

## Review

# Perspectives on the health care system of the United Arab Emirates

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## Introduction

The purpose of this report is to examine some of the available basic indicators of the health care system of the United Arab Emirates (UAE), to place these indicators in perspective as to the likely future developments in this sector and to suggest some effective interventions to support the further development of the health services.

Growth inevitably merges into development, a phase that consolidates the earlier achievements and lays the foundations for the future. It appears to many concerned with the health care system of the UAE that the country is currently at this critical juncture. This paper is an attempt to examine some of the issues that are likely to be confronted in the next phase.

## Demographic indicators

The 1995 population of the UAE has been estimated officially at 2.378 million residents. It has also been indicated that the national population represents some 25%–30% of this number; thus 70%–75% are expatriates living in the UAE for variable lengths of stay. The distribution of the population is given in Table 1. The population of the United Arab Emirates was re-

ported to have been only 180 000 people in 1968. By 1975, the population numbered 557 000; it doubled by 1980 to about 1 million and reached 1.4 million by 1986. The overall increase has been 13-fold in 27 years.

This increase is predominantly due to the continuing inflow of expatriates, a tide that does not seem to have changed appreciably since 1968. The overall rate of annual natural population increase has been noted as 1.86% for the period 1990 to 1995

**Table 1 Population distribution per Emirate by sex, 1995**

Emirate	Males	Females	Total
Abu Dhabi	638 526	289 834	928 360
Dubai	467 432	206 669	674 101
Sharjah	251 949	148 390	400 339
Ajman	70 656	48 156	118 812
Oum			
Al-Quwain	20 832	14 325	35 157
Ras			
Al-Khaimah	84 518	59 912	144 430
Fujeirah	45 830	30 424	76 254
Total	1 579 743	7 97 710	2 377 453

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

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**Table 2 Trends in demographic indicators and in proportionate distribution of causes of death, UAE, 1986–1995**

Variable	1986	1990	1995
<i>Demographic indicators</i>			
Population (million)	1.447	1.844	2.377
Total population increase (%)	–	27.4	29.0
Natural population increase (%)	2.96	2.61	1.86
Crude birth rate (%)	31.7	28.2	20.6
Crude death rate (%)	2.1	2.1	2.03
Infant mortality rate (per 1000 live births)	11.2	11.4	10.0
Neonatal mortality rate (per 1000 live births)	7.9	7.7	7.01
1–4 years mortality rate (per 1000 live births)	1.2	0.7	0.63
Maternal mortality rate (per 1000 live births)	1.0	0.3	0.03
<i>Proportionate mortality (%)</i>			
Cardiovascular	23.3	16.7	20.2
Accidents, poisoning	14.6	11.2	15.8
Respiratory	6.3	2.7	3.4
Tumours	4.2	4.8	6.3
Perinatal, etc.	0.1	0.4	0.3
Unknown	36.1	19.7	19.0

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

(Table 2). However, it is known that many of the expatriate population is single in the UAE. If we consider only the total born to nationals, namely 20 733 live births, over their relative representation in the population, we obtain an annual natural increase for the national population of 3.5%, a number far more likely to represent the true state and which is similar to the population increase in neighbouring states. Conversely, if we assume that most segments of the expatriate population (generally coming from neighbouring countries) have the same annual rate of natural increase, we would expect 63 000 births for the expatriate population rather than the reported 28 331; this may also indicate that overall 55% of the expatriate population is single as far as its civil status in the UAE. This is an important determinant for the planning of maternity and paediatric services in the UAE.

The crude birth rate has fallen from 31.7 to 20.6 per 1000 population in the 10-year interval from 1986 to 1995; the infant mortality rate has also fallen from 11.2 to 10.0 per 1000 live births in the same period, while the crude death rate has been stable at around 2 per 1000 (Table 2). These indicators point to improvements in the health services, particularly in causes of death that can be prevented by immunization or treatment. The neonatal mortality rate has not varied much (7.0–7.9 per 1000 live births) indicating the difficult medical conditions faced in the neonatal period (namely congenital anomalies and deformities). Also indicating the improved maternal services is the major drop in maternal mortality from 1 to 0.03 per 1000 live births, a 33-fold decrease; this may be attributed to the very high percentage of deliveries now occurring in hospital (some 98.9% of deliveries) under medical supervision.

**Table 3 Population distribution (%) in UAE, 1995**

Age group (years)	Males	Females	Total
Total 0-4	6.89	6.81	13.70
5-9	6.13	6.07	12.20
10-14	4.06	3.94	8.00
Total 0-14	17.08	16.83	33.91
15-24	6.66	6.54	13.2
25-34	17.43	9.45	26.88
35-44	11.92	4.58	16.50
Total 15-44	36.02	20.57	56.59
45-54	4.90	1.41	6.31
55-64	1.34	0.54	1.88
Total 45-64	6.24	1.95	8.19
Total ≥ 65	0.65	0.65	1.30

*Note that the migrant work force affects the age group 25-64 years*

*Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995*

The total number of births born to the overall population was 49 064 in 1995; 20 733 (nationals) and 28 331 (expatriate). Of this number, only 29 973 (61%) live births were delivered in Ministry of Health (MOH) facilities all over the UAE. Other governmental and private facilities must have delivered the balance (39%). The MOH hospital infrastructure for maternity services includes 574 obstetricians/gynaecologists and 554 hospital beds; there were 38 424 hospital admissions and 115 409 patient days in 1995, the average length of stay was 3 days and the hospital bed occupancy was 57%. The Planning Department in the MOH indicates that there are 36 private clinics for obstetrics/gynaecology in the country, mainly in the major cities of Abu Dhabi, Dubai, Sharjah and Al-Ain. These private clinics are staffed by 88 obstetricians/gynaecologists.

The population distribution of the UAE (Table 3) indicates the migrant nature of the population. While the male/female ratio remains closely similar in the age group 0-24 years and in the age group 65 years and above, it diverges distinctly in the age group 25-64 years, where the male population represents 66.5% of the total population rather than the 50-50 distribution expected in nonmigrant societies.

The paediatric population (0-14 years) represents 33.91% of the population; thus the paediatric population is close to 800 000. To cater for this population, the MOH has some 500 paediatric beds, providing for 33 500 admissions per year and 125 000 patient days; the average length of stay is 3.74 days and the overall hospital occupancy is 69%. Care is provided by 77 paediatricians in the MOH. There are also 33 private paediatric clinics with 85 registered paediatricians, again mainly concentrated in the four main cities of the UAE. The proportion of children between 0-14 years (33.91%) and women in the child-bearing age group of 15-45 years (20.57%) represent 55% of the total population which highlights the importance of maternal and child health services.

The proportion of those aged above 65 years is only 1.30% of the total population or 31 000 persons. This geriatric population is likely to be mainly nationals as the majority of expatriates return to their country of origin upon retirement (60 years in the civil service) or when they become incapacitated by disease. For planning purposes, the health care system is not over-burdened with chronic illnesses which usually predominate in the elderly (who may reach up to 20% in European and North American societies) and hence the medical services are relieved of this high-cost element. However, the fact that a good proportion of the expatriate population is

single status may present the health care system with different problems, such as sexually transmitted diseases (which are usually not fully documented) and psychosomatic illnesses (equally under-reported). Since expatriates are in the UAE because they are employed and have a secure job in the country, health problems associated with unemployment are likely to be far less than in other societies.

## Mortality indicators

The causes of death are shown in Table 2. The mortality picture resembles that of industrialized countries, with a predominance of cardiovascular deaths (20.2%). However, the category of accidents and poisoning ranks second with about 16% of the deaths, while tumours account for only 6.3%. The unknown causes of death are also high at 19.0%.

This mortality picture highlights the growing importance of road traffic accidents as a major cause of death, despite the availability of an excellent infrastructure of roads, the insignificant amount of alcoholism in the country, the mild year-round weather with no snow, rain, sleet or freezing conditions and the presence of well-maintained vehicles. Mortality due to cancer may be masked by the return of expatriates afflicted with malignant diseases to their country of origin. The proportionate mortality attributed to cardiovascular diseases may also be on the low side because of the small proportion of elderly in the population, as previously mentioned.

The mortality attributed to infectious diseases has been much reduced due to the excellent provision of preventive and promotive health services, such as immunization, a good water supply and good sewage systems. Mortality is now dominated by

diseases and conditions related to unhealthy lifestyles, such as obesity, smoking, stress, lack of exercise and drugs, much like industrialized societies.

Finally, mortality attributed to perinatal diseases stands at 0.26% of the total number of deaths, up from 0.1% in 1986. One may wonder whether the high prevalence of consanguinity may be partly responsible for these deaths, which are essentially due to congenital anomalies.

## Health care facilities

### Hospitals

The MOH operates 29 hospitals, with a total number of 4346 beds, thus yielding a ratio of 547 persons per bed or a ratio of 1.8 beds per 1000 people (Table 4). The number of hospitals and hospital beds has not increased appreciably in the last decade. The infrastructure of hospitals was completed in the early 1980s. With the increase in the size of the population, the indicators of utilization have increased; still, hospitals tend to run at around 55% of their overall occupancy (preferred at 75%–80%). However, most of the major hospitals have an optimal occupancy of around 70%–80%. The average occupancy of all MOH hospitals is lowered by the low occupancy in the smaller rural hospitals and some of the larger hospitals in the northern Emirates. Tables 5 and 6 illustrate the major indicators of hospital utilization in the UAE. The 4346 MOH hospital beds include beds for the chronically ill and some of the specialized hospitals (a total of eight such hospitals, with 518 beds).

Al-Ain Hospital and Tawam Hospital in Al-Ain serve as the main teaching hospitals for the Faculty of Medicine and Health Sciences of the University of the UAE in Al-Ain; the Al-Ain Region is thus a teaching

Table 4 Basic utilization indicators, UAE-MOH facilities, 1986-1995

Variable	1986	1990	1995
No. of health centres	92	93	98
Population/centre	15 733	19 831	24 260
Visits/person/year/centre	1.5	1.7	1.5
No. MOH hospitals	26	29	29
No. MOH hospital beds	3952	4341	4346
Population/hospital bed	366	425	547
Hospital bed/1000 population	2.7	2.4	1.8
Maternity bed/population (15-45 years)	349	496	601
% beds/hospital beds (obstetrics/gynaecology)	18.3	16.6	16.8
% beds/hospital beds (paediatrics)	12.4	13.3	12.7
% beds/hospital beds (medical)	19.3	18.1	16.3
% beds/hospital beds (surgical)	11.1	11.3	13.0
Bed occupancy (%)	51.90	52.60	56.69
Average length of stay (days)	4.9	5.5	5.3
Admissions/population (%)	9.1	8.2	7.1
Population/operation	32.4	34.5	42.2
% hospital deliveries	97.9	99.1	98.9
Visits/specialty centre/person	1.4	1.6	2.3
No. visits of expectant mothers/centre	6	3.2	3.25
No. visits student/year/school health	1.8	0.8	0.9
Prescription/person	3.0	2.5	2.0
Laboratory test/person	3.0	3.4	4.2
Radiology investigation/person	0.29	0.40	0.32
Population/ambulance	11 000	11 600	13 350
No. physicians	1299	1493	1937
% specialists/GPs	38.0	39.0	33.5
Population/physician	1114	1235	1227
Bed/physician	3.8	3.9.0	2.2
Bed/nurse	1.00	1.30	1.04
Population/nurse	394	438	454
Population/dentist	14 331	15 763	13 135
Population/pharmacist	16 830	13 174	12 068
Population/technician	1083	1127	1586
Patients treated abroad	295	85	190
MOH budget (million dirhams) <sup>a</sup>	892	954	1149
MOH budget/person (dirhams) <sup>a</sup>	616	518	483

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

<sup>a</sup> US\$ 1 = 3.68 dirhams

Table 5 Hospital services by specialty, UAE-MOH, 1995

Variable	No. of beds	Admissions (citizens)	Admissions (expatriates)	Total admissions	Patient days	Average length of stay (days)	Occupancy rate (%)	No. of operations
Internal medicine	626	11 622	1 308	22 930	144 079	6.28	63.06	-
Chest	45	448	316	764	8 519	11.15	51.87	-
Cardiology	84	1 962	3 248	5 210	30 116	5.78	98.23	-
Neurology	44	367	389	756	9 389	12.42	58.46	-
Psychiatry	173	925	873	1 798	52 745	29.34	83.53	-
Dermatology	14	274	189	463	2 056	4.44	40.23	-
Paediatrics	499	17 238	16 199	33 437	125 105	3.74	68.69	-
General surgery	499	6 928	11 890	18 818	95 798	5.09	2.6	14 480
Thoracic surgery	10	81	223	304	4 013	13.2	109.95	308
Cardiac surgery	6	42	128	170	3 340	19.65	152.51	371
Neurosurgery	28	433	718	1 151	13 079	11.36	127.97	367
Urology	76	1 339	2 497	3 836	25 467	6.64	91.81	2 889
Paediatric surgery	51	1 114	1 280	2 394	8 252	3.45	44.33	3 472
Orthopaedic surgery	257	3 351	5 298	8 649	81 336	9.4	86.71	7 820
Plastic surgery	24	223	329	552	6 824	12.36	77.90	522
Ophthalmology	98	1 334	1 868	3 202	20 041	6.26	56.03	278
Otorhinolaryngology	85	1 895	2 604	4 499	16 473	3.66	53.10	4 271
Gynaecology	178	4 876	7 242	12 118	40 814	3.37	62.82	10 792
Obstetrics	554	15 507	22 917	38 424	115 409	3	57.07	10 792
Radiotherapy	0	75	248	323	6 444	19.95	-	-
Oncology	8	197	519	716	7 580	10.59	259.59	9
Emergency/accidents	23	321	367	688	827	0	9.85	-
General	394	0	0	0	0	0	0	-
Geriatrics	157	70	34	104	36 096	347.08	62.99	-
Dental	21	282	269	551	2 390	4.34	31.18	581
Other	392	3 346	3 087	6 433	43 130	6.7	30.14	3 175
Total	4 346	74 250	94 040	168 290	899 322	5.34	56.69	17 963

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

**Table 6 Basic hospital indicators and categories of health personnel, UAE-MOH, 1995**

Variable	No.
Number of beds	4340
Admissions	168 290
Patient days	899 349
Average length of stay (days)	5.34
Occupancy rate (%)	56.69
Operations	56 335
Total OPD visits	3 429 624
Physicians	1405
Dentists	107
Pharmacists	302
Nursing	4194
Technicians	1182

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995  
OPD = outpatients department

medical district. Faculty members on the payroll of the university contribute to patient care, as well as teaching and research. They are not on the payroll of the MOH.

In addition to the current hospitals, there are several important hospital projects that have been completed or are nearing completion. The most important of these projects are as follows.

- The new Sheikh Khalifa Hospital (about 600 beds) has been completed in Abu Dhabi City and is expected to become operational in 1998. Some existing facilities in Abu Dhabi may be closed for renovation and refurbishment when the new hospital receives its patient load.
- A new paediatric hospital is being built in Abu Dhabi City.
- Another paediatric hospital is being constructed in Al-Ain, within the Tawam Medical School complex. A new

800-bed Al-Ain hospital is reportedly being planned to replace the existing facility.

- The new Baraha hospital in Dubai is about to be made operational. It is intended to replace the older Kuwaiti hospital in Dubai.

It is important to remember that the statistical information provided only includes the MOH facilities in Dubai and excludes the services provided by the Department of Health and Medical Services of the Emirate of Dubai (local government), which is the major provider of health services in that Emirate, whether for inpatient or outpatient services. Data on the services provided by this department are as follows.

• Number of beds	1233
• Admissions	61 800
• Occupancy (%)	71.1
• Total surgery	19 349
• Total births	12 657
• Total outpatient visits	1 291 028
• Radiology tests	209 707
• Medical laboratory tests	3 692 764
• Prescriptions	992 649
• Physicians	695
• Nursing staff	2167
• Pharmacists	100
• Technicians	675

In addition to the MOH and the Department of Health and Medical Services of the Emirate of Dubai, a number of health institutions operate hospitals, namely the military medical services, the oil companies and, of course, the private sector.

The total number of non-MOH hospitals is 20, excluding the hospitals of the military medical services. Their total number of beds is 1754. Non-MOH hospitals employ 936 physicians, 2707 nursing personnel and 888 technical staff. It is reported that,

together, they cater for to 93 173 hospital admissions and close to 2.1 million outpatient consultations.

Recent developments indicate that the size of the private sector is likely to expand, more so in hospital facilities. In the summer of 1996, the new 100-bed American Hospital started operations in Dubai. In December 1996, it was announced that a new 100-bed hospital was being commissioned in Abu Dhabi, due to be operational at the end of 1998.

The distribution of MOH hospital beds and specialists per service is given in Tables 4, 5 and 7. The examination of the hospital services provided by specialty and their utilization invites the following remarks.

There is a tendency for nationals to have a higher rate of hospital utilization than expected. If one were to use 10% as the norm for admissions per population per year, the number of admissions of nationals ought to be around 60 000 per year. Instead, it is 74 250 or 24% higher than anticipated. These numbers exclude admissions outside the UAE, as for example for treatment abroad, as well as admissions in the non-MOH facilities and the private sector establishments.

The medical specialties vary widely in the utilization of services; some are extremely over-subscribed, such as thoracic surgery (110% occupancy), cardiac surgery (153%), neurosurgery (128%) and oncology (260%); some are crowded, such as cardiology (98% occupancy), psychiatry (84%), urology (92%) and orthopaedic surgery (87%); some are underutilized such as paediatric surgery (44%) and general surgery (53%). All others are optimally utilized at 60%–70% (Table 5).

The average length of stay for all hospitals is 5.3 days. However, this is affected

**Table 7 Medical facilities and personnel, UAE-MOH, 1995**

Variable	No.
<i>Facilities</i>	
Urban hospitals	10
Rural hospitals	13
PHC centres (urban)	38
PHC centres (rural)	60
School health centres	10
School health units	554
MCH centres	10
MCH units	93
Dental centres	8
Dental units	69
<i>PHC personnel</i>	98
Physicians	350
Dental	48
Pharmacy	243
Nursing	460
Technical	100
<i>Specialists and bed/specialty</i>	
Medicine physicians	93
Medicine beds	755
General surgery physicians	77
General surgery beds	618
Orthopaedic surgeons	23
Orthopaedic beds	257
Obstetrians/gynaecologists	74
Obstetrics/gynaecology beds	732
Paediatricians	77
Paediatric beds	499
Psychiatrists	16
Psychiatric beds	217
Other medical specialists	287
Other beds	1268
Total specialists	647
Total general practitioners	1290
Total physicians	1937
Total beds	4346

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

PHC = primary health care

MCH = maternal and child health



partly by the inclusion of psychiatric beds (average length of stay of 29 days), geriatrics (347 days) and radiotherapy (20 days). However, cardiac surgery has a longer than expected average length of stay of some 20 days per admission.

Of the surgical operations performed in MOH hospitals, only about one-third (32%) are considered major, in the sense that the operation lasts longer than one hour. General surgery, orthopaedics, urology, ophthalmology, otorhinolaryngology and obstetrics are available in most of the country's major hospitals. Paediatric surgery, neurosurgery, cardiac surgery, thoracic surgery and oncology are primarily available in Abu Dhabi City and Al-Ain. Dubai offers some of these services through the local government health facilities. A total of about 18 000 major and about 38 000 minor surgical operations were performed in 1995 in all MOH hospitals, a rate of 42 persons per surgical procedure.

MOH hospitals have active outpatient departments (Table 6); some 1.5 million new cases consulted the various specialties in 1995, with close to 2 million repeat visits; thus the total load of visits is close to 3.5 million per year.

### Ambulatory care facilities

The MOH outpatient facilities include primary health care (PHC) centres, maternal and child health centres (MCH), the school health system and dental clinics (Table 7).

There were 98 major MOH PHC centres in 1995, employing some 350 physicians, 460 nursing personnel, 100 technicians, 48 dental professionals, 243 pharmacy professionals and 460 nursing staff. In all, some 3.6 million visits were made to the PHC centres in 1995, generating 77 000 referrals for further care and medical opinion (a rate of about 2%). Each of the 350 physicians attended to 10 000 patients on average;

each nurse to some 8 000 patients (Table 8). Of significance is the fact that the 98 PHC centres, which are spread all over the UAE, had only about 137 000 persons registered, or only 5.8% of the total population. Both nationals and expatriates had a comparable registration status, when compared with their respective numbers in the population. This is indeed low, particularly since the PHC centre is supposed to be the

Table 8 Utilization of PHC, dental and MCH centres, UAE-MOH, 1995

Variable	No.
<i>PHC</i>	
PHC centres	98
Registered citizens	39 654
Registered GCC citizens	5249
Registered expatriates	92 259
Total registered	137 162
Percentage registered/population	5.8
Attendances	3 599 799
Visits/person	1.5
Attendance/physician	102 85.1
Attendance/nurse	7842.7
Number of referrals	77 192
Percentage referrals/attendance	2.1
<i>Dental</i>	
No. of patients	435 883
Visit/patient	2.7
Attendance/100 population	19.55
Attendance/dentist	2520
Population/dentist	12 890
<i>MCH</i>	
New pregnancies	20 462
Repeat visits	46 042
Postnatal new	9004
Postnatal repeat	7636
Total attendances	83 144

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

PHC = primary health care

MCH = maternal and child health

GCC = Gulf Cooperation Council

first entry point into the health care system of the UAE. Registration is also required for all health services and recently new legislation has been enacted to enforce the registration of all expatriates in order to secure residency permits in the UAE. This may considerably increase the number of registered people, but not necessarily their utilization of the services.

The MCH had some 83 000 visits; new pregnancies accounted for 20 500 visits or 2.25 visits per live birth. School health averaged one visit per student per year (0.9 visit per person per year). Dental services are spread all over the UAE. About half a million people sought dental care in 1995. There is one dentist for every 13 000 persons on average. The MOH employs 181 dentists and 97 dental technicians (2.9% of the total health staff); 63% of the dental staff are males and 7% are citizens of the UAE.

### Health personnel (Tables 9–11)

The MOH employs 1937 physicians: of these, 200 are consultants, 447 are specialists and 1290 are general practitioners. Physicians constitute 20% of the health professionals. Two-thirds of the physicians are males and only 10% are nationals. All specialties are represented. There are 1227 persons per physician and 2.24 beds per physician. These are only MOH physicians, while the denominator is the totality of the population, inclusive of Dubai. Nursing staff number 5235 and they represent 54% of the health staff employed by the MOH; 75% are professional nurses, 84% are females and only 1.6% are nationals (mainly assistant nurses).

Paramedical technical staff number 1499; 46% are at the technician level and the rest are assistant technicians. Together

they constitute 15.6% of the health team; 56% are males, and 5.6% are nationals. The majority of paramedical personnel are employed in MOH hospitals. There are 694 medical laboratory technicians who perform some 10 million tests, a rate of 4.2 tests per person (Table 12). Radiology/imaging technicians number 345; they process about 751 000 radiological examinations on 626 000 patients (0.32 examinations per person per year). The radiological examinations are mainly routine X-rays. The MOH

Table 9 Physicians by specialty, UAE-MOH, 1995

Category	No.
<b>Specialists</b>	
Internal medicine	71
Chest	4
Cardiology	18
Psychiatry	16
Dermatology	22
Paediatrics	77
General surgery	68
Neurosurgery	4
Urology	11
Paediatric surgery	5
Orthopaedic surgery	23
Ophthalmology	16
Otorhinolaryngology	26
Obstetrics/gynaecology	74
Anaesthesiology	70
Radiology	31
Clinical laboratories	36
Physiotherapy	6
Social medicine	14
School health	9
Not stated	46
Subtotal	647
General practitioners	1290
<b>Total</b>	<b>1937</b>

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

Table 10 Health personnel by category, UAE-MOH, 1995

Personnel	No.
Consultants	200
Specialists	447
General practitioners	1290
Dentists	181
Dental technicians	97
Pharmacists	197
Assistant pharmacists	465
Nurses	3838
Assistant nurses	1397
Technicians	698
Assistant technicians	801
Total	9611

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

Table 12 Diagnostic services, UAE-MOH, 1995

Diagnostic services	
Radiology (No.)	750 944
Rate/person	0.32
Routine (No. of patients)	535 909
Routine (No. of examinations)	626 035
CT scan	18 373
Ultrasound	89 914
Angiography	415
Laboratory tests (No.)	9 880 651
Rate/person	4.16
Prescriptions (No.)	4 826 939
Rate/person	2.03

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

Table 11 Distribution of health personnel by sex, nationality and category, UAE-MOH, 1995

	No.	% of total	Male	Female	% males	Nationals	Expatriates	% nationals
Total physicians	1937	20.2	1226	711	63.3	195	1742	10.1
Total nursing staff	5235	54.5	848	4387	16.2	84	5151	1.6
Total dental staff	278	2.9	175	103	62.9	20	258	7.2
Total pharmacy staff	662	6.9	450	212	68.0	27	635	4.0
Total technician staff	1499	15.6	844	655	56.30	84	1415	5.6
Grand total	9611	100	3543	6068	36.9	410	9201	4.3

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

also employs 69 physiotherapists, 22 optometrists, 51 respiratory therapists and 51 nutritionists/dietitians. Pharmacy staff consists of 197 pharmacists and 465 assis-

tant pharmacists. Together they form about 7% of the health professionals; 68% are males and 4% are nationals. Some five million prescriptions are dispensed yearly or

Table 13 Private sector: clinics, personnel, pharmacies, 1995

Private sector	No.
<i>Private clinics</i>	
General clinics	264
Group practice	127
Obstetrics/gynaecology	36
Eye	21
Ear, nose and throat	24
Orthopaedics	23
Urology	13
Paediatrics	33
Others	50
Dental	207
Total	798
<i>Personnel</i>	
Physicians	1839
Nurses	451
Radiographers	52
Laboratory technicians	74
<i>Specialists</i>	
Medicine	126
General surgery	58
Orthopaedics	41
Ear, nose and throat	60
Eye	71
Obstetrics/gynaecology	88
Anaesthesia	18
Paediatrics	85
Laboratories	37
Radiology	31
Physiotherapy	6
Dermatology	35
Not specified	38
General practice	744
Dental	401
<i>Pharmacies</i>	
Pharmacies	458
Stores	86
Pharmacists	847
Assistant pharmacists	391

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

about two per person per year in MOH facilities.

The private sector employs an additional 1839 physicians, of all specialties, 451 nurses, 52 radiographers and 74 laboratory technicians, employed in 798 private medical and dental clinics (Table 13). An additional 847 pharmacists and 391 assistant pharmacists work in 458 private pharmacies and 86 pharmaceutical stores.

### Financing the health services

The 1995 MOH federal budget amounted to 1.26 billion dirhams (1 US\$ = 3.68 dirhams); 71% of this budget pays the salaries and benefits of MOH staff, about 25% are spent on general services, pharmaceuticals (160 million dirhams or 13% of the total budget) and treatment abroad of some 190 referrals (35 million dirhams or 2.8%); 4%–5% is left for equipment. The federal health budget actually spent is 92% of the budgeted figures (Table 14).

The federal health institutions are also supported by contributions from the local governments, primarily the local government of the Abu Dhabi Emirate. Additional resources are spent on the health services of the military by the Ministry of Defence budget and the oil companies have their own medical services for their staff and dependants. The Emirate of Dubai manages and operates its own hospitals and health centres. The Crown Prince Courts of Abu Dhabi and Dubai cover the costs of treatment abroad for several thousand nationals. In addition, the private sector is financed by contributions by nationals and expatriates seeking their health services. Health insurance companies have made their entry in the last two years as well; some of these companies are national companies, others are branches of international concerns.

Table 14 Budget allotments (in '000 dirhams), MOH-UAE, 1995

Budget allotments	Budgeted	Actual	Difference	% difference
<i>Section I</i>				
Salaries (division 1)	393 400	350 156	43 244	11.0
Salaries (division 2)	482 600	461 130	43 244	4.4
Salaries (division 3)	12 000	8252	3748	31.2
Subtotal (salaries)	888 000	819 538	68 462	7.7
<i>Section II</i>				
Chemicals/drugs	160 000	157 436	2564	1.6
Meals/laundry	26 000	25 916	84	0.3
Hospital cleaning	20 00	18 089	1911	9.6
Treatment abroad	35 000	35 000	0	0
Alqassemi/Kalba hospitals	4600	4334	266	5.8
Building rents	14 265	3907	10 186	1.7
Others	49 265	3907	10 186	20.7
Subtotal	309 700	294 441	15 259	4.9
<i>Section III</i>				
Equipment	50 000	27 608	22 392	44.8
Others	10 060	7803	2257	22.4
Subtotal	60 060	35 411	24 649	41.0
Grand total	1 257 760	1 149 390	108 370	8.6

Source: Annual Report, Department of Planning, Ministry of Health, UAE, 1995

## Discussion and perspectives

### Current status of the health care system

If an observer were to review these figures and data, he/she would conclude that the UAE enjoys an exemplary health care system, for the following reasons:

- The United Arab Emirates has a relatively small population, with only 1.3% above the age of 65 years. Most of the expatriates with chronic illnesses return home for treatment and retirement.
- All families, whether nationals or expatriates, have at the very least an acceptable income and a dwelling. The diseases associated with poverty are thus minimal. Health care is relatively free to all, nationals and expatriates, ex-

cept for minor charges that all can be afforded and even these may be waived in case of financial need.

- The country has a modern infrastructure in all its sectors. Thus, diseases associated with poor, unsafe water systems or poor sewage disposal are minimized.
- The prevention of illnesses, whether by public health measures (such as food control, inspection of imports), immunization programmes, health education, school health, is advanced by any standard and in most cases is free. There is no financial toll on the care-seeker.
- The health institutions (hospitals, health centres, dental clinics) have all been built relatively recently; they are clean and generally well equipped. The UAE

has one of the highest ratios of beds per population.

- Health staff is available in all facilities and generally in good ratios, whether physicians (all specialties), nursing staff or paramedical workers. Ratios of staff for the MOH alone and for the country as a whole are indeed very favourable.
- Expenditure on health care is sizable if one were to add up the contributions of all departments, ministries and agencies for health care.

In view of the above, and of many other similar arguments and points in favour of the current health care system, why is it that the perception of people remains that the health care system is not as good as it should be, that the quality of care in its facilities leaves much to be desired and that it needs a major overhaul? Why is it that patients prefer to be treated abroad, despite the difficulties associated with treatment abroad? Why is it that patients seek the private health care sector of the UAE in increasing numbers? I shall attempt to respond to some of these queries, by reviewing first the macrolevel of the health care system of the UAE.

### Unique nature of health care

Health care in the UAE is first and foremost the responsibility of the Federal Ministry of Health. Thus, it is essentially a public and a governmental responsibility. Being so, it is regulated by mandates issued by supraministerial bodies, such as the Civil Service Commission, the Budget Bureau and the Ministry of Finance. These supraministerial regulations affect all ministries and all sectors, since these agencies are indeed created to streamline governmental rules and regulations, policies and procedures and systems.

However, the MOH has the following distinct differences that differentiate it from other ministries and governmental agencies.

- A very large proportion of MOH employees are technical, 9611 out of a total of 14 000–15 000 employees (65%–70%).
- Disease and sickness require continuous monitoring and the availability of care in health care facilities around the clock. Although, skeletal staff and on-duty personnel assure the continuity of care, it is difficult to provide optimal care when the hospital is on a 6-hour shift per day, 5 days per week. Medical professionals cannot provide a service if the official schedule is 7:00–13:30 or even less—judges, engineers, directors, agencies can and do, health care professionals cannot, for disease and illness are unpredictable, and care is immensely inelastic.
- Flexibility is essential in the management of health care facilities. These facilities may run short of medical supplies, pharmaceuticals, office supplies, reagents, even with careful planning done one year earlier. Decentralization and devolution of authority are required for the management of health care facilities.
- Health care is labour-intensive and labour-sensitive. The quality of the staff is essentially what differentiates the service provided and the quality received. The process of change in a health care system is the basic client–provider relationship. It is this relationship that determines the outcome. This one-to-one relationship has an immense impact which is independent of the facility and the technology (these are structure and environmental factors in the health care system).

Having noted the above, under the current system, based on the Civil Service Commission, the emoluments paid to physicians and nurses are generally not attractive enough to interest American- and European-trained professionals in large numbers, or in numbers large enough to maintain a "critical mass" of professionals capable of inducing and sustaining improvement. However, the selection committees are flooded with candidates seeking employment in the UAE, some of whom will even accept grades and positions inferior to the grades they are entitled to by law. Thus, there is a large supply of professionals available and the Civil Service and/or the Ministry of Finance see no reason to revise the current salary structure. This structure has not been revised since 1979, despite the yearly increase in the cost of living and rates of inflation since then.

With time, health professionals, who may have been full of zest initially, become disillusioned because no incentives have been offered. Their professional growth may also have been stemmed because they have not had the opportunity to go to American and European health facilities and practise at these institutions (due to licence restrictions). Programmes of continuing education have been episodic and often unplanned. The quality of care offered by the physicians, nurses and technicians is thus bound to deteriorate with time. Morale sags as well. This climate does not encourage the recruitment of much needed new professionals who are concerned with maintaining their professional growth and updating their skills and knowledge. Such professionals merely accept to come for short visits and consultations.

### **Financing the health care system**

Financing the health services presents its own set of problems. Like all countries that

have essentially a publicly-financed health care system, the MOH has to compete with any and all other sectors for federal money. With the increase in public spending, the decrease in state revenues, the rapid escalation in the cost of health care and the increase in the number of people it serves, the money allocated by the federal budget is always going to remain less than what is expected and wished. The mere availability of the supply generates the demand for medical services. Furthermore, there are few if any barriers to health care: there is no financial toll, little queuing, no problems with accessibility and little social inconvenience.

Health officials have to-date relied on additional money to be provided by the local government to complement the federal budget. The sum has grown to be quite substantial, yet more is needed and will continue to be required. Co-payment through some basic forms of cost sharing apparently yielded 0.5 million dirhams for the MOH in 1995. Clearly, more will need to be done in that field.

### **Overseas treatment**

The "political" pressure that could assist in the further development of the health services has been reduced by the overseas treatment of large numbers of nationals, estimated variously at some 5000-6000 per year. Overseas treatment releases any pressure that may build up to improve further the quality of health services in the UAE. It also contributes to undermining the confidence in the health care system. Hence, the circle is complete; with more and more patients going abroad there is less and less pressure to improve the system. Moreover, it is difficult to support the further expansion of a health care system that caters mainly to expatriates, without any contribution from the employers or the clients.

### **Increasing professionalism in the health care system**

The "professionalization" of the management of the health care system, although already initiated, is still far from being complete. Professional systems in procurement and materials management should assist in the provision, distribution and monitoring of pharmaceuticals and medical supplies. Useful and timely information systems are urgently needed to provide decision-makers with well analysed options and recommendations. Financial systems and cost analysis have lagged behind because of the public nature of the health care system and the minimal urgency to contain costs. Quality control, medical and nursing audit and all other evaluation and assurance systems need to be anchored and established at the core of the medical services.

The development of a professional environment within the health care system needs to be accelerated. Health professionals need to be assured of their tenure, their immunity should medical malpractice occur (as it always will occur inadvertently) and their security. Likewise, these professionals serve all segments of the population and their skills and knowledge have to be updated and maintained. Relicensing must be required from all health professionals who deal with clients and patients.

### **Nationalization of health professionals**

The nationalization of health professionals has also lagged behind, despite the efforts made. Only 10% of the physicians, 1.5% of the nurses, 7.2 % of the dentists, 4.1 % of the pharmacists and 5.6 % of the paramedical staff are nationals. Nationalization contributes to the assurance of continuity, to the development of pressure for improvement, to the enlargement of the mechanism of outreach within the community of na-

tionals, all of which yields power and induces change. There is undoubtedly a greater credibility that emanates from circles and sources that are well known to the decision-makers and who are permanently resident in the country.

### **Registration of clients**

The registration of clients, whether nationals or expatriates, must be encouraged and required. As noted above, only 5.7% of the total population had registered in PHC centres. Unless the referral process becomes effective and efficient, it is difficult to rationalize the process of patient care, referral and follow-up.

### **Options for the health care system**

Some groups have favoured the contracting out of some or most of the major MOH hospitals to private management companies with excellent track records in the management of health care facilities. Such interest is fuelled by the concern to maintain quality of care, contain costs and obtain value-for-money services.

Interest has also been expressed in the establishment of a private national company for the management and delivery of health services and health-related programmes. This interest is to be seen against a background favouring a degree of privatization of the health care sector of the UAE as well as in many countries in the area. Management companies for health care facilities have yet to be established in the UAE or to a large extent in the rest of the Arab world. Although such management companies have sprung up widely in industrialized countries over the past 3-4 decades, such a transformation has not yet occurred in the Arab world to any significant extent. Perhaps the primary reason for this lies in the fact that, in most Arab states, the public sector predominates. Private en-



tries in health have had to be, by necessity, limited as it remains hard to compete with a government-sponsored, free service at the point of delivery. On the other hand, governments have been relatively insensitive to the cost of medical care, in some countries, or unshaken by the quality of care provided to citizens seeking the public services in other countries.

It is anticipated that a national management company would submit its bid with the credibility and expertise of an international management company; the national company would remain, however, the primary contractor should the bid be successful. With proper planning, over a few years, the capacity and expertise of the national company, along with its network, would be developed. By being the primary contractor, the national company would oversee the performance of staff and have inside information that would ensure control and build for the future.

The primary advantage of a national company is indeed in what an international company prefers not to be, namely to be the primary contractor. International companies, particularly in the Arab world and the countries of the Gulf Cooperation Council, opt against entering into bids and placing money up front in order to be reimbursed later. In this regard, a national company would have a definite edge in the negotiations and indeed would be better placed to secure its payments and advances on time. In view of the delays that are usually associated with reimbursement, an installment facility of payment would be required to settle payments on time.

A national company, while under the mother agreement with the international company, may bid for smaller projects and contracts, given the entry it already has established with the international company. By so doing, the national company would

acquire additional expertise of its own, in preparation for future contracts. A national management company may develop its own subsidiaries or may contract out itself (for a profit) services such as catering, laundry services, general services and staff accommodation. At the same time, a national company could second some of its junior national staff to the contracts that are entered with the international management company in order to prepare these health professionals to assume responsibilities at the next round of negotiations. Such national expertise may also become the nidus for national subsidiaries in information systems, materials management, quality control and staff recruitment, as they learn the business from the major international company.

While the contracting out of one or more hospital (or any other facility) to the private sector, or to a voluntary group, is possible, and may well be envisaged, the overall responsibility for the health sector must remain the purview and *raison d'être* of the MOH. The Ministry cannot relinquish its constitutional authority in promulgating legislation, planning, monitoring, control, provision of non-personal health services, quality control and emergency services. The Ministry could only relinquish, if it wishes to, the managerial and operational levels, not the strategic and control layers of authority and responsibility.

Management companies may certainly be freed from the bureaucracies attached to the public sector of any country. Private management also provides for flexibility, instant action, immediate response with no strings attached. Administrative and financial systems have usually been well tested and are generally efficient. Management companies may well serve to respond to criticisms levied against administrative, fi-

nancial and other non-medical issues. However, contracting-out to private management companies is unlikely to ensure the quality of care provided by the health professionals of all kinds. In fact, the private sector may choose to cut corners in order to save on its contracts by hiring health professionals with variable levels of competency.

Another option consists in twinning hospitals, in their entirety or some of the departments, with centres of medical excellence, well known worldwide for the superiority of their medical care and educational capabilities. For example, the cardiovascular programme in hospital X in the UAE enters into an agreement with an academic centre Y in the USA. The US-based centre supports the UAE department through the secondment of a senior professional to the department for a finite period of time. This senior professional assists the department in the hospital, as well as other officials, in defining up-to-date professional systems for patient care, education and training. The housestaff training programme is thus strengthened. Visiting staff contribute to the continuing education of the other members of the department. Quality control is assured by the monitoring team set up with the academic medical centre.

The seconded professionals may be perfectly willing to spend perhaps two years in the UAE; they would return after the assignment to their departments and positions. They have not risked their professional growth; in fact, they will have strengthened their administrative and professional growth through the assignment in the UAE. Contacts have not been lost with their peers in the USA because the seconded professionals would return home on annual leave and return to the academic medical centres where their office, staff

and peers are located. They will have kept abreast with the new knowledge through these trips and through the visiting consultants who have visited the UAE.

The hospital or department in the UAE will have defined a preferred relationship with the academic medical centre in the USA. The perception of the public of the quality of care in that hospital or department will have been enhanced. The original staff will have benefited from the exposure. Medical students and housestaff will have a far better chance of joining the academic medical centre in the USA to continue their graduate education.

The academic medical centre in the USA would succeed through this twinning programme to access the health sector of the UAE and become better known. More patients may now be referred for treatment there. More of its staff may be invited for consultations and conferences. It could encourage the initiation of joint international projects and research. It is a win-win situation for all.

### **Private sector**

The private sector facilities and personnel should be carefully monitored. As it stands currently, the perception of the medical services it provides is not favourable with regard to most of the practitioners and facilities. Efforts are needed to monitor quality of care and encourage the formation of group practices, outpatient facilities, monospecialty hospitals and larger general hospitals.

### **Health Insurance**

Health insurance companies are likely to increase and widen the scope of their operations. Arrangements, much like managed care programmes and health maintenance organizations, are apparently imminent, with some association and affiliation with

medical centres abroad (regional and international) as well. This may well serve to promote cost sharing, particularly if the employers and employees were to contribute to the premium.

## Conclusion

This report has been an attempt to provide the reader with an overview of the main health care indicators in the UAE. The somewhat unusual demographic situation

has been described, the mortality indicators have been reviewed and the utilization indicators of hospitals, health centres, health facilities and programmes have been analysed. Finally, the main findings pertaining to the macrolevel have been discussed. The paper is a first attempt at defining perhaps some of the main problems faced by the health care system of the UAE. More specific and detailed papers addressing defined parameters or issues may be prepared, as the need arises.

We, the Member States of the World Health Organization (WHO), reaffirm our commitment to the principle enunciated in its constitution that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being; in doing so, we affirm the dignity and worth of every person, and the equal rights, equal duties and shared responsibilities of all for health.

*Source: Health-for-all policy for the twenty-first century. Annex: World Health Declaration. Fifty-first World Health Assembly. Resolution WHA 51/7. 16 May 1998.*