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UAE Healthcare

Growth fuelled by private healthcare spending & COVID-19 response

Research Highlights:

Analyzing potential opportunities in UAE healthcare highlighting growth drivers, opportunities and challenges.

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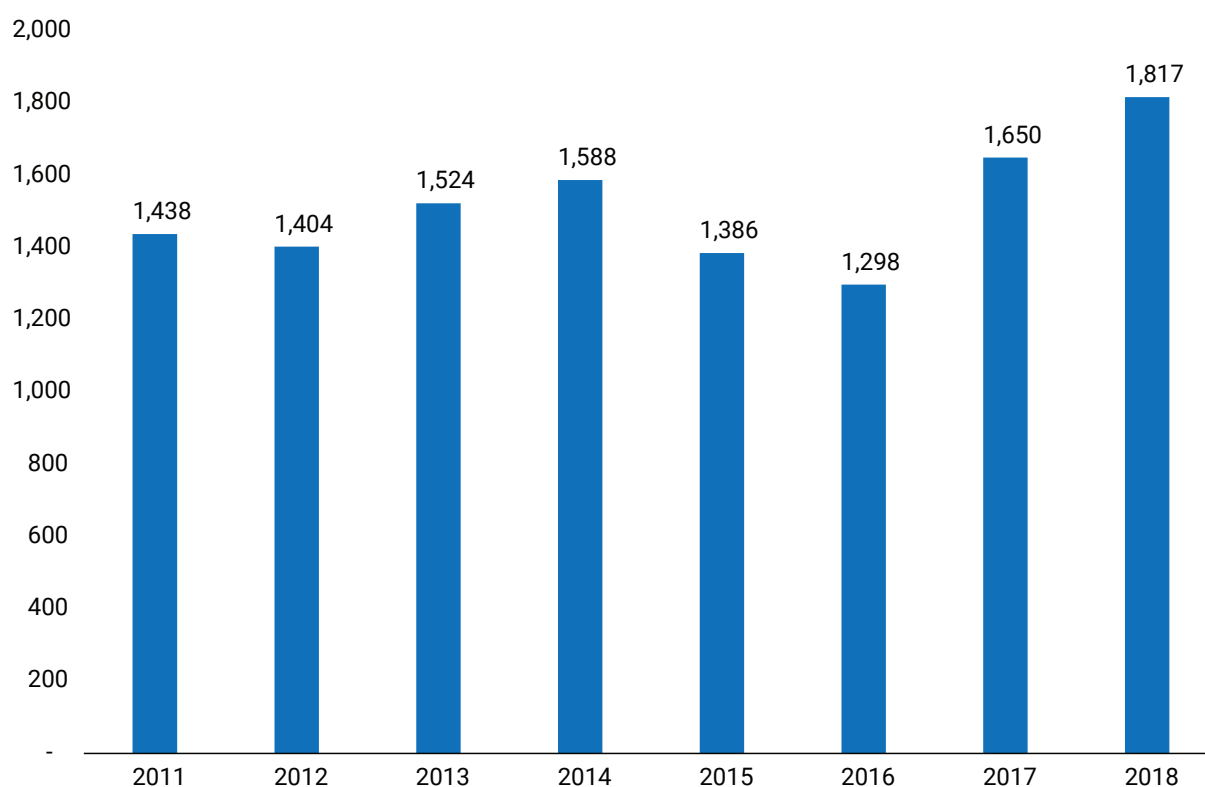
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Executive Summary

UAE's population is expected to increase from 9.9 million in 2020 to 10.7 million by 2030 and as the population increases, the need for healthcare facilities and services rises along with it. In 2018, UAE spent close to 4.2% of the country's GDP on healthcare at USD 1,817 per capita. As per the latest available figures from UAE's Federal Competitiveness and Statistics Centre (FCSC), the UAE had 145 hospitals, 4,659 clinics and health centres with a cumulative bed capacity of 13,811 as of 2018, representing a growth of 25%, 17% and 30% for the three segments since 2014 respectively. The government of UAE funds close to 52% of the healthcare expenditure while the rest is taken care of by the private sector. The UAE government has been allocating an average of USD 1.2bn in its annual budgets between 2016 and 2020 forming an average 7.6% of the total budgetary allocations. This has been increased to USD 1.4bn and 8.1% of the total budget in 2021 because of higher spending to tackle the COVID-19 pandemic. Moreover, overall healthcare spending is projected to account for 5.1% of the country's GDP by 2029.

Figure 1.1: Per capita Health care expenditure (USD)



Source: World Bank

Urbanisation and rising disposable income have resulted in many of the younger citizens adopting a "Western Lifestyle" which is characterized by an aversion to exercise and consumption of processed foods leading to increasing instances of diseases such as diabetes, coronary problems and other obesity related illness that were not prevalent in the region previously.

Dubai is gaining popularity as a medical tourism destination due to its low cost, English speaking medical staff and virtually no queues for treatment. Medical tourism is a highly profitable business and UAE attracts attention owing to its proximity to Europe and Africa.

Mandatory health insurance was first introduced in the country in Abu Dhabi in 2007 in a pilot project and it was followed by Dubai which introduced mandatory health insurance in 2014. In Abu Dhabi health insurance was made mandatory for all residents in 2016. In the northern part of the UAE, i.e., Ajman, Ras Al-Khaimah, Sharjah, Fujairah, and Umm Al-Quwain, it is not mandatory for the employers to provide medical insurance to the employees by law. There are however talks of similar mandatory insurance programme to be implemented in the Northern Emirates of the country, which could drive the sector growth further. Insurance has played an important role in attracting the private healthcare providers to the market.

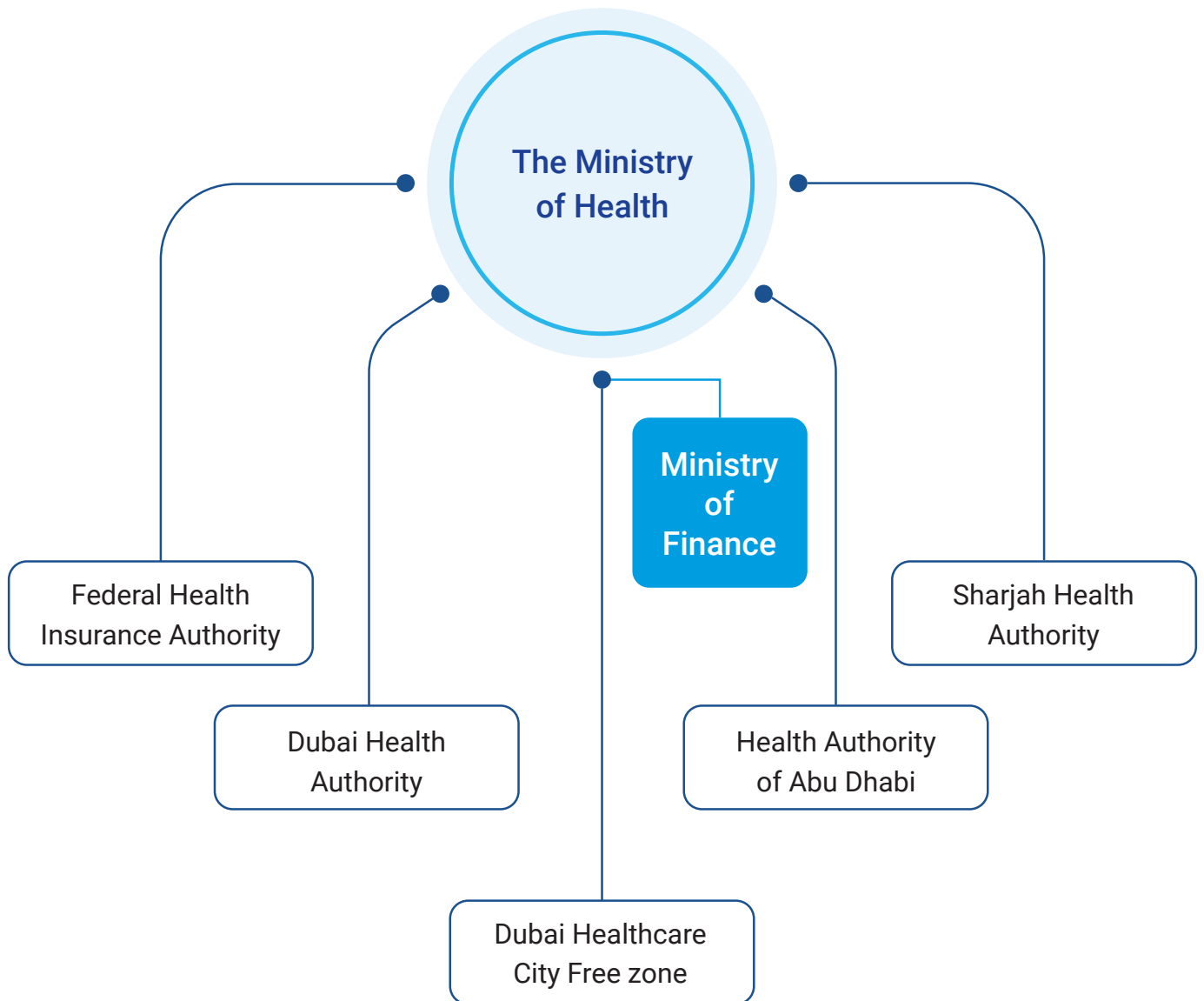
The UAE pharmaceutical market is relatively well-developed and is estimated to grow to USD 4billion in 2020, representing a growth of 8.5 per cent from 2019¹. The UAE market continues to lure manufacturers and traders to the region and Dubai has experienced a strong growth in pharmaceutical trade. Currently, the UAE market is driven primarily by branded medicines, with generic medicine consumption at only about 20 per cent. Since the cost of branded medicines tend to be on the higher side the federal government of UAE introduced price controls in a phased manner since 2011. By seeking to reduce the medical cost inflation the Ministry of Health has brought down prices of many drugs since 2011.

Information Technology in healthcare in the UAE remains as one of the most promising as well as challenging growth area. IT infrastructure in the UAE is currently run by independent healthcare systems with little integration among each other. UAE's government is aware of the issue and has initiated few integration programmes in areas such as Data management, Disease screening and Medicine registry.

Healthcare sector in UAE is regulated by a number of different organizations at the federal and the Emirate level. All of these organizations are unified by a central authority, the Ministry of Health (MoH). Insurance in the country is currently regulated by the Ministry of Finance (MoF) while a standalone organization the FHIA (The Federal Health Insurance Authority) has been setup.

¹ PharmaBoardroom | New UAE Pharma Report April 2020

Figure 1.2: UAE healthcare regulators



Source: *Respective websites*

Historically, UAE nationals typically availed basic healthcare services in the domestic market. For performing major surgery and treating serious disorders, such as cancer, heart and renal diseases expatriates returned home while Emirati nationals usually flew to the West (Germany, Switzerland and the US). Emiratis have expressed a preference for getting treatment from outside the country. However, this is changing as proven by the success of the country's medical tourism initiative which is finding large number of tourists coming to the country for medical treatment. Several sophisticated healthcare facilities have been set up in the private sector in the country.

Currently, UAE's healthcare infrastructure has been recognized as on par with international standards driven by the strong push by the government and its business-friendly regulations. In the recent years the shift to a market model is evident given the introduction of mandatory health insurance in Abu Dhabi and Dubai. It is also rapidly increasing its efforts to treat its patients inside the country rather than sending them abroad

for receiving advanced treatments. To deal with future challenges, UAE is also ramping up its investments in IT, supply chain, equipment management etc., While operating in UAE healthcare market is not without its challenges, recent collaborations with international healthcare brands such as Cleveland Clinic and John Hopkins increase the confidence of potential investors entering into the market.

The UAE government took rapid measures to expand capacity and expand healthcare infrastructure to handle the positive covid-19 cases that were rising on a daily basis. The government has also undertaken a rapid vaccination program, with 16.9 million doses administered², and taking the rate of doses per 100 people to 170.1 as of August 4th, 2021. COVID -19 pandemic, has led to mobilization of increased capacity of the workforce, beds, equipment and diagnostics and this experience may drive further creation of healthcare infrastructure.

Innovative solutions like telemedicine, e-ICU, remote monitoring, online purchase of prescription medicines, allowed a significant proportion of the primary care delivery to shift to the homes of people during the pandemic and this is expected to continue and further fast-track the digital transformation of the sector. UAE has launched its own app, called AlHosn UAE, which uses Bluetooth to identify if a person has been in contact with someone with COVID-19.

The post-COVID-19 will demand a more agile workforce with a front-line staff who can leverage various technologies. Hospitals will need to make strategic investments in digitalization and technologies that boost the ability of their health care professionals. The effects of the novel Coronavirus crisis will require to re-design the way health care organizations deliver care to patients as well as improve current internal inefficiencies through technology and create strategic partnerships to combat the challenges of living in a post-COVID-19 world. Economic factors such as the effects of a population outflow, as well as the high costs and competition in the industry are all challenges to the region's healthcare industry³.

² Home | UAE Coronavirus (COVID-19) Updates (ncema.gov.ae)

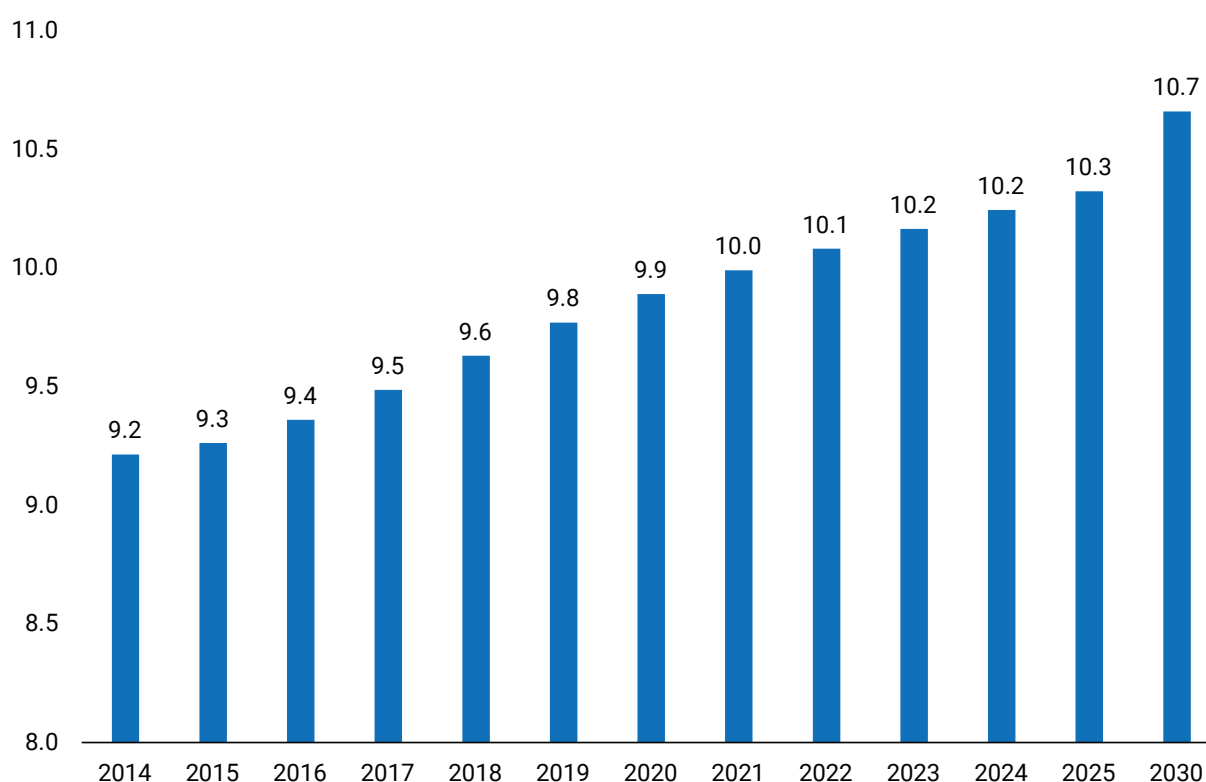
³ GCC Healthcare Industry Report, Alpen Capital

Drivers for growth

Demographic Changes & Lifestyle Habits

UAE has got one of the fastest growing populations in the region largely due to the inflow of expatriates that serve the majority of the workforce in the country. UAE's population is expected to increase from 9.9 million in 2020 to 10.7 million by 2030 and as the population increases, the need for healthcare facilities and services rises along with it. UAE is expected to continue its economic spending on account of the Expo 2020 which would positively impact the economy.

Figure 2.1: Population growth (In million)



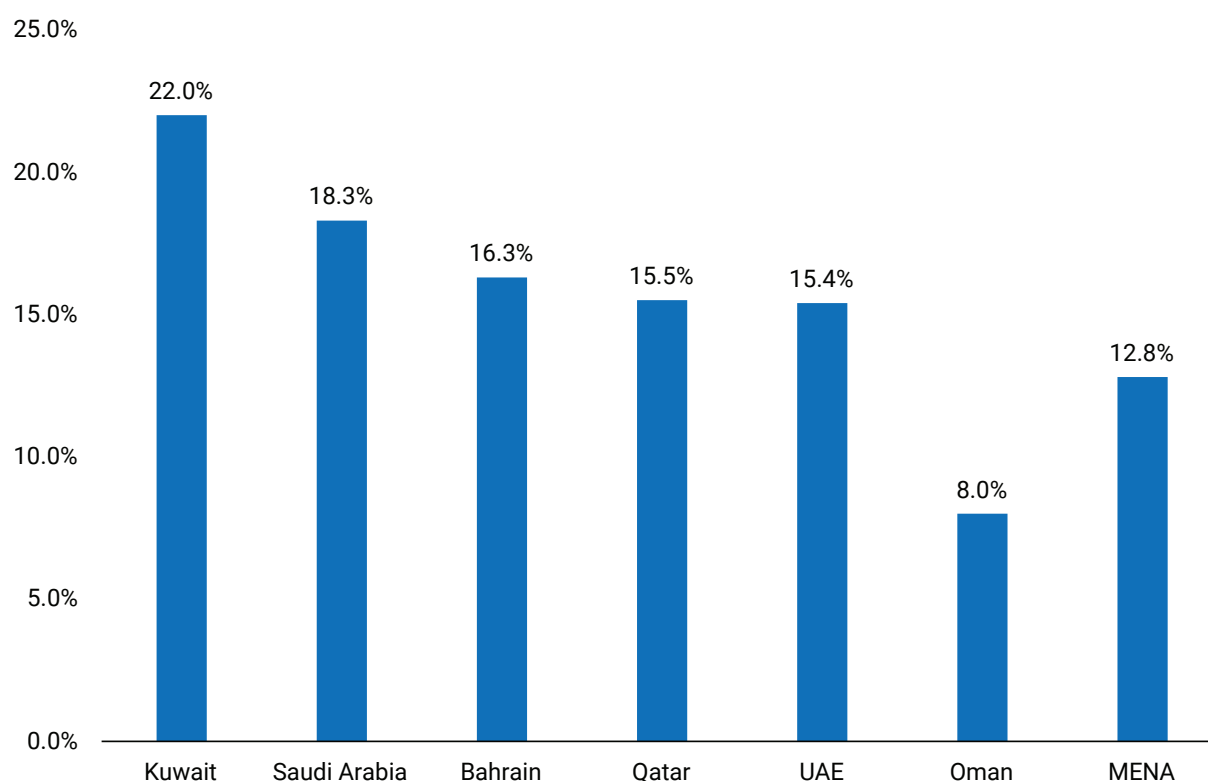
Source: World Bank

Demographic shifts are also at work, as the U.A.E.'s population slowly begins to age. The estimated share of the U.A.E.'s population above the age of 65 will, according to the World Bank, increase from 1.1% in 2017 to 4.4% by 2030. This will stimulate demand for healthcare, and geriatric care in particular. Problematic lifestyle habits are also propelling healthcare growth, with poor nutrition and sedentary behaviour leading to obesity. In the U.A.E., 66% of the adult population have excess weight and 31.7% of the adult population are obese. Widespread use of tobacco is also at play. According to the 2018 Tobacco Atlas, more than 900,000 adults in the U.A.E. use tobacco every day. Smoking is responsible for one in eight deaths among men in the U.A.E. As a result of the above problematic lifestyle habits, chronic conditions such as cardiovascular diseases, cancer, and diabetes

are prevalent. Cardiovascular disease remains the leading cause of fatalities in the U.A.E., accounting for over two-thirds of all deaths. Cancer is also an issue in the country, accounting for 15% of deaths. The adoption of poor lifestyle habits by younger generations of Emiratis suggests these problems may persist. Indeed, the prevalence of children in the U.A.E. carrying excess weight is double the global prevalence, with one in every three schoolchildren either overweight or obese at present. Meanwhile, a 2017 study by UAE University determined that 8.5% of children in the U.A.E. between the ages of 12 and 14 are smokers. To counter these trends, the U.A.E. government is focused on several programs in school and in society aimed at changing problematic lifestyle habits.

UAE has a high proportion of people who have diabetes and related illness, 15.4% of the adult population have diabetes⁴. The age wise distribution of diabetes shows that the prevalence of diabetes in UAE is significantly higher than that of MENA region. Diabetes has huge side-effects on other vital organs of the body such as heart and blood vessels, eyes and could even lead to kidney failure. Heart diseases and diabetes have been the leading cause of male deaths in the region⁵. Diabetes and its after effects such as blood vessel damage, Glaucoma, Cataract, kidney failure etc. require the patients to have constant medical treatment which is expected to increase the need for medical care.

Figure 2.2: Higher Diabetic Population in GCC in age group of 25 years and above (in %), 2019



Source: www.diabetesatlas.org

⁴ www.diabetesatlas.org

⁵ <http://www.who.int/gho/countries/are.pdf?ua=1>

According to World Bank, the global average for persons (25+) having diabetes was 8.8% of the total population in 2019.

Favourable Macroeconomic Indicators

UAE has a diversified economy, close to 70% of its GDP comes from non-hydrocarbon sector. GDP in 2020 contracted significantly due to Covid-19 impact. However, the real GDP is forecast to grow by 3.1% in 2021 and at 2.6% thereafter based on IMF Projections. UAE has been quick to implement reforms to sustain its competitiveness and consolidate its fiscal balance despite having sizeable reserves and buffers.

Table 2.1: Macroeconomic Indicators (in USD billion)

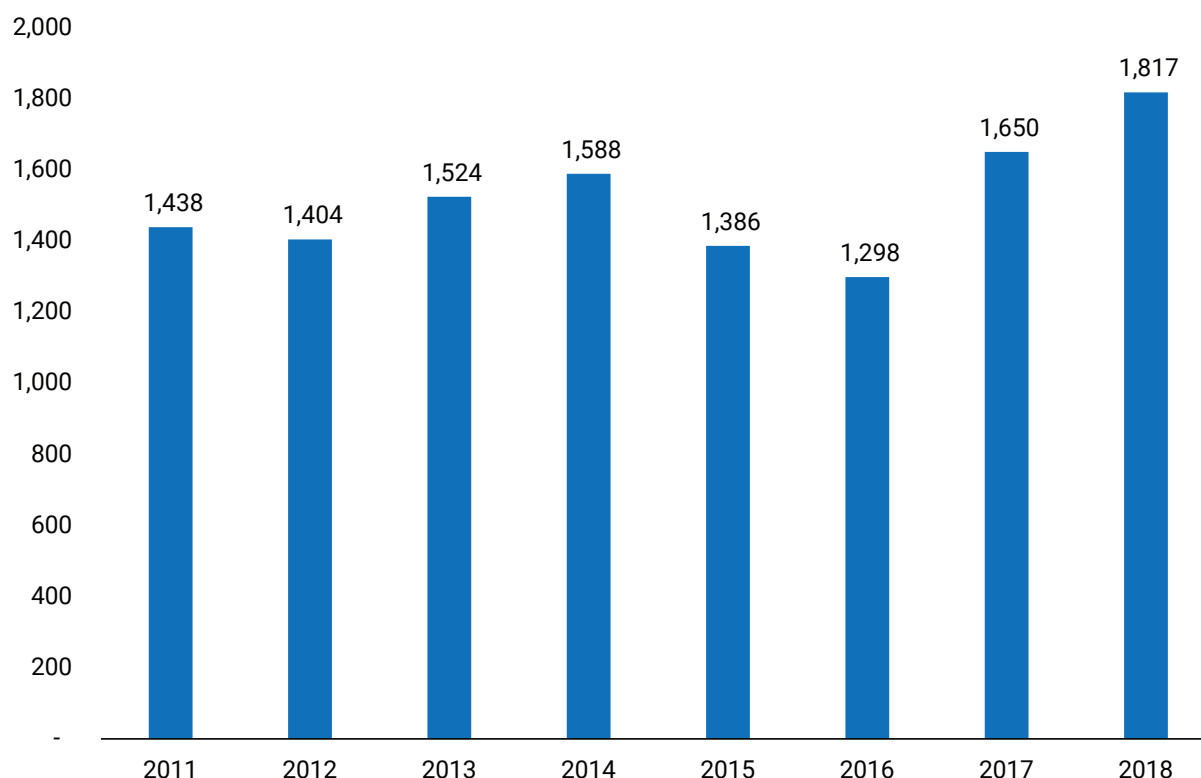
	2016	2017	2018	2019	2020e	2021f
Nominal GDP	357	386	422	421	354	402
Real GDP growth	3.1%	2.4%	1.2%	1.7%	-5.9%	3.1%
Gross domestic product per capita, (USD)	36,226	38,032	40,479	39,180	31,982	35,171
Total investment % of GDP	26.0	25.3	23.5	23.8	25.1	23.0
Current account balance (% of GDP)	3.7%	7.1%	9.6%	8.4%	3.1%	7.1%

Source: IMF, Government Statistics

UAE spends close to 4.2% of the country's GDP on healthcare⁶ at USD 1,817 per capita which is among the top 30 in the world. The government of UAE funds close to 52% of the healthcare expenditure while the rest is taken care of by the private sector. UAE also has a population distribution where the younger population amount for closer to 75% of the population which is expected to increase the spending as the population ages.

⁶ As of 2013, Export.gov

Figure 2.3: Per capita Health care expenditure (USD)



Source: World Bank

Urbanisation and rising disposable income has resulted in many of the younger citizens of the country adopting a “Western Lifestyle” which is characterized by an aversion to exercise and consumption of processed foods leading to increasing instances of diseases such as diabetes, coronary problems and other obesity related illness that were not prevalent in the region previously.

While UAE is making a transition towards private healthcare, government spending is essential in order to fulfil UAE’s vision 2021 healthcare goals. UAE’s healthcare systems has been striving to keep up with the expat population growth and increasing healthcare costs that are close to the rates charged in Europe. Another part of the expenditure goes towards attracting qualified doctors and medical scientists for which huge investments in technology is required. Investing in technology is also part of the UAE’s agenda to convert the country into a medical tourism hub. Dubai planned to attract close to 500,000 visitors for medical treatment which is expected to add close to USD700 million in 2020 to the economy rivalling the major medical tourism markets such as India and Thailand.

Investing in healthcare serves a twin purpose – betterment of health services and economic diversification. While UAE is well diversified among the GCC countries, its economic growth engines needs to prepare for lower fossil fuel market growth in future necessitating government spending in other areas which are essential for national development such as social development, and education. It is planning for greater contribution by the private sector to augment the growth of healthcare sector.

Table 2.2: Health expenditure in GCC countries (USD million)

Total Health Expenditure	2014	2015	2016	2017	2018	CAGR
United Arab Emirates	14,635	12,834	12,152	15,982	17,842	5.1%
Saudi Arabia	39,542	39,245	37,636	48,226	50,035	6.1%
Qatar	5,021	5,130	4,837	4,384	4,574	-2.3%
Oman	2,846	2,945	2,852	2,805	3,297	3.7%
Kuwait	5,200	4,600	4,411	6,392	6,908	7.4%
Bahrain	1,471	1,545	1,566	1,684	1,556	1.4%
Health Expenditure Private						
United Arab Emirates	4,248	3,690	3,451	7,222	8,640	19.4%
Saudi Arabia	11,321	12,373	12,529	17,244	18,794	13.5%
Qatar	686	829	1,005	993	1,159	14.0%
Oman	291	312	318	360	407	8.7%
Kuwait	731	731	760	810	826	3.1%
Bahrain	514	542	605	708	641	5.7%

Source: World Bank, Marmore Research

Medical Tourism

Dubai is gaining popularity as a medical tourist destination due to its low cost, English speaking medical staff and virtually no queues for treatment⁷. Medical tourism is a highly profitable business and UAE attracts attention owing to its proximity to Europe and Africa.

Dubai Health Authority (DHA) executed a strategy to boost medical tourism in the Emirate with plans to make it a top global medical tourism destination. The Emirate ranks sixth out of 46 destinations globally in International Healthcare Research Centre's Global Medical Tourism Index 2020-2021. In addition, Dubai is ranked fifth in

⁷ Medical Tourism

Quality of Healthcare Facilities and Services, seventh in Destination Environment, and 13th in Medical Tourism Industry, as reported by IHRC. However, the travel bans that were placed for most part of the year and strict enforcements of Covid-19 protocols has led to a decline in medical tourism visits, thus impacting the sector. The government's subsequent opening of borders and adoption of smart technologies and precautionary measures are some of the recent developments which could bring back medical tourists.

In terms of numbers, in 2019, Dubai achieved growth in the number of health tourists by four per cent compared to 2018, with a total of 350,118 health tourists, while their total expenditure on health care services was approximately USD 727 million. Medical tourism sales in the country are projected to reach USD 2.27 billion in 2025 and grow by a CAGR of 17.1 per cent between 2021 and 2025⁸.

Dubai plans to attract the best doctors in the world to work in its hospitals. Dubai has been attracting tourists mainly from Iran, Libya, Djibouti and other African nations. DHA has also introduced medical tourism packages since November 2014 for three areas - wellness, fertility and Lasik.

The UAE's potential as a medical tourism destination is further supported by the wider tourism ecosystem in the country, such as attractions, hotels, entertainment and the provision of world class aviation and transport logistics. The primary areas of emphasis for medical tourism in the UAE are dermatology, orthopaedics and ophthalmology. Low cost and the existing tourism infrastructure contribute to the UAE's medical tourism industry. For example, the average cost of a hip replacement in developed countries such as the USA and Switzerland is USD 26,500 and USD 19,722 respectively; the same procedure in the UAE costs under USD 15,000⁹.

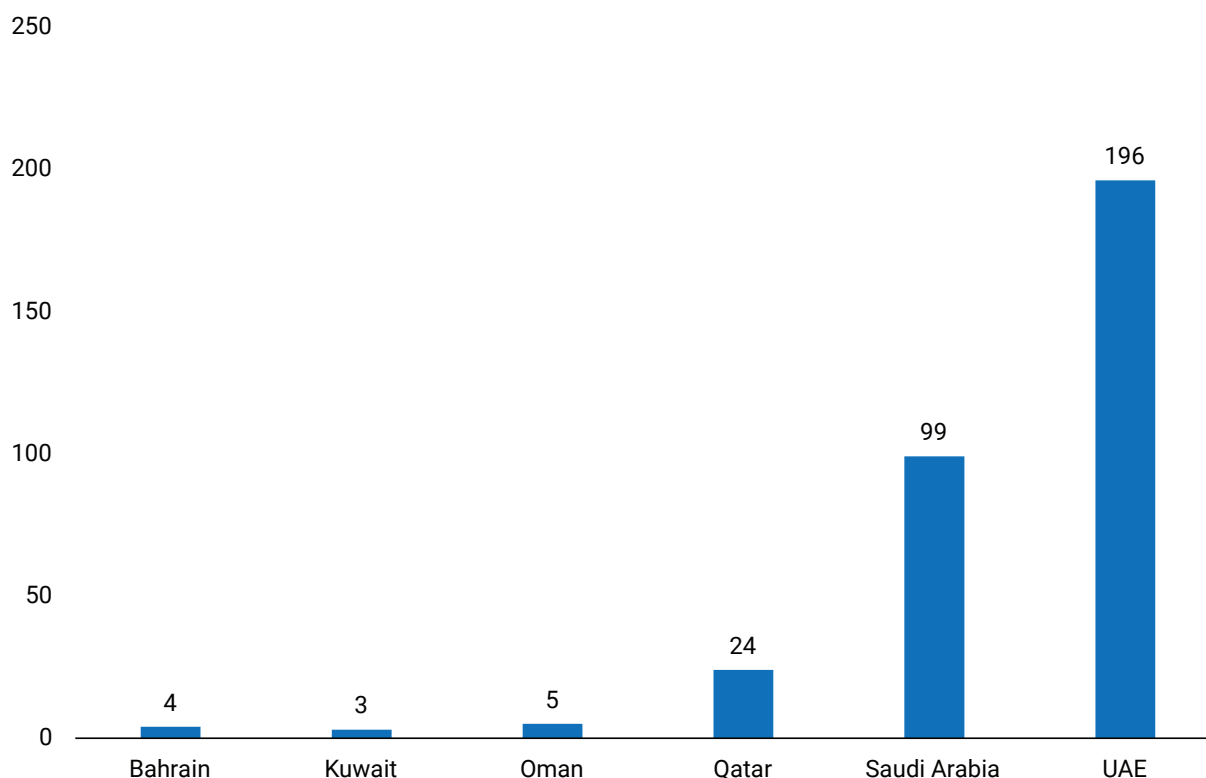
As part of its strategy to attract more visitors to its facilities, the Dubai Healthcare City (DHCC), one of the healthcare free zones in the country, introduced specialities previously unavailable, such as Cardiology, Nephrology and Rehabilitation (post trauma). To achieve that, DHCC had devised certain strategies to attract medical specialists who were not currently available in UAE. The UAE, particularly Dubai, is trying to promote itself as a hub for medical tourism to attract foreigners to its hospitals and specialized clinics.

Attracting medical tourists to the region necessitates international accreditation. Obtaining international accreditation assures that a healthcare organization meets the highest international benchmarks. The JCI (Joint Commission International) is one such accreditation.

⁸ UAE healthcare sector set for post-Covid revenue boost - News | Khaleej Times

⁹ uae-healthcare-perspectives.pdf (assets.kpmg)

Figure 2.4: No of Healthcare Organizations with JCI Accreditation in GCC



Source: JCI

The major challenge for the development of medical tourism in UAE is the higher cost of medical services when compared to other Asian countries like Thailand and India¹⁰. But given the higher quality of healthcare that is being offered in the region the cost should not greatly influence the decision of patients seeking medical care.

Telemedicine

Telemedicine is another area that UAE has been focused on developing in the recent years. Globally telemedicine has been used by many countries to extend medical care to patients in remote areas. As a first step, Abu Dhabi introduced the country's 24-hour telemedicine center for its citizens who hold "Daman Enhanced" or "Thiqa card" holders. This center was opened in 2014, a joint venture between Mubadala Healthcare and Swiss company Medgate, aims to reduce the burden on hospital emergency rooms by giving callers medical guidance from the doctors and nurses who work there.

While Abu Dhabi has set of standards for telemedicine, the Dubai Health Authority only addresses tele radiology¹¹, not telemedicine, in their regulatory standard. In Dubai, Dubai Health Authority (DHA) has introduced telemedicine at its facilities through the "Dubai RoboDoc" initiative. In March 2017, DHA completed the trial phase of this initiative, which enables doctors to consult with two or more specialists in different health facilities

¹⁰ The National

¹¹ Teleradiology is the transmission of radiological patient images, such as x-rays, CTs, and MRIs, from one location to another for the purposes of sharing studies with other radiologists and physicians.

at the same time by way of robots. After the completion of this trial phase, DHA announced that it plans to make this service available across all DHA hospitals and health centers. It also plans to make the service available to home-care patients by means of visiting nurses.

In addition to the above initiatives, the U.A.E. has embraced teleradiology. Mulk Holdings, a prominent Sharjah-based conglomerate, has built two telemedicine and diagnostic centers in Dubai. More recently, as seen above, GE Healthcare, the Ministry of Health and Prevention, and Abu Dhabi International Medical Services formed an innovative, performance-based public-private-partnership called Unison to create the U.A.E.'s first public sector teleradiology capability. Also, several start-ups have embraced telemedicine concepts. "Health at Hand," which is licensed by the Dubai Multi Commodities Center, provides patient-to-doctor video consultations. Meanwhile, "Heydoc!" allows you to find the right doctor, chat with the doctor, share pictures or other information, and get personalized guidance. Also, "Smart Seha" allows you to call a doctor.

Although telehealth services were offered in the UAE prior to the Covid-19 outbreak, the pandemic has accelerated the growth of this market segment. According to the press reports, the Ministry of Health and Prevention has recorded almost 50,000 virtual hospital visits by the end of Q3 2020. Today, telehealth and teleradiology services are prevalent among leading healthcare providers across the UAE. Recent Google trends data also show that in online searches for telehealth services reached a peak point in April 2020. It is worth noting that several healthcare service providers in UAE reacted quickly by providing telehealth services to patients during the lockdown. Lifestyle disorders, aging population and rising demand for personalised patient care as well as self-health management tools will continue to drive the telehealth market in the UAE. Besides, as per experts, telehealth can also improve quality, efficiency and customer service in medical tourism applications. In particular, telehealth in medical tourism may improve the process and quality of pre- and post-operative care¹².

mHealth program

The mHealth program was started following a study by the United Nations Development Programme, which rated the UAE highly in terms of e-government readiness due to high Internet penetration (70%) and extensive use of digital communications¹³. Following that the UAE government issued a mandate for transition from e-government to m-government. Telecom operators in the region Etisalat and Du were given a mandate to develop interoperable mobile health solutions targeting diabetes and childhood obesity.

Etisalat and Du launched pilot programs of their own following an agreement with the former targeting diabetes while the latter targeting childhood obesity.

Du, in partnership with UNICEF, rolled out a large-scale anti-obesity health education service following a successful pilot. The objective of this program was to provide interactive health education for schoolchildren aged 11 to 16 and to introduce them to healthy lifestyle changes.

¹² UAE healthcare sector set for post-Covid revenue boost - News | Khaleej Times

¹³ A Al-Khouri. eGovernment Strategies: The Case of the United Arab Emirates. European Journal of ePractice. www.epracticejournal.eu. 17; ISSN: 1988-635X. September 2012.

Etisalat coordinated with UAE National Diabetes Task Force to launch a pilot an Arabic language diabetes education solution. The two organizations are integrating health messages, approved by the Ministry of Health, into a number of mobile-based delivery systems - including an application that pushes tailored health text messages and health videos to individuals. In Dec 2014, Etisalat launched a mobile nurse call service, which flashes alerts on patients' on their mobile device when they login to their shift.

Mobile communication and connectivity is widespread in the region with UAE's internet usage covers over 91.9% of the population and smartphone penetration at 96% of the market making UAE one of the highest smartphone penetration rates in the MENAP¹⁴ region¹⁵.

Insurance

Mandatory health insurance was first introduced in the country in Abu Dhabi in 2007 in a pilot project and it was followed suit by Dubai, which introduced mandatory health insurance in 2014. Across the region mandatory health insurance is expected to be a major driver of expansion and investment in the healthcare sector. The mandatory health insurance in Abu Dhabi and Dubai is fully implemented. There are also talks of similar mandatory insurance programme to be implemented in the Northern Emirates of the country.

Mandatory insurance has been used as strategic tool in moving towards a "Market Model" from the current "Welfare Model". UAE has traditionally paid the medical bills of its citizens in the past sometimes even paying for treatment abroad. Since the introduction of insurance schemes, expenses are taken care by the private and public insurance players it has ushered in an era of rapid growth in private care facilities, consequentially the private sector's share of healthcare infrastructure capacity and its utilization has gone up significantly.

UAE is expected to see considerable increase in the healthcare expenditure mainly due to a change in the population mix toward an older population, increased instances of chronic diseases, growing medical tourism etc.. Given the fact that healthcare costs in the region are on par with that of developed markets mandatory health insurance helps in reducing the cost of healthcare on individuals.

In the past, the UAE healthcare ministry played multiple roles - as a health care regulator, hospital operators as well as service providers. UAE government in the past have paid majority of the bills for healthcare needs of its nationals. While it still subsidizes the insurance premium through Daman and introduces price controls the shift to private insurance has increased the confidence of private hospital providers who wanted to invest in the region.

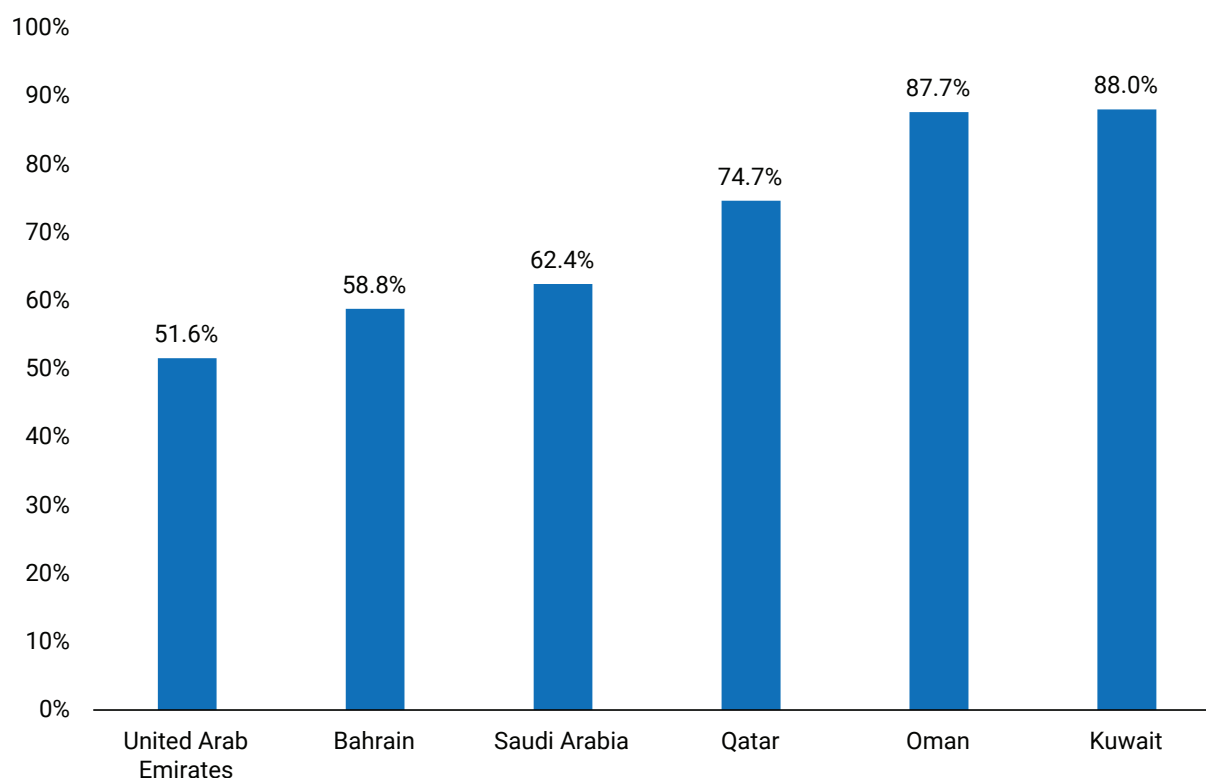
¹⁴ Middle East, North Africa and Pakistan

¹⁵ Nielsen survey

Infrastructure Spending

Government spending has been a major driver of healthcare infrastructure growth across the region and UAE is no exception to this trend. UAE has made significant investments in the healthcare infrastructure over the past few years driven by its agenda to diversify the economy further. UAE's government spending in 2018 stood at 51.6% of the total healthcare spending and has seen sharp decline compared to that in 2014. UAE's government has encouraged the private healthcare sector that has responded well with huge investments in the country's healthcare sector.

Figure 2.5: Government Share in Total Healthcare Spending, 2018



Source: World Bank

Significant investments have been made in UAE's physical infrastructure over the last few years. One of the major areas that was developed in the last few years has been the establishment of the Centre of Excellence (CoEs). CoEs are health care facilities focused on providing high-quality care in multiple areas. They charge premium prices compared to their general hospital counterparts, given the superior quality and technologically advanced services that they are able to provide.

Table 2.3: Specialized COEs in UAE

COE	Specialization
Burjeel Hospital for Advanced Surgery, Dubai, UAE	Knee and Hip replacements
Wooridul Spine Center, Abu Dhabi, UAE	Spine and related disorders
Cleveland Clinic, Abu Dhabi, UAE	Minimally invasive robotic surgeries for obesity, diabetes and heart disease
Danat El Emarat Hospital, Abu Dhabi, UAE	<ul style="list-style-type: none"> • Premium hospital with focus on maternity, neonatology and • Paediatrics. • Breast Cancer screening • Plastic Surgery

Source: E&Y

The impact of COVID-19 pandemic

Covid-19 has resulted in heightened public health concerns as well as increased health expenditures for Covid-19 testing, Covid-19 vaccines, Covid-19 targeted medicines, Covid-19 diagnostic related devices like oximeters and higher use of medical equipment like CT scanners. Covid-19 hospitalization is also specialized because of its ability to spread to others. Therefore, Covid-19 can be expected to drive investments in specialized health centres/vaccination centres and hospital beds geared to treat such patients, increased investment in testing laboratories, collaborations for formulations of vaccines and specialized medicines with overseas firms, importing of testing kits, supplies like PPE equipment and masks, and various medical equipment required for the diagnosis of the illness.

Hospitals and Infrastructure

The United Arab Emirates has a highly developed healthcare infrastructure consisting of well-equipped hospitals, clinics and primary health care centres. UAE's healthcare infrastructure is relatively well-placed than its neighbours in the region. Some studies reveal that hospitals and clinics are not at full capacity suggesting that the hospital infrastructure is keeping up with the demand . The private sector hospitals in the UAE are playing a bigger role in serving the needs of the patients in the country by providing more beds, doctors and nurses. Private sector hospitals in the country have also been assisting the public hospitals in the region by undertaking management of public hospitals and providing best-practice standards.

Table 3.1: Area-wise Number of hospitals, clinics & beds, 2017

	Hospitals	Beds	Clinics
Abu Dhabi	60	5,536	1,621
Dubai	37	4,231	2,078
Sharjah	24	1,658	745
Ajman	6	404	186
Umm Al Quwain	2	241	29
Ras Al Khaimah	9	774	186
Fujairah	5	468	123
Total	143	13,312	4,968

Source: UAE Government Statistics

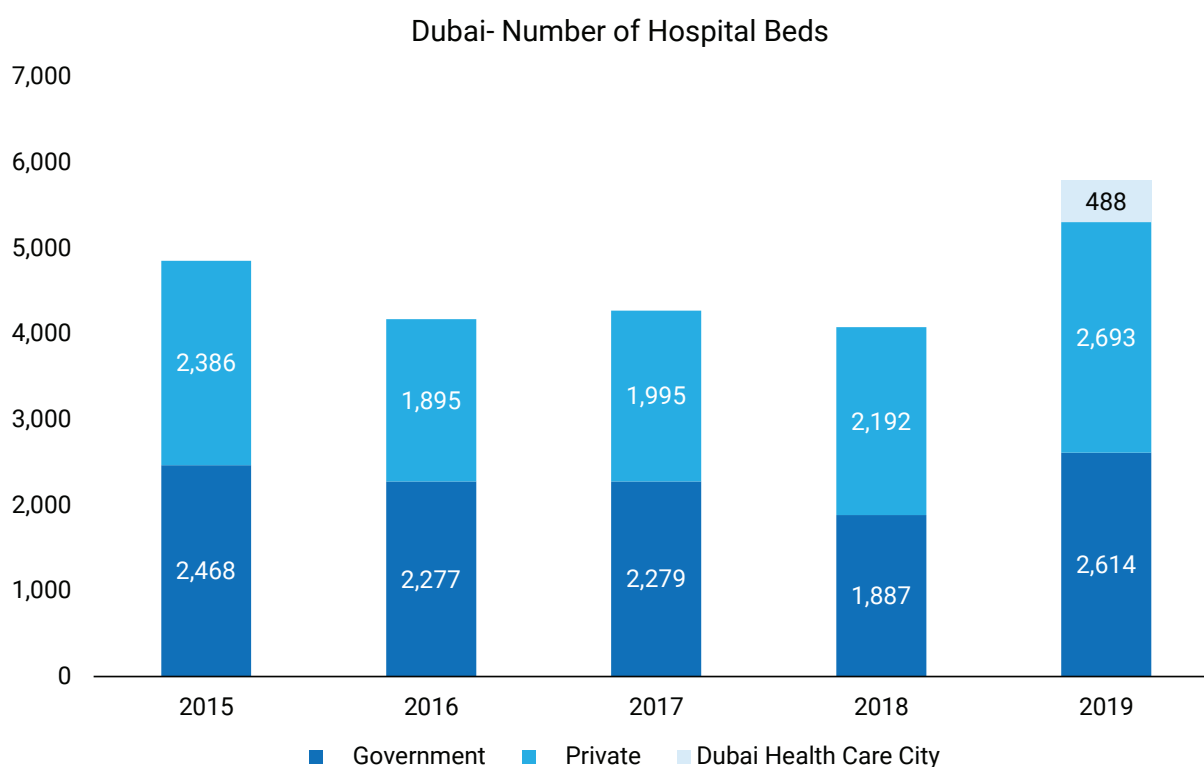
Out of the 143 hospitals in the country, 45 of which are owned by the government and 98 by the private sector. Out of the total beds 7,232 are in government hospitals and 6,080 in private hospitals. Among clinics, 149 are in government sector and remaining 4,819 in the private sector.

UAE government liberalized its investment policies to attract foreign investments into the country. UAE in a bid to ease doing business has announced full foreign ownership of commercial companies without the need for an Emirati shareholder or agent. The move is expected to liberalize the business environment and play a key role in attracting investments into the country.

Following an amendment to executive regulations, UAE government now allows investors, professionals, special talents and their families to acquire the Emirati nationality and passport under certain conditions. Under UAE golden visa program, it provides 10-year residency for investors, professionals, and students; foreign students could bring and sponsor their families, and retired residents could enjoy provision of 5-year renewable retirement visa.

Favourable policies, the government's national strategy to raise the quality of healthcare services to international best practice standards by 2021 etc. have increased the attractiveness of the UAE healthcare market for foreign investors. High birth rates, increasing instances of lifestyle related diseases and shortage of a skilled healthcare workforce in the country have created opportunities for private firms looking to enter the healthcare.

Figure 3.1: Beds in Public and Private Sector Hospitals (Dubai)



Source: Dubai Statistics Center

While the government hospitals have a major share of the beds in the UAE market the private sector is quickly catching up with the public sector, private sector is the major contributor in Dubai. Hospital beds in the private sector grew substantially in 2019. In 2017, the private sector in the UAE accounted for 46% of the beds available in the country. The public sector bed capacity as a percent of total bed capacity has fallen from 79% in 2007 to 65% in 2014 and further to 54% in 2017. While the decline might sound alarming the public sector hospitals are the ones that provide super-speciality services in the country.

Hospitals in the UAE have come a long way from where they were a couple of decades back. Previously the private-sector healthcare providers were typically small, stand-alone organizations that resulted in fragmented service delivery model and their quality varied widely. More than tripling of the country's population since 2000,

broadening medical needs and the steps taken up by the government to attract medical investments into the country have all helped in driving the expansion of medical facilities across the country. DHA - Rashid Hospital Expansion (Dubai), VPS Healthcare Group - Burjeel Medical Center (Abu Dhabi), DSFH - Fakeeh Academic Medical Center (Dubai) are some of the biggest hospitals that were completed in last five years.

In recent times, the local authorities have supported collaboration from international clinics. An example is that of Cleveland Clinic in Abu Dhabi which is a result of a joint-venture between Mubadala and Cleveland Clinic. Cleveland clinic's medical campus investment in Al Maryah Island is one of the biggest healthcare investments in Abu Dhabi costing around USD 1.54billion. This facility in Abu Dhabi has 364 beds, with the option to increase that to 490, including 72 intensive-care unit beds, four post-anaesthesia care units and 26 operating rooms. Another example of a foreign hospital in UAE is the Johns Hopkins Hospital, a US teaching hospital which is currently undertaking the management of Tawam hospital in Al Ain. Johns Hopkins hospital appoints the senior management of the hospital, provides guidance, training and helps to attract high-quality medical staff to the hospital.

Growing healthcare demands in the region owing to various lifestyle diseases is driving the expansion of the hospitals in the region. A key driver for the promotion of private investments is the increased need to introduce niche healthcare sector skills (e.g. cardiology) that are not yet present in the UAE to a substantial extent. From 2018 to 2022, private-sector healthcare spending is forecast to have increased at a cumulative annual growth rate (CAGR) of 9.5%, compared with the government contribution growth rate of 4.4%. In the UAE, growth is mainly supported by the rising emergence and support for PPP, as well as the increasing demand for treatment and hospital beds amongst an ageing population.

Saudi German Hospital, Dubai project is under construction at a cost of USD 300million and is slated for completion by end 2021. The project consists of a 150-bed hospital and medical college complex, comprising a ground floor and seven floors at Al Barsha 3, Dubai. Saudi German Hospitals is part of Saudi German Health group with operations in Saudi Arabia, UAE, Egypt and Yemen¹⁷. GlobalData estimates that 161 healthcare projects with a combined value of USD 53.2bn are currently under way in the GCC. These projects will add 40,326 beds to the GCC's existing capacity. UAE has 10.3% of the region's healthcare projects under execution. In the UAE, around 71 per cent of the healthcare construction project pipeline is comprised of government-funded schemes¹⁸.

Expanding the scope of healthcare, standalone hospitals which were the norm previously are slowly moving towards a chain model (with both local and international hospitals participating). This trend is expected to continue given the current scenario. Dubai has a unique demography which consists of a higher percent of expatriates compared to local population. Expatriates prefer private service providers to public service providers and is one of the reasons why private service providers play a bigger role.

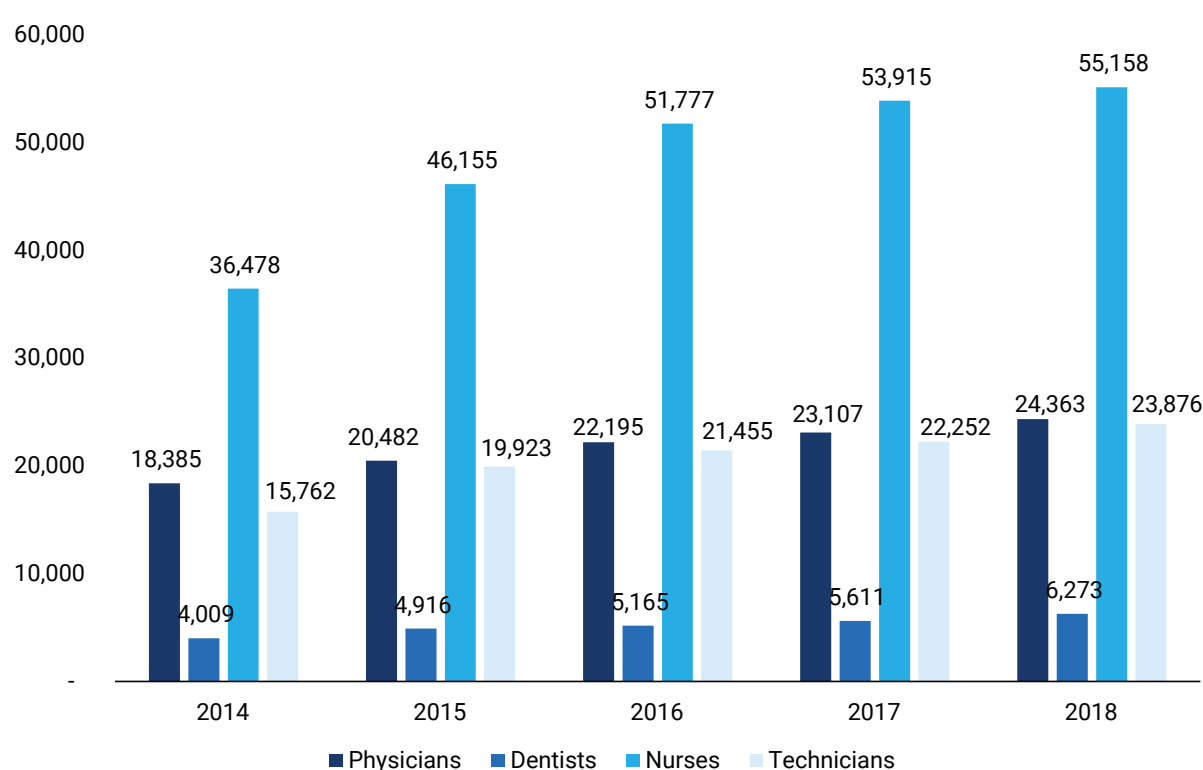
¹⁷ PROJECTS: Top 5 healthcare projects in GCC amount to a \$2.5bln spending spree | ZAWYA MENA Edition

¹⁸ MEED | Mena healthcare poised for post Covid-19 growth

Healthcare Professionals

UAE's healthcare infrastructure is at an advanced level and could be compared with those in the developed markets. The current priority of the government is to improve the staffing - both in terms of numbers and skillsets. Over the past few years, the number of doctors in the public sector has fallen while the number of doctors in the private sector grew. As of 2018, there were 24,363 physicians, and 55,158 nurses & midwives who are working across the UAE.

Figure 4.1: Healthcare Staff in UAE Hospitals



Source: UAE National Statistics, Marmore Analysis

Table 4.1: Healthcare Staff in UAE, Private & Government Sectors

	2014	2015	2016	2017	2018
Physicians					
Government	7,453	6,953	7,018	8,322	8,442
Private	10,932	13,529	15,177	14,785	15,921

	2014	2015	2016	2017	2018
Dentists					
Government	787	737	751	841	845
Private	3,222	4,179	4,414	4,770	5,428
Nurses					
Government	17,464	16,832	16,453	20,480	20,098
Private	19,014	29,323	35,324	33,435	35,060
Technicians					
Government	8,274	9,164	7,220	9,540	9,693
Private	7,488	10,759	14,235	12,712	14,183

Source: UAE National Health Statistics

Similar trends have been witnessed in the number of nurses who were recruited by the private sector. The number of nurses working in the private sector has increased. Healthcare authorities are developing strategies to generate manpower to keep with the growing needs of this sector. Specialty nurses are in great demand in the region as patients who require specialised treatment usually require frequent medical attention. Private hospitals such as Mediclinic, Al Zahra Private Hospital, Cleveland Clinic, Tawam Hospital among others have made attempts to recruit specialty nurses to their hospitals. The monthly salary range for nurses in the UAE is between Dh 3,500 and Dh 16,000, with the average salary being Dh 8,500¹⁹. Salaries in the region are almost triple/four times higher than what a staff nurse could earn in emerging markets such as India, Indonesia, and Philippines etc.

The private sector's continuous increase in the number of staff is due to various government policies that have encouraged recruitment of healthcare professionals in order to meet the staffing goals for 2021. UAE plans to increase the doctors and nurses per capita by 50% in order to achieve the target. In addition to increasing the raw numbers, the UAE is also looking to address the shortage of skills. There is a shortage of specialist physicians in histopathology, oncology, occupational medicine and infectious diseases.

In Abu Dhabi, private sector has played a key role in bringing down the skill gap that were traditionally present in certain areas of medical care. While the gap has reduced owing to the increase in the number of private

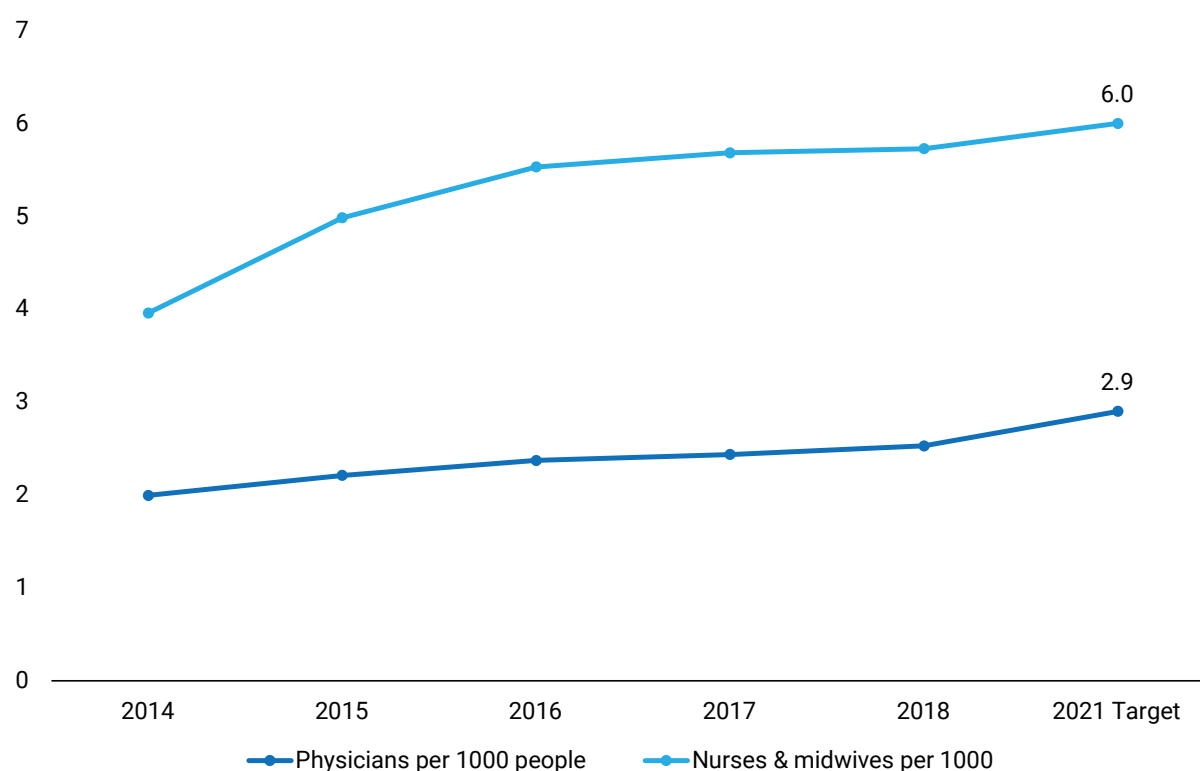
¹⁹ Emirates 24/7: Nurses in hot demand in Dubai

hospitals, the Health Authority of Abu Dhabi (HAAD) has identified certain areas in which the skill gap still remains at critical levels such as – Intensive and Critical Care medicine, emergency medicine, Neonatology, Psychiatry, Paediatrics, Oncology, Paediatric Surgery, Physical Medicine & Rehabilitation and Orthopaedics.

The public sector's growth has been stagnant as the government is shifting to a "market-model" approach for developing its healthcare infrastructure in the region as it is sustainable in the long run given the conservative outlook for oil prices. Another reason for the stagnation in public sector hospitals in the region is due to the fact that there are a lot of public sector hospitals that are currently under construction. The share of public sector hospitals is expected to increase slightly once the facilities have been completed.

The MoH owns and operates 31.5% of hospitals in the UAE, although public hospitals represent 54.3% of total hospital beds²⁰. While the private hospitals provide patient care for common surgeries and illness, public sector hospitals still offer the majority of super specialty services which are required by the patients in UAE.

Figure 4.2: Key indicators for the UAE region



Source: UAE National Statistics, World Bank, Marmore

UAE healthcare staffing is lower when compared to the developed nations. The average number of physicians per 1,000 people in the UAE was 2.5 as of 2018. In comparison, the number in developed economies such as the Germany was 4.3, and the U.S was 3.4. The number of nurses per 1,000 people is also low at 5.7 compared to 12.0 in Germany and 14.5 in the U.S. While the number of hospitals in the public sector has reduced, the staff that have been hired by the public sector has grown over the years. Government healthcare in Northern

²⁰ National Bureau of Statistics

Emirates pay a much lower compensation compared to the Dubai or Abu Dhabi as a result of which there is little interest among medical staffs and doctors to be employed in those areas.

UAE currently faces a challenge when it comes to recruiting staff that are required for its country. The sector is dominated by expats and there is an acute shortage of home-grown talent which could be due to the limited availability of medical institutes in the region. Skill gaps exist in specialty care and given that it takes at least six years to train a doctor, recruiting local talents is currently not possible. Expatriates would continue to be the major portion of the healthcare workforce. To achieve the staffing goals of 2021, there has to be 50% increase in doctors and nurses available per capita. However, in recent years, medical universities have been setup in the country which has attracted students from other gulf countries and offer sponsorship programs.

Another major staffing challenge that arises in UAE is the distribution of skills. Northern Emirates attract less talent than Dubai and Abu Dhabi owing to lower pay that these Emirates offer. Even before the pandemic that forced the healthcare workforce to move out of the country due to the scare, they were moving abroad to western countries after gaining experience. However, the increased inflow of workers since 2009 suggests that the UAE is an attractive location for expatriates to work. Its developed infrastructure, liveability, availability of public services, political stability and liberal environment are positives for expatriates to shift their base to UAE. However, these alone are not enough for expatriates to stay in the country, additional incentives and fast track citizenship is required. The government has recently extended the 'Golden Visa' program to medical professionals who are fighting the pandemic in the country, which could help to retain the professionals in the near future.

Medical Equipment

The projected growth of the U.A.E.'s medical equipment market broadly mirrors that of other sectors. Diagnostic imaging equipment comprises a large percentage of the U.A.E. medical device market. Middle East & Africa diagnostic imaging market is sized at USD 1.6 billion and is expected to grow at a CAGR of 5.9% up to 2026²¹. The UAE has a small but sophisticated medical device market, thanks to a growing private healthcare sector and the government's relative wealth, built upon oil revenues. The local production of medical equipment in the UAE accounts for only 7.5% of the market. In UAE, only 700 firms have a presence in the market specializing in the pharmaceuticals, trading and manufacturing for health, hospitals and medical devices market. During the pandemic, the U.A.E. has leveraged its relationships with leading companies to acquire new types of innovative medical technologies.

Consequent to Covid-19, in April 2020, the American conglomerate GE Healthcare delivered CT scanners fitted in shipping containers to hospitals in Abu Dhabi and Al Ain to enable safe, critical diagnosis of viral pneumonia attributable to Covid-19. These state-of-the-art units are sited in temporary tactical areas outside the main hospital facility, thus reducing the risk of infection, and are fitted with a filtration system that keeps out 90% of potential contaminants. They allow physicians to complete patient lung screenings in under a minute and can serve over 100 people a day.

Another fall out of Covid-19 is that the U.A.E. has sought to increase its domestic production of medical equipment using cutting-edge technologies. Notably, Mubadala subsidiary Strata partnered with Honeywell International to set up a production line in Al Ain capable of producing over 30 million N95 masks per year, transforming the U.A.E. from a net importer to a net exporter of this critical personal protective equipment (PPE). This development may be part of a larger trend of localizing production of certain medical equipment in the U.A.E. In July 2020, Abu Dhabi's Department of Economic Development outlined investment opportunities in 27 fields to boost local manufacturing of basic consumer and industrial products in a push towards self-sufficiency. One of the four areas in which the government is aiming to attract private sector investment is in medical supplies²².

Until recently, UAE has been a major consumer rather than provider of healthcare services. Currently, there are first indications to reverse this trend. The rising interest in the healthcare sector is largely due to the UAE government initiatives to modernize the healthcare systems. Progress is being made by focusing on improving and building healthcare infrastructure, including the privatization of publicly owned healthcare facilities and the introduction of compulsory private health insurance.

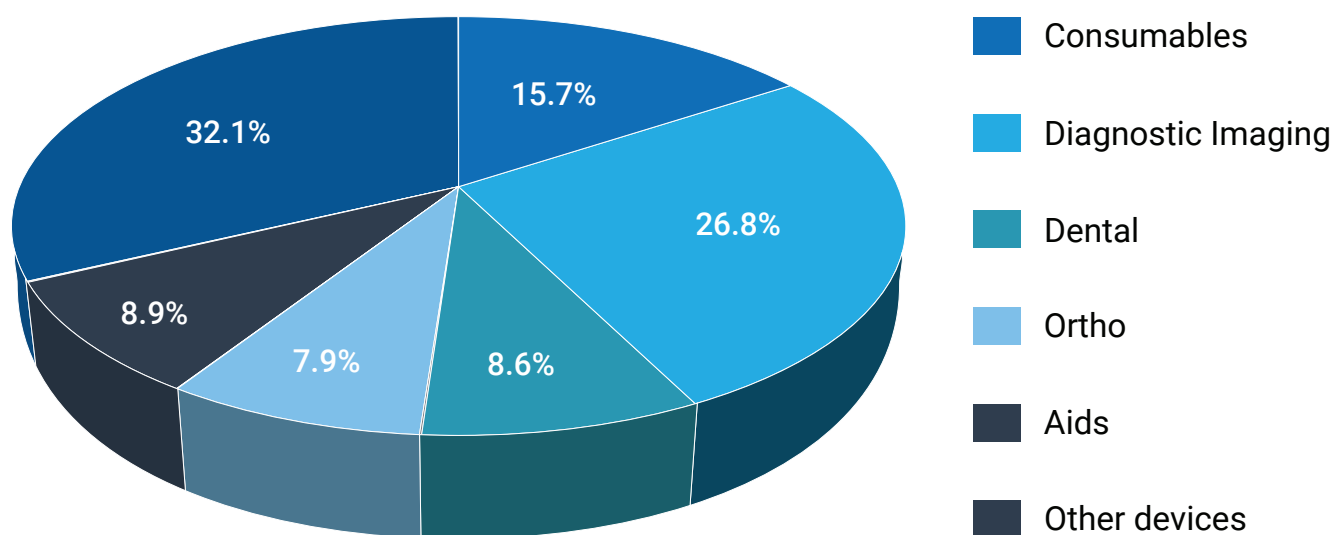
²¹ MEA Diagnostic Imaging Market Size, Growth, Forecast | 2021 to 2026 (marketdataforecast.com)

²² Technology-Series-MedTech-Report-Web.pdf (usuaebusiness.org)

The following sub-sectors are the most promising within the medical equipment and supplies market in the UAE:

- Diagnostic equipment
- Therapy and rehabilitation equipment
- Disposables
- Monitoring Equipment
- Medical Aids
- Surgical

Figure 5.1: UAE Medical Devices Market by Category (2017)



Source: BMI

The other devices comprises of ophthalmic (USD 27mn), hospital furniture (USD 48mn), other instruments (USD 269mn), medical/surgical sterilizers (USD 8mn) and ultraviolet/infrared apparatus (USD 8mn).

UAE-based Al Hayat Pharmaceuticals launched its range of cardiology treatment machines including electro cardiograph machines and automated external defibrillators. Al Mazroui Medical and Chemical Supplies has come up with Asahi products used for interventional cardiology guide wires and Esaote - an echo portable unit equipped with cardiac applications along with Huntleigh Dopplex Ability- an automatic ankle brachial index system.

Few hospitals generally specialize in one field. Mafraq, for example, is known for being a cardiac centre. Tamwam Hospital specializes in radiotherapy and cancer treatment - being the first hospital in the UAE to install radiotherapy systems. Corniche Hospital is a maternity hospital. Abu Dhabi Health Services Company PJSC (SEHA) invested USD 750 million to build a new Mafraq Hospital campus which opened in 2015, continuing to align its goals with Abu Dhabi vision 2030.

Key players in the UAE medical equipment market

Following the steps of the pharmaceutical industry, the United Arab Emirates (UAE) will remain the regional hub chosen by the medical device industry. Currently, around 18 leading multinationals use the UAE as their distribution base for other countries in the Middle East. Multinationals' offices serve as distribution, sales and service centres. Main manufacturers of medical devices in UAE are DSP, MEDECO, and Dodhy's Medical Limited.

Major market leaders include General Electric (GE), Philips Medical Systems, and Siemens which all compete vigorously in similar product lines. GE has the biggest market share in diagnostic equipment. Toshiba and Varian (Swiss/American) are other major players.

In radiotherapy, Electra/Philips is the number one player, GE being dominant in radiology. In lithotripsy, Dornier (German) and Siemens are the major players. With regard to patient monitoring equipment, GE/Marguette (US) dominates the market. Other players in the market are Space Labs (US), Siemens, and HP. American companies lead the market for intensive care units (ICU) and cardiac intensive care units (CICU).

As for rehabilitation equipment, American companies dominate the market for non-electrical physiotherapy equipment and related consumables. Dutch and British companies lead the electrotherapy equipment market. Laser equipment used in different fields of surgery, dermatology, and physiotherapy are controlled by US companies. France is a main supplier of medical x-ray films, both flat and rolled.

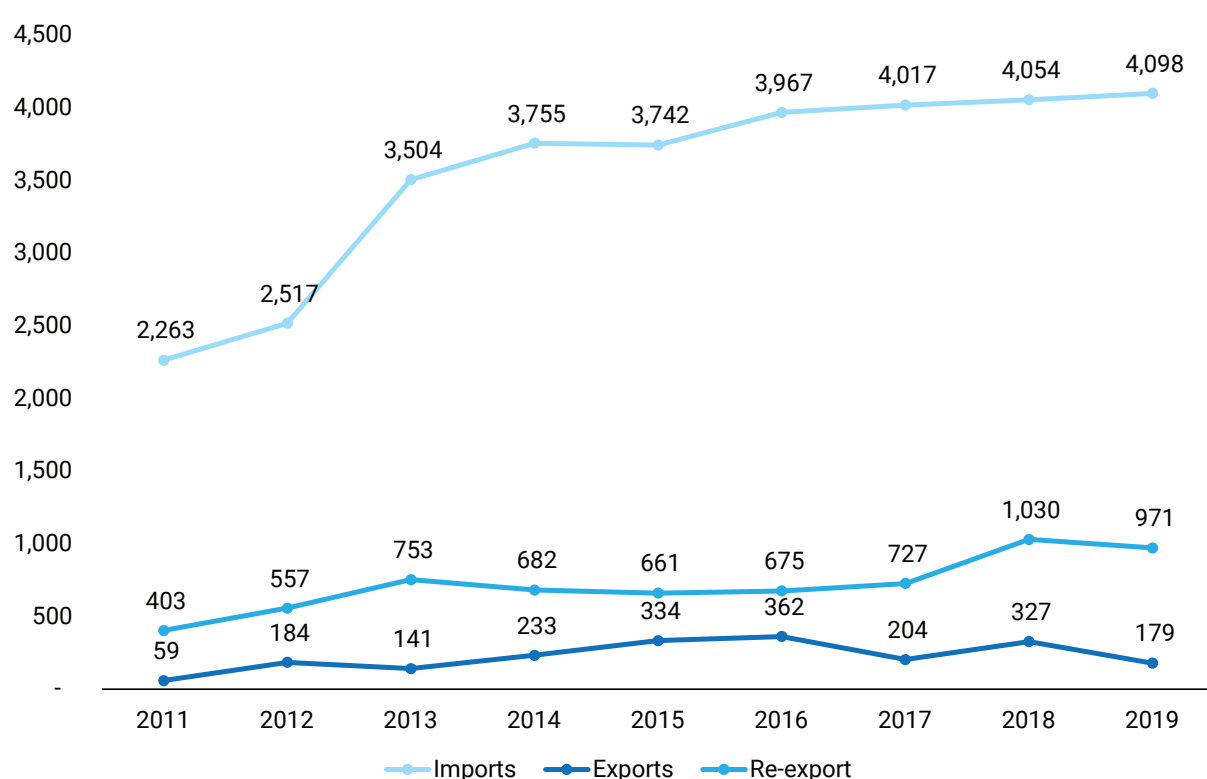
Both European and U.S companies compete in the market for laboratory equipment. As for dentist equipment, European companies dominate 70% of the market. They are followed by the US and Japanese companies. The UK is a leading supplier of sutures, sterile surgical supplies, and blood grouping reagents. China led the market in non-adhesive medical dressings. Oman is a leading regional supplier of surgical gloves.

Local distributors play a key role when it comes to the distribution channel and are the only way to buy medical equipment in the UAE. The UAE market for medical equipment is a monopoly market; there is always one distributor who sells a special product and a special brand.

Pharmaceutical Market

The UAE pharmaceutical market is a relatively well-developed market in the GCC region. UAE's import dependency for pharmaceutical products is around 90%. According to Fitch Solutions in 2019, UAE's pharmaceutical sales reached USD 3.4billion. The Dubai Industrial Strategy 2030 and Abu Dhabi Vision 2030 consider pharmaceutical industry one of the main subsectors to be prioritized for development due to its growth prospects, and export potential.

Figure 6.1: Pharmaceutical Products Trade (USD mn)



Source: Federal Customs Authority, DCCI

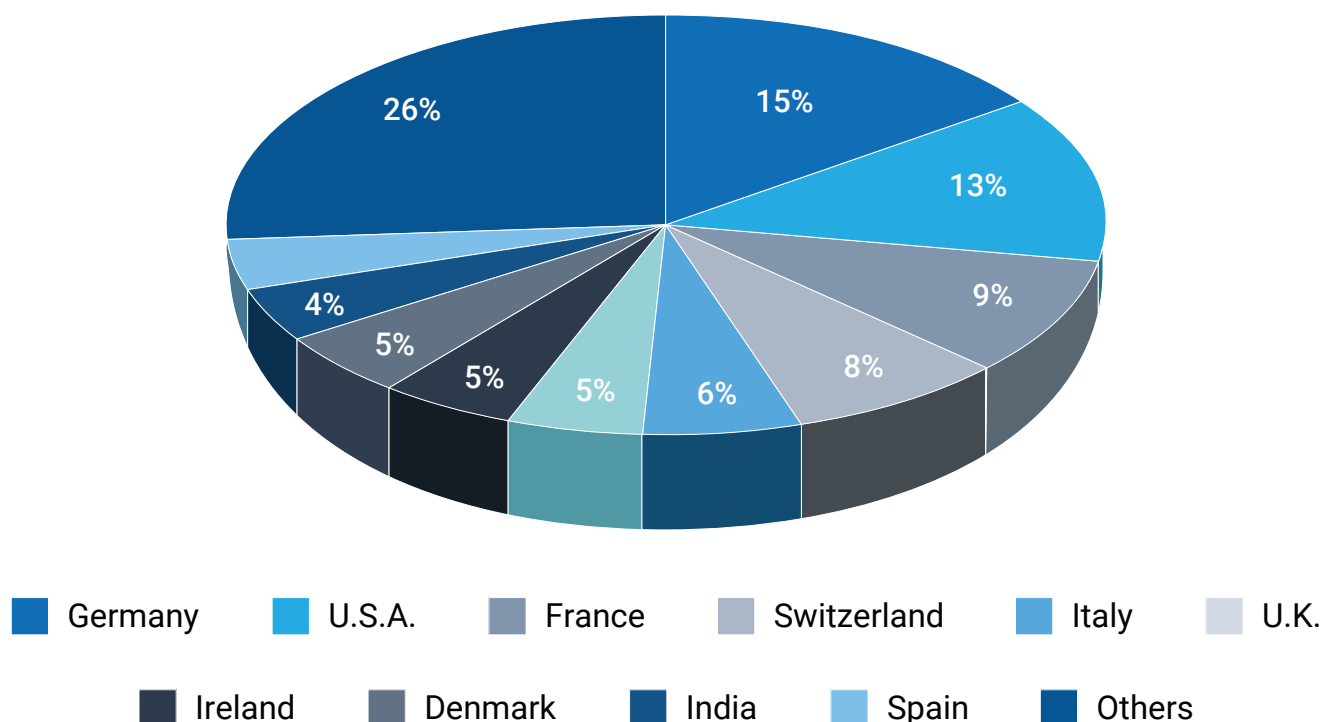
The Middle East and North Africa (MENA) region's pharmaceutical market is projected to reach a value of around USD 60billion by 2025. The most impressive growth is coming from the UAE, but North African giants Egypt and Algeria are also significant contributors. The UAE's pharma market is predicted to grow to USD 4billion in 2020. The market continues to lure manufacturers and traders to the region and Dubai has experienced a strong growth in pharmaceutical trade. In 2019, the top five product groups accounted for 83% of UAE imports of medicaments from the world. Medicaments with mixed or unmixed products accounted for 61%, followed by immunological products for 10%, medicaments with antibiotics for 5%, medicaments with hormone steroids for 4% and medicaments with corticosteroid hormones for 3%.

²³ PharmaBoardroom | MENA Pharma Market Set to Grow to USD 60 Billion

²⁴ PharmaBoardroom | New UAE Pharma Report April 2020

UAE mainly produces cheap and generic medicines, and its share is very small. As per Euromonitor, in 2019 total production of pharmaceutical products in UAE reached USD 403million, 5.3% higher than the previous year.

Figure 6.2: Pharmaceutical Product Imports by Country in 2019



Source: Federal Customs Authority, DCCI

Among the pharmaceutical products consumed highest sales belong to patented drugs with market share of 68% (USD 2.3billion), followed by generic drugs for 19% (USD 0.6billion) and OTC medicines for 13% (USD 0.4billion). Though small, generic drugs are expected to have growth as in Abu Dhabi all insured patients will be offered generic drugs which are 60% cheaper. Patients may prefer branded medicines provided they pay the difference between the government's reference price and the medicine cost. This is also expected to help development of local manufacturing of generic drugs.

The UAE pharmaceutical sector confronts several challenges as the local manufacturing sector is relatively small and focuses on basic medicines. The market relies on imports for hi-tech prescriptions. The increasing cost of the drugs and lack of local manufacturers constrain the choice of drugs for doctors and increase the cost pressures for the patients. The government is keen to increase the production of local drugs. The 'Make in UAE' tag has been introduced for all the drugs manufactured in UAE to encourage doctors and consumers to opt for local drugs. The government's initiative to support the local pharma industry is expected to give a thrust to its growth²⁵.

²⁵ DuBiotech

UAE has been developing its local pharmaceutical production capacity over the past few years. There are eight companies in UAE that manufactures medicines, some of them include are Julphar (Gulf Pharmaceutical Industries), Neopharma, Globalpharma and Med Pharma. In addition to serving the local market they also export their products to Middle East and North Africa and South East Asian countries. International brands also have a significant presence in the UAE which includes Johnson & Johnson, Sanofi-Aventis, MSD, Bayer, Merck Serano, Eli Lilly and AstraZeneca.

The UAE will continue to be an attractive emerging market for pharmaceutical companies as a result of continued investment in the country's healthcare sector. Citizens of UAE suffer from chronic diseases such as diabetes, obesity and other heart related ailments which is prompting both the public and private sector to improve the population's access to healthcare services. Pharmaceutical industry's growth has also been positively impacted by the growing population, compulsory health insurance and the growth of regional medical tourism. Over the past years the UAE's pharmaceutical industry has grown from USD 2.6billion as of 2014 to USD 4.0billion estimated for 2020. The pharmaceutical industry is expected to grow as patents expire on numerous drugs and the U.A.E. government promotes the use of generic and over-the-counter drugs.

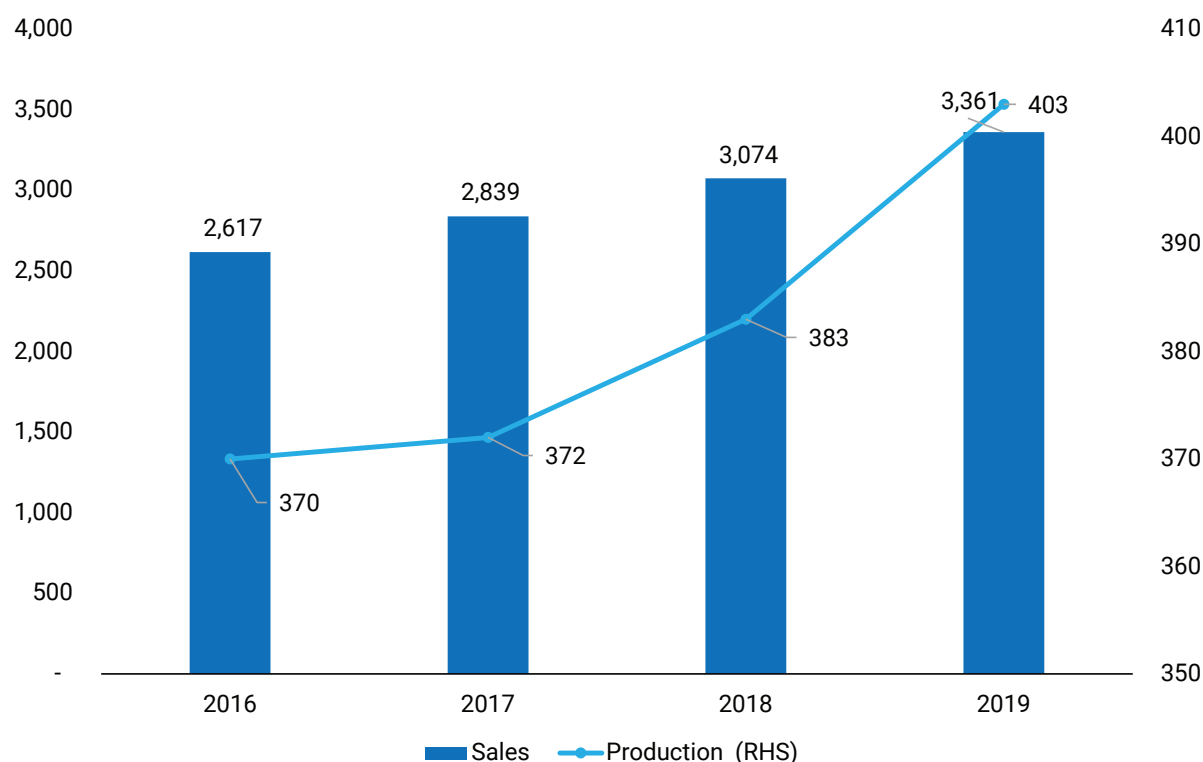
Currently the UAE market is driven primarily by branded medicines, with generic medicine consumption at only about 20 per cent²⁶. Since the cost of branded medicines tend to be on the higher side the federal government of UAE introduced price controls in a phased manner since 2011. By seeking to reduce the medical cost inflation the Ministry of Health has brought down prices of 8,000 drugs since 2011. The MOH has added another 142 drugs to the list in December 2015. Medicines included in the price cut list are the ones that have been used to treat cancer, immunosuppression, gynaecology, urinary tract infections, blood diseases and central nervous disorders.

The push for generics started in 2010 following reports of big pharmaceuticals pushing higher priced variants. Insurance companies in the region were paying out 100% of the drugs value which resulted in their cost ballooning. For instance, Daman introduced an annual pharmaceutical cap for patients on its lowest-premium plan, alongside hefty co-payments for those choosing pricey brand-name drugs in 2007²⁷.

²⁶ <http://www.thenational.ae/business/economy/julphar-strengthens-asset-base-amid-uae-pharmaceuticals-push>

²⁷ <http://m.arabianbusiness.com/pharmyard-rivalry-146919.html>

Figure 6.3: UAE: Pharmaceutical Sales & Production (USD mn)



Source: Fitch Solutions, Euromonitor, DCCI

Major players in the UAE pharmaceutical space

Julphar Pharma

Julphar Pharma was established in 1980 and it is one of the oldest in the country. It has 3,608 registered products in more than 50 countries. The company operates 11 manufacturing facilities in the UAE and one in Ethiopia. Julphar generated revenues of approximately AED 581 million in 2020. Julphar's list of products includes drugs that treat wounds, anaemia, asthma, allergy, infections, paediatric care, pain management and cardiopulmonary care.

Neopharma

Neopharma commenced operations in 2003 in UAE and the first set of manufacturing facilities were planned on an investment outlay of USD 25million. Neopharma's global presence is supported by 10 manufacturing facilities spread across 3 continents delivering branded and generic formulations, and active pharmaceutical ingredients (APIs). The therapeutic segments covered by its portfolio of over 100 high-quality molecules include anti-infectives, neurology, cardiology, orthopaedics, diabetology, gastroenterology, urology, dermatology, gynaecology, respiratory, dental and nutritional. Neopharma lays emphasis on research, especially towards development of processes and products that are patent non-infringing. Neopharma currently caters to over 50 international markets including Middle East, Africa, CIS, Far East and South East Asia. Neopharma has a manufacturing facility in Abu Dhabi's Mussafah industrial zone over an area of 1,076,000 Sq.Ft. It has an annual capacity of 242 million tablets and capsules and 7.5 million sachets.

Globalpharma

Set up in 1998, it is based in Dubai Investments Park with two manufacturing units for penicillin and non-penicillin products. Its manufacturing facility is spread over 290,520 Sq.ft and the annual capacity includes 300 million tablets, 150 million capsules and 7 million litres of syrup. It is also looking to gain access to 12 African markets. It manufactures more than 50 products, including antibiotics, antianalgesics, anti-ulcerants, respiratory products, nutritional supplements and for cardiovascular diseases and diabetes among others. It employs more than 220 people. The factory has two separate manufacturing units including one specific for penicillin products. The range of products manufactured at Globalpharma includes tablets, capsules and dry syrups in the penicillin plant, and tablets, capsules, liquid syrups and suspensions at the general facility.

Sanofi entered into the UAE pharmaceutical market by buying a majority stake in Global Pharma in 2014. Sanofi purchased the 66% stake from Dubai investments. Under the agreement, Globalpharma will be managed as a Sanofi company and will become the platform to manufacture and promote its generic drugs portfolio in the Middle East. While manufacturing tie-ups are commonplace in the UAE pharmaceutical market, a global company taking over a majority stake in a UAE established company is new.

Med Pharma

Established in 1998, the company manufactures generic drugs, cosmetics and beauty-care products. The factory in Sharjah, produces 15 million cream tubes, 185 million capsules, 20 million antibiotic bottles, 20 million syrup bottles, 20 million hygienic and cosmetic products, and 850 million tablets. Its market includes the Middle East and Africa countries.

COVID-19 Impact on UAE's Pharma sector

During COVID-19 pandemic the demand for many pharmaceutical products is reported to have increased. In H1 2020, UAE imports of pharmaceutical products reached USD 2.2 billion, 18% growth over the same period of 2019. In the post Covid-19 period, immunological drugs imports went up 230% by volume and 46% by value in H1 2020 compared to same period of 2019. The current year (2021) can be expected to witness a further surge due to vaccine imports.

The health ministry reported that 79.95% of the UAE population of roughly 9 million had received one vaccine dose while 71.22% had been fully vaccinated as of August 5th, 2021²⁸. The total doses administered was 16.9 million. UAE is also reported to be offering free vaccines to its tourists. UAE has also started manufacturing Sinopharm vaccine under a joint venture between Sinopharm and Abu Dhabi-based Technology Company Group 42.

UAE has approved several internationally produced Covid-19 vaccines for use in the country leading to large imports.

²⁸ Home | UAE Coronavirus (COVID-19) Updates (ncema.gov.ae)

Name of the Vaccine Manufacturer	Approval Date by UAE
Sinopharm (China)	December 2020
Pfizer- BioNTech (USA)	December 2020
Sputnik (Russia)	January 2021
Oxford-AstraZeneca (UK)	February 2021
Moderna (USA)	July 2021

The country has also started providing Pfizer-BioNtech vaccine for children aged 12-15 and Sinopharm vaccine for children aged 3-17 years.

GlobalData's analysis of the Emerging Disease Landscape report, states that the Covid-19 therapeutic pipeline consists of more than 300 drugs at various stages of development. Of these 300 drugs, 73 are in phases I to III of development, which include clinical trials. Organisations in the GCC are ramping up research and development (R&D) initiatives in response to Covid-19²⁹.

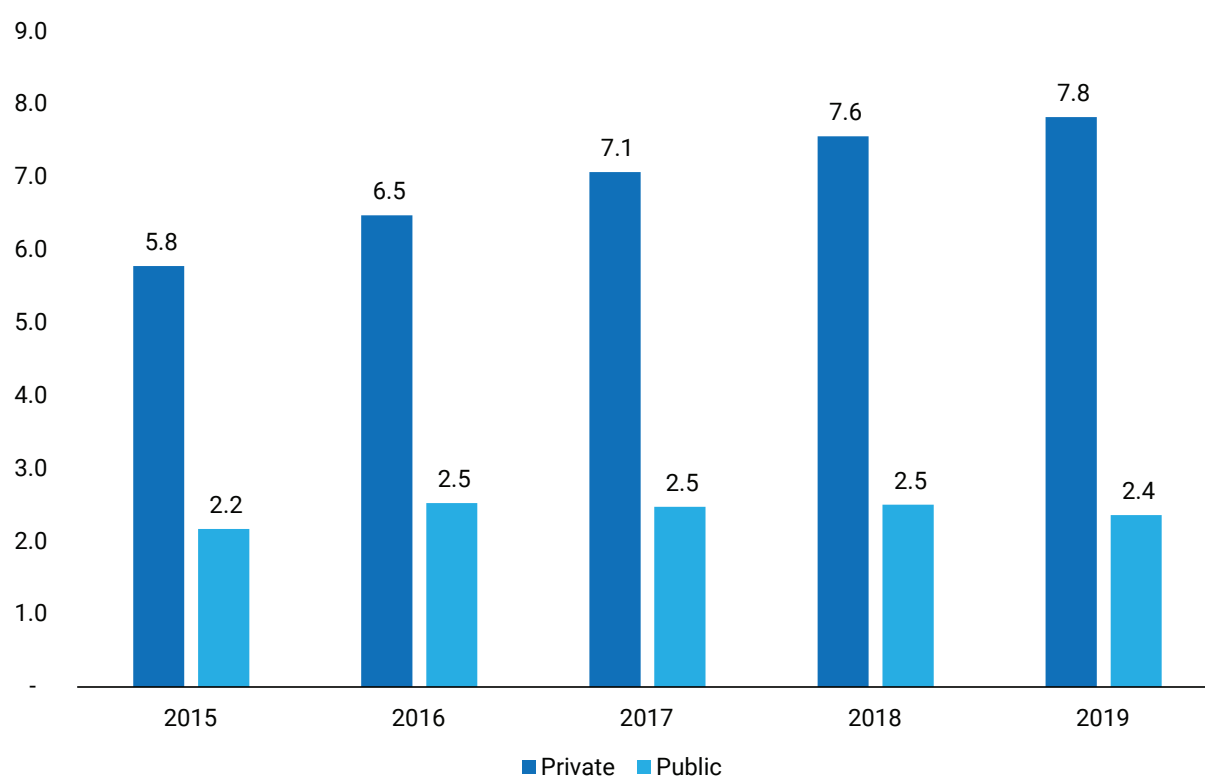
²⁹ MEED | Covid-19 could spur GCC drug production

Inpatient and Outpatient Analysis

Dubai

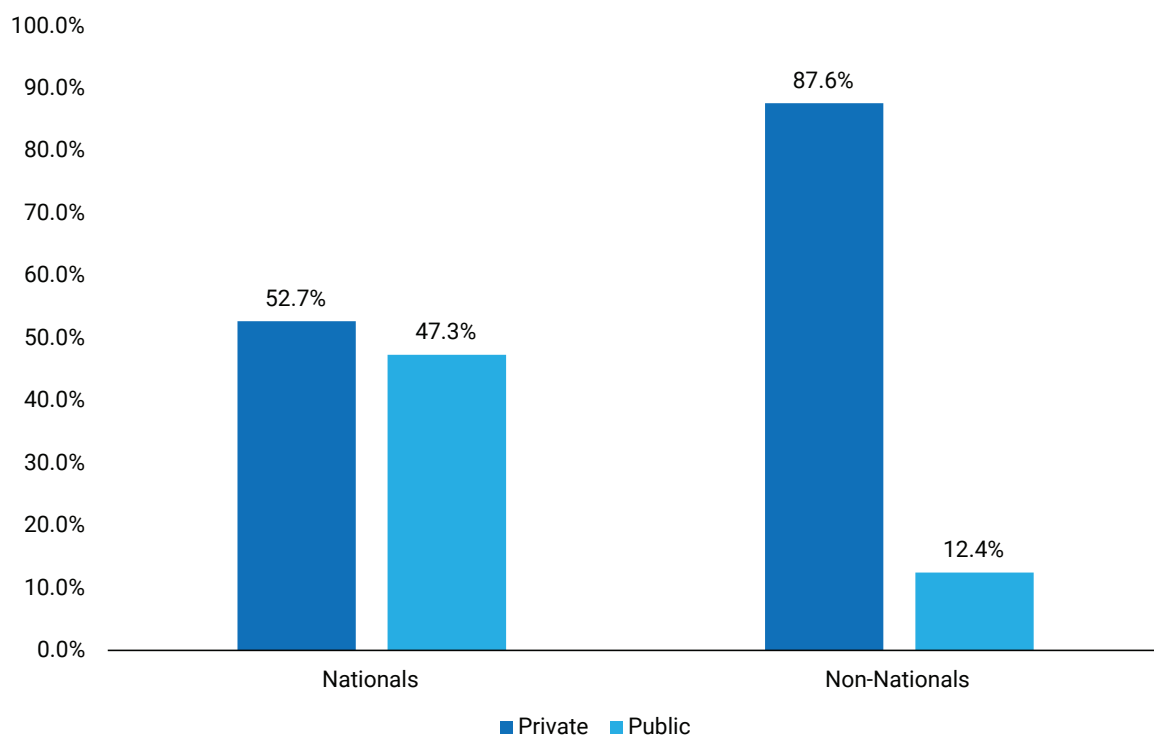
Dubai witnessed higher demand for health services during 2015-2019 as seen by the significant increase in the outpatients during the period. The outpatient growth was at a CAGR of 6.4% during this period. The growth in outpatients happened mainly in the private hospitals where the CAGR was 7.9%, while it was only 2.1% in the case of government hospitals. Further there was a strong preference for private hospitals from non-nationals while nationals showed almost equal preference for private and public hospitals. The number of private hospitals increased from 28 in 2015 to 37 in 2019. The hospital beds in private hospitals increased from 2,386 in 2015 to 3,181 in 2019; while the physicians increased from 6,333 in 2015 to 8,201 in 2019.

Figure 7.1: Outpatient in Dubai (million)



Source: Dubai Health Authority

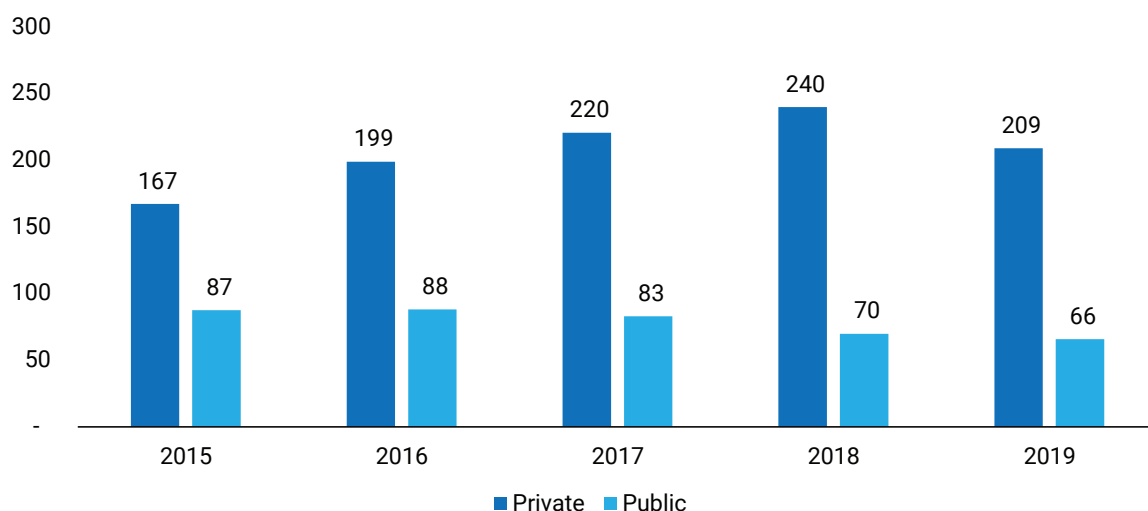
Figure 7.2: Preference for Private vs Public hospitals – Dubai Outpatient (2019)



Source: Dubai Health Authority

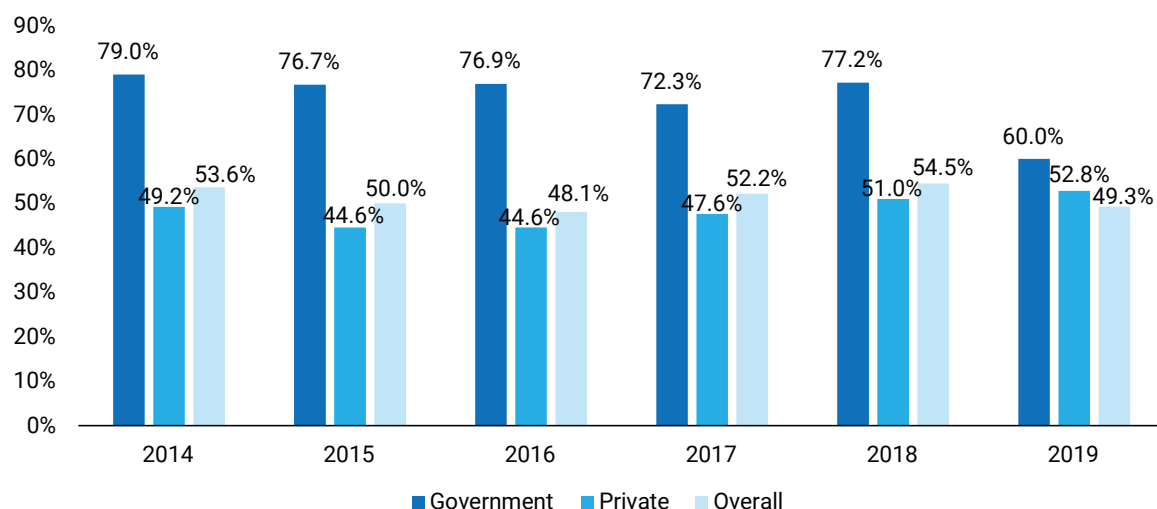
Inpatients in Dubai hospitals increased from 255,000 in 2015 to 275,000 in 2019 at a CAGR of 1.9% of which the private hospitals witnessed the largest CAGR of 5.7% while the inpatients in public hospitals shrunk at a CAGR of (-)6.9%. In 2019, 62% of the nationals preferred private hospitals while 81% of non-nationals preferred private hospitals. The bed occupancy in private hospitals of Dubai was only around 50% indicating the adequacy of the hospital infrastructure in Dubai over the period 2014-2019. The bed occupancy in public hospitals was around 75% except for 2019 when it was low at 60% indicating adequacy of the public hospital infrastructure in that year.

Figure 7.3: Inpatients (in 000s) in Dubai Hospitals



Source: Dubai Health Authority

Figure-7.4: Bed Occupancy for Private vs Public in Dubai

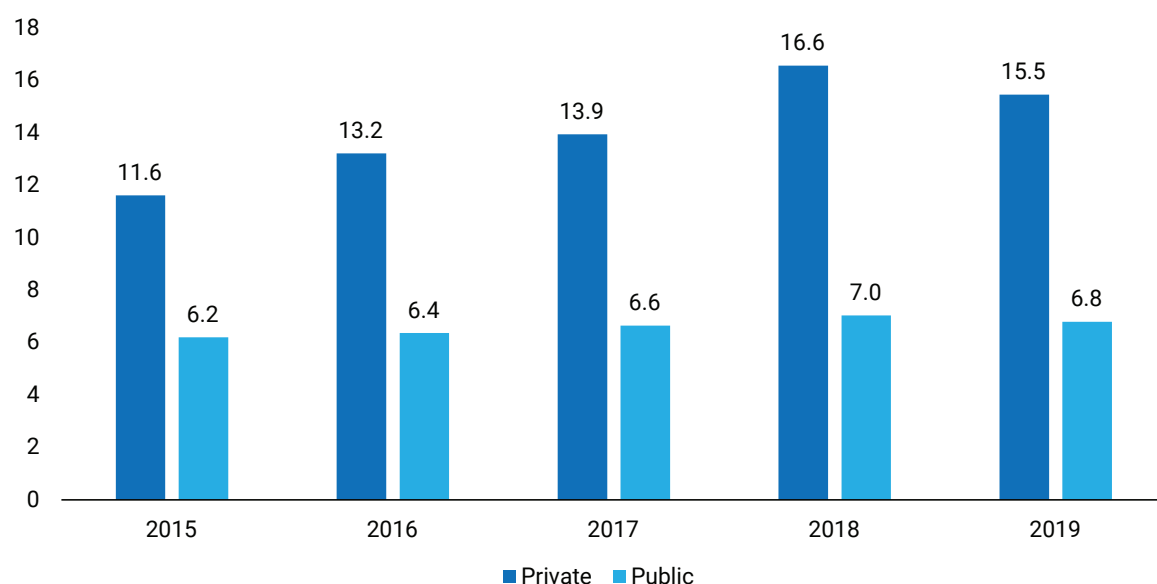


Source: Dubai Health Authority

Abu Dhabi

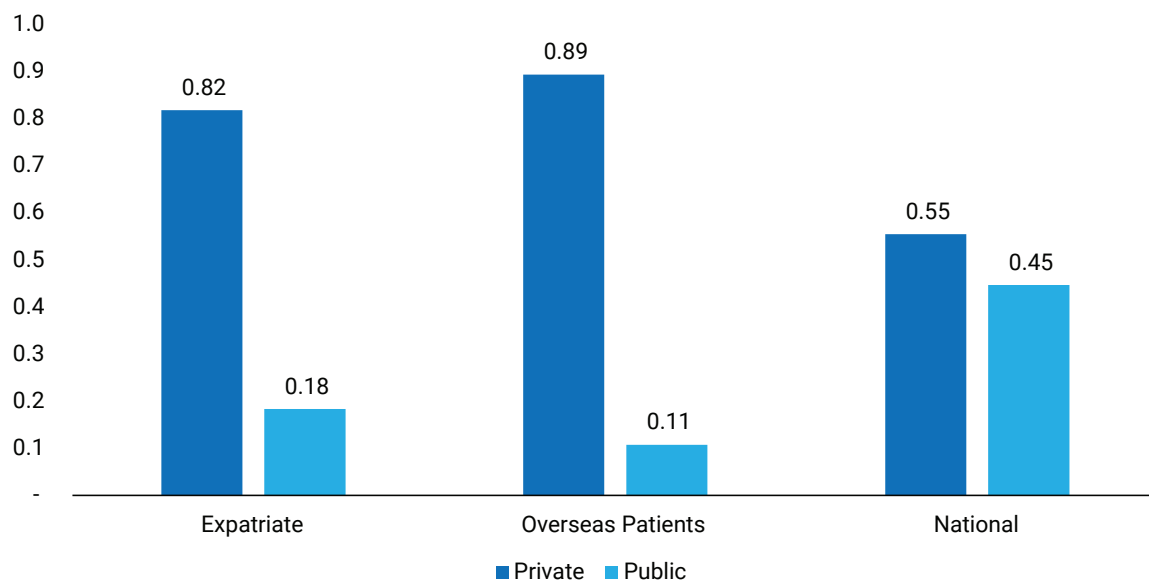
The total number of outpatients in Abu Dhabi grew at a CAGR of 5.7% accounted by 7.4% CAGR in private hospital patients and CAGR of 2.3% for outpatients to public hospitals. The total outpatients grew from 17.8 million in 2015 to 22.2 million in 2019. In 2019 the expatriates and overseas outpatients showed marked preference for private hospitals while the nationals exhibited a more balanced outpatients preference for private and public hospitals though they also showed greater preference for private hospitals.

Figure 7.5: Outpatient Growth (2015-2019) Abu Dhabi (in million)



Source: Abu Dhabi Health Authority

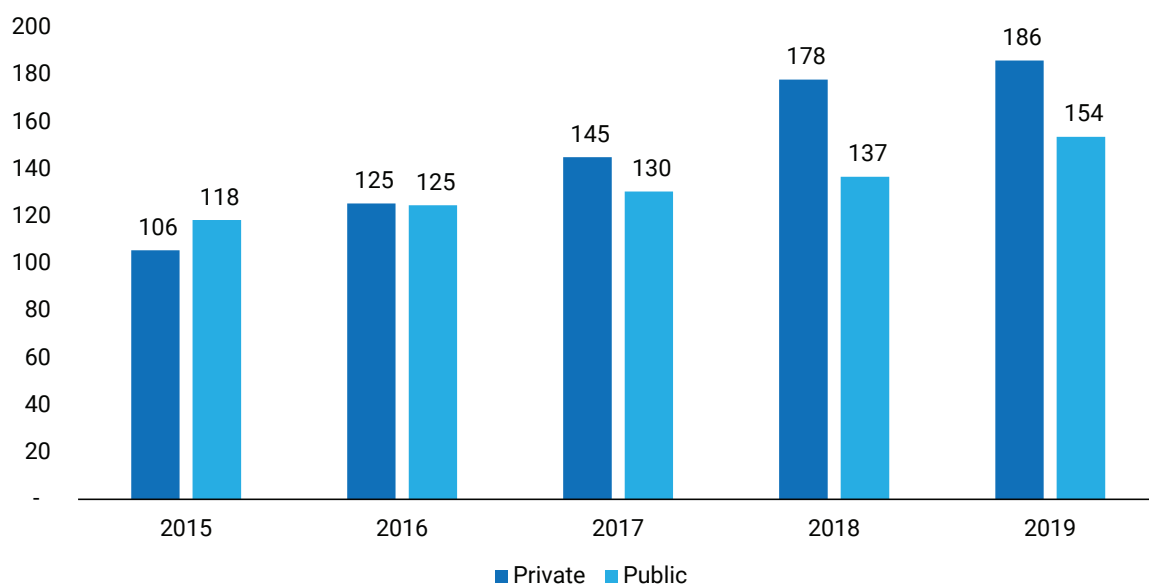
Figure-7.6: Preference for Private vs Public in Abu Dhabi



Source: Abu Dhabi Health Authority

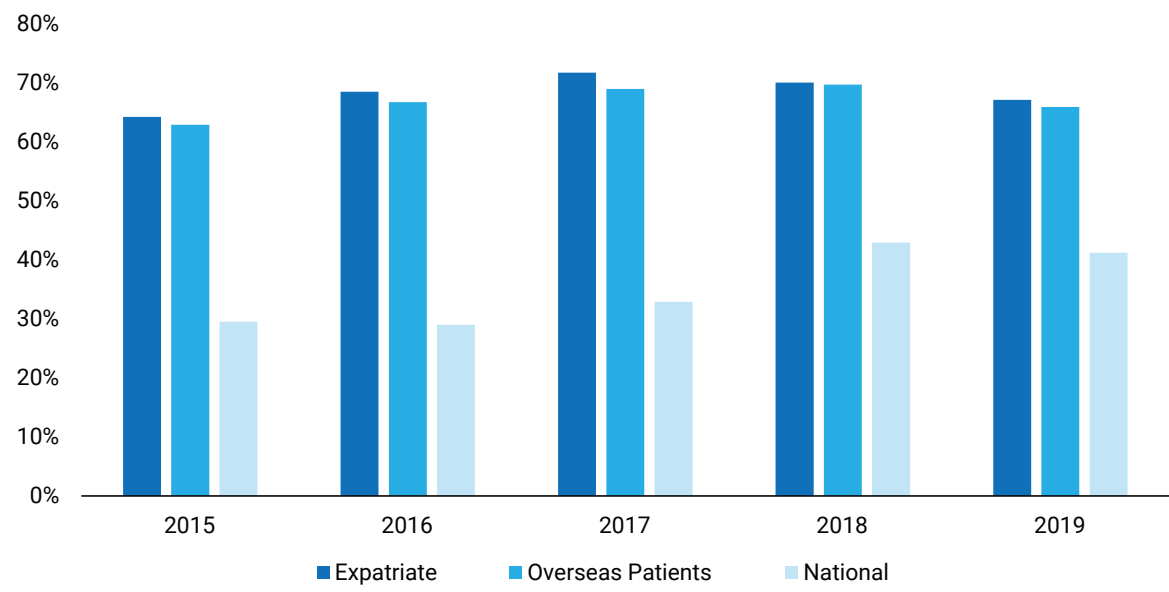
The total number of inpatients in Abu Dhabi was 340,000 during 2019 which is a CAGR of 11.0% over the number in 2015. The outpatient CAGR for private hospital was 15.2% and the CAGR for private hospitals was 6.7%. 67% of expatriate outpatients and 66% of overseas outpatients showed preference for private hospitals over public hospitals while only 41% of the nationals showed preference for private hospitals. The total Bed Occupancy Rate (BOR) for the Emirate was 54.5% in 2017 highlighting that the capacity on average was adequate in the Emirate.

Figure 7.7: Inpatient Growth (2015-2019) – Abu Dhabi (in 000s)



Source: Abu Dhabi Health Authority

Figure 7.8: Inpatient Preference for Private vs Public Hospitals (Abu Dhabi)



Source: Abu Dhabi Health Authority

Role of IT and Healthcare Technologies

Information technology in healthcare in the UAE remains one of the most promising as well as challenging growth area. IT infrastructure in UAE hospitals is currently run by independent healthcare systems with little integration among each other. UAE's government is aware of the issue and has initiated few integration programmes in areas such as data management, disease screening and medicine registry. The integration programme aims to bring together the patient record that is currently spread across the Emirate. Cloud based platforms have also assisted in storing patient records virtually, which makes the healthcare workers to access the past medical history of patients. Other potential technologies that could positively impact the sector include Artificial Intelligence-based solutions that could have the capacity to scan millions of scans and x-rays of prior patients to check for similar treatments, Internet of Things (IoT) based applications that could track the availability of beds, oxygen, and other key medical devices on a real-time basis that could aid in quicker treatment reaching the patients. On the supply chain front, pharmacies can be connected to hospitals that could aid them in ordering and stocking the right supplies based on past order histories. The development of the healthcare sector in the country depends on establishing key parameters such as developing a better infrastructure, establishing a wider network of global partners to enable an efficient supply chain and creating a stable healthcare workforce that would ensure constant availability of healthcare professionals.

Wareed: A MoH initiative to integrate electronic medical records in all 14 public hospitals and 68 affiliated clinics across Dubai and the Northern Emirates, as well as automate all healthcare processes across departments, such as radiology, pathology, pharmacy, surgery, accident/emergency, and registration.

Weqaya: A population screening and intervention program for Emiratis implemented by HAAD that currently focuses on diabetes and cardiovascular disease.

Tammini Program: A MoH initiative, this program provides information to the public for medical products registered and marketed in the U.A.E. The program also provides warnings and medication safety alerts for existing medical products in the country

Spending on IT services and products among healthcare providers in the countries increased at 11.2 per cent annually until 2018³⁰. Of overall hardware spending growth, expenditure on mobile devices and networking equipment constituted a significant share. There has been significant development in this regard. In 2014, Dubai Health Authority announced the distribution of around 3,000 tablets across its hospitals and primary health care centres as a part of the UAE's smart government initiative. On the software front, system infrastructure will account for largest share of the IT spending. Clinical information systems currently accounts for a very small portion of the overall spending but is expected to grow at 13.5% annually.

³⁰ IDC

Companies involved in Healthcare IT in UAE

GE Healthcare provides advanced medical technologies and services for patient care in the U.A.E. The company is also experienced in medical imaging and information technologies, medical diagnostics, patient monitoring systems, performance improvement, and drug discovery. In the past, GE Healthcare has had significant partnerships with Sheikh Khalifa Medical Centre.

Cerner Corporation: Wareed initiative was developed in association with Cerner Corporation. Cerner works in partnership with the Abu Dhabi Health Services Company (SEHA) to deliver technological and IT integrated solutions to Abu Dhabi's hospitals focusing on improving electronic processing, increase efficiency, reduce costs, and protect patient confidentiality

Truven Health Analytics serves as an important partner to the Health Authority Abu Dhabi. In the past few years, Truven developed a provider/hospital ranking system for Abu Dhabi based on quality. Additionally, Truven positions critical point-of-care and hospital management systems throughout the UAE. Truven continues its partnership with HAAD and other government and private entities in various capacities.

Home-health service is another area which holds huge potential for IT companies in UAE owing to the regulatory changes happening in the insurance sector, as well as the growing acceptance of m-health applications and services globally as well as within the region. IT in healthcare has the potential to go beyond clinical walls and into homes of patients themselves. IT services in home healthcare market can be classified into two broad areas – provision of medical services and telehealth services.

Provision of Medical services - provision of medical services in a patient's home with the help of doctors, nurses, home health kits and attendants.

Telehealth is the use of applications or devices to connect virtually through applications for consultations or monitoring. The monitoring is done using wearable technologies, which monitor patients' vitals in real time and help healthcare professionals to provide diagnosis.

3D Printing

The UAE has truly embraced the power of 3D printing, as evidenced by its national 3D printing strategy. This strategy aims to turn the UAE into a global 3D printing center. It calls for Emirati government entities and universities to partner with businesses from around the globe to produce a wide variety of 3D printed goods, including for the health and science sectors. In keeping with the above, Dubai Healthcare Authority (DHA) has its own 3D printing strategy. They partnered with an additive manufacturing healthcare specialist firm to open an innovation center in January 2020 that, among other things, prints prosthetics limbs and teeth. This center also provides medical professional at DHA hospitals with patient specific anatomical models, allowing them to

conduct detailed pre-operative analysis, reduce surgery times, and thus save costs. During the pandemic, 3D printing took on new applications focused on increasing the production of medical equipment and supplies to support frontline workers battling Covid-19. For instance, in May 2020, NYU Abu Dhabi started collaborating with Mubadala Healthcare to create 3D printed N-95 masks that are more environmentally friendly while still providing the same level of protection against Covid-19 and other diseases.

Healthy Building Solutions

Also, during the pandemic, the U.A.E. has turned to leading U.S. companies such as Honeywell to provide technologies that enable them to return to a semblance of normal. In response to the global pandemic, Honeywell has launched an integrated set of solutions to help building owners improve the health of their building environments, operate more cleanly and safely, comply with social distancing policies, and help reassure occupants returning to the workplace. By integrating air quality, safety, and security technologies along with advanced analytics, Honeywell's Healthy Buildings solutions are designed to help building owners minimize potential risks of contamination and create business continuity by monitoring both the building environment and building occupants' behaviors. Honeywell Healthy Buildings solutions can increasingly be found throughout the U.A.E.

International Collaborations in Healthcare Technology

The U.A.E. is not only trying to bring high-quality healthcare technology to its shores but entities such as Mubadala are investing in innovative healthcare technology abroad. Mubadala has redoubled its commitment to investing in healthcare as a result of the Covid-19 pandemic, creating a dedicated fund for this purpose. The fund would accelerate the growth of innovative life sciences and healthcare companies over the coming decade with a focus on next-generation therapeutics, digital health, and preventative healthcare as well as clinical and non-clinical workflow optimization. One of Mubadala's key contributions to the U.A.E.'s agile response to the Covid-19 pandemic is launching the #WeAreDedicated campaign, through which Mubadala has been collaborating with multiple front-line public and private sector players to coordinate national efforts to tackle the pandemic and mitigate its impact. In line with its drive to strengthen the U.A.E.'s leading role in the fight against the Covid-19 pandemic on an international scale, Mubadala Healthcare is partly-funding the trial of an immune-dampening drug in the United Kingdom that will help patients with diabetes overcome the effects of the virus³¹.

³¹ Technology-Series-MedTech-Report-Web.pdf (usuaebusiness.org)

Challenges

Transient Immigrant Workforce

UAE depends on foreign work force for fulfilling the vacancies in healthcare sector. Owing to the transient nature of the workforce UAE hospitals face challenges while planning for the long term. Increasing the number of medical personnel in the country depends mostly on various liveability indicators such as the country's developed infrastructure, public services, political and economic stability and a liberal environment. UAE has been partly successful on the above aspects; the steady increase in the number of expatriates arriving in the country since 2009 suggests that UAE is indeed an attractive location for expatriates. The problem however is the length of their stay in the country, many of the healthcare professionals who come to work in UAE move to other countries after gaining few years of work experience. Temporary nature of the health care workforce hinders the way in giving high quality healthcare and it continuously adds to the administrative burden of the management, increases disruptive churn and reduces the continuity of the care. Local sensitivities are not readily understood by a foreign workforce and significant time is required in training them. Owing to the constant churn patients going back for further treatment might not be under the care of same doctor or even the same institution for long periods of time. UAE is also seen by many as a transition point before they move onto European countries.

Another staffing challenge emerges from the fact that the distribution of medical personnel is not uniform across the UAE. Dubai and Abu Dhabi stand out while other Emirates fall behind giving very little incentive for health care professionals to work in those places. These areas are usually controlled by the public health organization where the pay is lower. Doctors and nurses expected to work in remote areas expect a better package to compensate for taking on the hardships of living in a non-urban environment while the MOH has taken the opposite stand leading further exacerbation in the Northern Emirates. The average salary of physician is around AED 7,600 (USD 2,052) per month in Sharjah while it is AED 16,000 (USD 4,320) in Dubai and AED 13,000 (USD 3,500) in Abu Dhabi³². The average take home salary of a general physician in United Kingdom is USD 7,000 per month while that of a specialist in Germany is USD 12,500³³.

To overcome the issues, expatriate medical workforce need to be provided with sufficient incentives. Financial incentives would serve as a good starting point - lump sum bonuses tied to long-term stints might be a good area to start out with. Non-financial incentives such as quick residency permits, 100% ownership of health

³² Physician Salary in UAE (indeed.com)

³³ Top 10 Countries with the Highest Salaries for Doctors (careeraddict.com)

practices through a “free zone” policy would go a long way in retaining the workers. Smaller Emirates suffer from higher skill gap than larger Emirates like Abu Dhabi and Dubai. Recent co-ordination efforts between UAE’s regulatory bodies could help solve the situation by easing the movement of staff from one Emirate to another.

Fragmented regulation

Regulatory architecture influences the quality of healthcare available in the country. While the presence of large private providers helps in achieving higher quality of healthcare in the country and imbibing global best practices, the market should also be large enough to achieve greater economies of scale. Recent trend in the UAE shows that regulation in the country is fragmented.

Abu Dhabi’s healthcare is currently being regulated by two authorities – The Health Authority of Abu Dhabi (HAAD) and the Abu Dhabi Health Services Company (SEHA). The former is responsible for regulation of public and private sectors while the latter is responsible for service provision. Dubai’s healthcare is currently being regulated by Dubai Health Authority (DHA). The DHA is responsible for the public service delivery and in addition regulates the Emirate’s healthcare free zone. In the five Northern Emirates, the UAE Ministry of Health continues to provide services as well as regulatory oversight. Sharjah, the largest of Northern Emirates has got its own authority, the Sharjah Health Authority (SHA). The SHA is yet to take over the control from the federal authority.

In addition to the above, the Ministry of Health retains limited nationwide responsibilities such as licensing and controlling the prices of drugs and medical devices. While the current approach is avoiding the one-size fits all approach and achieving a focused approach for each of the Emirate, it can be a huge hurdle for companies wanting to operate across the Emirates. Functioning under different regimes and dealing with various pricing norms can put off serious healthcare providers. Once again the healthcare operators might choose to work only in two of the major Emirates such as Dubai and Abu Dhabi.

Fragmentation of the rules and regulations governing each of the Emirates would lead to separate staff hiring and licensing procedures for companies willing to operate in the country. Standardizing the terms of operations among the Emirates would go a long way in helping the service providers in the region. It would also reduce the burden of relocating staff between Emirates. UAE has been working on fixing these challenges through an agreement signed in October 2014 between the regulators to establish a unified UAE medical licence. There was also a national health council that was established in 2008 to co-ordinate between public bodies and private sector which can be given more scope to harmonise relationship between the two.

Insurance

Private players have been providing insurance in UAE for the past few years and they target the higher income expatriates and their families. The mandatory health insurance scheme that Abu Dhabi rolled out in between

2006 and 2008 rapidly increased the size of the insurance market. Mandatory health insurance was introduced in Dubai in 2014 and the rest of the Northern Emirates is expected to follow suit. Mandatory health insurance is a critical tool in delivering equitable treatment to the citizens of the country. The problem that UAE faces with these insurance providers is not a unique one – matching cost with quality. Cost of treatment in UAE is not significantly lower than in Europe and increasing quality will ultimately require higher premiums while the average premium charged by insurance companies in UAE is about 1/5th of the cost of insurance in Europe.

In Abu Dhabi, Healthcare is provided by publicly owned company, Daman which provides subsidised insurance to its citizens and low-income workers. It also competes in the open market along with other players, 1/3rd of enhanced premium policy that is issued to expatriates is issued by Daman. Daman pays out 73% of insurance claims by value, giving it huge leverage while bargaining with service providers. Other players in the markets are also severely fragmented with only two insurers paying more than 2% of the claims³⁴.

Dubai does not have a setup like Daman but it provides health insurance through the DHA to nationals through the Eyana scheme for government employees. DHA also caps the prices that the providers (such as hospitals and other allied medical services). Price increase was capped at 4.2% in 2015 which the medical services providers requested to change after they met certain criteria like relation to capital investment and quality of service.

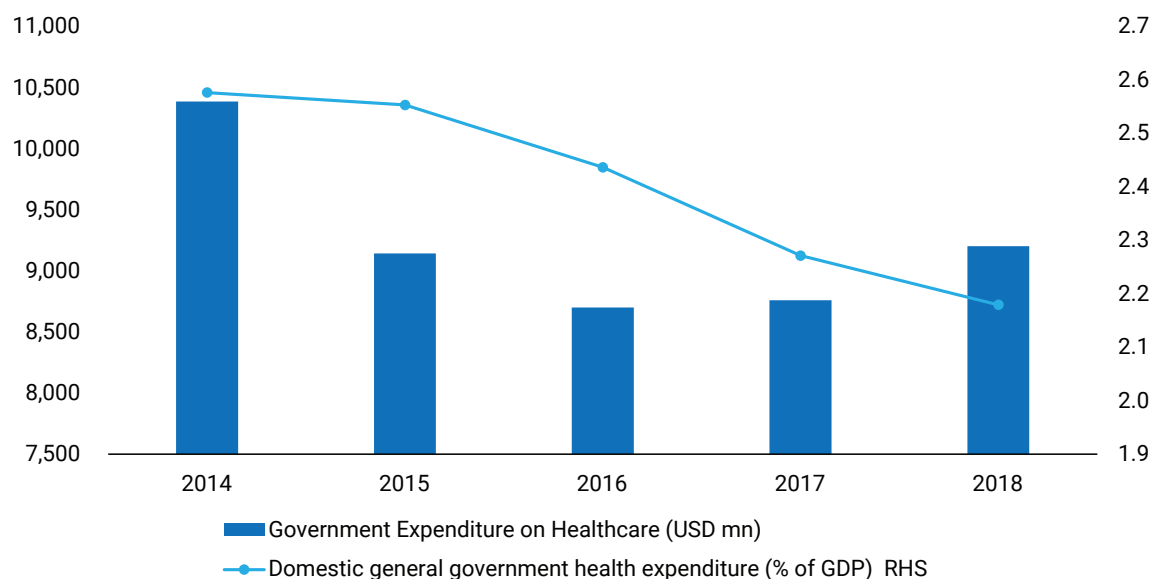
High level of public sector influence, pricing control combined with geographical fragmentation could pose new challenges on the way the services are charged. Differential pricing increases the administrative complexity making it harder to ensure consistency and limiting the appeal of building a pan-UAE business. A right way to go ahead would be to allow a nuanced approach and strike a balance between pricing while not introducing too many problems for private-sector insurance providers.

Reliance on Government Spending

In 2017, the UAE spent close to USD 1,817 per person per year on healthcare ranking it among the top countries in the world for healthcare spending. In order to keep its spending to sustainable level the UAE government has been moving towards a universal healthcare system. Over the past decade, the UAE has made specially orchestrated efforts to build a robust healthcare infrastructure and is currently being considered on par with international standards.

³⁴ HAAD, 2013 statistics

Figure 9.1: Government Expenditure on Healthcare (USD Bn)

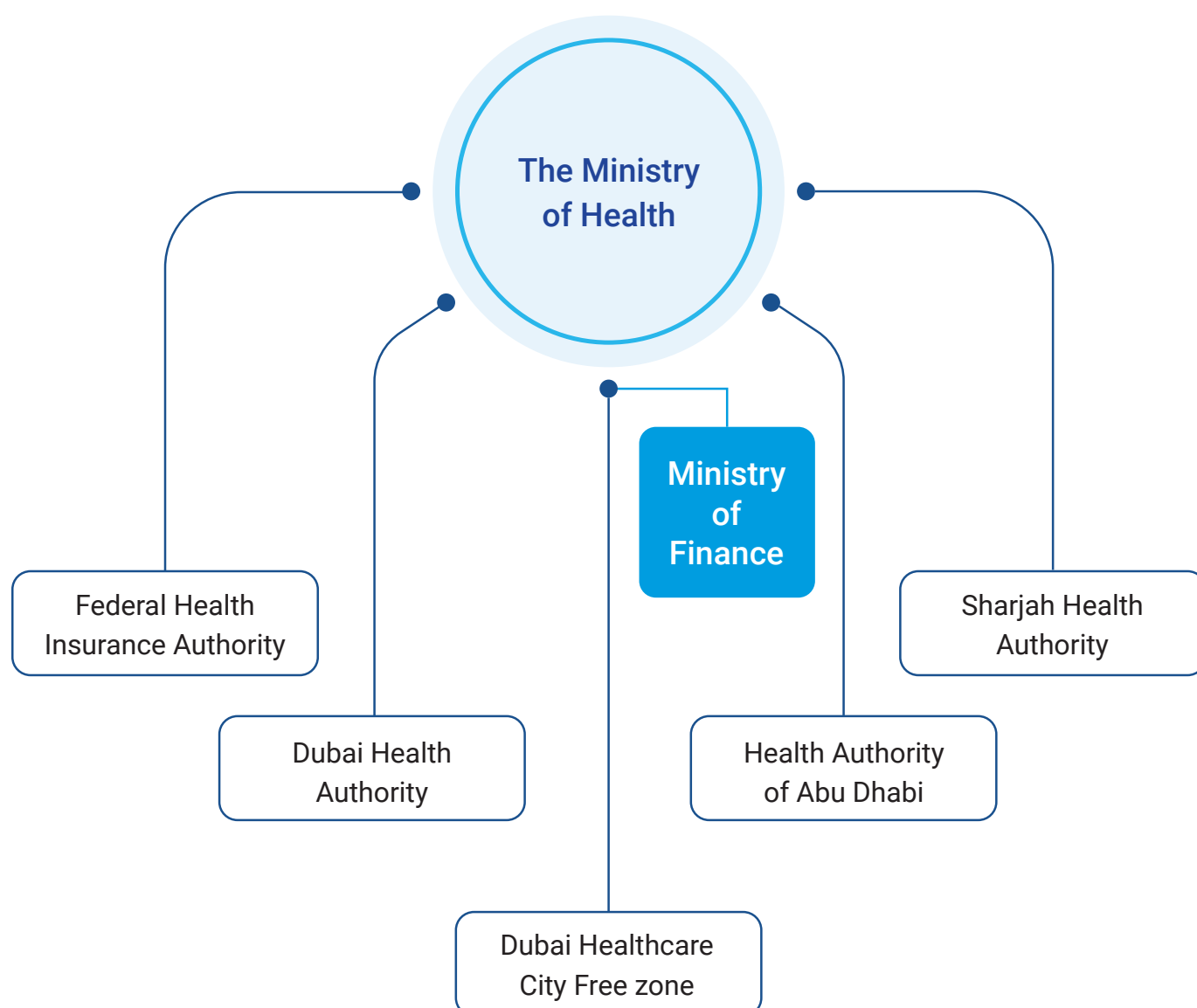


Source: World Bank, Marmore Analysis

While the government spending is required for encouraging healthcare sector, huge investments have already been made in terms of infrastructure of hospitals as a result of which these beds in UAE are underutilized. The role of the UAE government here is that of an executioner instead of an enabler. While this could have been sustainable in the previous years it might get increasingly difficult to replicate in the forthcoming years.

Healthcare sector in UAE is regulated by a number of different organizations at the federal and the Emirate level. All of these organizations are unified by a central authority, The Ministry of Health (MoH). Insurance in the country is currently regulated by the Ministry of Finance (MoF) while a standalone organization the FHIA (The Federal health Insurance Authority) has been setup. FHIA's development is currently being overseen by the MoH, MoF as well as the Emirati level authorities. FHIA's role would encompass licensing, registration and codes of conduct for healthcare providers. UAE's healthcare regulators are striving hard to make improve the quality of healthcare services in the region to the level of international best practices by 2021.

Figure 10.1: UAE healthcare regulators



Historically, Healthcare in the UAE market has been perceived to be of lower quality than many developed countries. Locals and national typically use these systems for performing initial diagnosis and basic services. For performing major surgery and treating serious disorders, such as cancer, heart and renal diseases expatriates return home while Emirati nationals usually go to the West (Germany, Switzerland and the US). Emiratis have expressed a preference for getting treatment from abroad.

Ministry of Health - is the federal authority responsible for centralising and unifying the U.A.E.'s health policies, developing a comprehensive, nationwide health service, and ensuring that healthcare remains accessible across the country. The MoH also serves as the healthcare regulator for the Northern Emirate. Dubai and Abu Dhabi manage their healthcare services through their own regulators. Healthcare infrastructure in Northern Emirates is below that of Dubai and Abu Dhabi and it relies heavily on the MoH for building its healthcare capabilities. The Federal Health Authority is the executive arm of the MoH which undertakes the responsibilities of building and maintaining the hospital buildings. It also focuses on increasing the efficiency and competitiveness of the UAE health system.

Medical devices are also regulated by the Ministry. Medical device manufacturers must register with the Ministry before they can market their products in the UAE. Companies who wish to export their products into the UAE must do so via a local representative or distributor who has a licensed medical store. The appointed local representative or distributor must submit a medical device registration application form to the Ministry's Drug Control Department. If the application is approved, a registration number is given, which is valid for five years.

Ministry of Finance - Insurance aspect of UAE's healthcare system is currently being undertaken by the MoF. In 2013, the MoF drafted a law making the health insurance mandatory in all seven Emirates of UAE. Currently this law has been implemented in Abu Dhabi and in Dubai. This plan also gives provisions for adding family members. Adding family members to the insurance package has been done to cater to the needs of a growing expatriate population. Insurance premium ranges from Dh 500 - Dh 700 per annum for essential health benefits package. The basic package provides not only access to a general or family physician, but also referrals to specialists, surgical procedures, laboratory tests and investigations, emergency services and maternity care.

Dubai Health Authority – The Dubai Health Authority serves the dual role of being a regulator as well as the executor of healthcare services in Dubai. It is responsible for public healthcare facilities, hospitals, clinics as well as other services in Dubai and other free trade zones. Currently the DHA runs four major hospitals – The Dubai Hospital, The Rashid Hospitals, The Latifa Hospitals and the Hatta hospitals. There are 20 Primary Healthcare Center (PHC's) throughout the Emirate of Dubai (1 for every 30,000 individuals) which has been constructed after taking into consideration the ease of accessibility.

Health Authority of Abu Dhabi (HAAD) – Abu Dhabi health authority is the regulatory body for healthcare sector in the Emirate of Abu Dhabi. HAAD defines the strategy for the health system, monitors and analyses the health status of the population and performance of the system.

Regulators focus on Vision 2021

UAE's vision 2021 is an important tool that the regulators in UAE have tried to follow in order to bring the quality of UAE's healthcare on par with global standards. According to the vision 2021 document, all Emiratis are entitled to have access to comprehensive and world-class quality medical services. The government aims to achieve this by continuously investing in superior medical facilities and by acquiring and attracting expertise and service providers to the country. While the patient treatment is given high priority the vision document also gives importance to the early diagnosis and preventive medicines.

The three healthcare regulators have put forth their specific objectives and plans in order to provide the high quality healthcare for their patients.

HAAD

HAAD has set specific objectives aimed at improving patient safety and providing high quality healthcare. Development of an automated internal process to collect accurate patient data to provide faster and more efficient access to patient records are some of the initiatives that has been taken by HAAD.

DHA

DHA's target is to improve patient safety by reducing error and duplication of information, technology optimisation, developing patient protection procedures, improving quality of human resources, and improving lead time of healthcare delivery to patients.

MoH

The MOH has 9 key objectives that it plans to achieve as part of the vision 2021 plan

- Enhance and strengthen its role in setting and applying policies, regulations and governance guidance on a federal level;
- Develop and improve the Health Ministry's infrastructure facilities;
- Enhance and develop the healthcare safety system to counter health hazards;
- Promote public healthcare standards and raise public healthcare awareness among the community up to international standards;
- Ensure the healthcare system meets international standards;
- Support, enhance and apply scientific research and healthcare studies;
- Ensure administrative services meet international standards;
- Ensure de-centralised administrative services meet quality, efficiency and credibility of international standards;
- Improve auxiliary support healthcare services.

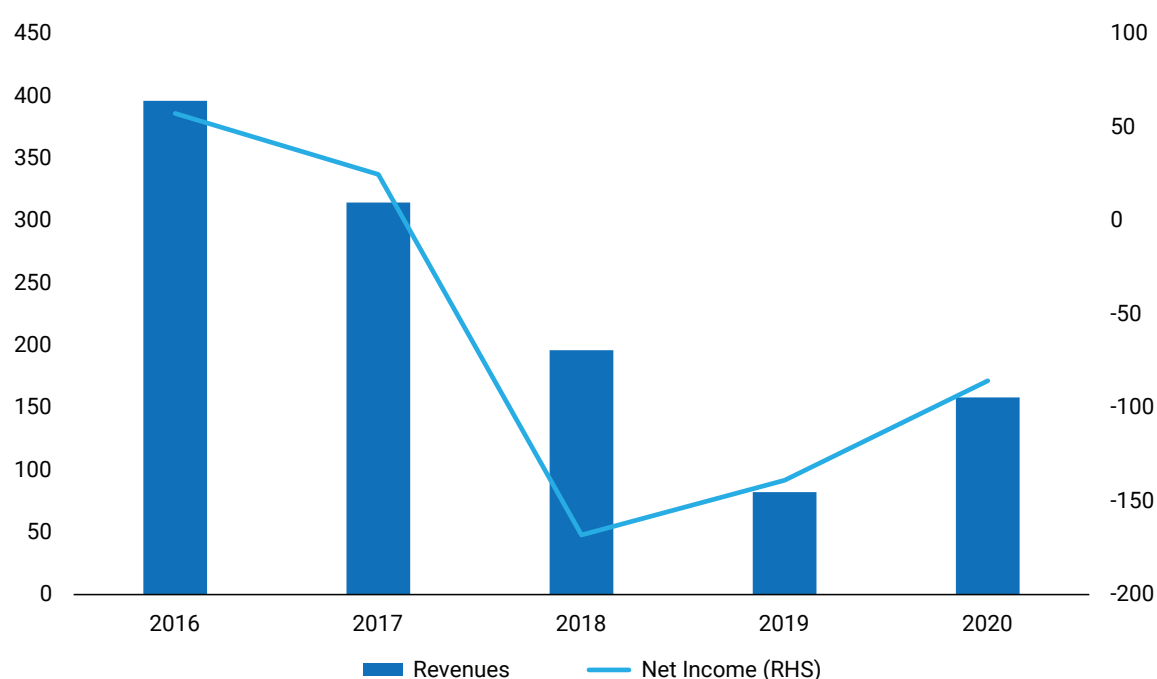
While the regulators have come out with clear cut objectives towards improving the healthcare in the country, the challenge of aligning the strategic objectives with actual implementation remains.

Company Profile

Gulf Pharmaceutical Industries

Julphar (Gulf Pharmaceutical Industries) is one of the large companies operating in the healthcare segment in the MENA region in terms of revenue. The company was established in 1980 in UAE. The company has 12 manufacturing facilities and produces 800 products including major antibiotics and insulin.

Figure 11.1: Revenue and Net Income of Julphar, (USD mn)



Source: Reuters

The company's revenues and net income have decreased over the years and the company has incurred net losses for last three years, due to fall in revenues. The fall in revenues was due to import restrictions by Saudi Arabia, & other countries in GCC due to inadequate quality. In 2021 the import ban is lifted by Saudi and it is expected that the company's operations would improve.

Table 11.1: Key Ratios, 2016-2020

	2016	2017	2018	2019	2020
Gross Margin	49.7%	43.1%	19.0%	-27.7%	32.3%
Operating Margin	12.7%	7.5%	-84.9%	-153.6%	-49.6%

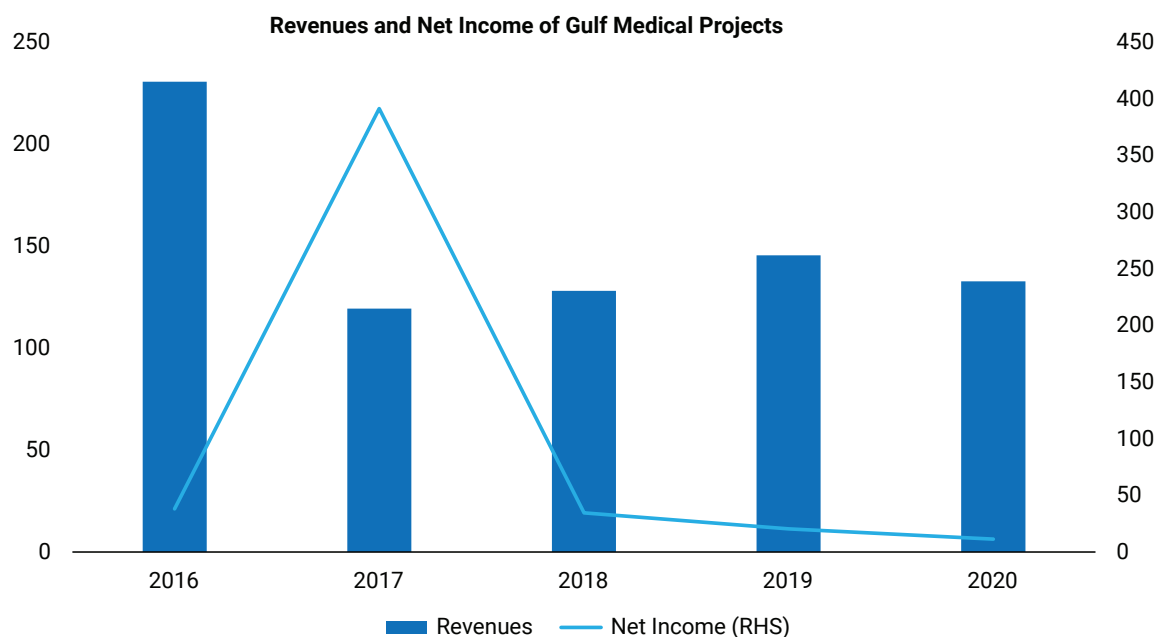
	2016	2017	2018	2019	2020
Net Margin	14.4%	7.8%	-85.8%	-169.2%	-54.2%
ROE	9.7%	4.5%	-37.4%	-51.9%	-36.3%
Current Ratio	2.38	2.38	1.01	0.91	1.17
Leverage (Assets/Equity)	1.60	1.71	2.40	3.51	2.58

Source: Reuters

Gulf Medical Projects Company

Gulf Medical Projects Co PSC is a United Arab Emirates-based public shareholding company that operates in the healthcare sector. The Company's main activities include general hospital, import, hospitals management, construction of medicine product factories, trading in medical equipment and its instruments, medicine and medical tools. The Company operates through its subsidiaries, including wholly owned Al Zahra Private Hospital Company Limited, whose activities include hospital management, general hospital, import, trading in medical and surgical equipment, as well as in medicine, and 68.38%-owned AL Zahra (Pvt.) Hospital Dubai LLC, which is a general hospital. The company's revenues and net income declined during the period 2015-2019.

Figure 11.2: Gulf Medical Projects, Revenues and Net Income (USD mn)



Source: Reuters

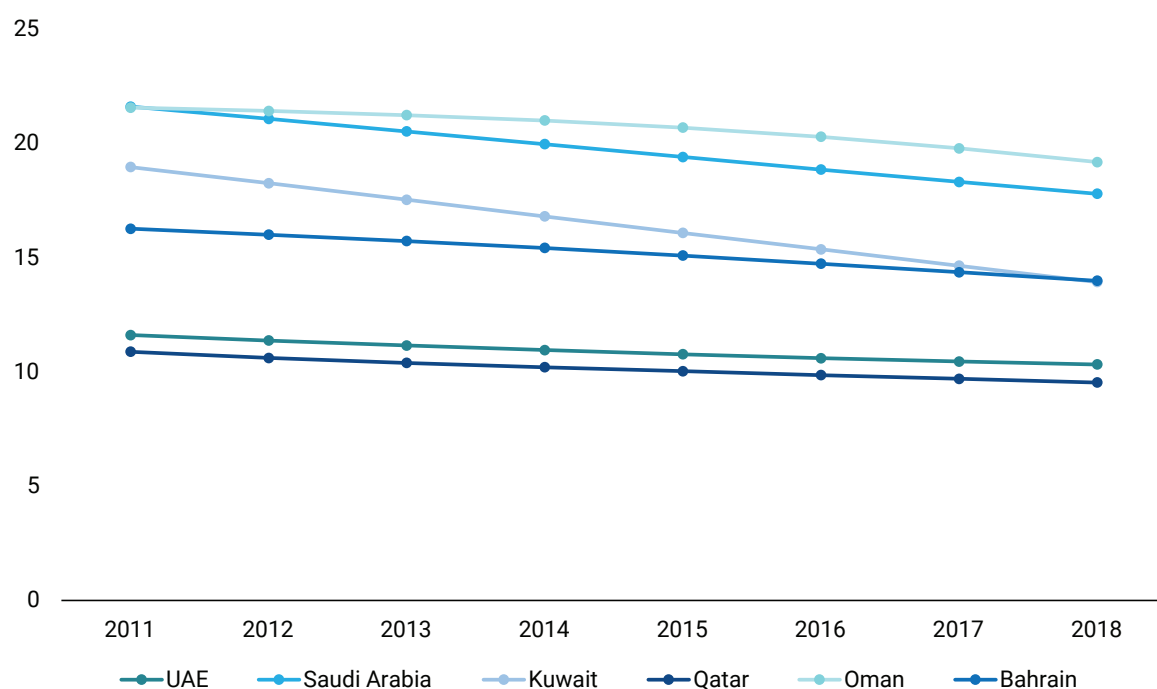
Table 11.2: Key Ratios, 2016-2020

	2016	2017	2018	2019	2020
Gross Margin	24.9%	16.0%	22.8%	24.4%	25.2%
Operating Margin	17.4%	329.7%	28.4%	15.0%	8.9%
Net Margin	16.5%	328.0%	26.9%	14.1%	8.5%
ROE	11.2%	110.8%	9.9%	6.3%	3.2%
Current Ratio	1.72	2.66	2.22	1.97	2.05
Leverage (Assets/Equity)	1.56	1.47	1.30	1.24	1.22

Source: Reuters

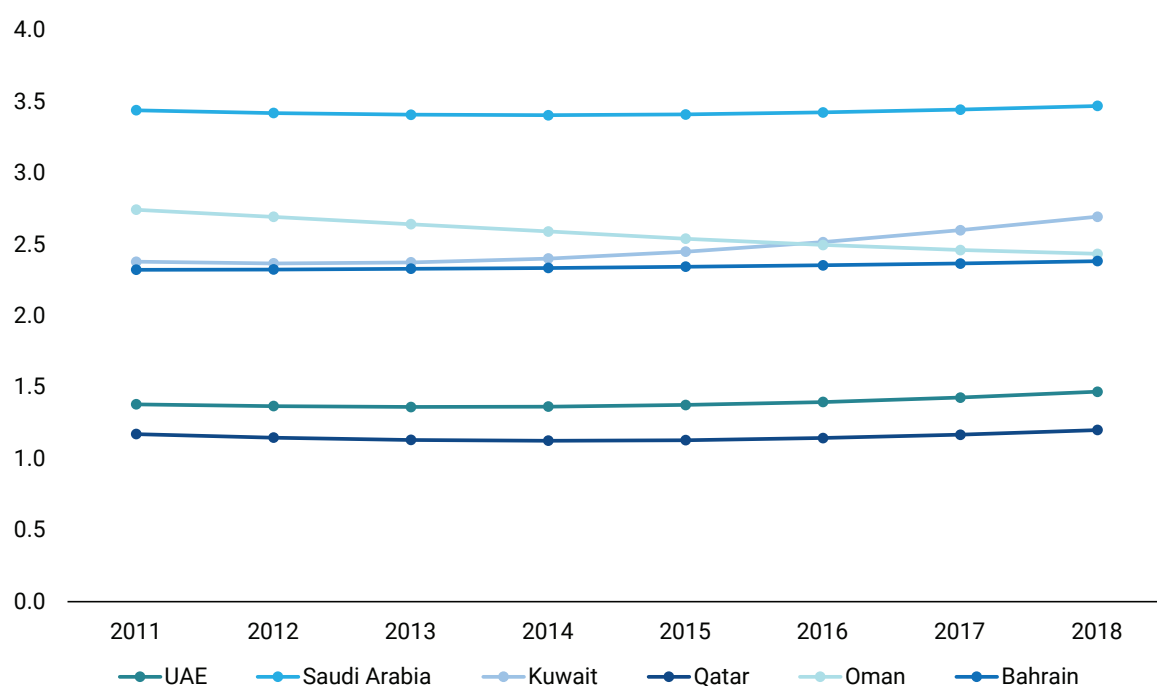
Key Healthcare Indicators

Figure 12.1: Crude Birth rate (per 1,000)



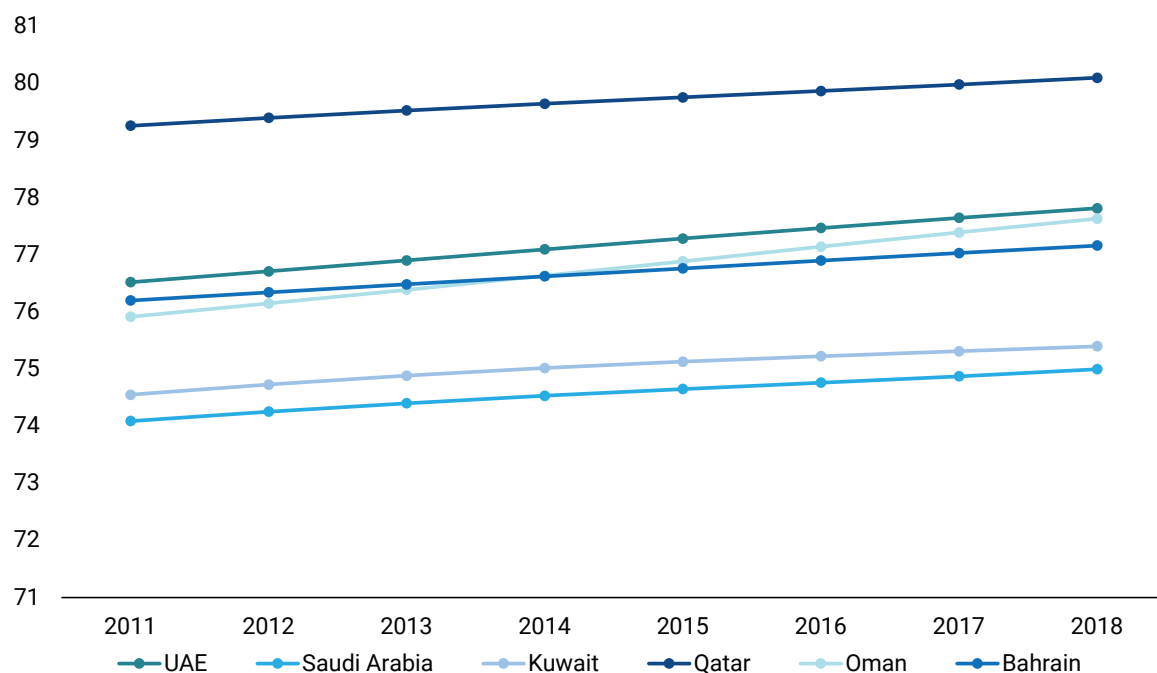
Source: World Bank

Figure 12.2: Crude Death Rate (per 1,000)



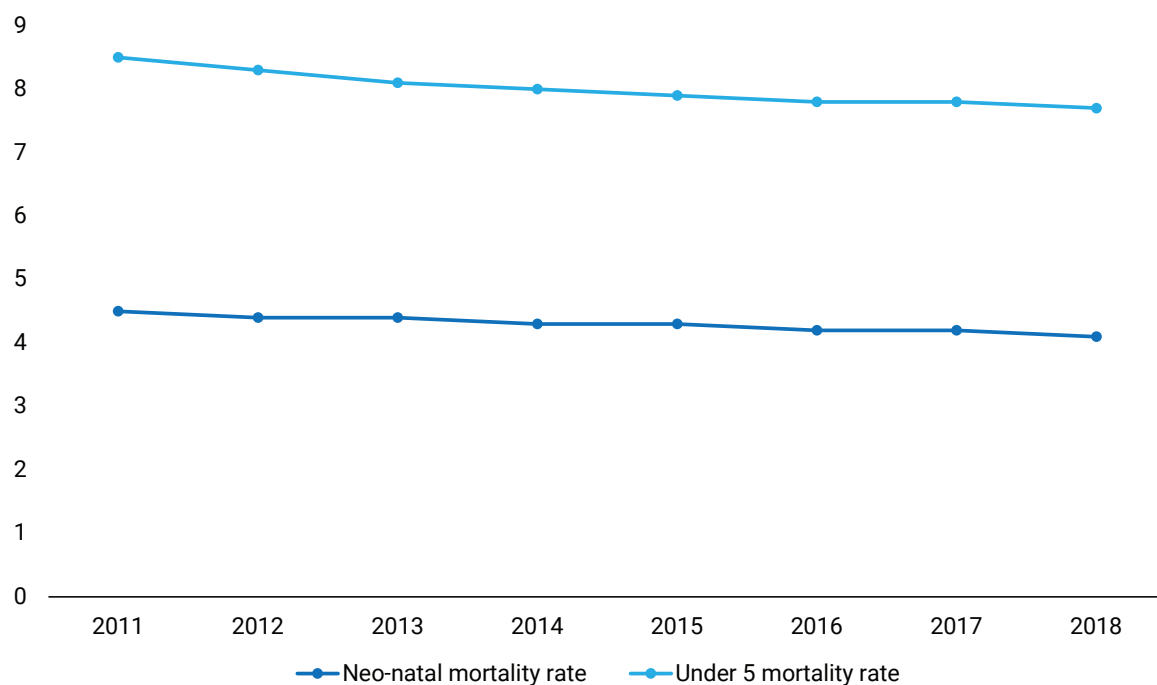
Source: World Bank

Figure 12.3: Life Expectancy at birth (in years)



Source: World Bank

Figure 12.4: Neo Natal and Under 5 Deaths (per 1000 live births) in United Arab Emirates



Source: World Bank

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