiency and the elimination of waste and duplication. The process of decentralization opens up channels of communication and opportunities for genuine partnerships where all parties benefit. It is essential that the appropriate democratic mechanisms are in place that enables local communities to become active participants in Jordan's development.

### 3 HEALTH STATUS AND DEMOGRAPHICS

Based on preliminary results from the 2004 census<sup>12</sup>, the population in each Directorate is given in Table 2.6, which indicates that the present total population is 5.32 million. The current assumption is that the population of Jordan will grow by 2.5% each year. Using this growth rate and applying it equally to each age group and Directorate, Table 2.6 shows that in 10 years time (2014), the total population of Jordan will have increased to almost 6.4 million.

**Table 3.1: Demographic indicators**

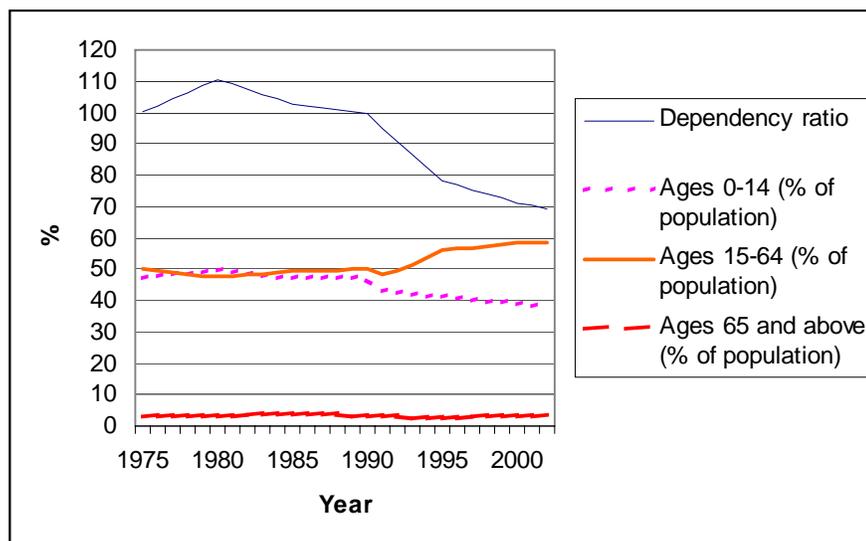
Indicators	1990	1995	2000	2002	2003	2004
Crude Birth Rate:	35.80	33.10	29.44	28.20	29.0	29.0
Crude Death Rate:	5.62	4.60	4.22	4.10	5.0	6.0
Population Growth Rate:	3.66	3.25	3.05	2.74	2.8	2.6
Dependency Ratio:	1.00	0.82	0.71	0.70	0.70	0.70
%Population <15 years	46.81	41.41	38.55	37.63	37.8	37.1
Total Fertility Rate:	5.40	4.35	3.66	3.50	3.7	3.7

*Source:* Department of Statistics (DOS), 2004 Indicators

#### 3.1 Demographic patterns and trends

Jordan is an Arab country, which administratively consists of twelve governorates. The estimated midyear population of Jordan in 2004 was 5.323 million, with an overall population density of 56.5 per square kilometer, and the great majority of the population living in urban areas. The total fertility rate is relatively high, though it has declined steadily in recent years to 3.7 in 2004. The declining mortality rate and the high total fertility rate have contributed to overall population growth that averaged 3.3% per year from 1992–1998.

The population growth rate for 2003 was 2.8%. Based on 2003 figures, 37.8% of the population falls under 15 years, 58.7% between 15 and 64 years and 3.5% over 65 years. Life expectancy is 71.5 years: 72.4 years for females and 70.6 years for males. The percentage of Jordanians under the 15 years of age increased in the early 1970s but has been declining since 1980. The opposite is true for the 15-64 age group (Figure 2.1). The pattern is typical of populations that are experiencing a fertility decline. With population ages 65 and above remaining about the same during the entire period, the dependency ratio calculated as the ratio of persons in the “dependent” ages (less than 15 years and 65 and over) increased from 1975-80 and has been declining since 1980.

**Figure 3.1 Populations by Age Groups and Dependency Ratio, 1975-2003**

Source: World Bank, WDI database (as reported in Jordan Public Health Expenditure Review, Draft Report, 2004).

According to DOS, the dependency ratio is projected to fall further to 45 in 2025 (Table 2.7). The increasing proportion of the population that is aging along with the changing epidemiological profile could have serious implications on the demand of health care services in the future.

**Table 3.3: Projected Populations by Specific Age Groups for Jordan**

Year	Total Pop (000)	Children <15years		Elderly 65+		Dependency Ratio
		Total (000)	%	Total (000)	%	
2003	5.48	2.08	38	0.19	3.5	71
3008	6.13	2.14	34.9	0.26	4.2	64
2013	6.75	2.15	31.9	0.33	4.9	58
2019	7.43	2.19	29.5	0.37	5.0	53
2025	7.99	2.07	25.9	0.42	5.3	45

Source: Department of Statistics, 2003 (Jordan Public Health Expenditure Review, 2004).

Over the next 50 years, Jordan's demographics will change dramatically – a change that has the potential to translate into dividend or disaster for the country. The country's population is growing rapidly, doubling over the last 20 years and likely to almost double again by 2035. More important, however, is the demographic transition the country is undergoing, as it moves from high fertility and mortality, to low fertility and mortality. This is changing the age structure of the population, as well as leading to fundamental changes in parents' perceptions of what their children can and should achieve. Over the next 40 years Jordan will see the relative size of its working age population more than double. It can also expect demand for quality education and health care to rise, and for people to save increasing proportions of their income, so that they can maintain a reasonable standard of living in their old age. Policies will be needed to continue to reduce fertility rates, anticipate future retirement needs, and address issues that might impede efficient use of the anticipated new labor, national savings and human capital.<sup>13</sup>

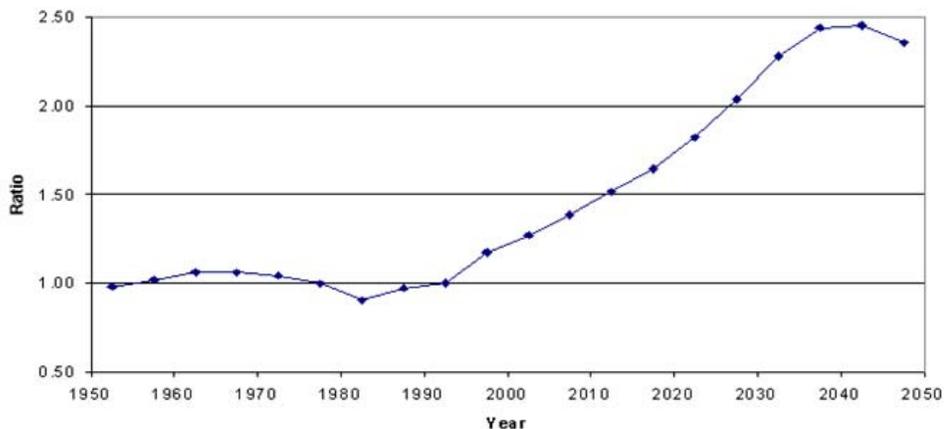
Reducing fertility rates is the first step in accentuating Jordan’s demographic dividend. Jordan’s total fertility rate currently stands at 3.7 children per woman. As that rate continues to fall, there will be increased opportunities for economic growth.

Reduced fertility could be achieved by increasing access to contraception. In 2000, nearly 56 per cent of married women were using some form of modern contraception, an increase from 26.9 per cent and 40 per cent in 1990 and 1999 respectively. The most popular method of contraception is the IUD, used by 24 per cent of women in 2000.<sup>14</sup> Sixty per cent of married women who were not using contraception, as reported by the Jordan Population and Family Health Survey (JPFHS), 2000, said that they intend to adopt a family planning method some time in the future. However, there is clear unmet demand. When questioned in 1999 survey, 17 per cent of pregnant women described their child as unwanted, while a further 20 per cent would have altered the timing of their pregnancy. If all these unwanted births could be prevented, the current fertility rate would be 2.9 children per woman.<sup>13</sup>

Increased education about contraception would drive fertility rates down further. Currently, there is a high level of awareness of modern methods of contraception; however, 27 per cent of women have stopped using some form of contraception (including ‘traditional methods’) because of method failure. Modern methods of contraception have extremely low failure rates – provided they are used properly. So the high failure rate indicates that the methods were not used properly, or that traditional methods were used in place of modern contraception. It is clear that many women do not understand how contraception works, or how their reproductive cycles work. One-third of women did not know when in their menstrual cycle they were most fertile.<sup>14</sup>

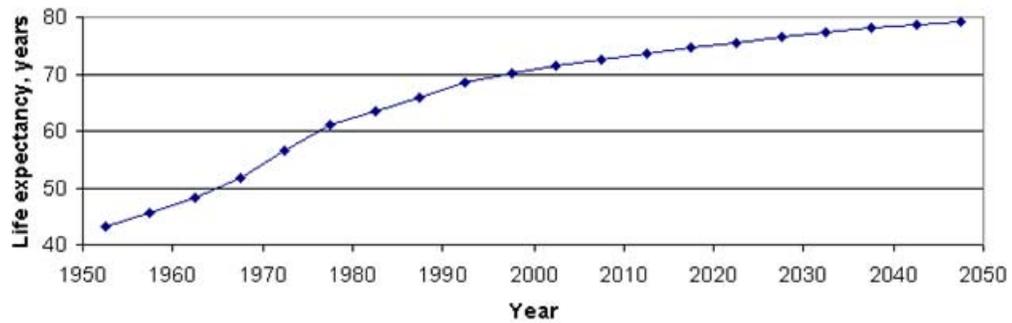
Education about and access to family planning and sexual health care are increasingly important, for more than just fertility reduction. While over 80 per cent of the female population knew what condoms were, less than 1 per cent thought using condoms during sex could prevent the transmission of AIDS. Jordan’s policies of using national television campaigns and encouraging the involvement of the Islamic clergy and the private sector to tackle fertility have made some progress, but more will be needed if rates are to fall to high-income country levels and enable Jordan to take full advantage of the demographic shift.

Figure 2.2: Ratio of Working-Age Population to Dependent Population, Jordan



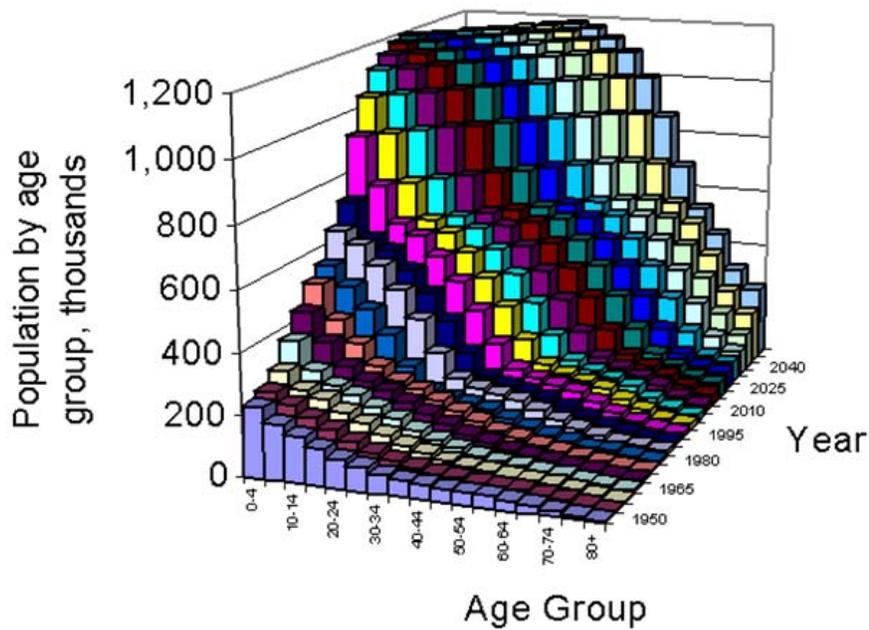
Source: United Nations Population Division, 1998 World Population Prospects

Figure 2.3: Life Expectancy at Birth, Jordan

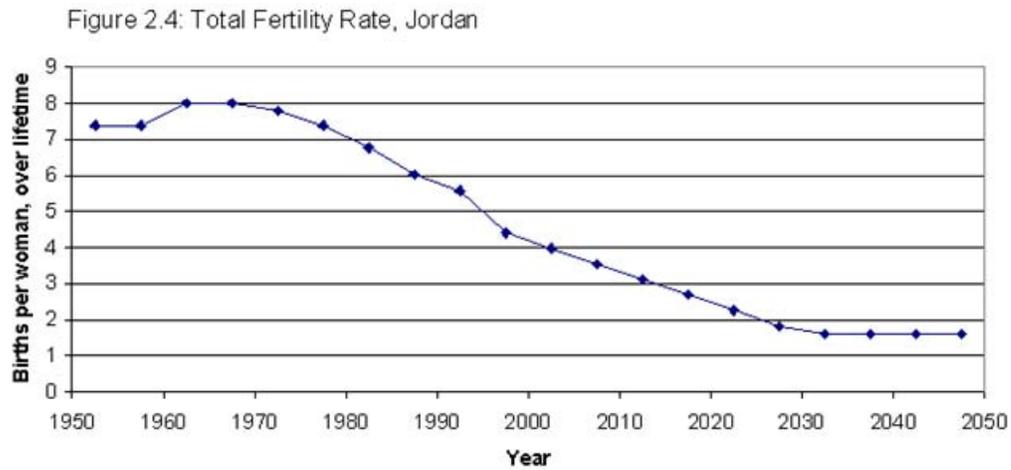


Source: United Nations Population Division, 1998 World Population Prospects

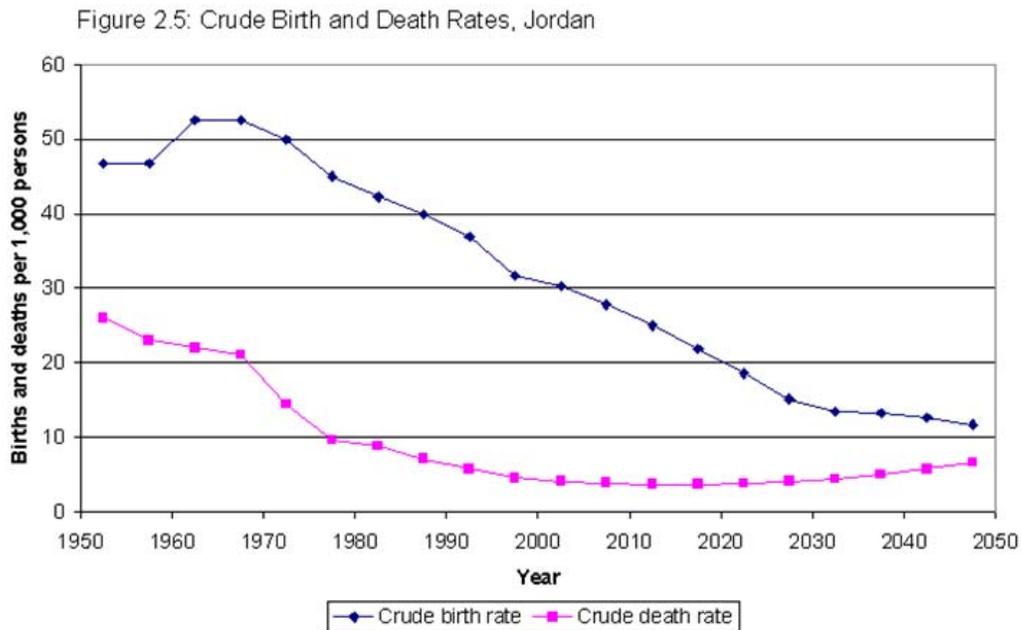
Figure 2.3: Jordan's Changing Age Distribution



Source: United Nations Population Division, 1998 World Population Prospects



Source: United Nations Population Division, 1998 World Population Prospects



Source: United Nations Population Division, 1998 World Population Prospects

### 3.2 Health Status

Jordan's population composition and growth along with its basic epidemiological underpinnings have important implications for its present and future economic prosperity, health status of the population, and the demand/need for health and other social safety net services. Jordan's current population and epidemiological profiles are a

result of both the demographic and epidemiological transitions that characterize most middle-income countries. Drastic declines in death rates and continued high birth rates along with the shifting composition of illness away from infectious diseases to non-communicable diseases shape Jordan's population and epidemiological circumstances.

Infant and child mortality indicators are generally favorable compared with other countries in the region and with other countries at similar levels of income, although they are still high by Organization for Economic Cooperation and Development (OECD) standards. These impressive indicators are, as explained below, due in large measure to the high education level and improvements in the nutritional status of the population. Despite declines in fertility in recent years (from 5.4 children per woman in the 1990), Jordan's total fertility rate (TFR) of 3.7 children per woman is still quite high, above the rates in neighboring Egypt and Lebanon, 3.2, and far in excess of-the 1.9 rate for the western industrialized OECD countries.

**Table 3.4: General health indicators in Jordan 2001-2004:**

General Health in Jordan during 2001 -2004					
Country Demographic and Health Data	2001	2002	2003	2004	
Population .	5182000	5329000	5480000	5350000	
Adult Male Illiteracy Rate (% of 15+Yrs of age )	5.6	5.4	5.1	5.1	
Adult Female Illiteracy Rate (% of 15+Yrs of age )	16.2	15.2	14.8	14.8	
Average :	11	10.3	9.9	9.9	
Crude Birth rate (per 1000 .pop.)	28	29	29	29	
Population Growth Rate (%)	2.8	2.8	2.8	2.5	
Average Persons Per Family	5.8	5.8	5.7	5.4	
Total Fertility Rate	3.5	3.7	3.7	3.7	
Life Expectancy At Birth (Yrs) Male	68.6	70.6	70.6	70.6	
Life Expectancy At Birth (Yrs)Female	71.1	72.4	72.4	72.4	
Average :	69.9	71.5	71.5	71.5	
Crude Death rate (per 1000 .pop.)	5	5	5	5	
Infant Mortality Rate (per 1000 .live births )	28.8	22	22.1	22	
Maternal Mortality Rate (per 100 .000 live births )	40	41	41	40	
Dependency Ratio %	73	73	70	70.4	
Unemployment rate (%)	14.7	15.3	14.5	14.5	
Physician /10000 pop.	20.5	22	22.6	22.4	
Dentist /10000 pop	4.1	4.5	6.3	7.3	
Nurse (All Categories )/10000 pop	27.4	28.1	29.5	32.5	
Pharmacist /10000 pop	9.6	11.2	11.6	12.6	

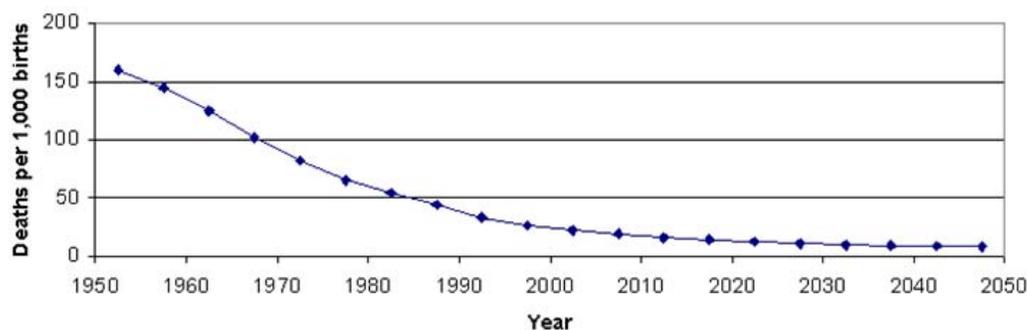
Source: MOH Annual Report, 2004

**Table 3.5: List of Basic Indicators for Jordan (2003)**

Infant mortality rate	22 per 1,000
Under-five mortality rate	27 per 1,000
Maternal mortality rate	41 per 100,000
Immunization coverage	over 95 %
Married mothers that use contraceptives (any)	55.8 %
Women who seek at least one antenatal visit	98.6 %
Birth deliveries in hospitals	93 %
Access to safe drinking water	95.1 %
Access to sanitary means of excreta disposal	99.9%
Percentage of children under five years who are underweight	4.4%

Source: Integrated the Human Rights –Based Approach in Country Program: UNICEF’s Experience in Jordan, UNICEF/Jordan, 2003).

Figure 2.6: Infant Mortality Rate, Jordan



Source: United Nations Population Division, 1998 World Population Prospects

National morbidity data is not available in Jordan since most hospitals and almost all non-MoH primary healthcare centers and clinics do not perform any type of coding or classification of diseases. Data from Al Bashir Hospital (Table 2.11) may give an indication for the most common health problems treated at hospitals. While this data from Al Bashir hospital is obviously biased by the specialist interests and referral patterns of a tertiary teaching hospital it confirms the importance of cardiovascular disease, renal failure, diabetes, respiratory diseases (pneumonia) and asthma. Causes related to cardiovascular (Circulatory), as shown in Table 2.14, were the leading causes of death in Jordan followed by neoplasms and external causes.

Deaths related to circulatory, neoplasm, respirators and prenatal period diseases are more frequent in the Middle region compared to North and South regions.

**Table 3.6: Al Bashir Hospital, Medical admissions ICD10 codes, from 01.01.2003 to 30.06.2003; N=2582 (only the 25 most frequent ICD10 codes)**

ICD10 Code	Condition	Total	%
I50	Heart failure	279	10.39
I63	Cerebral infarction	225	7.37
N18	Chronic renal failure	149	5.55
K92.2	Upper GI bleeding	110	4.10
E10	Insulin dependant diabetes mellitus	109	4.06
G35	Multiple sclerosis	100	3.72
I10	Essential hypertension	96	3.58
E11	Non insulin dependant diabetes mellitus	89	3.31
J18	Pneumonia, organism unspecified	73	3.09
I82	DVT	60	2.23
E10.1	Diabetic ketoacidosis	59	2.20
I25	Ischaemic heart disease	54	2.01
G45	Transient cerebral ischaemic attacks and related syndromes	46	1.71
E23	Hypofunction and other disorders of pituitary gland	44	1.64
K74	Fibrosis and cirrhosis of liver	40	1.49
J81	Pulmonary oedema	35	1.30
J45	Asthma	33	1.23
M32	Systemic lupus erythematosus	28	1.04
J44	Other chronic obstructive airways disease	27	1.01
N17	Acute renal failure	26	0.97
I61	Intracerebral haemorrhage	22	0.72
G40	Epilepsy	19	0.71
R18	Ascites	19	0.71
B17	Other acute viral hepatitis Hep C	17	0.63
I20	Angina pectoris	17	0.63

*Source:* Methodology for the Development of Standard Treatment Guidelines for Jordan, Health Insurance Commission, Australian Government, 2004.

Further analysis of this data showed that the 60% of all conditions coded fitted into the categories shown in Table 2.12 below.17

**Table 3.7: Common disease categories coded at Al Bashir Hospital**

Body system	Disease category
Cardiovascular system	Heart failure
	Hypertension
	Ischaemic heart disease
	Deep venous thrombosis
	Pulmonary oedema
	Cerebral infarction

	Transient ischaemic attacks
Genitourinary system	Chronic renal failure
Endocrine	Insulin dependant diabetes
	Non insulin dependant diabetes
	Diabetic ketoacidosis
Gastrointestinal tract	Upper GI bleeding
Respiratory system	Pneumonia
	Asthma
	Chronic obstructive airway disease

*Source:* Methodology for the Development of Standard Treatment Guidelines for Jordan, Health Insurance Commission, Australian Government, 2004.

The MOH Annual Statistical Report for 2004 provides a classification of clinical problems in patients presenting to MOH PHC. As shown in table 2.13 below, the diseases related to respiratory system centers are responsible for 42% of health problems treated in MOH PHC.

**Table 3.8: Morbidity - Visits to MOH PHC Centers during 2004 according to rank order**

Disease Group	%
Disease of the Respiratory System	42.1
Diseases of the Digestive System	9.2
Diseases of the Nervous System & Sense Organs	8.0
Diseases of the Musculoskeletal System & connective tissue	6.7
Diseases of the Skin & Subcutaneous System	6.2
Diseases of the Circulatory System	6.1
Infectious & Parasitic Diseases (not included above or below)	5.5
Endocrine, Nutritional & Metabolic Diseases	5.0
Diseases of the Genitourinary System	5.0
Pregnancy, Childbirth & the Puerperium	2.0
Symptoms, Signs and abnormal clinical & Laboratory findings, NEC	1.5
Injury & Poisoning and certain other consequences of external cause	1.3
Diseases of Blood & Blood formatting organs & Immunity Disorders	0.7
Mental & Behavioural Disorders	0.3
Tumours	0.1
Congenital malformations, deformations and chromosomal abnormalities	0.2
Certain conditions originating in the Perinatal Period	0.1

*Source:* MOH Annual Statistical Report, 2004.

The 2002 Jordan Behavioral Risk Factor Survey<sup>18</sup> highlights substantial levels of risk for chronic diseases in the Jordanian population as hypertension, diabetes and asthma as shown in Table 2.14 below.

Table 2.14 Prevalence of risk factors for chronic disease, by sex group, 2002

Risk factor	Sex		Age group (yrs)				Total
	Men	Women	18-34	35-49	50-64	>65	
	% (95% CI) <sup>*</sup>	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	
High blood pressure	21.0 (±2.4)	23.2 (±2.1)	8.8 (±1.4)	22.8 (±2.5)	44.3 (±4.5)	43.8 (±6.3)	22.2 (±1.8)
High blood cholesterol	21.2 (±4.0)	20.5 (±4.4)	8.8 (±5.0)	18.3 (±4.5)	32.1 (±5.8)	34.0 (±9.9)	20.9 (±3.0)
Diabetes	5.5 (±1.0)	5.2 (±1.2)	0.7 (±0.3)	5.2 (±1.4)	19.0 (±3.5)	23.3 (±4.7)	6.4 (±0.8)
Heart attack history	3.2 (±0.7)	1.5 (±0.6)	0.2 (±0.1)	1.5 (±0.7)	8.2 (±2.4)	10.8 (±3.0)	2.4 (±0.5)
Asthma	3.7 (±0.7)	5.4 (±1.1)	3.7 (±0.8)	6.5 (±1.6)	5.8 (±2.0)	6.6 (±2.7)	5.1 (±0.7)
<b>Smoking</b>							
Ever smoker <sup>†</sup>	64.4 (±2.0)	10.9 (±1.7)	33.3 (±2.9)	44.5 (±3.8)	42.0 (±4.8)	45.5 (±6.0)	38.2 (±2.8)
Current smoker <sup>‡</sup>	50.5 (±2.2)	8.3 (±1.4)	29.0 (±2.7)	34.9 (±3.2)	27.8 (±3.9)	22.2 (±5.3)	29.8 (±2.3)
<b>Weight</b>							
Overweight <sup>¶</sup>	36.0 (±2.2)	27.8 (±2.2)	26.2 (±2.1)	41.0 (±2.9)	41.0 (±4.4)	38.1 (±7.7)	32.4 (±1.7)
Obesity <sup>**</sup>	10.3 (±1.3)	15.2 (±1.9)	5.8 (±1.0)	20.8 (±2.4)	25.0 (±4.0)	19.3 (±6.0)	12.8 (±1.1)
<b>Physical activity</b>							
Any weekly vigorous <sup>††</sup>	38.0 (±2.4)	23.9 (±1.9)	35.8 (±2.5)	33.5 (±2.6)	22.3 (±3.5)	10.0 (±3.4)	31.6 (±1.7)
Any weekly activity <sup>‡‡</sup>	56.0 (±2.6)	48.2 (±2.4)	57.7 (±2.4)	54.9 (±2.8)	43.8 (±3.9)	22.0 (±4.4)	52.6 (±1.7)
<b>Ever checked</b>							
Blood pressure	61.1 (±2.3)	73.9 (±2.0)	56.1 (±2.2)	78.7 (±2.4)	83.6 (±2.8)	81.9 (±5.0)	67.4 (±1.8)
Cholesterol	20.8 (±2.0)	18.1 (±1.8)	9.6 (±1.2)	26.0 (±3.0)	35.0 (±4.2)	28.0 (±5.4)	18.5 (±1.3)

\* Confidence interval.

† Ever smoked ≥100 cigarettes during lifetime.

‡ Ever smoked ≥100 cigarettes during lifetime and currently smoke every day or some days.

¶ Body Mass Index (BMI) (i.e., ratio of weight in kilograms to height in meters squared [kg/m<sup>2</sup>]) of 25.0-29.9.

\*\* BMI of ≥30.

†† Vigorous activity (i.e., causing heavy sweating and large increases in breathing or heart rate for 20 minutes).

‡‡ Any moderate activity (i.e., causing light sweating and small increases in breathing or heart rate for 30 minutes) or vigorous activity.

Source: Behavioral Risk Factor Survey, Jordan, 2002, Department of Statistics.

Table 3.9: Distribution of cause of death by rank order (June-December 2003)

Cause of death by chapter	%
Circulatory	38.2
Neoplasm's	14.3
External causes	11.5
Ill defined & unspecified	6.3
Respiratory	5.7
Prenatal period	5.2
Congenital malformations	5.0
Digestive	3.5
Endocrine	2.8
Genitourinary	2.4
Nervous	2.1
Infectious	1.6
Others	1.4
Total	100

Source: National Death Registry Report, (June-December 2003), MOH

Table 3.10: Distribution of causes of death by region (%) (Jun-Dec 2003)

<b>Cause of death</b>	<b>Middle</b>	<b>North</b>	<b>South</b>
Circulatory	39.7	35.0	35.4
Neoplasm's	15.9	11.2	12.6
External causes	11.1	11.3	13.8
Respiratory	6.3	4.7	5.4
Prenatal period	5.9	2.0	2.3
Congenital mal.	5	4.5	3.3
Digestive	3.7	3.2	3.6
Endocrine	2.9	3.1	1.7
Genitourinary	2.5	2.5	2.5
Nervous	2.1	1.8	2.9
Ill defined & Unspecified	1.9	14.2	12.8
Others	3.1	6.4	3.6
Total	100	100	100

*Source:* National Death Registry Report (June-December 2003), MOH

**Table 3.11: Deaths related to Circulatory system (June-December 2003)**

<b>Cause of death</b>	<b>Male (%)</b>		<b>Female (%)</b>		<b>Total (%)</b>	
Ischemic heart disease	676	(46)	319	(31)	995	(40)
Cerebrovascular disease	393	(27)	314	(31)	707	(28)
Hypertensive disease	164	(11)	208	(20)	372	(15)
Other forms of heart disease	178	(12)	135	(13)	313	(13)
Pulmonary heart disease	14	(1)	30	(3)	44	(2)
Disease of arteries	25	(2)	10	(1)	35	(1)
Disease of veins	5	(0)	2	(0)	7	(0)
Chronic rheumatic heart d.	3	(0)	3	(0)	6	(0)
Unspecified	1	(0)	2	(0)	3	(0)
Acute rheumatic fever	0		0	(0)	0	(0)
Total	1459	(100)	1023	(100)	2482	(100)

*Source:* National Death Registry Report (June-December 2003), MOH

**Table 3.12: Causes of Deaths from Neoplasm's (June-December 2003)**

<b>Neoplasm's (928 cases)</b>	<b>(%)</b>
Digestive	25
Lymphoid, haematoma.	17
Respiratory	16
Breast	9
Unspecified sites	8
Urinary	5
Female genital	5
Eye, brain	5
Male genital	3
Others	8
<b>Total</b>	<b>(100)</b>

*Source:* National Death Registry Report (June-December 2003), MOH

**Table 3.13: Cause of death ranked by male and female**

<b>Cause of death</b>	<b>Male (%)</b>	<b>Female (%)</b>
Circulatory	37.9	38.6 (1)
External Causes	14.6	6.9 (4)
Neoplasm's	13.7	15.1 (2)
Respiratory	5.9	5.4 (6)
Ill Defined & Unspecified	5.8	7 (3)
Congenital Malformation	4.8	5.4 (7)
Perinatal Period	4.6	6 (5)
Digestive	3.8	3.2 (9)
Genitourinary	2.2	2.9 (10)
Endocrine	2.1	3.8 (8)
Nervous	2.1	2.1 (11)
Infectious & Parasitic	1.5	1.7 (12)
Others	1	2.1
<b>Total</b>	<b>100</b>	<b>100</b>

*Source:* National Death Registry Report (June-December 2003), MOH

Jordan achieved universal child immunization in 1988 (Table 2.20 indicates details of Immunization coverage during the last decade) 19, and has made considerable progress in reducing the major health risks to infants and children. The Country has been polio free since 1995. Beginning from the early 1980s; all national socioeconomic plans have emphasized the right to health and health care. Major progress was achieved in lowering the infant and child mortality rates, as well as the maternal mortality rates. Presently, Jordan is one of the countries with the lowest infant and maternal mortality rates in the region. For the most part, the record shows that the Government of Jordan has made the realization of the right to health a national priority. In 1993, when a nationwide study revealed the prevalence of iodine deficiency disorder, the Government promptly issued regulations requiring that all salt be manufactured with iodine supplements. Similarly, action was taken to address the problem of iron deficiency anemia by making it a public health priority. In yet another example to its commitment to health, the Government established a program to address the prevalence of vitamin A deficiency within primary school children in the high-risk areas.

### **Principal Causes of Death:**

Table 2.16 contains the percent distribution of the main causes of death in rank order, based on the 2003 first report released by the National Death Registry. As can be seen in this, the leading cause of reported death in Jordan for males (37.9 percent of all reported male deaths) and females (38.6 percent of all reported deaths) are diseases of the cardiovascular system. Other important causes include neoplasms and external causes as accidents and respiratory infections mainly pneumonia. It is apparent that non-communicable diseases have become an important cause of registered deaths.

### **Infant and child Mortality:**

According to the Jordan Annual Fertility Survey (JAFS) 2000, the previously observed decline in infant and child mortality over the past several decades appears to be tapering off. Infant and under-5 mortality rates for Jordan as a whole were 27/1000 and 33/1000 respectively. These figures were generally higher for males than females except in rural areas where the opposite was observed. Geographical variations in these rates were observed with the highest rates in the North. Rural residence was also associated with higher infant and under-5 mortality compared to urban residence.<sup>20</sup> However, more recent data showed a substantial decline in infant and child mortality (22/1000 and 27/1000 respectively).<sup>3</sup>

### **Child growth and nutrition:**

Recent data from the Department of Statistics (Population and Family Health Survey, 2002) shows the percentage of Jordanian children <5 years of age with 2 or more standard deviations below the mean of the international reference population values 22 for height/age, weight for height, and weight for age. The corresponding percentages were 8.5, 2, and 4.4 respectively. Severe stunting and wasting were present in 1.6% and 0.4% of children. Rural children, children from the southern region, and children of illiterate women were more likely to suffer from these growth problems.

A number of activities to improve the nutrition status of the population exist in Jordan. These activities are directed at improving food security at the household level, protecting consumers through improved food quality and safety, preventing and controlling micronutrient deficiencies, promoting breastfeeding and healthy lifestyle. Malnutrition of different categories is reported from Jordan. Studies have been conducted in understanding the Iodine Deficiency Disorders (IDD) and Anemia resulting

from the deficiency of Iron, although more studies are now refined on the prevalence of anemia to provide baseline data for the intervention program on flour fortification, which is being initiated.

An assessment of the status of Iodine Deficiency Disorders in 1993 had disclosed moderate to severe IDD throughout the country, with rural areas reporting high prevalence of goiter and lower urinary iodine content. Iodized salt has been produced and distributed since 1995 and monitored partially in the last 5 years. National monitoring survey of 2000 showed adequate iodine supplementation in almost all the Governorates. Median Urinary Iodine is adequate in the country and in 11 out of 12 Governorates. It has increased approximately 4 folds, as compared to 1993 results. The percent of school children having urinary iodine < 50 µg/dl is less than 20% assuring the adequacy of iodide supplementation. An extensive salt iodization has been in place and recent findings indicate that over 83% of the households consume iodized salt.

Iron deficiency and anemia have been identified as a public health problem. The reported prevalence among pregnant and lactating women is around 35%, about 28% in women in the childbearing age; 15.3% among school-age children and 8.8% among infants. A project to fortify flour has been initiated since 2002 to ensure an adequate intake of iron for the entire population. Vitamin A supplementation for school children programs was launched in 2003. MOH and Ministry of Education are planning to start a national program in September 2005 to provide a free supplementary meal for school children. Despite the fact that an outline of a strategy on nutrition was drafted several years ago, the strategy has not been updated and not translated into action plan.

#### **Priority areas:**

- To develop a comprehensive national strategy and action plan on food and nutrition.
- To strengthen the national program for the control and elimination of Iodine Deficiency Disorders (IDD) and to support national efforts in accelerating the existing micronutrient supplementation and fortification activities for the control and prevention of micronutrient malnutrition.<sup>23</sup>

#### **Chronic non communicable diseases:**

Jordan, like other middle income countries, is witnessing an epidemiological transition, which is characterized by an increase of non communicable diseases, particularly cardiovascular diseases, cancer, diabetes and chronic respiratory conditions. The major cardiovascular diseases are hypertension, coronary heart disease and stroke. As indicated before, these health problems are now becoming the leading causes of mortality in Jordan with cardiovascular diseases and cancer alone responsible for more than half of all deaths. Among the factors contributing to a high prevalence of non communicable diseases are the increasing elderly in the population as well as the lifestyle changes including unhealthy food consumption pattern, smoking and residential life lacking manual work and physical exercise.

- **Cancer:** The National Cancer Registry is now providing reliable information on cancer patterns. 4287 new cases of cancer were registered in 2002, of which 3430 (81.9%) were among Jordanians. Of the total new cases of cancer among Jordanians, 1760 (51.3%) were male and 1670 (48.6%) were female. The Jordanian male to female ratio was 1.06 : 1, this ratio was nearly similar to 2001 ratio which is 1.04 : 1, and different from 1999 ratio which is 0.99 : 1. Cancer is mainly a disease of the elderly, in 2002, 387 (11.3%) of all cancers occurred before the age of 20, and 1381 (40.3%) occurred after the age of 60. The overall median age at diagnosis

was (58 years) with considerable variation among the sites (59 years for males and 56 years for females). In 2002, the crude incidence rate of all cancers among Jordanians was 64.4 per 100,000 population (63.1 for males and 65.7 for females), which is still lower than in many industrialized countries. The age standardized rate, adjusted to the world standard population was 102.1 per 100,000 for males and 100.6 per 100,000 for females. The rank order for all cancers for both males and females among Jordanians in 2002, indicated that the leading causes of incidence in order were as follows:- Breast 513 cases (15% of total cases); colo-rectal 381 (11.1%); leukemia including multiple myeloma 288 (8.3%); Lymphoma 221 (6.4%); Lung 214 (6.2%); Urinary bladder 199 (5.8%); Stomach 153 (4.5%); prostate 143 (4.2%); Thyroid 136 (4.0 %); and Brain & CNS 131 (3.8%). Breast cancer ranked first among females accounting for 30% of all female cancers colo rectal, leukemia, corpus uteri, thyroid, nonmelanoma skin cancer, Hodgkin's disease, ovary, non Hodgkin's lymphoma, and stomach. Colo-rectal was the commonest in males accounting for 11.5% of all cancers followed in order of frequency by bladder, lung, prostate, non-melanoma skin cancer, stomach, Brain & CNS and larynx. The highest reported incidence of cancer was observed in Amman (100.7/100,000), followed by Zerka (51.9/100,000), while the lowest incidence was observed in Mafrak (17.9/100,000). However, the latter rate is based on small numbers (44 cases of cancer) and therefore likely to be unstable. The exact explanation for this geographic variation is unknown although speculations about lifestyle factors and pollution may be proposed.

- **Hypertension:** The Ministry of Health reports a national prevalence rate of hypertension of 32% among those aged 25 years and above. According to the Jordan morbidity surveys of 1996 about 40% of those aged 40 years and above were hypertensive.<sup>25</sup> Jordan Health Expenditure and utilization study<sup>26</sup> showed that over 85% of hypertensive were either overweight or obese. The same study revealed that 89% of the overall sample had uncontrolled hypertension. Furthermore, the study showed that only about 25% of the study population was aware of the disease. Using different diagnostic criteria with higher cut-off points (160/95), another study revealed a prevalence rate of 16.1% with women having a higher rate (17.1%) than men (14.4%). Using a lower cutoff point (140/90 mm Hg), the prevalence of hypertension was 24% with about one half of hypertensive subjects unaware of their hypertensive status before the survey. In terms of magnitude, there is a clear indication that Jordan has at least the same high prevalence seen in other countries of the region; the differences in diagnostic cut-off points in the various studies can explain the discrepancy in prevalence figures.
- **Diabetes Mellitus:** Available data on diabetes mellitus in Jordan suggest that the disease is highly prevalent in Jordan. According to epidemiological surveys conducted over the last few years on samples of Jordanian population, diabetes affects more than 10% of adults<sup>14</sup>. A cross sectional study conducted in four Jordanian communities showed a prevalence of diabetes of 13.4% in population samples aged 25 years and over. The rate was slightly higher for males (14.9%) than females (12.5%).<sup>28</sup> Impaired glucose tolerance (IGT) was found in an additional 9.8% of the population bringing the total prevalence of glucose tolerance abnormalities to over 23%. The National Morbidity Study revealed results which confirm the high magnitude of diabetes in Jordan; 14% of those above 25 years and almost 25% of those above 40 were found to have diabetes.
- **Smoking:** Determinants and levels of risk factors for chronic non-communicable diseases are rising. Smoking is a major health and economic problem in Jordan. It was reported that more than 40% of adult men and 5% of women smoke

regularly.<sup>25</sup> The Minister of Health, during a TV interview on 29 May 2005, mentioned that 50% of Jordanian adult men and 20% of women smoke. He stated that the prevalence of smoking is about 36% and 28% among 16-18 years of age male and female children respectively. The annual expenditure on smoking is about 350 million JDs and the total annual cost of treating smoking related health problems is about 100 million JDs (18% of total health expenditures).

- **Accidents and Injuries:** Accidents and injuries emerge as an increasingly significant problem. According to the Jordan Traffic Institute, there were 62115 road accidents in 2003 causing 832 deaths and 18368 injuries. According to the same source, road traffic accidents have been increasing over years and leading to more human and economic losses.<sup>30</sup> Occupational accidents amounted to 15619 causing an estimate of 97522 work day's lost.<sup>31</sup>

Non-communicable diseases and illness are becoming increasingly prevalent in Jordan. Efforts to address these non-communicable diseases in a cost-effective manner become exceedingly important as treatment costs for these diseases are likely responsible for a large and growing percentage of health care costs.

Jordan, like other middle income countries, may be entering into a newly documented phase of the epidemiological transition known as the "protracted polarized model," which is characterized by rapid declines in mortality, continuing high incidence of infectious diseases (despite significant reductions in their mortality rates) coupled with an increase of non-communicable diseases, unequal distributions of wealth and incomplete coverage resulting in widening gaps in health status among income groups and geographic areas (i.e., "epidemiologic polarization"), and possible re-emergence of previously eradicated epidemic.<sup>15</sup>

#### **Communicable diseases:**

Although disease profile in Jordan is changing, infectious diseases remain on the list of major causes of morbidity. According to reports of the Disease Control Directorate in the Ministry of Health (MOH), diarrhea diseases, acute respiratory infections (ARI), and hepatitis are still major causes of morbidity in Jordan especially among children. Over 6% of children <5years of age suffered from acute respiratory infection and 15% from diarrhea during the 2 weeks prior to a survey conducted in 2002.<sup>14</sup> Vaccination coverage for polio and DPT is around 99%, for measles 95%, and for TB 29%. Vaccination for hepatitis B and haemophilus influenza has been introduced in the national vaccination program. The list of reported communicable diseases includes 40 diseases, of which one fourth are no longer reported in Jordan (e.g. cholera, typhus, yellow fever and plague).

- **Vaccine preventable diseases:** The trend of vaccine preventable diseases (VPDs) has shown a remarkable decline in the last 20 years. The last polio epidemic occurred in Jordan in 1991/2, with 35 cases and 5 deaths. This epidemic was followed by zero cases for the last 7 years. However, since polio cases are still reported in some countries as Yemen, Sudan and Nigeria (WHO), Jordan should be considered at risk. Thus polio importation will remain a risk until it is eradicated elsewhere. Similarly, diphtheria has not been detected for the last 10 years. A very small number of pertussis and tetanus cases have been detected during the same period. Reasons for the remarkable decline in the number of VPDs include the high immunization rates among children, which are 97% for polio and DPT as well as improved surveillance.

The incidence of pulmonary tuberculosis is in continuous decline. With good surveillance and follow up of all cases and contacts, the incidence dropped from 7.3 /100000 in 1993 to 3.4/100000 in 2001.

Jordan has achieved the goal of malaria control since 1971. All malaria cases currently detected in Jordan are imported. An effective system of surveillance and monitoring is implemented, including screening of Jordanians and expatriates coming from infected countries, and vector control in certain areas.

In 2004 Typhoid epidemic occurred in Jordan Valley, Dir Alla District. 30 cases with 3 deaths were reported .Most of these cases were among expatriates working in agriculture.

Jordan is considered among low prevalence countries for HIV/AIDS. The estimated prevalence is less than 0.02%.<sup>25</sup> In 2004, the total cumulative number of all HIV/AIDS reported cases in Jordan were 374; of which 138 are Jordanians and 236 expatriates.(Tables) 88% of detected cases acquired infection outside Jordan, and the remaining were infected inside the country.<sup>33</sup> Though HIV/AIDS infection rates are low in Jordan, it is imperative that Jordan does not ignore this worldwide crisis. Countries in sub-Saharan Africa that ignored the threat of the HIV/AIDS crisis and did not pursue public health programs are now suffering from extremely high infection rates.

**Table 3.15: Cumulative AIDS/HIV/Sero positives as in 31/12/2004**

Year of Diagnosis	AIDS	Carrier	Unknown	Total	Jordanian	Others
1986	1	3	0	4	4	0
1987	3	6	0	9	8	1
1988	1	5	0	6	6	0
1989	6	8	0	14	12	2
1990	1	2	0	3	3	0
1991	8	12	0	20	14	6
1992	7	12	0	19	12	7
1993	8	9	0	17	7	10
1994	6	14	0	20	11	9
1995	2	8	0	10	3	7
1996	4	10	0	14	7	7
1997	12	26	0	38	14	24
1998	11	13	0	24	12	12
1999	3	19	0	22	1	21
2000	11	27	0	38	4	34
2001	9	19	0	28	2	26
2002	16	13	0	29	9	20
2003	4	16	0	20	3	17
2004	18	21	0	39	6	33
<b>Total</b>	<b>131</b>	<b>243</b>	<b>0</b>	<b>374</b>	<b>138</b>	<b>236</b>

Source: MOH Annual Statistical Report, 2004

**Table 3.16: Cumulative AIDS/HIV/ by Age Group in Jordan as in 2004**

Age Groups	Number						Total No by Age Group	%
	Case		Carrier		Total			
	M	F	M	F	M	F		
< 5	1	2	3	2	4	4	8	2.1
05-14	7	1	13	0	20	1	21	5.6
15-19	1	1	3	2	4	3	7	1.9
20-29	13	4	49	44	62	48	110	29.4
30-39	43	8	59	34	102	42	144	38.5
40-49	21	4	19	1	40	5	45	12.0
50 +	21	3	11	4	32	7	39	10.4
Unknown	0	0	0	0	0	0	0	0.0
<b>Total</b>	107	23	157	87	264	110	374	100.0

**Table 3.17: Cumulative AIDS/HIV/ by Mode of Transmission as in 2004**

Mode of Transmission	Number			%
	Case	Carrier	Total	
Blood/ Blood products	38	57	95	25.4
Sexual	62	129	191	51.1
IVDUs	5	15	20	5.3
Vertical Trans	4	0	4	1.1
Unknown	21	43	64	17.1
<b>Total</b>	130	244	374	100.0

Source: MOH Annual Statistical Report, 2004

#### Hereditary Diseases (Genetic):

Inherited Diseases in Jordan are now considered important health problems. 48% of the Jordanian population is in the reproductive age group. Consanguinity rate is 50% and this high rate contributes to the increase of autosomal recessive disorders. Thalassaemia is the commonest screenable hereditary disease in Jordan. Carrier rate is 3.4%. A recent study showed a higher rate in the north. There are more than one thousand Thalassaemics, registered at the governmental hospitals (Amman & Irbid) and are on regular treatment with blood transfusions and desferoxamine (melating agent). The annual cost of treatment is estimated to be about JD7 millions. Premarital Screening for Thalassaemia and some other hereditary diseases is now mandatory by law and provided free by the MOH. But in case of positive findings the decision to get married or not is optional. Health Education, laboratory facilities and genetic counselors are deficient.

**Child Health:**

Major achievements have been attained in relation to child health in Jordan. A remarkable reduction was made in infant and child mortality rates as stated before. More work is clearly needed in reducing infant and young child mortality further. The major causes of young children deaths are acute respiratory Infections mostly Pneumonia, diarrhea, malnutrition and often to a combination of these conditions. The challenge now is to apply the strategies that promote coordination and integration of activities in order to improve the prevention and management of childhood illness (IMCI). The core of the IMCI Strategy is a set of guidelines for integrated cases management of the most common causes of childhood illnesses and deaths and common associated conditions, in outpatient settings.

**Maternal health:**

A child's health is directly linked to its mother's health. Jordan witnessed a continuous improvement in maternal health, as the ratio of maternal deaths related to pregnancy dropped from 48 to 41 per 100,000 births between the years 1990-2004. The number of mothers who delivered with the assistance of qualified medical supervision has reached more than 98% irrespective of geographical location. However, the percentage of women receiving postnatal care remains low. The results of the Department of Statistics 2002 Population and Family Health Survey showed that 65% of mothers who are examined immediately after giving birth, do not return for postpartum examinations, mostly because they feel it is unnecessary to do so. There still remain many challenges in the field of maternal health, most important of which are the establishment of necessary systems for monitoring high risk pregnancies during and after birth, and reducing iron deficiency anemia in women in their childbearing years.

**Environmental health:****Water Supply:**

The fresh water supplies of Jordan are scarce and strategically critical. With an average per capita annual share of 170 cubic meters, Jordan ranks as one of the World's 10 most water stressed countries. The average share is 156 liters/citizen/day, one of the lowest in the Middle East. Acute water scarcity compounded by relatively high population growth rate is considered an important constraint to sustainable development. Water availability per capita declined and continues to decline due to population growth. The economic constraints of the country hinder the development of additional non-conventional water resources (desalinated or imported). The water scarcity is exacerbated by pollution, which constitutes a serious threat to health. The main sources of pollution include: insufficient and inefficient management of domestic wastewater, uncontrolled disposal of industrial waste, leaching from unsanitary solid waste landfills; seepage from agro-chemical sources (excessive use of fertilizers and pesticides).

Public piped water supplies are available to 95% of the Jordanian population. Water is provided intermittently with supply frequency of once or twice a week, each of 12-24 hour's duration. The quality of supplies suffers from supply interruptions and from inadequate state of the distribution systems. About 60% of the urban population and 50% of the total population have access to wastewater collection and treatment systems, thus raising the sanitation level and strengthening control of surface and ground water pollution in the areas served by wastewater facilities.

**Solid Waste:**

Safe solid waste collection and disposal are crucial for protecting public health. Local governments and common services councils in coordination/cooperation with the Ministry of Health (MOH) and the Ministry of Environment are responsible for solid waste management, but they are hindered by the lack of funds, skilled manpower and community awareness. Solid waste collection is provided to about 75% of the Jordanians and more than 90% of the Greater Amman's population. While the solid waste collection seems to be quite satisfactory, the design and operation of most of the disposal sites is environmentally unsound; this has serious impact on groundwater and air quality and subsequently on health. There are about 30 disposal sites in Jordan, of which only 10 are authorized.

**Chemicals and Hazardous Waste:**

The annual use of chemicals in Jordan almost doubled between 1980 and 1998 (0.7 to 1.2 million kgs). The increase in the use of chemicals brought with it serious environmental and health problems. The number of chemical poisoning cases each year is about 500. Despite considerable efforts made by the government, data are still insufficient regarding the quantities, types, and current practices of handling hazardous wastes. There is also lack of adequate legislation covering some environmental issues. The technologies and resources currently available for hazardous waste management in Jordan are insufficient.

**Air Pollution:**

In the last two decades the emission of five principle pollutants – suspended particulate matter, SO<sub>2</sub>, NO<sub>2</sub>, CO and lead – have all increased significantly in Jordan. The main sources contributing substantially to air-pollution are thermal power plants, oil refineries, Khirbet Al-Samra wastewater treatment plant, and emissions from automobiles, phosphate mining and cement industry. Specific measures (laws and regulations) for the industries as well as reduction of automobiles emissions (e.g. lead free gasoline, use of public transportation or car-pool, etc.) need to be considered. The monitoring programs in the Ministries concerned suffer from deficient equipment and tools.

## 4 HEALTH SYSTEM ORGANIZATIONS

### 4.1 Brief History of the Health Care System

Despite hard conditions Jordan passed - due to Palestine catastrophe and its negative health sequences in 1948 and 1967-, comprehensive health prosperity occurred during 40 years, and great achievements in medical field had been done. But we can say that the real health prosperity in Jordan, occurred after country independence, establishment of the Hashemite Kingdom of Jordan, and union of the two banks of Jordan River.

Health prosperity in Jordan passed several phases as follows:

- The ministry of health was established on December 14th, 1950.
- MOH started its responsibilities in 1951, which is considered the beginning of health prosperity in Jordan.
- Establishment of six departments in the kingdom districts, related to the central management of MOH, in which the head of each department was a physician.
- The first nursing college was opened in 1953.
- The physician union/association had been established in 1954.
- The central laboratory for medical tests had been established in 1955.
- Nursing college of Princess Mona had been established in 1962.
- The first health insurance system in the kingdom had been implemented among army members in 1963.
- The first civil health insurance system was implemented in the kingdom in 1965.
- The first medicine faculty was established in Jordan University In 1970.
- Public health law number 43 for 1966 was replaced by Public health law, number 21 for 1971.
- The King Hussein Medical Center (KHMC) was inaugurated in 1973.
- Publish of high health council system, number 60, for 1977.
- The allied medical professions institute was inaugurated in Irbid in 1978.
- The first pharmacy faculty was inaugurated in Jordan University in 1980.

#### **Jordan Health Sector Brief:**

Jordan has one of the most modern health care infrastructures in the Middle East. Jordan's health system is a complex amalgam of three major sectors: Public, private, and donors. The public sector consists of two major public programs that finance as well as deliver care: the Ministry of Health (MOH) and Royal Medical Services (RMS). Other smaller public programs include several university-based programs, such as Jordan University Hospital (JUH) in Amman and King Abdullah Hospital (KAH) in Irbid. The total expenditure on health services in 2003 accounted for about JD 727 million, 10.4 percent of the GDP. Health expenditure per capita was JD 133.35 Each of the health care sub-sectors has its own financing and delivery system.

## 4.2 Public Health Care System

### Ministry of Health:

The MOH is the major single institution financier and provider of health care services in Jordan. It is the largest in term of the size of its operation and utilization as compared to RMS, JUH, KAH, or other private sectors.

According to the new Public Health Law No.54, issued by a Royal decree in 2002, the Ministry of Health is responsible for all health matters in the Kingdom, and in particular:

- Protecting health through providing preventive and curative services as well as monitoring responsibilities
- Organizing and supervising health services provided by the public and private sectors
- Providing health insurance for citizens within available resources
- Establishing educational and training health institutions managed by the MOH

Article 4 of the Law defines areas of work for the Ministry including health promotion and healthy lifestyles, disease control, prevention of nutritional deficiencies, maternal and child health, school health, health of the elderly and prevention and control of non communicable diseases. The Law contains provisions on the practice of medical and health professions, private health care institutions, mental health and drug addiction, communicable diseases, immunization, pharmaceuticals, water and sanitation.

Annex 1 shows the organizational structure of the MOH. It does not reflect the latest changes that involve the establishment of the Directorate of Health Economics, the Directorate of Health Insurance and assigning several assistants for the General Secretary. The Ministry of Health (MOH) provides primary, secondary and tertiary health care services. Primary Health Care services are mainly delivered through an extensive primary health care network, consisting of 52 comprehensive health centers, 340 primary health care centers, 260 Village Clinics and 353 MCH Centers.

The MOH owns and operates 29 hospitals in 11 governorates, with 3456 hospital beds accounting for 37 percent of total hospital beds in Jordan. In terms of utilization, 43 percent of inpatients care and 45 percent of outpatients care occur within its hospitals. The bed occupancy rate in MOH hospitals was 69.8 percent for the year 2004.<sup>36</sup> The MOH employs 25 percent of all practicing physicians in Jordan. In 2002 and 2003 the MOH budget accounted for 5.7 and 5.9 percent of the general budget respectively.<sup>3</sup> The MOH is the largest in terms of expenditures, which accounted for 25 percent of total health expenditures in 2003. Over 76 percent of MOH expenditures are financed through the government budget, some 11 percent from insurance premiums from Civil Health Insurance enrollees, and the remainder from user charges and donors. In the year 2003, the MOH allocated 83 percent of its fund (JD 185 millions) to facilities it owns and operates, and the remaining amount (JD 31.5 millions) was spent on reimbursing private and other public providers for their services. In addition to its general public health functions, the MOH has a dual financing function. First, it is responsible for administering the Civil Health Insurance Plan (CHIP) which covers civil servants and their dependents. Individual certified as poor, the disabled, children below the age of six years, and blood donors are also formally covered under the CHIP, which covers about 20 percent of population. Second, the MOH is in effect the insurer of last resort for the entire population, since any individual can come to MOH facilities and pay highly subsidized charges (15 to 20 percent of the costs) for the entire range of MOH services.

**Royal Medical Services:**

The Royal Medical Services (RMS) mainly provides secondary and tertiary care services. It has 10 hospitals (7 general and 3 specialist), 1801 beds representing 19% of hospital beds in Jordan with occupancy rate of 79 percent. It employs 8 percent of all practicing physicians. RMS is responsible for providing health services and a comprehensive medical insurance to military and security personnel. Beneficiaries include active and retired staff and their dependents, staff of the Royal Court, Royal Jordanian Airlines, Aviation Academy, Mu'ta and Al Al-Bait Universities and others. RMS also provides care to uninsured patients referred from MoH and the private sector. The Military Health Insurance system currently covers 1,500,000 people of whom less than 10% are active military and police personnel.

RMS acts also as a referral center through providing high quality care, including some complex procedures and specialty treatment to Jordanians (including MOH beneficiaries) and Arab patients. It plays a major role politically through contributing in activating the role of Jordan in the region and world by sending medical teams and field hospitals to disaster and conflict area such as (Iraq, West Bank, Ariteria, Afghanistan, Croatia and Seralion). The RMS, like all other public providers, receives most of its annual budget (JD 96 million in 2003) from the Ministry of Finance (MOF), almost 61 percent. The remaining source of funds comes from other government entities including the MOH, households and private firms.

**Jordan University Hospital:**

Jordan University Hospital (JUH) was established in 1971 under the name of Amman Grand Hospital, and was named JUH in 1975 after it was affiliated with Jordan University and its medical school. With over 531 beds, its one of the most specialized and high-tech medical centers in the public sector, along with King Hussein Medical Center and King Abdullah Hospital. JUH patients are referral from the MOH, employees of Jordan University and their dependents, employees of private firms with whom JUH has contractual agreements, as well as some independent private patients. It has 5.8 percent of the total number of hospital beds in Jordan and accounts for 4.2 percent of the admissions for the year 2004.<sup>36</sup> JUH has an occupancy rate of 72.2 percent and employs 2 percent of physicians. 49 percent of the JUH revenue for the year 2001 was from MOH resources.

**King Abdullah Hospital:**

King Abdullah Hospital (KAH) was established in 2002 by Jordan University of Science and Technology (JUST). The total bed capacity of the hospital is 650 beds and the operating (opened beds) are 200 beds.<sup>40</sup> The hospital serves as a teaching hospital to the Faculty of Medicine at JUST and as a referral hospital for all public sectors in the Northern Region. More than 85 percent of the hospital admissions are for patients referred by the MOH and the RMS. Thus, the two agencies are the main source of fund for KAH.

**United Nation Relief Works Agency:**

The United Nations Relief and Work Agency (UNRWA) for Palestine Refugees in the Near East is a relief and human development agency that was established by the United Nations General Assembly in 1984, following the Arab-Israeli Conflict. It provides education, health care, social and emergency aid.

UNRWA provides care to over 600,000 Palestinian refugees, many of whom are also covered through MOH and RMS.<sup>15</sup> UNRWA provides basically community health oriented programs that provide comprehensive health care to eligible refugee population including preventive, curative, and family planning services. Its services also include school health and health education programs. It also provides environmental health services to the refugee camps.

Currently, UNRWA operates 23 health centers and MCH centers. For in-patients services, it used to contract with the MOH, RMS and some private hospitals for this service. UNRWA health expenditure amounted to almost JD 10 million in 2004 and accounted to 1.4 percent of total health expenditures.

### **4.3 Private Health Care System:**

The private sector plays an important role in terms of both the financing and delivery of services. Many private firms provide health care coverage for their employees either through self-insuring or the purchase of private health insurance. According to the Jordan's National Health Accounts (JNHA), 49 percent of the health expenditure goes to private sector physicians and hospitals in 2001. Many individuals including those with public coverage, purchase services privately through direct out-of-pocket payment. The JNHA reported that the total out-of pocket expenditures from households amounted to JD 274 million in 2001. The private sector received 81 percent of this amount, while the public sector received only 19 percent.

In terms of service delivery system, the private sector accounts for 36 percent of hospital beds and 56 percent of hospitals in Jordan with occupancy rate of 46.2 percent. In addition, the private sector employs 61.8 percent of all physicians, 93 percent of all pharmacists, 71 percent of all dentists, and 52 percent of all nurses. The private sector contains much of the country's high tech diagnostic capacity. This sector continues to attract significant numbers of foreign patients from nearby Arab nations. The JNHA reported that the private sector received about \$600 million in revenue from foreign patients in 2001. This sector under the absence of strict regulatory environment is flourishing and growing steadily

#### **Public/private interactions (Institutional):**

The private sector is represented in all public independent health organizations as the Jordan Medical Council, the High Health Council, the High Nursing Council, the Jordan Food and Drug Administration (JFDA) and Councils of Health Professions Faculties, etc.

The private health sector also participates in the development of national health policies and strategic plans. The Present Minister of Health, Dr. Saeid Darwazah, came from the private pharmaceutical industry. Jordan governments have adopted more liberal policy toward public-private partnership. The MOH has adopted plans to attract private physicians and other health professions to work at the new MOH Prince Hamzeh hospital, which will be opened soon.

#### **Strategic analysis for the private sector:**

Figure (3.1) provides strategic analysis for the private hospital sector position in Jordan. This analysis indicates the following strengths, weaknesses, opportunities and threats (SWOT) that currently face this sector.

**Strengths (inside the sector):**

- Advanced medical equipment of large hospitals.
- Skilled technical manpower.
- Good reputation outside Jordan, since 32% of hospitals revenues are from foreign patients.
- More quality services compared with government hospitals.

**Weaknesses (inside the sector):**

- Inefficient role for the Private Hospitals Association.
- Cash flow problems.
- Shortage in qualified nurses.
- Less advance equipment for the small hospitals compared with large hospitals.
- Excess capacity and overlapping in certain medical equipment and services.
- The bed occupancy rates are low (44%) compared with other health services providers.
- Lack of skilled management expertise.
- Inefficient cooperation within the sector.

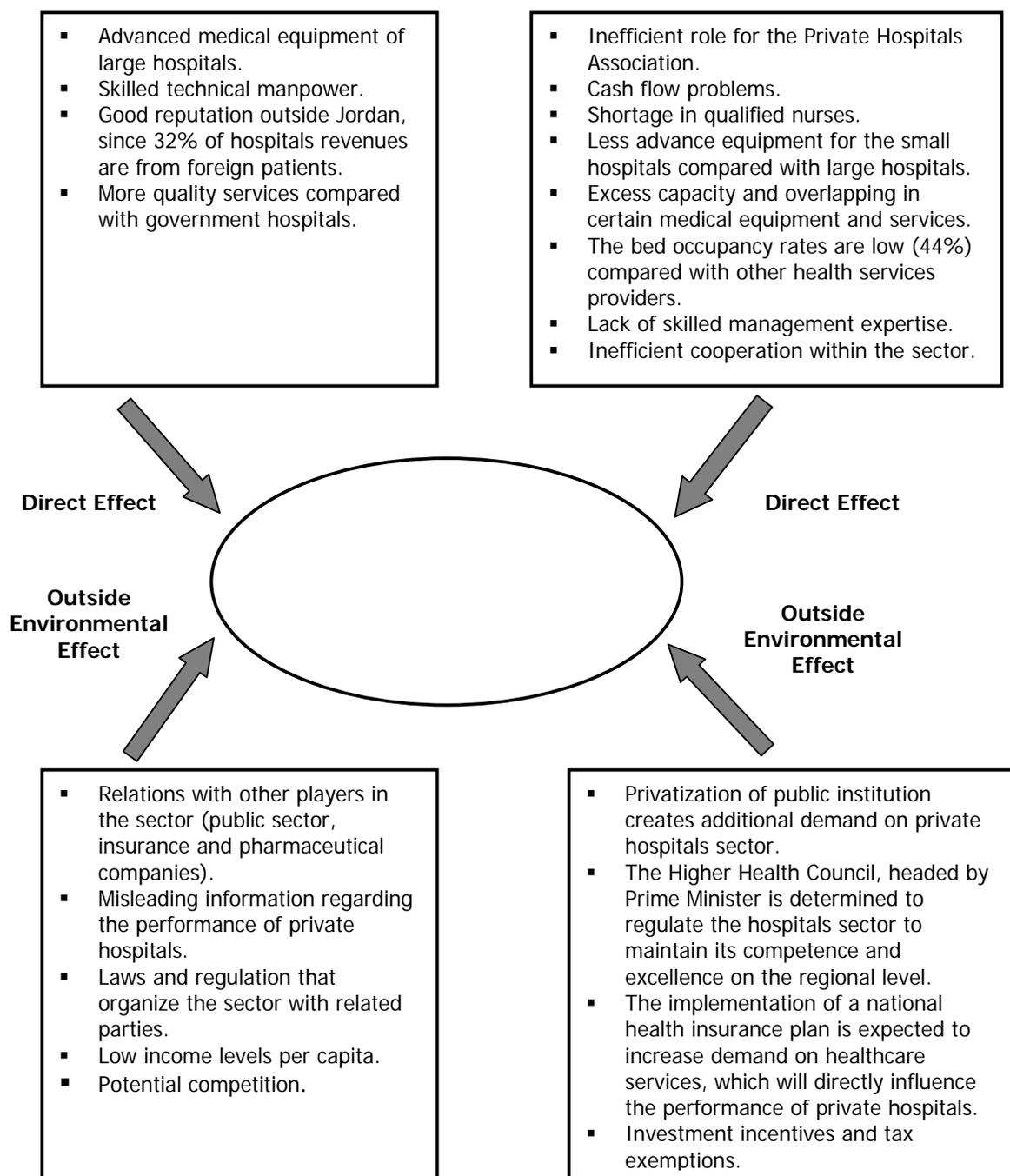
**Opportunities (external environment):**

- Relations with other players in the sector (public sector, insurance and pharmaceutical companies).
- Misleading information regarding the performance of private hospitals.
- Laws and regulation that organize the sector with related parties.
- Low income levels per capita.
- Potential competition.

**Threats (external environment):**

- Privatization of public institution creates additional demand on private hospitals sector.
- The Higher Health Council, headed by Prime Minister is determined to regulate the hospitals sector to maintain its competence and excellence on the regional level.
- The implementation of a national health insurance plan is expected to increase demand on healthcare services, which will directly influence the performance of private hospitals.
- Investment incentives and tax exemptions.

**Figure 3.1: Strategic Analysis for the Private Hospitals Sector Position in Jordan:**



*Source:* Adapted from Deloitte & Touché (M.E.) "Financial and Regulatory Study of Jordanian Private Hospitals", 2001.

## 4.4 Profile of the Health Care System

### **Brief description of current overall structure:**

Table 3.1 contains a detailed description of the system and the individual programs in terms of the key health sector policy parameters of eligibility, benefits, financing (i.e., revenue raising), payment of medical care providers, and the service delivery system. The following general observations which were presented in Jordan Health Sector Study<sup>15</sup> performed by the World Bank and a team of Jordanian experts (the author of this report was a member of this team) provide a summary policy overview of the characteristics of the Jordanian health sector.

### **Eligibility:**

The coverage situation is complicated by the fact that many individuals and their dependents are eligible for more than one health insurance program as well as the fact that many individuals with public coverage purchase private sector services through out of pocket payments. Table (5.7) shows that about 68 percent of Jordan's population is formally covered through various public sector (48 percent) and private insurance and UNRWA (20 percent) programs, while 32 percent has no formal coverage. Yet, these individuals can purchase services at MOH facilities at highly subsidized prices.

### **Benefits:**

Public programs generally cover a comprehensive array of services including pharmaceuticals with very limited patient cost-sharing. However, uninsured individuals, even those purchasing subsidized care in MOH facilities, must generally pay the full price of pharmaceuticals. Private insurance benefits are more variable and the usual forms of medical underwriting (e.g., pre-existing condition exclusions) are extant.

### **Financing:**

The public programs are financed by the general budget, premium contributions, and user fees. MOH, Civil Insurance and RMS budgets are determined annually through the Government's budgeting process. There are major cross-subsidies built into the budgets among public programs as well as from the General Army Budget to the RMS. UNRWA is financed through international donor contributions. There is no available information on the financing sources of private insurance. An important potential source of financing is through private firms via Article.3 a. (4) of Jordan's Social Security Law No 19 of 2001. This article provides for firms to contribute to health insurance for their employees through payroll taxes, but it has never been implemented.

### **Payment of Providers:**

The MOH and RMS have centralized management systems for allocating resources to individual facilities. Individual facilities do not have budgets; rather, facilities receive allocations of supplies, equipment, pharmaceuticals, salaries, etc. from central MOH and RMS departments. Facility managers have little discretion, and health personnel in the public sector are salaried. MOH and RMS facilities also receive reimbursements based on schedules of charges from uncovered individuals. The JUH has a budget but also receives reimbursements from charges for individuals not covered through Jordan University. Private sector facilities and practitioners are reimbursed on the basis of schedules of charges. Charge schedules differ across all programs, although all must be

approved by the MOH. While MOH charges are heavily subsidized, those of the other programs more closely approximate actual costs or market prices.

### **Delivery System:**

Each major program has its own delivery system, and there is little coordination among them. There is no single managerial entity responsible for the overall health system. In addition to managing the Civil Insurance System, the MOH is responsible for public health, quality, standard setting, medical education and training, etc., but beyond setting standards and approving charge schedules has little control of the private sector. As part of its strategy to contain health costs, the government has recently established the Joint Procurement Directorate to purchase supplies and equipment for all public health providers including MOH, RMS and public university hospitals.

### **Equity:**

In assessing the "fairness" of the contribution/revenue base for financing the health system, one should consider whether individuals' contributions both through the general government revenue system and out-of-pocket are based on 'ability to pay'. The overall incidence of Jordan's general revenue structure is not progressive, since only a very limited proportion of revenues derive from progressive income taxes. In terms of individuals' contributions for services, while the Government, in effect, does potentially finance and provide subsidized care for the entire population, the structure of MOH and RMS eligibility and premiums as well as the higher payment levels required by the uninsured suggest that equity could be improved.

The fact that 48 percent of the population is covered by public programs, while 53 percent of all spending is privately financed suggests that many MOH and RMS eligible, presumably some with lower incomes, are paying out-of-pocket for publicly covered services in the private sector. The essence of a 'fair' system of financing is to spread the health risks of the population on the basis of ability to pay. While Jordan's MOH facilities are in effect the 'insurer of last resort,' it is clear that there is significant potential to improve the equity of the financing of health services in Jordan.

The government has taken many decisions during the past three years to improve equity. Below are some examples on these decisions:

- Including all government employees in the Civil Health Insurance System (CHIS) irrespective of their service position.
- Including the husband and children of the female government employees in the CHIS.
- Providing free health insurance for all children less than six years of age (350,000 children).
- Providing free health insurance for all people living in poverty pockets areas (350,000 children).
- The Civil Health Insurance Law was amended recently to allow any citizen to join, if he wishes, the highly subsidized CHIP.

### **Access:**

In terms of physical access, Jordan has a well-developed delivery system with a significant amount of capacity. Compared to other middle income and even some industrialized countries, Jordan's health system in terms of infrastructure and physicians is well endowed. While the data on manpower and facilities indicate significant differentials among governorates, the fact that the country is relatively small

geographically, means that non-emergency accessibility to facilities is generally not a problem. However, while there generally do not appear to be major financial or physical access barriers, there may be some specific groups such as the near poor and specific rural geographic areas have access problems to secondary and tertiary health services. To solve access problems to patients who are not insured and cannot pay the treatment costs, the Royal Court Clinics located in Amman and sponsored by the government refer applying patients to public hospitals. The government reimburses hospitals for the full cost of these referrals.

**Economic Efficiency:**

From a macroeconomic/total expenditure perspective, as a share of its GDP Jordan is spending far more on health care (10.1%) than other middle income countries in the region and most of the rest of the world, including many industrialized countries such as Japan (7.3 percent) and the United Kingdom (7.1 percent). Whether as a share of GDP or in per capita dollar terms, Jordan spends more than would be predicted based on the average relationships for other countries. While Jordan clearly spends more than most other comparator countries, the real question is what Jordan gets for its high levels of health spending and could it get more in terms of quality (including health outcomes), access, and amenities, if the money were spent more effectively. This leads to questions about the efficiency of expenditures for public health programs and microeconomic efficiency, as well as the incentives that individual suppliers and consumers of care face. The efficiency of expenditures on health interventions is discussed below in terms of a cost-effectiveness analysis for reducing the burden of illness.

It would appear that there are inefficiencies at the microeconomic level in Jordan's health system. The totally centralized budgeting systems for running facilities, high overhead costs, the salary-based payments for physicians, lack of effective referral systems, individuals consistently by-passing lower levels of the system without penalty, little financial accountability on the part of physicians or patients for services utilized, lack of coordination among public and private delivery systems, the significant excess capacity overall but especially in the private sector (e.g., overall hospital occupancy rate of 63 percent, 73 percent in the public sector but 46 percent in the private sector), limited amounts of ambulatory surgery, little use of generic drugs, lack of treatment protocols, and future hospital bed construction plans bearing little relationship to actual needs, suggest that there are major inefficiencies in the service delivery system.

**Clinical Effectiveness:**

It is extremely difficult to assess how well Jordan's health care financing and delivery system performs with regard to medical appropriateness and clinical effectiveness of services rendered. The system appears to perform reasonably well in these regards, although there are no hard data, especially concerning medical appropriateness and/or case mix adjusted mortality rates for individual hospitals and practitioners.

## 5 GOVERNANCE/OVERSIGHT

### 5.1 Process of Policy, Planning and management

#### National health policy and trends in stated priorities:

The High Health Council sets the general Health Policy. The Council is chaired by the Prime Minister, the Minister of Health as vice chairman and membership of involved three other Ministers (Finance, Planning, Labor, and Social Development), Director of the Royal Medical Services, Deans of medical schools, heads of the related professional associations and representatives from the different health sectors.

#### Government Priorities in the Health Sector:

The Government of Jordan is committed to making health services available and accessible to all. The national health strategy is aimed at creating a comprehensive health care system, utilizing both public and private service providers covering all levels of care and improving the quality of health services by implementing a national health services accreditation program.

Box 4.1 summarizes the short and medium term priorities of the Government of Jordan for the health sector. As part of the Socio-Economic Transformation Program (SETP), the government is in the process of expanding and improving health care provision to the poor. This includes expanding health insurance coverage from 60% in 2000 to 80% by the end of 2005, upgrading primary healthcare facilities, improving hospital administration to speed up admissions and reduce duplication of services and other waste.

#### Box 1.1 Priorities for the Health Sector, 2004-2006

- Enhance the sub-optimal use of medical outlets throughout the country, and upgrade primary health clinics to act as entrants to health care services.
- Implement capacity-building measures at the MOH to ensure timely implementation of reforms.
- Enhance the level of coordination between all health care service providers in the private and public sectors.
- Improve and extend coverage of health insurance.
- Develop a health and social information system.
- Raise the standards of healthcare institutions and encourage them to sustain themselves financially.
- Establish criteria for assessing and improving health services and employees.
- Provide effective on-the-job training.

*Source:* Ministry of Planning, Social and Economic National Development Plan 2004-06, 2004

The MOH is mandated by the Public Health Law and other legislations to license, monitor and regulate all health professions and institutions in the country. The professional associations, other health councils and independent public organizations (Jordan Medical Council, High Health Council, High Nursing Council, Jordan Food and Drug Administration, etc...) participate with the MOH in regulating and monitoring functions. The Private Hospitals Associations (PHA), which represents all private hospitals, has no effective role in regulating and monitoring private hospitals.

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## **5.2 Decentralization: Greater public hospital autonomy:**

In Jordan, the governance of MOH hospitals is highly centralized. Senior level executives at headquarters in Amman decide all significant managerial, personnel, budgetary and procurement matters. It is believed that hospitals may be more efficiently operated and quality of patient care enhanced if greater independence was granted to them. The MOH with the support of PHRplus(USAID) has adopted a project since 1998 to give more autonomy to hospital directors over activities related to their hospitals. Modest success has been achieved from this project due to high bureaucracy, delinquent legislation, shortage of qualified administrators, lack of incentives and limited resources. Therefore, the MOH and PHRplus decided in 2005 to focus on hospital system improvement to improve the effectiveness and efficiency of hospital services.

The MOH hospitals face several constraints that hamper their ability to contribute more effectively to providing proper health care to the poor and the uninsured. In addition to the centralized management practices, the lack of incentives to promote efficiency and quality, and inadequate information and communications systems are contributory factors. Hospitals and their staff lack incentives and the basic information on costs and evidence-based medicine to implement standardized treatment protocols or to operate efficiently.

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## **5.3 Health Information Systems**

### **National Health Statistical Information System (NHSIS):**

Continued efforts are still needed to enhance the efficiency of National Health Statistical Information System (NHSIS). Despite the progress made in strengthening the information process particularly data collection and data processing the NHSIS is still not close enough from playing essential role in the health decision making process.

#### **Main achievements**

1. A website for the Ministry of Health.
2. Capacity building in data collection and programming languages in the Information Directorate/ MOH.
3. The establishment of the National Cancer Registry and the National Death Registry in the MOH.
4. Computerizing RMS hospitals (phase one).
5. Computerizing of Patient Indexes, Disease Indexes and personnel data in some MOH hospitals.
6. Computerizing the MOH Biomedical Engineering Directorate.
7. All private hospitals are applying computerized information systems.

**Main constraints**

1. Lack of qualified human and financial resources.
2. Lack of unified and integrated systems.
3. Connectivity problem with concern parties.
4. Lack of training.

The MOH in collaborating with WHO has adopted a program to develop a central health database for Jordan .The objectives of this program are:

- Enhancing capacity building in health information process.
- Dissemination of information via Internet.
- Capacity building in ICD 10 coding for mortality and morbidity.
- 20 health directorates will have on line connection with Information Center, in each directorate a PC server, two workstations and printer will be installed Currently only dial-up connection is available other choices are still under study.

**Main Priority Areas**

1. Developing a central health database compound of all relevant and national information available in the public health system.
2. Reinforcing and dissemination of available health information through local networking as intranet and Internet.
3. Enhancing national capacity building in health information process with emphasis on data analysis, data reporting and data use in decision making.
4. Strengthening mortality statistics

**Health Information Support:**

Health Information Support and Medical Library Services in Jordan are provided by the Ministry of Health, health and medical care units and the Jordanian universities medical libraries. During the last biennium, WHO assisted the Ministry of Health to make available and to provide access to health literature to Ministry staff and end users. WHO and EMRO publications were distributed to Ministry staff and other professionals and institutions. Support was provided to medical colleges to acquire informatics equipment to develop training materials and to facilitate data processing. The Ministry has expressed the need for more trained personnel to manage health information units. Supply of health literature (journals, CD-ROMs, books and WHO documentation) will continue to be needed. There is a need for medical library cooperation and resources sharing at the country level by way of creating a national network of medical libraries. HIS unit assisted the Ministry of Health during the last biennium to connect to the Internet. There is need to link other health information services units and medical libraries at the Jordan medical colleges and hospitals in particular to the Internet in general and WHO/EMRO sites in particular.

**5.4 Health System Research**

Health systems research is not institutionalized in Jordan. Universities, international organizations and individual researchers are producing many valuable studies related to policy issues, provision of health services, patient care, planning and evaluation. There is

no systematic or organized effort to disseminate and distribute these studies to concerned organizations and interested individuals. The PHRplus project did an important effort on this subject by creating a National Health Research Directory in 2002. However, this directory should be updated on continues basis to achieve its objectives.

## 6 HEALTH CARE EXPENDITURE AND FINANCE

### 6.1 Health Expenditure

Jordan's health system is a complex amalgam of two major public programs, the Ministry of Health (MOH) and Royal Medical Services (RMS), which both finance and deliver care, some smaller public programs including several university-based programs (i.e., Jordan University (JU) and Jordan University of Science and Technology (JUST)), a large private sector in terms of both the financing and delivery of care, and several NGOs, the largest of which is the United Nations Relief Works Agency (UNRWA) which provides care to Palestinian refugees. The MOH is responsible for the separate Civil Insurance Program for civil servants as well as the usual public health activities and health system regulatory functions. The 'system' is really not a single unified system, but rather separate multiple public and private programs which both finance and deliver care.

**Table 5.1: Summary of Health Expenditures Statistics, Jordan, 2001**

Total Population	5,182,000
Total Health Care Expenditures	JD 597,834,320
Per Capita Health Care Expenditures	JD 115,4
Gross Domestic Product (GDP)	JD 6,258,800,000
Gross National Product (GNP)	JD 6,391,500,000
Per Capita GDP	JD 1221
Health Care Expenditures as Percent of GDP	9.5%
Health Care Expenditures as Percent of GNP	9.4%
Percent of Government of Jordan Budget Allocated to Health	9.6%
Sources of Health Care Financing (percent distribution)	
Public	37.0%
Private	58.1%
Donors	4.9%
Distribution of Health Expenditure	
Public	45.0%
Private	48.7%
UNRWA	1.3
NGOs	5.1%

Count... Table (2)

Public Health Expenditure as percent of GDP	3.5%
Private Health Expenditure as percent of GDP	5.6%
International Health Expenditure as percent of GDP	0.5%
Total Expenditure on Pharmaceuticals	JD 184,630,938
Per Capita Pharmaceutical Expenditure	JD 35.6
Pharmaceuticals as Percent GDP	3.0%
Pharmaceuticals as Percent of Total Health Expenditure	30.9%
Distribution of Pharmaceuticals Expenditure	
Public	18.5%
Private	81.5%

Source: Jordan's National Health Accounts, Draft Report, 2004.

**Table 5.2: Sources of Funds to financing agents, (million) JD, 2001**

Financing Agents	Primary Sources of Fund							Total
	MOF	MOP	Other Gov. Entities	Private Firms	Household	UNRWA	Other Donors	
MOH	134.5	1.1	1.0	-	21.7	-	8.9	167.4
RMS	53.9	0.39	23.9	1.1	5.6	-	-	85.0
JUH	-	0.18	3.0	0.35	0.09	-	0.43	4.1
Other Gov. Entities	-	-	-	-	-	-	2.4	2.4
Public Universities	-	-	2.8	-	1.4	-	-	4.2
Social Security	-	-	-	1.8	-	-	-	1.8
Private Insurance Enterprises	-	-	-	21.6	1.9	-	-	23.6
Household	-	-	-	-	241.9	-	-	241.9
NGOs	-	-	-	-	-	-	8.8	8.8
Private Firms	-	-	-	47.5	-	-	0.99	48.5
Private Universities	-	-	-	1.0	0.71	-	-	1.7
UNRWA	-	-	-	-	-	7.8	-	7.8
Total	188.4	1.7	30.9	73.6	273.5	7.8	21.7	597.8

Source: Jordan National Health Accounts, Draft Report, 2004.

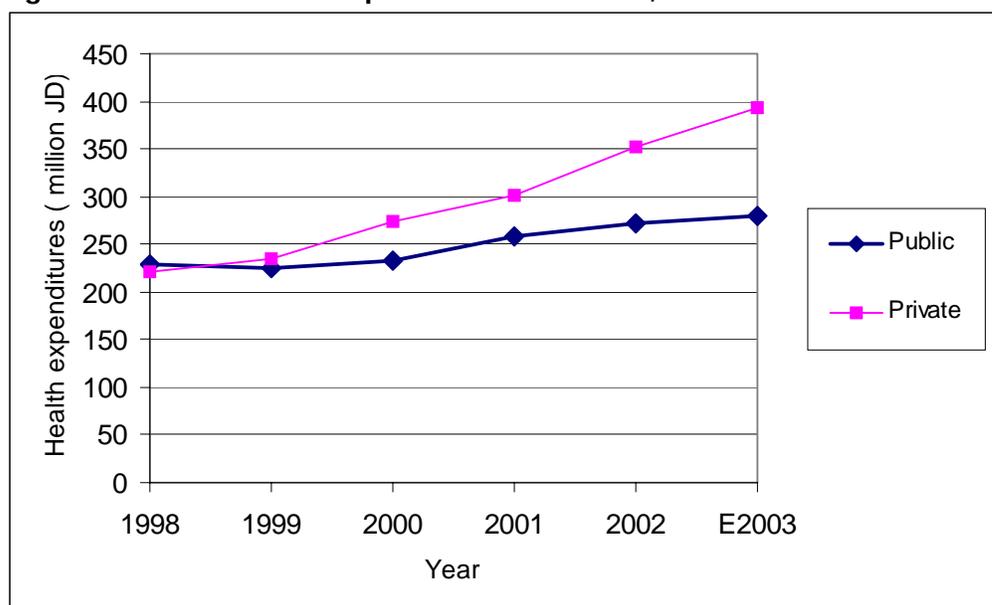
### Trends in health expenditures by category:

As reported by the National Health Accounts Report for the year 2001<sup>38</sup>, Jordan's health delivery system is financed by four principal sources: 46% public funding (general taxation, premiums paid by public firms and contributions to charitable NGOs), 47.7% household spending (payroll deductions for insurance, user fees, and purchase of pharmaceuticals and other health commodities), and by private firms which pay health insurance premiums for their employees. 6.3% donor contribution including UNRWA and NGOs (Table 5.1). The average contribution of public expenditure has declined from 51% in 1990 to 35% in 2001 indicating the rising importance of private sources of health care in Jordan. The Jordan National Health Accounts estimates that in 2001 approximately JD 598 million (US\$ 860 million) was spent on the health care sector, which accounted for 9.5 % of the GDP. Almost 58% of the total funds originated from private sources, 37% from public funds and the remaining 5% were contributed by international donors or other sources. The private sources comprise premiums for private commercial insurance, expenditures incurred by self-insured companies and out-of-pocket expenditure for health care. In the public sector 83% of health expenditure was financed through the government budget and 17% from insurance premiums, prescription fees, doctors fees and donations. Almost 58% of public expenditure on health was spent on curative health care, 27% on preventive services and primary care, 5% on administrative activities, 3% on training and 7% on miscellaneous activities. Expenditure on drugs, at JD185 million, accounted for approximately 31% of total expenditure on health care services and 3 % of GDP in 2001 (Tables 5.1 and 5.2). A joint Jordanian/World Bank Public Expenditure Review of the health sector performed in 2004<sup>35</sup> indicated that in 2003, total health expenditures –both public and private was estimated at 727million JD or 133 JD per capita (188 US dollars or 428 international dollars). This is equivalent to 10.4% of GDP – public 4.3% and private 6.1% (Table 5.3). Real health spending, adjusted for health care inflation, increased by about 30% from 449 million JD in 1998 to 671 million in 2003. During this period, real public spending grew at about 4% per year, while private sector expenditures grew at an average annual rate of 13% (Figure 5.1).

**Table 5.3: Expenditures in Health, 1998-2003**

<b>Health expenditures, (million JD)</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Public expenditures	228	234	246	269	282	302
Private expenditures	221	244	291	329	365	425
Total expenditures	449	478	537	598	647	727
Public as % of total	51	49	46	45	44	42
<b>Per capita expenditures (JD)</b>						
Public expenditures	48	48	49	52	53	55
Private expenditures	47	50	58	64	69	78
Total expenditures	94	98	107	116	121	133
<b>Per capita expenditures (US\$)</b>						
Public expenditures	68	67	69	73	75	78
Private expenditures	66	70	81	85	97	110
Total expenditures	133	138	150	158	171	187

*Source:* Jordan NHA, 2001 and Jordan Public Expenditure Study: Health Sector, Unpublished Draft Report, 2004.

**Figure 5.1 Real Health Expenditures in Jordan, 1998-2003**

Source: Jordan Public Expenditure Study: Health Sector, Unpublished Draft Report, 2004.

### International Comparisons of Health Expenditures:

Health spending in Jordan is high when compared to other MENA and middle-income countries (Table 5.4). Overall spending has increased in nominal terms over the past six years and has grown slightly more rapidly than GDP. Spending has also increased more rapidly than medical specific inflation. Nevertheless, Jordan's health spending, whether measured in per capita U.S. dollar terms or as a share of GDP, is high compared to countries of comparable income levels.

Figure 5.2 shows that Croatia has the highest rate of public expenditure on health among middle-income countries, as a percentage of its GDP with 8%, followed by Portugal with 5.8%, while Jordan expends 4.1%. If we compare the share of public health expenditure between Jordan and similar countries, it is found that Jordan spends more than the 3.5% of Upper Middle-Income countries (UMC), the 2.7% of Lower Middle-Income countries (LMY), the 2.9% of the Middle East and North Africa (MNA), and the 2.6% of Low Income (LMC) countries.

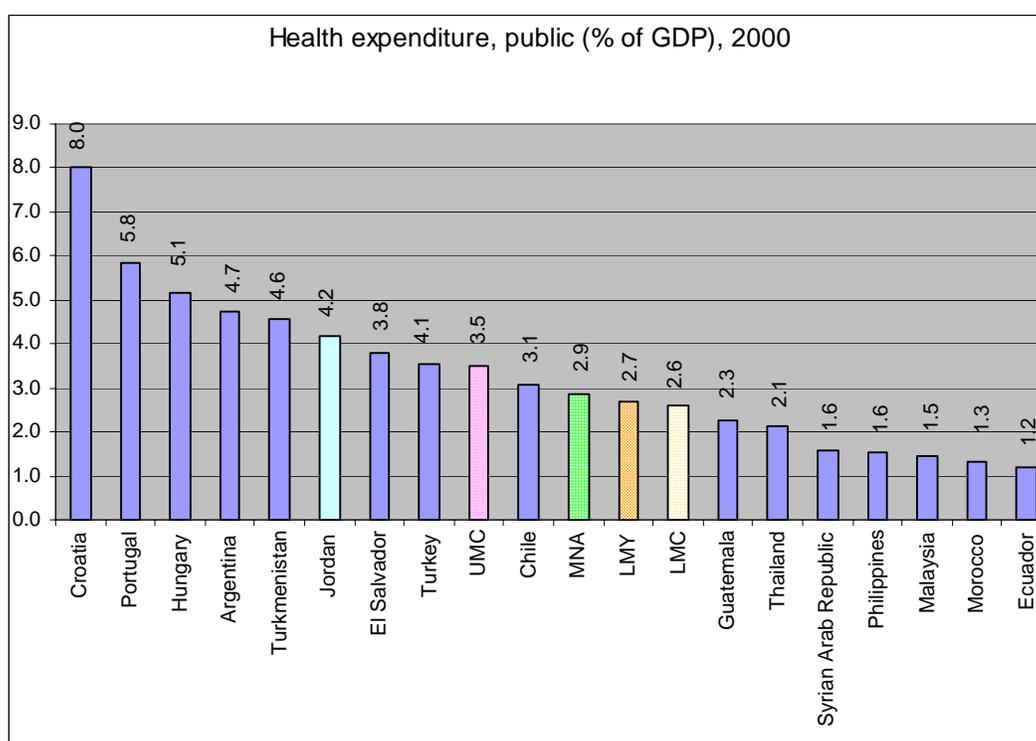
**Table 5.4 International Comparisons of Health Expenditures, 2001**

Countries	GDP per capita, (PPP\$)	Per capita expenditures in health (PPP\$)	Health-to-GDP (%)	Public health-to-GDP (%)
Jordan	4220	392	9.5	4.1
Argentina	10880	1117	9.5	5.1
Ecuador	3580	158	4.5	2.3
Chile	9820	657	7.0	3.1
Egypt	3810	121	3.9	1.9
Turkey	6390	409	6.9	4.4

Malaysia	9120	345	3.8	2.0
Morocco	3810	189	5.1	2.0
Lebanon	4360	534	12.4	2.2
Tunisia	6760	431	6.4	4.9
MENA	5729	..	4.9	2.8
LMIC	5376	..	5.8	2.7
MIC	5909	..	6.0	3.1

Source: Jordan Public Expenditure Study: Health Sector, Unpublished Draft Report, 2004 and Jordan NHA for 2001.

**Figure 5.2 Public Health Expenditures in Jordan and other countries (% of GDP), 2000.**



Source: Jordan Public Expenditure Study: Health Sector, Unpublished Draft Report, 2004 and Jordan NHA for 2001

### Composition of Government Expenditures:

Capital expenditures account for less than 20% of government health budget. Furthermore, the share has declined from 25% in 1998 to 18% in 2003. The share of recurrent expenditures increased from 75% in 1998 to 82% in 2003. During this period, the share of salaries and wages remained constant at 38% of total expenditures. About half of the recurrent budget is spent on operational expenses (goods and services). One of the reasons for the high operational costs is the cost of pharmaceuticals which absorb 30% of operational expenses.

### Spending by Health Program:

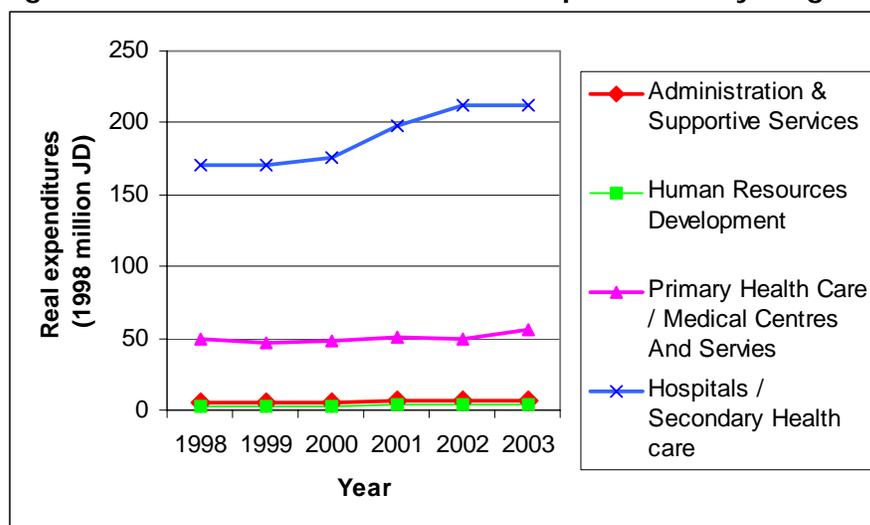
Curative care, in Jordan like many other developing countries, takes up a disproportionately large share of public spending on health. During the period 1998-2003, the share of hospital care has remained relatively stable - about 75% of the total state health budget while the proportion spent on primary health care has been steadily declining (table 5.5). Expenditures in hospital program increased by 25% in real terms, while expenditures on primary health centers increased by only 13% (Figure 5.3). The largest increase (30%) is in human resource development although the figure is still relatively small.

**Table 5.5 Public Health Expenditures by Program, 1998-2003**

Programs	1998	1999	2000	2001	2002	2003
<b>Nominal (million JD)</b>						
Administrative and supportive services	6	5	6	6	7	8
Human resources development	3	3	3	3	4	4
Primary health care/medical centers and services	49	48	51	54	51	60
Secondary health care/hospitals	171	176	186	208	220	230
<b>Total</b>	<b>228</b>	<b>234</b>	<b>246</b>	<b>271</b>	<b>282</b>	<b>302</b>

Source: MOF, Jordan Public Expenditure Study: Health Sector, Draft Report, 2004 and Jordan NHA for 2001.

**Figure 5.3 Trend in Real Public Health Expenditures by Program, 1998-2003**



Source: MOF, Jordan Public Expenditure Study: Health Sector, Draft Report, 2004 and Jordan NHA for 2001.

During the same period, the financing share of MOH has remained about the same at about 58-60% of total government sources. There is more fluctuation in the shares of the RMS and the university-based programs ("other public"). MOH and RMS financing grew in real terms by 25%, while the "other public" only grew at 10% (Table 5.6).

**Table 5.6 Government health financing by sources of funds, 1998-2003**

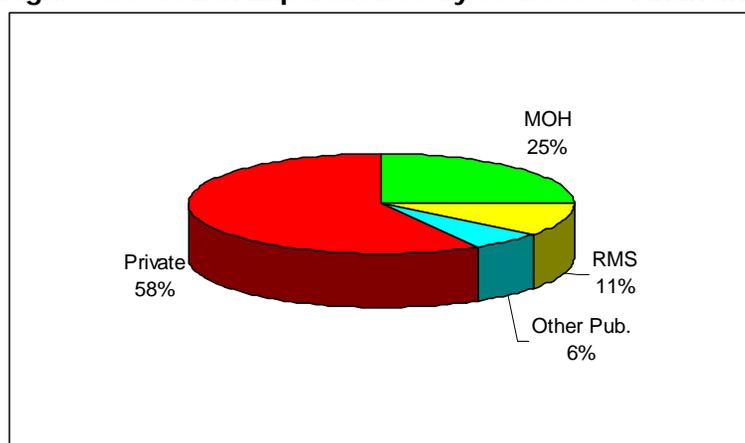
Source of Financing	1998	1999	2000	2001	2002	2003
<b>Nominal (million JD)</b>						
MOH	135	137	144	154	170	182
RMS	57	65	70	77	67	77
Other public*	36	32	33	38	45	43
Total	228	234	246	269	282	302
<b>Real (1998 million JD)</b>						
MOH	135	133	142	153	165	168
RMS	57	63	66	74	64	71
Other public*	36	31	31	37	43	40
Total	228	227	239	264	273	279

\* Includes expenditure from MOF to Jordan University and King Abdullah Hospital.

Source: Jordan Public Expenditure Study: Health Sector, Draft Report, 2004 and Jordan NHA for 2001.

## 6.2 Sources of Financing

As shown in Figure 5.4 the private sector (payroll deductions for insurance, user fees, purchase of pharmaceuticals and other health commodities and private firms which pay health insurance premiums for their employees) was the main source of health finance (58%), while other public sectors including donors finance 42% of the total healthcare expenditures. While the government remains a large provider of health services, its role in the financing of health expenditures has been declining from 51% in 1998 to 42% in 2003.

**Figure 5.4 Health Expenditures by Sources of Financing, 2003**

Source: Jordan Public Expenditure Study: Health Sector, Draft Report, 2004 and Jordan NHA for 2001.

### 6.3 Tax-based Financing

In Jordan there is no specific tax allocated for financing health services. The two main public health programs (MOH and RMS) are financed directly from the tax and other revenue pool available in the public budget. However, as an exception from this policy, the government in 2004 allocated part of the revenue generated from the six percent increase on prices of cigarettes and tobacco for treating cancer patients at Al-Hussein Cancer Centre [Jordan Times, May 2004].

### 6.4 Budgeting

The public programs are financed by the general budget, premium contributions, and user fees. MOH, Civil Insurance and RMS budgets are determined annually through the Government's budgeting process. The MOH and RMS have centralized budgeting systems for allocating resources to individual facilities. Individual facilities do not have budgets; rather, facilities receive allocations of supplies, equipment, pharmaceuticals, salaries, etc. from central MOH and RMS departments. Facility managers have little discretion, and health personnel in the public sector are salaried. MOH and RMS facilities also receive reimbursements based on schedules of charges from uncovered individuals. The JUH has a budget but also receives reimbursements from charges for individuals not covered through Jordan University. Private sector facilities and practitioners are reimbursed on the basis of schedules of charges. Charge schedules differ across all programs, although all must be approved by the MOH. While MOH charges are heavily subsidized, those of the other programs more closely approximate actual costs or market prices.

### 6.5 Insurance

As indicated in Table 5.7 below, about 68% of the population in Jordan is covered by formal health insurance. The RMS is the largest health insurer (27%) followed by MOH (19.5%), UNRWA (11%), private firms (8.8%) and university hospitals (2%). Table 3.1 provides detailed information about health services covered, beneficiaries, premiums, financing and health facilities for each health insurance program.

**Table 5.7 Population coverage by source**

Source of Coverage	2000	2004
Civil Insurance	18	19.5
RMS Insurance	23	27
University hospitals	2	1.3
Private firms and corporations	11	8.8
UNRWA	13	11
<b>Uninsured/Uncovered</b>	<b>33</b>	<b>32.4</b>

Note: The insured figures include multiple coverage (6% as reported by JHEUS, 2000).

Sources: JHEUS, 2000

Public Health Expenditure Study, Draft Report, 2004.

### **Trends in insurance coverage:**

One of the main concerns of the MOH is the efficiency and equity of the current health insurance system. The two major public health insurance programs are civil health insurance (CIP) administered by the MOH and military health insurance, administered by RMS. Under public law, the Ministry is required to provide subsidized health care to all Jordanian citizens. Thus the MOH provides a safety net for Jordanians who require health services and have no insurance coverage. The data reported in the Jordan Health Expenditure and Utilization Survey 26, which was conducted by the PHR in 2000, is considered the most reliable source of information on health insurance coverage in Jordan (see Annex 2).

The PHR's Health Utilization and Expenditure Survey showed that on average, Jordanians pay JD 33 per annum on outpatient care. Of this average, 75% represents spending on pharmaceuticals. Uninsured Jordanians spend nearly twice as much per annum as the insured. For inpatient care, Jordanians pay JD 8.2 out of pocket per capita per annum. The uninsured pay 3.5 times as much as the insured. Developing, implementing and evaluating universal coverage policies is a complex and highly political undertaking with major economic implications. Implementing universal coverage in Jordan would require additional research and analysis and improved partnerships between public and private sectors, more demographic and health related actuarial data and improved regulation of the health insurance industry.

### **Social insurance programs: trends, eligibility, benefits, and contributions:**

The Civil Health Insurance Program (CIP) is mandatory for government employees and their dependants. A premium of 3% is deducted from employees' total salary with a ceiling of 30 JD per month, and some co-payments. The CIP benefits are unlimited and are completely free to all irrespective of their ability to pay. Military personnel and their dependants pay very limited premiums (ranging between 1–5 JD per month based on military rank) and receive care in MOH and RMS institutions. JUH and KAK cover their employees and dependants as well as the two universities students and serve as a fee for services referral centers for other public programs and private payers. UNRWA provides care to registered Palestinian refugees. Private health insurance is administered either by private insurance companies or by self-insured firms. A survey conducted by PHR-plus indicates that over 50% of workers in the private sector are without any form of employer-sponsored insurance cover.

The government is adopting a plan to gradually extend the social health insurance program to cover all vulnerable people who are not insured and can not buy private health insurance. The followings steps and reforms have been taken to achieve this plan:

- The Civil Health Insurance Law was amended in 2004 to insure the family members of the government female employees and to allow voluntary insurance for non-governmental employees and self-employed.
- Providing free health insurance for children less than six years of age (350,000 children) and for the people in poor and less advantaged areas.
- Extending contractual arrangements with the private sector and other autonomous health providers.
- Adopting some prospective payment mechanisms to control the costs of treatment as: bed leasing; payment per case; payment per episode.
- Planning for the establishment of an independent health insurance organization.

- Planning for providing free health insurance for senior citizens (more than 65 years of age).

### **Private insurance programs: trends, eligibility, benefits, and contributions:**

The private health-financing sector comprises private insurance companies, self-insured firms, and third party administrators (TPA). Twenty firms offer health insurance, and they cover an estimated 138,815 beneficiaries, mostly middle and upper class professionals. Health insurance premiums represent only 12% of all insurance premiums. Insurance executives interviewed did not consider health insurance a highly profitable product. The number of self-insured firms is unknown, but most large employers offer health benefits to their employees. The estimated number of beneficiaries ranges from 390,000 to 650,000. There are only three TPA firms in Jordan. They service 74,300 beneficiaries through contracts with insurance companies and a few self-insured firms.<sup>47</sup>

Private insurers design health insurance policies to contain costs and control risk by excluding many diseases and treatments. Underwriting is typically done on an individual basis using age, sex, and reported medical use. Companies do not typically use professional actuaries or community rating. Only the TPAs and one insurance company have automated systems to review and pay medical claims. Companies do little market research or advertising for health insurance products because few consider health insurance as a growth industry with the potential for significant profits. Most companies sell health insurance policies through insurance brokers or directly to clients. Some companies restrict the number of brokers who can sell health insurance. Many sales are accommodations to existing customers.

Insurance companies and self-insured firms deal primarily with private sector physicians and hospitals. They have used both contractual (insurer pays providers) and indemnification (insurer pays beneficiary) approaches. Contracts with providers are usually simple and primarily define the terms for payment. Private third party payers follow government and professional price controls to pay hospitals and physicians. Recently some third party payers have begun to negotiate with groups of providers to establish provider networks, particularly in Amman where there is an over-supply of private hospital beds and physicians. However, Jordan presently has no integrated delivery system that would unite the provision and financing of care. They conduct utilization review on a case-by-case basis, typically focusing on determination of eligibility or benefits, as opposed to practice patterns or part of a quality assurance effort. Existing management information systems are rudimentary. Insurance executives are knowledgeable administrators and TPAs are developing further capacity in health insurance, provider management, and claims systems, but many more workers need to be trained.

Third party payers have not organized themselves to manage government relations in a coordinated manner. Instead, each company deals with the government independently. What regulation there is, is done by the Ministry of Industry and Trade (MIT) through the Controller of Insurance. Regulation of insurance is minimal, and there is no regulation specific to health insurance. There is little coordination between the MOH and the MIT. The single most important factor that determines the role of private third party payers in any country's health sector, is the role of the public sector in the financing and delivery of health services. Private third party payers typically evolve in response to the gaps in coverage or the perceived deficiencies of the public health system. Thus, private insurance provides coverage: for people who are ineligible for the public insurance

program, for people who withdraw from a public insurance program, and for people who seek supplemental or additional coverage. In determining a role for private third party payers, policymakers should consider their potential advantages, which includes expertise, flexibility, innovation, capital, credibility, and increased consumer choice.

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## 6.6 Provider Payment Mechanisms

### **Hospital payment: methods, any recent changes; Consequences and current key issues/ concerns:**

Hospitals are paid mainly according to fee-for-service method. The private hospitals determine their fee schedules in coordination with the MOH. The Cabinet determines the MOH hospitals fees. RMS and autonomous public hospitals (JUH and KAH) set their own fee schedules. In order to contain costs, new prospective payment methods have been adopted recently in Jordan. Some health contractual arrangements between the MOH and private hospitals are based on bed leasing. The MOH with technical support from PHRplus about to start piloting contracting with several private hospitals in Amman to provide a bundle as maternity health services for pregnant women insured by the CIP including prenatal, delivery and post-natal care. The hospitals will be paid according to the bundle of maternity services provided not according to fee-for-services.

### **Payment to health care personnel:**

Health care personnel employed in the public and private sectors are paid on salary basis. Physicians employed in MOH, RMS and universities hospitals receive financial incentives in additions to their salaries, from the fees granted from uninsured patients. The MOH and the Jordan Medical Association set the fees of the private physicians who work on their own. These fees are set according to a minimum and maximum scale.

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## 6.7 Contracting Out Health Services

A WHO sponsored study about the role of contractual arrangements in improving the health sector performance in Jordan<sup>48</sup> indicated that the MOH has at least 8 formal contracts or agreements for purchasing health services, 5 with private hospitals and 3 with autonomous public providers. Six contracts were reimbursed according to fee-for-service and two contracts were paid a fixed payment against leasing a specific number of hospital beds (Al-Mowasah and Al- Hayah hospitals). In addition to these formal contracts, the MOH has informal contracts with private hospitals to admit insured patients in case of emergency. About 38,000 MOH enrollees were admitted to the hospitals with which the Ministry has formal and informal contractual agreements. The total annual cost for these admissions was about JD 28 million with an average cost of JD 535 per admission. Moreover, the MOH with the support of the PHRplus is implementing a Health Insurance Pilot Project (HIPP). The main objective of this project is to extend the MOH administrative and technical capacity in the areas of contract design, contract monitoring, and contract enforcement.

The results of the study showed that most of the contractual arrangements have positive impacts on the purchaser (The MOH) and the providers (Private and autonomous public hospitals). Contracting has improved access, efficiency, and sustainability, promoted public health goals, and created an environment conducive to public- private collaboration. Although it is not evidence based, quality of contracted services is likely to be satisfactory. This could be attributed to the fact that most of the contracted hospitals

have highly skilled and well trained health personnel, advanced medical equipment and high tech diagnostic facilities, and have achieved good medical reputation inside and outside Jordan.

On the Macroeconomics level, contracting out services was successfully used by the government as a social and economic policy tool in dealing with the effects of poverty and unemployment. Indeed, the admitting of 38,000 insured patients outside MOH facilities in 2003 for example has provided almost equal number of admissions for uninsured poor patients in MOH hospitals nearly free of charge. Utilizing some of the idle beds in the private sector will reflect positively on the governments' efforts to contain the rising health care expenditures and encourage the private health sector to grow and participate effectively in the national economy.

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## 6.8 External Sources of Finance

In general, health receives only a small share of the external official development aid from bilateral donors. The exception is USAID, which currently allocates about US\$ 10 million annually for health out of a total between US\$ 150 and 200 million. The focus is on two major areas: health reform (including Health Insurance, Hospital System Improvement, National Health Accounts, Hospital Accreditation, Drug Rational Use, Management accounting and statistics (MASH)) addressed by the Partners for Health Reform project (PHRplus) and PHC/reproductive health, addressed by the PHCI initiative. The Governments of Norway, Switzerland and Spain are also reported to have provided support to the health sector.

UNDP's programs in health-related areas are limited to collaboration with the Department of Statistics in planning the household, income and expenditure survey and collaboration in inter-agency projects led by WHO such as HIV/AIDS prevention, media and health, and Healthy Villages.

UNICEF is focusing its 5-year plan on the following areas in the health sector: PHC, nutrition and healthy lifestyles with commitments in 2001 for US\$ 270 000.

UNFPA is committing resources for US\$ 3.5 million over the 5-year period 2003–2007, addressing, as far as health is concerned, integration of reproductive health into PHC, strengthening of national capacities, community awareness on reproductive health and gender issues, including male involvement and barriers to women's access to reproductive health services.

Recently the UN finalized the CCA and UNDAF for Jordan, focusing on eight priority areas for coordinated action of the UN agencies operating in the country. The biennial program budget is about US\$ 1.5 million and activities are defined according to the JPRM. Apart from the regular budget, funds are also raised every year (amounting to about US\$ 0.5 million from September 2001 to October 2002). Additional funds are obtained from headquarters and the regional budget to sponsor a large number of training fellowships and participation of Jordanian officials and staff from the Ministry of Health and other ministries in WHO and international/regional meetings or conferences.

There is currently no investment in health from the European Commission. Their emphasis is on public sector reform initiatives. However, there is interest in collaboration in relevant areas such as health insurance and human resources development, both representing major challenges for health development in Jordan. Potentials for future collaboration require further discussion and interaction.

As far as aid agencies of other EU Member States, such as the United Kingdom, it appears that Jordan is less eligible than other developing countries for bilateral support in the social sector including health. However, their interest in the economic and social reform could provide opportunities for collaboration. As an example, the United Kingdom Department for International Development is among the so-called "like-minded" donors actively supporting the WHO Country Focus Initiative for strengthening WHO presence and performance at country level; hence, collaboration could be established on the multilateral channel.

## 7 HUMAN RESOURCES

### 7.1 Human resources availability

Jordan has 2.3 physicians, 3.0 nurses, 1.2 pharmacists and 0.7 dentists per thousand population (Tables 6.1 and 6.2). During the last four years the number of all health professions and their percentages to population have been increasing. Physician to population ratio is higher than most of MENA region and other lower middle-income countries. Tables 6.5 to 6.9 indicate the national education programs for health professions, average cost of education for health professions, student teacher ratios, gender of students studying the health professions and national totals of intakes/outputs for health professions education.<sup>50</sup>

#### Distribution of human resources according to category:

Table 6.2 shows the percentage distribution of current staff at MOH by category. Of the total MOH staff in November 2004, almost 13.5% are doctors (of all types, including residents). 27.6% are nurses, but of these, only 15.7% are qualified (are registered nurses, associate nurses or midwives). Almost 15% of all staff are in the management and administration category and almost 24% are ancillary.<sup>50</sup>

#### Distribution of human resources according to work place:

Of the almost 24,000 total MOH staff, 9% (2,057) are working in the central Ministry of Health. In comparison with some other countries for which data are available, 9% is very high. For example, in Zimbabwe in 2000, where the MOH employed a total of 22,000 staff for a population of almost 11 million, only 330 staff (1.5%) was working at the central MOH. Of the total doctors of all types working for the MOH, 64% are working in hospitals, 29% in health centers and 7% in management positions at the central MOH and health directorates. Table 6.3 shows that 86% of the MOH registered nurses work in hospitals, while only 6% work at PHC.<sup>50</sup>

Table ( 6.1 )

Health Personnel Rate per 10.000 Population (2000-2004)

Year \ Category	2000	2001	2002	2003	2004
Physicians	19.0	20.5	22.0	22.6	22.4
Dentists	5.7	5.5	4.5	6.3	7.3
Pharmacist	8.6	9.6	11.2	11.6	12.6
Registered Nureses	13.4	14.1	14.7	15.9	17.5
Associate Degree Nursing	-	-	-	1.7	3.0
Assistant Nurses	11.5	10.9	10.8	9.2	9.0
Midwives	2.4	2.5	2.6	2.7	3.0

Source : MOH Annual Statistical Report,2004

**Table 6.2: Percent Distribution of Staff by Category**

<b>Staff Category</b>	<b>Percent</b>
Medical Specialists	4.97%
GPs	4.45%
All Doctors	13.42%
Dental Specialists	0.26%
Dentists	1.84%
Registered Nurses	9.34%
Midwives	4.01%
Assistant Nurses	11.87%
All Nurses	27.61%
Pharmacy Staff	5.13%
Laboratory Staff	3.89%
Admin. Staff	14.75%
Ancillary	23.68%
Other Staff	9.42%
<b>TOTAL</b>	<b>100%</b>

*Source:* health resources assessment study, MOH and USAID, 2004.

**Table 6.3: Medical Personnel by Sector, 2003**

	<b>Physicians</b>	<b>%</b>	<b>Pharmacists</b>	<b>%</b>	<b>Nurses</b>	<b>%</b>
Public	4728	38.2	424	6.7	9675	59.8
MOH	3236	26.1	221	3.5	6124	37.8
RMS	958	7.7	137	2.2	2885	17.8
Other public	534	4.3	66	1.0	666	4.1
Private	7647	61.8	5909	93.3	6512	40.2
<b>Total</b>	<b>12375</b>		<b>6333</b>		<b>16187</b>	
<b>Rate per 1000 population</b>	<b>2.3</b>		<b>1.2</b>		<b>3.0</b>	

Notes:

1 Includes UNRWA.

2 Nurses include registered nurses, associate nurses and assistant nurses.

*Source:* MOH Health Information Center

### Trends in skill mix, turnover and distribution and key current human resource issues and concerns:

The MOH, with assistance from WHO, assessed the status of human resources development (HRD) in 1998. The assessment highlighted the need for a long-term policy and plan for the production of a balanced human resource. Despite the existence of procedures for HR management issues such as recruitment, hiring, firing, transfer and promotion, they were not used consistently. There were major gaps in relation to performance management. Job descriptions may have existed but were not up-to-date and were very general. There was no formal continuing education system. In addition, the relationship between health service provision and pre-service training institutions (medical and other health professional schools) was loose.<sup>49</sup> A recent health resources assessment study done in 2004 by MOH and USAID<sup>50</sup> revealed almost the same gaps mentioned in the MOH/WHO assessment.

The MOH has recently established the Academy of Health to respond to the above challenges. A one-year diploma course in community medicine, supported by WHO, has been in operation for about 10 years. More than 150 physicians have graduated, most of them are still working in MOH institutions. A similar, WHO-supported program in family medicine has been established. A new M.Sc course on health management has been established in collaboration with WHO. Moreover, training courses have been conducted for different categories of health providers. A MOH fellowship plan has recently been developed. It is expected that after the implementation of the national accreditation program, which is now in piloting stage, formal continuing education will be common practice in all healthcare facilities in Jordan.

**Table 6.4: Qualifications of MOH Registered Nurses**

Place of Work	Masters' Degree	Baccalaureate Degree	3-Year RN Diploma	1-Year Specialist Diploma	All Qualifications
Central MOH	24 (53%)	28 (3%)	54 (4%)	1 (20%)	107 (5%)
Health Directorate	1 (2%)	69 (8%)	32 (2%)	-	102 (4%)
Hospital	17 (38%)	714 (86%)	1,264 (87%)	4 (80%)	1,999 (86%)
Comprehensive H/C	2 (4%)	12 (1%)	45 (3%)	-	59 (3%)
Primary H/C	1 (2%)	11 (1%)	56 (4%)	-	68 (3%)
MCH Center	-	-	2 (0.1%)	-	2 (0.1%)
Village H/C	-	-	1 (0.1%)	-	1 (0.04%)
Sub-Total: H/Cs	3 (7%)	23 (3%)	104 (7%)	0	130 (6%)
TOTAL ALL WORKPLACES	45	834	1,454	5	2,338

*Source:* Health Resources Assessment Study, MOH and USAID, 2004.

**Table 6.5: Average Cost of Education for Health Professions**

Profession	Competitive	Total JD	Non-Competitive	Total JD
	Cost/Credit Hour		Cost/Credit Hour	
Bachelor's Degree				
Medicine	40.5	10,363	163	41,746
Nursing	12.5	1,600	53.30	6,845
Pharmacy	25	3,876	83	12,950
Dentistry	35.5	7,221	163	33,247
Laboratory	32	4,416	50	6,900
Physiotherapy	33	4,270	66.5	8,572
Nutrition	21	2,850	63	8,592

*Source:* Health Resources Assessment Study, MOH and USAID, 2004.

**Table 6.6 Student Teacher Ratios**

Education Program	Students per Teacher	
	Public	Private
MOHE/Universities: Basic		
Medical Doctor (6 years)	12	
Dentistry (5 years)	18	
Pharmacy (5 years)	40	23
Nursing (4 years)	36	31
Laboratory Technology (4 years)	11	
MOHE/Colleges (Associate Degree)		
Pharmacy Assistant	(1)	(1)
Associate Nurse	(1)	(1)
MOH Institutes (Assoc. Degree/ Diploma)		
Community Medicine (Diploma)	(1)	(1)
Associate Nurse	17	
Associate Midwife	16	
Pharmacy Assistant	(1)	(1)
Laboratory Assistant	(1)	(1)
Physiotherapy Assistant	28	
X Ray Technicians	(1)	(1)
Anesthesia Assistant	(1)	(1)
Critical Care/PHC/Clinical Inst.	1.5	

*Source:* Health Resources Assessment Study, MOH and USAID, 2004.

**Accreditation, Registration Mechanisms for HR Institutions:**

HR institutions are registered by the Ministry of High Education and accredited by the High Education Accreditation Council.

**7.2 Human Resource Policy and Reforms:**

In terms of health manpower, reforms dealing with the geographic distribution, training of physicians, nurses, and allied and technical personnel, and continuing education, could improve access, quality, and the efficiency of service delivery. While the current Health Resources Initiative, the Hospital System Improvement and PHCI Projects financed by the USAID and the WHO Human Resources Development projects address some of these issues, further reforms are clearly warranted. There are regional disparities in the distribution of physicians as evidenced by the difference in physician population ratios between Amman and some of the rural governorates. While the MOH has done a great deal to place clinics in these rural areas, it continuously faces the usual obstacles of placing professionals. Policies and appropriate incentives should be developed to attract and retain physicians in rural areas. In addition there is need to strengthen training, and increase the number of professionals trained, in emergency care and obstetric services.

Jordan needs to do more to strengthen and maintain the skills of all its health personnel, but especially nurses and other allied health and technical personnel. Foreign training is expensive and should focus more strongly on preparing qualified teachers, rather than practitioners, in the health disciplines. Medical curricula for undergraduates and postgraduates should be reformed from its current hospital orientation toward a community-based model emphasizing prevention and management of common childhood diseases and outpatient treatment and detection of chronic disorders such as diabetes and cancer. Certification procedures for physicians should be reviewed to ensure the quality of physician services. Continuing education programs (such as conferences jointly sponsored by the MOH, RMS, JUH, and the private sector), need to be strengthened as well, making them more readily available to nurses, paramedical technicians, and other support staff.

## 8 HEALTH SERVICE DELIVERY

### 8.1 Primary Care

#### **Access to primary care and infra structure:**

MOH operates an extensive primary health care network, consisting of 260 village health clinics (VHCs), 340 primary health care (PHC) centers, 353 maternity and child centers, 53 comprehensive health centers, 12 chest diseases centers and 251 dental clinics. With about 2.3 centers per 10,000 populations, and with an average patient travel time to the nearest centre of 30 minutes, this represents a high-density system by international standards. In addition to the MOH network, UNRWA operates 21 primary care centers and 30 special care clinics for Jordan's Palestinian refugees. The private sector is already active in curative primary care, accounting for nearly 40% of all initial patient contacts. Private practice is mainly confined to urban areas and caters to better – off Jordanians who can afford private sector fees.<sup>25</sup>

#### **Package of services for PHC:**

In addition to the full range of personal primary patient care included dental care, the PHC centers are also responsible for public health activities not directly related to patient care and for health data collection / information systems at the local level. Public health activities (health education, water safety, sanitation, food quality control, pest control etc.) are usually performed by paramedical staff at the PHC level, under the supervision of the doctor in charge.

The following is a brief description of the PHC centers respective roles and package of services provided:

**Primary health centre:** Headed by a GP and provides both curative and preventive health services, including dental services and school health. They do food inspections and perform simple epidemiological investigations.

**Comprehensive Health Centre:** In addition to the services provided by the primary health centers, the comprehensive health centre also provides specialty care in the areas of pediatrics, gynecology, internal medicine, orthopedics, ENT, ophthalmology, dermatology and dentistry.

**Village Health Centre:** Originally intended to provide health promotion in villages and to maintain simple information about births, deaths, etc. Their actual functions are presently not in line with the original intention. GPs will visit to attend to patients.

#### **Health information system in PHC:**

Health data are collected at all levels of the primary care system. They include both qualitative and quantitative information, which is usually processed at the local health directorate level. An emergency reporting system exists, allowing the fast mobilization of resources in the event of epidemics. However, most of the data are simply collected for onward transmission to the MOH (Directorate of Information). There is hardly any analysis at, or feedback of information to, the local level. The data collected are often not sufficiently utilized at the central level. Epidemiological reporting is difficult to use as the classification of diseases is too wide and ambiguous. No standard forms exist for

handling patient personal data at the primary care level, and the exchange of information between primary care facilities and hospitals is limited. A project managed by Partners for Health Reform (PHRplus) and financed by USAID aims at exchanging on-line information between maternity health centers and maternity departments in three MOH pilot hospitals is on going now. This project will serve as a model to build a health information network between primary healthcare and hospitals.

### **Cost of PHC:**

Staffing patterns and costs of primary care services were evaluated in a study conducted by the Primary Health care Initiatives (PHCI) in 2001. The study, which involved 97 primary health centers, concluded that a large proportion of provider's time was not being used effectively. The majority of patients received treatment between 9.00 am and 11.30 am, and the patient contact time with the provider was too short. The study results showed that the economic costs of primary health care facilities in 1999 amounted to JD 42.3 million. The share of personnel cost was 54% of the recurrent costs, followed by clinical supplies (24%) and drugs (20%).

The average cost per visit was JD 4.5. Cost per visit to the general practitioner was JD 3.1. Prenatal /post natal visits cost JD 14.7. The cost increases when client volume goes down with a range between JD 3.3 for a visit in the high volume centers to more than JD 20 in the low volume centers. Primary care centers appear to have the lowest cost per visit (JD 4.0) compared to comprehensive health centers (JD 5.7) and village health centers (JD 6.3). Strengthening referral systems, adopting appointment systems, reconsidering the expansion of village health centers, introducing a cost conscious culture in the health system and among health professionals were some of the major recommendations of the study.<sup>25</sup>

### **Quality of PHC:**

A major project funded by the United State Agency for International Development (USAID) called Primary Health Care Initiative (PHCI) is currently making a significant contribution to strengthening primary health care in Jordan. The PHCI project is a five-year bilateral program reaching its five year by the end of 2005. The approach for this project combines efforts to support training, quality improvement, management support systems, applied research, health management information system, health communication and marketing, purchasing of essential equipment and renovation of selected healthcare centers.<sup>51</sup>

The MOH in collaboration with the WHO office in Amman and PHCI has developed national quality standards for primary healthcare.<sup>180</sup> health centers have been meeting these standards by the end of May 2005 and were awarded quality certificates by the MOH and WHO.

## **8.2 Secondary and Tertiary Care**

Table 7.1 indicates that Jordan has 1.8 inpatient beds per thousand population; 12.3 percent of the population is admitted annually to hospitals; hospital lengths of stay average 3.3 days; individuals use on average 0.4 inpatient days per year; and the hospital occupancy rate is 63.3 percent.

Jordan has experienced substantial increases in capacity from 1990 to 2004. The number of hospital beds has increased by 65 percent. Admissions per 100 populations increased from 11.3 t to 12.3, and hospital occupancy rate increased from 60.1 to 63.3

percent. Jordan's bed capacity is comparable with the MENA region and other lower middle income countries, while its physician to population ratio is higher than most of these countries. Jordan has more physicians and fewer beds than Turkey. However, there is significant excess bed capacity as indicated by the low hospital occupancy rate especially in the private sector, out of the total of 9376 hospital beds in 2004, 3275 36% were in the private sector.<sup>15</sup>

**Table 7.1: Inpatient use and performance**

	1990	1994	2004
Hospital Bed	5699	6620	9376
Hospital Beds/1,000	1.80	1.64	1.80
Admissions/100	11.3	11.2	12.3
Average LOS (days)	3.5	3.4	3.3
Occupancy Rate (%)	60.1	62.7	63.3

*Source:* Health Sector Study, World Bank, 1997; MOH Annual Report, 2004.

### Utilization Rates

Admission rate per 1000 population was 115.5 for the year 2004 (78.4 admissions in the public sector and 37 admissions in the private sector) (Table 7.2). The overall bed occupancy rate for 2004 was 63.3%. A great variation exists between the occupancy rate in the public sector (72%) and the private sector (46.2%). The RMS has the highest bed occupancy rate (79%) followed by university hospitals (72.5) then MOH hospitals (69.8%).

The majority of hospitals in Jordan are short-term facilities. The MOH psychiatric hospital is the only hospital in Jordan that provides long-term care.

**Table 7.2 Utilization Rates for Jordan, 2003**

Sector	Admission rates (per 1000 population)	Average length of stay (days)	Occupancy rates (%)
Public	78.4	3.7	72
MOH	49.3	3.2	69.8
RMS	21.9	4.4	79
Other public	7.2	4.8	72.5
Private	37.0	2.6	46.2
Total	115.4	3.3	63.3

*Source:* Public Expenditure Review (draft report), 2004.

**Table 7.4: Utilization Static in MOH Hospitals (200-2004)**

Item		Year				
		2000	2001	2002	2003	2004
Admissions		257272	263981	264031	269450	271866
Discharged	Alive	250013	260213	261380	263934	267862
	Dead	3162	3041	3199	3683	3997
Death Rate %		1.2	1.2	1.2	1.3	1.4
Occupancy Rate %		740	76.4	72.2	71.3	69.8
Average Length of Stay		3.3	3.2	3.3	3.2	3.2
Surgical Operations		74474	76671	76879	76200	80405
Deliveries		67313	68749	70505	72556	71487

Source: MOH Annual Report, 2004.

## 8.3 Pharmaceuticals

### Consumption of Pharmaceuticals in Jordan:

The drug policy studies performed for Jordan by the Health Insurance Commission, Australia<sup>52</sup>, indicated that the expenditure on pharmaceuticals in 2003 was JD 211 million (about US\$295 million). Over the last 5 years, the average growth rate has been about 3%. This is due to increases in both drug costs and consumption rates. The rate of growth is considerably lower than that of most developed countries. The population of over 5 million uses the pharmaceuticals and the average rate of growth in the use of pharmaceuticals per person is about 3%, after allowing for population increases.

Pharmaceuticals are supplied through both the public and private sectors. For the public sector, drugs are acquired through tenders in the generic (or scientific) name. These tenders are through one of four sources, the Ministry of Health (MOH), the Royal Medical Services (RMS), the Jordan University Hospital (JUH) and King Abdullah Hospital (KAH). The Joint Procurement Directorate (JPD), which was established in 2004, is expected to purchase drugs for all public health sectors by the end of 2005.

**Table 7.5 Total consumption of pharmaceutical in Jordan (Million JD)**

Item	1999	2000	2001	2002	2003
Imports	102.9	104	121.3	142.2	157.4
Increase in Imports		+1.10%	+16.59%	+17.26%	+10.66
Local Production	62.1	56.1	63.2	49.1	53.5
Increase in Local production		-9.79%	+12.81%	-22.27%	+8.86%
Total Consumption	165.1	160.1	184.6	191.4	211
Increase in Total Consumption	+4.93%	-3.00%	+15.27%	+3.71%	+10.20%
Local Production as a Percentage of Total Production	37.66%	35.03%	34.28%	25.69%	25.38%
Imports as a Percentage of Total Consumption	62.34%	64.97%	65.72%	74.31%	74.62%
Average Consumption per Person	33.699	31.787	35.629	35.632	38.505
Increase in Consumption per Person		-5.67%	+12.09%	0.00%	+8.06

*Source:* Impacts of Change in the Pricing Structure of Drugs in Jordan, Health Insurance Commission, Australia, 2004.

From the table 7.5, between 1999 and 2003:

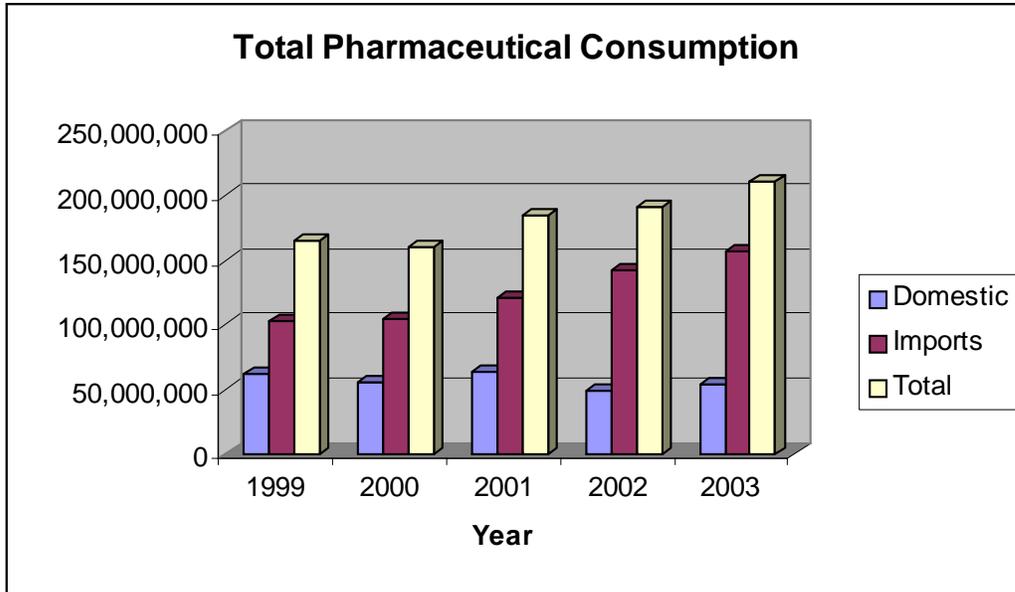
- The total market increased from 165 million JD to 211 million JD (28%);
- Imports increased from 103 million JD to 157 million JD (52%); while
- Domestic production decreased from 62 million JD to 53 million JD (-14%).

In 2002, the main source of imports was from Europe (61.73%) with the USA second (36.79%).

The table also indicates that total consumption of drugs has been increasing mainly due to imports. Between 1999 and 2003 production by local companies has decreased both

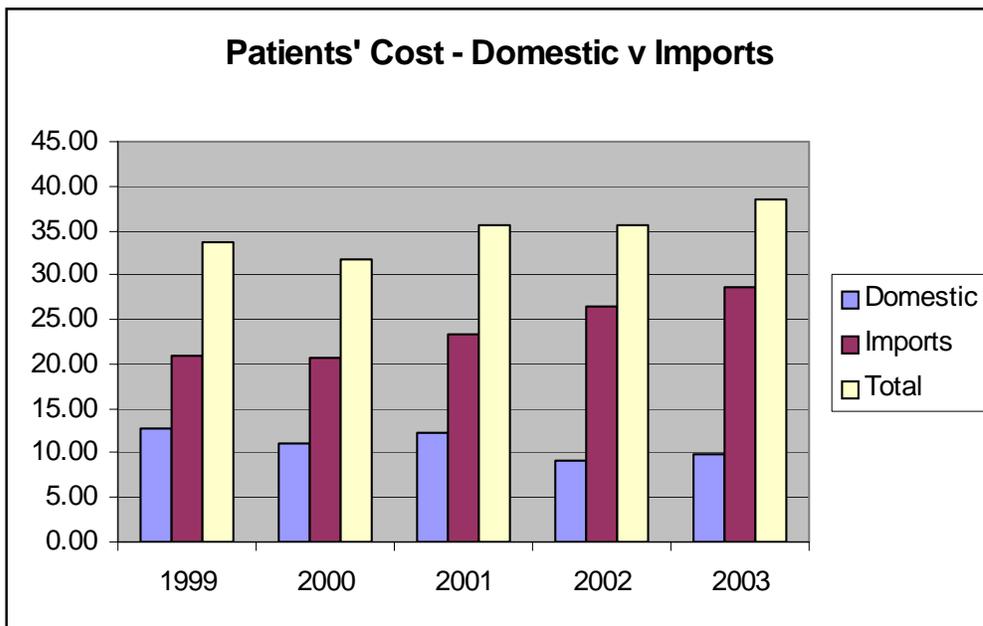
in terms of monetary value and in share of the market. The reason for the decrease is due to higher priced new products being imported and greater competition from imported generics.

**Figure 7.1 Total Pharmaceutical Consumption in Jordan (1999-2003)**



Source: Impacts of Change in the Pricing Structure of Drugs in Jordan, Health Insurance Commission, Australia, 2004.

**Figure 7.2 Drug cost- Domestic Vs Imports**



Source: Impacts of Change in the Pricing Structure of Drugs in Jordan, Health Insurance Commission, Australia, 2004

**Systems for procurement, supply, distribution:**

In Jordan, public sector drug supply is through four existing agencies namely the Ministry of Health (MOH), the Royal Medical Service (RMS), the Jordan University Hospital (JUH) and King Abdullah University Hospital(KAUH). Processes for drug acquisition and supply are well designed and established, however there have been increasing periods when prescribed drugs have been unavailable.

All agencies appropriately separate the processes in the quantification, tendering, selection, procurement, payment aspects of drug supply. The RMS has an existing process from end-point users (pharmacists in hospitals and health centers) which reports back drugs in stock and requests alteration to their drug supply quota. The MOH is in the process of a major exercise to determine what changes are necessary to improve their procurement and stock management. A methodology being considered is providing each institution with a drug budget and cost prices and delegating to them the actual calculation of their drug requirement within their available budget. The local hospital administration would have to set the services, which they deliver within the available budget.

When drugs are out of stock in the MOH, patients can obtain their required therapy from private pharmacies. Subsequently the MOH Health Insurance Directorate reimburses the costs. The annual budget for this activity is JD3 million. This amount is some 11% of the total MOH drug supply budget of JD27 million. If overall drug procurement in the public sector can be made more efficient with fewer stock-outs, then more therapy can be provided to more people for the same Government financial input. In other words, better health outcomes will be achieved for no additional cost.

Public sector drug procurement reform is being addressed through establishment of the Joint Procurement Directorate to serve all four agencies. The Director of this new agency has recently been appointed.

In the private sector, drugs are distributed through pharmacies. Several different brands of the one chemical entity can be listed. Private health insurance funds generally require providers to prescribe branded drugs that are lowest cost in a given bio-equivalent category. However, the present drug law does not allow for brand substitution or other changes to the prescription unless the prescribing doctor has formally accepted it in writing. This applies where the patient is insured and the majority of the people (68%) are insured.

**Essential drugs list:**

Jordan has established a comprehensive National Drug Policy (NDP) 53 and a comprehensive Essential Drug List (EDL). Unfortunately the EDL was established by a small select central group of experts and has not been promoted effectively. As a result, a national effort is now taking place to develop new and comprehensive EDL. Several technical committees that represent all medical specialties from all health sectors have been working on the new EDL since January 2005. This project is sponsored by the USAID with technical support from PHRplus project.

**Manufacture of Medicines:**

In 2003 the Jordanian pharmaceutical market was made up of imported products (75%) and locally manufactured products (25%). Most of the locally-produced drugs are alternative versions of the original products, usually sold under a commercial name (branded generics). About 5% of the local production is produced under license through

an agreement with the originator and there is some local labeling and packaging undertaken using products supplied in bulk from the originator. A large part of the imports is made up of generic products.

The Jordanian pharmaceutical industry (comprising 18 companies) is dynamic, profitable and export-oriented, with exports markets in over 60 countries, including the Middle East, South Africa, Europe and North America (export is limited with Egypt and Syria as these countries have protection arrangements for the local industry – though it is understood that the situation in Syria is currently undergoing change). In 2003 total production for the local industry totaled JD141.6 million. Out of this JD103.0 million (73%) was exported. The remaining JD38.6 million was for local consumption and of this JD9.9 million (25.6%) was for tenders. The industry represents a capital investment in excess of US\$400 million and generates over 4,000 jobs.<sup>52</sup>

### **Regulatory Authority: System for Registration, Licensing, Quality Control and Pricing:**

The JFDA, which was established in 2003, is responsible for drug registration, licensing, quality control and pricing.

#### **Drugs Pricing:**

Prices for drugs will vary depending on the procurement arrangement. For the public sector where procurement is through tender, the prices will be the cheapest. The Jordanian Food and Drug Administration (JFDA) determine the price paid for pharmaceuticals in the private sector. The final figure includes the drug cost, an administration and profit margin wholesalers and a margin for retailers. The margins in all cases are based on a fixed percentage of the cumulative cost.

#### **Drug Quality Control:**

The drug quality control laboratory is the only reference laboratory in Jordan that controls the analysis of each batch of local manufactured and imported drugs, surgical and disposables. In addition to this responsibility it also receives recalled drugs from the inspection department in JFDA and undertakes all the required tests. The JFDA is responsible for developing and updating the level of performance of drug quality control laboratory by providing it with updated supplies and equipment and by providing training courses in different aspects for technicians to keep them well trained and experienced.

In Jordan, as in all countries, increasing antibiotic resistance is a major public health problem. The results of many studies performed by Jordanian researchers show a dramatic increase in penicillin resistance to *Streptococcus pneumonia* (an important community pathogen causing meningitis, pneumonia, otitis media, etc), high levels of antimicrobial resistance in urinary and faecal pathogens and severe problems of antibiotic-resistant nosocomial infection in tertiary hospital neonatal and adult intensive care units. The findings of these studies highlight the need for antibiotic control policies, including tightening the current lax controls on obtaining antibiotics from pharmacies in Jordan without the need to present a prescription.<sup>23</sup>

#### **Reforms over the last 10 years:**

- The preparation of the national drug policy<sup>53</sup> has been finalized and approved by the Cabinet and a plan of action has been prepared for the implementation of the policy with the help of consultants from the World Bank and WHO.

- EDL and Jordan national drug formulary (NDF) for the EDL was updated during the biennium 2000-2001. A national project to update the NDF and the EDL is now taking place and expected to finish by the end of 2005. This effort is organized and sponsored by PHRplus project, which is funded by the USAID.
- A new Drug and Pharmacy Law and a Clinical Studies Law were approved from the Cabinet.
- Jordan recently established a Jordanian pharmaco-vigilance system, main centre in drug directorate and two other sites at the Jordan university hospital and Jordan University of Science and Technology.
- A national policy committee is working as an advisory body to JFDA in the evaluation and monitoring of the different activities of the National Drug Policy.
- The establishment of the Jordan Food and Drug Administration (JFDA).
- The establishment of the Rational Drug Use Unit in JFDA.
- The establishment of the Joint Procurement Directorate (JPD).
- Development of a national system to promote rational use of drugs by conducting survey about using EDL and conducting training workshop for pharmacists on rational use of drugs and EDL and preparing Guidelines for treatment of Hypertension.
- Preparation of standard Good Laboratory Practice (GLP) and standard Good Clinical Practice (GCP).

### **Current issues and concerns**

The high cost of drugs is a major constraint. The five drug groups responsible for the highest cost as shown in Table (7.6) below are: anti-infective agents, cardiovascular drugs, drugs affecting the central nervous system, endocrine drugs and drugs directed at the respiratory tract<sup>52</sup>. Other major constraints encountered by the drug supply system include its fragmented structure, irrational use of drugs and inadequate drug information services. The MOH in collaboration with the World Bank and WHO developed a National Drug Policy in 2000 to serve as a framework for future development of the pharmaceutical sector and to upgrade the drug control administration, procurement, registration of drugs and traditional medicines, quality control and post-marketing surveillance and utilization system in addition to strengthening initiatives on the rational use of drugs. Lack of expertise in these areas continues to exist.

### **Planned reforms:**

- Strengthen the role of clinical pharmacy in patient care.
- Development of a national drug information system.
- Enforcement of the EDL.
- Development of standard treatment protocols.
- Rationalizing prescription and dispensing.
- Enforcement of generic substitution.
- Creating a drug research and development council.

## 9 HEALTH SYSTEM REFORMS

### 9.1 Background of health reforms

In 1996, the Jordan Government and the World Bank conducted a comprehensive study on the Jordan health sector and recommend necessary changes. The study was completed in April 1997 with the release of a Report entitled "Hashemite Kingdom of Jordan: Health Sector Study". The study concluded that Jordan's health system performs well in terms of access and health outcomes. Yet, the system is expensive and inequitable, and quality can be variable. Rapid growth of the largely unregulated private sector in an era of constrained public spending is resulting in a two-tiered system of care. Lack of a coordinated policy apparatus and relevant data for decision-making preclude effective policy-making across Jordan's multiple financing arrangements and delivery systems. With private financing accounting for over 50 percent of all health spending and private delivery capacity providing more than 30 percent of overall delivery system capacity and growing, Jordan has come to a crossroads. Passive acceptance of the status quo will result in a U.S. type system with costs out of control, gaps in coverage and access problems for vulnerable populations, wasteful excess capacity, and relatively poor health outcomes for the amounts spent. Moreover, the continued costs of the public programs driven by the epidemiological transition, population aging, a continued high birth rate, and clinical and economic inefficiencies will hinder efforts to achieve macroeconomic stability and growth.

According to this report, the following reform agenda was proposed and adopted by the successive governments:

**a. Improve management of the health sector by:**

- Improving management capacity at every level of the system including providing management information systems, computerization, and training.
- Developing necessary data for decision-making including National Health Accounts, coverage information, basic epidemiological information on mortality, morbidity, and underlying risk factors, and basic cost information at the individual facility level.
- Decentralizing decision-making to the facility level, and providing individual facility managers with the necessary authority and management information to effectively manage their facilities.

**b. Improve health status and clinical practice by:**

- Developing and disseminating treatment protocols for communicable and non-communicable diseases and providing appropriate training in their use.
- Adapting the WHO/UNICEF approach to integrated management of childhood illness.
- Focusing programs to eliminate regional disparities in maternal and child health outcomes.
- Improving the availability and delivery of family planning services.
- Promoting outpatient treatment of chronic conditions.

- Undertaking a major health education effort in anti-smoking, exercise, nutrition, and the wearing of seat belts.
  - Developing a comprehensive national cancer control strategy which includes expansions of anti-smoking programs and early detection of cancer (particularly breast cancer).
- c. Improve equity and access by extending formal universal coverage to the entire population by:**
- Undertaking a major study that analyzes the costs, alternative financing arrangements, and implementation issues associated with a politically acceptable set of options.
  - Including universal coverage as the center piece in a major national reform effort.
- d. Improve the efficiency and clinical effectiveness of the service delivery system by:**
- Developing options to reform Jordan's centralized medical care provider payment systems.
  - Developing appropriate norms and standards for facilities.
  - Undertaking a comprehensive study to establish an effective referral system for the individual public programs as well as across programs focusing on needed training, patient and physician incentives, scheduling, and improvements in physical infrastructure, supplies, and equipment.
  - Developing a master plan of all major secondary and tertiary facilities in the MOH, RMS, and JUH and ultimately in the private sector.
  - Developing a capital investment strategy to eliminate excess capacity, redress geographic imbalances in service availability, and improve the functional conditions in MOH, RMS and JUH facilities.
- e. Improve efficiency, health outcomes, and quality of the pharmaceutical sector undertaking a major study and reform focusing on:**
- Developing a national pharmaceutical policy including a list of essential drugs for public programs and overhaul of the present pricing system.
  - Analyzing the potential economies from combining some or all the procurement, storage, and distribution functions of the five separate systems.
  - Introducing advanced methods of forecasting annual drug requirements based on morbidity and service use statistics.
  - Developing and introducing standard treatment protocols, and training in the rational use of drugs (standard treatment schedules, generic substitution).

## 9.2 Summary of recent reforms

During the last eight years the following health system reforms have been adopted:

### 2. National health policy

The High Health Council Law was issued in 1999. According to the Law, the Council is responsible for formulating health policies in the Kingdom and developing strategies for

their implementation. The Council is headed by the Prime Minister and has representatives from all sub health sectors. A Secretary General for the High Health Council (HHC) was appointed in 2002 and the technical staff was recruited.

### **3. Health Strategy**

A National Health Strategy for the period from 1998 to 2010 was adopted in 1998. This Strategy aims at ( ):

- Supporting and strengthening primary health care
- Improving managerial, technical and professional performance in public health sector.
- Enhancing partnership between the public and the private sectors.
- Implementing a National Health Insurance System.
- Improving the health care financing in the country.
- Promoting the regional role of Jordan in providing high quality and inexpensive medical care to attract patients from other countries (Medical Tourism).
- Improving quality of health services and patient satisfaction.

### **4. Health Insurance Reforms:**

The Civil Health Insurance Law was amended in 2004 to insure the family members of the government female employees and to allow voluntary insurance for non-governmental employees and self employed.

- Providing free health insurance for children less than six years of age (350,000 children) and for the people in poor and less advantaged areas.
- Extending contractual arrangements with the private sector and other autonomous health providers.
- Adopting some prospective payment mechanisms to control the costs of treatment as: bed leasing; payment per case; payment per episode.
- Planning for the establishment of an independent health insurance organization.
- Planning for providing free health insurance for senior citizens (more than 65 years of age).

### **5. Pharmaceutical reforms:**

- The establishment of the Jordan Drug Policy in the year 2002 to rationalize drug production, procurement, distribution and use.
- First Edition of the Jordan National Drug Formulary (NDF), and the Essential Drug List (EDL) published in 1998, revised in 2002 and now under revision. (Hashemite Kingdom of Jordan. 2002, Jordan National Drug Formulary for Essential Drugs, 2nd Ed. Drug Directorate, Ministry of Health, Jordan).
- The establishment of the Jordan Food and Drug Administration (JFDA) in 2003. Article 4 of the Provisional law number 31 for year 2003 Food and Drug Administration states the following aims for the JFDA (Annex 1):
- The safety of foodstuffs, their quality and their suitability for human consumption through out their use.

- The safety of Drug (medications) and their quality control.
- The safety of other stuffs specified in the Drug and Pharmacy law which is in effect.
- The establishment of Rational Drug Use Unit within the JFDA in 2004.
- The Joint Procurement Directorate (JPD) was established in 2004, to purchase drugs for all public health sectors.
- Legislative and Regulatory Framework that covers all activities in the pharmaceutical sector was introduced during the period 2002 –2004(Annexes 1, 2, 3).
- A Jordanian Pharmaco-vigilance Centre was established in 2002 to monitor adverse drug reactions.

#### **6. Improving quality of healthcare services:**

- Rational Use of Drug Program.
- Development and application of national quality standards for primary healthcare with the collaboration of WHO and USAID (PHCI). 180 health centers have been meeting these standards by the end of May 2005 and were awarded quality certificates by the MOH and WHO.
- A Quality Control Directorate was established in the MOH to develop and monitor quality standards in all MOH facilities.
- A National Hospital Accreditation Program has been adopted since 2004. The Program was initially supported by the WHO it is now sponsored and technically supported by USAID through PHRplus. Seventeen hospitals (8 MOH hospitals, 2 RMS hospitals, 2 teaching hospitals and 5 private hospitals) were selected as pilot hospitals. The standards development phase is will be completed before the end of 2005 (Annex indicates the action plan for Jordan Hospital Accreditation Program).

#### **7. Decentralization and public hospital autonomy program.**

This program has been implemented since 1998, funded by USAID and organized by PHRplus.

#### **8. Strengthening primary health care**

A major project funded by the United State Agency for International Development (USAID) called Primary Health Care Initiative (PHCI) is currently making a significant contribution to strengthening primary health care in Jordan. The PHCI project is a five-year bilateral program reaching its five year by the end of 2005. The approach for this project combines efforts to support training, quality improvement, management support systems, applied research, health management information system, health communication and marketing, purchasing of essential equipment and renovation of selected healthcare centers.<sup>51</sup>

#### **9. Health information system reforms**

- The establishment of the National Cancer Registry and the National Death Registry in the MOH.
- Computerizing of RMS hospitals (phase one).

- Computerizing of Patient Indexes, Disease Indexes and personnel data in some MOH hospitals.
- Computerizing the MOH Biomedical Engineering Directorate.
- All private hospitals are applying computerized information systems.
- The MOH in collaborating with WHO has adopted a program to develop a central health data base for Jordan .The objectives of this program are:
  - a) Enhancing capacity building in health information process.
  - b) Dissemination of information via internet.
  - c) Capacity building in ICD 10 coding for mortality and morbidity.
  - d) 20 health directorates will have on line connection with Information Center, in each directorate a PC server, two workstations and printer will be installed currently only dial-up connection is available other choices are still under study.

#### **10. Improving the efficiency of health services and cost containment reforms**

- The MOH established Health Economics Directorate in 2002 to perform cost benefit analysis studies for the various health programs and to develop efficiency indicators.
- The National Health Accounts Unit was established in the MOH in 2001.This Unit, with the support of PHRplus, has published the 1998 and 2001 Jordan National Health Accounts Reports.
- Institutionalizing the Rational Drug Use Project (RDU) by creating a unit for RDU in the JFDA.
- Enforcement of the referral system by imposing financial penalties on non-emergency patients who visit hospital outpatient clinics or emergency departments without referral from health centers.
- Extending contracting out health services between the MOH and private sector and other autonomous public providers to utilize the underused health resources in the country especially in the private sector.
- Introducing some prospective payment methods, as mentioned before, to reimburse healthcare providers.
- Using companies who are specialized in the management of health insurance programs (e.g. NatHealth) to negotiate, manage and monitor contracted out health services.

#### **11. Human resources development reforms**

- Development of professional grading system for all health professions in the RMS.
- Development of Job Descriptions for all categories of personnel in MOH.
- Introducing incentive plans for all health professionals in RMS and for physicians in MOH.
- A formal continuing education and training system is well established in RMS. The MOH has recently developed a comprehensive plan for continuing education and training. A MOH fellowship plan has recently been developed.

- The MOH has recently established the Academy of Health to respond to human resources challenges.
- A one-year diploma course in community medicine, supported by WHO, has been in operation for about 10 years. More than 150 physicians have graduated; most of them are still working in MOH institutions. A similar, WHO-supported program in family medicine has been established (WHO, Jordan).
- The MOH has established a Human Resource Development Directorate to develop plans and programs for continuing education and training for all MOH staff.
- The Jordanian Nursing High Council was established in 2002 to set strategic plans and policies for the nursing profession in Jordan.

### 9.3 Health System Challenges

As indicated in this report, Jordan's health sector performs well in terms of access and health outcomes, which are among the best in the region and among other middle-income countries. About 70 percent of Jordan's population has formal 'health insurance' coverage. Services are delivered through an extensive network of public and private facilities, and overall capacity in terms of hospital beds and physicians is high.

While the system performs relatively well in terms of overall access and outcomes, it is facing many problems and serious challenges that need attention by health policy makers and health managers. Specific challenges facing health development in Jordan were identified in a joint MOH/WHO report on health strategies in November 2001:25

- The demographic changes representing increase in population and higher life expectancy.
- Considerable changes in lifestyles favoring the development of determinants and risk factors for chronic diseases, accidents, injuries, and substance abuse.
- The epidemiological transition and changes in the pattern of disease characterized by a progressive increase in the magnitude of non-communicable diseases like cardiovascular diseases, cancer, diabetes, mental health problems as well as accidents and health of the elderly.
- Inefficiencies observed in the provision and financing of health services.
- The lack of a rigorous appraisal (and reorientation) of the current state of human resources development in health
- The negative impact of poverty on accessibility to quality health care particularly in view of the high proportion of uninsured people
- The increasing demands and expectations of the public for effective and accessible health care.
- The rapid advances in technology and rising health care costs.
- Inadequate coordination between the public sector and the increasingly significant private sector and the lack of effective systems for monitoring and auditing clinical practice.
- The emerging environmental health issues.

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## 11 ANNEXES

- Annex 1: Provisional law #31 for year 2003 Food and Drug Administration FDA
- Annex 2: Drugs Testing Regime issued by virtue of Article (104 b) of the Provisional Drug and Pharmacy Act No. 80 of 2001
- Annex 3: Provisional Law No. (67) For the Year 2001, and the amendment No. (44) For the year 2003
- Annex 4: Organizational structure of Ministry of Health
- Annex 5: Hospital Accreditation (Work Plan) in Jordan (August 2004-September 2006) (Revised June 2005)
- Annex 6: Population by directorate 2004 and projected 214
- Annex 7: Profiles of Health Sub-Systems in Jordan

The Regional Health Systems Observatory is an undertaking of the WHO Regional Office for the Eastern Mediterranean. The Observatory supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of the dynamics of health systems in the EMR. Its primary goal is to contribute to the improvement of health system performance and outcomes, in terms of better health, fair financing and responsiveness of health systems. The aim of this initiative is to provide relevant comparative information to support policy-makers and analysts in the development of health systems and to serve as repository of information on health systems.

This document is part of a series of in-depth health systems profiles, produced and updated by the Observatory using standardized approach that allows comparison across countries.

They provide facts, figures and analysis and highlight reform initiatives in progress.



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