

**MINISTRY OF HEALTH  
SULTANATE OF OMAN**

# **ANNUAL STATISTICAL REPORT**

**1991 A.D.      1411 / 1412 A.H.**

Prepared by :  
Directorate-General of Planning



*H.M.Qaboos bin Said, Sultan of Oman*

## **PREFACE**

This annual report gives information about the health services provided in the Sultanate, both by the Ministry of Health itself and other organizations. Information is an essential tool in the management of health services. We strive to provide the best health service to all people of the Sultanate within the constraints of the current resources of the Ministry of Health. Information shows us how well these resources are being used in terms of improved service provision and increased efficiency and service utilization. It also shows us where we need to expand our provision of services in the future.

Since 1990, the provision of health services to the people of each region has been the responsibility of the Regional Directorate-General of Health Services of each region. The information provided in this report is thus given both by institution and by region, to allow a comparison between regions of both the provision and utilization of health services.

This report is a summary of the information which is used regularly in the Ministry of Health to assist in both planning and management. If an organization is to operate effectively and efficiently, such information must be utilized by managers at all levels. We have encouraged this, and will soon be introducing computerized information systems both in every region and in every major hospital of the Sultanate.

We hope that you find this information of interest, and that it can be of use to help maintain and improve the health of the people of the Sultanate. Under the wise guidance of His Majesty Sultan Qaboos we shall continue to improve our services in the Ministry of Health to ensure that the best health care is provided to all the people of the Sultanate.

May God guide us and help us to achieve our goal.

Dr. Ali bin Mohammed bin Moosa

Minister of Health

## FOREWORD

At the end of 1991, the Health Ministry operated 46 hospitals with a total of 3,473 beds. During the year, new paediatric wards of 30 beds were added to the Tanam and Ibra hospitals. Further beds are also being added to the Sumail and Bahla hospitals. Construction of new hospitals in Rustaq (200 beds) and Buraimi (100 beds) began in September, and in Ibri (200 beds) and Wadi Heebi (18 beds) in December. Preliminary design of the new 300 bed hospital in Sohar was prepared and construction is expected to begin in 1992.

To cope with the increasing need for local maternity services, maternity facilities were installed in some health centres. Combined with what were previously termed "maternity centres", the Ministry had 12 health centres with maternity beds at the end of 1991. In addition to these, there were 82 health centres without beds in 1991 - thus bringing the total to 94 health centres. Two new health centres with beds were completed in December 1991 - one in Wadi Jawahir and the other in Wadi Bani Omar. They will become fully operational in 1992 to bring the total to 14. Also, currently under construction are three polyclinics and three new health centres (two of them with beds).

The functions of the health centres were reorganized in 1991 to provide all aspects of primary health care - curative, preventive and promotive - to the communities in which they are located. Thus, previously independent public health units were incorporated into the health centres themselves to form a comprehensive health unit. There are also mobile medical teams, to provide access to health care for the smaller isolated communities.

The preventive services themselves continued to expand to improve the health of the population of the Sultanate. Thus, at the end of 1991, there were 12 Malaria Control Centres operating throughout the country, as well as 7 Health Checkposts at points of entry to Sultanate, including 3 ports, 2 airports and 2 border checkposts.

In 1991, the Expanded Immunization Programme (EPI) immunized 94% of all infants before they reached the age of one year, to provide them with the security of protection against the six serious communicable diseases of tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis and measles. The numbers of cases of these diseases has fallen dramatically since 1986, and in 1991 there were only two cases of diphtheria, four cases of poliomyelitis and one case of neonatal tetanus. The EPI programme continued its programme of immunization at age 40 days, which was begun in 1990 to protect children against Type B Hepatitis.

Along with the BCG immunization programme, the special programme to control tuberculosis continued to reduce the numbers of new cases. Acute gastroenteritis is still the most common cause of morbidity among children and the Acute Diarrhoeal Diseases programme continued to provide oral rehydration for early treatment, and hence reduced both the severity and the subsequent mortality.

While malaria continues to be a major public health problem, the incidence of confirmed cases of malaria fell from its peak of 32 thousand cases in 1990 to just over 18 thousand new cases in 1991 - similar to the levels of 1987-1989. New measures introduced to control the problem in the Sharqiya Region have been successful in significantly reducing the incidence there. Trachoma remains another major public health problem with no signs of improvement in adults over the past five years. An encouraging feature, though, is the reduced prevalence among schoolchildren over the last three years. Rabies became a hazard in 1991 with an epidemic among wild animals, which rapidly spread throughout the country. A special surveillance system was introduced for humans with animal bites, resulting in rapid intervention and treatment. This has kept the cases of this fatal disease to only one in 1991.

The number of medical and para-medical personnel employed under the Ministry of Health grew by 7.6% in 1991 compared with 2.5% in 1990. At the end of 1991(1990) there were 1,167 (994) physicians, 54 (40) dentists, 37 (33) pharmacists, 3,855 (3,512) nurses and 3,322 (3,165) para-medical personnel. Including health staff in both other organizations and the private sector, the Sultanate had one doctor per 860 population, and one nurse per 320 population.

The training of nurses and technicians at the Institute of Health Education continued to develop. With the growing demand, the facilities at the Institute were expanded during 1991; these will become operational in the 1992/93 academic year. In addition, new Regional Nursing Schools were opened in five regions, and the new Institute of Assistant Pharmacists and the Oman Institute of Public Health began accepting students. Periodical Workshops, Symposia and Seminars for medical and para-medical workers were held, and short-term training courses for medical and public health workers were also organized during the year.

This annual statistical report contains data and information on the current status and utilization of health services in the Sultanate. We hope that you find it of use. Any suggestions for the improvement of the content or the presentation of the report would be most welcome.

Mohammed Baqer bin Moosa bin Ali  
Director-General  
Directorate-General of Planning



## INDEX OF TABLES & GRAPHS

Table No.	( All tables relate to Ministry of Health Institutions except where otherwise stated)	Pages
1.1	Estimated national vital rates 1980-1991.....	6
1.2	National health indicators : 1984 - 1991.....	7
	<b>DISTRIBUTION AND UTILIZATION</b>	
2.1	Regional Distribution of Curative Units as of 31.12.1991.....	10
2.2	Distribution of Hospital beds by Specialty as of 31-12-1991.....	12-13
2.3	Hospital administrative statistics by hospital - 1991.....	16-17
2.4	Attendances in Hospital Out-Patient Departments - 1991.....	19-20
2.5	Attendances by Type of Clinic - 1991.....	21
2.6	Health Centres with beds as of 31-12-1991.....	22
2.7	Attendances in Health Centres - 1991.....	23-25
2.8	Attendances in Health Centres by Type of clinic - 1991.....	26
	<b>MORBIDITY</b>	
3.1	Inpatient Morbidity - 1991 & 1990.....	29
3.2	In-Patient Morbidity by Region.....	30-31
3.3	In-Patient Morbidity Rates per 10,000 population by Region.....	32-33
3.4	Notifiable diseases by region - 1991.....	34
3.5	Notifiable diseases - 1985 - 1991.....	35
3.6	Patients treated abroad - 1991.....	37
	<b>OTHER HOSPITAL ACTIVITIES</b>	
4.1	Deliveries & Births in Hospitals & Maternity Centres - 1991.....	40-41
4.2	Outcome of deliveries in hospitals and maternity centres - 1991.....	42-43
4.3	Operations performed by type - 1991.....	44-45
4.4	Radiography performed in Hospitals - 1991.....	47-48
4.5	Laboratory investigations carried out in Hospitals - 1991.....	49-51
4.6	Dental and other activities in Hospitals - 1991.....	52-53
	<b>PREVENTIVE MEDICINE</b>	
5.1	Regional Distribution of Preventive Units - 31-12-1991.....	54
5.2	Ante-natal and post-natal services by Region - 1991.....	56
5.3	Expanded Programme of Immunization - doses given in 1991.....	57
5.4	Expanded Programme of Immunization Coverage - 1981 to 1991.....	58
5.5	Eye Health Care Programme - 1987 to 1991.....	61
5.6	Tuberculosis prevention programme - 1985 to 1991.....	63
5.7	Control of Diarrhoeal diseases (CDD) by Region - 1991.....	64
5.8	Acute Respiratory Infections (ARI) by Region - 1991.....	65
5.9	Malaria control activities - 1987 to 1991.....	67
5.10	Malaria passive case detection by Region - 1991.....	68
5.11	Malaria school survey (6-9 years) by Region - 1991.....	69
5.12	Water Quality Testing by Region - 1991.....	71

Table No.	( All tables relate to Ministry of Health Institutions except where otherwise stated)	Pages
	<b>TRAINING</b>	
6.1	Enrolment at Ministry of Health Training Institutes - 1989 to 1991.....	74
6.2	Graduates from the Institute of Health Sciences 1984 to 1991.....	75
	<b>PERSONNEL</b>	
7.1	Ministry of Health Manpower by Nationality as of 31-12.....	78-79
7.2	Ministry of Health Manpower by Category and Region as of 31-12-1991.....	82-83
7.3	Medical & Para-medical Personnel - 1983 to 1991.....	84
7.4	Total Medical & Para-medical staff (in Ministry of Health, other Organizations and the Private Sector) 1991 & 1990.....	85
	<b>NON HEALTH MINISTRY ORGANIZATIONS</b>	
8.1	Health Facilities - 1991 & 1990.....	88-89
8.2	Health-related Personnel employed as of 31-12-1991.....	90-91
8.3	Utilization of health services - 1991 & 1990.....	92
	<b>PRIVATE SECTOR</b>	
8.4	Number of Clinics and Pharmacies and Medical Personnel in the Private Sector by Region - 31.12.1991.....	93
	<b>C H A R T S</b>	
1.	Ministry of Health Hospital beds : 1983 - 1991.....	11
2.	Total Hospital Beds by Regions : 31.12.1991.....	14
3.	Rates of Hospital Beds by Region : 31.12.1991.....	15
4.	Discharges from Hospitals : 1986 - 1991.....	18
5.	Outpatient Attendance - 1983 - 1991.....	18
6.	Major Operations by Type - 1991.....	46
7.	Immunization coverage : 1982 - 1991.....	59
8.	Nursing graduates from the IHS 1984-1991.....	76
9.	Total graduates from the IHS by type - 1991.....	76
10.	Medical & Para-Medical staff - 1983 - 1991.....	80
11.	Ministry of Health staff by category - 1991 .....	81
12.	Distributiun of doctors by sector - 1991.....	86
13.	Ministry of Health budget 1987-1991.....	95
	<b>APPENDICES</b>	
1.	Organization Chart of the Ministry of Health.....	96
2.	Health Institutions by Region.....	97-99

## 1. INTRODUCTION

### Geographical Features

The Sultanate of Oman occupies most of the south-eastern corner of the Arabian Peninsula and has a coast-line stretching almost 1700 km from the Straits of Hormuz in the north to the frontier with the Republic of Yemen in the south. The Musandam Peninsula, the northern-most point of Oman is separated from the main body of the Sultanate by a strip of territory which is part of the United Arab Emirates.

The total area of Oman is 344,000 sq.km, of which mountains (450 meters or more) constitute 45,000 sq.km, the coastal plains just 9,000 sq.km, and the rest (290,000 sq. km) are wadis (dry river beds) and desert areas.

The climate is varied. From April to October it is hot and dry in the interior regions, and hot and humid along the coast with maximum temperatures ranging from 35C to 42C. From November to March, the temperature is much cooler, maxima ranging from 25C to 30C. A temperate climate all year occurs in elevated regions of the Western Hajar (see below). Rainfall is low and erratic in all but the southern region, averaging 50 - 100 mm per year. In winter, however, rain can cause flooding of many wadis in both rural and urban areas. The climate in the southern region is more consistent with maximum temperatures ranging from 25 to 35 C, but is characterized by heavy monsoon rains from June to September.

Oil is still the main source of national income, although some industrialization has taken place in recent years. Agriculture and fisheries are also being developed as additional sources of national income.

### Government Administration

The Sultanate of Oman is divided into 59 Wilayats, each administered by a Wali; in addition both the capital area of Muscat and the southern region of Dhofar are administered by Governors.

The Wilayats are grouped into 8 regions; the largest region - Batinah- has been further divided into two for health administration, giving a total of nine health regions.



The health regions are thus :-

- (1) Muscat (including Quriyat)
- (2) Dhofar ( formerly Janubia or Southern)
- (3) Dakhilya (formerly Interior or Al Joof)
- (4) Sharqiya (formerly Eastern)
- (5) North Batinah
- (6) South Batinah
- (7) Dhahirah
- (8) Musandam
- (9) Al Woustah

Tables of this report thus present results for the nine health regions.

### Health Administration

The Ministry of Health is the main provider of health care in the country. There are three other government organizations - the Ministry of Defence, the Royal Oman Police and Petroleum Development Oman (PDO) - who provide medical care only to their employees and their dependants. The University Hospital of the Ministry of Education opened in 1990 and at present caters for the primary health care needs of the university students and staff, with a limited number of beds now open in paediatrics and obstetrics. No private hospitals exist in Oman. Primary health care is also provided by private physicians who work in their own clinics.

An important measure taken by the Ministry of Health at the start of 1990 was an administrative decentralization process by the introduction of a Regional Health Office in each of the regions, along with the appointment of Regional Directors-General and other support staff. This has given greater autonomy to each region and assisted in the integration of both curative and preventive services to provide a comprehensive health care service to the whole community. The new administrative structure is shown in Appendix 1.

#### (a) Directorate-General of Curative Medicine (DGCM)

The Directorate-General of Curative Medicine plans, monitors and supervises primary, secondary and tertiary care through a network of hospitals, health centres, maternity centres and mobile medical units.

(b) Directorate-General of Preventive Medicine (DGPM)

This Directorate-General is responsible for the planning and supervision of preventive programmes provided at both the above units and Public Health Units. Currently, there are nine departments within the Directorate viz.

- a) Family & Community Health (consisting of the nine PHC programmes of MCH, EPI, CDD, ARI, TB, Eye health care, Oral health care, Nutrition, and Epidemiological studies).
- b) Disease Surveillance and Control
- c) Environmental Health.
- d) Health education.
- e) Malaria Eradication.
- f) School Health
- g) Public Health Laboratories.
- h) Finance and Administration.
- i) Supplies and Stores.

Each department is responsible for planning, monitoring, supervising, training and evaluating activities under their programmes.

(c) Directorate-General of Regional Health Services

Responsibility for the provision of health services lies with the Director-General of each of the eight health regions.

(i) At the local level, a health centre headed by a physician provides basic health care. With the need for local maternity services in remote areas, some health centres have a few maternity beds. Small hospitals at the local level have from 4 to 20 beds for general medicine and maternity, as well as an outpatient service. Other local hospitals have between 24 and 49 beds and provide additional inpatient, casualty and emergency services. All these local health units also provide preventive services including maternal and child health (MCH) and environmental sanitation, in order to provide comprehensive primary care services.

(ii) At the district and regional levels, there are district hospitals with 50 to 160 beds and regional hospitals with 200 or more beds. These hospitals have extensive inpatient and out-patient services, including specialized services in medicine, surgery, paediatrics and maternity.

(iii) At the national level, the three major hospitals in Muscat - the Royal, Khoula and Al Nahdha - provide tertiary care and act as national referral hospitals. The Ibn Sina is the country's only psychiatric hospital. (The Royal Hospital has its own Director-General).

Prior to 1990, the Public Health Units (PHU's) and Public Health Compounds (PHC's) were functioning directly under the Director of Preventive Medicine. However, regionalization in 1990 has brought about the integration of the delivery of health services as a single package, comprising preventive, curative, promotive and rehabilitative services.

Over 95% of the entire population of Oman now has ready access to the permanent health facilities of the Ministry of Health. Mobile medical teams visit the more isolated communities with limited access to provide both preventive and curative health services.

## 1 GENERAL INFORMATION

While no census has yet been undertaken in the Sultanate, both population sizes and vital statistics are required for the planning and evaluation of health services. Based on information available at the Ministry of Health, Table 1.1 shows the best estimates available of the vital statistics for the last ten years.

The infant mortality rate is generally accepted as an overall indicator of the health of a country as it is affected by the provision of health services (curative and preventive), the utilization of these services by the population, and the quality of the environment in which the population lives, each of these being an important factor in the risk of mortality amongst the very young. The significant decline in the infant mortality over the last ten years is an indication of the improved provision of health services to the very young and to an overall improvement in the general standard of living.

The most noticeable features of Table 1.1 are the high birth rates and hence high natural increase rates. The birth rate of 44.1 per 1,000 population in 1991 is among the highest in the world due to the high fertility rates among women of all ages, especially those aged 30-39. With the majority of births now surviving, due to improved maternal and child health care, the infant mortality rate has more than halved over the last decade to about 28 per 1,000 livebirths in 1991. The combination of the high birth rate and the low overall death rate results in a very high estimated natural increase rate of 3.7%. At this rate, the population of Oman will double every 20 years.

As a measure of the contribution of the provision of health services to the improved health of the population, Table 1.2 shows the trend in health service indicators for the last 5 years. Each indicator has continued to improve over this period. The numbers and rates of doctors, nurses and dentists increased significantly in 1991.

**TABLE 1.1****ESTIMATED OMANI NATIONAL POPULATION STATISTICS 1980-1991****(A) ESTIMATED VITAL RATES**

YEAR	BIRTH RATE (per 1000 population)	DEATH INFANTS (per 1000 livebirths)	RATES OTHER (per 1000 population)	OVERALL (per 1000 population)	NATURAL INCREASE RATE (%)
1980	50	64	10.0	13.3	3.7
1981	50	59	9.5	12.5	3.7
1982	50	55	9.0	11.8	3.8
1983	50	51	8.6	11.2	3.9
1984	49	48	8.1	10.5	3.8
1985	48	45	7.7	9.9	3.8
1986	47	42	7.4	9.4	3.8
1987	47	38	7.0	8.8	3.8
1988	46	34	6.6	8.2	3.8
1989	45.4	31	6.3	7.7	3.8
1990	44.9	29	6.3	7.6	3.7
1991	44.4	28	6.3	7.6	3.7

**SOURCES****(1) BIRTH RATES -**

The results of applying the age-specific fertility rates found in the 1988 Maternal and Child Health survey to the estimated age/sex distribution of the population

**(2) INFANT MORTALITY RATES -**

55 in 1982 and 45 in 1985 (Child Mortality Survey 1986)  
34 in 1988 (Maternal and Child Health Survey 1988)  
Interpolation and extrapolation for other years

**(3) OVERALL MORTALITY -**

The results of applying the west life tables to the estimated age/sex distribution of the population

**TABLE 1.2****HEALTH SERVICE PROVISION INDICATORS : 1986 - 1991**

(Combined Data for both Ministry of Health and  
all Other Government and Private Organizations)

INDICATOR	1986	1987	1988	1989	1990	1991
TOTAL BEDS.....	3,348	3,455	3,859	3,952	4,158	4,315
TOTAL DOCTORS.....	1,096	1,243	1,371	1,392	1,557	1,810
TOTAL NURSES.....	2,533	3,467	3,810	3,866	4,286	4,856
TOTAL DENTISTS.....	80	83	96	97	99	118
TOTAL PHARMACISTS.....	224	227	235	235	269	288
HOSPITAL BEDS / 10,000 POPN.....	24.4	25.0	27.2	26.9	27.5	27.7
DOCTORS / 10,000 POPULATION.....	8.0	9.0	9.7	9.5	10.3	11.6
NURSES / 10,000 POPULATION.....	18.5	25.1	26.8	26.3	28.4	31.1
DENTISTS / 10,000 POPULATION..	0.6	0.6	0.7	0.7	0.7	0.8
PHARMACISTS / 10,000 POPN.....	1.6	1.6	1.7	1.6	1.8	1.8
POPULATION / HOSPITAL BED.....	410	400	370	370	360	360
POPULATION / DOCTOR.....	1,250	1,110	1,040	1,060	970	860
POPULATION / NURSE.....	540	400	370	380	350	320
POPULATION / DENTIST.....	17,100	16,600	14,800	15,200	15,300	13,200
POPULATION / PHARMACIST.....	6,100	6,100	6,000	6,300	5,600	5,400



## 2 DISTRIBUTION AND UTILIZATION OF HEALTH SERVICES

Table 2.1 show the regional distribution of the health units. At the end of 1991 there were 46 hospitals and 94 health centres, of which 12 health centres had beds (some formerly called maternity centres), and 82 with no beds.

At the end of 1991, the hospitals by themselves (excluding the former maternity centres) had a total of 3,473 beds compared with 3,417 at the end of 1990. Their distribution by region, hospital and specialty is shown in Table 2.2 and Figures 2 & 3 . Each region is well equipped, with the number of hospital beds approximately proportional to the region's population. The only exception to this is the Muscat region whose beds are a mixture of general beds to serve the Muscat population alone, and tertiary care beds (to provide the specialist services not routinely available in general hospitals) for the whole Sultanate. The under-provision of beds in the Batinah regions is currently being amended with extensions to the Sohar and Rustaq hospitals. The distribution of health centres with beds is shown in Table 2.6.

The utilization of the hospitals' inpatient services is shown in Table 2.3, with the trend over the last six years shown in Figure 4. Almost 190 thousand patients were discharged from the 46 hospitals in 1991 - a 3.8% increase over the 183 thousand in 1990 (interestingly, this increase is the same as the country's population growth rate, suggesting that utilization rates have remained constant.). On average, the hospitals cared for 2,499 inpatients per day, who stayed for an average of 4.7 days. This meant that the hospital beds were occupied, on average, 71% of the year - almost the same as for the last two years. Smaller hospitals, with less demand had, on average a much lower occupancy rate.

The utilization of hospital outpatient services is shown in Table 2.4 and Figure 5. A total of 6.6 million patients were seen during 1991, which was a significant 18% increase over the 5.6 million in 1990. (Note that some of the increase may be due to more complete reporting of outpatient activities under the new reporting system introduced in 1991). The major increases occurred in the Khoula (82%), Nizwa (44%), Saham (40%) and Ibra (26%) hospitals. The hospitals with the highest throughput in 1991 were the Sohar Hospital in North Batinah (1,488 per day), the Qaboos Hospital in Salalah (1,438 per day), and the Al Nahdha Hospital (1,258) and the Royal Hospital (1,034) in Muscat.

The attendances at each type of clinic in each region is shown in Table 2.5. General practice accounted for almost exactly half of the patient attendances, the next highest being Paediatrics (9%), Accident and Emergency (7%) and General Medicine (6%).

The utilization of the health centres and mobile medical teams is shown in Table 2.7. A total of 3.4 million patients were seen during 1991 - a 14% increase over the 3.0 million in 1990 (again, some of this increase could be due to improved reporting). The busiest clinics were the Birka and Masnah in South Batinah, the Suwaiq and Khabura in North Batinah, and the Amirat and the Seeb in Muscat, each of which saw an average of over 400 patients each day of the year.

Thus, in hospital outpatient departments and health centres combined, a total of just under 10 million outpatients were seen for both curative and preventive purposes. For "curative" reasons (i.e. excluding preventive clinics such as antenatal and immunization) there were about 9.1 million visits - an average of 5.9 visits per person per year; this is a very high average figure for the total population.



**TABLE 2.1****REGIONAL DISTRIBUTION OF CURATIVE UNITS ON 1.1.1991**

REGIONS	HOSPITALS	HEALTH CENTRES WITH BEDS	HEALTH CENTRES WITHOUT BEDS	TOTAL
MUSCAT.....	7	0	9	16
DHOFAR.....	5	5	19	29
DAKHILYA.....	6	0	10	16
SHARQIYA.....	10	0	18	28
NORTH BATINAH.....	4	1	8	13
SOUTH BATINAH .....	5	1	6	12
DHAHIRA.....	4	1	8	13
MUSANDAM.....	3	3	1	7
AL WOUSTAH.....	2	1	3	6
TOTAL	46	12	82	140

**Fig 1 MINISTRY OF HEALTH BEDS 1983-1991**  
**(Hospitals and Health Centres)**

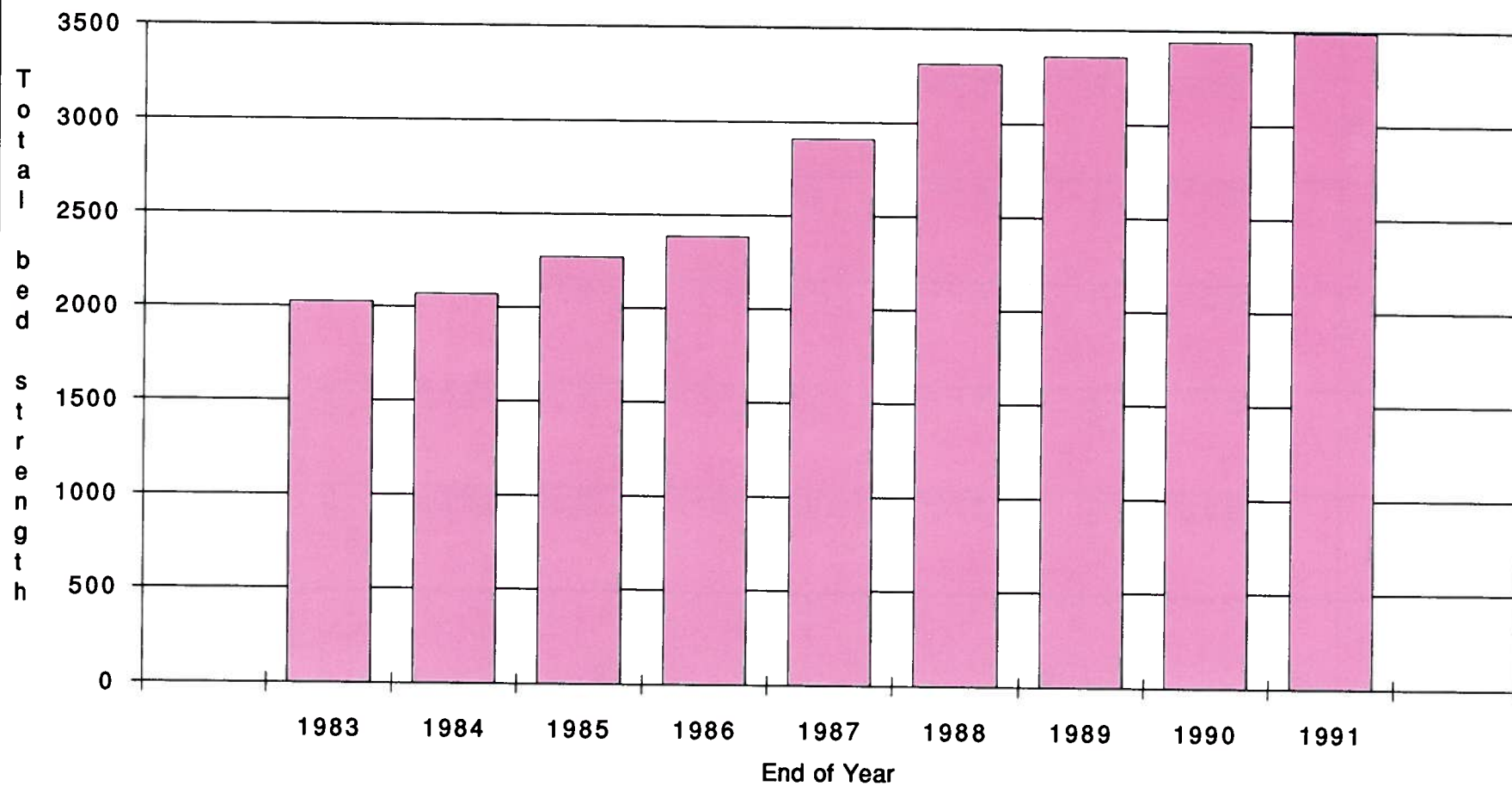


TABLE 2.2

**HOSPITAL BEDS BY SPECIALTY AND REGION AS OF 31ST DECEMBER 1991**

## BEDS BY SPECIALTY

HOSPITAL	REGION	TOTAL BEDS	PAEDI ATRIC (1)	ADULT MEDICAL (2)	ADULT SURGICAL (3)	ADULT MIXTURE (4)	OBSTETRIC GYNAEC	ICU CCU	OTHER (5)
<b>MUSCAT</b>									
ROYAL.....		635	131	152	172	0	128	32	20
KHOULA.....		410	67	0	168	0	145	6	24
AL-NAHDHA.....		205	32	28	107	0	0	4	34
IBN-SINA.....		81	0	81	0	0	0	0	0
AR-RAHMA.....		80	0	77	0	0	0	0	3
QURIYAT.....		37	13	16	0	0	8	0	0
MUSCAT.....		2	0	0	0	0	0	0	2
<b>TOTAL:</b>		<b>1,450</b>	<b>243</b>	<b>354</b>	<b>447</b>	<b>0</b>	<b>281</b>	<b>42</b>	<b>83</b>
<b>DHOFAR</b>									
QABOOS.....		316	69	94	80	0	53	4	16
MADINAT AL-HAQ.....		18	5	0	0	13	0	0	0
SUDHA.....		18	5	0	0	13	0	0	0
RAKHYUT.....		19	5	1	0	13	0	0	0
TAWI ATTAIR.....		6	0	0	0	6	0	0	0
<b>TOTAL:</b>		<b>377</b>	<b>84</b>	<b>95</b>	<b>80</b>	<b>45</b>	<b>53</b>	<b>4</b>	<b>16</b>
<b>DAKHILYA</b>									
NIZWA.....		181	68	19	31	0	42	5	16
SUMAIL.....		74	18	20	20	0	10	0	6
BAHLA.....		42	12	18	0	0	12	0	0
ADAM.....		30	9	0	0	13	6	0	2
IZKI.....		20	6	0	0	8	6	0	0
JABAL AKHDAR.....		4	2	0	0	0	2	0	0
<b>TOTAL:</b>		<b>351</b>	<b>115</b>	<b>57</b>	<b>51</b>	<b>21</b>	<b>78</b>	<b>5</b>	<b>24</b>
<b>SHARQIYA</b>									
SUR.....		124	28	25	40	0	31	0	0
IBRA.....		81	41	14	16	0	10	0	0
B.B.BU ALI.....		70	26	16	2	10	12	0	4
B.B.BU HASSAN.....		52	18	16	6	0	8	0	4
SINAW.....		41	12	0	0	14	8	0	7
WADI DIMA & TAYEEN.....		36	36	0	0	0	0	0	0
MASIRAH.....		29	9	0	0	20	0	0	0
BIDIYA.....		26	8	0	0	12	6	0	0
SAMAD AL-SHAAN.....		27	11	8	0	0	8	0	0
WADI BANI KHALID.....		13	4	6	0	0	3	0	0
<b>TOTAL:</b>		<b>499</b>	<b>193</b>	<b>85</b>	<b>64</b>	<b>56</b>	<b>86</b>	<b>0</b>	<b>15</b>

**(CONT)TABLE 2.2****HOSPITAL BEDS BY SPECIALTY AND REGION AS OF 31ST DECEMBER 1991**

BEDS BY SPECIALTY									
HOSPITAL	REGION	TOTAL BEDS	PAEDI ATRIC (1)	ADULT MEDICAL (2)	ADULT SURGICAL (3)	ADULT MIXTURE (4)	OBSTETRIC GYNAEC	ICU CCU	OTHER (5)
NORTH BATINAH									
SOHAR.....		184	68	18	43	0	38	2	15
SAHAM.....		52	16	18	0	0	18	0	0
WADI HAWASNA.....		14	6	5	0	0	3	0	0
WADI SARAMI.....		12	0	9	0	0	3	0	0
TOTAL:									
		262	90	50	43	0	62	2	15
SOUTH BATINAH									
RUSTAQ.....		130	41	18	24	0	41	2	4
WADI BANI GHAFIR.....		16	5	0	0	7	3	0	1
WADI BANI KHAROOS.....		16	6	0	0	7	3	0	0
WADI MISTAL.....		14	6	0	0	6	2	0	0
WADI HEMLI.....		14	6	0	0	5	3	0	0
TOTAL:									
		190	64	18	24	25	52	2	5
DHAHIRA									
TANAM.....		123	42	22	29	0	22	2	6
BURAIMI.....		75	17	23	26	0	6	0	3
YANKUL.....		9	3	3	0	0	3	0	0
TOTAL:									
		207	62	48	55	0	31	2	9
MUSANDAM									
KHASAB.....		50	10	16	10	0	8	0	6
DIBBA.....		26	0	0	0	24	0	2	0
BUKHA.....		13	0	13	0	0	0	0	0
TOTAL:									
		89	10	29	10	24	8	2	6
AL-WOUSTAH									
HAIMA.....		36	9	15	8	0	4	0	0
DUQUM.....		12	6	6	0	0	0	0	0
TOTAL:									
		48	15	21	8	0	4	0	0
NATIONAL TOTAL:									
		3,473	876	757	782	171	655	59	173

(1) Includes General Paediatrics, SCBU, Paediatric Orthopaedics, Neurosurgery, ICU, Isolation and Nursery

(2) Includes General Medicine, Renal, Dermatology, TB, Psychiatry and Isolation

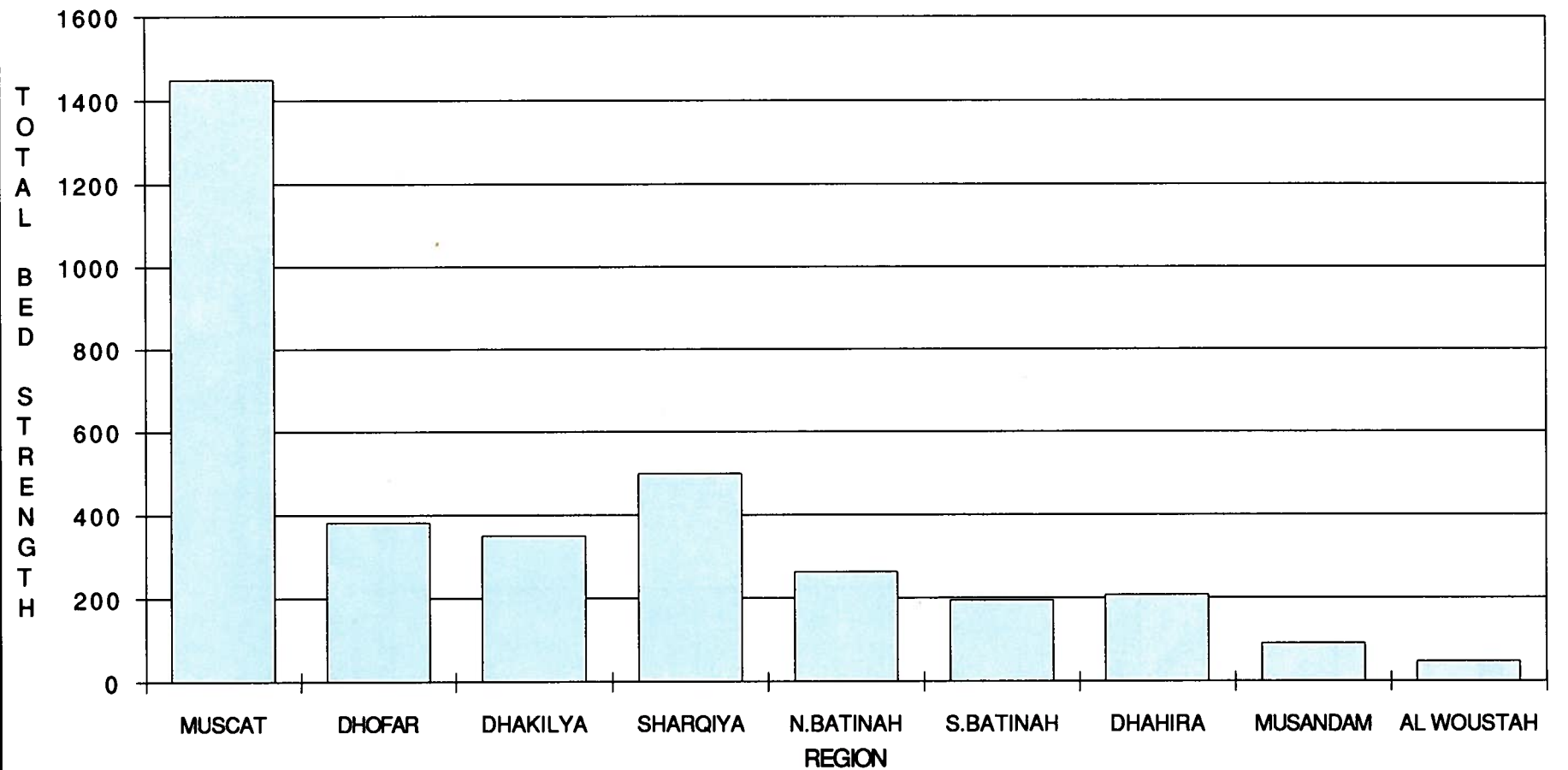
(3) Includes General Surgery, Orthopaedics, Plastic, Neurosurgery, Ophthalmology, Nephrology/Urology, ENT, Dental and Post-cardiac

(4) Includes beds shared between medical and surgical specialties

(5) Includes Daycare, VIP, Private, Observation and not classified



**Fig 2. MINISTRY OF HEALTH HOSPITAL BEDS  
BY REGION 31-12-1991**



**Fig 3. MINISTRY OF HEALTH HOSPITAL BEDS  
RATES PER 1000 POPULATION - 1991**

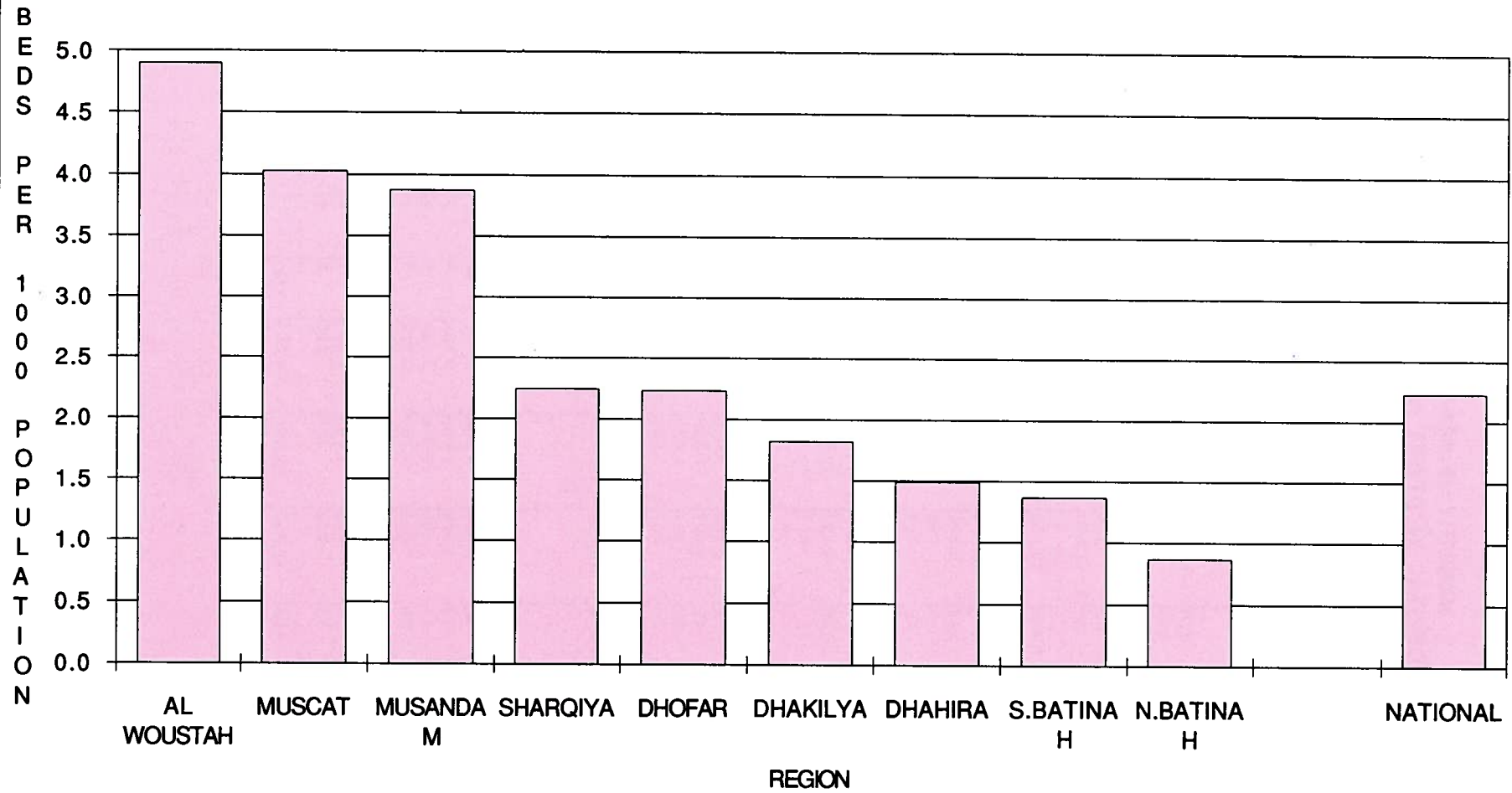


TABLE 2.3

**MINISTRY OF HEALTH HOSPITALS - 1991**  
**HOSPITAL INPATIENT ADMINISTRATIVE STATISTICS**

HOSPITAL / REGION	BED STRENGTH AS ON 31.12.91	DISCHARGES (Including Deaths)			DEATHS			TOTAL PATIENT DAYS	HOSPITAL STATISTICS		
		M	F	TOTAL	M	F	TOTAL		% OCCUP- ANCY	MEAN STAY	AVERAGE PATIENTS PER DAY
MUSCAT :											
ROYAL.....	635	10,459	14,528	24,987	445	318	763	171,887	74%	6.9	471
KHOULA.....	410	5,700	11,032	16,732	62	27	89	104,332	70%	6.2	286
AL-NAHDHA.....	205	2,702	1,918	4,620			0	30,796	41%	6.7	84
IBN-SINA.....	81	460	213	673			0	55,758	189%	82.8	153
AR-RAHMA.....	80	341	219	560	24	7	31	22,167	76%	39.6	61
QURIYAT.....	37	1,020	2,114	3,134	11	5	16	10,338	77%	3.3	28
TOTAL	1,448	20,682	30,024	50,706	542	357	899	395,278	75%	7.8	1,083
DHOVAR :											
QABOOS.....	316	5,624	9,222	14,846	92	76	168	88,475	77%	6.0	242
MADINAT AL-HAQ.....	6	268	356	624			0	1,844	84%	3.0	5
SUDH.....	18	212	314	526			0	1,320	20%	2.5	4
RAKHUT.....	18	128	160	288			0	1,162	18%	4.0	3
TAWI ATTAR.....	18	91	138	229			0	484	7%	2.1	1
TOTAL	376	6,323	10,190	16,513	92	76	168	93,285	68%	5.6	256
DAKHILYA :											
NIZWA.....	181	4,454	6,137	10,591	71	46	117	48,213	73%	4.6	132
SUMAIL.....	74	2,125	3,518	5,643	31	27	58	22,092	82%	3.9	61
BAHLA.....	42	1,803	3,366	5,169	6	9	15	12,972	85%	2.5	36
ADAM.....	30	924	1,376	2,300	3	1	4	6,835	62%	3.0	19
IZKI.....	20	707	1,680	2,387	4	1	5	4,911	67%	2.1	13
JABAL AKHDAR.....	4	51	78	129	1	0	1	296	20%	2.3	1
TOTAL	351	10,064	16,155	26,219	116	84	200	95,319	74%	3.6	261
SHARQIYA :											
SUR.....	124	2,701	5,532	8,233	66	39	105	32,724	72%	4.0	90
IBRA.....	81	2,208	3,737	5,945	41	38	79	19,261	65%	3.2	53
B.B. BU ALI.....	70	2,057	3,735	5,792	34	21	55	21,671	85%	3.7	59
B.B. BU HASSAN.....	52	1,528	1,905	3,433	5	6	11	11,131	59%	3.2	30
SINAW.....	41	1,309	2,414	3,723	9	9	18	9,866	66%	2.7	27
W.DIMA & TAYEEN.....	36	1,030	1,383	2,413	6	1	7	6,317	48%	2.6	17
MASIRAH.....	29	811	1,089	1,900	5	5	10	6,082	57%	3.2	17
BIDIYA.....	26	1,013	1,350	2,363	5	4	9	5,255	55%	2.2	14
SAMAD AL-SHAAN.....	27	528	1,043	1,571	1	3	4	5,256	53%	3.3	14
WADI BANI KHALID.....	13	212	468	680	0	1	1	1,453	31%	2.1	4
TOTAL	499	13,397	22,656	36,053	172	127	299	119,016	65%	3.3	326

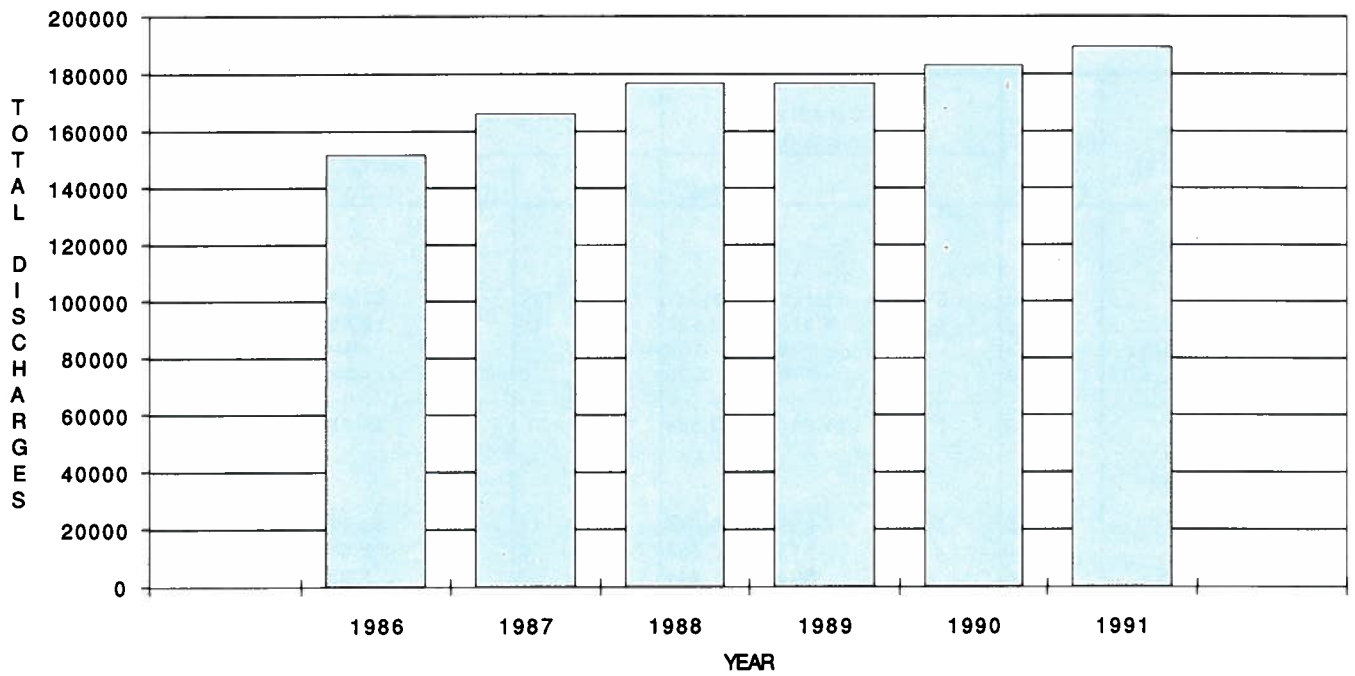
(CONT) TABLE 2.3

**MINISTRY OF HEALTH HOSPITALS - 1991**  
**HOSPITAL INPATIENT ADMINISTRATIVE STATISTICS**

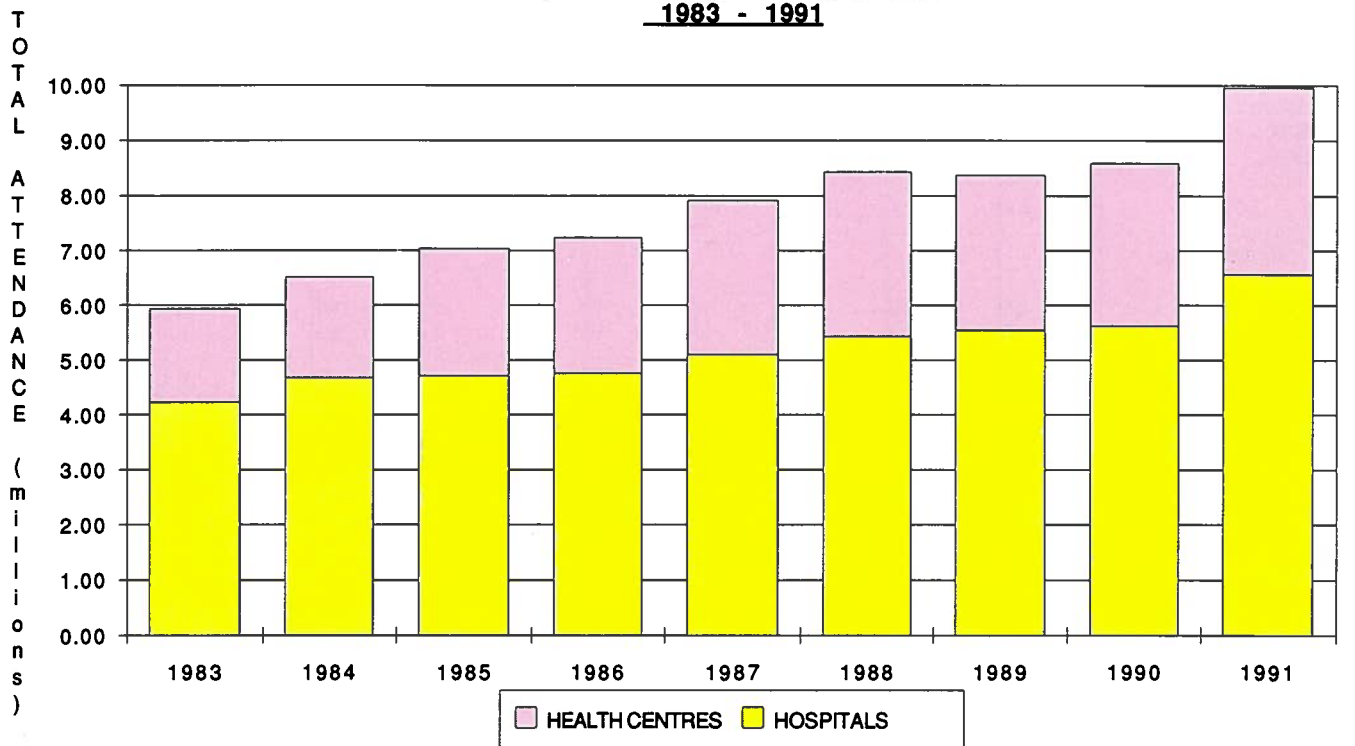
HOSPITAL / REGION	BED STRENGTH AS ON 31.12.91	DISCHARGES (Including Deaths)			DEATHS			TOTAL PATIENT DAYS	HOSPITAL STATISTICS		
		M	F	TOTAL	M	F	TOTAL		% OCCUP- ANCY	MEAN STAY	AVERAGE PATIENTS PER DAY
NORTH BATINAH :											
SOHAR.....	184	6,218	11,123	17,341	158	120	278	54,870	82%	3.2	150
SAHAM.....	52	1,144	4,376	5,520	16	10	26	12,694	67%	2.3	35
WADI AL-HAWASNA.....	14	63	134	197			0	523	10%	2.7	1
WADI SARAMI.....	12	196	310	506	1	0	1	969	22%	1.9	3
-----											
TOTAL	262	7,621	15,943	23,564	175	130	305	69,056	72%	2.9	189
-----											
SOUTH BATINAH :											
RUSTAQ.....	130	3,393	7,293	10,686	77	48	125	38,027	80%	3.6	104
W.B.GHAFFIR.....	16	221	511	732	1	0	1	2,539	43%	3.5	7
WADI B. KHAROOS.....	16	140	304	444	1	3	4	1,930	33%	4.3	5
WADI MISTAL.....	14	51	119	170	0	2	2	821	16%	4.8	2
WADI HEMLY.....	14	157	266	423	1	0	1	1,483	29%	3.5	4
-----											
TOTAL	190	3,962	8,493	12,455	80	53	133	44,800	65%	3.6	123
-----											
TOTAL BATINAH	452	11,583	24,436	36,019	255	183	438	113,856	69%	3.2	312
-----											
DHAHIRA											
TANAM.....	123	5,044	6,767	11,811	74	57	131	38,777	86%	3.3	106
BURAIMI.....	75	2,404	2,645	5,049	25	16	41	19,456	71%	3.9	53
YANKUL.....	9	154	701	855			0	1,402	43%	1.6	4
-----											
TOTAL	207	7,602	10,113	17,715	99	73	172	59,635	79%	3.4	163
-----											
MUSANDAM											
KHASAB.....	50	1,243	1,315	2,558	13	7	20	9,561	52%	3.7	26
DIBBA.....	26	764	804	1,568	2	3	5	4,607	49%	2.9	13
BUKHA.....	13	287	302	589			0	1,214	26%	2.1	3
-----											
TOTAL	89	2,294	2,421	4,715	15	10	25	15,382	47%	3.3	42
-----											
AL WOUSTAH											
HAIMA : .....	36	459	376	835	0	2	2	4,184	32%	5.0	11
DUQUM : .....	12	329	378	707	0	2	2	1,751	40%	2.5	5
-----											
TOTAL	48	788	754	1,542	0	4	4	5,935	34%	3.8	16
-----											
NATIONAL TOTAL	3,470	72,733	116,749	189,482	1,291	914	2,205	897,706	71%	4.7	2,459

(This table does not include the three maternity centres with 8 beds, the Sahtan Health Centre with 6 beds and Muscat Hosp with 2 beds)

**Fig 4 MINISTRY OF HEALTH HOSPITALS  
INPATIENT DISCHARGES - 1986 - 1991**



**Fig 5 OUTPATIENT ATTENDANCE  
1983 - 1991**



**TABLE 2.4**

**ATTENDANCE IN OUT-PATIENT DEPARTMENTS  
OF HEALTH MINISTRY HOSPITALS - 1991**

HOSPITALS REGIONS	TOTAL ATTENDANCES	DAILY AVERAGE ATTENDANCE *
<b>MUSCAT</b>		
ROYAL.....	377,547	1,034
KHOULA.....	197,025	540
AL-NAHDHA.....	459,124	1,258
IBN-SINA.....	33,154	91
ARRAHMA.....	127,698	350
QURIYAT.....	90,435	248
MUSCAT.....	93,761	257
<b>TOTAL:</b>	<b>1,378,744</b>	<b>3,777</b>
<b>DHOFAR</b>		
QABOOS.....	524,787	1,438
MADINAT AL-HAQ.....	30,170	83
SUDHA.....	25,797	71
RAKHYUT.....	6,861	19
TAWI ATTAIR.....	25,910	71
MMT SALALAH.....	13,092	36
MMT MADINAT AL HAQ.....	3,413	9
MMT SUDHA.....	1,343	4
MMT RAKHYUT.....	4,495	12
MMT TAWI ATTAIR.....	1,661	5
<b>TOTAL:</b>	<b>637,529</b>	<b>1,747</b>
<b>DAKHILYA</b>		
NIZWA.....	352,226	965
SUMAIL.....	209,654	574
BAHLA.....	163,224	447
ADAM.....	92,340	253
IZKI.....	139,906	383
JABAL AKHDAR.....	21,257	58
MMT NIZWA.....	469	1
MMT SUMAIL.....	1,999	5
MMT BAHILA.....	2,530	7
MMT ADAM.....	468	1
MMT JABAL AKHDAR.....	1,926	5
<b>TOTAL:</b>	<b>985,999</b>	<b>2,701</b>
<b>SHARQIYA</b>		
SUR.....	229,569	629
IBRA.....	223,245	612
B.B.BU ALI.....	258,274	708
B.B.BU HASSAN.....	108,519	297
SINAW.....	175,789	482
WADI TAYEEN.....	63,607	174
MASIRAH.....	70,908	194
BIDIYA.....	89,883	246
SAMAD AL-SHAAN.....	111,755	306
WADI BANI KHALID.....	28,075	77
<b>TOTAL:</b>	<b>1,359,624</b>	<b>3,725</b>



**(CONT)TABLE 2.4**

**ATTENDANCE IN OUT-PATIENT DEPARTMENTS  
OF HEALTH MINISTRY HOSPITALS - 1991**

HOSPITALS REGIONS	TOTAL ATTENDANCES	DAILY AVERAGE ATTENDANCE *
<b>NORTH BATINAH</b>		
SOHAR.....	543,297	1,488
SAHAM.....	299,675	821
WADI HAWASNA.....	16,602	45
WADI SARAMI.....	10,212	28
TOTAL:	869,786	2,383
<b>SOUTH BATINAH</b>		
RUSTAQ.....	284,887	781
WADI BANI GHAFIR.....	62,643	172
WADI BANI KHAROOS.....	25,011	69
WADI MISTAL.....	10,284	28
WADI HEMLI.....	34,079	93
TOTAL:	416,904	1,142
<b>DHAHIRA</b>		
TANAM.....	281,376	771
BURAIMI.....	252,184	691
YANKUL.....	102,366	280
WADI JIZZI.....	27,897	76
MMT YANKUL.....	1,095	3
TOTAL:	664,918	1,822
<b>MUSANDAM</b>		
KHASAB.....	110,419	303
DIBBA.....	75,105	206
BUKHA.....	22,081	60
TOTAL:	207,605	569
<b>AL WOUSTAH</b>		
HAIMA.....	19,607	54
DUQUM.....	25,719	70
TOTAL:	45,326	124
NATIONAL TOTAL:	6,566,435	17,990

\* Total attendances divided by 365 days.

**TABLE 2.5**

**ATTENDANCES IN HOSPITALS BY TYPE OF CLINIC - 1991**

TYPE OF CLINIC	T O T A L	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	N BATINAH	S BATINAH	DHAHIRA	MUSANDAM	WOUSTAH
General Practice.....	3,253,972	364,476	333,248	406,584	964,098	444,276	271,347	272,731	154,099	43,113
A & E/ Casualty.....	487,931	210,512	54,157	139,028	0	13,946	0	70,288	0	0
General Medicine.....	381,902	182,068	23,745	67,921	0	28,063	12,079	59,232	8,794	0
General Surgery.....	145,679	43,516	7,501	23,733	23,180	7,998	5,452	28,029	6,270	0
Urology.....	9,146	4,423	0	0	0	4,696	0	27	0	0
Orthopaedics.....	81,992	42,037	8,867	9,107	11,147	10,834	0	0	0	0
Ophthalmology.....	246,889	68,350	29,427	36,181	46,674	27,500	7,972	26,500	4,285	0
ENT.....	138,642	58,729	17,328	13,491	15,093	10,410	794	14,437	8,360	0
Paediatrics.....	601,057	85,901	55,788	75,471	97,260	159,759	38,289	77,005	11,584	0
Obstetrics & Gynaecology.....	173,840	36,628	31,859	30,588	17,737	24,358	505	27,620	4,545	0
Psychiatry.....	41,658	33,154	4,058	444	0	4,002	0	0	0	0
Dental.....	229,991	57,311	26,704	30,547	37,241	35,068	12,548	26,329	3,395	848
Chest diseases.....	8,898	6,191	1,181	0	1,526	0	0	0	0	0
Dermatology.....	164,936	63,539	25,703	14,113	25,328	15,933	4,097	14,110	2,113	0
Antenatal.....	161,784	57,910	1,004	20,310	29,905	21,750	21,108	8,093	1,086	618
Postnatal.....	6,758	814	610	4,016	336	203	101	678	0	0
Child Health.....	148,517	0	36	66,624	45,722	2,426	33,709	0	0	0
Immunization.....	218,888	31,147	15,185	42,569	29,740	56,780	8,903	30,743	3,074	747
Immunization - Outreach .....	125	0	0	0	0	125	0	0	0	0
Immunization - School.....	599	0	0	0	0	599	0	0	0	0
Others*.....	63,231	32,038	1,128	5,272	14,637	1,060	0	9,096	0	0
<b>TOTAL .....</b>	<b>6,566,435</b>	<b>1,378,744</b>	<b>637,529</b>	<b>985,999</b>	<b>1,359,624</b>	<b>869,786</b>	<b>416,904</b>	<b>664,918</b>	<b>207,605</b>	<b>45,326</b>

\* Others include paediatric surgery, diabetic clinic, hypertension clinic, service clinic ,VIP clinic and staff clinic.

**TABLE 2.6**

**HEALTH CENTRES WITH BEDS  
AS ON 31st DECEMBER 1991**

HEALTH CENTRES	REGION	TOTAL BEDS
DHOFAR		
MIRBAT.....		1
SHAHIB ASSAIB.....		1
SHELEEM.....		1
DHALQUT.....		1
MAKINAT SHAHAN.....		1
TOTAL:		5
NORTH BATINAH		
HEEBI.....		2
TOTAL:		2
SOUTH BATINAH		
WADI SAHTAN.....		6
TOTAL:		6
DHAHIRA		
MAHADHA .....		2
TOTAL:		2
MUSANDAM		
LIMA.....		1
KUMZAR.....		1
MADHA.....		2
TOTAL:		4
AL WOUSTAH		
KAHIL.....		1
TOTAL:		1
NATIONAL TOTAL : .....		20

**TABLE 2.7****ATTENDANCES IN HEALTH CENTRES -1991**

HEALTH CENTRES	TOTAL ATTENDANCES	DAILY AVERAGE ATTENDANCE (1)
<b>MUSCAT</b>		
SEEB.....	194,811	534
AMIRAT.....	158,590	434
YETI.....	33,277	91
SIYA.....	26,448	72
NEW AL KHODH.....	69,174	190
DAGMAR.....	26,181	72
OLD AL KHODH.....	14,981	41
MAZARA.....	19,383	53
HAIL AL GHAF.....	19,124	52
MMT YETI.....	1,424	4
<b>TOTAL:</b>	<b>563,393</b>	<b>1,544</b>
<b>DHOFAR</b>		
MIRBAT.....	48,791	134
TAQA.....	44,811	123
THUMRAIT.....	23,596	65
SHAHIB ASSAIB.....	20,197	55
QEIRON HEIRITI.....	21,456	59
SHELEEM.....	14,556	40
TEYTUM.....	12,220	33
GHADOW.....	12,078	33
DHALQUT.....	16,081	44
JIBJAT.....	12,823	35
MAKINAT SHAHAN.....	13,652	37
HAIGHAF.....	11,970	33
KHADRAFI.....	5,539	15
HASIK.....	6,850	19
UMBUSHEQ.....	5,119	14
MUDHAI.....	9,309	26
ASHUWAIMIYAH.....	4,404	12
HADBEEN.....	6,794	19
HALANIYAT.....	4,456	12
PORT RAYSUT.....	2,521	7
SHARBITHAT.....	5,698	16
MARSADIT.....	2,028	6
RIMA.....	1,589	4
MUQSHAN.....	2,281	6
MMT THUMRAIT.....	9,130	25
MMT Q. HEIRITI.....	5,506	15
MMT SHELEEM.....	166	0
MMT DHALQUT.....	1,057	3
MMT MUDHAI.....	5,194	14
<b>TOTAL:</b>	<b>329,872</b>	<b>904</b>

**(CONT) TABLE 2.7****ATTENDANCES IN HEALTH CENTRES -1991**

HEALTH CENTRES	TOTAL ATTENDANCES	DAILY AVERAGE ATTENDANCE(1)
<b>DAKHILYA</b>		
HAMRA.....	83,262	228
FANJA.....	69,299	190
MANAH.....	52,193	143
BISIYA .....	41,178	113
QURIYATEEN.....	31,722	87
GHAFAT.....	37,653	103
MAMoor.....	38,442	105
WADI BANI RAUWAHA.....	28,056	77
BARKAT AL MOUZ.....	28,697	79
WADI MAHRAM.....	17,190	47
<b>TOTAL:</b>	<b>427,692</b>	<b>1,172</b>
<b>SHARQIYA</b>		
MUDHAIBI.....	54,343	149
KAMIL.....	39,609	109
ASHKARA.....	35,700	98
WAFI.....	31,610	87
GHAINA.....	22,315	61
FALAJ AL MASHAIKH.....	14,646	40
RUWAIS.....	20,219	55
MUDHERIB.....	15,602	43
AFLAJ.....	18,578	51
RAS AL HAD.....	23,169	63
AIGA.....	14,769	40
DREEZ.....	10,085	28
TIWI.....	13,522	37
DHAHIR.....	10,340	28
QUMAILA* .....	10,605	29
SUWAIH* .....	13,627	37
AL AYOON.....	10,307	28
WADI BANI JABER.....	5,023	14
MCH IBRA.....	6,046	17
<b>TOTAL:</b>	<b>370,115</b>	<b>1,014</b>
<b>NORTH BATINAH</b>		
SUWAIQ.....	174,592	478
LIWA.....	104,006	285
KHABURA.....	175,497	481
SHINAS.....	105,898	290
HEEBI .....	28,755	79
ABU BAQRA.....	24,657	68
KHATMAT MALAHA .....	11,408	31
MASHAIQ .....	19,944	55
WADI SHAFAN.....	5,338	15
<b>TOTAL:</b>	<b>650,095</b>	<b>1,781</b>

**(CONT) TABLE 2.7****ATTENDANCES IN HEALTH CENTRES -1991**

HEALTH CENTRES	TOTAL ATTENDANCES	DAILY AVERAGE ATTENDANCE(1)
<b>SOUTH BATINAH</b>		
BIRKA.....	190,824	523
MASNAH.....	242,274	664
AFI.....	42,263	116
NAKHAL.....	46,836	128
AWABI.....	37,079	102
HOQEIN.....	35,450	97
WADI SAHTAN.....	41,884	115
<b>TOTAL:</b>	<b>636,610</b>	<b>1,744</b>
<b>AL-DHAHIRA</b>		
IBRI.....	69,150	189
DHANK.....	49,546	136
MUQNIYAT.....	50,828	139
HAJEERMAT.....	42,289	116
MAMUR.....	16,861	46
MAHADHA.....	20,976	57
WADI FIDA.....	17,834	49
SUNAINA.....	13,191	36
FAYADH.....	9,885	27
MMT DHANK.....	39	0
MMT MUQNIYAT.....	7,162	20
MMT SUNAINA.....	3,490	10
<b>TOTAL:</b>	<b>301,251</b>	<b>825</b>
<b>MUSANDAM</b>		
MADHA.....	22,694	62
LIMA.....	15,538	43
KUMZAR.....	9,163	25
BUKHA**.....	* *	
<b>TOTAL:</b>	<b>47,395</b>	<b>130</b>
<b>AL WOUSTAH</b>		
KAHIL.....	14,268	39
LIQBI.....	7,761	21
SOGHARA.....	5,293	15
MAHOOT.....	40,663	111
MMT KAHIL.....	2,615	7
<b>TOTAL:</b>	<b>70,600</b>	<b>193</b>
<b>NATIONAL TOTAL:</b>	<b>3,397,023</b>	<b>9,307</b>

(M.M.T.) = Mobile Medical Team

**NOTES**

(1) Total attendances divided by 365 days

\* Closed from June to August, 1991.

\*\* Data is included in Bukha Hospital.



**TABLE 2.8****ATTENDANCES IN HEALTH CENTRES BY TYPE OF CLINIC - 1991**

TYPE OF CLINIC	T O T A L	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	N BATINAH	S BATINAH	DHAHIRA	MUSANDAM	WOUSTAH
General Practice.....	3,091,528	533,328	324,925	398,166	345,727	538,587	551,891	283,356	46,001	69,547
Dental.....	2,246	0	0	0	0	0	2,246	0	0	0
Antenatal.....	99,665	9,782	4,295	11,363	13,127	32,974	21,293	5,130	648	1,053
Postnatal.....	8,153	682	0	0	520	5,808	974	169	0	0
Child Health.....	84,888	0	649	2,754	8,716	16,193	51,906	4,670	0	0
Immunization.....	99,055	19,601	3	15,409	1,092	46,254	8,024	7,926	746	0
Immunization - Outreach.....	2,820	0	0	0	0	2,820	0	0	0	0
Immunization - School.....	5,544	0	0	0	0	5,544	0	0	0	0
Others.*.....	3,124	0	0	0	933	1,915	276	0	0	0
<b>TOTAL.....</b>	<b>3,397,023</b>	<b>563,393</b>	<b>329,872</b>	<b>427,692</b>	<b>370,115</b>	<b>650,095</b>	<b>636,610</b>	<b>301,251</b>	<b>47,395</b>	<b>70,600</b>

\* Others include surgery, ophthalmology and dermatology.

### 3 MORBIDITY

The morbidity groups of all inpatients discharged from hospitals in 1991 is shown in Table 3.1. This is the number of discharges for the 18 standard Disease Groups. While not an illness, Normal Deliveries (Group 11b) had the largest number of discharges in 1992, accounting for 35% of all female discharges.

Of the disease groups, those of the respiratory system (Group 8) accounted for the highest proportion of cases with over 25 thousand patients. The infectious diseases (Group 1) showed a marked decrease from 1990 with the number of cases decreasing by 8% from 20.7 thousand in 1990 to 18.9 thousand in 1991. This was mainly due to a decrease in the number of malaria cases which reduced from its high of 6,828 in 1990 to 4,353 in 1991. The main cause of infectious diseases continued to be gastroenteritis and diarrhoea. However, the decreasing trend shown from 1987 to 1990 was reversed with a 4% increase in the numbers of admissions.

The next highest cause of inpatient admission was injuries and poisoning for which 15 thousand cases were admitted. This was a 6% increase over 1990, continuing the increasing trend seen since 1988. The causes with more than 1,000 admissions were poisonings and by fractures of the humerus, radius and ulna.

The regional distribution of inpatient morbidity is shown in Tables 3.2 and 3.3. Table 3.2 shows the numbers of patients treated for each disease in each region in 1990, i.e. the workload on the hospitals in each region. However, each region has a different sized population and so the numbers of admissions do not reflect the pattern of morbidity around the country. In order to compare the regional morbidity patterns, Table 3.3 shows the rate of admissions per 10,000 population in each region. (It must be remembered that some of the hospitals of the Muscat region are referral hospitals which take cases from all over the Sultanate. Hence high rates for Muscat e.g. for malignancies, do not necessarily imply a higher than expected incidence of a disease.)

Thus admission rates for gastroenteritis and diarrhoea are highest by far in Sharqiya and Musandam, while being relatively low in both the Muscat and Batinah regions. This can either reflect a varying incidence of severe cases or different treatment and admission policies. As expected, the admission rates for malaria vary quite considerably around the country, ranging from under 5 in Muscat and Dhofar to over 50 in Sharqiya and Dhahira. While respiratory disease (Group 8) have the highest admission rates, there is considerable variation around the country. Some of the variations in individual disease groups may be due to differences in classification, but still the total admission rate for Group 8 varies from under 100 in Muscat, North and South Batinah to over 300 in Sharqiya, Musandam and AL Woustah. Again these may be reflective of either different incidence rates of severe cases of the disease or (more likely) different admission policies.

The rates for normal deliveries have some interesting variations. They are lowest in both Dhofar and Al Woustah for no apparent reason. The lower rates in Dhahira and Musandam can be explained by some of the deliveries of these regions taking place in nearby hospitals of the U.A.E. Rates in other regions are similar.

The numbers of cases of notifiable diseases reported from 1985 to 1991 are shown in Table 3.5. This only includes cases notified, and is not necessarily the complete incidence of the disease. Influenza had by far the highest number of cases, followed by malaria, chickenpox and mumps. While the notifications of some diseases have declined consistently (e.g. tuberculosis, diphtheria, tetanus and viral hepatitis), others have reached what may be their endemic levels with fluctuations up or down each year ( e.g. typhoid, amoebiasis, brucellosis, measles, mumps).

The regional distribution of the 1991 cases is shown in Table 3.4. Under the new disease surveillance system in operation during 1991, the cases were checked for duplication and assigned to their regions of residence. Hence the data quite accurately reflect the true incidence in each region. Certain regions experienced higher incidence of certain diseases e.g. meningococcal infection in Sharqiya, tuberculosis in Muscat (possibly associated with the high expatriate population) and brucellosis in Dhofar. Epidemics of both mumps and chickenpox occurred throughout the country during 1991.

TABLE 3.1

## INPATIENT MORBIDITY STATISTICAL REPORT

## GENERAL GROUPS

## ALL HOSPITALS

## COMPARISON OF 1991 AND 1990

ICD GROUP CODE	DISEASE / CONDITION	TOTAL DISCHARGES IN 1991 (alive and dead)			TOTAL DISCHARGES		% CHANGE	
		MALE	FEMALE	TOTAL	1990	1989	1990- 1991	1989- 1990
1 -	INFECTIOUS AND PARASITIC DISEASES : .....	10,215	8,715	18,930	20,651	18,682	-8%	11%
2 -	NEOPLASMS.....	1,082	1,133	2,215	2,110	1,849	5%	14%
3 -	ENDOCRINE, NUTRITIONAL, METABOLIC & IMMUNITY DISORDERS:.....	1,740	2,484	4,224	3,026	2,699	40%	12%
4 -	DISEASES OF THE BLOOD & BLOOD-FORMING ORGANS : .....	2,141	1,915	4,056	3,832	3,729	6%	3%
5 -	MENTAL DISORDERS : .....	685	726	1,411	1,327	1,294	6%	3%
6 -	DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS:.....	3,564	2,470	6,034	5,877	6,395	3%	-8%
7 -	DISEASES OF THE CIRCULATORY SYSTEM : .....	5,992	4,601	10,593	9,439	9,031	12%	5%
8 -	DISEASES OF THE RESPIRATORY SYSTEM : .....	14,106	11,813	25,919	23,137	22,706	12%	2%
9 -	DISEASES OF THE DIGESTIVE SYSTEM : .....	5,523	4,637	10,160	9,764	9,621	4%	1%
10 -	DISEASES OF THE GENITOURINARY SYSTEM : .....	3,373	5,086	8,459	8,618	8,413	-2%	2%
11 - A	COMPLICATIONS OF PREGNANCY & BIRTH : .....	0	17,188	17,188	17,138	16,843	0%	2%
11 - B	NORMAL DELIVERY.....	0	41,168	41,168	40,946	40,292	1%	2%
12 -	DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE : .....	3,309	1,480	4,789	4,548	4,241	5%	7%
13 -	DISEASES OF THE MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1,744	1,335	3,079	3,009	2,952	2%	2%
14 -	CONGENITAL ANOMALIES : .....	957	614	1,571	1,574	1,708	0%	-8%
15 -	CONDITIONS ORIGINATING IN THE PERINATAL PERIOD : .....	2,289	1,985	4,274	3,797	3,499	13%	9%
16 -	SYMPTOMS, SIGNS AND ILL-DEFINED CONDITIONS : .....	4,561	3,783	8,344	8,392	8,301	-1%	1%
17 -	INJURIES AND POISONING:.....	10,312	4,749	15,061	14,165	13,553	6%	5%
18 -	(V-CODES) OTHER REASONS FOR CONTACT WITH HEALTH SERVICES....	1,140	867	2,007	1,851	1,015	8%	82%
TOTAL.....		72,733	116,749	189,482	183,201	176,881	3.4%	3.6%

TABLE 3.2

**MORBIDITY OF INPATIENT DISCHARGES IN 1991 BY MAJOR DISEASE GROUPS AND REGIONS  
AND INDIVIDUAL DISEASE GROUPS WITH 1,000 OR MORE DISCHARGES**

DIS. GROUP BTL CODE	DISEASE/CONDITION	TOTAL DISCHARGES IN 1991									
		NATIONAL TOTAL	MUSCAT	DHOFA	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRAH	MUSANDAM	WUOSTAH
1	INFECTIOUS AND PARASITIC DISEASES .....	18,930	1,744	1,407	3,007	5,682	2,530	1,239	2,409	623	289
B019.1	Acute gastro-enteritis and diarrhoea .....	7,345	651	715	1,247	2,551	742	342	792	226	79
B049	Non-specific viral diseases .....	2,547	84	128	543	862	298	171	242	144	75
B052	Malaria .....	4,353	196	12	665	1,175	1,087	282	826	25	85
2	NEOPLASMS .....	2,215	1,594	167	84	127	62	45	97	31	8
3	ENDOCRINE, NUTRITIONAL, METABOLIC & IMMUNITY .....	4,224	969	289	780	782	334	577	376	81	36
B181	Diabetes mellitus .....	2,072	527	226	296	363	205	75	308	63	9
B190-192	Protein-calorie malnutrition .....	1,540	99	29	462	292	114	474	38	5	27
4	DISEASES OF THE BLOOD & BLOOD-FORMING ORGANS .....	4,056	1,504	222	690	380	510	211	443	87	9
B200	Anaemias .....	2,788	1,306	147	312	271	157	168	363	58	6
5	MENTAL DISORDERS .....	1,411	651	190	128	236	6	25	147	20	8
6	DISEASES OF NERVOUS SYSTEM AND SENSE ORGANS .....	6,034	2,733	473	776	669	407	275	586	103	12
B231	Cataract .....	1,507	687	148	192	178	69	69	149	15	0
7	DISEASES OF THE CIRCULATORY SYSTEM .....	10,593	2,962	850	1,485	1,756	1,435	491	1,240	336	38
B26	Hypertensive diseases .....	2,502	377	175	438	582	332	69	354	157	18
B27	Ischaemic heart diseases .....	4,077	1,172	355	455	533	885	124	451	89	13
B28	Diseases of pulmonary circulation & heart NOS .....	2,167	800	167	352	356	6	180	265	36	5
8	DISEASES OF THE RESPIRATORY SYSTEM .....	25,919	3,566	2,991	3,743	7,497	2,676	1,198	2,727	928	593
B310	Acute tonsillitis .....	1,742	57	244	403	465	195	31	162	151	34
B312	Acute upper respiratory infections .....	6,741	67	632	561	2,351	1,573	139	1,192	162	64
B315	Chronic diseases of tonsils and adenoids .....	1,052	812	116	3	35	29	2	27	27	1
B319	Non-specific diseases of the upper resp tract .....	1,283	270	30	153	265	138	108	138	80	101
B320	Acute bronchitis & bronchiolitis .....	3,640	190	498	919	1,290	154	221	170	71	127
B321	Pneumonia .....	3,893	612	409	842	981	276	434	249	59	31
B323	Bronchitis (chronic), emphysema & asthma .....	4,833	547	700	581	1,712	249	178	424	263	179

(CONT)TABLE 3.2

**MORBIDITY OF INPATIENT DISCHARGES IN 1991 BY MAJOR DISEASE GROUPS AND REGIONS  
AND INDIVIDUAL DISEASE GROUPS WITH 1,000 OR MORE DISCHARGES**

DIS. GROUP BTL CODE	DISEASE/CONDITION	TOTAL DISCHARGES IN 1991									
		NATIONAL TOTAL	MUSCAT	DHOFA	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRA	MUSANDAM	WUOSTAH
9	DISEASES OF THE DIGESTIVE SYSTEM .....	10,160	2,688	1,169	1,354	2,031	1,066	400	1,116	249	87
B342	Appendicitis .....	1,687	492	273	184	227	245	91	135	34	6
B343	Hernia of abdominal cavity .....	1,357	544	129	132	176	195	34	128	19	0
B349.1	Gastritis and duodenitis .....	2,832	139	248	624	899	282	130	393	87	30
B349.3	Diseases of other parts of digestive system .....	2,754	853	384	279	502	220	90	314	79	33
10	DISEASES OF THE GENITOURINARY SYSTEM .....	8,459	2,917	599	1,103	1,568	735	349	754	357	77
B35	Diseases of urinary system .....	4,425	1,415	314	617	932	316	228	434	96	73
B37	Diseases of female genital organs .....	2,822	1,137	203	354	493	260	76	211	85	3
11-A	COMPLICATIONS OF PREGNANCY & BIRTH .....	17,188	5,591	1,693	2,278	3,154	1,711	1,168	1,287	241	65
B38	Abortions .....	6,481	1,946	422	839	1,253	848	502	536	119	16
B39	Direct obstetric causes .....	8,480	2,943	1,023	1,192	1,632	562	491	519	86	32
B40	Indirect obstetric causes .....	2,227	702	248	247	269	301	175	232	36	17
11-B	NORMAL DELIVERY .....	41,168	10,380	3,065	5,008	6,925	8,063	4,075	2,979	543	130
12	DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE .....	4,789	2,789	281	442	435	278	179	254	106	25
13	DISEASES OF MUSCULOSKELETAL SYSTEM .....	3,079	1,235	320	337	327	408	77	215	128	32
14	CONGENITAL ANOMALIES .....	1,571	1,163	81	95	73	46	37	66	9	1
15	CONDITIONS ORIGINATING IN PERINATAL PERIOD .....	4,274	1,336	603	704	530	476	333	248	30	14
B452	Slow fetal growth, malnutrition & immaturity .....	1,492	313	84	261	165	466	117	70	14	2
16	SYMPTOMS, SIGNS AND ILL-DEFINED CONDITIONS .....	8,344	1,705	1,004	1,317	1,627	913	472	1,011	269	26
B460	Pyrexia of unknown origin .....	1,121	53	203	94	327	219	107	80	36	2
B462	Renal colic .....	1,386	115	185	397	306	72	64	211	28	8
B464	Epigastric pain .....	1,095	212	162	154	158	238	20	132	17	2
17	INJURIES AND POISONING .....	15,061	3,592	1,109	2,888	2,254	1,908	1,304	1,597	317	92
B472	Fracture of humerus, radius & ulna .....	1,237	419	91	150	111	245	79	119	19	4
B53	Poisoning & toxic effects .....	1,670	152	153	357	383	329	212	55	18	11
18	(V-CODES) NON-CURATIVE REASONS .....	2,007	1,587	0	0	0	0	0	163	257	0
	TOTAL .....	189,482	50,706	16,513	26,219	36,053	23,564	12,455	17,715	4,715	1,542

TABLE 3.3

**RATES OF INPATIENT DISCHARGES IN 1991 BY MAJOR DISEASE GROUPS AND REGIONS  
AND INDIVIDUAL DISEASE GROUPS WITH 1,000 OR MORE DISCHARGES**

DIS. GROUP BTL CODE	DISEASE/CONDITION	RATES OF DISCHARGES PER 10,000 POPULATION IN 1991									
		NATIONAL TOTAL	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRA	MUSANDAM	WUOSTAH
1	INFECTIOUS AND PARASITIC DISEASES .....	121	48	82	156	256	83	87	172	260	289
B019.1	Acute gastro-enteritis and diarrhoea .....	47	18	42	65	115	24	24	57	94	79
B049	Non-specific viral diseases .....	16	2	7	28	39	10	12	17	60	75
B052	Malaria .....	28	5	1	34	53	36	20	59	10	85
2	NEOPLASMS .....	14	44	10	4	6	2	3	7	13	8
3	ENDOCRINE, NUTRITIONAL, METABOLIC & IMMUNITY .....	27	27	17	40	35	11	40	27	34	36
B181	Diabetes mellitus .....	13	15	13	15	16	7	5	22	26	9
B190-192	Protein-calorie malnutrition .....	10	3	2	24	13	4	33	3	2	27
4	DISEASES OF THE BLOOD & BLOOD-FORMING ORGANS .....	26	42	13	36	17	17	15	32	36	9
B200	Anaemias .....	18	36	9	16	12	5	12	26	24	6
5	MENTAL DISORDERS .....	9	18	11	7	11	0	2	11	8	8
6	DISEASES OF NERVOUS SYSTEM AND SENSE ORGANS .....	39	76	28	40	30	13	19	42	43	12
B231	Cataract .....	10	19	9	10	8	2	5	11	6	0
7	DISEASES OF THE CIRCULATORY SYSTEM .....	68	82	50	77	79	47	34	89	140	38
B26	Hypertensive diseases .....	16	10	10	23	26	11	5	25	65	18
B27	Ischaemic heart diseases .....	26	33	21	24	24	29	9	32	37	13
B28	Diseases of pulmonary circulation & heart NOS .....	14	22	10	18	16	0	13	19	15	5
8	DISEASES OF THE RESPIRATORY SYSTEM .....	166	99	175	194	338	88	84	195	387	593
B310	Acute tonsillitis .....	11	2	14	21	21	6	2	12	63	34
B312	Acute upper respiratory infections .....	43	2	37	29	106	52	10	85	68	64
B315	Chronic diseases of tonsils and adenoids .....	7	23	7	0	2	1	0	2	11	1
B319	Non-specific diseases of the upper resp tract .....	8	8	2	8	12	5	8	10	33	101
B320	Acute bronchitis & bronchiolitis .....	23	5	29	48	58	5	15	12	30	127
B321	Pneumonia .....	25	17	24	44	44	9	30	18	25	31
B323	Bronchitis (chronic), emphysema & asthma .....	31	15	41	30	77	8	12	30	110	179
	(Population estimates used (thousands)) .....	1,563	360	171	193	220	303	143	140	24	10

(CONT)TABLE 3.3

**RATES OF INPATIENT DISCHARGES IN 1990 BY MAJOR DISEASE GROUPS AND REGIONS  
AND INDIVIDUAL DISEASE GROUPS WITH 1,000 OR MORE DISCHARGES**

DIS. GROUP BTL CODE	DISEASE/CONDITION	RATES OF DISCHARGES PER 10,000 POPULATION IN 1990									
		NATIONAL TOTAL	MUSCAT	DHOFA	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRA	MUSANDAM	WUOSTAH
9	DISEASES OF THE DIGESTIVE SYSTEM .....	65	75	68	70	91	35	28	80	104	87
B342	Appendicitis .....	11	14	16	10	10	8	6	10	14	6
B343	Hernia of abdominal cavity .....	9	15	8	7	8	6	2	9	8	0
B349.1	Gastritis and duodenitis .....	18	4	15	32	40	9	9	28	36	30
B349.3	Diseases of other parts of digestive system .....	18	24	22	14	23	7	6	22	33	33
10	DISEASES OF THE GENITOURINARY SYSTEM .....	54	81	35	57	71	24	24	54	149	77
B35	Diseases of urinary system .....	28	39	18	32	42	10	16	31	40	73
B37	Diseases of female genital organs .....	18	32	12	18	22	9	5	15	35	3
11-A	COMPLICATIONS OF PREGNANCY & BIRTH .....	110	155	99	118	142	56	82	92	100	65
B38	Abortions .....	41	54	25	43	56	28	35	38	50	16
B39	Direct obstetric causes .....	54	82	60	62	74	19	34	37	36	32
B40	Indirect obstetric causes .....	14	20	15	13	12	10	12	17	15	17
11-B	NORMAL DELIVERY .....	263	288	179	259	312	266	285	213	226	130
12	DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE .....	31	77	16	23	20	9	13	18	44	25
13	DISEASES OF MUSCULOSKELETAL SYSTEM .....	20	34	19	17	15	13	5	15	53	32
14	CONGENITAL ANOMALIES .....	10	32	5	5	3	2	3	5	4	1
15	CONDITIONS ORIGINATING IN PERINATAL PERIOD .....	27	37	35	36	24	16	23	18	13	14
B452	Slow fetal growth, malnutrition & immaturity .....	10	9	5	14	7	15	8	5	6	2
16	SYMPTOMS, SIGNS AND ILL-DEFINED CONDITIONS .....	53	47	59	68	73	30	33	72	112	26
B460	Pyrexia of unknown origin .....	7	1	12	5	15	7	7	6	15	2
B462	Renal colic .....	9	3	11	21	14	2	4	15	12	8
B464	Epigastric pain .....	7	6	9	8	7	8	1	9	7	2
17	INJURIES AND POISONING .....	96	100	65	150	102	63	91	114	132	92
B472	Fracture of humerus, radius & ulna .....	8	12	5	8	5	8	6	9	8	4
B53	Poisoning & toxic effects .....	11	4	9	18	17	11	15	4	8	11
18	(V-CODES) NON-CURATIVE REASONS .....	13	44	0	0	0	0	0	12	107	0
	TOTAL .....	1,210	1,409	966	1,358	1,624	778	871	1,265	1,965	1,542



TABLE 3.4

## NOTIFIABLE DISEASES BY REGION - 1991

ICD CODE		TOTAL	MUSCAT	DHOOFAR	DAKHILYA	SHARQIYA	N.BATINAH	S.BATINAH	DHAHIRA	MUSANDAM	WOUSTAH
<b>GROUP A DISEASES (IMMEDIATE reporting of individual cases)</b>											
001	Cholera.....	0	0	0	0	0	0	0	0	0	0
020	Plague.....	0	0	0	0	0	0	0	0	0	0
032	Diphtheria.....	2	1	0	0	0	1	0	0	0	0
045	Acute poliomyelitis.....	4	0	0	1	1	0	2	0	0	0
771.3	Tetanus neonatorum.....	1	0	0	0	0	0	1	0	0	0
060	Yellow fever.....	0	0	0	0	0	0	0	0	0	0
071	Rabies.....	1	0	1	0	0	0	0	0	0	0
080	Louse-borne typhus.....	0	0	0	0	0	0	0	0	0	0
087	Relapsing fever.....	0	0	0	0	0	0	0	0	0	0
036	Meningococcal infection.....	27	7	2	1	13	2	2	0	0	0
<b>GROUP B DISEASES (Weekly reporting of individual cases)</b>											
002	Typhoid fever.....	100	46	10	14	6	3	15	2	4	0
002.1-9	Paratyphoid fevers.....	21	10	3	1	5	0	2	0	0	0
003 & 005	Food poisoning.....	259	43	14	90	30	0	58	22	2	0
010-018	Tuberculosis.....	442	226	68	12	59	22	33	19	3	0
022	Anthrax.....	0	0	0	0	0	0	0	0	0	0
023	Brucellosis.....	350	0	347	3	0	0	0	0	0	0
030	Leprosy.....	17	1	7	0	2	3	2	2	0	0
033	Whooping cough (Pertussis).....	26	2	0	1	3	7	12	0	1	0
037	Tetanus (Excluding neonatal).....	8	1	2	1	1	2	1	0	0	0
055	Measles (Only below 6 years).....	48	3	6	19	3	4	1	5	7	0
056	Rubella in Pregnancy.....	0	0	0	0	0	0	0	0	0	0
061	Dengue.....	0	0	0	0	0	0	0	0	0	0
070.2or.3	Viral hepatitis - Type B.....	245	19	33	68	68	9	36	10	2	0
070(other)	Viral Hepatitis - other than Type B.....	402	8	54	127	75	12	81	36	9	0
070.6 & 9	Viral Hepatitis - Unspecified.....	419	18	90	131	62	22	8	86	2	0
085	Leishmaniasis.....	3	0	2	0	0	0	1	0	0	0
120	Schistosomiasis.....	9	6	0	2	1	0	0	0	0	0
125.7	Dracunculiasis / Guinea worm.....	0	0	0	0	0	0	0	0	0	0
125(other)	Filariasis.....	1	0	0	0	0	0	1	0	0	0
<b>GROUP C DISEASES (Numbers only)</b>											
004	Shigellosis (Bacillary dysentery).....	1,971	1,076	37	35	270	24	72	400	49	8
006	Amoebiasis.....	5,105	1,271	18	141	1,067	146	125	1,717	619	1
008-009	Acute Gastro-Enteritis and Diarrhoea.....	227,127	45,263	10,681	24,776	41,886	42,470	30,480	23,624	5,319	2,628
052	Chicken Pox.....	17,779	5,083	976	1,777	4,684	2,810	1,544	640	254	11
056	Rubella - other than in Pregnancy.....	8	2	0	0	0	1	0	5	0	0
072	Mumps.....	15,654	3,497	665	2,794	950	2,127	1,884	3,566	30	141
076	Trachoma.....	10,117	1,149	108	4,914	1,211	874	423	1,272	21	145
084	Malaria (clinical).....	37,360	1,319	15	1,991	3,788	18,955	2,375	8,328	64	525
084	Malaria (confirmed)*.....	15,835	1,790	16	2,295	2,701	2,112	1,085	5,769	67	n.a.**
090-097	Syphilis.....	196	40	25	29	16	53	3	18	11	1
098	Gonococcal Infections.....	574	175	74	32	97	55	7	53	53	28
487	Influenza.....	51,933	20,442	123	5,947	10,060	495	5,503	8,658	404	301
055	Measles (Above 6 years).....	228	114	7	17	21	14	28	10	17	0

\* Excludes 1,199 from malaria units & central laboratory, 116 from focal studies, 867 case contact & follow-ups, 126 from chloroquine allergy test, and 119 from those who came from East Africa.

\*\* Included in Dakhilya Region

TABLE 3.5

## NOTIFICATIONS OF INFECTIOUS DISEASES 1985 - 1991

(ICD-9) BTL No.	DISEASE	1985	1986	1987	1988	1989	1990	1991
010	Cholera	0	0	0	0	0	1(i)	0
011	Typhoid fever	244	168	131	117	178	167	100
012	Shigellosis (bacillary dysentery) *	4,276	3,332	2,457	2,224	2,979	2,540	1,971
013	Food poisoning (including salmonella)	319	262	221	208	147	174	259
014	Amoebiasis *	3,787	4,048	3,833	3,833	5,436	5,393	5,105
019.0	Paratyphoid fevers	21	26	36	36	25	84	21
02	Tuberculosis (all forms) **	1,229*	700	616	477	478	482	442
031	Brucellosis	260	186	229	292	224	183	350
032	Leprosy *	32	21	6	15	18	13	17
033	Diphtheria **	6	4	0	0	0	0	2
034	Whooping cough	765*	207*	5**	16**	25**	49**	26
036	Meningococcal infection	9	7	126	41	33	32	27
037	Tetanus (other than neonatal)	64	24	10	11	11	10	8
039.0	Anthrax	0	1	2	2	1	0	0
040	Acute poliomyelitis	33	9**	6**	118**	5**	0	4
042	Measles *	3,675	2,001	3,804	6,052	4,255	1,262	276
043	Rubella *	10	1	77	175	54	27	8
046	Viral hepatitis *	2,118	2,223	1,826	1,688	1,390	1,176	1,066
047	Rabies	0	0	0	0	0	0	1
049.1	Chicken-pox *	5,955	8,814	14,616	23,381	16,729	7,041	17,779
049.3	Mumps *	18,040	8,778	5,192	11,169	15,167	11,375	15,654
052	Malaria (clinical)	n.a	n.a	n.a	51,187	39,762	62,029	37,360
052	Malaria (confirmed) **	16,348	16,420	15,437	24,780	17,867	32,720	18,262
053	Leishmaniasis	23	17	32	11	27	12	3
060	Syphilis	12	2	5	8	5	4	196
061	Gonococcal infection	8	10	6	5	6	10	574
072	Schistosomiasis *	5	47	17	44	43	29	9
074	Filarial infection *	20	7	19	82	42	1	1
322	Influenza *	91,373	83,604	101,358	120,208	98,731	82,012	51,933
459.1	Tetanus neonatorum **	11	11	8	1	0	0	1

## Notes:

Statistics from 1985 -1990 are hospital inpatient cases except where indicated.

\* Outpatient cases

\*\* Confirmed cases

(i) - Imported case

n.a. - Not available

Starting 1991, the new Communicable Disease Surveillance monthly reporting system was introduced categorizing these diseases into Group A, B, & C as shown in Table 3.5. No case was reported of the other diseases, i.e. louseborne typhus, plague, relapsing fever, small-pox & yellow fever.

## TREATMENT ABROAD

Under the Government's commitment to provide free medical treatment, patients who cannot be treated locally are sent for treatment abroad by the Ministry of Health. Details of patients treated abroad in 1991 are shown in Table 3.6.

A total of 328 patients were treated abroad, which was a significant 22% lower than the 418 in 1990. The reduction was mainly due to the Royal Hospital now treating cardiac cases, the numbers treated overseas falling by over 50% from 259 in 1990 to only 125 in 1991. The principal countries used overall were India (51%) and the United Kingdom (41%).

Cardiac cases and neoplasms accounted for 70% of all cases. Ophthalmic (11%) and Nephrological/Urological (7%) conditions were the other main causes for treatment abroad.

**TABLE 3.6****PATIENTS TREATED ABROAD BY DISEASE AND COUNTRY OF TREATMENT - 1991**

CONDITIONS TREATED	U.K	INDIA	JORDAN	* OTHER COUNTRIES	TOTAL CASES		
					1991	1990	1989
Cardiac.....	82	26	17	0	125	259	231
Neoplasms.....	1	103	0	0	104	53	81
Ophthalmic.....	35	1	0	1	37	29	40
Neurology.....	1	6	0	0	7	17	17
Nephrology & Urology.....	0	23	0	0	23	18	24
Orthopaedics.....	7	1	0	2	10	10	14
Haematology.....	0	6	0	0	6	20	7
Gastro-intestinal/abdominal.....	2	0	0	0	2	3	7
ENT.....	1	0	0	0	1	1	3
Dermatology.....	0	0	0	0	0	0	1
Liver diseases.....	2	1	0	0	3	1	2
Chest inc. tuberculosis.....	0	0	0	0	0	0	1
Psychiatry.....	0	0	0	0	0	0	2
Endocrinology inc thyroid.....	0	0	0	0	0	4	2
Plastic surgery.....	0	0	0	5	5	2	1
Vascular surgery.....	0	0	0	0	0	1	0
Metabolic Disorder.....	5	0	0	0	5	0	0
Other investigations.....	0	0	0	0	0	0	3
TOTAL:	1991	136	167	17	8	328	
	1990	172	109	115	22	418	
	1989	184	94	125	33		436

\* ( Egypt , Saudi Arabia , Australia , Germany )

## 4 OTHER HOSPITAL ACTIVITY

### a) Deliveries and Births.

Details of the deliveries carried out in hospitals and health centres with beds in 1991 are shown in Table 4.1. A total of 45.1 thousand deliveries took place in hospitals and maternity centres. Of these deliveries, 93% were spontaneous cephalic vaginal deliveries, 2% were assisted and 5% by Caesarean section. The rate of caesarean sections was highest in both the Royal and Khoula hospitals, as they are the referral hospitals for high risk cases from all over the Sultanate.

The outcome of the deliveries is shown in Table 4.2. There were 45.7 thousand births of which 590 (1.3%) were stillbirths. There was limited variation in the rate across the hospitals and regions of the Sultanate, although the rate at the Nizwa hospital was almost double the national average; high stillbirth rates have been observed there for the last four years. Of the 45.1 thousand livebirths, 3.9 thousand (7.9%) were of low birth weight (Under 2,500 gms). The rate was highest at 13.5% in the Royal Hospital (as for 1990) which has a higher proportion of high risk deliveries; there was only a limited variation across the remainder of the country.



## b) Other activities

Table 4.3 show the numbers of operations performed in hospitals and health centres in 1991 by type of operation. Major operations by type are shown in Figure 6. The total of 15.6 thousand major operations was 4% lower than the 16.3 thousand of 1990. There were 58 thousand minor operations performed - a significant 8.7% increase from the 53 thousand minor operations in 1990.

Table 4.4 shows the amount of radiography performed in each hospital in 1991. A total of 410 thousand procedures took place - a 10.5% increase over the 391 thousand procedures of 1990, thus continuing the 8-10% annual increase which has occurred since 1988. The main increase occurred in plain x-rays at the Sohar hospital.

Table 4.5 shows the number of laboratory tests undertaken in 1991. The total 5.6 million was 10% higher than the 5.1 million of 1990, giving an average annual growth of 18% since the 3.5 million in 1988. The change varied considerably around the country - 8% fewer tests were done at the Royal, compared with 46% more at the Buraimi hospital, 40% more at the Qaboos hospital and 35% more at the Nizwa hospital.

The use of dental services fell slightly in 1991 as shown in Table 4.6. 237 thousand treatments were carried out in 1990 - a 4% decrease over the 247 thousand in 1990; this was in spite of a 7% increase in the number of extractions. The ratio of extractions : fillings remained at the 1989 and 1990 level of 4.3 extractions :1 filling. The worst region is still Sharqiya (8.7 extractions: 1 filling), although this has improved since 1988. The Sinaw hospital performed over 4 thousand extractions but, as for the last three years, no fillings.

**TAB 4-1**

**NUMBER OF DELIVERIES & BIRTHS - 1991**

REGIONS	DELIVERIES IN HEALTH UNITS					TOTAL
	SCVD	BREECH (VAGINAL)	ASSISTED DELIVERY	CAESARIAN		
				ELECTIVE	EMERGENCY	
MUSCAT						
ROYAL.....	4,356	100	119	127	468	5,170
KHOULA.....	5,238	92	88	133	352	5,903
QURIYAT.....	827	19	24	0	0	870
TOTAL:	10,421	211	231	260	820	11,943
DHOFAR						
QABOOS.....	2,950	75	78	80	149	3,332
MADINAT AL-HAQ.....	41	1	0	0	0	42
SUDH.....	38	2	0	0	0	40
RAKHYUT.....	6	0	0	0	0	6
TAWI ATTAIR.....	27	0	0	0	0	27
MIRBAT H.C.*.....	1	0	0	0	0	1
SHAHIB ASSAIB H.C.....	17	0	0	0	0	17
SHELEEM H.C.....	22	1	0	0	0	23
DHALQUT H.C.....	20	1	0	0	0	21
MAKINAT SHAHAN H.C....	3	0	0	0	0	3
TOTAL:	3,125	80	78	80	149	3,512
DAKHILYA						
NIZWA.....	1,687	48	29	12	132	1,908
SUMAIL.....	1,263	19	23	3	25	1,333
BAHLA.....	1,136	21	0	0	1	1,158
ADAM.....	309	4	3	0	1	317
IZKI.....	714	10	0	0	8	732
JABAL AKHDAR.....	37	1	0	0	0	38
TOTAL:	5,146	103	55	15	167	5,486
SHARQIYA						
SUR.....	1,765	40	84	3	93	1,985
IBRA.....	1,404	44	31	13	91	1,583
B.B.BU ALI.....	1,307	36	66	2	56	1,467
B.B.BU HASSAN.....	313	3	1	0	0	317
SINAW.....	760	11	2	0	0	773
WADI TAYEEN.....	245	4	0	0	0	249
MASIRAH.....	159	6	10	0	0	175
BIDIYA.....	272	3	0	0	0	275
SAMAD AL-SHAAN.....	411	5	0	0	0	416
WADI BANI KHALID.....	134	3	0	0	0	137
TOTAL:	6,770	155	194	18	240	7,377

**(CONT) TAB 4-1****NUMBER OF DELIVERIES & BIRTHS - 1991**

REGIONS  HOSPITALS	DELIVERIES IN HEALTH UNITS					TOTAL
	SCVD	BREECH (VAGINAL)	ASSISTED DELIVERY	CAESARIAN		
				ELECTIVE	EMERGENCY	
NORTH BATINAH						
SOHAR.....	4,305	113	200	17	180	4,815
SAHAM.....	3,103	31	3	0	1	3,138
WADI HAWASNA.....	59	1	0	0	0	60
WADI SARAMI.....	41	0	0	0	0	41
HEEBI H.C.....	132	0	0	0	0	132
TOTAL:	7,640	145	203	17	181	8,186
SOUTH BATINAH						
RUSTAQ.....	3,361	53	79	0	105	3,598
WADI BANI GHAFFIR.....	288	1	0	0	0	289
WADI BANI KHAROOS.....	113	1	0	0	0	114
WADI MISTAL.....	36	3	0	0	0	39
WADI HEMLI.....	119	2	0	0	0	121
WADI SAHTAN H.C.....	162	4	0	0	0	166
TOTAL:	4,079	64	79	0	105	4,327
DHAHIRA						
TANAM.....	2,051	56	49	4	76	2,236
BURAIMI.....	559	9	7	1	13	589
YANKUL.....	544	8	6	0	1	559
MAHDHA H.C.....	2	0	0	0	0	2
TOTAL:	3,156	73	62	5	90	3,386
MUSANDAM						
KHASAB.....	296	4	9	0	6	315
DIBBA.....	170	9	12	2	4	197
BUKHA.....	58	0	0	0	0	58
MADHA H.C.....	17	0	0	0	0	17
LEEMA H.C.....	34	0	0	0	0	34
KUMZAR H.C.....	22	1	0	0	0	23
TOTAL:	597	14	21	2	10	644
AL WOUSTAH						
HAIMA.....	37	4	2	0	0	43
DUQUM.....	79	0	0	0	0	79
AL KAHIL H.C.....	86	1	0	0	0	87
TOTAL:	202	5	2	0	0	209
NATIONAL TOTAL:	41,136	850	925	397	1,762	45,070

\* Started maternity services in November, 1991.



TABLE 4-2

**OUTCOME OF HOSPITAL DELIVERIES - 1991**

REGIONS  HOSPITALS	LIVE BIRTHS					STILL BIRTHS	GRAND TOTAL	SB's (per100 births)
	500 GMS- 1000 GMS	1000 GMS- 1499 GMS	1500 GMS- 2499 GMS	2500 GMS ORMORE	TOTAL			
MUSCAT								
ROYAL.....	21	110	568	4,480	5,179	85	5,264	1.6%
KHOULA.....	11	12	323	5,527	5,873	74	5,947	1.2%
QURIYAT.....	2	2	93	773	870	7	877	0.8%
-----								
TOTAL:	34	124	984	10,780	11,922	166	12,088	1.4%
-----								
DHOFAR								
QABOOS.....	7	22	147	3,207	3,383	62	3,445	1.8%
MADINAT AL-HAQ.....	0	0	2	41	43	0	43	0.0%
SUDH.....	0	0	1	49	50	0	50	0.0%
RAKHYUT.....	0	0	0	8	8	0	8	0.0%
TAWI ATTAIR.....	0	0	2	29	31	0	31	0.0%
MIRBAT H.C.*.....	0	0	0	1	1	0	1	0.0%
SHAHIB ASSAIB.....	0	0	0	17	17	0	17	0.0%
SHELEEM.....	0	0	2	24	26	0	26	0.0%
DHALQUT.....	0	0	0	30	30	1	31	3.2%
MAKINAT SHAHAN.....	0	0	0	3	3	0	3	0.0%
-----								
TOTAL:	7	22	154	3,409	3,592	63	3,655	1.7%
-----								
DAKHILYA								
NIZWA.....	7	23	193	1,671	1,894	46	1,940	2.4%
SUMAIL.....	1	3	148	1,175	1,327	16	1,343	1.2%
BAHLA.....	0	2	129	1,035	1,166	4	1,170	0.3%
ADAM.....	1	0	25	291	317	2	319	0.6%
IZKI.....	0	1	69	660	730	5	735	0.7%
JABAL AKHDAR.....	0	0	21	69	90	2	92	2.2%
-----								
TOTAL:	9	29	585	4,901	5,524	75	5,599	1.3%
-----								
SHARQIYA								
SUR.....	3	11	143	1,815	1,972	34	2,006	1.7%
IBRA.....	0	7	161	1,404	1,572	21	1,593	1.3%
B.B.BU ALI.....	0	8	94	1,368	1,470	11	1,481	0.7%
B.B.BU HASSAN.....	0	0	20	296	316	1	317	0.3%
SINAW.....	1	1	59	711	772	2	774	0.3%
WADI TAYEEN.....	1	0	14	233	248	2	250	0.8%
MASIRAH.....	0	0	10	162	172	3	175	1.7%
BIDIYA.....	1	4	8	260	273	4	277	1.4%
SAMAD AL-SHAAN.....	0	1	34	381	416	3	419	0.7%
WADI BANI KHALID.....	0	1	19	113	133	4	137	2.9%
-----								
TOTAL:	6	33	562	6,743	7,344	85	7,429	1.1%

(CONT)TABLE 4-2

**OUTCOME OF HOSPITAL DELIVERIES - 1991**

REGIONS  HOSPITALS	LIVE BIRTHS					STILL BIRTHS	GRAND TOTAL	SB's (per100 births)
	500 GMS- 1000 GMS	1000 GMS- 1499 GMS	1500 GMS- 2499 GMS	2500 GMS ORMORE	TOTAL			
NORTH BATINAH								
SOHAR.....	13	28	315	4,439	4,795	73	4,868	1.5%
SAHAM.....	0	7	200	2,927	3,134	22	3,156	0.7%
WADI HAWASNA.....	0	0	3	57	60	0	60	0.0%
WADI SARAMI.....	0	0	2	40	42	1	43	2.3%
HEEBI.....	0	0	14	118	132	0	132	0.0%
TOTAL:	13	35	534	7,581	8,163	96	8,259	1.2%
SOUTH BATINAH								
RUSTAQ.....	5	15	313	3,245	3,578	54	3,632	1.5%
WADI BANI GHAFIR.....	0	0	35	253	288	1	289	0.3%
WADI BANI KHAROOS.....	0	0	10	104	114	0	114	0.0%
WADI MISTAL.....	0	0	5	34	39	0	39	0.0%
WADI HEMLI.....	0	0	9	110	119	2	121	1.7%
WADI SAHTAN .....	2	0	31	121	154	2	156	1.3%
TOTAL:	7	15	403	3,867	4,292	59	4,351	1.4%
DHAHIRA								
TANAM.....	6	14	181	2,026	2,227	28	2,255	1.2%
BURAIMI.....	0	3	42	541	586	5	591	0.8%
YANKUL.....	1	3	47	506	557	3	560	0.5%
MAHDHA.....	0	0	0	2	2	0	2	0.0%
TOTAL:	7	20	270	3,075	3,372	36	3,408	1.1%
MUSANDAM								
KHASAB.....	0	1	33	282	316	2	318	0.6%
DIBBA.....	0	0	15	182	197	4	201	2.0%
BUKHA.....	0	0	1	57	58	0	58	0.0%
MADHA.....	0	0	2	16	18	0	18	0.0%
LEEMA.....	0	1	5	28	34	0	34	0.0%
KUMZAR.....	0	0	1	30	31	0	31	0.0%
TOTAL:	0	2	57	595	654	6	660	0.9%
AL-WOUSTAH								
HAIMA.....	0	0	1	41	42	2	44	4.5%
DUQUM.....	0	0	5	74	79	1	80	1.3%
AL KAHIL.....	1	0	5	90	96	1	97	1.0%
TOTAL:	1	0	11	205	217	4	221	1.8%
NATIONAL TOTAL:	84	280	3,560	41,156	45,080	590	45,670	1.3%

\* Started maternity services in November , 1991.

**TABLE 4.3****OPERATIONS PERFORMED IN MINISTRY OF HEALTH HOSPITALS - 1991**

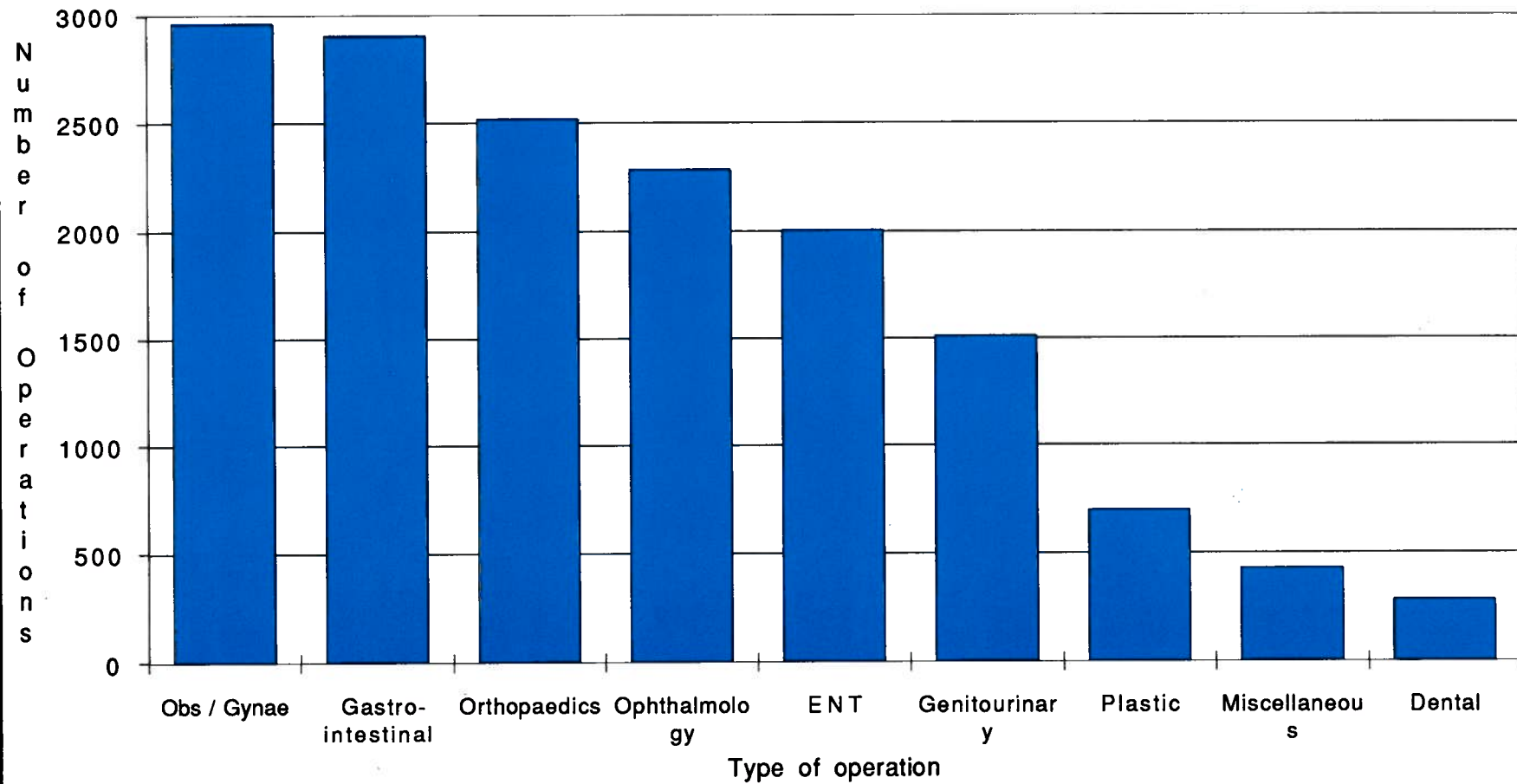
REGIONS HOSPITALS	TYPE OF MAJOR OPERATIONS									TOTAL MAJOR OPERA- TIONS	MINOR OPERA- TIONS	GRAND TOTAL
	Gastro- intestinal	Genito- urinary	Obs.& Gynaec.	Ophthal- mology	Ortho- paedics	Plastic Surgery	ENT	Dental	Misc.			
MUSCAT												
ROYAL.....	889	1,095	1,024	0	553	0	0	0	0	3,561	80	3,641
KHOULA.....	402	0	628	0	1,221	689	0	0	0	2,940	4,351	7,291
AL-NAHDHA.....	0	0	0	1,237	0	0	1,211	262	0	2,710	2,812	5,522
IBN SINA.....	0	0	0	0	0	0	0	0	0	0	0	0
AR-RAHMA.....	0	0	0	0	0	0	0	0	0	0	0	0
QURIYAT.....	0	0	1	0	0	0	0	0	0	1	1,137	1,138
MUSCAT.....	0	0	0	0	0	0	0	0	0	0	7	7
TOTAL:	1,291	1,095	1,653	1,237	1,774	689	1,211	262	0	9,212	8,387	17,599
DHOFAR												
QABOOS.....	336	37	260	175	104	4	323	22	108	1,369	4,122	5,491
MADINAT AL-HAQ.....	0	0	0	0	0	0	0	0	0	0	93	93
SUDHA.....	0	0	0	0	0	0	0	0	0	0	165	165
RAKH-YUT.....	0	0	0	0	0	0	0	0	0	0	16	16
TAWI ATTAIR.....	0	0	0	0	0	0	0	0	0	0	42	42
TOTAL:	336	37	260	175	104	4	323	22	108	1,369	4,438	5,807
DAKHILYA												
NIZWA.....	197	65	155	172	185	6	156	0	97	1,033	12,059	13,092
SUMAIL.....	56	0	32	101	1	0	0	0	12	202	2,750	2,952
BAHLA.....	0	0	0	0	0	0	0	0	0	0	1,912	1,912
ADAM.....	0	0	0	0	0	0	0	0	0	0	331	331
IZKI.....	0	0	0	0	0	0	0	0	0	0	984	984
JABAL AKHDAR.....	0	0	0	0	0	0	0	0	0	0	110	110
TOTAL:	253	65	187	273	186	6	156	0	109	1,235	18,146	19,381
SHARQIYA												
SUR.....	113	19	146	131	22	0	72	0	18	521	4,248	4,769
IBRA.....	91	34	145	40	3	0	0	0	55	368	1,989	2,357
B.B.BU ALI.....	74	11	58	48	0	0	0	0	1	192	1,385	1,577
B.B.BU HASSAN.....	0	0	0	0	0	0	0	0	0	0	167	167
SINAW.....	0	0	0	0	0	0	0	0	0	0	830	830
WADI TAYEEN.....	0	0	0	0	0	0	0	0	0	0	152	152
MASIRAH.....	4	7	0	0	0	1	0	0	3	15	362	377
BIDIYA.....	0	0	0	0	0	0	0	0	0	0	214	214
SAMAD AL-SHAAN.....	0	0	0	0	0	0	0	0	0	0	402	402
WADI BANI KHALID.....	0	0	0	0	0	0	0	0	0	0	156	156
TOTAL:	282	71	349	219	25	1	72	0	77	1,096	9,905	11,001

(CONT)TABLE 4.3

## OPERATIONS PERFORMED IN MINISTRY OF HEALTH HOSPITALS - 1991

REGIONS	TYPE OF MAJOR OPERATIONS									TOTAL MAJOR OPERA- TIONS	MINOR OPERA- TIONS	GRAND TOTAL
	Gastro- intestinal	Genito- urinary	Obs.& Gynaec.	Ophthal- mology	Ortho- paedics	Plastic Surgery	ENT	Dental	Misc.			
HOSPITALS												
NORTH BATINAH												
SOHAR.....	362	195	271	88	432	0	130	0	39	1,517	5,720	7,237
SAHAM.....	18	1	0	0	0	0	0	0	0	19	832	851
WADI HAWASNA.....	0	0	0	0	0	0	0	0	7	7	11	18
WADI SARAMI.....	0	0	0	0	0	0	0	0	0	0	34	34
TOTAL:	380	196	271	88	432	0	130	0	46	1,543	6,597	8,140
SOUTH BATINAH												
RUSTAQ.....	106	12	117	68	0	0	2	0	0	305	3,104	3,409
WADI BANI GHAFFIR.....	0	0	0	0	0	0	0	0	0	0	141	141
WADI BANI KHAROOS.....	0	0	0	0	0	0	0	0	0	0	0	0
WADI MISTAL.....	0	0	0	0	0	0	0	0	0	0	2	2
WADI HEMLI.....	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	106	12	117	68	0	0	2	0	0	305	3,247	3,552
DHAHIRA												
TANAM.....	72	17	100	126	2	1	65	1	75	459	3,015	3,474
BURAIMI.....	150	21	15	83	0	0	0	0	15	284	1,435	1,719
YANKUL.....	0	0	0	0	0	0	0	0	0	0	543	543
WADI JIZZI.....	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL:	222	38	115	209	2	1	65	1	90	743	4,993	5,736
MUSANDAM												
KHASAB.....	30	0	7	18	0	0	49	0	1	105	996	1,101
DIBBA.....	7	0	6	0	0	0	0	0	0	13	725	738
BUKHA.....	0	0	0	0	0	0	0	0	0	0	75	75
TOTAL:	37	0	13	18	0	0	49	0	1	118	1,796	1,914
AL-WOUSTAH												
HAIMA.....	0	0	0	0	0	0	0	0	0	0	120	120
DUQUM.....	0	0	0	0	0	0	0	0	0	0	85	85
TOTAL:	0	0	0	0	0	0	0	0	0	0	205	205
ALL HOSPITALS	2,907	1,514	2,965	2,287	2,523	701	2,008	285	431	15,621	57,714	73,335

**Fig 6 MAJOR OPERATIONS PERFORMED**  
**By Type of Operation - 1991**



**TABLE 4.4****RADIOGRAPHY PERFORMED IN MINISTRY OF HEALTH HOSPITALS - 1991**

REGIONS	TYPE OF X-RAYS				TOTAL
	PLAIN	IVP	BARIUM-MEAL	OTHERS	
HOSPITALS					
MUSCAT					
ROYAL.....	48,180	1,484	892	11,854	62,410
KHOULA.....	80,420	145	296	1,004	81,865
AL-NAHDHA.....	19,117	75	453	1,263	20,908
IBN-SINA.....	878	0	0	0	878
AR-RAHMA.....	8,898	0	0	0	8,898
QURIYAT.....	4,373	0	0	0	4,373
MUSCAT.....	1,985	0	0	0	1,985
TOTAL:	163,851	1,704	1,641	14,121	181,317
DHOFAR					
QABOOS.....	44,322	311	899	253	45,785
MADINAT AL-HAQ.....	188	0	0	0	188
SUDH.....	588	0	0	0	588
RAKHYUT.....	4	0	0	0	4
TAWI ATTAIR.....	0	0	0	0	0
TOTAL:	45,102	311	899	253	46,565
DAKHILYA					
NIZWA.....	20,360	232	179	444	21,215
SUMAIL.....	7,291	47	6	10	7,354
BAHLA.....	830	0	0	4,111	4,941
ADAM.....	2,603	0	0	0	2,603
IZKI.....	0	0	0	0	0
JABAL AKHDAR.....	0	0	0	0	0
TOTAL:	31,084	279	185	4,565	36,113
SHARQIYA					
SUR.....	12,668	169	284	54	13,175
IBRA.....	9,228	117	69	24	9,438
B.B.BU ALI.....	13,516	126	49	2	13,693
B.B.BU HASSAN.....	4,337	3	6	0	4,346
SINAW.....	3,649	223	314	61	4,247
WADI TAYEEN.....	819	0	0	242	1,061
MASIRAH.....	1,975	18	50	311	2,354
BIDIYA.....	2,480	0	0	68	2,548
SAMAD AL-SHAAN.....	342	0	0	383	725
WADI BANI KHALID.....	0	0	0	0	0
TOTAL:	49,014	656	772	1,145	51,587

**(CONT) TABLE 4.4****RADIOGRAPHY PERFORMED IN MINISTRY OF HEALTH HOSPITALS - 1991**

REGIONS HOSPITALS	TYPE OF X-RAYS				TOTAL
	PLAIN	IVP	BARIUM- MEAL	OTHERS	
NORTH BATINAH					
SOHAR.....	31,790	181	306	389	32,666
SAHAM.....	8,862	0	0	0	8,862
WADI HAWASNA.....	0	0	0	0	0
WADI SARAMI.....	0	0	0	0	0
TOTAL:	40,652	181	306	389	41,528
SOUTH BATINAH					
RUSTAQ.....	16,530	28	39	14	16,611
WADI BANI GHAFIR....	0	0	0	0	0
WADI BANI KHAROOS	454	0	0	0	454
WADI MISTAL.....	0	0	0	0	0
WADI HEMLI.....	375	0	0	0	375
TOTAL:	17,359	28	39	14	17,440
DHAHIRA					
TANAM.....	17,035	99	27	56	17,217
BURAIMI.....	9,340	85	137	35	9,597
YANKUL.....	0	0	0	0	0
WADI JIZZI.....	0	0	0	0	0
TOTAL:	26,375	184	164	91	26,814
MUSANDAM					
KHASAB.....	5,819	22	56	39	5,936
DIBBA.....	617	0	3	959	1,579
BUKHA.....	469	0	0	188	657
TOTAL:	6,905	22	59	1,186	8,172
AL WOUSTAH					
HAIMA.....	255	0	0	5	260
DUQUM.....	0	0	0	0	0
TOTAL:	255	0	0	5	260
NATIONAL TOTAL:	380,597	3,365	4,065	21,769	409,796

TABLE 4.5

## LABORATORY INVESTIGATIONS CARRIED OUT IN HEALTH INSTITUTIONS - 1991

REGIONS HOSPITALS/ HEALTH CENTRE	TYPE & NUMBER OF LABORATORY TESTS DONE									
	HAEMATO- LOGY	BLOOD GROUPING	BIOCHEM- ISTRY	BACTERIOLOGY		HISTOLOGY	CYTOLOGY	REFERRALS	SPECIMENS	TOTAL
				CULTURAL	OTHER					
MUSCAT										
ROYAL.....	231,252	141,171	1,295,698	92,097	39,083	60,136	32,295	3,133	0	1,894,865
KHOULA.....	92,350	41,687	116,231	0	41,415	0	0	25,175	31,412	348,270
AL-NAHDHA.....	68,178	329	42,020	1,030	24,222	0	0	16,033	52,940	204,752
IBN-SINA.....	9,196	201	2,276	0	3,980	0	0	1,510	3,696	20,859
ARRAHMA.....	46,389	4,440	35,916	0	21,536	0	0	5,174	23,259	136,714
QURIYAT.....	17,495	1,213	2,823	0	17,596	0	0	535	9,515	49,177
MUSCAT.....	7,813	826	1,905	0	9,288	0	0	403	7,272	27,507
SEEB H.C.....	11,690	3,159	5,080	1,559	17,790	0	0	1,590	13,858	54,726
AMIRAT H.C.....	3,897	697	956	0	4,782	0	0	22	3,072	13,426
NEW AL KHOD H.C.....	3,837	669	823	0	4,681	0	0	0	5,154	15,164
TOTAL:	492,097	194,392	1,503,728	94,686	184,373	60,136	32,295	53,575	150,178	2,765,460
DHOFAR										
QABOOS.....	234,763	12,817	148,316	9,958	65,231	4,519	712	1,653	86,509	564,478
MADINAT AL-HAQ.....	2,992	253	269	0	4,042	0	0	0	2,703	10,259
SUDH.....	3,711	212	673	0	2,931	0	0	10	1,942	9,479
RAKH-YUT*.....	456	48	0	0	626	0	0	0	320	1,450
TAWI ATTAIR.....	2,143	181	223	0	1,533	0	0	200	1,999	6,279
DHALQUT H.C.....	1,112	96	0	0	1,300	0	0	433	2,199	5,140
TOTAL:	245,177	13,607	149,481	9,958	75,663	4,519	712	2,296	95,672	597,085
DAKHILYA										
NIZWA.....	102,824	9,609	26,805	3,348	35,324	0	0	4,164	48,618	230,692
SUMAIL.....	35,145	3,887	8,804	2,916	19,747	0	0	1,554	19,513	91,566
BAHLA.....	31,287	2,760	4,192	0	15,909	0	0	1,031	16,861	72,040
ADAM.....	16,414	734	1,904	0	7,250	0	0	696	8,431	35,429
IZKI.....	15,117	762	1,698	0	13,437	0	0	494	8,110	39,618
JABAL AKHDAR.....	232	104	0	0	1,361	0	0	0	232	1,929
TOTAL:	201,019	17,856	43,403	6,264	93,028	0	0	7,939	101,765	471,274



(CONT) TABLE 4.5

## LABORATORY INVESTIGATIONS CARRIED OUT IN HEALTH INSTITUTIONS - 1991

TYPE & NUMBER OF LABORATORY TESTS DONE										
REGIONS HOSPITALS/ HEALTH CENTRE	HAEMATO- LOGY	BLOOD GROUPING	BIOCHEM- ISTRY	BACTERIOLOGY		HISTOLOGY	CYTOLOGY	REFERRALS	SPECIMENS	T O T A L
				CULTURAL	OTHER					
SHARQIYA										
SUR.....	36,620	4,651	14,234	1,416	28,922	27	3	3,570	25,146	114,589
IBRA .....	53,416	6,271	12,682	0	25,721	0	0	1,173	26,361	125,624
B.B.BU ALI.....	67,661	5,816	11,958	0	39,487	0	0	555	32,284	157,761
B.B.BU HASSAN.....	20,077	973	1,815	0	14,354	0	0	208	11,741	49,168
SINAW .....	33,626	1,870	5,346	0	16,269	0	0	327	20,296	77,734
W.DIMA & TAYEEN.....	15,454	604	705	0	5,947	0	0	32	6,207	28,949
MASIRAH.....	10,993	287	1,366	0	5,782	0	0	87	4,482	22,997
BIDIYA.....	12,444	940	2,510	0	11,558	0	0	28	6,647	34,127
SAMAD AL-SHAAN.....	10,144	868	262	0	8,339	0	0	0	6,452	26,065
WADI BANI KHALID.....	3,349	214	342	0	1,770	0	0	0	1,329	7,004
TOTAL:	263,784	22,494	51,220	1,416	158,149	27	3	5,980	140,945	644,018
NORTH BATINAH										
SOHAR.....	97,856	12,293	22,783	4,246	37,700	134	163	3,576	42,194	220,945
SAHAM.....	50,147	5,723	3,724	387	31,459	0	0	153	29,511	121,104
WADI HAWASNA*.....	1,002	57	48	0	473	0	0	0	607	2,187
WADI SARAMI*.....	3,141	53	234	0	695	0	0	0	1,117	5,240
TOTAL:	152,146	18,126	26,789	4,633	70,327	134	163	3,729	73,429	349,476
SOUTH BATINAH										
RUSTAQ.....	107,015	9,287	34,270	0	34,362	0	0	3,061	50,725	238,720
WADI BANI GHAFIR...	8,205	149	497	0	1,965	0	0	0	3,992	14,808
WADI BANI KHAROOS	3,184	135	459	0	2,379	231	0	0	1,875	8,263
WADI MISTAL*.....	0	0	0	0	0	0	0	0	0	0
WADI HEMLI*.....	4,461	120	299	0	1,545	0	0	0	1,475	7,900
TOTAL:	122,865	9,691	35,525	0	40,251	231	0	3,061	58,067	269,691

(CONT) TABLE 4.5

## LABORATORY INVESTIGATIONS CARRIED OUT IN HEALTH INSTITUTIONS - 1991

TYPE & NUMBER OF LABORATORY TESTS DONE										
REGIONS HOSPITALS/ HEALTH CENTRE	HAEMATO- LOGY	BLOOD GROUPING	BIOCHEM- ISTRY	BACTERIOLOGY		HISTOLOGY	CYTOLOGY	REFERRALS	SPECIMENS	TOTAL
				CULTURAL	OTHER					
DHAHIRA										
TANAM.....	91,932	8,790	17,326	8,618	38,349	0	0	2,582	47,329	214,926
BURAIMI.....	42,527	4,298	10,668	1,530	37,727	0	0	935	23,782	121,467
YANKUL*.....	11,971	713	773	0	6,337	0	0	46	7,642	27,482
WADI JIZZI.....	2,169	88	83	0	1,143	0	0	0	1,038	4,521
TOTAL:	148,599	13,889	28,850	10,148	83,556	0	0	3,563	79,791	368,396
MUSANDAM										
KHASAB.....	24,978	2,092	6,371	1,573	27,084	0	0	406	29,853	92,357
DIBBA.....	5,889	539	1,003	96	4,067	0	0	0	6,525	18,118
BUKHA.....	4,072	154	648	0	3,352	0	0	345	1,754	10,325
TOTAL:	34,939	2,785	8,022	1,669	34,503	0	0	751	38,132	120,800
AL WOUSTA										
HAIMA.....	5,926	267	713	0	3,640	0	0	192	7,550	18,288
DUQUM.....	4,123	122	389	0	1,898	0	0	4	1,849	8,385
TOTAL:	10,049	389	1,102	0	5,538	0	0	196	9,399	26,673
NATIONAL TOTAL:	1,670,675	293,229	1,848,120	128,774	745,388	65,047	33,173	81,090	747,378	5,612,873

\*

- 1) Laboratory technician was on leave in the following health units and hence no laboratory investigations had been carried out:
  - a) Rakhyut - October & December
  - b) Wadi Bani Khalid - April
  - c) Wadi Sarami - February & March
  - d) Wadi Hemli - February
  - e) Yankul - June
- 2) There was no laboratory technician posted in Wadi Hawasna from January to March and in Wadi Mistal for the whole year of 1991.

**TABLE 4.6****DENTAL & OTHER ACTIVITIES IN MINISTRY OF HEALTH HOSPITALS - 1991**

REGIONS	TYPE OF DENTAL TREATMENTS			TOTAL DENTAL TREAT- MENTS	OTHER ACTIVITIES	
	DENTAL EXTRAC- TIONS	DENTAL FILLINGS	OTHER DENTAL TREAT- MENTS		MEDICAL CHECKUPS	EYE TESTINGS
HOSPITALS						
MUSCAT						
AL-NAHDHA.....	15,688	8,474	24,005	48,167	3,362	0
AR-RAHMA.....	0	0	0	0	3,705	0
QURIYAT.....	2,873	641	4,623	8,137	167	167
MUSCAT.....	2,107	586	2,618	5,311	0	0
TOTAL:	20,668	9,701	31,246	61,615	7,234	167
DHOFAR						
QABOOS.....	11,561	3,522	7,789	22,872	1,328	9,818
MADINAT AL-HAQ.....	0	0	0	0	0	0
SUDH.....	0	0	0	0	0	0
RAKHYUT.....	0	0	0	0	0	0
TAWI ATTAIR.....	0	0	0	0	0	0
TOTAL:	11,561	3,522	7,789	22,872	1,328	9,818
DAKHILYA						
NIZWA.....	8,648	1,487	4,874	15,009	1,666	5,704
SUMAIL.....	3,900	996	5,157	10,053	1,601	1,760
BAHLA.....	0	0	0	0	1,330	0
ADAM.....	0	0	0	0	56	0
IZKI.....	676	197	321	1,194	20	0
JABAL AKHDAR.....	0	0	0	0	379	0
TOTAL:	13,224	2,680	10,352	26,256	5,052	7,464
SHARQIYA						
SUR.....	2,537	1,010	6,819	10,366	4,924	4,123
IBRA .....	5,999	854	4,007	10,860	1,029	2,633
B.B.BU ALI.....	4,810	144	3,371	8,325	334	406
B.B.BU HASSAN.....	0	0	1,499	1,499	852	852
SINAW .....	4,145	0	5,970	10,115	321	321
WADI TAYEEN.....	60	0	287	347	131	255
MASIRAH.....	0	0	0	0	94	11
BIDIYA.....	0	0	0	0	431	184
SAMAD AL-SHAAN.....	0	0	0	0	1,105	0
WADI BANI KHALID.....	0	0	0	0	0	0
TOTAL:	17,551	2,008	21,953	41,512	9,221	8,785

**(CONT)TABLE 4.6****DENTAL & OTHER ACTIVITIES IN MINISTRY OF HEALTH HOSPITALS - 1991**

REGIONS	TYPE OF DENTAL TREATMENTS			TOTAL DENTAL TREAT- MENTS	OTHER ACTIVITIES	
	DENTAL EXTRAC- TIONS	DENTAL FILLINGS	OTHER DENTAL TREAT- MENTS		MEDICAL CHECKUPS	EYE TESTINGS
<b>HOSPITALS</b>						
<b>NORTH BATINAH</b>						
SOHAR.....	12,634	1,851	6,466	20,951	6,914	10,865
SAHAM.....	7,376	909	5,646	13,931	1,491	1,491
WADI HAWASNA.....	0	0	191	191	0	0
WADI SARAMI.....	0	0	186	186	0	0
<b>TOTAL:</b>	<b>20,010</b>	<b>2,760</b>	<b>12,489</b>	<b>35,259</b>	<b>8,405</b>	<b>12,356</b>
<b>SOUTH BATINAH</b>						
RUSTAQ.....	5,944	1,473	4,661	12,078	992	3,677
WADI BANI GHAFIR.....	0	0	1,105	1,105	19	0
WADI BANI KHAROS.....	0	0	408	408	0	0
WADI MISTAL.....	0	0	0	0	0	0
WADI HEMLI.....	0	0	1,065	1,065	33	0
<b>TOTAL:</b>	<b>5,944</b>	<b>1,473</b>	<b>7,239</b>	<b>14,656</b>	<b>1,044</b>	<b>3,677</b>
<b>DHAHIRA</b>						
TANAM.....	6,023	649	8,149	14,821	6,044	2,052
BURAIMI.....	3,450	971	5,998	10,419	5,647	4,350
YANKUL.....	0	0	0	0	0	0
WADI JIZZI.....	0	0	0	0	0	0
<b>TOTAL:</b>	<b>9,473</b>	<b>1,620</b>	<b>14,147</b>	<b>25,240</b>	<b>11,691</b>	<b>6,402</b>
<b>MUSANDAM</b>						
KHASAB.....	1,593	515	1,292	3,400	817	550
DIBBA.....	159	0	1,638	1,797	409	317
BUKHA.....	39	2	138	179	205	45
<b>TOTAL:</b>	<b>1,791</b>	<b>517</b>	<b>3,068</b>	<b>5,376</b>	<b>1,431</b>	<b>912</b>
<b>AL-WOUSTAH</b>						
HAIMA.....	0	0	0	0	0	0
DUQUM.....	0	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>NATIONAL TOTAL.....</b>	<b>100,222</b>	<b>24,281</b>	<b>108,283</b>	<b>232,786</b>	<b>45,406</b>	<b>49,581</b>

## **5. PREVENTIVE SERVICES**

The Directorate-General of Preventive Medicine includes Maternal & Child Health Services, Environmental Health, Quarantine measures, Vector control, and Health Education.

At the end of 1991 (1990), there were 68 (64) Public Health Units, 2 (2) MCH centers and 12 (9) Malaria Control Centers operating throughout the country. Their distribution is shown in Table 5.1.

The various components of preventive medicine are as follows.

TABLE 5.1

### **REGIONAL DISTRIBUTION OF PREVENTIVE MEDICINE FACILITIES** **- AS OF 31.12.1991**

REGION	PUBLIC HEALTH UNITS	QUARANTINE UNITS			MCH CENTRES	MALARIA CONTROL CENTRES
		AIRPORTS	PORTS	BORDERS		
MUSCAT.....	4	1	2	-	1	-
DHOFAR.....	13	1	1	-	-	-
DAKHILYA.....	9	-	-	-	-	3
SHARQIYA .....	17	-	-	-	1	2
N. BATINAH ....	7	-	-	1	-	1
S. BATINAH.....	7	-	-	-	-	4
DHAHIRAH.....	9	-	-	1	-	1
MUSANDAM.....	1	-	-	-	-	1
AL WOUSTAH..	1	-	-	-	-	-
TOTAL:(1991)	68	2	3	2	2	12
TOTAL:(1990)	64	2	3	2	2	9

## **ANTENATAL AND POSTNATAL CARE**

The use of antenatal and postnatal services in 1991 are shown in Table 5.2. There were 56.2 thousand new cases during the year, thus, an estimated 98% of pregnant women made at least one visit for antenatal care. With 236.5 thousand follow-up visits, the average number of visits per woman was 5.2. This average varied between regions; the lowest figure of 3.6 was in the South Batinah region and the highest of 6.7 in the Dhofar region. There was little difference between primigravida and multigravida mothers. There were a total of 23.1 thousand mothers who made one or more postnatal visits - a coverage of only 41%. Again, there were significant differences between regions with the lowest being 21% in Muscat and the highest 73% in Musandam. More of the primigravida mothers (53%) attended than did multigravida mothers (39%).

## **EXPANDED PROGRAMME OF IMMUNIZATION (EPI)**

The objective of the EPI is to fully immunize all children against the diseases of tuberculosis (BCG), diphtheria, pertussis, tetanus and poliomyelitis (DPT), and measles by their first birthday. This was carried out under the management of the Department of Family and Community Health Programs. Its main features are:-

- (a) To offer an immunization service in all the Ministry's hospitals and health centers
- (b) To monitor the incidence of the six diseases in children and to investigate control measures when an outbreak occurs.
- (c) To improve coverage by defaulter retrieval and visiting distant/ inaccessible communities. This is carried out by outreach teams based at public health units.

The number of immunization doses given in 1991 to children is shown in Table 5.3. A comparison over the last 11 years for the numbers of doses given and the coverage rates by age one year is shown in Table 5.4 and Figure 6.

As shown by the tables and figure, the coverage rate for all diseases increased significantly from 1981 to 1986. In 1985 the BCG and DPT-1 reached over 90% coverage by age 1 year, and have remained there since. Both the DPT-3 (DPT and OPV) and the measles (both given towards the end of the child's first year) both passed the critical 80% mark in 1987 and have further improved to 92% and 94% respectively in 1991. Immunizations given in the age range 1-5 years further augment the 1-year old coverage.

**TABLE 5.2****A: - ANTENATAL ATTENDANCES IN 1991**

HOSPITALS / HEALTH CENTRES BY REGION	Total Attendance						Mean No. of visit per pre- -gnancy	Mean No. of visit per gravida	Mean No. of visit per multi gravida
	NEW CASES			FOLLOW - UP					
	Prima	Multi	Total	Prima	Multi	Total			
MUSCAT.....	2,045	9,155	11,200	6,550	40,760	47,310	5.2	4.2	5.5
DHOFAR.....	704	3,562	4,266	5,275	18,837	24,112	6.7	8.5	6.3
DAKHILYA.....	777	6,581	7,358	3,363	27,371	30,734	5.2	5.3	5.2
SHARQIYA.....	933	6,959	7,892	4,427	34,068	38,495	5.9	5.7	5.9
NORTH BATINAH .....	1,020	9,550	10,570	3,964	39,672	43,636	5.1	4.9	5.2
SOUTH BATINAH .....	889	9,036	9,925	2,696	22,754	25,450	3.6	4.0	3.5
DHAHIRA.....	376	3,583	3,959	1,821	20,830	22,651	6.7	5.8	6.8
MUSANDAM.....	76	616	692	330	2,453	2,783	5.0	5.3	5.0
AL WOUSTAH.....	50	343	393	141	1,183	1,324	4.4	3.8	4.4
NATIONAL TOTAL.....	6,870	49,385	56,255	28,567	207,928	236,495	5.2	5.2	5.2

**B: - POSTNATAL ATTENDANCES IN 1991**

HOSPITALS / HEALTH CENTRES BY REGION	Total Attendance						% OF MOTHERS MAKING POSTNATAL VISIT		
	NEW CASES			FOLLOW - UP			Total	Prima Gravida	Multi- Gravida
	Prima	Multi	Total	Prima	Multi	Total			
MUSCAT.....	1,072	1,297	2,369	234	1,484	1,718	21%	52%	14%
DHOFAR.....	169	1,071	1,240	76	448	524	29%	24%	30%
DAKHILYA.....	549	2,953	3,502	662	4,216	4,878	48%	71%	45%
SHARQIYA.....	680	3,411	4,091	517	3,205	3,722	52%	73%	49%
NORTH BATINAH .....	563	5,238	5,801	868	2,533	3,401	55%	55%	55%
SOUTH BATINAH ....	261	2,910	3,171	122	1,159	1,281	32%	29%	32%
DHAHIRA.....	217	1,926	2,143	19	490	509	54%	58%	54%
MUSANDAM.....	76	432	508	48	116	164	73%	100%	70%
AL WOUSTAH.....	31	246	277	63	304	367	70%	62%	72%
NATIONAL TOTAL....	3,618	19,484	23,102	2,609	13,955	16,564	41%	53%	39%

**TABLE 5.3****IMMUNIZATIONS GIVEN TO PRE-SCHOOL CHILDREN - 1991**

IMMUNIZATION	TOTAL	A G E (years) UNDER 1	1 YR & OVER
B C G.....	50,715	50,430	285
OPV.....	51,544	51,544 (birth)	-
HBV - 1st dose.....	52,231	52,231	-
OPV - 40.....	51,645	51,645 (Al Arbayeen)	-
HBV - 2nd dose.....	51,592	51,592	-
DPT & OPV (DPTP)			
Dose - 1.....	52,312	52,081	231
Dose - 2.....	51,442	51,129	313
Dose - 3.....	51,764	51,101	663
HBV - 3rd dose*.....	39,201	39,201	-
MEASLES.....	53,476	51,906	1,570
DPT/OPV Booster.....	49,160	-	49,160

\* Started in March 1991.



TABLE 5.4

**IMMUNIZATION COVERAGE BY AGE 1 YEAR - 1981-1991**

Year	Estimated live-births ('000s)	TYPE OF IMMUNIZATION							
		BCG No. ( '000s)	% *	DPTP-1 No. ( '000s)	% *	DPTP-3 No. ( '000s)	% *	MEASLES No. ( '000s)	% *
1981	43.3	24.3	56%	10.5	42%	8	19%	4	10%
1982	45.6	35.7	78%	23.1	52%	10.8	23%	10.6	23%
1983	48	37.3	78%	29	62%	14.5	32%	15.8	35%
1984	49.5	39	79%	38.7	80%	21.4	45%	25.1	54%
1985	50	46.4	93%	45.3	93%	28.8	60%	31.3	66%
1986	50.6	50.7	100%	50.4	102%	40.4	83%	38.6	79%
1987	51.3	49.2	96%	50.1	99%	44.2	89%	43	87%
1988	52	49	94%	49.2	96%	45.4	90%	44.1	88%
1989	54	49.3	91%	51.8	97%	51	97%	48.9	93%
1990	55.6	50.2	90%	51.8	95%	51.5	95%	51.8	96%
1991	57.1	50.4	88%	52.1	93%	51.1	92%	51.9	94%

DPTP-1 is the first dose of the DPT and OPV immunizations

DPTP-3 is the third (final) dose of the DPT and OPV immunizations

\* % Coverage of the target populations, which are:-

BCG - (All livebirths)

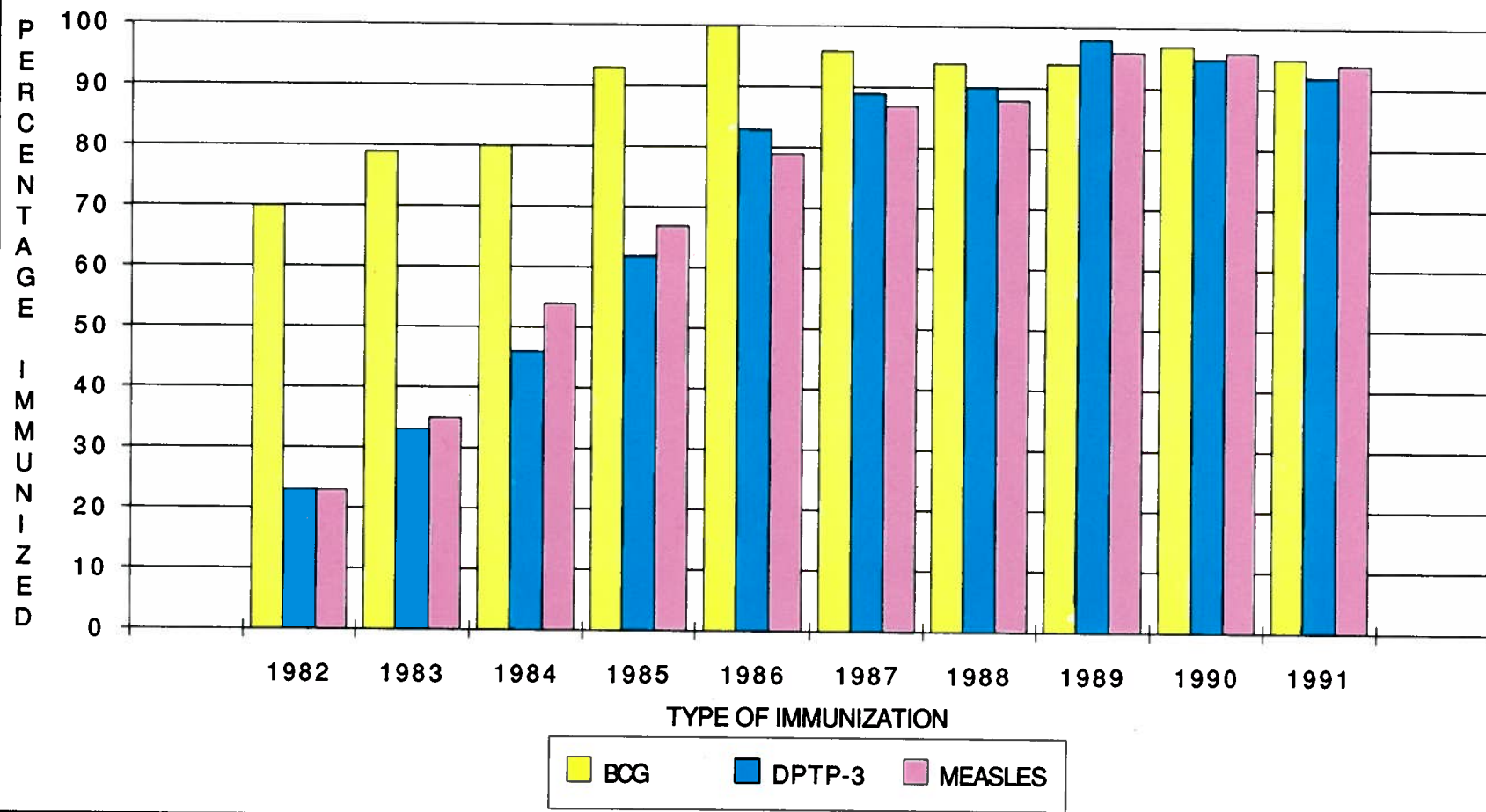
DPTP-1 - (Livebirths) minus (Half of the infant deaths)  
(as these will have died before the DPT-1 is given)

DPTP-3 - (Livebirths) minus (All infant deaths)

Measles - (Livebirths) minus (All infant deaths)

**Note -** It is estimated that between 1,000 and 1,500 babies are delivered in nearby countries and receive their BCG there. These are not included in this table, and would increase the BCG coverage by about 2%.

**Fig 7 IMMUNIZATION COVERAGE BY ONE YEAR**  
**1982 - 1991**



There has been a marked decline in the incidence of the EPI target diseases. During 1991, 4 confirmed cases of acute Poliomyelitis, 1 case of Neonatal Tetanus and 2 confirmed cases of Diphtheria (due to non-toxigenic strain) were detected. Prompt investigation and containment action were instituted for the cases reported.

### **EYE HEALTH CARE PROGRAMME (EHC)**

Trachoma - the blinding eye disease - is still a major public health problem in Oman. Trachoma is endemic amongst the rural populations of the northern regions of Oman, where it is estimated that 1% - 4% of the population suffer from moderate to severe trachoma and 9% - 17% from mild trachoma; 3% - 6% are blind in one or both eyes. Muscat and the southern Dhofar Region, however, are very little affected by the disease.

Since the victims of the disease seldom seek treatment of their own accord, the EHC is an outreach programme into schools and communities to find and treat them. EHC has, therefore, two approaches - a School Screening Programme and a Community Screening Programme. Under both programs, cases detected are treated with appropriate drugs and serious cases referred to a local ophthalmologist.

#### **(i) School Screening Programme**

In the school year 1990-91, school health visitors carried out this programme. Their activity levels and findings compared with those of the previous years are shown in Table 5.5.

#### **(ii) Community Screening Programme**

The Community Screening Programme was carried out by 7 EHC teams based in Nizwa, Sumail, Al-Hamra, Rustaq, Sur, Masnah and Sohar. Their activity levels and findings for 1991 and the four previous years are also shown in Table 5.5.

As shown in the table, the results of 1991 are similar to those of the last four years for the Community Screening. However for the School Screening Programme, there appears to have been a consistent improvement in the status of the children's eye health since 1987.

**TABLE 5.5****EYE HEALTH CARE PROGRAMME****Community Screening**

TRACHOMA SCREENING	1991	1990	1989	1988	1987
Places visited.....	52	113	95	122	123
Persons examined.....	12349	32,833	24,609	34,596	32,591
Prevalence discovered.....					
Normal.....	56%	47%	53%	56%	51%
Conjunctivitis.....	6%	9%	*	*	*
Mild trachoma.....	16%	13%	14%	19%	18%
Moderate/severe trachoma.....	4%	2%	3%	4%	3%
Thick lid trachoma.....	13%	14%	16%	15%	14%
Corneal opacity.....	4%	7%	7%	9%	6%
Cataract.....	1%	1%	1%	1%	1%
Glaucoma.....	-	0.6%	0.1%	0.8%	1%
Blind (one or both eyes).....	5%	6%	6%	6%	6%

\* Included in normal prevalence.

**School Screening**

TRACHOMA SCREENING	1990-91	1989-90	1988-89	1987-88	1986-87
Schools screened.....	390	360	264	413	330
Students examined.....	43374	44,241	27,012	106,175	55,575
Prevalence discovered					
Normal.....	79%	83%	78%	72%	62%
Conjunctivitis.....	8%	*	*	*	*
Mild trachoma.....	10%	13%	17%	20%	27%
Moderate/severe trachoma	2%	3%	3%	4%	7%
Thick lid trachoma.....	1%	1%	1%	3%	3%
Corneal opacity.....	-	0.1%	0.1%	0.2%	0.3%
Cataract.....	-	0.02%	0.03%	0.06%	0.06%
Glaucoma.....	-	-	-	0.01%	0.02%
Blind (one or both eyes).....	-	0.2%	0.3%	0.2%	0.2%
REFRACTION TESTING					
Schools visited.....	99	40	94	154	153
Students visited.....	58329	19,300	51,000	60,500	58,600
Refraction tests.....	2088	2,213	3,168	4,808	5,154
Defective vision detected.....	1167	1,460	701	2,609	2,251
.....%	2.0%	7.5%	5.4%	4.3%	3.8%

\*Included in normal prevalence.

## **TUBERCULOSIS CONTROL PROGRAMME**

The goal of the Tuberculosis Control Programme is to detect and treat all new cases of tuberculosis in the Ministry of Health's institutions. It consists of three components :-

- 1     Diagnosis and treatment of cases, which is carried out mainly in the Ministry's hospitals.
- 2     Contact tracing and defaulter retrieval.
- 3     Staff training, monitoring and supervision of the Control Programme, which is the responsibility of the Department of Family and Community Health Programmes.

A statistical summary for the year 1991 and its comparison with previous years is shown in Table 5.6.

The number of new cases remained constant (around 480) from 1988 to 1990 but declined to only 442 in 1991. From 1985 to 1987, the number of extra-pulmonary cases increased, and has remained at about 100 per year since then.

The number of defaulters dropped significantly between 1986 and 1987 from 424 to 275, and fell further to 170 in 1988; this decreased further to only 52 in 1991. Every effort is being made to retrieve The defaulters by both active and passive means especially those who were detected to be sputum positive initially.

## **C.D.D. & ARI PROGRAMMES**

The outcome of the Control of Diarrhoeal Diseases (CDD) and Acute Respiratory Infection (ARI) programmes are shown in Tables 5.7 and 5.8 respectively. The morbidity reported for the both programmes remained almost the same as compared to 1990, while the mortality reported still remains at very low levels.

**TABLE 5.6****TUBERCULOSIS RELATED STATISTICS - 1985-1991**

	1991	1990	1989	1988	1987	1986	1985
New pulmonary cases detected....	299	379	370	379	502	669	778
Primary Complex	37	n.a	n.a	n.a	n.a	n.a	n.a
Sputum positive.....	(150)	(160)	(147)	(177)	(153)	(222)	(258)
Sputum negative.....	(149)	(219)	(223)	(203)	(349)	(387)	(520)
Extra pulmonary cases.....	106	103	108	98	114	91	83
Total New Cases.....	442	482	478	477	616	700	861
Old cases restarting treatment.....	64	64	60	79	108	171	190
Cured cases reinfected.....	(28)	(22)	(31)	(35)	n.a.	n.a.	n.a.
Lost cases resuming trt.....	(36)	(42)	(29)	(44)	n.a.	n.a.	n.a.
Cases cured.....	287	365	373	469	447	446	483
Cases died.....	22	14	42	34	441	46	41
Cases lost (defaulters).....	52	90	108	170	275	424	444
Cases left country.....	33	46	31	39	35	43	40
Cases on treatment on 31st Dec...	436	406	437	463	619	696	784

(thousands)

Diagnostic tests	1991	1990	1989	1988	1987	1986	1985
Sputum examinations.....	30.8	13.7	15.1	15.4	13.7	13.8	13.3
Mantoux tests.....	6	5.1	n.a	5.8	5.4	4.3	4.0

**TABLE 5.7****CONTROL OF DIARRHOEAL DISEASES (CDD) BY REGION - 1991**

STATISTICS FOR 1991	R E G I O N									
	NATIONAL TOTAL	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	N.BATINAH	S.BATINAH	DHAHIRA	MUSANDAM	ALWOUSTAH
Total Diarrhoea cases.....	190,376	29,167	12,402	27,618	39,554	35,792	24,881	15,958	3,369	1,635
Rate per 1000 population...	745	603	468	792	1010	677	996	697	828	895
Dehydration of cases (%) No dehydration.....	91%	92.8%	82%	91%	87.5%	94%	92%	92%	92.5%	96%
Mild/moderate.....	8.6%	7%	17%	8%	11.5%	5.6%	7.5%	7%	7%	3.5%
Severe.....	0.4%	0.4%	1%	1%	1%	0.4%	0.5%	1%	0.5%	0.5%
Cases admitted..... No.....	4,573	226	550	847	1,638	589	214	343	116	50
to hospital..... %.....	2.4%	0.8%	4.4%	3.1%	4.1%	1.7%	0.9%	2.2%	3.4%	3.1%
Cases treated.....No...	6,687	1,127	1,257	674	1,781	656	54	563	537	38
with antibiotics.....%.....	3.5%	3.9%	10.1%	2.4%	4.5%	1.8%	0.2%	3.5%	15.9%	2.3%
Deaths reported.....No.....	12	0	2	0	1	1	6	2	0	0

**TABLE 5.8****ACUTE RESPIRATORY INFECTIONS (ARI) BY REGION - 1991**

STATISTICS FOR 1991	R E G I O N									
	NATIONAL TOTAL	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	N.BATINAH	S.BATINAH	DHAHIRA	MUSANDAM	WOUSTAH
Total ARI cases.....	781,962	98,695	84,100	105,118	170,148	138,823	83,792	75,609	15,354	10,323
Rate per 1,000 population..	3,060	2,040	3,176	3,015	4,343	2,626	3,354	3,300	3,775	5,653
Severity of cases (%)										
Mild.....	78%	79%	77%	78%	76%	77%	82%	77%	88%	84%
Moderate.....	21%	21%	22%	21%	23%	22%	17%	22%	11%	15%
Severe.....	1%	-	1%	1%	1%	1%	1%	1%	1%	1%
Cases admitted .....No..	9561	494	1,138	1,887	2,788	1,381	635	879	177	182
to hospital.....%.....	1.2%	0.5%	1.4%	1.8%	1.6%	1.0%	0.8%	1.2%	1.2%	1.8%
Cases treated .....No..	162,148	20,133	19,052	22,284	31,505	31,511	15,909	17,041	3,092	1,621
with antibiotics.....%.....	20.7%	20.4%	22.7%	21.2%	18.5%	22.7%	19%	22.5%	20.1%	15.7
Deaths reported.....No....	45	0	1	3	12	22	4	3	0	0



## **MALARIA CONTROL PROGRAMME**

During 1991, 9 Malaria Control Units were operational. In addition to these, there were 68 malaria control teams attached to Public Health Units.

In 1991 the geographical reconnaissance was started or updated in 215 villages. This is less than the 314 visited in 1990. The breeding places and spraying operations are shown in Table 5.9.

Table 5.9 shows the summary of the house spraying operations. Larviciding operations continued to constitute the main vector control measure in the majority of the protected areas. In 1991 (1990) this activity covered 2.2 (2.1) million square meters of water surfaces weekly. Smear activity levels for 1991 and 1990 are also shown in Table 5.9.

The malaria incidence, as measured by passive case detection, is shown in Table 5.10. The total positive cases detected in 1991 were 15 thousand (a significant fall from the 27 thousand of 1990 and also less than both 1988 and 1989). Of the 1991 cases, 14 thousand were *P. falciparum*, less than the 25 thousand of 1990. These figures suggest a decrease in the overall incidence of the disease due to the extra control activity initiated in 1991.

Table 5.10 also shows the regional distribution of the cases detected in 1991. Both the number of cases and the slide positivity rate were by far the highest in Dhahira, followed by Dakhilya, North and South Batinah and Sharqiya. Just over 1.7 thousand cases were found in the Muscat region, although the slide positivity rate was lower at 5%.

Table 5.11 shows the result of the School Survey (6 - 9 year-olds) carried out by the Department of Malaria Control during 1991. This shows a slide positivity rate of 2.2%, almost the same as the 2.1% rate of 1990.

**TABLE 5.9****MALARIA CONTROL****A) HOUSE SPRAYING OPERATIONS**

	1991	1990	1989	1988	1987
Villages covered.....	107	107	152	104	66
Total population.....	22,000	22,000	49,500	34,100	34,500
Population protected.....	20,600	20,600	45,500	29,900	25,700
% of population protected.....	95%	95%	92%	88%	74%
Total houses.....	5,799	5,799	12,371	8,788	8,043
Houses totally covered.....	3,515	3,515	7,490	5,061	4,022
Houses partially covered.....	1,790	1,790	3,935	2,617	1,946
% of coverage.....	94%	94%	92%	87%	74%
Total number of rooms in houses.....	31,700	31,700	73,800	47,400	48,100
Number of rooms sprayed.....	28,200	28,200	63,600	41,200	35,700
% of coverage.....	89%	89%	86%	87%	74%
Surface area covered (million m2).....	1.49	1.49	2.86	1.98	1.71
DDT 75% WDP consumption (kgs).....	3,618	3,618	7,093	5,238	4,725

**B) SMEAR ACTIVITY****(thousands)**

	1991	1990	1989	1988	1987
Total smears done.....	271	271	268	270	240
Passive case detection					
Malaria Units/Laboratory.....	7.6	7.6	8.1	9.7	11.7
Other health units.....	183.4	183.4	155.1	170.5	140.1
Surveys.....	67.4	67.4	99.3	81.8	87.4
Case contacts & follow-ups.....	6.8	6.8	5.2	8.2	1.2
Smears of those who came from					
East Africa and other countries.....	5.1	5.1	n.a.	n.a.	n.a.
Chloroquine allergy test.....	0.3	0.3	n.a.	n.a.	n.a.
Positive smears					
Number.....	32.7	32.7	17.9	24.8	15.4
Smear Positivity Rate.....	12.1%	12.1%	6.7%	9.2%	6.4%

**TABLE 5.10**

**Passive Case Detection Carried out by the General**  
**Health Facilities with Laboratories during 1991**

REGION	Blood Smears Taken	Positive Cases	Rate (%) (SPR)	Type of Malaria			% Rate of P.Falciparum
				Falciparum	Vivax	Malariae	
MUSCAT.....	35,006	1,739	5.0%	1,507	213	19	87%
DHOFAR.....	1,329	16	1.2%	7	9	0	44%
DAKHILYA.....	23,478	2,141	9.1%	1,782	357	2	83%
SHARQIYA.....	43,328	2,460	5.7%	2,295	162	3	93%
NORTH BATINAH.....	26,902	1,962	7.3%	1,893	69	0	96%
SOUTH BATINAH.....	13,679	982	7.2%	968	14	0	99%
DHAHIRA.....	32,365	5,645	17.4%	5,372	270	3	95%
MUSANDAM.....	3,146	66	2.1%	24	42	0	36%
TOTAL.....	179,233	15,011	8.4%	13,848	1,136	27	92%

**TABLE 5.11**

**MALARIA SCHOOL SURVEY (6-9 YEARS) BY REGION - 1991**

REGION	Blood Smears Slides	Positive Cases	Rate (%) (SPR)	Type of Malariae			% Rate of P.Falciparum
				Falciparum	Vivax	Malariae	
MUSCAT.....	2,749	51	1.9%	51	0	0	100%
DHOFAR.....	2,301	0	0.0%	0	0	0	...
DAKHILYA.....	6,608	154	2.3%	154	0	0	100%
SHARQIYA.....	9,749	241	2.5%	239	2	0	99%
NORTH BATINAH.....	4,945	150	3.0%	150	0	0	100%
SOUTH BATINAH.....	5,669	103	1.8%	102	1	0	99%
DHAHIRA.....	4,046	124	3.1%	124	0	0	100%
MUSANDAM.....	1,890	1	0.1%	0	1	0	0%
TOTAL.....	37,957	824	2.2%	820	4	0	100%

## **OTHER PUBLIC HEALTH ACTIVITIES**

### **(i) School Health Services**

These services which include medical check ups of the students, treatment of common diseases & vaccination against communicable diseases are being carried out by Directorate of School Health Services. During 1991, the Directorate of School Health Services made a total of 545 visits to schools, treating 22 thousand students for various ailments and giving basic medical examinations to 10,252 students in Muscat Region. This reflects the new approach to school health of screening children to detect problems at an early stage. Also there were 229 lectures and sessions of health education held in 1991.

### **(ii) Environmental Health Services**

The Directorate of Environmental Health provides those services in Muscat which public health units provide in other regions. Such activities include inspection of markets, slaughter houses, water reservoirs etc. During 1991, 2,343 places were inspected in Muscat. 803 food and 2314 water samples were collected for analysis, while 37 food samples were tested by a radiological method during the year.

### **(iii) Bacteriological, Chemical, Microbiological and Tuberculosis Laboratories**

During 1991 (1990), 844 (575) food and 4364 (4665) water samples were analyzed by the Bacteriological and Chemical laboratories. Also, 471 (458) water tanks were inspected and disinfected, 91 thousand (87 thousand) samples of urine, stool, and blood taken from food-handlers were analyzed, 11 thousand samples were analyzed by the Microbiological labs. 4 thousand sensitivity and cultural tests were carried out by the T.B. laboratories..

The results of water quality control tests are shown in Table 5.12. Of the 1,602 water samples tested chemically, 162 (10%) proved to be unfit. The rate was highest in water from public wells (28%) and lowest in mineral bottled water (0%). For the bacteriological tests, just under 20% of samples were unfit, ranging from 55% in private wells to 3.6% in bottled water.

**TABLE 5.12****WATER QUALITY AND SANITATION -1991**

S O U R C E	CHEMICAL TESTS				BACTERIOLOGICAL TESTS			
	NUMBER OF SAMPLES	FIT	UNFIT		NUMBER OF SAMPLES	FIT	UNFIT	
		NO.	NO.	%		NO.	NO.	%
WATER TANKERS.....	413	398	15	3.6%	374	340	34	9.1%
PRIVATE WELLS.....	461	402	59	12.8%	64	29	35	54.7%
PUBLIC WELLS.....	229	165	64	27.9%	120	89	31	25.8%
PUBLIC TAP.....	170	162	8	4.7%	58	40	18	31.0%
PRIVATE TAP.....	41	36	5	12.2%	8	6	2	25.0%
MINERAL BOTTLED WATER.....	31	31	0	0.0%	28	27	1	3.6%
GOVERNMENT STORAGE TANKS.....	128	124	4	3.1%	49	35	14	28.6%
PRIVATE WATER STORAGE TANKS.....	129	122	7	5.4%	11	6	5	45.5%
TOTAL.....	1,602	1,440	162	10.1%	712	572	140	19.7%

#### **(iv) Quarantine Activities**

There are 7 Health Checkposts at points of entry to Sultanate, which include 3 ports, 2 airports & 2 border checkposts. During 1991 (1990), the port health units inspected 1,957 (1,053) vessels with 43 thousand (41 thousand) crew members. Airport health units checked 8,166 (7,571) planes with 89 thousand (85 thousand) crew members and 599 thousand (539 thousand) passengers. 909 (1,075) persons were vaccinated against cholera or yellow fever. At points of entry into the Sultanate, 15,730 (15,511) food clearance certificates were issued.

#### **(v) Health Education Activities**

Health Education activities in 1991 included health education visits to 20 schools and 3 Social Centers, the production and distribution of 5,330 placards and posters, and 60,700 educational publications. Articles were also written for widespread readership in newspapers, and programmes produced for the media of the radio and television.

#### **(vi) Disease Surveillance**

Communicable Disease Surveillance was intensified in 1991 especially for the control of the EPI diseases, meningococcal infections and rabies. The data was prepared for 1991 by month and region and is shown in Table 3.4. For the first time, the cases are given by region of residence, and hence reflect the true regional incidence of each disease.

A new national Communicable Disease Surveillance System was launched on 1st March 1991. This includes an outbreak containment system especially for disease of Group A and B (see Table 3.4).

A feed-back report for communicable disease has been initiated with the first issue of the Disease Surveillance & Community Health Newsletter published early in 1992.

## **6. MEDICAL EDUCATION & TRAINING**

Medical education and training, both locally and abroad, is the responsibility of the Directorate-General of Education & Training. This includes:-

- (a) Local education & training of nurses & other para- medical staff at Ministry of Health training establishments throughout the country.
- (b) Post-graduate training of doctors & nurses abroad.
- (c) Training of para-medical and other staff abroad.

1991 saw the opening of 7 new training establishments - the Oman Institute of Public Health, the Institute of Assistant Pharmacists and five Regional Nursing Institutions (in Nizwa, Sur, Sohar, Tanam and Salalah).

The total enrollment at the Institute of Health Sciences and the new institutes at the start of the 1991/92 academic year is shown in Table 6.1.

In 1991 (1990) the Institute of Health Sciences also trained 119 (97) medical & para-medical staff and arranged training course for 84 (161) administrators & other staff locally. Also during 1991 (1990), 25 (15) medical & para- medical and 13 (9) other Ministry of Health staff were sent abroad for further training.

The graduates from the Institute of Health Sciences over the past 8 years are shown in Table 6.2. The numbers of graduates of the general nursing course has been somewhat erratic over this period ranging from 24 and 27 in 1984 and 1985 to only 8 in 1990, but rising again to 29 in 1991. The number of Assistant Nurses has declined gradually over the last four years with only 8 graduating in 1991.

The number of medical laboratory technicians had remained between 6 and 12 since the first graduations in 1986, but significantly increased to 28 in 1991. The radiography graduates fell from 11 in 1990 to only 2 in 1991, similar to the physiotherapy graduates who numbered 5 in 1990 and none in 1991.



**TABLE 6.1**

**ENROLMENT AT MINISTRY OF HEALTH TRAINING INSTITUTIONS**  
**1991, 1990 & 1989**

**NUMBER OF STUDENTS ENROLLED**

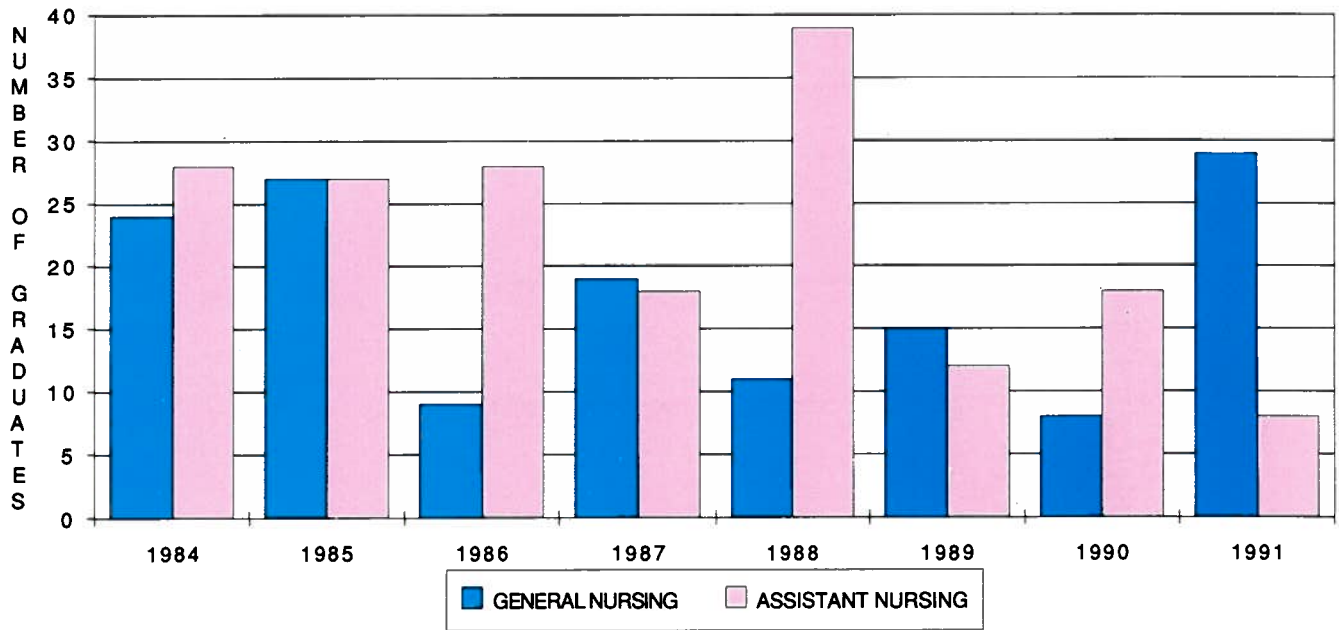
COURSES	ACADEMIC YEAR 1991			TOTAL	TOTAL
	MALE	FEMALE	TOTAL	1990	1989
<b>(A) INSTITUTE OF HEALTH SCIENCES</b>					
<b>GENERAL NURSING</b>					
1st Year	11	61	72	78	71
2nd Year*	16	66	82	67	46
3rd Year	16	41	57	46	29
In Service	13	32	45	29	8
<b>MEDICAL LAB TECHNICIAN</b>					
(3Year Course) 1st Year	10	9	19	15	16
2nd Year	3	12	15	16	10
3rd Year	2	14	16	10	13
In Service	7	3	10	13	7
(18Month Course)					
1st Year	1	10	11	-	-
2nd Year	1	15	16	-	-
<b>RADIOGRAPHY</b>					
1st Year	5	7	12	16	12
2nd Year	2	14	16	12	7
3rd Year	7	5	12	7	0
In Service	5	3	8	0	11
<b>PHYSIOTHERAPY</b>					
1st Year	2	10	12	10	11
2nd Year	5	4	9	11	8
3rd Year	6	5	11	8	0
In Service	7	1	8	0	5
<b>TOTAL:</b>	<b>119</b>	<b>312</b>	<b>431</b>	<b>338</b>	<b>254</b>
<b>(B) OMAN INSTITUTE OF PUBLIC HEALTH</b>					
<b>SANITARY INSPECTOR</b>					
1st Year	35	0	35	-	-
<b>(C) INSTITUTE OF ASSISTANT PHARMACISTS</b>					
<b>ASST. PHARMACIST</b>					
1st Year	11	24	35	-	-
<b>(D) REGIONAL NURSING INSTITUTIONS</b>					
<b>GENERAL NURSING</b>					
LOCATION					
NIZWA	1st Year	7	20	27	-
SUR	1st Year	0	30	30	-
SOHAR	1st Year	6	24	30	-
TANAM	1st Year	7	23	30	-
DHOFAR	1st Year	2	22	24	-

\*(Including Upgrading 14 Assistant Nurses)

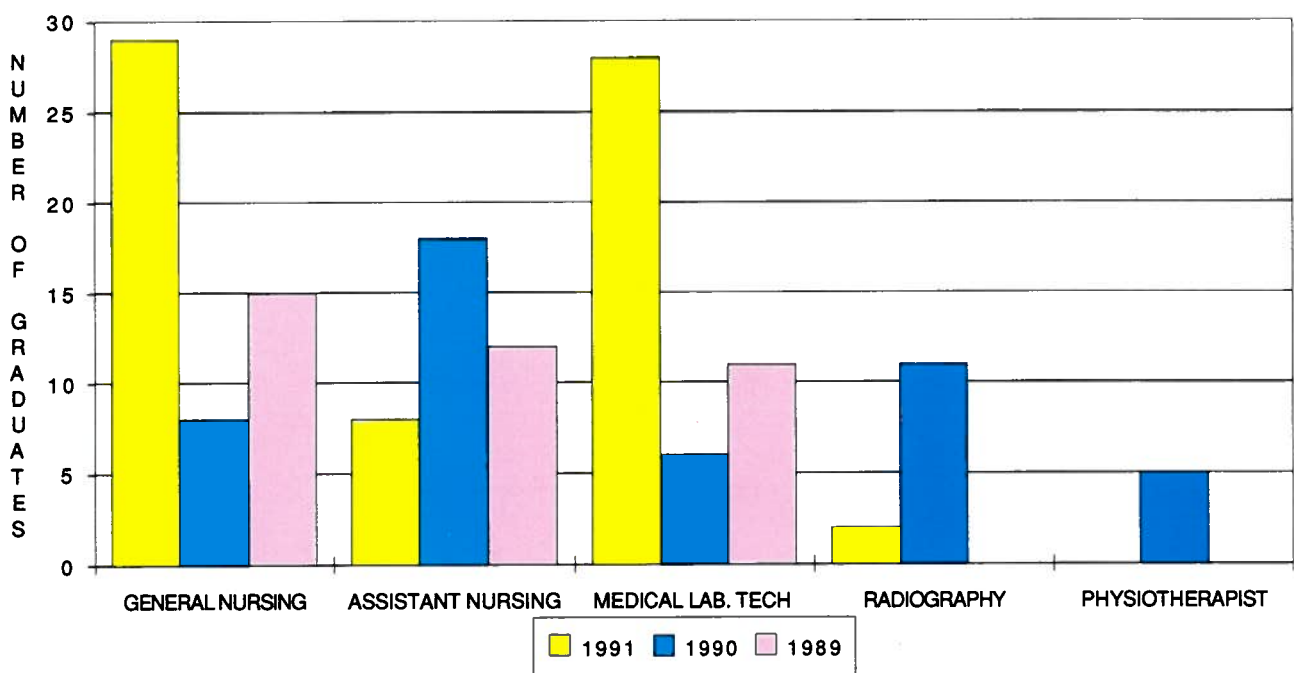
**TABLE 6.2****GRADUATES FROM THE INSTITUTE OF HEALTH SCIENCES 1984 - 1991**

YEARS	NUMBER OF STUDENTS QUALIFIED														
	GENERAL NURSING			ASSISTANT NURSING			MEDICAL LABORATORY TECH.			RADIOGRAPHY			PHYSIOTHERAPIST		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1984	6	18	24	7	21	28	-	-	-	-	-	-	-	-	-
1985	9	18	27	10	17	27	-	-	-	-	-	-	-	-	-
1986	3	6	9	6	22	28	3	5	8	-	-	-	-	-	-
1987	9	10	19	3	15	18	2	6	8	-	-	-	-	-	-
1988	5	6	11	11	28	39	6	6	12	-	-	-	-	-	-
1989	13	2	15	5	7	12	5	6	11	-	-	-	-	-	-
1990	6	2	8	12	6	18	2	4	6	8	3	11	3	2	5
1991	16	13	29	2	6	8	14	14	28	2	0	2	-	-	-

**Fig 8 NURSING GRADUATES FROM IHS**  
**1984 - 1991**



**Fig 9 TOTAL GRADUATES FROM IHS**  
**BY TYPE (1989 - 1991)**



## **7. MEDICAL & HEALTH PERSONNEL**

The total staff employed under the Ministry of Health at the end of 1991 is shown in Table 7.1. At that time, the Ministry employed 12,636 staff. This was 7.6% more than the 11,743 at the end of 1990. Omanis constituted 51% of the total staff - the same as for the last three years. Of the total medical and para-medical staff, Omanis constituted 34%. This included 9% of physicians, 25% of dentists, 21% of pharmacists, 12% of nursing staff and 71% of other paramedical staff. There has been little change in these percentages since 1988, as the increase in the numbers of newly qualified Omanis have only managed to keep pace with the increasing staff demand.

The regional distribution of Ministry of Health staff is shown in Table 7.2. A large proportion (38%) of staff are located in the Muscat region due to the presence of the national referral hospitals of the Royal, Khoula, AL nahdha and Ibn Sina.

The numbers of medical personnel employed by the Ministry over the last nine years is shown in Table 7.3. There has been a continuous increase in all categories, with the greatest increase occurring from 1986 to 1987 with the staffing of the new Royal hospital in Muscat.

The total numbers of medical and paramedical staff working in the Sultanate are shown in Table 7.4. About two thirds of the total 1,810 doctors are employed by the Ministry of Health, although 392 (22%) work in private clinics. Just under half of all dentists work for the Ministry of Health, with another 35% being in private practice. Pharmacists are primarily distributed in the private sector (75%), while the vast majority of nurses (79%) are employed by the Ministry of Health.



TABLE 7.1

# **MEDICAL/PARA-MEDICAL & OTHER STAFF EMPLOYED UNDER MINISTRY OF HEALTH**

**31-12-1991**

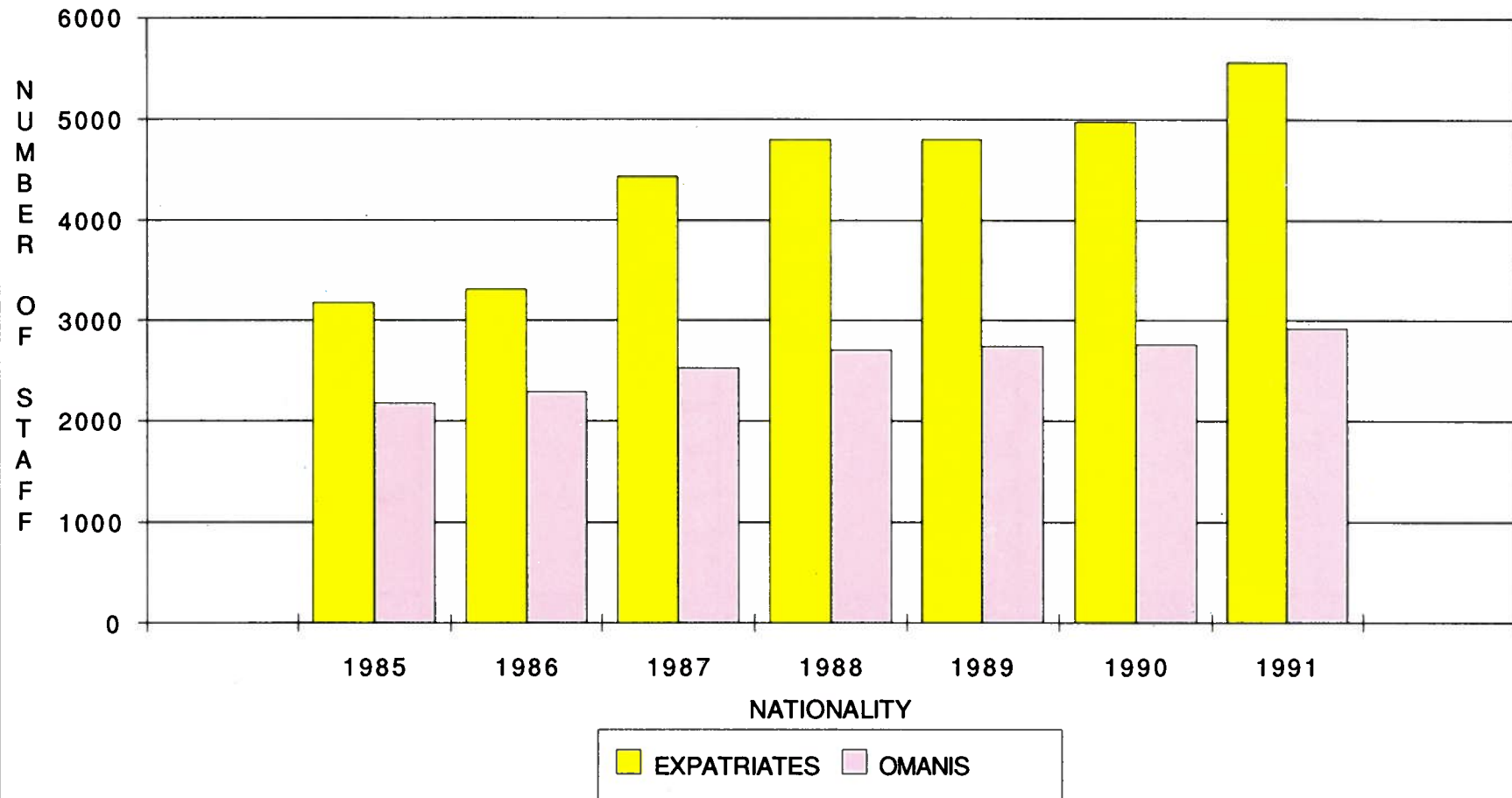
CODE NO.	CATEGORIES	OMANIS			NON-OMANIS			TOTAL			PERCENTAGE OF OMANIS	
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	1991	1990
1	HEALTH ADMINISTRATORS.....	44	2	46	7	1	8	51	3	54	85%	n.a
2	DOCTORS.....	81	27	108	766	293	1,059	847	320	1,167	9%	9%
2.1	Medical Administrators.....	9	1	10	8	0	8	17	1	18	56%	90%
2.2	Sr/Jr.Specialists/Specialists/Consultan	22	6	28	272	73	345	294	79	373	8%	8%
2.3	Medical Practitioners.....	50	20	70	486	220	706	536	240	776	9%	8%
3	DENTISTS.....	4	6	10	35	9	44	39	15	54	19%	25%
4	PHARMACISTS.....	3	3	6	20	11	31	23	14	37	16%	21%
5	TOTAL NURSES.....	188	239	427	173	3,255	3,428	361	3,494	3,855	11%	12%
5.1	Administrative Nurses.....	25	22	47	35	266	301	60	288	348	14%	n.a
5.2	Staff Nurses.....	54	108	162	135	2,856	2,991	189	2,964	3,153	5%	n.a
5.3	Assistant Nurses.....	109	107	216	3	33	36	112	140	252	86%	n.a
5.4	Midwives.....	0	2	2	0	71	71	0	73	73	3%	1%
5.5	Health Vistors.....	0	0	0	0	29	29	0	29	29	0%	0%
6	MEDICAL/HEALTH ASSISTANTS.....	19	0	19	80	1	81	99	1	100	19%	18%
7	PHYSIOTHERAPISTS.....	4	2	6	14	18	32	18	20	38	16%	19%
8	SANITARY INSPECT/SUPERVISORS/ QUARANTINE SUPERVISORS.....	52	0	52	102	2	104	154	2	156	33%	34%
9	RADIOGRAPHERS/X-RAY TECHNICIANS.....	16	2	18	111	16	127	127	18	145	12%	14%

TABLE 7.1 (CONT.)

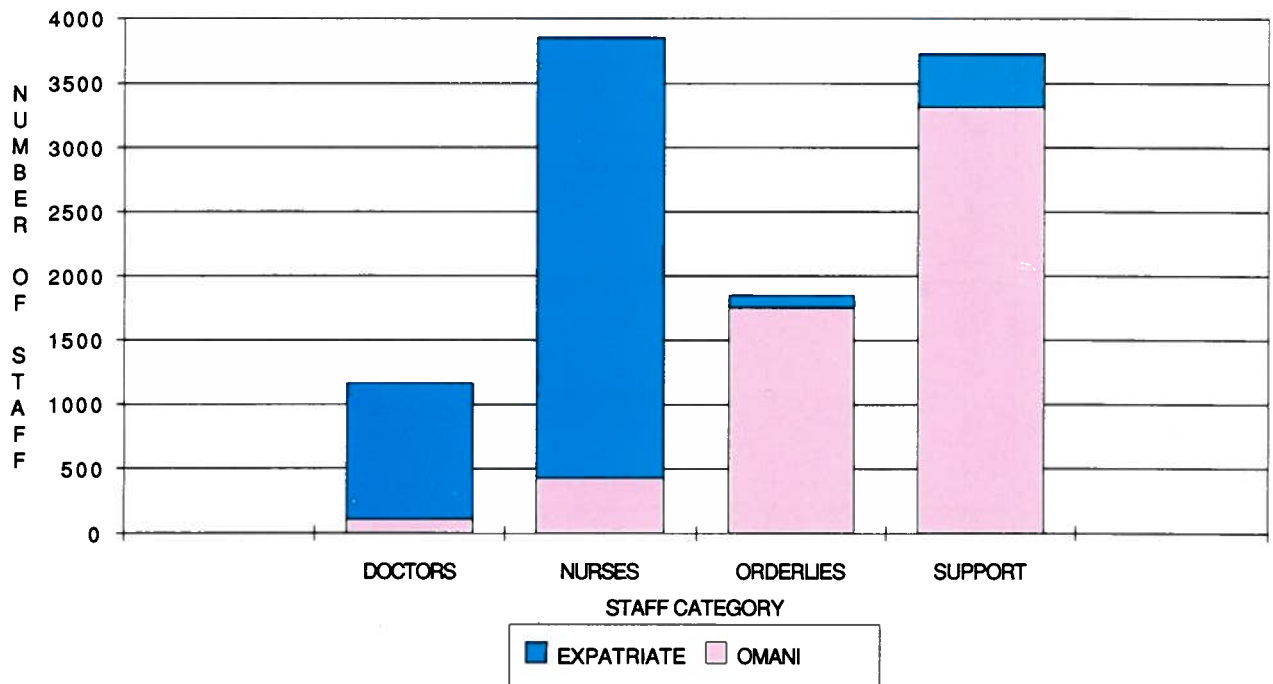
**MEDICAL/PARA-MEDICAL & OTHER STAFF EMPLOYED UNDER MINISTRY OF HEALTH****31-12-1991**

CODE NO.	CATEGORIES	OMANIS			NON-OMANIS			TOTAL			PERCENTAGE OF OMANIS	
		MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	1991	1990
10	MICROBIOLOGISTS/LAB TECH./CHEMISTS/ASSISTANT CHEM.....	39	61	100	177	128	305	216	189	405	25%	20%
11	ASSISTANT PHARMACISTS/DISPENSERS...	15	1	16	143	35	178	158	36	194	8%	9%
12	MEDICAL ORDERLIES.....	969	782	1,751	75	25	100	1,044	807	1,851	95%	94%
13	OTHER PARAMEDICAL STAFF.....	335	27	362	55	16	71	390	43	433	84%	n.a
14	TOTAL OTHER TECHNICAL STAFF.....	153	9	162	200	1	201	353	10	363	45%	n.a
14.1	Scientists/Engineers.....	6	4	10	8	1	9	14	5	19	53%	n.a
14.2	Technicians.....	147	5	152	192	0	192	339	5	344	44%	n.a
15	TOTAL OTHER SUPPORT STAFF.....	2,883	435	3,318	349	61	410	3,232	496	3,728	89%	n.a
15.1	White Collar Workers.....	954	184	1,138	180	59	239	1,134	243	1,377	83%	n.a
15.2	Skilled Labour.....	801	41	842	104	0	104	905	41	946	89%	n.a
15.3	Unskilled Labour.....	1,128	210	1,338	65	2	67	1,193	212	1,405	95%	n.a
16	TEACHERS/TUTORS.....	2	5	7	23	26	49	25	31	56	13%	n.a
GRAND TOTAL :		4,807	1,601	6,408	2,330	3,898	6,228	7,137	5,499	12,636	51%	52%
PERCENTAGE OF TOTAL STAFF :												
	1991.....	38%	13%	51%	18%	31%	49%	56%	44%	100%		
	1990.....	39%	13%	52%	18%	30%	48%	57%	43%	100%		

**Fig 10 MEDICAL AND PARAMEDICAL STAFF  
BY NATIONALITY 1985 - 1991**



**Fig 11 MINISTRY OF HEALTH STAFF**  
**(a) CATEGORIES WITH OVER 1000 STAFF**



**Fig 11 MINISTRY OF HEALTH STAFF**  
**(b) CATEGORIES WITH UNDER 1000 STAFF**

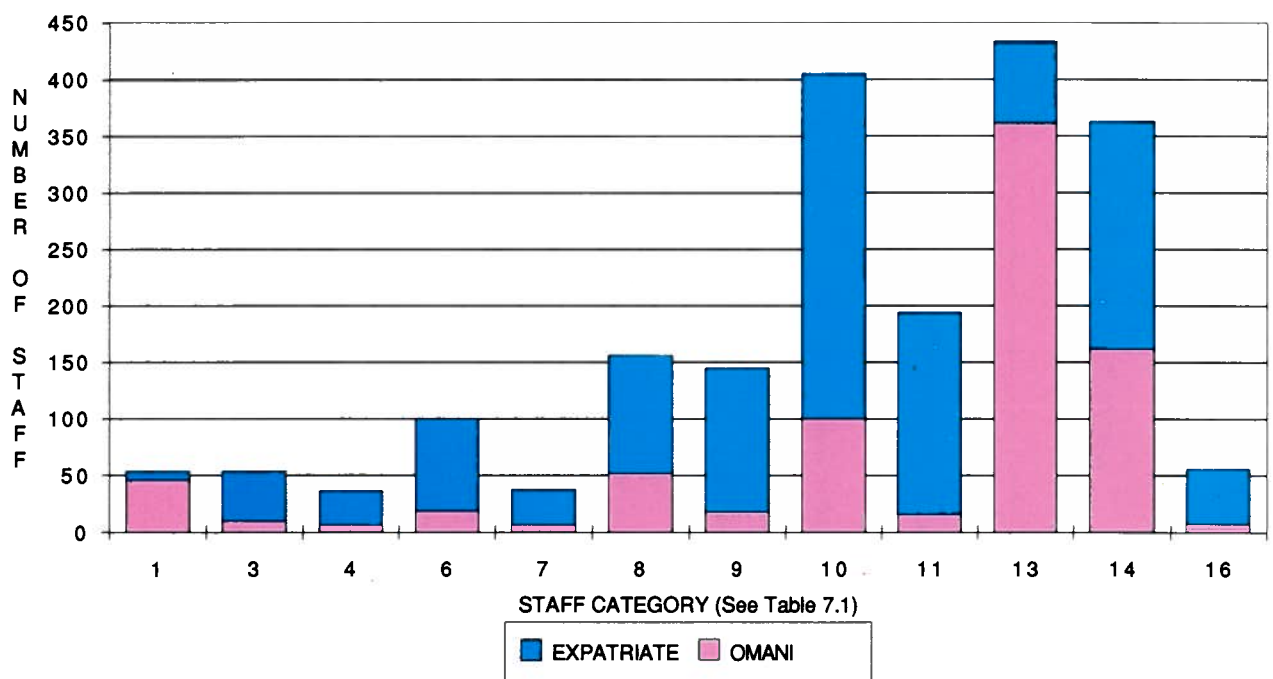




TABLE 7.2

**MEDICAL/PARA-MEDICAL & OTHER STAFF EMPLOYED UNDER MINISTRY OF HEALTH**  
**BY REGION - 31-12-1991**

CODE NO.	C A T E G O R I E S	NATIONAL TOTAL	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRA	MUSANDAM	WOUSTAH	MINISTRY*
1	HEALTH ADMINISTRATORS.....	54	10	2	3	0	3	3	4	1	0	28
2	DOCTORS.....	1,167	515	107	112	124	85	50	69	30	4	71
2.1	Medical Administrators.....	18	4	1	1	1	1	2	0	0	0	8
2.2	Sr/Jr. Specialists/Specialists/Consultan	373	219	39	23	24	24	9	20	4	0	11
2.3	Medical Practitioners.....	776	292	67	88	99	60	39	49	26	4	52
3	DENTISTS.....	54	18	6	5	5	5	2	5	1	1	6
4	PHARMACISTS.....	37	9	6	1	6	1	1	2	0	0	11
5	TOTAL NURSES.....	3,855	2,020	310	326	360	286	153	178	75	26	119
5.1	Administrative Nurses.....	348	220	18	20	19	27	1	7	5	1	30
5.2	Staff Nurses.....	3,153	1,638	264	268	307	228	137	148	63	24	76
5.3	Assistant Nurses.....	252	132	18	29	19	21	6	12	3	1	11
5.4	Midwives.....	73	22	6	6	9	6	9	8	3	0	4
5.5	Health Vistors.....	29	8	4	3	6	4	0	3	1	0	0
6	MEDICAL/HEALTH ASSISTANTS.....	100	19	16	16	20	7	6	7	6	3	0
7	PHYSIOTHERAPISTS.....	38	26	4	1	2	1	0	0	0	0	4
8	SANITARY INSPECT/SUPERVISORS/ QUARANTINE SUPERVISORS.....	156	32	11	23	26	11	11	13	2	0	27
9	RADIOGRAPHERS/X-RAY TECHNICIANS.....	145	63	13	15	14	9	5	7	4	1	14

TABLE 7.2 (CONT.)

**MEDICAL/PARA-MEDICAL & OTHER STAFF EMPLOYED UNDER MINISTRY OF HEALTH****BY REGION - 31-12-1991**

CODE NO.	CATEGORIES	NATIONAL TOTAL	MUSCAT	DHOFAR	DAKHILYA	SHARQIYA	NORTH BATINAH	SOUTH BATINAH	DHAHIRA	MUSANDAM	WOUSTAH	MINISTRY*
10	MICROBIOLOGISTS/LAB TECH./ CHEMISTS/ASSISTANT CHEM.....	405	189	36	29	28	19	14	17	8	2	63
11	ASSISTANT PHARMACISTS/DISPENSERS...	194	50	12	19	18	11	14	13	4	2	51
12	MEDICAL ORDERLIES.....	1,851	701	141	214	296	140	115	119	35	22	68
13	OTHER PARAMEDICAL STAFF.....	433	86	29	59	82	37	40	18	11	2	69
14	TOTAL OTHER TECHNICAL STAFF.....	363	102	16	26	36	2	26	17	1	2	135
14.1	Scientists/Engineers.....	19	8	0	0	0	1	0	0	1	0	9
14.2	Technicians.....	344	94	16	26	36	1	26	17	0	2	126
15	TOTAL OTHER SUPPORT STAFF.....	3,728	927	231	361	465	270	231	186	118	26	913
15.1	White Collar Workers.....	1,377	418	76	94	89	70	61	48	27	4	490
15.2	Skilled Labour.....	946	225	65	94	142	80	63	55	31	12	179
15.3	Unskilled Labour.....	1,405	284	90	173	234	120	107	83	60	10	244
16	TEACHERS/TUTORS.....	56	0	3	3	1	4	0	4	0	0	41
GRAND TOTAL : .....		12,636	4,767	943	1,213	1,483	891	671	659	296	91	1,619
PERCENTAGE OF TOTAL STAFF : 1991.....		100%	38%	7%	10%	12%	7%	5%	5%	2%	1%	13%

\* Includes Ministry HQ, DGs,IHS, Inst of OPH, Inst of Asst Pharmacists, Malaria Control

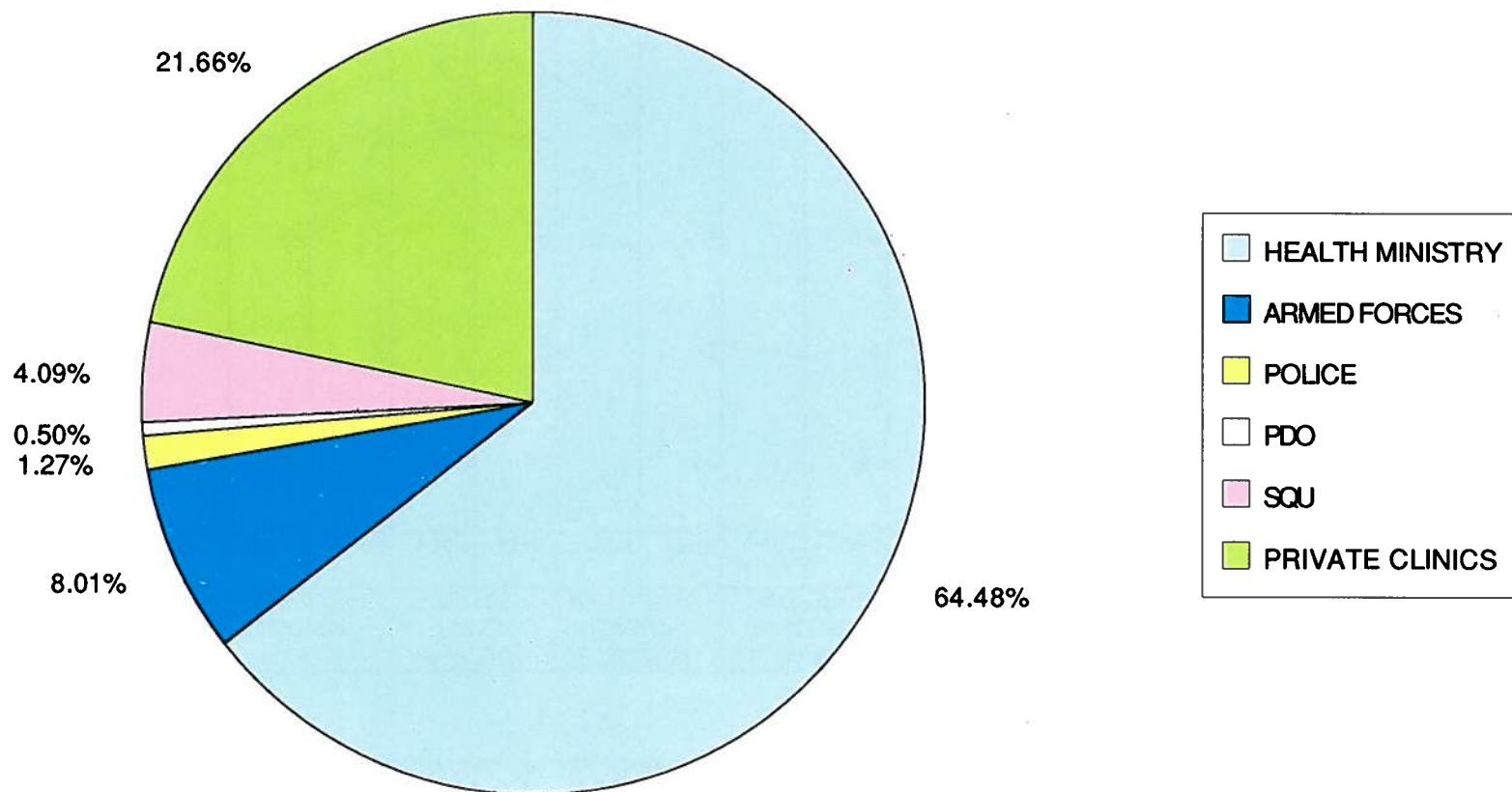
**TABLE 7.3****HEALTH PERSONNEL EMPLOYED BY THE MINISTRY OF HEALTH****1983 - 1991**

CATEGORIES	1983	1984	1985	1986	1987	1988	1989	1990	1991
ADMINISTRATORS/ ADVISORS.....	6	7	7	8	9	9	8	10	18
CONSULTANTS.....	11	16	24	24	37	45	48	53	62
SNR SPECIALISTS/SPECIALISTS.....	87	90	95	108	122	136	130	131	164
JUNIOR SPECIALISTS.....	54	57	67	86	120	129	135	141	147
MEDICAL OFFICERS.....	307	402	445	448	548	588	598	659	776
DENTISTS.....	22	23	23	27	31	35	38	40	54
PHARMACISTS.....	16	18	22	23	25	26	27	33	37
NURSES.....	1,386	1,753	1,947	2,057	2,973	3,260	3,274	3,512	3,855
OTHER PARA-MEDICAL STAFF.....	2,261	2,490	2,722	2,819	3,099	3,285	3,293	3,161	3,322
TOTAL.....	4,150	4,856	5,352	5,600	6,964	7,513	7,551	7,740	8,435

**TABLE 7.4****TOTAL MEDICAL & PARAMEDICAL STAFF - at end of 1991 and 1990**

STAFF CATEGORIES	MINISTRY OF HEALTH		FORCES MEDICAL SERVICES		FORCES OMAN POLICE		PETROLEUM DEVELOP- MENT OMAN		S. QABOOS UNIVERSITY HOSPITAL		PRIVATE CLINICS		PRIVATE PHARMA- CIES		T O T A L		PERCENTAGE UNDER HEALTH MINISTRY	
	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990
DOCTORS.....	1,167	994	145	116	23	27	9	10	74	53	392	357	0	0	1,810	1,557	64%	64%
DENTISTS.....	54	40	19	15	2	2	0	0	2	0	41	42	0	0	118	99	46%	40%
PHARMACISTS.....	37	33	23	22	0	6	1	1	10	4	0	0	217	203	288	269	13%	12%
NURSES.....	3,855	3,512	239	139	96	90	32	36	336	210	298	299	0	0	4,856	4,286	79%	82%
OTHER PARA- MEDICAL STAFF.....	3,322	3,161	765	713	45	43	36	32	197	139	96	65	100	86	4,561	4,239	73%	75%
GRAND TOTAL.....	8,435	7,740	1,191	1,005	166	168	78	79	619	406	827	763	317	289	11,633	10,450	73%	74%

**Fig 12 DOCTORS BY SECTOR 1991**



## **8. HEALTH CARE PROVIDED BY OTHER ORGANIZATIONS**

### **(a) Other Government Organizations**

In addition to the Ministry of Health which is the main agency responsible for health services, the Ministry of Defence, Royal Oman Police , Petroleum Development Oman and Sultan Qaboos University provide health care for their employees and dependants. The services provided by these organizations and their utilization is shown in Tables 8.1 to 8.3.

At the end of 1991, these four organizations had 5 hospitals with 577 beds, and 44 clinics with 245 beds (see Table 8.1). As shown in Table 8.2, at the end of 1991, they employed 251 doctors, 23 dentists, 34 pharmacists, 703 nursing personnel (a significant increase over the 475 of 1990) and 1043 other paramedical staff.

Their activities during 1991 are shown in Table 8.3. During 1991 (1990) they admitted 17,179 inpatients, a 59% increase over the 11,400 of 1990. This was mainly due an increase in the utilization of the beds of the Sultan Qaboos University Hospital. The numbers of major operations increased significantly in both the Royal Oman Police Hospital and the Sultan Qaboos University Hospital resulting in a total of 1,637 major operations in 1991 compared to only 398 in 1990. They also treated 818 (635) thousand outpatients.

### **(b) Private Companies and Clinics**

Private companies and individuals also operate clinics, as shown by region in Table 8.4. At the end of 1991, there were 300 general clinics, 24 specialized clinics and 32 dental clinics. The number of private pharmacies increased significantly from 158 in 1990 to 188 in 1991. The private sector employed 1,144 medical and paramedical staff.

**TABLE 8.1****HEALTH FACILITIES (NON-HEALTH MINISTRY ORGANIZATIONS) AS OF 31-12-1991****A. HOSPITALS**

FACILITIES	ARMED FORCES MEDICAL SERVICES		ROYAL OMAN POLICE		PETROLEUM DEVELOPMENT OMAN		SULTAN QABOOS UNIVERSITY HOSPITAL		TOTAL	
	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990
<b>HOSPITALS</b>										
Number.....	3	3	1	1	—	—	1	1	5	5
Beds.....	239	249	47	65	—	—	291	140	577	454
<b><u>DISTRIBUTION OF BEDS BY SPECIALITY:</u></b>										
General.....	53	53	0	0	—	—	0	0	53	53
Surgery.....	58	58	10	10	—	—	56	24	124	92
Medicine.....	42	38	15	15	—	—	97	24	154	77
Obstet. & Gynae.....	24	24	12	12	—	—	32	17	68	53
Paediatrics.....	0	14	10	10	—	—	68	48	78	72
Isolation.....	22	22	0	0	—	—	0	0	22	22
Others.....	40	40	0	18	—	—	38	27	78	85
<b>TOTAL BEDS.....</b>	<b>239</b>	<b>249</b>	<b>47</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>291</b>	<b>140</b>	<b>577</b>	<b>454</b>

**(CONT)TABLE 8.1**

**HEALTH FACILITIES (NON-HEALTH MINISTRY ORGANIZATIONS) AS OF 31-12-1991**

**B: DISPENSARIES/PRIMARY HEALTH CARE CENTRES**

FACILITIES	ARMED FORCES MEDICAL SERVICES		ROYAL OMAN POLICE		PETROLEUM DEVELOPMENT OMAN		SULTAN QABOOS UNIVERSITY HOSPITAL		TOTAL	
	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990
DISPENSARIES/CURATIVE CENTRES										
Number Without Beds.....	7	0	2	4	0	0	—	—	9	4
Number With Beds.....	24	27	2	0	9	11	—	—	35	38
Number Of Beds.....	198	234	10	0	37	39			245	273



**TABLE 8.2****HEALTH - RELATED PERSONNEL EMPLOYED (NON-HEALTH MINISTRY ORGANIZATIONS)****AS OF 31.12.1991**

C A T E G O R I E S	FORCES MEDICAL SERVICES			ROYAL OMAN POLICE			PETROLEUM DEVELOPMENT OMAN			SULTAN QABOOS UNIVERSITY			T O T A L		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1 HEALTH ADMINISTRATORS.....	30	16	46	3	0	3	2	0	2	3	0	3	38	16	54
2 DOCTORS.....	12	133	145	3	20	23	2	7	9	8	66	74	25	226	251
2.1 Medical Administrators.....	1	9	10	1	0	1	1	0	1	1	0	1	4	9	13
2.2 Sr/Jr.Specialists/Specialists/Consultant	1	31	32	1	17	18	0	0	0	2	26	28	4	74	78
2.3 Medical Practitioners.....	10	93	103	1	3	4	1	7	8	5	40	45	17	143	160
3 DENTISTS.....	17	2	19	0	2	2	0	0	0	0	2	2	17	6	23
4 PHARMACISTS.....	1	22	23	0	0	0	1	0	1	0	10	10	2	32	34
5 TOTAL NURSES.....	16	223	239	24	72	96	19	13	32	5	331	336	64	639	703
5.1 Administrative Nurses.....	6	98	104	1	1	2	2	0	2	2	87	89	11	186	197
5.2 Staff Nurses.....	10	52	62	13	60	73	13	10	23	3	234	237	39	356	395
5.3 Assistant Nurses.....	0	40	40	10	0	10	0	0	0	0	0	0	10	40	50
5.4 Midwives.....	0	31	31	0	11	11	4	3	7	0	10	10	4	55	59
5.5 Health Visitors.....	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2
6 MEDICAL/HEALTH ASSISTANTS.....	395	230	625	0	0	0	0	0	0	0	0	0	395	230	625
7 PHYSIOTHERAPISTS.....	2	12	14	1	2	3	0	1	1	0	6	6	3	21	24
8 SANITARIANS.....	5	19	24	0	0	0	12	0	12	0	0	0	17	19	36
9 RADIOGRAPHERS/X-RAY TECHNICIANS.....	5	16	21	3	5	8	0	1	1	1	19	20	9	41	50

**(CONT)TABLE 8.2**

**HEALTH - RELATED PERSONNEL EMPLOYED (NON-HEALTH MINISTRY ORGANIZATIONS)**

**AS OF 31.12.1991**

C A T E G O R I E S	FORCES MEDICAL SERVICES			ROYAL OMAN POLICE			PETROLEUM DEVELOPMENT OMAN			SULTAN QABOOS UNIVERSITY			T O T A L		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
10 LABORATORY TECH./ ASST LAB TECH.....	11	24	35	4	8	12	2	1	3	8	63	71	25	96	121
11 ASSISTANT PHARMACISTS/DISPENSERS....	0	0	0	0	6	6	0	1	1	2	9	11	2	16	18
12 MEDICAL ORDERLIES.....	0	0	0	16	0	16	10	0	10	68	0	68	94	0	94
13 OTHER PARAMEDICAL STAFF.....	10	36	46	0	0	0	8	0	8	13	8	21	31	44	75
14 TOTAL OTHER TECHNICAL STAFF.....	5	18	23	0	0	0	1	2	3	10	14	24	16	34	50
15 TOTAL OTHER SUPPORT STAFF.....	0	0	0	0	0	0	5	0	5	186	32	218	191	32	223
16 TEACHERS/TUTORS.....	0	0	0	4	0	4	2	0	2	0	0	0	6	0	6
GRAND TOTAL.....	509	751	1,260	58	115	173	64	26	90	304	560	864	935	1,452	2,387

**TABLE 8.3****UTILIZATION OF HEALTH SERVICES(NON-HEALTH MINISTRY ORGANIZATIONS) - 1991 & 1990**

ACTIVITIES	FORCES MEDICAL SERVICES		ROYAL OMAN POLICE		PETROLEUM DEVELOPMENT OMAN		SULTAN QABOOS UNIVERSITY HOSPITAL		TOTAL	
	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990
<b>INPATIENTS</b>										
Number of staffed beds.....	239	249	47	65	—	—	291	140	577	454
Total Discharges.....	9,715	7,045	3,187	3,145	—	—	4,277	1,219	17,179	11,409
Deaths.....	192	155	12	9	—	—	83	7	287	171
Total patient days.....	57,623	52,558	15,268	16,370	—	—	32,869	9,346	105,760	78,274
Mean length of stay.....	5.9	7.5	4.8	5.2	—	—	7.7	7.7	6.2	6.9
Bed Occupancy rate.....	66%	58%	89%	69%	—	—	31%	18%	50%	47%
Total deliveries.....	1,383	1,251	632	626	52	120	340	1	2,407	1,998
Livebirths.....	1,388	1,246	630	622	52	118	335	1	2,405	1,987
Stillbirths.....	9	5	2	4	0	2	5	0	16	11
Major Operations done.....	376	303	952	40	—	—	309	55	1,637	398
Minor Operations done.....	2,428	2,612	732	1,149	9	16	591	240	3,760	4,017
<b>OUTPATIENTS</b>										
Hospitals (O.P.D).....	255,817	224,163	56,327	62,163	—	—	36,322	12,913	348,466	299,239
Dispensaries/Primary/ H.Care Centres (O.P.D).....	300,201	263,737	116,781	17,388	53,155	54,539	—	—	470,137	335,664
Patients treated in OPD.....	556,018	487,900	173,108	79,551	53,155	54,539	36,322	12,913	818,603	634,903
Daily average number.....	1,523	1,337	474	218	146	149	100	35	2,243	1,739

**TABLE 8.4**

**NUMBER OF CLINICS AND MEDICAL PERSONNEL IN THE PRIVATE SECTOR BY REGIONS - 31.12.1991**

REGIONS	NUMBER OF CLINICS					NUMBER OF MEDICAL AND PARAMEDICAL PERSONNEL EMPLOYED									
	TYPE OF CLINIC			TOTAL CLINIC		PRIVATE PHARMACIES		DOCTORS		DEN- TISTS	PHARMA- CISTS	NURSES	OTHER PARA- MEDICALS	TOTAL PERSONNEL	
	GEN- ERAL	SPEC- -IAL	DEN- TAL	1991	1990	1991	1990	SPECIAL- ISTS	GENERAL						
														1991	1990
MUSCAT.....	74	15	13	102	95	81	69	20	112	23	113	67	112	447	427
DHOFAR.....	12	2	3	17	18	22	18	4	18	3	21	13	21	80	61
DAKHILYA.....	26	0	3	29	22	13	10	0	27	3	12	14	8	64	54
SHARQIYA.....	41	0	1	42	33	17	15	0	46	1	15	11	6	79	57
BATINAH.....	95	2	9	106	100	38	31	2	109	9	38	71	11	240	223
DHAHIRA.....	22	5	3	30	24	16	14	4	30	2	17	12	10	75	68
MUSANDAM.....	0	0	0	0	0	1	1	0	0	0	1	0	0	1	1
TOTAL:	270	24	32	326	292	188	158	30	342	41	217	188	168	986	891
PRIVATE COMPANIES:	30	0	0	30	42	0	0	0	20	0	0	110	28	158	161
GRAND TOTAL	300	24	32	356	334	188	158	30	362	41	217	298	196	1144	1052

## **9. FINANCE**

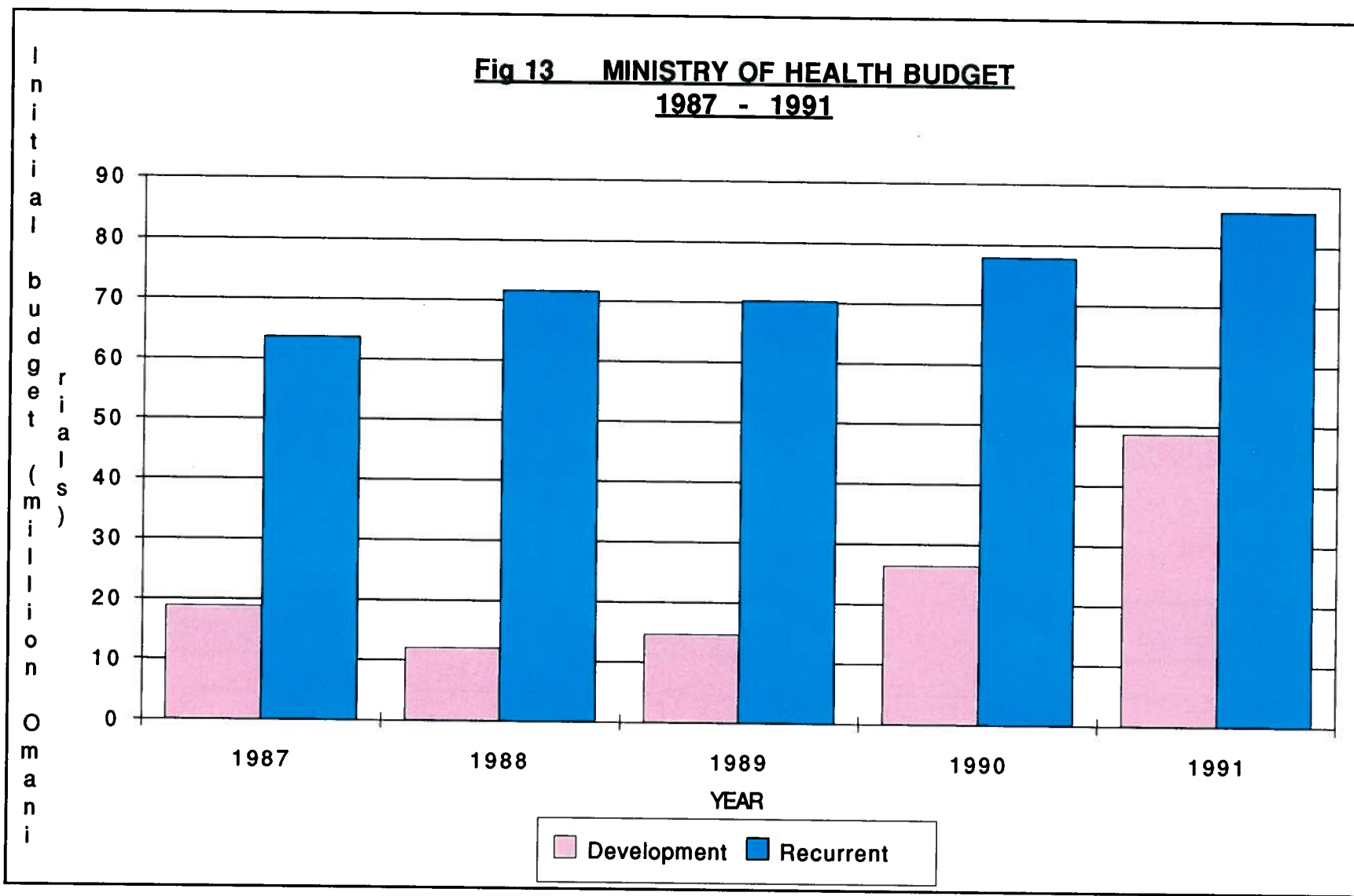
The initial 1991 budget allocation for the Ministry of Health was RO 134.5 million - a 29% increase from the RO 104.5 million of 1990. This included RO 85.8 million for recurrent expenditure and RO 48.7 million for development expenditure. As shown in Figure 13, the recurrent expenditure has grown gradually by an average of 7.7% per year since 1987, while the development budget has grown by an average of 37%.

The breakdown of the recurrent expenditure for the last four years is detailed below:-

	<b>1991</b>	<b>1990</b>	<b>1989</b>	<b>1988</b>
			(million riyals)	
(i) Salaries, allowances etc.....	54.8	51.2	46.1	0.4
(ii) Furniture, equipment, vehicles etc.....	3.0	3.8	1.6	2.0
(iii) Supplies, materials, repairs, maintenance & Miscellaneous ...	28.0	22.9	22.8	29.2
<b>T o t a l:.....</b>	<b>85.8</b>	<b>77.9</b>	<b>70.4</b>	<b>71.7</b>

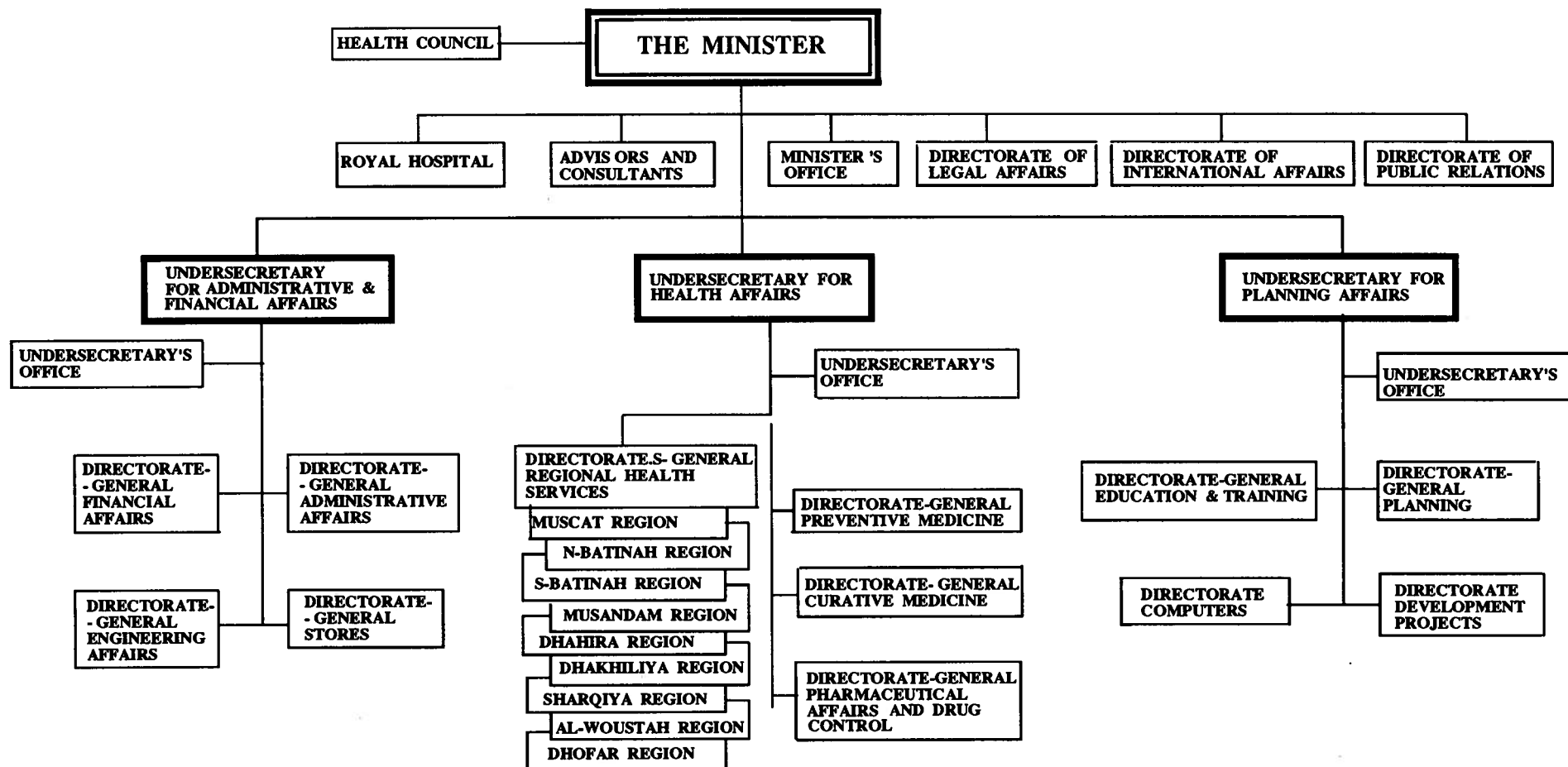
The recurring expenditure was distributed among different programmes and Directorates-General of regional health services as follows:-

	<b>1991</b>	<b>1990</b>
	(million riyals)	
Nationally administered programmes.....	23.6	21.8
Health Services Development Programmes.....	0.2	0.3
<b>Directorates-General :</b>		
Royal Hospital.....	19.2	19.5
<b>Regional Health Services:</b>		
Muscat.....	13.9	11.7
Dhofar.....	5.2	4.6
Dakhilya.....	5.6	4.6
Sharqiya.....	6.8	5.8
North Batinah.....	4.2	3.4
South Batinah.....	2.8	2.3
Dhahira.....	3.0	2.7
Musandam.....	1.3	1.2
<b>T O T A L.....</b>	<b>85.8</b>	<b>77.9</b>



I  
n  
i  
t  
i  
a  
l  
  
b  
u  
d  
g  
e  
t  
  
(  
m  
i  
l  
l  
i  
o  
n  
  
O  
m  
a  
n  
i  
r  
i  
a  
l  
s  
)

# Appendix 1



**ORGANIZATION CHART OF THE MINISTRY OF HEALTH AS OF 1/1/1991**

## HEALTH INSTITUTIONS OF REGIONS AND SUB-REGIONS

31ST DECEMBER 1991

REGIONS	HOSPITALS	HEALTH CENTRES WITH BEDS	HEALTH CENTRES WITHOUT BEDS	PUBLIC HEALTH UNITS	MALARIA CONTROL CENTRES	WILAYAT
(1) MUSCAT	MUSCAT AR RAHMA AL NAHDHA KHOULA IBN SINA ROYAL QURIYAT		MUTTRAH (MCH) AL AMIRAT SEEB AL KHOD (old) AL KHOD (new) DAGMAR SIYA HAIL AL GHAF MAZARA YETI	QURIYAT SIYA MAZARA YETI		Muscat Quriyat
(2) DHOVAR	QABOOS RAKHYUT SUDH MADINAT AL HAQ TAWI ATTAIR	MIRBAT DHALQUT SHAHIB ASSAIB SHELEEM MAKINAT SHAHAN	ASHUWAIMIYAH GHADOW HADBEEN HAIGHAF HASIK JIBJAT KHADRAFI ALHALLANIAT MARSIDOD MUDHAI PORT RAYSUT QEIRON HEIRITI RIMA SHARBITHAT TAQA TEYTUM THAMRAIT UMBUSHEQ MUQSHAN	SALALAH TAWI ATTAIR RAKHYUT SUDH MADINAT AL-HAQ DHALQUT JIB JAT QEIRON HEIRITI GHADOW MIRBAT SHELEEM TAQAH THUMRAIT		Salalah Thumarait Taqah Rakhyut Mirbat Shellen Sudh Dhalqut



**HEALTH INSTITUTIONS OF REGIONS AND SUB-REGIONS****31ST DECEMBER 1991**

REGIONS	HOSPITALS	HEALTH CENTRES WITH BEDS	HEALTH CENTRES WITHOUT BEDS	PUBLIC HEALTH UNITS	MALARIA CONTROL CENTRES	WILAYAT
(3) DAKHILYA	NIZWA BAHLA ADAM JABAL AKHDAR		AL HAMRA MANAH AL GHAFAT AL MAMoor BARKAT AL MOUZ BISIYA	NIZWA BAHLA ADAM AL-HAMRA BISIYA	ADAM	Nizwa Bahla Adam Al Hamra Haima Manah
	SUMAIL IZKI		FANJA WADI MAHRAM WADI BANI RAUWAHA QURIYATEEN	SUMAIL IZKI WADI MAHRAM QURIYATEEN	WADI B. RAUWAHA BIDBID	Sumail Izki Bidbid
(4) SHARQIYA	IBRA BIDIYAH WADI TAYEEN SINAW SAMAD AL SHAAN WADI BANI KHALID		IBRA (MCH) AL MUDHAIBI AL DREEZ MUDHERIB AL AFLAJ AL DHAHIR AL AYOUN	MUDHERIB BIDIYAH AL AFLAJ SAMAD AL SHAAN WADI TAYEEN WADI BANI KHALID	IBRA MUDHAIBI	Ibra Al Mudhaibi Badiyah Al Qabel Dima & Al-Tayeen
	SUR MASIRAH B.B. BU ALI B.B. BU HASSAN		TIWI RAS AL HAD AIGA WADI BANI JABER QUMAILA AL ASHKARA AL SUWAIH AL RUWAIIS AL WAFI AL GHAINA AL KAMIL FALAJ AL MASHAIKH	SUR TIWI MASIRAH B.B. BU ALI B.B. BU HASSAN QUMAILA AL ASHKARA AL-AYOON WADI BANI JABIR AL KAMIL FALAJ AL MASHAIKH		Sur Masirah Al Kamil & Al-Wafi Jaalan Bani Bu-Ali Jaalan Bani Bu-Hassan Wadi Bani Khalid

# HEALTH INSTITUTIONS OF REGIONS AND SUB-REGIONS

31ST DECEMBER 1991

REGION	HOSPITALS	HEALTH CENTRES WITH BEDS	HEALTH CENTRES WITHOUT BEDS	PUBLIC HEALTH UNITS	MALARIA CONTROL CENTRES	WILAYAT
(5) NORTH BATINAH	SOHAR SAHAM WADI SARAMI WADI HAWASNA	HEEBI	SUWAIQ KHABURA LIWA SHINAS ABU BAQRA WADI SHAFAN MASHAIQ KHATMAT MALAHA	SAHAM SOHAR WADI SARAMI WADI HAWASNA WADI SHAFAN SHINAS MASHAIQ	SHINAS	Sohar Shinas Liwa Saham Al Khabura Al Suwaiq
(6) SOUTH BATINAH	RUSTAQ WADI MISTAL WADI HEMLI WADI BANI GHAFIR WADI BANI KHAROOS	WADI SAHTAN	BIRKA MASNAH AWABI NAKHAL AFI HOQEN	RUSTAQ WADI BANI KHAROOS WADI MISTAL WADI BANI GHAFIR WADI HEMLI WADI SAHTAN HOQEN	RUSTAQ BARKA MUSANAA NAKHAL	Rustaq Nakhla Wadi al Maawil Al Awaabi Al Masnah Birka
(7) DHAFIRA	TANAM YANKUL		IBRI SUNAINA MUQNIYAT MAMUR HAJEERMAT DHANK WADI FIDA	TANAM SUNAINA DHANK WADI FIDA MUQNIYAT HAFEET	YANKUL	Ibri Yankul Dhank
	BURAIMI WADI JIZZI	MAHDHA	AL FAYADH	BURAIMI WADI JIZZI AL FAYADH		Buraimi Mahdha
(8) MUSANDAM	KHASAB DIBBA (old BAYA) BUKHA	MADHA LIMA KUMZAR	BUKHA	KHASAB	DIBBA	Khasab Bukha Daba al Baya Madha
9 AL-WOUSTA	DUQUM HAIMA	AL-KAHIL	LIQBI SOGHARA MAHOOT	DUQUM		
TOTAL	46	12	84 (inc 2 MCH)	68	12	