



SECTOR UPDATES

U.A.E. Healthcare Sector

January 2024

INTRODUCTION

The U.A.E. economy's resilience and recovery during and after the COVID-19 pandemic, and reforms adopted as a result of the pandemic, have solidified its place as a regional leader in diversification, sustainability, and technology. Moreover, the country has set itself upon an ambitious plan to become a global hub in health care, technology, banking, and energy efficiency and reform over the next five years. The country's hosting of the 28th session of the Conference of the Parties – more commonly known as COP 28, the premier climate change conference of the United Nations – in Dubai in November, 2023 added to the country's regional and global status as a leader in climate change action and global health. The U.A.E.'s rise in prominence was not limited to the field of sustainability. It also took marked steps towards its overall goal of building a world-class healthcare ecosystem in the country and establishing itself as a global leader in life sciences and health technology. Through its strategic relationships with world-renowned healthcare, research, and education institutions, public-private partnerships, and dynamic regulatory environment, the U.A.E. continues to drive local healthcare infrastructure development, integrate technology into all aspects of patient care, address the health impact of climate change, and create a policy and regulatory environment that attracts and fosters innovation. These efforts have solidified the U.A.E. as a leader in creating a dynamic and forward-looking, innovative healthcare ecosystem and a top destination for medical tourism.

Significant reforms in the U.A.E.'s healthcare sector continued in 2023 with the appointment in late January of His Excellency Mansoor Al Mansoori as the Chairman of the Department of Health – Abu Dhabi (DOH). Prior to this appointment, H.E. Al Mansoori served as Group Chief Operating Officer of G42, the U.A.E.'s home-grown artificial intelligence and technology company.¹ Later in the year, Her Excellency Dr. Noura Al Ghaithi, formerly the CEO of Ambulatory Healthcare Services, a SEHA institution, became the new Undersecretary of the DOH. H.E. Dr. Al Ghaithi, who for many years served as an Official Spokesperson for the U.A.E. Healthcare Sector, was at the forefront of the U.A.E.'s COVID-19 response and passionately promoted artificial intelligence and advanced technology to address public health needs.² Both appointments demonstrate Abu Dhabi and the U.A.E. leadership's recognition of the importance of fusing health and life sciences with technology and innovation. Abu Dhabi continued this effort with initiatives led mainly by PureHealth and M42, subsidiaries of its two key sovereign wealth funds ADQ and Mubadala, respectively. Under the direction of federal and emirate-level authorities, public-private partnerships in Abu Dhabi are working to position the U.A.E.'s capital as a global hub for healthcare and life sciences research, development, and manufacturing.

The healthcare landscape in Dubai, which has historically relied on a combination of public and private sector providers and a welcoming business landscape for international companies, is also undergoing significant reform. While still pursuing its strategy of attracting medical tourism and international investment, the Dubai Health Authority (DHA) is taking the lessons learned from the COVID-19 pandemic and the international response to climate-change induced health crises and natural disasters and is undertaking a substantial internal restructuring that may better serve its citizens and residents.

Leadership from the DHA visited many countries around the world throughout the year – including the United States – to gauge international best practices for emergency management and public health protection. As it undergoes these institutional changes, DHA leadership has noted three key priority areas: public health, health regulation, and health insurance.

The U.A.E. continues to leverage its prime location as a hub for tourism, logistics, and travel, and has seen a significant surge in global tourism since the pandemic. It continues to capitalize on this momentum to position itself as not just a regional but a global hub in priority sectors, including in healthcare. From its growth in medical tourism – for which Dubai ranks sixth globally and Abu Dhabi ranks ninth – pharmaceuticals and medical technology research, development, and manufacturing, and its humanitarian support response in times of crisis and uncertainty, the U.A.E. has grown as a globally influential power.³

In response to the conflict between Israel and Hamas, for example, the U.A.E. responded by sending aid to Palestinian civilians in Gaza, opening field hospitals, performing medical evacuations, offering medical treatment in the U.A.E. to over 1,000 Palestinian patients, and calling for a ceasefire and a diplomatic solution to the conflict. Similarly, the U.A.E. continues to play a critical role in mediating between Russia and Ukraine for hostage exchanges and diplomatic conversations. As the crisis in Gaza continues, the U.A.E. is continuing humanitarian relief efforts and playing a leadership role, alongside other Gulf and Middle Eastern states that have normalized relations with Israel, to identify and facilitate a resolution to the conflict.

The U.A.E. government also continued to expand its opportunities for international cooperation, trade, and investment through regional integration efforts and economic partnership agreements. The I2U2 Initiative, a collaborative partnership signed in 2023 by the governments of India, Israel, the U.A.E., and the United States, serves as one potential opportunity for the private sector to leverage the U.A.E.'s regional role to advance healthcare partnerships and business in new markets. In addition, the U.A.E. is working towards signing 26 Comprehensive Economic Partnership Agreements (CEPA) with countries around the world, through which the healthcare industry can also reach more patients, providers, and innovators.⁴

In addition to government efforts, new entities and institutions have emerged and evolved in recent years, adding to the U.A.E.'s value proposition as a hub for healthcare innovation. These institutions, including Emirates Health Services, Dubai Health, PureHealth, and M42, combined with existing government and semi-governmental ones, serve as the impetus for continued advancements in healthcare and life sciences that are positioning the U.A.E. as a global leader. These developments continue to offer significant opportunities for U.S. institutions to engage and partner with key players in the local healthcare ecosystem to collaborate on new technologies, innovation, and research. While Cleveland Clinic Abu Dhabi continues to serve as the premier example of U.S.-U.A.E. healthcare collaboration, new partnerships with U.S. institutions emerged in 2023, adding to the healthcare innovation ecosystem. For example, key institutions in the Boston health ecosystem, Mass General Brigham and Dana-Farber Cancer Institute, announced jointly a partnership with BEEAH Group to create the 'Jawaher Boston Medical District' in Sharjah. Many other new partnerships between U.A.E. entities and U.S. hospitals, pharmaceutical companies, medical technology firms, and health education

institutions in both the U.A.E. and the United States continue to develop, offering additional opportunities for collaboration.

Building on the Business Council’s previous reports on the U.A.E.’s healthcare sector, this updated edition aims to facilitate the involvement of U.S. companies in the next phase of the U.A.E.’s healthcare development by providing relevant information about the country’s healthcare sector. This report provides an overview of the latest developments and the potential for growth of the U.A.E. healthcare market, government reforms necessary to meet the demands of this evolving ecosystem both from a regulatory and service provision perspective, and the steps that the government is taking to meet these demands. Secondly, this report takes a closer look at the different actors and entities in the U.A.E. healthcare sector – from regulators to providers, insurers to manufacturers, researchers to educators, and others that are driving this rapid change. Finally, this report provides a snapshot of both challenges and opportunities for our member companies in the U.A.E. healthcare market and offers resources useful for businesses entering the market.

Throughout, this report highlights case studies of successful U.S.-U.A.E. partnerships are highlighted to demonstrate different ways that U.S. companies can and have become involved in the local ecosystem in mutually beneficial arrangements.

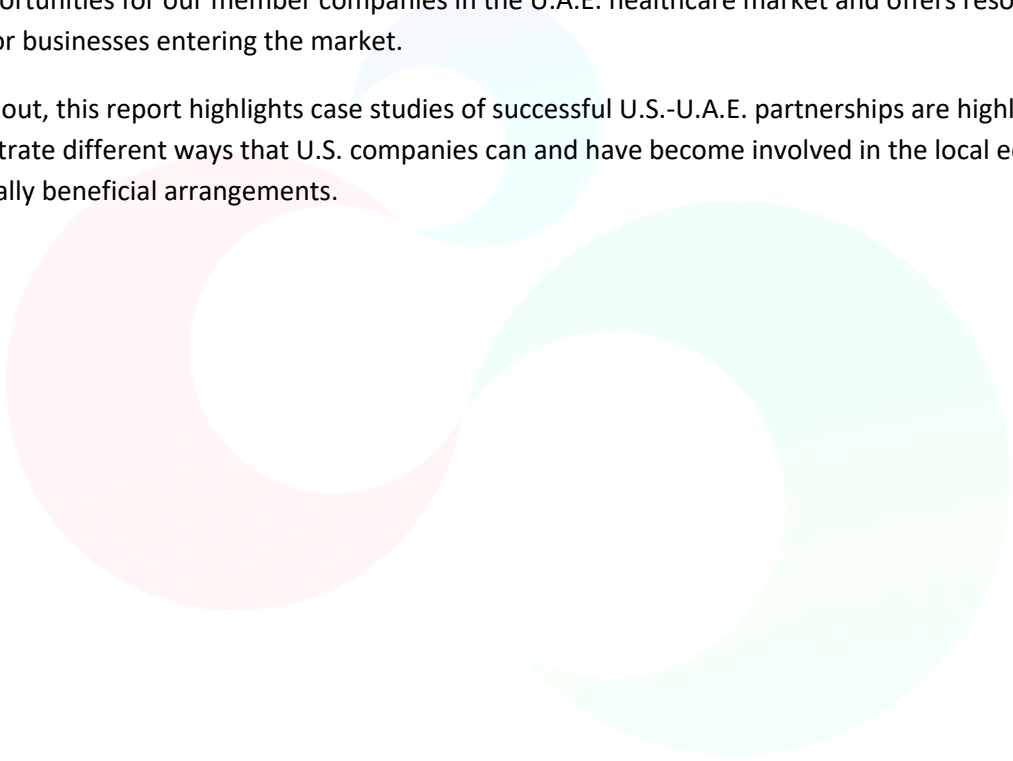


Table of Contents

- INTRODUCTION 3
- PART I: GENERAL TRENDS..... 8
 - A. Growth 8
 - B. Challenges 10
 - Strengthening Domestic Capabilities 10
 - Case Study: Bridging Sustainability and Health..... 11
 - C. Government Strategies 11
- PART II: SECTOR OVERVIEW 13
 - A. Regulation 13
 - Federal Level..... 15
 - Emirate Level..... 16
 - B. Provision..... 19
 - Public Sector 19
 - Government-Linked Entities..... 23
 - Private Sector 26
 - Medical Hubs..... 30
 - C. Insurance 30
 - Daman’s Market Importance 31
 - Heavy Competition..... 32
 - D. Pharmaceuticals 35
 - Promoting Manufacturing..... 35
 - Pharmaceutical Intellectual Property 35
 - Controlling Prices 36
 - Julphar and U.A.E. Pharmaceutical Manufacturers 36
 - International Pharmaceutical Companies..... 37
 - Pharmaceutical Hubs 37
 - E. Medical Equipment 38
 - Diagnostic Imaging Equipment..... 38
 - Cardiovascular Devices 39
 - Local Manufacturing and 3D Printing 40
 - F. Information Technology 41
 - Electronic Health Records and Health Information Exchanges..... 41

Telemedicine.....	45
Smart Technology and Apps	46
Medicine in the Metaverse.....	46
G. Education, Research, and Events	47
Education and Training.....	48
Research.....	51
Exhibitions and Conferences	54
H. Public Health	55
Response to COVID-19.....	55
Cancer Screening.....	56
Anti-Smoking	56
Combating Obesity, Diabetes, and Cardiovascular Disease.....	57
Environmental Health and Emergency Management	58
PART III: ENTERING THE MARKET	59
A. Opportunities	59
B. Challenges	60
C. Resources	61
REFERENCES	65

PART I: GENERAL TRENDS

The U.A.E. has continued to invest significant resources into the healthcare sector, further solidifying its position as a global hub for healthcare and life sciences. In previous years, creating and institutionalizing new hospitals, care centers, and medical education institutions to advance the U.A.E.’s domestic care capacity was the country’s primary focus. In 2023, this focus began to be coupled with federal and emirate-level, top-down strategies to develop local technology, innovation, artificial intelligence, and research and development in the healthcare sector. The U.A.E. government’s overall objective with these efforts is to build a healthcare ecosystem that offers the highest standard of medical care for its residents and to the broader region through world-class hospitals, international collaborations, and partnerships to develop cutting-edge research and innovation.

A. Growth

The U.A.E. healthcare market has grown rapidly over the past decade and continues to do so. The value of the healthcare market in the U.A.E. in 2022 totaled \$1.83 billion, and is predicted to increase by 2030 to \$3.59 billion, a compound annual growth rate of 8.93%.⁵ In 2022, the federal government spent AED 4.95 billion (\$1.35 billion) on health, about 8.6% of its total budget.⁶ There will soon be 166 hospitals in the country, and a total of 5,301 hospitals and clinics.⁷ The number of physicians working in the public and private sectors in the country increased to 27,268 by the end of 2021, compared to 12,894 in 2010, a rise of 111%.⁸



Population growth has been one driver of this expansion and will continue to be the case in the future. Current UN forecasts predict that the U.A.E. population will continue to grow to about 11.1 million in 2030, 13.2 million in 2050, and 14.8 million in 2100.⁹

Demographic shifts towards an aging population are also driving the growth of the U.A.E.’s domestic healthcare sector needs. The estimated share of the U.A.E.’s population above the age of 65, according to the World Bank, will increase from 1.1% at present to 4.4% by 2030. The aging population in the U.A.E. will also likely become more diverse with the increase in expatriates retiring in the country and will therefore demand healthcare, including geriatric care, in both the private and public sectors. Similarly, the growth of the long-term resident population will result in higher demand for maternity, neonatal, and pediatric care as expatriates will increasingly give birth and raise children in the U.A.E.

Diseases resulting from unhealthy lifestyle habits continue to be prevalent among the U.A.E.’s citizens and residents. Obesity and its comorbidities such as diabetes and cardiovascular diseases account for the majority of mortalities among the U.A.E. population. Cardiovascular disease remains the leading cause of fatalities in the U.A.E., accounting for over two-thirds of all deaths. Around 17% of the population between the ages of 20 and 79 years old suffer from type 2 diabetes, placing the U.A.E. at 10th worldwide in diabetes prevalence.¹⁰

Health problems stemming from a widespread use of tobacco, especially among youth, are also common. A study published in the Oman Medical Journal estimates the prevalence rates of smoking in the U.A.E. to range from 23.4%–24.7% in men and 0.8% in women – a rate low in comparison to many countries in the Middle East, but high compared to the rate of 12.5% among adults in the United

States.¹¹ With the ease of access to non-traditional smoking methods, such as midwakh, sheesha, and electronic vapes, it is expected that these rates will continue to increase. In addition, rising temperatures and worsening air quality have increased the prevalence of climate-related health problems such as asthma, which is exacerbated by smoking and vaping.

The most recent data available from the U.A.E.'s Ministry of Health and Prevention shows that in 2019, cancer accounted for 13.1% of all deaths in the U.A.E. The Ministry's research revealed that cancer affects women more than men in the U.A.E., with 56.2% of cases affecting female citizens compared to 43.8% of cases affecting male citizens. Breast cancer was the leading cause of cancer-related deaths, at an average of 11.6% deaths per year, followed by colon cancer and lung cancer.¹²

Mental health care is a growing field of medicine in the U.A.E. and one with much potential for development in the coming years. In 2022, according to a survey of prices for mental health services across 50 countries, the U.A.E. was found to be the second most expensive, with an average cost of \$163 for a one-hour therapy session.¹³ The country has a shortage of mental health professionals, with 0.77 psychologists per 100,000 people.¹⁴ However, in terms of virtual access to mental health counseling, the U.A.E. is leading in the field of digital mental health infrastructure and services. The market for digital health services in the Emirates, which includes virtual appointments, mHealth, and remote patient monitoring, is projected to reach over \$530 million by 2025 – up from about \$120 million in 2019.¹⁵ Additionally, government organizations at the federal and emirate level have rolled out initiatives for free-of-cost mental health services such as hotlines giving those seeking help quick access to mental health professionals.¹⁶ EHS, for example, operates Al Amal Psychiatric Hospital in Dubai, the largest mental health hospital in the U.A.E., with a combination of in-person and digital services allowing patients across the country to engage and benefit from mental health care services, while simultaneously protecting their privacy.¹⁷ In December 2023, the U.A.E. Government issued a policy on mental health that aims to define the relationship between mental health patients, care providers, and the health authorities, as well as to preserve the rights and privacy of the patient.¹⁸

A significant driver of U.A.E. healthcare growth is medical tourism. In 2021, Abu Dhabi and Dubai became two of the top 10 medical tourism destinations in the world, according to the Medical Tourism Index.¹⁹ From specialty surgeries to cosmetic procedures, the costs associated with travel to and healthcare in the U.A.E. make it more accessible to people of the MENA, Southeast Asia, and Africa regions than similar care in Europe and North America. Both Abu Dhabi and Dubai have their own individual approaches to success in medical tourism, outlined by the Department of Health – Abu Dhabi (DOH) as well as Dubai's Medical Tourism Strategy for 2017-2021, put forth by the Dubai Health Authority. Following the lull in travel during the COVID-19 pandemic, Dubai's medical tourism industry has boomed once again, receiving 674,000 medical tourists that spent \$270 million in 2022, an increase of about \$70 million from revenues of 2021.²⁰

Improved quality is also a driver of cost, and various metrics have shown that the quality of U.A.E. healthcare has improved. In 2021, the Legatum Institute's Legatum Prosperity Index report ranked the U.A.E. 33rd globally, and second (after Israel) in the Middle East and North Africa, in terms of healthcare quality.²¹ The same report also ranked the U.A.E. first in three important global competitiveness indices in the health care industry: for its national early detection programs, the scope of its medical coverage, and the range of antenatal care.²²

B. Challenges

The tremendous growth of the U.A.E.'s healthcare market has driven policies and initiatives aimed at mitigating the biggest challenge still facing the country: recruiting, training, and retaining healthcare professionals.

Strengthening Domestic Capabilities

During the COVID-19 pandemic, the U.A.E. was confronted with the reality of caring for all its patients with an understaffed healthcare sector. It was in particular need of nurses. According to 2021 data, the U.A.E. had 6.05 nurses for every 1,000 people, a figure significantly lower than that of most Western countries.²³ Several factors complicated the adequate staffing of qualified medical personnel in the U.A.E., and government action in recent years has aimed at mitigating these challenges.

In October 2021 the U.A.E announced sweeping reforms to its visa process by granting all frontline health workers and their families a 10-year golden visa.²⁴ This initiative, under the direction of U.A.E. President Sheikh Mohammed bin Zayed, served to provide stability for healthcare workers and their families in the U.A.E., who were also supported throughout the pandemic with schooling cost assistance and free flights home to visit their families. Additionally, Emirates Health Services (EHS) – the federal authority responsible for the provision of care that recently spun off from the federal health regulation authority, the Ministry of Health and Prevention (MOHAP) – put forth initiatives to attract Emirati professionals and students to healthcare professions, with a specific focus on nursing.

In April 2021, MoHAP launched the National Strategy for Nursing and Midwifery – Roadmap for 2025, (later adjusted to 2026). This strategy serves to encourage U.A.E. citizens and residents to become nurses and midwives, to promote public training programs for them, and to raise the quality of nursing care provided domestically.²⁵ It also refers to the United Nation's Sustainable Development Goals to increase sustainability of the medical field and equitable treatment of nursing professionals.

In its efforts to enhance the capabilities of its domestic healthcare sector, the U.A.E. has developed and invested in general and specialty care facilities.

- ❖ In Abu Dhabi, institutions such as Cleveland Clinic Abu Dhabi and Sheikh Shakhbout Medical City (SSMC) illustrate progress made in diversifying and strengthening the types of care provided in the country by bringing in international doctors and providers and developing local centers of excellence.
- ❖ Dubai is home to two of the most important children's and women's hospitals, Al Jalila Children's Specialty Hospital and Medcare Women & Children Hospital, according to Newsweek.²⁶ Additionally, Dubai Health Care City (DHCC), the emirate's healthcare free zone, has grown to include nearly 200 hospitals and clinical facilities and is continuously working to attract investment from local and international healthcare businesses, with a specific focus on those providing specialty services.²⁷
- ❖ In mainly Sharjah and the Northern Emirates (and to a lesser extent in Dubai) Emirates Health Services (EHS), took on much of the responsibility for building the capacity of the local healthcare sector. EHS signed many partnership and collaboration agreements with domestic and international hospitals, pharmaceutical companies, and medical technology companies, and has demonstrated a keen interest in further engaging U.S. private sector companies and work to enhance the efficiency and scope of the U.A.E.'s domestic healthcare sector. These partnership opportunities include visiting consultancy programs, shared education and training courses, research and academic cooperation, development of digital solutions, and public health advocacy initiatives. In addition to EHS, PureHealth's acquisition of Abu Dhabi Health Services

Company (SEHA), made it the largest healthcare provider network in the U.A.E., and many of its 14 SEHA hospitals and 46 clinics are active in the northern emirates.

Case Study: Bridging Sustainability and Health

From November 30th to December 12, 2023, the U.A.E. hosted the 28th session of the Conference of the Parties – more commonly known as COP 28, UNFCCC’s annual climate conference. The U.A.E. leveraged its Presidency of COP 28 to include a health-focused day at COP to highlight the impact of the climate crisis on public health. This initiative included a climate-health ministerial, and in a landmark announcement, the parties announced the ‘COP28 UAE Declaration on Climate and Health,’ a global commitment to proactively address climate-related health impacts that was endorsed by 123 countries.²⁸ Also at COP 28, a record number of financial commitments to help address the climate change health crisis were made, including an initial \$7 million towards the new Climate and Health Initiative by the Asian Development Bank, \$57.95 million towards climate and health by the Bill and Melinda Gates Foundation, £100 million by Wellcome Trust, \$100 million by the Rockefeller Foundation, £18 million by the U.K. government, and \$500 million from the Global Fund to Fight AIDS, Tuberculosis, and Malaria.²⁹

This COP also brought a multitude of voices to the forefront of the climate change-health agenda. Indigenous peoples, youth, and vulnerable communities in the Global South were represented in ministerial negotiations, thought-leadership discussions, and advocacy protests. Climate change is already contributing to humanitarian emergencies and health crises around the world such as heatwaves, wildfires, floods, tropical storms, and hurricanes, but the brunt of these disasters is felt by countries and populations that do not have the financial support and infrastructure to mitigate it. The U.A.E., in striving to host the “most inclusive COP,” successfully amplified these voices to join governments and industry around the world in the fight for health resiliency in the face of climate change.³⁰

C. Government Strategies

The U.A.E. federal government – which broadly oversees the country’s healthcare sector and funds non-private healthcare in the northern emirates – has developed strategic plans to both respond to the growing demand for healthcare and meet the associated challenges. The ‘We the U.A.E. 2031’ Vision, launched in November 2022, is the highest-level federal strategic which, among other measures, aims to rank the U.A.E. as one of the top 10 countries globally in the quality of healthcare.

This builds on the previous strategic plan, the U.A.E.’s Vision 2021, which made achieving “world-class healthcare” one of its priority goals. In executing this strategy, the U.A.E. achieved status as the leading country in Joint Commission International (JCI) accredited hospitals, after the U.S., with more than 200 accredited health facilities.³¹ The 2021 Vision, which coincided with the U.A.E.’s 50th National Day, also sought to reduce the prevalence of diabetes, obesity, and smoking among the population, decrease the number of deaths from cardiovascular diseases and cancer, and increase the supply of nurses and physicians to treat its population.

Also in 2021, the federal government launched the ‘Projects of the 50’, a series of economic projects that aim to accelerate the development of the U.A.E. into a regional hub and ideal destination across various sectors for talented individuals and investors. One of these projects is the Healthcare

Development Programme, which strives to recruit and train 10,000 Emiratis into the U.A.E.'s healthcare sector by 2025. This program falls under the scope of NAFIS, a program focused on attracting Emirati youth to the private sector and will roll out educational programs to train students in collaborations with private sector educators and healthcare facilities.³²

In the spirit of the U.A.E.'s Vision 2021, Abu Dhabi had developed its own emirate-level strategic healthcare plan. In December 2014, Sheikh Mohammed bin Zayed Al Nahyan, current President of the U.A.E. and then-Crown Prince of Abu Dhabi, approved the strategy to improve healthcare in the emirate. This strategy included 85 initiatives that aimed to improve the quality of healthcare services in Abu Dhabi by enhancing safety standards and patient experience, attracting and retaining medical professionals, preparing for emergencies, embracing public health methodology, stemming unsustainable health care costs, and integrating IT systems and electronic data into practices.³³ This strategy evolved to include further integration of the private sector in the Abu Dhabi healthcare environment, with entities like Mubadala Investment Company and ADQ playing an important role.

Dubai likewise developed strategic plans for its healthcare sector in keeping with Vision 2021. In January 2017, Sheikh Mohammed bin Rashid Al Maktoum, U.A.E. Vice President and Prime Minister and Ruler of Dubai, launched Dubai Health Strategy 2021. This strategy aimed to provide high-quality medical care to patients with chronic diseases, as well as to promote a culture of early detection and regular check-ups. It also sought to create a high-quality comprehensive and integrated health service system by improving efficiency in healthcare, utilizing digital infrastructure, and creating a collaborative partnership between the public and private sectors.

Other emirates also embarked on long-term plans to meet the anticipated growth in their healthcare sectors. Sharjah, for instance, has made healthcare a focus of its development strategies, beginning with the construction of the Sharjah Healthcare City freezone. U.S. partnerships with public and private institutions will increasingly provide a framework for Sharjah's overall healthcare ecosystem development, especially following the announcement of the Jawaher Boston Medical District, a collaboration between BEEAH Group and Boston-based Mass General Brigham Hospital Group and Dana-Farber Cancer Institute.³⁴ While the Sharjah Health Authority is the main entity charged with the regulation and provision of healthcare services in the emirate, Emirates Health Services (EHS) shares some of this responsibility through its affiliation with Al Qassimi Women and Children's Hospital and others. The federal government similarly manages the healthcare sectors of the remaining northern emirates including Ajman, Ras Al Khaimah, Umm Al Quwain, and Fujairah.

As the U.A.E. redoubles its commitment to developing its healthcare sector, both at the federal and emirate level, the private sector will have an important role to play. Private-sector healthcare spending is forecasted to increase at a cumulative annual growth rate of 9.5% compared to a government contribution growth rate of 4.4%. This growth offers tremendous opportunities for U.S. companies and healthcare institutions to partner with U.A.E. government and private entities and build towards the realization of the U.A.E.'s healthcare objectives.

PART II: SECTOR OVERVIEW

Under the oversight of both federal and emirate-level regulatory authorities, the U.A.E. is witnessing a boom in healthcare provision from both public sector and private sector institutions. Concurrently, the U.A.E. is rapidly expanding its pharmaceutical, medical equipment, healthcare data and IT, and medical education sectors.

A. Regulation

The U.A.E. has a number of healthcare regulators at both the federal and emirate levels, each with its own geographic or functional purview. U.A.E. healthcare regulatory structure is being shaped by two broad trends: (1) an expanding autonomy of emirate-level health authorities (2) changing ecosystem of cross-sector regulatory authorities.

The Ministry of Health and Prevention, the federal health regulator, is responsible for issuing laws and policies that are carried by the emirate-level health authorities. However, as the Department of Health – Abu Dhabi (DOH Abu Dhabi) and the Dubai Health Authority (DHA) develop their own priorities for growth and development in the health sector, industry has recently reported cases of laws being applied differently in different emirates compared to federally. This has been especially prevalent in the case of data regulations and has impacted the flow of health data between patients, providers, insurers, and researchers. The DOH Abu Dhabi, in achieving its focus on strengthening local research, development, and manufacturing of medical products, has also facilitated the rise of its own local institutions in managing service provision and data management. This trend is evidenced in the consolidation of the hospitals of the Abu Dhabi Health Services Company (SEHA) under PureHealth, a subsidiary of the sovereign wealth fund ADQ, as well as in the enablement of technology company G42 with health and patient data sovereignty through efforts to localize data in-country. Compared to Abu Dhabi, this trend of government-led encouragement of local and semi-governmental market actors has not prevailed in Dubai, where both international and local private sector health companies tend to maintain a substantial hold in the healthcare market.

As the U.A.E.'s healthcare sector becomes more and more intertwined with other sectors, especially technology, tourism, and logistics, other regulatory authorities will come into play in the health and life sciences ecosystem. We have already seen this trend in the case of data, with health data laws being created by both the relevant health authorities and the U.A.E.'s Ministry for Artificial Intelligence, Digital Economy, and Remote Work Applications. In addition to data, manufacturing across sectors and including healthcare is stimulated by the Make It in the Emirates Initiative, a project of the Ministry of Industry and Advanced Technology, aimed at raising the GDP contribution of industrial manufacturing to over \$80 billion by 2030.³⁵ A new U.A.E. Drug Corporation, announced in October 2023 upon its establishment by the U.A.E. Cabinet, will also create a new level of regulation and licensing procedures for medical and pharmaceutical products, health care items, and nutritional supplements.³⁶

Several important federal legislative developments in recent years are as follows:

- ❖ Federal Decree Law No. 11 of 2023, Amending some provisions of the Federal Law No. 8 of 2019 on Medical Products, Profession of Pharmacy, and Pharmaceutical Facilities³⁷
 - This law, passed in April 2023, notably amended certain aspects of the U.A.E.'s regulations regarding marketing and distribution of medical products including pharmaceuticals and medical devices. One of the most critical changes this law made was to require medical product developers, in marketing their products in the U.A.E., to identify two, rather than only one, local distributor. Industry leaders noted that this policy, while important for

protecting the availability of critical medical products in the event of supply chain disruptions, can create inefficiencies for companies that produce and market value-driven, rather than volume-driven products. The U.S.-U.A.E. Business Council is working with industry and U.A.E. government health authority leaders to facilitate discussions that reconcile industry recommendations for global best practices and U.A.E. leadership's priorities.

- ❖ Ministerial Resolution No. 89 of 2023, Regarding Medical Products and Health Facilities that are excluded from Registration in the Drug Tracking and Monitoring Platform³⁸
 - This ministerial resolution, passed in March 2023 by the MoHAP, refers to the ministerial resolution passed in 2021 requiring medical products distributed in the country to be registered using the Electronic Drug Tracking and Monitoring Platform, Tatmeen. This updated resolution excludes certain products from the requirement to register them on the Tatmeen platform, including intravenous nutrition, radioactive drugs, diagnostic imaging medications, blood and blood products/derivatives, medical gasses, medical products of limited or rare demand, compound medicinal products prepared within the country in licensed pharmacies, and other approved products.
- ❖ National Policy to Promote Healthy Lifestyles in the U.A.E.³⁹
 - This policy, issued in 2023, serves as a framework for the U.A.E.'s emphasis on promoting and supporting healthy lifestyles through pillars that include support from the leadership and government, sustainability, innovation, cooperation and shared participation, equality and transparency, and empowerment of communities.
- ❖ Chairman's Resolution No. 146 of 2022, Regarding the regulations for international patient care⁴⁰
 - This resolution, issued in 2022 by the Chairman of the Department of Health – Abu Dhabi, outlines the regulations for determining when patients should acquire medical referrals to receive treatment outside the country and the cost, travel, and family accommodation expenses provided.
- ❖ Federal Decree Law No. 45 of 2021, on the Protection of Personal Data
 - This law, which came into effect in January 2022, deals with the protection of an individual's personal data, and the flow of data across country borders. This law was released after consultation with industry, spearheaded by the Business Council, and is the precursor to a health data law and business data law, likely to be released soon.
- ❖ Federal Law No. 13 of 2020, On Public Health⁴¹
 - This law, passed in November 2020, served to identify and define national strategies and procedures for the advancement of public health, noting an absence of the subject in previous laws issued. It outlined the coordination across levels of government in addressing public health concerns and the Ministry's work to build community advocacy and understanding of public health topics. Notably, it introduced a National Public Health Committee, to be led by the Ministry. It brought a variety of concerns and topics under the umbrella of "public health," including family health, individual's health (at all ages and physical abilities), psychological health, healthy lifestyles, food safety, physical activity, controlling tobacco and its derivatives, occupational health, communicable diseases, non-communicable disease, environment health, hazardous product management, burial and cemetery sites, and medicinal products.

- ❖ Federal Law No. 2 of 2019, on the Use of Information and Communication Technology (ICT) in Health Fields⁴²
 - This law, announced in February 2019 by the President of the U.A.E., Sheikh Khalifa bin Zayed Al Nahyan, aims to promote and ensure the optimal use of ICT in health fields through adopting standard practices and enabling the Ministry to collect, analyze, and store health data and ensure its security. This law created a Central System to keep, exchange, and collect health information and data and, notably, restricted the storage and transfer of health information and data outside the state, unless in cases defined by the Health Authority in coordination with the Ministry. This provision in the law has proven to create challenges to U.S. companies, particularly those in the insurance sector as well as providers who serve patients both in the U.A.E. and the United States, and the Business Council has worked with industry and government to establish conversations that may synthesize mutually-beneficial solutions to these challenges.

Federal Level

The most important federal regulatory authority in the U.A.E. healthcare sector is the Ministry of Health and Prevention.

Ministry of Health and Prevention (MOHAP)

The Ministry of Health and Prevention (MOHAP), formerly known as the Ministry of Health, oversees the implementation of government policy in relation to the provision of health care for all U.A.E. citizens and residents.⁴³ Importantly, it also licenses and controls the prices of drugs and medical devices nationwide.⁴⁴ MOHAP is working to achieve the objectives of the U.A.E.'s 'National Strategy for Wellbeing 2031', which aims to make the country a world leader in quality of life for its citizens and residents. The current Minister of Health and Prevention is H.E. Abdul Rahman bin Mohammed bin Nasser Al Owais and the Undersecretary is Dr. Mohammad Salim Al Olama.⁴⁵ For more information, please visit www.mohap.gov.ae



MOHAP is working to achieve the objectives of the U.A.E.'s 'National Strategy for Wellbeing 2031', which aims to make the country a world leader in quality of life for its citizens and residents.

MOHAP Partnerships with U.S. Institutions

- **SAS** collaborated with MOHAP for the U.A.E.'s first Center of Excellence for Artificial Intelligence (AI), which launched in October 2023. This Center will aim to promote the digitalization of health data, employ smart technologies to develop health capacities, and establish a comprehensive digital services ecosystem for patients.
- **Viatriis** signed a Memorandum of Understanding with MOHAP in September 2022 to support the ministry's efforts, initiatives, campaigns, research, and workshops designed to achieve the objectives of the U.A.E.'s 'National Strategy for Wellbeing 2031'.
- **Janssen Pharmaceutical Companies of Johnson & Johnson**, signed an appendix in February 2022 to their 2018 Memorandum of Understanding with MOHAP and Axios, a healthcare consulting firm, aimed at providing affordable medicines to uninsured and low-income expatriates suffering from pulmonary hypertension, multiple myeloma, ulcerative colitis and/or psoriatic arthritis.
- **Amazon Web Services (AWS)** signed a Memorandum of Understanding in January 2022 with MOHAP for partnership in creating a cloud-based electronic medical records system.



46

Emirates Drug Establishment

The Emirates Drug Establishment was created in December 2023 by the U.A.E. Cabinet and is currently undergoing its 100-day formation plan, which was approved in January 2024.⁴⁷ This new entity will be led by Dr. Fatema Mohammed Al Kaabi, who, prior to this appointment, served as Director of the Abu Dhabi Bone Marrow Transplant (ADBMT) Program at the Abu Dhabi Stem Cells Center.⁴⁸ Once formed, the Emirates Drug Establishment will play an important role in developing national capabilities in the medical and pharmaceutical sectors and enhancing drug security in the U.A.E.

Emirate Level

While healthcare provision in some emirates is regulated entirely by MOHAP, certain emirates or free zones also have their own regulatory authorities, most notably The Department of Health – Abu Dhabi (DOH) and Dubai Health Authority (DHA).

Department of Health – Abu Dhabi (DOH)


The Department of Health – Abu Dhabi (DOH) regulates the healthcare sector in Abu Dhabi. It defines the strategy of the health system, and it monitors and analyzes both the health status of the population and the performance of the system. Importantly, the International Patient Care (IPC) Office of the DOH refers Emiratis to leading U.S. hospitals for treatment. The Chairman of the DOH is His Excellency Mansoor Al Mansoori and its Undersecretary is Her Excellency Dr. Noura Al Ghaithi.⁴⁹ For more information, please visit www.doh.gov.ae/en



DOH Partnerships with U.S. Institutions

- **AbbVie Biopharmaceuticals** signed a Declaration of Collaboration with DOH and M42 in June 2023 to elevate collaborative efforts in personalized medicine and genomics in Abu Dhabi.
- **Mass General Brigham** signed an agreement with DOH in June 2023 for collaboration on clinical and translational research, capacity building, technology transfer, and commercialization.
- **Eli Lilly & Co.** signed a Declaration of Collaboration with DOH in June 2023 to support clinical research and healthcare technology.
- **Johnson & Johnson** signed a Declaration of Collaboration with DOH in June 2022 to bring innovative treatments and breakthrough solutions to the U.A.E. in support of Abu Dhabi's vision in developing a regional hub for clinical research and data generation.
- **Merck (MSD)** signed a Declaration of Collaboration with DOH in June 2022 for collaboration on public health research, healthcare professional education and training programs, and development of technological and digital solutions.

abbvie

 Mass General Brigham

Lilly

Johnson & Johnson

 MERCK

Dubai Health Authority (DHA)

Dubai Health Authority (DHA), which was created by Law No. 13 of 2007, is the main health authority in Dubai. DHA regulates all of Dubai's healthcare sector services through licensing healthcare facilities and professionals and inspecting health facilities. DHA also regulates the cost of healthcare in the emirate and runs special programs such as one meant to encourage young Emiratis to enter medical professions.



DHA is undergoing a major reorganization, especially in the area of public health and disaster and emergency management. The DHA has collaborated with U.S. institutions such as U.S. Centers for Disease Control (CDC), Health and Human Services (HHS), and the Federal Emergency Management Agency (FEMA), to learn best practices in public health protection.

His Excellency Awadh Seghayer Al Ketbi is its Director General. For more information, please visit www.dha.gov.ae/en

Sharjah Health Authority

Sharjah Health Authority (SHA), which was established by Sharjah Emiri Decree No. 12 of 2010 (amended by Emiri Decree No. 33 of 2016), regulates Sharjah's healthcare system. According to SHA, its prime mission at present is to develop and manage Sharjah Healthcare City. It also manages the Sharjah Health Insurance department.⁵⁰ Dr. Abdulaziz Saeed Al Muhairi is Chairman of the Sharjah Health Authority. For more information, please visit www.sha.gov.ae/en

B. Provision

Public sector institutions and government-linked entities play a relatively outsize role in U.A.E. healthcare provision, with the exception of the emirate of Dubai. That said, the private sector is assuming an increasingly prominent role, aligning with a deliberate government strategy to encourage public-private partnerships and private sector investment.

Public Sector

The three public sector institutions which play major roles in U.A.E. healthcare provision are: Abu Dhabi Health Services Company (SEHA), Dubai Health, and Emirates Health Services (EHS), with the latter being particularly active in the northern emirates.

Abu Dhabi Health Services Company (SEHA) – Part of PureHealth

The Abu Dhabi Health Services Company (SEHA), which was established by Abu Dhabi Emiri Decree No. 10 of 2007, has traditionally owned and operated all public hospitals and clinics across Abu Dhabi. In 2022, SEHA became an asset of PureHealth (owned by ADQ) which became the largest consolidated healthcare network in the U.A.E., consisting of 25 hospitals, 100 clinics, and 160 laboratories.⁵¹

The logo for PureHealth, featuring the word "PUREHEALTH" in a blue, sans-serif font with a small star icon to the right.The logo for SEHA, featuring the acronym "SEHA" in blue, a stylized human figure icon, and the Arabic word "صحة" (Health) in blue. Below it, the full name "شركة أبوظبي للخدمات الصحية" and "Abu Dhabi Health Services Co. P.J.S.C." are written in smaller text.

SEHA's flagship business entities include Sheikh Khalifa Medical City, Sheikh Shakhbout Medical City, Al Rahba Hospital, Corniche Hospital (the U.A.E.'s largest maternity hospital), Al Ain Hospital, Tawam Hospital, and Al Dhafra Hospitals. The Al Dhafra Hospitals business entity notably consists of six hospitals and four primary healthcare centers that serve the more than 200,000 people living in the 60,000-square-kilometer area of Abu Dhabi known as the Western (Al Gharbia) region.

Since opening Sheikh Shakhbout Medical City, SEHA has undertaken several highly publicized expansions of the hospital, including the addition of a dialysis center, a psychiatry center, and a pediatric dialysis unit.⁵² In addition, over the last several years, SEHA has embarked on the expansion of its health facilities in the Western Region, as well as adding new facilities, such as Al Towayya Children's Specialty Centre in Al Ain.⁵³

The Group Chief Executive Officer of SEHA is Saeed Jaber Al Kuwaiti and its Group Chief Medical Officer is Dr. Anwar Sallam. For more information, please visit www.seha.ae.

SEHA Partnerships with U.S. Institutions

- **Children's National Hospital** sponsored 11 conferences hosted by SEHA in the U.A.E. in 2023. At these conferences, Children's National Hospital showcased 14 speakers from various pediatric specialties.
- **Johns Hopkins Medicine International** signed an agreement with SEHA in 2006 to manage the 479-bed Tawam Hospital in Al Ain City, which is a national referral center for oncology services. Two years later, it signed another agreement with SEHA to manage the 173-bed Al Rahba Hospital outside Abu Dhabi City.
- **Cleveland Clinic** signed an agreement with SEHA in 2007 to manage Sheikh Khalifa Medical City, which is located in Abu Dhabi City and describes itself as the "flagship institution" for the public health system in Abu Dhabi. It consists of a 586-bed tertiary hospital, 14 outpatient specialty clinics, and the Abu Dhabi Blood Bank.
- **The New England Center for Children** signed an agreement with SEHA in 2007 to launch a comprehensive education program for children with Autism Spectrum Disorder. The New England Center subsequently opened a facility in Mohammed bin Zayed City.
- **Children's Hospital of Philadelphia (CHOP)** signed a MoU with SEHA in October 2022 to facilitate enhanced medical research and education in the U.A.E. CHOP has a neuro-science presence at Sheikh Khalifa Medical Center (SKMC). CHOP's Chief of Neurology and two Epileptologists travel to SKMC to evaluate new and previously seen patients at CHOP with Epilepsy, MS, and neuromuscular disorders. The Chief of Neurosurgery and a neurosurgeon who specializes in epilepsy surgery are onsite to evaluate new patients (refractory epilepsy candidates for surgery) and consult on other neurosurgical conditions. Working alongside SEHA's physicians in this clinic allows collaboration on patients' treatment plans and transfer of knowledge of leading research and innovation. This agreement was signed in October 2021.



Dubai Health

Dubai Health is an integrated academic health system comprised of 6 hospitals, 26 ambulatory health centers, and 20 medical fitness centers. Its facilities include those previously operated by Dubai Health Authority (DHA). Its flagship facilities include Dubai Hospital, Rashid Hospital, Latifa Women and Children Hospital, and Hatta Hospital, Jebel Ali Hospital, and Al Jalila Children's hospital. Its CEO is Dr. Amer Ahmad Sharif, who also serves as President of Mohammed bin Rashid University (MBZU) For more information, please visit <https://dubaihealth.ae/>.

Al Jalila Children's Partnerships with U.S. Institutions

In 2023, Children's National concluded the QUILT program at Al Jalila Children's Hospital. This initiative aimed to augment Al Jalila's capacity by refining quality pathways, processes, and clinical outcomes in subspecialty care, particularly in expanding scientific service line infrastructure.



Emirates Health Services (EHS)

The Ministry of Health and Prevention (MOHAP) has recently spun-off healthcare provider services as a new entity, Emirates Health Services (EHS). This entity consists of all hospitals, primary care facilities, and public health services previously provided under the MOHAP umbrella, including 17 hospitals and over 100 clinics throughout the U.A.E., especially in the northern emirates.⁵⁴



Based in Dubai, the Emirates Health Services (EHS) has the aim of enhancing the efficiency of the federal health sector in the country, by providing healthcare and treatment services, taking preventative measures in combating epidemics and diseases, and achieving sustainable development of health care. It also aims to implement the strategic health-related policies, standards, and preventative care measures set by MOHAP. EHS has integrated the provision of healthcare treatment services, customer and patient experience services, federal medical training and education programs, digital health and information technology initiatives, and public health initiatives under its umbrella. EHS held its first meeting in March 2021, under the chairmanship of Dr. Mohamed Salim Al Olama and in the presence of EHS Director General H.E. Dr. Yousif Mohammed Al-Serkal. In April 2020, H.E. Dr. Al-Serkal was appointed to this role after holding the position of Assistant Undersecretary for the Hospitals Sector at the Ministry of Health and Prevention since 2013.⁵⁵

Key public health-related initiatives of EHS include strategies to incorporate youth voices into health leadership discussions, attract citizens and residents to the nursing profession, a mental health support program for healthcare workers, a blood donation campaign, and a digital health and telemedicine promotional campaign.⁵⁶ EHS has become the forefront organization on Nursing and Midwifery in the

U.A.E. and hosted the 3rd Edition of the U.A.E. International Conference on Nursing and Midwifery in November 2022. It has also revolutionized its own health systems and operations by using blockchain, artificial intelligence, and other advanced information technologies, paving the way for further digitization of the U.A.E.’s broader healthcare sector.⁵⁷

More information can be found at <https://www.ehs.gov.ae/en/home>

EHS Partnerships with U.S. Institutions

- **Oracle Cerner** provides an electronic health record system to EHS called Wareed, which is used by clinicians in the U.A.E. for Autism screening in young children and to reduce patient waiting times and no-shows.

- **Johnson and Johnson** and EHS signed an MoU in June 2022 to develop health services and collaborate on advanced technology solutions for the U.A.E. healthcare sector. This partnership is set to include a joint launch of the ‘Silent Noise Campaign’ to raise awareness about and destigmatize mental health conditions.

- **Children’s Hospital of Philadelphia (CHOP)** signed an MoU with EHS at Arab Health 2022 to collaborate on enhanced medical services at Al Qassimi Women and Children’s Hospital and establish a visiting physician/surgeon program for 7 physicians and 5 surgeons to cover 8 subspecialities in the northern emirates. Through this partnership, knowledge will be shared through scientific education programs, conferences, and the EHS Simulation Center. Also at Arab Health 2022, CHOP was featured at the EHS booth for its innovative research on Autism Spectrum Disorder.



Ministry of Presidential Affairs

The Medical Office of the Ministry of Presidential Affairs (MOPA) has historically made a major push to expand the quantity and quality of healthcare provision in the U.A.E., particularly in the northern emirates. MOPA funded the 750 million AED [\$204 million] Sheikh Khalifa General Hospital in Umm Al Quwain, which features clinics specializing in pediatrics, gynecology, emergency care, dialysis, and dermatology.⁵⁸ MOPA also funded the 1 billion AED [\$272 million] 248-bed Sheikh Khalifa Specialty Hospital in Ras Al Khaimah (near the border with Umm Al Quwain).⁵⁹

Ministry of Defense

The Ministry of Defense is also a significant provider of healthcare in the U.A.E. Zayed Military Hospital, a part of Zayed Military City, is a 260-bed facility, including an ICU, Burn ICU, Cardiac Care Unit, medical, surgical, and pediatric beds. The hospital has a psychiatric center located in a separate building, bringing the total aggregate number of beds to 300. The campus includes an ambulatory care component, as well as housing for the Hospital's staff and physicians. The neurology department of the Zayed Military Hospital consists of some of the most innovative and advanced healthcare technologies in the U.A.E., such as Brainsuite ICT, Brainlab, and Haag Streit. The Ministry of Defense has strong relationships with leading U.S. hospitals, including Nationwide Children's Hospital, to supplement its resources and ensure that military members and their families receive world-class care.

Government-Linked Entities

Government-linked entities most notably include PureHealth and M42. PureHealth is a subsidiary of Abu Dhabi-based investment and holding company ADQ and is the largest integrated healthcare network in the U.A.E.⁶⁰ M42 is a newly formed partnership between the prominent Abu Dhabi government investment vehicle Mubadala Investment Company and G42 Healthcare, a division of G42, the U.A.E.'s homegrown artificial intelligence and technology company. PureHealth and M42 are both supporting the development of a world-class, commercially sustainable private healthcare sector in the U.A.E.

PureHealth

PureHealth is the U.A.E.'s largest healthcare group. It was founded in 2006 and merged with all healthcare subsidiaries of ADQ in January 2022, making it the largest integrated health services provider. PureHealth's acquisition of SEHA in particular brought under its management a total of 25 hospitals and 100 clinics. Its other subsidiaries across the U.A.E.'s healthcare sector include the National Health Insurance Company (better known as Daman), the Medical Office, which oversees the hospitals and health facilities of Sheikh Khalifa group, Rafed, a healthcare procurement company, PureLab, the Abu Dhabi Stem Cells Centre, One Health, a medical devices distributor, and The Life Corner, a pharmacy.⁶¹

In December 2023, PureHealth launched on the Abu Dhabi Securities Exchange after an IPO that raised \$986 million. By the close of its first day on the market, PureHealth's shares settled at AED 5.74, after being priced initially at AED 3.26/share. PureHealth's founders will retain a 90% stake in the company.⁶²

Earlier in 2023, PureHealth made two major international acquisitions that contributed to its considerable growth. In September, it bought Circle Health Group, one of the largest independent hospital operators in the United Kingdom, for \$1.2 billion, PureHealth's first entrance into the U.K.'s market.⁶³ In May, it completed its nearly \$500,000 acquisition of Ardent Health, one of the largest acute care hospitals in the U.S., based in Nashville, Tennessee.⁶⁴ In expanding its international footprint, in June PureHealth also signed an agreement with Israel's Sheba Medical Center to conduct joint research, collaborate on medical professionals' training, and promote medical tourism.⁶⁵

M42

Mubadala Investment Company, a global sovereign investor established by the Government of Abu Dhabi, announced in early 2021 that it will bring together six of its wholly-owned medical assets in the U.A.E. into an integrated network to serve patients seeking specialized care.

In 2022, Mubadala and G42, the U.A.E.'s leading artificial intelligence company, announced the merging of their healthcare businesses to create a new, first-of-its-kind integrated healthcare company. This new

entity was formed to revolutionize the region's healthcare landscape and deliver personalized, patient-centric care to patients worldwide through G42 and Mubadala's combined prowess in research, technology, AI, and genomics. At first called Mubadala Health, it was eventually renamed M42.

M42's combination of healthcare and technology creates a unique, global tech-enabled healthcare company at the forefront of medical advancement. It is the largest healthcare company in the Middle East and serves as a provider and partner for the region.⁶⁶

The establishment of M42 follows the earlier efforts by Mubadala and its prominent international partners to fill gaps in coverage left by public sector providers. Along these lines, M42 and its predecessors at Mubadala:

- ❖ Created the Malaffi platform, the 1st centralized health information exchange in the region.⁶⁷
- ❖ Completed a 100% acquisition of Diaverum, a Swedish multinational company that is one of the largest providers of dialysis treatments around the world.⁶⁸
- ❖ Joined with Cleveland Clinic Foundation to create its flagship project: Cleveland Clinic Abu Dhabi (CCAD). CCAD hosts 15 institutes that provide innovative, multidisciplinary patient-centric care with 394 beds on 13 floors of critical and acute inpatient wards and 5 clinical floors.⁶⁹
- ❖ Collaborated with institutions such as South Korea's Wooidul Hospital to set up Healthpoint, a specialty hospital. The facility has three centers of excellence: Musculoskeletal (Orthopedic and Sports Medicine and Spine Care), Bariatric and Metabolic Surgery, and Dental.⁷⁰
- ❖ Partnered with Imperial College London to establish the Imperial College London Diabetes Centre (ICLDC), which has three branches in the U.A.E. capital, the newest of which, in Zayed Sports City, broke even within three months of opening.⁷¹

The CEO of M42 is Mr. Hasan Jasem Al Nowais. For more information, please visit <https://m42.ae/>.

M42 Partnerships with U.S. Institutions

- **Resilience**, a biomanufacturing company, based in La Jolla, California, and Mubadala Investment Company signed an agreement to help advance the U.A.E.'s life sciences sector through a biopharma manufacturing collaboration. Under this agreement, a new manufacturing facility in Abu Dhabi will be owned by Mubadala and operated by Resilience. The facility's production will include a range of vaccines and therapeutics for diseases such as cancer, infectious diseases, and inflammatory and autoimmune disorders.
- **Cleveland Clinic Foundation** and Mubadala Investment Company collaborated on the construction of Cleveland Clinic Abu Dhabi, a state-of-the-art medical institution on Al Maryah Island that offers world-class care to patients, closer to home. It boasts 15 institutes, including six centers of excellence in the following areas: Heart & Vascular, Neurological, Digestive Disease, Eye, and Respiratory and Critical Care. The hospital is the designated stroke and chest pain center for Abu Dhabi. The Department of Health has designated Cleveland Clinic Abu Dhabi as a human subject research facility and advanced teaching hospital. The hospital delivered more than 600 academic outcomes in 2021 and has 173 active research studies. In 2021, the hospital had more than 800,000 encounters and performed more than 22,000 surgical cases.
- **Children's National Medical Center** signed a MoU with Healthpoint in May 2017 to collaborate more closely in pediatric subspecialty care. As part of this MoU, Children's National would send visiting physicians to Healthpoint, and it would manage the pediatric department alongside Healthpoint.⁷⁷

[RESILIENCE



Ruling Family Patronage

Members of U.A.E. ruling families have also personally contributed to healthcare in the country. In December 2008, for instance, Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the U.A.E. and Ruler of Dubai, announced the establishment of a dedicated 200-bed 692 million AED [\$188.4 million] children's specialty hospital named after his daughter, Sheikha Al Jalila.⁷³

Inaugurated on 1 November 2016, Al Jalila Children's is the first dedicated children's hospital in the U.A.E., and it aims to be a driving force behind tertiary and quaternary care in the region. The hospital has 28 fully operational clinics for pediatric healthcare, two leading educational programs, and several pediatric research studies.⁷⁴ It is affiliated with Alder Hey Children's as well as Moorfields Eye Hospital Dubai.⁷⁵ In 2021, Al Jalila announced its plan to introduce the first spinal muscular atrophy (SMA) gene therapy in the U.A.E. Al Jalila Children's Hospital is now a subsidiary of Dubai Health.

Private Sector

The private sector plays an increasingly significant role in the provision of healthcare in the U.A.E., with some of the major players – and best ranked private hospitals in the country, according to Newsweek – including Ahalia Group, Al Zahra Hospital Dubai, American Hospital Group, Arabian Healthcare Group, Aster DM Healthcare, Burjeel Holdings, Emirates Hospitals Group, International Modern Hospital, King's College Hospital London Dubai, Mediclinic Middle East, NMC Healthcare, Saudi German Hospital Group, and Zulekha Hospital.⁷⁶

Ahalia Group

Ahalia Group was founded in 1984 in Abu Dhabi as a small, single clinic, and grew into a conglomerate of two multi-specialty hospitals, 20 satellite medical centers, 35 pharmacies, as well as a line of ophthalmology centers and optical shops. It also expanded to India, operating a range of facilities under the Ahalia Health Heritage and Knowledge Village in Kerala, India.⁷⁷

Al Zahra Hospital Dubai

Established in 2013, Al Zahra Hospital Dubai is a 187-bed facility located on Sheikh Zayed Road that hosts a medical team of 250 doctors and 400 nurses. The Al Zahra Group formerly operated a facility in Sharjah; however that was acquired in 2017 by NMC Healthcare and renamed.⁷⁸

American Hospital Group

American Hospital, part of Mohamed and Obaid Al Mulla Group, was established in 1996 and encompasses multiple facilities in Dubai that, in total, host 254 beds and practice 40 medical and surgical specialties. All physicians at American Hospital are American Board Certified.⁷⁹

Arabian Healthcare Group

Arabian Healthcare Group is a global healthcare management and consulting firm set up in 2011 by the Government of Ras Al Khaimah (RAK). Comprising a network of hospitals, diagnostic centers, pharmacies, and wellness services, its flagship facility is the 65-bed RAK Hospital, which is managed in cooperation with Sonnenhof Swiss Health.⁸⁰ In 2018, Arabian Healthcare Group began a collaboration with CommonSpirit Health, a U.S.-based healthcare provider, to enhance the emirate's healthcare sector through training and education programs, digital innovation, and an expansion of RAK Hospital, which will triple its capacity to become a 200-bed facility by 2024.⁸¹ It is a hub for health tourism and international patients and hosts an eye care center, a rehabilitation center, and three medical centers.⁸²

Aster DM Healthcare

Aster DM Healthcare is a Dubai-based healthcare company with 27 hospitals, 115 clinics, and 223 pharmacies in the Middle East and India.⁸³ In the U.A.E., it has eight hospitals under the high-end

Medcare or midrange Aster brands.⁸⁴ In October 2022, Aster's Medcare Women & Children Hospital became the first U.A.E. healthcare facility to enter the metaverse.⁸⁵

Burjeel Holdings

Burjeel Holdings is an integrated healthcare services provider which acquired the healthcare brands and assets formerly associated with VPS Healthcare. It is a network of 39 hospitals and medical centers across the Middle East, Europe, and India. It operates hospitals and medical centers under the Burjeel, Medeor, LLH, Lifecare, and Tajmeel brands. In 2022, Abu Dhabi healthcare investor International Holding Company (IHC) acquired a 15% stake in Burjeel Holdings.⁸⁶

Emirates Hospitals Group

Emirates Hospitals Group hosts 26 facilities and over 1,500 medical professionals in facilities across the U.A.E. It is a subsidiary of KBBO Group, which filed for bankruptcy in 2021 following the scandal involving the CEO of NMC Healthcare, BR Shetty, which was also part of the KBBO Group. Emirates Hospitals Group was successfully refinanced in January 2022 with AED 150 million (\$41 million) from Fidera, an independent London-based investment fund.⁸⁷

International Modern Hospital

International Modern Hospital is the oldest private hospital in Dubai, established in 2005. Its fully renovated (in 2023) facility in Dubai hosts 117 beds, including 4 VIP suites, and specializes in women and children's services, orthopedics, cardiology, general surgery, urology, gastroenterology, bariatric and plastic surgery, ENT, ophthalmology, dental, and neurosurgery.⁸⁸

King's College Hospital London Dubai

King's College Hospital, one of London's largest teaching hospitals, opened a Medical and Surgical Center in Abu Dhabi in November 2014. Then, in November of the next year, it signed an agreement with Al Tayer Group and Dubai Investments to build a \$200 million 100-bed branch of King's College Hospital in Dubai as well as three other King's College Hospital clinics. The first of these clinics, a Medical Center in Jumeirah, opened in September 2017.⁸⁹ In September 2018, King's College opened another medical facility in Dubai.⁹⁰ The late U.A.E. President Sheikh Zayed Al Nahyan once provided a donation to King's College Hospital to set up its specialist liver research center.⁹¹

Mediclinic Middle East

Mediclinic Middle East is a branch of Mediclinic International, which consists of 74 hospitals, five sub-acute and specialized hospitals, 21 day case clinics, and 23 outpatient clinics worldwide.⁹² In the U.A.E., it has seven hospitals with more than 950 inpatient beds as well as 28 clinics.⁹³ In September 2018, the group opened its seventh hospital in the UAE, Mediclinic Parkview Hospital, a 182-bed in-and outpatient facility in Dubai which became the largest greenfield construction project by value ever undertaken by Mediclinic International across its entire international portfolio.⁹⁴

The current Mediclinic International operation in the U.A.E. is the result of the reverse takeover by Al Noor Hospitals Group of the Johannesburg-based Mediclinic International Limited.⁹⁵ At the time of this reverse takeover, Mediclinic had an extensive and growing U.A.E. presence. Meanwhile, Al Noor

Hospitals Group was the largest private healthcare company in Abu Dhabi with seven facilities in Abu Dhabi city, one in the Western Region, and two in Al Ain.⁹⁶

NMC Group

NMC Healthcare was a publicly listed company on the London Stock Exchange and part of the UK's exclusive FTSE 100 index, until a fraud scandal broke in March 2020, and it was forced into administration. In 2022, many NMC companies were able to exit administration thanks to lenders, led by Abu Dhabi Commercial Bank, who agreed to exchange debt in the company for exit instruments under a new facility. In 2023, it filed a lawsuit against its former chief executive, Mr. BR Shetty.⁹⁷

Following this scandal and the company's exit of administration, the newly formed NMC under the new leadership of David Hadley, remains the largest integrated private healthcare platform in the U.A.E. It operates 11 hospitals and 54 clinics and specialty care centers, employs 13,000 people, and serves over 5.5 million patients in the U.A.E. and Oman.⁹⁸

Saudi German Hospital

Saudi German Hospital was founded in 1988 in the Kingdom of Saudi Arabia by the Batterjee family and has grown to become one of the largest hospital providers in the Middle East and North Africa region, with 18 medical facilities, over 3,000 beds total, and over 9,000 employees. Its location in Riyadh, Saudi Arabia operates in partnership with Mayo Clinic. In the U.A.E., it operates hospitals in the emirates of Dubai, Sharjah, and Ajman.⁹⁹

Zulekha Healthcare Group

The Zulekha Healthcare Group established Zulekha Hospital in Sharjah in 1992, and it subsequently grew from a 30-bed facility to a 185-bed 290,000 square-foot hospital.¹⁰⁰ Since then, the Zulekha Healthcare Group has also established a 140-bed hospital in Dubai, a diagnostic center, three medical centers, and three pharmacies.¹⁰¹ The Zulekha Healthcare Group partnered with the Alexis Multispecialty Hospital in Nagpur, India to help serve the Central India community.¹⁰²

Private Sector Healthcare Partnerships with U.S. Institutions

Oracle Cerner and King's College Hospital London Dubai announced a strategic collaboration to leverage Oracle Cloud Dubai Region in the hospital's operations in the first U.A.E.-based cloud deployment by Oracle Cerner in the region.

King's

مستشفى كينجز كوليدج لندن
King's College Hospital London

Mayo Clinic Laboratories and American Hospital Dubai announced a strategic partnership aimed at improving advanced laboratory diagnostics in the Dubai region. Under the agreement, the two organizations began delivering laboratory testing through a collaboration based out of American Hospital Dubai in early 2021. Mayo Clinic Laboratories and American Hospital Dubai are working together to improve access to complex laboratory diagnostics for the region's providers. By improving access to laboratory testing, health care providers will have the necessary tools to advance patient care.



Medical Hubs

Free zones are becoming increasingly important sites for healthcare provision, as they offer many benefits to businesses such as allowing for 100% foreign ownership of companies, full repatriation of profits, exemption from personal income taxes and corporate taxes, and exemption from customs duties for goods and services.

Dubai Healthcare City

Dubai Healthcare City (DHCC), which was launched in 2002, is a healthcare free zone. DHCC currently has over 150 clinical partners, and it hosts brand-name providers such as Moorfields Eye Hospital and Maghrebi Eye Hospital. It is also home to the Mohammed bin Rashid University of Medicine and Health Sciences, part of Dubai Health.¹⁰⁴ DHCC's ecosystem has more than 400 businesses from a plethora of sectors operating within its borders. As a part of the U.A.E.'s efforts to increase Emirati participation in the workforce, in December 2021 DHCC launched a tailored employment training program for Emirati Nationals called Masari.¹⁰⁵ In June 2023, Dubai Healthcare City announced the planning and construction of a 65-bed hospital in collaboration with the South Korean Asan Medical Center (AMC), which will be the first hospital in the Gulf region specializing in gastroenterology.¹⁰⁶



Sharjah Healthcare City

In January 2017, His Highness Sheikh Sultan bin Mohammed Al Qasimi, Supreme Council Member and Ruler of Sharjah, approved the master plan for Sharjah Healthcare City (SHC). SHC is spread over an area of 2.5 million square meters and is conveniently located adjacent to the Sharjah International Airport and



between the two main highways of the U.A.E., Sheikh Mohammed Bin Zayed Road and Emirates Road. It operates as a tax-free zone under the Sharjah Health Authority.¹⁰⁷

Jawaher Boston Medical District

In May 2023, His Highness Sheikh Sultan bin Mohammed Al Qasimi, Supreme Council Member and Ruler of Sharjah, approved the joint Jawaher Boston Medical District project. This project is a partnership between BEEAH Group, a public-private environmental sustainability and waste management company founded in Sharjah in 2007, and Boston-based hospital institutions Mass General Brigham and Dana-Farber Cancer Institute.¹⁰⁸ This medical district will be located on the Emirates Bypass Road next to the Sharjah Mosque, and is poised to establish an advanced, integrated network of healthcare systems in the emirate featuring hospitals, laboratories, R&D centres, and more.¹⁰⁹



C. Insurance

Over the last decade, the U.A.E. has moved toward mandating health insurance for all citizens and residents, greatly expanding the country's health insurance market. However, the large number of

domestic and foreign players in this market has led to intense competition and limited profitability. Moreover, there are restrictions on the entry of new foreign companies into the market.

Mandatory Coverage

Abu Dhabi has led the way in implementing mandatory health insurance for citizens and residents. In 2005, Abu Dhabi issued Law No. 23, requiring all employers to provide health insurance to their employees and their employees' dependents.¹¹⁰ Then, in 2007, Abu Dhabi issued Resolution 83 directing the then-Health Authority - Abu Dhabi (now Department of Health – Abu Dhabi) to give comprehensive health coverage to all U.A.E. nationals living in that emirate at no cost through the “Thiqa” program.¹¹¹

Dubai subsequently followed suit. In 2013, Dubai introduced Law No. 11, requiring employers to provide basic health insurance coverage for their employees and requiring sponsors to provide health insurance for those unemployed individuals under their sponsorship.¹¹² This law was implemented in phases: first for companies with more than 1,000 employees, then for companies with more than 100 employees, and finally for all companies and sponsors.¹¹³ The law fully came into effect in 2016.¹¹⁴

Since then, Dubai has endeavored to increase the scope of mandatory insurance coverage. In November 2017, the Dubai Health Authority launched a new initiative to provide a complete spectrum of care from screening to treatment for three types of cancer under the basic benefit plan of the Dubai Mandatory Health Insurance Scheme. Prior to then, cancer coverage under the scheme was limited to 150,000 AED [\$40,840].¹¹⁵ In October 2018, it was reported that mandatory health insurance in Dubai will include mental health treatment and rehabilitation of debilitating physical and neurological conditions.¹¹⁶

Sharjah has gradually joined Abu Dhabi and Dubai in moving toward more expansive health insurance as well. The Sharjah government extended health insurance to all Sharjah citizens aged 55 and over in April 2015.¹¹⁷ Then, in January 2020, it decided to extend the insurance coverage to all citizens of Sharjah.

Daman's Market Importance

The U.A.E. health insurance industry is dominated by the National Health Insurance Company (Daman), which is the largest insurance payer in Abu Dhabi and the third largest in Dubai.¹¹⁸ Established by Emiri Decree No. 39 of 2005, Daman is a part of PureHealth, which is, in turn, a part of ADQ.¹¹⁹ It has over 3 million members and it exclusively manages the aforementioned “Thiqa” program for U.A.E. nationals in Abu Dhabi as well as the Abu Dhabi Basic Plan for low-income expatriates in that emirate.¹²⁰



U.A.E. Health Insurance Terminology

- “Thiqa” is a health insurance program for U.A.E. nationals and those of similar status living in Abu Dhabi. It is exclusively managed by Daman on behalf of the Government of Abu Dhabi.
- “Enaya” is the Government of Dubai Employee Healthcare Benefits Scheme. Officially launched in July 2009, it provides a broad range of cover as well as preventive treatment and routine health checkups to more than 90,000 individuals. The third party administrator for this program is Neuron LLC.
- “Saada” is a health insurance program for citizens of Dubai who are not covered by any government health program. It is expected to ultimately reach 130,000 people. The third party administrator for this program is NEXtCARE.
- “Isahd” – Insurance System for Advance Healthcare in Dubai – is a Dubai Health Authority (DHA) initiative to provide health insurance for all nationals and residents in the private sector. The system requires that everyone in the private sector have a minimum level of health insurance in place. Around 50 companies are permitted to sell such policies, while only 14 of them have been selected as Participating Insurers to specially serve the low-income expatriate segment. MetLife is one of the 14 Participating Insurers approved to provide the “Essential Benefits Package” to expatriates who earn less than 4,000 AED [\$1,089] per month.¹⁸⁹

In July 2016, the then-Health Authority – Abu Dhabi (now Department of Health) announced changes to the “Thiqa” program with a view to making the healthcare sector more sustainable. Under these changes, Thiqa cardholders would pay 20% of the cost of hitherto free treatment at private hospitals; treatment at public hospitals would still be free. Thiqa cardholders would also pay 50% (as opposed to 10% formerly) of the cost of treatment outside Abu Dhabi, except in cases where that type of treatment was unavailable inside the emirate.¹²²

However, the U.A.E. government ultimately walked back these changes given their implications for the healthcare sector. These moves would have posed complications for enrollees already in long-term private care.¹²³ These changes would have also potentially impacted the viability of some private healthcare institutions and their long-term expansion plans.¹²⁴ As such, in April 2017, U.A.E. President His Highness Sheikh Mohamed bin Zayed Al Nahyan, who was then Crown Prince of Abu Dhabi and Deputy Supreme Commander of the U.A.E. Armed Forces, ordered the waiving of the 20% co-payment for Thiqa cardholders when receiving treatment at private healthcare facilities.¹²⁵

In November 2020, Daman announced that U.A.E. nationals in Abu Dhabi must pay for elective private medical treatment in the other emirates. This followed the phasing out of all direct billing at hospitals in October 2020.

Heavy Competition

The U.A.E. health insurance market reflects the U.A.E. insurance market as a whole. It is generally overcrowded, limiting profitability. There are currently more than 60 players in the U.A.E. insurance market, split between local insurers and the subsidiaries of foreign insurers.

That being said, the playing field of the U.A.E.’s insurance market is constantly changing. In late 2021, Gulf Insurance Group (GIG) completed its buyout of the regional division of French multinational AXA, which was one of the largest international health insurance providers operating in the U.A.E.¹²⁶

Additionally, in September 2022 the Central Bank of the UAE and the Saudi Central Bank (also known as Sama) signed a preliminary agreement to establish a general framework for the supervision of the insurance sector in both countries.¹²⁷ Today, both the Saudi and Emirati insurance markets are overseen by the U.A.E. Central Bank. Insurance companies, policies, and contracts that are in free zones, however, are regulated by the respective local free zone entities.¹²⁸

Outside of the aforementioned Daman, three of the most prominent local insurers – both in general and in health insurance – are:

- ❖ **Orient Insurance Company/Allianz:** Orient Insurance Company, which began operations in 1982, is one of the leading insurance companies in the U.A.E. by market share. Based in Dubai, it is part of Al Futtaim Group, a major U.A.E. conglomerate. It provides both individual and group medical insurance.¹²⁹ Orient Insurance Company is also the regional partner of German multinational insurance and asset management giant Allianz.¹³⁰
- ❖ **Abu Dhabi National Insurance Company (ADNIC)/MSH International:** ADNIC, which was founded in 1972, is a publicly listed composite insurance provider headquartered in Abu Dhabi that is also one of the largest insurance companies in the U.A.E. by assets.¹³¹ It provides both individual medical insurance and group medical insurance in partnership with French company MSH International.¹³² Mubadala became its largest shareholder after acquiring the stake of ADNIC held by Abu Dhabi Investment Council.¹³³
- ❖ **Oman Insurance Company/Bupa Global:** Oman Insurance Company (OIC), which is headquartered in Dubai, is one of the leading insurance companies in the U.A.E. and in the broader MENA region. It provides both group health insurance and an individual international health insurance plan designed and internationally administered by British healthcare giant Bupa Global.¹³⁴

In addition to the previously mentioned AXA Gulf (now GIG Gulf), other important international insurers in the U.A.E. are U.S. health insurance companies MetLife, Aetna, and Cigna. Forming partnerships and engaging with local actors is a key method by which U.S. or international insurance companies can stand out in the U.A.E.'s crowded insurance market. In 2021, MetLife and Emirates NBD, Dubai's government-owned bank, announced a partnership to provide insurance to the bank's wealth, retail, and SME customer base in the U.A.E.¹³⁵ Cigna has made a major push to expand its operations in the U.A.E. with its Cigna HealthGuard plan, approved by the DHA, that is tailored for those residing in Dubai and the northern emirates. Cigna's eighth annual 360° Global Well-Being Survey 2022 highlighted the U.A.E. as the top destination in the Middle East, Africa, and Asia to relocate for expats.¹³⁶ In its 2023 report, the U.A.E. was noted as having a higher percentage (68%) of respondents that have "excellent" or "great" overall well-being, compared to rates in Europe which fall around the 35% range.¹³⁷

U.S. Insurance Companies in the U.A.E.

- **MetLife:** MetLife, Inc., through its subsidiaries and affiliates, is one of the world's leading financial services companies, providing insurance, annuities, employee benefits, and asset management to help its individual and institutional customers navigate their changing world. Founded in 1868, MetLife has operations in more than 40 countries and holds leading market positions in the United States, Japan, Latin America, Asia, Europe, and the Middle East. MetLife is a pioneer of life insurance with a presence of nearly 65 years in the Gulf. Through its branches, MetLife offers life, accident, and health insurance along with retirement and savings products to individuals and corporations. In the U.A.E., MetLife has had operations since 1962 and today is a leading multinational life and medical insurance company across the country.²⁰³
- **Cigna:** In June 2017, Cigna opened an office at the Dubai International Financial Center (DIFC) to serve as its regional headquarters. The next month, Cigna announced the acquisition of Zurich Insurance Middle East, gaining official presence in Lebanon, Oman, the U.A.E., and Kuwait. Then, in October, it launched a much-touted individual insurance and wellness solution specially tailored for residents of Dubai and the northern emirates. Cigna has been growing in experience by entrenching itself in the region and adding local capabilities like its clinical team, culturally relevant resources, and an ever-expanding network of hospitals, clinics, and pharmacies. Prior to its acquisition of Zurich Insurance Middle East, Cigna already had an established presence via a local partner providing health insurance to U.A.E. residents for over 15 years.
- **Aetna International:** Aetna's Dubai office, based in Dubai Media City, is the nerve center for Aetna International's European and Middle East & Africa divisions. Notably, Aetna International administers health care plans for individuals, families, and corporate groups in the U.A.E. on behalf of RSA Insurance. It also administers Al Ain Ahlia Insurance Company plans within the country.¹⁶³



D. Pharmaceuticals

The U.A.E.'s pharmaceutical market is rapidly growing – it is expected to reach \$4.7 billion in value by 2025.¹⁴⁰ This growth is spearheaded and encouraged in particular by the Department of Health – Abu Dhabi, which aims to develop the U.A.E.'s capital city as a global hub for healthcare and life sciences through fostering domestic research, development, and manufacturing of pharmaceuticals.

Promoting Manufacturing

Although the U.A.E. currently imports about 80% of its pharmaceutical products, the U.A.E. has initiated new programs to promote domestic pharmaceutical manufacturing. The number of pharmaceutical manufacturing units in the U.A.E rose to 23 in 2021, and there are more than 2,500 medicines produced locally. Local pharmaceutical exports are also anticipated to rise to \$297 million by 2025.¹⁴¹

This growth is in line with the 'Operation 300b' Initiative to increase the industrial sector's GDP contribution from AED 133 billion to AED 300 billion (about \$36 billion to \$81 billion). This initiative, launched in March 2021 under the Ministry of Industry and Advanced Technology, which is led by Dr. Sultan Al Jaber, focuses on eleven total industrial sectors, three of which are related to medical technology pharmaceuticals.¹⁴²

It is also spurred by the pandemic. The U.A.E became the first country in the MENA region to establish a coronavirus vaccine factory in a joint venture between Sinopharm and G42 Healthcare. The COVID-19 pandemic sharpened the U.A.E.'s focus on investing in life sciences. This focus is subsequently bringing together key investment, technology, and research entities in Abu Dhabi such as G42, Mubadala, and ADQ in the emirate's vision to become a regional hub for innovation in health care.

In June 2023, The Department of Health – Abu Dhabi initiated separate collaborations with AbbVie and Eli Lilly & Company for clinical research, real-world evidence, healthcare technology, personalized medicine, and genomics development in the U.A.E.'s capital.¹⁴³

In January 2023, Mubadala Investment Company and U.S.-based National Resilience, Inc., signed a deal to further advance the U.A.E.'s life sciences ecosystem through biopharmaceutical manufacturing. Through a development agreement, Mubadala will establish a new manufacturing facility, in which Resilience will operate and manufacture biopharmaceutical-related products out of the U.A.E. The range of therapeutics will be used to treat complex diseases such as cancer, infectious diseases, and inflammatory and autoimmune disorders. The Abu Dhabi-based facility will be the first Goods Manufacturing Practice biopharmaceutical facility in the U.A.E., as well as the first of its kind in the region to manufacture essential life sciences products for advanced biologics.¹⁴⁴

Pharmaceutical Intellectual Property

The U.A.E. Ministry of Health and Prevention established robust Intellectual Property protection of pharmaceutical products by issuing Decree 321 on September 21, 2020. Decree 321 states that for a period of eight years from the date of marketing approval of a new drug in the U.A.E., the marketing authorization holder has exclusive rights to the clinical data underlying approval of the pharmaceutical product. The eight-year data exclusivity period provided under Decree 321 is the longest in the region that protects the value of drugs by temporarily blocking regulatory approvals of generic versions.

Unlike the United States, the U.A.E. does not provide additional incentives for innovation in the form of extensions of the market exclusivity period when companies conduct additional clinical trials to obtain

regulatory approval for the broader use of existing drugs, such as for the treatment of pediatric patients or of orphan diseases (diseases for which drugs are undeveloped owing to limited potential for profitability). The U.A.E. also does not provide additional incentives for innovation in the form of longer market exclusivity periods for biologic drugs, which sometimes are more expensive to develop.

Controlling Prices

At the same time it has sought to encourage domestic pharmaceutical manufacturing and safeguard pharmaceutical IP, the U.A.E. government also tries to contain rising drug prices, which are regulated by pharmaceutical pricing legislation.¹⁴⁵ In July 2011, the U.A.E. began a series of price reduction initiatives aimed at bringing U.A.E. pharmaceutical prices in line with those in neighboring countries.¹⁴⁶ Through these initiatives, the U.A.E. had, as of December 2017, cut the prices of 8,732 pharmaceutical products.¹⁴⁷ By January 2021, the U.A.E. had also authorized 6,176 generic drugs which on average cost nearly 60% less than branded medicines. This cost-cutting strategy is pioneered by MOHAP through its 'Reduction in Medicine Prices Initiative' aimed at making U.A.E. drug prices the lowest in the Gulf region.¹⁴⁸

Julphar and U.A.E. Pharmaceutical Manufacturers

The U.A.E.'s domestic pharmaceutical manufacturing industry is headlined by Julphar Gulf Pharmaceutical Industries, which is the largest generic pharmaceutical manufacturer in the Middle East and North Africa. Established in 1980 under the guidance of the former Emir of Ras Al Khaimah His Highness Sheikh Saqr bin Mohammed Al Qasimi, Julphar now operates 12 internationally certified manufacturing facilities globally. These factories collectively produce over one million boxes of medicines per day with 80% produced for export. As mentioned above, in 2021, Julphar began manufacturing COVID-19 vaccines in conjunction with G42 Healthcare. In October 2022, Julphar signed an MoU with PureHealth to establish the first factory in the country to produce Glargine, a drug used as an alternative to insulin in the treatment of diabetes.¹⁴⁹



The U.A.E. has several other domestic pharmaceutical manufacturers as well:

- ❖ **Neopharma:** Neopharma claims to be Abu Dhabi's premier pharmaceutical manufacturing company. Started in 2003, Neopharma has 10 manufacturing facilities across 3 continents and over 2,000 employees. In October 2018, the U.S. subsidiary of Neopharma acquired an antibiotic manufacturing facility and its related assets in Bristol, Tennessee, but this closed in 2020.¹⁵⁰ Neopharma was reportedly impacted by the legal woes of its longtime Executive Vice Chairman and Managing Director, Dr. B.R. Shetty, who was at the center of the NMC Health scandal.
- ❖ **Globalpharma:** Globalpharma, which is based in Dubai Investment Park, is a major U.A.E. pharmaceuticals manufacturer. Established in 1998, its manufacturing facility can produce up to 300 million tablets, 150 million capsules, and over 7 million liters of dry syrup and liquid each year. In 2014, Dubai Investments sold a majority stake in Globalpharma to French firm Sanofi, which subsequently sold its stake in 2018, citing a shift in its focus away from the generics portfolio.¹⁵¹
- ❖ **Medpharma (member of Valeant):** Medpharma is one of the leading pharmaceutical branded generic companies in the U.A.E. In September 2014, it was acquired by Lebanon-based Integrated Pharma Solutions and Canada-based Valeant Pharmaceuticals.¹⁵² At the time, Medpharma had about \$30-\$40 million in sales per year.¹⁵³

- ❖ **LIFEPharma:** Part of the aforementioned VPS Healthcare (now integrated into Burjeel Holdings), LIFEPharma has a facility at Jebel Ali Free Zone Area in Dubai that has the capacity to produce 1 billion tablets, 300 million capsules, and 150 million liters of liquid per year.¹⁵⁴ In 2020, LIFEPharma signed a multitude of agreements with international firms, pushing the U.A.E.'s pharmaceutical exports into North American and European markets.¹⁵⁵
- ❖ **Pharmax Pharmaceuticals:** Pharmax Pharmaceuticals is the first local company located in Dubai Science Park engaged in the development and commercialization of pharmaceuticals. It was established by one of the U.A.E.'s leading pharmaceutical and healthcare product distributors, Al Ittihad Drug Store (IDS).¹⁵⁶ Its facility in the U.A.E. can produce 250 million tablets and 85 million capsules a year, and it focuses on affordable generic medicines. In 2019, Pharmax was awarded its first Good Manufacturing Practice approval by the European Union, becoming one of the few manufacturing facilities in the U.A.E. to achieve this standard.¹⁵⁷

International Pharmaceutical Companies

As the U.A.E.'s domestic pharmaceutical manufacturing industry has grown, many international pharmaceutical companies have established a presence in the country. There are currently 11 multinational pharmaceutical companies operating in the U.A.E., including Johnson & Johnson, MSD (known as "Merck" in the U.S.), Pfizer, AstraZeneca, GSK, Roche, Novartis, and Sanofi. Some of these companies – such as Organon, Pfizer, Viartis, and Janssen EMEA (the pharmaceutical arm of Johnson & Johnson) – decided to make the U.A.E. the site of their regional headquarters. Moreover, these companies are increasingly not just selling products in the U.A.E., but setting up in-country facilities for research, digital solutions, and advocacy to support the local ecosystem, as mentioned in the section about the Department of Health – Abu Dhabi.¹⁵⁸

These international pharmaceutical companies are attracted to the U.A.E. for a variety of reasons. In addition to its growing domestic market, the U.A.E. boasts a strategic location and sophisticated logistics infrastructure that make it an ideal hub to access growing regional markets in Africa, Asia, and the Middle East. The U.A.E. has also created business friendly environments in which pharmaceutical companies can operate.

Key to the continued expansion of international pharmaceutical companies in the U.A.E. is the protection of intellectual property. In May 2021, the Office of the United States Trade Representative removed the U.A.E. from its Watch List in its Annual Section 301 Report on Intellectual Property (IP) Protection. This was largely due to the efforts of MOHAP to resolve U.S. concerns surrounding IP protection of pharmaceutical products and was supported by the issuance of Federal Law no. 11 of 2021 concerning the regulation and protection of Industrial Property Rights.

Pharmaceutical Hubs

Several free zones have become hubs for the pharmaceutical industry.

- ❖ **Dubai Healthcare City:** His Highness Sheikh Mohammed bin Rashid Al Maktoum, U.A.E. Vice-President and Prime Minister and Ruler of Dubai, launched Dubai Healthcare City (DHCC) in 2002 with the goal of establishing an internationally recognized location of choice for quality healthcare and an integrated center of excellence for clinical and wellness services, medical education, and research. It is a hub for pharmaceutical companies such as Abbott, Allergan Middle East, AstraZeneca, Baxter, Boehringer Ingelheim, Eli Lilly, Gilead



Sciences, Johnson & Johnson, Julphar, Merck Serono, Merck Sharp and Dohme (MSD), Novartis, Novo Nordisk, Organon, Sanofi, and Viatriis.¹⁵⁹

- ❖ **Dubai Science Park:** Dubai Science Park (DSP), which is part of the TECOM Group, is a science-focused business community, dedicated to supporting entrepreneurs, start-ups, SMEs, and MNEs. Since its inception in 2005, the community has grown to more than 350 companies, including Amgen, Bayer, Boston Scientific, Bristol-Myers Squibb, Fresenius Medical Care, Medtronic, Merck Serono, Pfizer, and Zimmer Biomet. In total, the community employs over 3,600 industry professionals.¹⁶⁰



- ❖ **Jebel Ali Free Zone:** In the 34 years since its inception, Jebel Ali Free Zone (Jafza) has become a key contributor to Dubai's economy and a growth engine for trade and commerce in the wider MENA region. Jafza is the leading source of foreign direct investment (FDI) in the U.A.E., accounting for around 32% of all FDI inflow, and has created a business environment that has helped drive forward economic diversification. As a part of its diversification efforts, Jafza has worked towards helping grow Dubai's healthcare and pharmaceutical industry. Currently, there are over 160 companies registered within the free zone from 38 countries, including leading industry players such as Johnson & Johnson, Colgate, Roche, Sanofi, GlaxoSmithKline, and Quest Vitamins. In September 2017, Jafza agreed to work alongside the UAE Ministry of Health and Prevention to increase support for the sector and encourage the establishment and growth of an indigenous pharmaceutical product manufacturing base in Dubai.



Abu Dhabi is also currently working to establish its own pharmaceutical and life sciences ecosystem. This initiative is led by the Abu Dhabi Investment Office (ADIO) and Mubadala Investment Company, among other leading Abu Dhabi entities.

E. Medical Equipment

The projected growth of the U.A.E.'s medical equipment market broadly mirrors that of other sectors. Despite ambitions to expand local manufacturing, domestic production of medical equipment remains largely nascent, offering tremendous opportunities for international companies. The pandemic led the U.A.E. to renew its focus on exploring local production of certain medical equipment.

Diagnostic Imaging Equipment

Diagnostic imaging equipment comprises a large percentage of the U.A.E. medical device market. Here, the U.A.E. has a preference for products from brand-named international companies, who have often turned to the U.A.E. as the site of their regional headquarters.

- ❖ **GE Healthcare:** From its regional headquarters in Dubai, GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality, and more affordable healthcare around the world. From medical imaging, software & IT, patient monitoring, and diagnostics to drug discovery, biopharmaceutical manufacturing



technologies, and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.¹⁶¹

- ❖ **Siemens Healthineers:** Siemens Healthineers, which is the separately managed healthcare business of Siemens and is a leading provider of medical imaging equipment, bases its Middle East regional office in Dubai Healthcare City.¹⁶² In December 2016, Siemens Healthineers partnered with Easa Saleh Al Gurg to set up its first U.A.E. business.¹⁶³ PureHealth, part of ADQ, is the authorized distributor for some of the top brands in the Medical and Diagnostic Devices business such as Siemens Healthineers.
- ❖ **Philips Healthcare:** Dubai serves as the Middle East headquarters for Philips Healthcare, which is also a global leader in health technology. This headquarters services 15 markets, including the U.A.E.¹⁶⁴

Cardiovascular Devices

Cardiovascular devices are another important segment of the U.A.E. medical device market, especially given the increasing incidence of cardiovascular disease due to the prevalence of a sedentary lifestyle and obesity among the local population. This market is principally centered on interventional cardiology and cardiac rhythm management.¹⁶⁵

Many key players in this segment also have significant U.A.E. operations.

- ❖ **Abbott:** Dubai serves as a regional headquarters for Abbott, which is one of the world's leading healthcare companies in medical devices as well as nutrition, pharmaceuticals, and diagnostics.¹⁶⁶ Abbott's acquisition of St. Jude Medical created a combined company with best-in-class solutions across the areas of cardiovascular and neuromodulation.¹⁶⁷ In December 2022, the U.A.E. became the third country in the world, after the U.S. and Canada, to implant Abbott's leadless pacemaker in a patient. The operation was successfully undergone at Al Qassimi hospital in Sharjah.¹⁶⁸
- ❖ **Medtronic:** Dubai is the home for Medtronic's headquarters for the Middle East & Africa, Central Asia & Turkey (MEACAT). These markets comprise 1,400 Medtronic professionals and produce approximately \$1 billion in revenue.¹⁶⁹ Medtronic is world renowned for its wide array of cardiac and vascular products.¹⁷⁰
- ❖ **Johnson & Johnson:** Dubai is the home of Johnson & Johnson Middle East FZ-LLC, which oversees the regional production of a broad range of products used primarily by healthcare professionals in the fields of cardiovascular disease as well as orthopedics, neurovascular, surgery, vision care, diabetes care, infection prevention, diagnostics, sports medicine, and aesthetics.¹⁷¹

Other U.S. medical device and diagnostic companies that have an active presence in the U.A.E. include 3M Healthcare, Baxter, Beckman Coulter Inc., Boston Scientific, and Stryker. Many others are represented through local distributors.

Local Manufacturing and 3D Printing

Although the U.A.E. is still heavily reliant on imports of more sophisticated medical equipment, it has begun to develop a nascent medical products industry, starting with products like medical consumables. For instance, Abu Dhabi National Industrial Projects (ADNIP) partnered with NNE Pharmaplan to launch the Abu Dhabi Medical Devices Company, which manufactures Auto Disable syringes, Single Use syringes, Insulin syringes, and IV Cannula.¹⁷² During the pandemic, 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).



One area in which the U.A.E. is poised to potentially play a leading role in the future is 3D printing. In 2016, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the U.A.E. and Ruler of Dubai, launched the 'Dubai 3D Printing Strategy' in order to exploit this technology for the "service of humanity" and promote the status of the U.A.E. and Dubai as a leading hub of 3D printing technology by the year 2030. One of the primary focus areas of this strategy is the medical products sector, which could involve developing 3D printed teeth, bones, artificial organs, medical and surgical devices, and hearing aids. As of July 2022, there was a team of 16 doctors and engineers using six Formlabs 3D printers, working with the Dubai Health Authority and the Dubai 3D Printing Strategic Alliance, which promotes 3D printing within the U.A.E.

U.A.E. Partnerships with U.S. Medical Equipment Companies

- **Abbott** announced in October 2017 the establishment of the Abbott Diabetes Academy. This Academy, which is located in Dubai Healthcare City, is the first dedicated training academy in the U.A.E. for healthcare professionals working with diabetes patients. With its mission to act as a center of excellence and education and training partner for the regional public and private healthcare and diabetes community, the Academy will provide practical tools that can be applied by endocrinologists, diabetologists, and educators to improve the region's management of diabetes. The announcement of this Academy came during the first USA Healthcare Symposium and Showcase on Nutrition, Obesity, and Diabetes, which was held as part of Discover America month at the Mohammed bin Rashid University of Medicine and Health Sciences in Dubai.²⁵⁴
- **GE Healthcare** brings the best of its scale and capabilities to serve as a strategic partner to public and private sector providers across the U.A.E. including the U.A.E. Ministry of Health and Prevention, Dubai Health Authority (DHA), and Abu Dhabi Health Services Company (SEHA).
- **Medtronic** signed a deal with the University of Sharjah in 2015 whereby Medtronic Academy, the educational wing of Medtronic, would collaborate with the University to educate regional physicians on Medtronic products and therapies as well as general cardiac topics.¹⁹⁷



F. Information Technology

The U.A.E.'s Healthcare Information Technology (IT) market is set to grow swiftly in the coming years. This growth is partly driven by government initiatives around the digitization of electronic medical records. The pandemic underscored not just the utility of electronic medical records but the power of telehealth. More recently, revolutions in AI have shone a spotlight on the potential of data to transform health care. At the same time, it has also brought into focus the importance of proper laws, regulations, and policies regarding the storage and transfer of this data.

Electronic Health Records and Health Information Exchanges

For the past decade, the U.A.E. has been gradually implementing electronic health record (EHR) and health information exchange (HIE) systems throughout the country that promise to help reduce

duplication, medication errors, and the length of hospital stays; improve patient safety and outcomes; and inform more effective public health policies.

In 2008, the U.A.E. Ministry of Health launched the “Wareed” project to establish a ‘one patient, one record’ electronic health record system by linking all of its facilities in Dubai and the northern emirates. This project, which involved deploying *Cerner Millennium*[®] systems in all Ministry hospitals and clinics, was managed by Dubai-based Hybrid Health Solutions and implemented by a consortium including iCapital, Oracle Cerner, Gulf Business Machines (the sole distributor of most IBM products and services), and Injazat Data Systems.¹⁷³

Emirates Health Services (EHS) has since taken over management of Wareed and other electronic and digital services for healthcare that which were formerly under the umbrella of MOHAP. In 2022, EHS announced the Smart Health Services application to provide patients a bundle of health services, including booking a medical appointment, requesting a medical report, home care, and viewing medical records. U.S. companies such as Oracle Cerner and Johnson & Johnson work through partnerships with EHS in their provision of digital health products and services. The efforts of EHS to continuously develop its digital system is in line with its strategy to optimize the use of digital and advanced technologies in an effort to promote healthy lifestyles among all members of the Emirati community, and to drive a shift in the work environment towards sustainable, innovative solutions and integrated, comprehensive services that meet the highest international standards.

Also in 2008, the Abu Dhabi Health Services Company (SEHA), a PureHealth company, launched its own electronic health records system. In 2008, Tawam Hospital in Al Ain became the first SEHA hospital to successfully implement *Cerner Millennium*[®] healthcare information technology solutions at its facility.¹⁷⁴

In August 2018, the Department of Health - Abu Dhabi (DOH) signed a strategic partnership agreement with Injazat Data Systems, a G42 company that was then a wholly-owned subsidiary of Mubadala Investment Company, to develop an integrated Health Information Exchange system for the healthcare sector in Abu Dhabi. The system, known as Malaffi and launched in January 2019, became the region’s first health information exchange platform. It enables real-time exchange of patient health information between healthcare providers with the aim of improving healthcare quality and patient outcomes. Malaffi connects more than 2,000 Abu Dhabi healthcare providers from both the public and the private sectors, offering healthcare services to more than 3 million people in the Emirate of Abu Dhabi.¹⁷⁵ Its four core areas of functionality are Diagnostic Data Exchange, Provider Portal, Patient Portal, and Public Healthcare Services. As of April 2021, 95% of all hospitals in Abu Dhabi were connected to Malaffi.

Meanwhile, in Dubai, the Dubai Health Authority (DHA) embarked on an electronic health records system known as “Salama.” This system, which was announced in February 2016, has created one electronic record for each resident who uses a public hospital in that emirate.

The Dubai Health Authority has since extended this electronic health records system to private facilities in the emirate as well through its NABIDH (Network and Analysis Backbone for Integrated Dubai Health) initiative. This initiative enabled the creation of a single unified medical record for each individual in Dubai by linking the information contained in all public and private health care facilities.¹⁷⁶ Since its launch in November 2020, the DHA has digitized 7.8 million unified medical files on NABIDH.¹⁷⁷

The DHA also launched Sheryan in 2019, a platform designed to digitize the process of healthcare facilities services and professional licensing, such as electronic exam registration and certification

auditing. In the first half of 2023, Sheryan handled more than 4 million transactions and hosted 85,000 registered health professionals in Dubai.¹⁷⁸

In response to the pandemic, the DHA strove to upgrade its public health surveillance system, creating HASANA. This program serves over 15.8 million people by gathering patient records from both public and private healthcare facilities. It comprises a unified immunization record for every patient in the city. It can also analyze disease data, laboratory reports, and hospitalization records to provide warnings of disease outbreak.¹⁷⁹



U.S.-U.A.E. Electronic Health Record and Health Information Exchange Partnerships

➤ **Oracle Cerner**, which designs health information technology that is employed worldwide, is highly active in the U.A.E., where its clients include the Abu Dhabi Health Services Company (SEHA), Emirates Health Services (EHS), Healthpoint, National Reference Laboratory, King's College Hospital Dubai, Al Jalila Children's Specialty Hospital, American Hospital Dubai, Sheikh Khalifa Medical City Ajman, and Zayed Military Hospital. In 2008, MOHAP began deploying Cerner Millennium as part of its Wareed Project to establish a "One Patient, One Record" system in its hospitals; in November 2016, MOHAP renewed and expanded this partnership with Oracle Cerner. In June 2018, Mubadala Healthcare implemented an integrated electronic health record system from Oracle Cerner. In March 2020, Oracle Cerner worked with MOHAP to develop a new program to keep patients up to date on their refills amidst the COVID-19 pandemic. Oracle Cerner was also instrumental in MOHAP's information-gathering methods to coordinate a national response during the pandemic. In 2021, all Mubadala Health providers were connected to a single laboratory information system in which physicians are able to quickly and easily order from the full range of advanced tests offered by National Reference Library.

ORACLE Cerner

➤ **Epic Systems**, a Wisconsin-based company with an international office in Dubai, has long been present in the U.A.E. healthcare sector. As early as 2008, it signed a seven-year contract to implement clinical technology at the Mohammed bin Rashid Al Maktoum Academic Medical Center in Dubai Healthcare City. Epic Systems' electronic medical records information system is also used by Cleveland Clinic Abu Dhabi, which was awarded the prestigious HIMSS Stage 7 certification for its improvements using Epic.

Epic

➤ **InterSystems**, a global U.S.-based provider of database, integration, and analytics software, has been engaged to deploy its health information systems at a variety of U.A.E. medical institutions, including Mediclinic, Emirates Hospital Group, Neuro Spinal Hospital, and Capital Health's Specialized Rehabilitation Hospital.²⁰⁴ InterSystems IRIS gained recognition as a platform supporting AI models and technology for healthcare.

InterSystems®
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In December 2021, MOHAP launched Riayati, a national medical records database created to connect 3,000+ U.A.E. public and private sector healthcare providers to effectively share data in real-time throughout the country. Riayati was developed through collaboration across federal and emirate-level governments such as MOHAP, EHS, DOH Abu Dhabi, and DHA. The Riayati platform is also coordinated with DOH Abu Dhabi's Malaffi platform.¹⁸¹ The launch of Riayati made the U.A.E. the first country in the MENA region to put forth a digital national healthcare platform.

Telemedicine

The U.A.E. is also improving healthcare through the increasing adoption of telemedicine, which has grown increasingly popular especially following the COVID-19 pandemic. Six telemedicine solutions were approved for use by the Telecommunications and Digital Government Regulatory Authority (TDRA) in April 2020: Mind Mina Telemedicine, NextGenGP Telehealth, vSee, OKADOC, DOXY, and GetBEE-licensed telehealth, all of which were supported on all U.A.E. mobile networks in coordination with the country's two telecommunications operators, Etisalat and du.

Telemedicine enables both patients to consult medical professionals and medical professionals to consult each other from a distance. This has reduced hospital visits, limited the movement of patients between hospitals, and extended healthcare services to more remote locations.

In Abu Dhabi, Mubadala Health operates and manages the Abu Dhabi Telemedicine Center, which offers over-the-phone medical consultations in both Arabic and English with medical professionals 24 hours per day, 7 days per week. All services are offered exclusively through Daman to Thiqa and Enhanced cardholders.¹⁸²

The Dubai Health Authority (DHA) introduced telemedicine at its facilities through the "Dubai RoboDoc" initiative in 2017. In 2019, this service was reintroduced as the DHA's "Doctor for Every Citizen" telemedicine initiative. Though it was originally only accessible by citizens, whether they be physically present in Dubai or travelling, working, or studying abroad, after the pandemic it became a resource for all residents of Dubai.¹⁸³

In addition to the above initiatives, the U.A.E. has embraced teleradiology. For instance, in 2016, 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.

Finally, several startups have embraced telemedicine concepts. Of the top 10 most funded health technology startups in the MENA region in 2022, four of them are based in the U.A.E. "Altibbi", a remote medical consultations platform with over 10,000 available doctors, has received a total of \$52.5 million in funding and won the World Summit Award for 'Best Digital Health Content'. "GluCare Health" provides in-person and virtual diabetes care and counseling through a mobile application which tracks and monitors patients' glucose, insulin, and diet. "Selfologi" allows patients to book appointments for aesthetic medical treatments such as botox, hair removal, and acne scarring. "Okadoc" is another appointment-booking and virtual consultation application that has gained investment from Abu Dhabi Investment Office (ADIO).¹⁸⁴

Smart Technology and Apps

The U.A.E. has long embraced the power of smart technologies and apps in the medical field. For instance, the Dubai Health Authority (DHA) has introduced smart pharmacies where robots can dispense 12 prescriptions in less than one minute from a store of up to 35,000 medicines.¹⁸⁵ DHA has also released a wide variety of apps that are geared toward various audiences from patients to doctors, students, medical tourists, blood donors, pregnant women, diabetics, investors, and children.

During the pandemic, the U.A.E. Government utilized several smart solutions and apps to detect cases of COVID-19 and control its spread. Most prominent among the smart solutions was the Al Hosn app, the official contact-tracing app of the federal government that held an individual's vaccine information, allowed residents and citizens to see all of their COVID-19 test results and records, and notified individuals if they came in contact or close proximity to someone who was infected with COVID-19. Every user who downloaded the app had a unique QR code containing information about the user's health. The app was encrypted, and the data remained on the user's phone. Through this data, the competent health authorities could identify people who can transmit the virus and who could be at a risk of contracting the virus. They could then communicate with those at risk and re-test them. This app was a joint initiative between Ministry of Health and Prevention, Department of Health - Abu Dhabi (DoH) and Dubai Health Authority. The other prominent digital solution developed by MOHAP in response to the pandemic was the chatbot service called "Virtual Doctor for COVID-19." The chatbot in the Virtual Doctor service asks several vital questions which help it deduce if a person is at risk of getting COVID-19.

Medicine in the Metaverse

In recent years, the U.A.E. has demonstrated a commitment to exploring and engaging across sectors in the metaverse, the virtual-reality space in which users can interact with a computer-generated environment. The government of Dubai launched the Dubai Metaverse Strategy in July 2022, a plan which strives to increase the metaverse sector's contribution to the emirate's economy to \$4 billion by 2030.¹⁸⁶ Leaders in the health technology field in the U.A.E. are joining the government entities in their race to the metaverse, with Medcare Hospitals & Medical Centres, a subsidiary of Aster DM Healthcare, launching the first medical facility in the metaverse in October 2022.¹⁸⁷ Thumbay Group has also announced its intention to build a virtual hospital in the metaverse and works with Gulf Medical University to supplement medical training with Virtual Reality (VR) technology. VR and Augmented Reality (AR) technology have already proved valuable in medical education worldwide and in the U.A.E., where local doctors at hospitals such as Dubai's Abdul Latif Jameel Health and Abu Dhabi's Burjeel Medical City are using VR and AR models to learn and practice new surgical techniques and analyze real-time simulated patient data.¹⁸⁸

Other U.S.-U.A.E. Information Technology Partnerships

- **IBM** partnered with the Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) in May 2022 to enhance and augment care practices and support the U.A.E.'s Artificial Intelligence vision. Commonly referred to as AI, this new generation of technology and systems that it helps power promises to touch every facet of work and life – with the potential to radically transform them for the better. This is because these systems can ingest and understand all forms of data, which is being produced at an unprecedented rate. The purpose of AI and cognitive systems developed and applied by IBM is to augment human intelligence, not replace it. Cognitive systems, like IBM Watson, can reason over this data, forming hypotheses and judgments.
- **Honeywell**, a global leader in connected healthcare, has over 50 years of experience in hospital environments worldwide. The company has a long history in the U.A.E., where it leverages advanced software solutions and Internet of Things (IoT) technology to deliver 'Connected Hospital,' 'Connected Clinician,' and 'Connected Patient' initiatives. Integrating infrastructure and disparate systems to enable better care, Honeywell works with state-of-the-art healthcare facilities across the U.A.E. to ensure the rapid flow of information for more agile operations. Honeywell also specializes in workflow automation and communications to help reduce errors and increase productivity for clinicians, while improving the health of patients through effective monitoring in the hospital and beyond. As part of its commitment to innovation, Honeywell recently implemented an infant tracking solution at a large private hospital in the Middle East. The system provides a special service level to parents who want to track the identity, activity, and movement of their newborn babies, to ensure the highest level of safety and care.²¹⁴



G. Education, Research, and Events

To meet its ever-increasing need for qualified medical professionals, the U.A.E. has sought to grow its nascent medical education and training capacity. It has also endeavored to make the country a regional

hub for medical research and events. Leading U.S. hospitals are key partners in cultivating Emirati medical professionals and transferring knowledge.

Education and Training

The U.A.E. is home to a number of medical education institutions, the most notable of which are:

- ❖ **United Arab Emirates University (UAEU):** Opened in 1984, UAEU's College of Medicine and Health Sciences takes pride in being the first and highest-ranked medical school in the U.A.E. It offers a four-year M.D. program, the pre-requisite for which is successful completion of its two-year premed program. It also offers several graduate programs including a Master of Public Health, Master of Medical Sciences, and a Doctor of Pharmacy. Additionally, it offers PhDs in Biomedical Sciences and Public Health and Occupational Health.¹⁸⁹
- ❖ **Mohammed Bin Rashid University of Medicine (MBRU):** Opened in 2014, Mohammed bin Rashid University of Medicine is located in the Mohammed bin Rashid Academic Medical Center in Dubai Healthcare City. MBRU offers bachelor's and master's degrees through its three colleges: the Hamdan Bin Mohammed College of Dental Medicine, the College of Medicine, and the College of Nursing and Midwifery.¹⁹⁰ It is now part of Dubai Health.
- ❖ **The University of Sharjah:** Opened in 2006, the University of Sharjah's College of Medicine offers a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree; a master's degree in Molecular Medicine; a master's degree in Leadership on Health Professions Education; and a Doctorate degree in Molecular Medicine.¹⁹¹ The University of Sharjah also has Colleges of Dental Medicine, Pharmacy, and Health Sciences, the latter of which offers a BSc. in Nursing.¹⁹² The University of Sharjah is notably home to the 325-bed University Hospital Sharjah.¹⁹³
- ❖ **Higher Colleges of Technology:** The Higher Colleges of Technology's Health Sciences Division offers a broad range of Health Sciences bachelor's degree programs across its 17 campuses, including bachelor's degrees in Emergency Medical Services, Health Information Management, Medical Imaging Science, Medical Laboratory Technology, Nursing, Pharmacy, Social Work, and Veterinary Science.¹⁹⁴
- ❖ **Gulf Medical University:** Based in Ajman, this University, which is associated with the Thumbay Group, offers a MBBS degree as well as bachelor's degrees in Biomedical Sciences, Physiotherapy, Medical Laboratory Sciences, Medical Imaging Sciences, Anesthesia & Surgical Technology, and Nursing. It also offers Doctorate degrees in Dental Medicine and Pharmacy.¹⁹⁵ In August 2018, Gulf Medical University (GMU) expanded its footprint and launched Academic Thumbay University Hospital, two new colleges, and new programs as part of its planned educational strategy. The expansion includes the introduction of a master's degree in Public Health, Environmental Health, and Toxicology, which have been made possible thanks to a partnership between Gulf Medical University and University of Arizona's Mel and Enid Zuckerman College of Public Health.¹⁹⁶

- ❖ **RAK Medical & Health Sciences University:** Fully owned and managed by the government of Ras Al Khaimah, this institution claims to be the first comprehensive health science university in the U.A.E. It offers a MBBS degree as well as bachelor’s degrees in Dental Surgery, Pharmacy, and the Science of Nursing. It also offers Master of Science Degrees in Pharmacy and Nursing.¹⁹⁷
- ❖ **Fatima College of Health Sciences:** Established in 2006, this Abu Dhabi-based college began by offering a BSc. in Nursing through a program now operated in collaboration with Griffith University in Australia. It currently offers more than ten degree programs at BSc. and Diploma levels in Health Sciences.¹⁹⁸ Notably, it has collaborated with Etihad Airways Medical Center to provide three students per year with an opportunity to pursue a career in nursing with the airline.¹⁹⁹
- ❖ **Dubai Medical College for Girls:** This all-female institution offers a MBBS degree to women.²⁰⁰
- ❖ **Dubai Pharmacy College:** This all-female college provides Bachelor of Pharmacy and Master of Pharmacy degrees.²⁰¹
- ❖ **Royal College of Surgeons in Ireland – Dubai:** Established in 2005, this institution offers Master of Science degrees in Healthcare Management as well as Quality & Safety in Healthcare Management.²⁰²



New public and private sector medical education institutions are also emerging in some of the U.A.E.’s most prestigious existing universities. Khalifa University of Science, Technology and Research was founded in 2007 and launched Abu Dhabi’s first medical school in September 2018. The Khalifa University College of Medicine and Health Sciences offers a four-year Doctor of Medicine degree program modeled after the North American medical education system.²⁰³ Ajman University, which was founded in 1988 as the first private university in the GCC and later became the first university in the U.A.E. to admit expatriate students, offers degrees in the medical and health sciences in three of its nine colleges.²⁰⁴ Ajman University offers bachelor’s and master’s degrees through its College of Medicine, College of Dentistry, and College of Pharmacy and Health Sciences.

In recent years, medical education institutions and partnerships have been a key focus of the U.A.E.’s healthcare leadership. Emirates Health Services (EHS) leads scholarships and education initiatives to increase the number of Emiratis studying and joining the nursing and midwifery professions. In Dubai in 2021, H.H. Sheikh Mohammed Bin Rashid Al Maktoum, U.A.E. Vice president and Prime Minister and Ruler of Dubai, created the Dubai Academic Health Corporation (DAHC), which serves to integrate all public healthcare provision facilities with medical universities.²⁰⁵ This initiative aims to both strengthen the emirate’s healthcare facilities by creating a pipeline of talented students from universities into the workforce as well as to offer local medical students hands-on experience in their communities.

Other U.S.-U.A.E. Educational Partnerships

- **Children’s National Medical Center** provides four training positions to Emirati physicians during their clinical and trial rotations. Each year, it also provides work experience to a number of Emirati students from UAE University, Higher Colleges of Technology, and Khalifa University.



➤ **Cleveland Clinic Abu Dhabi** chose 75 Emirati and expatriate high school students to participate in its prestigious two-week Junior Caregiver Program in the summer of 2018 across 4 of its 15 Institutes. The program was relaunched following the pandemic in August 2022 to host 60 students over the course of 2 weeks. It also formed partnerships with local education establishments such as Fatima College of Health Sciences, a local higher education college, from which it recruited five candidates to join its graduate nursing program. The hospital also sponsored 20 students from the college to continue their studies. Cleveland Clinic Abu Dhabi has been designated an advanced teaching facility by the Abu Dhabi Department of Health. In September 2018, Cleveland Clinic Abu Dhabi welcomed its first eight U.A.E. national resident physicians as part of its ongoing plans to boost the number of Emirati physicians practicing in the country and support a sustainable healthcare sector. By the end of 2021, Cleveland Clinic Abu Dhabi had 39 U.A.E. nationals as active medical residents across seven specialties.



A Mubadala Company

➤ **Boston Children's Hospital (BCH)** physicians have participated in numerous educational programs in the U.A.E. over many years including Arab Health, SEHA Pediatric Conference, and grand rounds lectures in the public and private sector. In 2021, BCH was the keynote sponsor for the Arab Health Pediatric Focus Day and presented a series of lectures on advances in neurology, surgery, cardiology, and cardiac surgery.²³²



➤ **Cedars-Sinai** and Khalifa University entered an academic collaboration for training and education of third- and fourth-year medical students to observe best medical and research practices as well as consult with host faculty members at Cedars-Sinai. At Cedars-Sinai, the commitment to medical education means consistent delivery of nationally recognized



programs produced by eminent faculty with unrivaled opportunities for clinical and advanced skills learning. Each year, a select group of medical students from Khalifa University will benefit from specialized training experiences in Los Angeles.

- **Children's Hospital of Philadelphia (CHOP)** hosts 4-5 medical students from Mohamed Bin Rashid University for six weeks during the summer in research labs of their choice to gain exposure to clinical research.



Research

U.A.E. universities are increasingly conducting innovative medical research. For instance, Sharjah University created a Research Institute of Medical & Health Sciences, which seeks to help make the university a national and international leader in biomedical and health sciences. Its research focuses on experimental and system biology, experimental genetics, disease states experimental therapeutics, inflammatory diseases, and clinic epidemiology/health policy.²⁰⁷ Moreover, NYU Abu Dhabi has created a Public Health Research Center (PHRC), which seeks to identify environmental and genetic determinants of health problems in Abu Dhabi and develop and test new public health interventions to promote wellness in the emirate.



Likewise, private sector companies are increasingly conducting research in the U.A.E., using dedicated facilities such as those provided by Dubai Science Park. The community features world-class laboratory space, equipped with air exhaust and ventilation systems, acid resistant draining, and pH neutralization systems amongst other technical features. As a result, the laboratories are home to a wide range of organizations conducting activities including research and product development, testing, diagnostics, manufacturing, and production.²⁰⁸

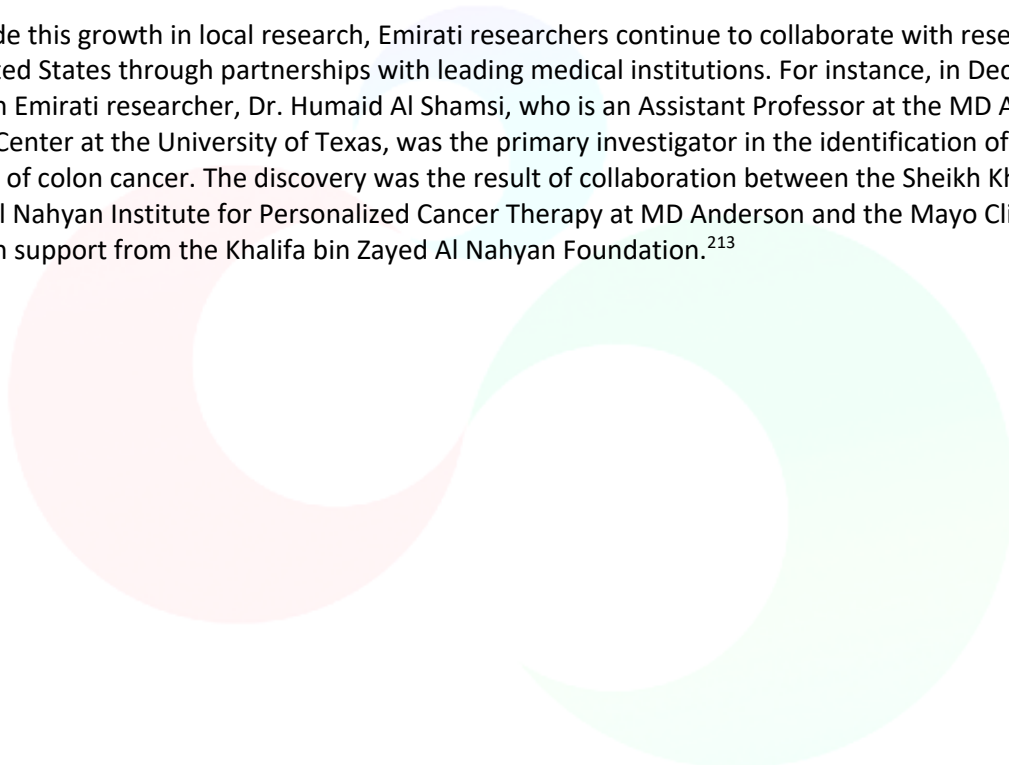
Several dedicated research centers have emerged in the country, with branches focusing on medical research. Technology Innovation Institute (TII), the applied research arm of Abu Dhabi's Advanced Technology Research Council (ATRC), established its Biotechnology Research Center to support and facilitate domestic research in the emerging fields of Biotechnology, such as bio-medicine, bio-robotics and nanotechnology, environmental biotechnology, molecular biotechnology and genetics, and bio-informatics.²⁰⁹ TII's researchers work alongside ASPIRE, the technology program development pillar of the ATRC, which follows a mandate to develop a research and development ecosystem in Abu Dhabi. To achieve this mandate, ASPIRE works to develop a globally



competitive research-funding platform through the Ghadan 21 government accelerator programs and collaborate with global partners to find solutions to local and global challenges across a variety of sectors of which biotechnology, health, and food are key focus areas.²¹⁰

In March 2017, the Thumbay Institute of Precision Medicine and Translational Research opened on the site of Gulf Medical University to conduct postgraduate research, particularly on diabetes and cancer. The Thumbay Institute of Population Health, which focuses on research in the fields of public health, epidemiology, evidence based medicine, big data analysis, and global health, and the Thumbay Institute of Healthcare Workforce Development, which focuses on responding to national, regional, and international shortages, are recent additions to Thumbay's commitment to research.²¹¹ Al Jalila Foundation Research Center, another expansion in the research field, is a 200 million AED [\$54 million] institution being built in Dubai Healthcare City to research five major areas: cancer, cardiovascular disease, diabetes, obesity, and mental health.²¹²

Alongside this growth in local research, Emirati researchers continue to collaborate with researchers in the United States through partnerships with leading medical institutions. For instance, in December 2016, an Emirati researcher, Dr. Humaid Al Shamsi, who is an Assistant Professor at the MD Anderson Cancer Center at the University of Texas, was the primary investigator in the identification of a rare subtype of colon cancer. The discovery was the result of collaboration between the Sheikh Khalifa bin Zayed Al Nahyan Institute for Personalized Cancer Therapy at MD Anderson and the Mayo Clinic, with research support from the Khalifa bin Zayed Al Nahyan Foundation.²¹³



U.S.-U.A.E. Research Collaborations

- **Illumina**, a California-based biotechnology company, opened its Illumina Solutions Centre in Dubai in November 2022, a 9,100-square-foot laboratory bringing genomics technology and precision medicine to the U.A.E. Illumina strives to use the new center as a regional hub for research and training in diagnostic tests such as prenatal screenings and genomic tests for cancer. Genomics testing technology and precision medicine treatments have historically been more widely available to populations of European descent, because of the concentration of research in this field happening in Europe. However, it is a very important field of medical study to the MENA region, where there is a high incidence of genetic diseases and conditions. Illumina's new Solutions Centre will serve to gather representation of the region's genetic data and educate local scientists on genetic testing techniques and technologies, leading to improved precision medicine therapies and drug development.
- **New York University Abu Dhabi (NYU Abu Dhabi)** announced the launch of the "UAE Healthy Future Study" in early 2017, which is a long-term study of 20,000 Emiratis to better understand the risk factors of obesity, diabetes, and heart disease. The study is being conducted in collaboration with SEHA, Zayed Military Hospital, UAE University, Zayed University, Khalifa University, EBTIC, Healthpoint, Capital Health Screening Center, and Daman. Separately, in November 2018, the Emirates Scientists Council signed a strategic partnership agreement with New York University Abu Dhabi. The MoU grants researchers from various disciplines access to the university's advanced science laboratories and research centers to conduct ground-breaking studies.³⁰⁵
- **The Medtronic Foundation** gave a two-year \$100,000 Health Access Grant to Al Jalila Foundation in February 2017 to fund a local research program focusing on Vitamin D deficiency across the country. The grant was intended to allow Al Jalila Foundation to promote early detection and prevention of the disease.²³⁸

illumina

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The U.A.E. has spurred much of the above activity through generous grants. For example, Al Jalila Foundation not only funded the construction of the Al Jalila Foundation Research Center, but it also provided scholarships to U.A.E. medical students and funded U.A.E.-based medical research.²¹⁷ Al

Jalila Foundation is not alone, as the Sheikh Hamdan bin Rashid Al Maktoum Award for Medical Sciences, which funds medical research, is now in its 22nd year.²¹⁸



“Reaching the Last Mile” Global Health Forum

At COP 28, which was hosted in Dubai from November 30th – December 12th, Reaching the Last Mile Forum hosted a pledging event for global donors. At the event, over 450 global leaders from governments, industry, and civil society donated a total of \$777.2 million to help control, eliminate, and eradicate neglected tropical diseases. Contributions came from country and donor partners including the Abu Dhabi National Insurance Company, the Bill and Melinda Gates Foundation, and the Carter Center, to name a few.

The 2023 Reaching the Last Mile Forum was hosted under the patronage of His Highness Sheikh Mohammed bin Zayed Al Nahyan and the Bill and Melinda Gates Foundation, and was attended by His Highness Sheikh Abdullah bin Zayed Al Nahyan, the U.A.E.’s Minister of Foreign Affairs, H.E. Samia Suluhu Hassan, President of Tanzania, H.E. Dr. Austin Demby, Minister of Health and Sanitation from Sierra Leone, as well as Bill Gates, co-chair of the Bill and Melinda Gates Foundation.

Reaching the Last Mile joined with global partners at the event to announce an expansion of its fund from \$100 million to \$500 million, which will broaden its scope from seven countries to 39 across Africa and Yemen. Its aim is to eliminate two neglected tropical diseases: lymphatic filariasis and onchocerciasis (river blindness), from the continent of Africa. The Reaching the Last Mile Forum launched in 2017 as a 10-year, multi-donor fund and, in five years, has provided over 100 million treatments, trained 1.3 million health workers, and established nine laboratories to support neglected tropical diseases surveillance and testing.

The forum took place on December 3rd, which the U.A.E.’s COP 28 Presidency designated as the first-ever Health Day during the United Nations Climate Change Conference.

219

Exhibitions and Conferences

Over the last decade, the U.A.E. has become a regional hub for healthcare exhibitions and conferences.

In May 2024, Abu Dhabi Global Healthcare Week (ADGHW) will launch its inaugural conference at ADNEC and Abu Dhabi City. ADGHW is expected to bring together over 20,000 attendees, 300 exhibitors, and 200 expert speakers to forecast future global healthcare vulnerabilities and formulate actionable strategies to safeguard communities against them, as well as to provide a platform for thought leadership and global ideas exchanges, and display the latest advancements in health and technology. For more information, please visit www.adghw.com.

Every January, the U.A.E. hosts “Arab Health”, the largest gathering of healthcare and trade professionals in the Middle East. Arab Health 2023 hosted over 3,358 exhibitors, 63,599 in-person visitors, 320 speakers, represented 183 countries, and generated \$1.81 billion worth of business.²²¹ For more information about Arab Health 2023, please visit www.arabhealthonline.com. Kallman Worldwide is the official USA representative of Arab Health and organizer of the USA Partnership Pavilion since 1996.²²²

The U.A.E. also hosts a variety of more specialized annual events. One of which is DUPHAT, the largest pharmaceutical exhibition in the MENA region, which, in January 2023, featured more than 1,100 companies from 82 countries and a record total attendance of 26,000 visitors.²²³ For more information about DUPHAT, please visit <https://duphat.ae/>. Another such event is MEDLAB, which is the largest attended laboratory expo worldwide with approximately 900 exhibitors and more than 30,000 attendees.²²⁴ For more information about MEDLAB, please visit www.medlabme.com. Other opportunities to host conferences of all sizes, topics, and audiences across the healthcare and life sciences sector exist, especially for companies and institutions looking to forge research and thought leadership partnerships and connections in the U.A.E.

H. Public Health

In line with the U.A.E.’s Vision 2021, the U.A.E. has recently made a major push to reduce the incidence of chronic diseases by adopting relevant legislation and launching public health campaigns.

Response to COVID-19

The U.A.E. government quickly took precautionary health measures after its first recorded case of COVID-19 on the 29th of January 2020, setting the stage for the U.A.E. to be recognized as a global leader in its COVID-19 response. The U.A.E. banned large gatherings, limited international travel, required mandatory quarantines for travelers and those potentially exposed to the virus, encouraged telework, and began an unparalleled effort of mass testing. These efforts by the U.A.E.’s leadership allowed the U.A.E. to be globally ranked as one of the top countries, and the best in the Arab world, in terms of its COVID-19 response.

The U.A.E. government also quickly charted the path to post-pandemic recovery by prioritizing vaccinations for its people. It began administering its first vaccine authorized for emergency use, China’s Sinopharm vaccine, in December 2020, quickly followed by the American Pfizer-BioNTech vaccine. Four main groups were targeted for inoculation, with the first group including Emiratis and residents aged 60 and older, people with chronic health conditions, and the disabled. The second group was frontline health workers, the third other essential workers, and the fourth members of the general public who wanted to be vaccinated. Vaccines were available at mass vaccination sites organized by the Dubai Health Authority, the Department of Health – Abu Dhabi, and other health entities within the Emirates.

Another key development was the ability of the U.A.E. to domestically manufacture key personal protective equipment in the fight against the pandemic. Honeywell signed an agreement with Mubadala Investment Company to produce N95 face masks within the U.A.E., with an annual output capacity of nearly 30 million masks per year. This venture allowed the U.A.E. to not only meet its national requirements, but also export this critical product to frontlines around the world. Meanwhile, Group 42 (G42) entered into an agreement with the Chinese pharmaceutical entity Sinopharm CNBG to manufacture COVID-19 vaccines in the U.A.E.

The U.A.E.'s public health efforts were not limited to its own borders and citizens. Recognizing the global nature of COVID-19, the U.A.E. launched two entities to support global vaccine distribution efforts. Abu Dhabi's HOPE Consortium and the Dubai Vaccine Logistics Alliance were formed to utilize the U.A.E.'s strategic geographic location and its world-class logistical capabilities in the race to vaccinate the world.


Cancer Screening

The U.A.E. government has made concerted efforts to promote early cancer detection through screening. The Ministry of Health and Prevention has been particularly forward-leaning in terms of raising awareness about cancer and the importance of early detection through regular medical check-ups, as well as offering free breast cancer screenings across the U.A.E.

These initiatives complement the longstanding efforts of the Friends of Cancer Patients. Founded by Sheikha Jawaher bint Mohammed Al Qasimi, this group has organized the high-profile "Pink Caravan" every year since 2011 to raise awareness about breast cancer early detection and screening.²²⁵ In its first eight editions, the caravan travelled 1,700 kilometers across the seven emirates with 490 riders and 700 volunteers, providing free medical tests and screenings to 56,000 men and women, leading to the diagnosis of 61 breast cancer cases.²²⁶

U.S.-U.A.E. Cancer Partnerships

- **The Susan G. Komen Foundation** has partnered with the U.A.E. to raise awareness of breast cancer and facilitate more effective outcomes in its prevention and treatment. The U.A.E. Embassy in Washington, D.C. regularly participates in the Susan G. Komen Race for the Cure as an official sponsor.
- **The American Cancer Society (ACS)** has partnered with Friends of Cancer Patients in the U.A.E. since 2014 to launch the U.A.E.'s first Relay for Life Race and translate the ACS's Cancer Atlas into Arabic. This Atlas provides a comprehensive guide to the global cancer landscape and is used to promote cancer prevention and control worldwide.²⁴⁸



Anti-Smoking

The U.A.E. has also focused on combating smoking. In January 2014, the U.A.E. announced the implementation of Federal Law No. 15 of 2009 that, among other things, made it illegal to smoke in houses of worship, universities, and schools; prohibited smoking in a vehicle when a child under 12-years-old was present; forbid the sale of cigarettes to individuals under the age of 18; banned all tobacco advertising and promotion; and mandated a large warning label on the packaging of tobacco products.²²⁷ Building on this legislation, in November 2014, the then-U.A.E. Ministry of Health announced a nationwide ban on smoking in all enclosed public spaces.²²⁸ Two years later, in 2017, the U.A.E. introduced an excise tax of 100% on tobacco products.²²⁹ In early 2021, U.A.E. health authorities opened smoking cessation clinics at various locations across the country to support individuals who

sought to quit smoking. In 2022, MOHAP marked the global celebration of the World No Tobacco Day, under the slogan "Tobacco. Threat to our environment," reiterating its commitment to educating and warning the public about the health consequences of consuming tobacco products, including e-cigarettes, and raise awareness about the economic development burdens it places on governments and societies.

Combating Obesity, Diabetes, and Cardiovascular Disease

In addition to its efforts to combat cancer and smoking, the U.A.E. has tried to fight growing rates of obesity and associated ailments through regulation and taxation of the food and beverage industry. In December 2013, the U.A.E. cabinet announced that it would require calorie counts to be printed on food products, limit the size of soft drinks that can be sold, regulate advertising of fast food, and enforce healthy food standards at school cafeterias.²³⁰ In 2017, the U.A.E. introduced an excise tax of 50% on carbonated drinks.²³¹ In 2019, it expanded this 50% excise tax to beverages with added sugars and sweeteners.

In recent years, educational campaigns about the danger of cardiovascular diseases have also increased in the U.A.E. In December 2018, Amgen lit up Burj Khalifa in Dubai, the world's tallest building, as part of its "See The Emergency In Cholesterol" campaign.²³² In 2019, MOHAP launched the "Keep on Beating" campaign in collaboration with Pfizer, aimed at increasing awareness of the lifestyle and genetic risk factors of cardiovascular diseases such as smoking, poor nutrition, physical inactivity, and family history.²³³

The U.A.E. has sought to combat these chronic ailments by promoting exercise and healthy lifestyles. In 2017, His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Executive Council of the Dubai Government, launched the Dubai Fitness Challenge, which challenged Dubai to be active for 30 minutes every day for 30 days. Sheikh Abdullah bin Zayed, Minister of Foreign Affairs and International Cooperation, was among the many U.A.E. officials who publicly embraced this challenge. A number of companies, such as Emirates, also accepted Sheikh Hamdan's challenge.²³⁴ Sheikh Hamdan repeated the Dubai Fitness Challenge in 2018, and it has become a recurring yearly challenge.

MOHAP launched its own media campaign aimed at encouraging Emirati society to exercise in December 2021 called MA'KOM.²³⁵ This initiative was launched with an organized one-kilometer run/walk event branded as "the world's shortest marathon," emphasizing the point that a simple healthy lifestyle can be achieved through incorporating small exercise activities into your daily routine.

In 2022, the National UAE Taskforce on Obesity discussed developing a joint roadmap to steer efforts and find effective ways to address obesity, in line with the National Strategy for Wellbeing 2031 and the aspirations of the UAE to become one of the best countries in the world in terms of quality of life. The Taskforce comprises representatives from the Ministry of Health and Prevention (MOHAP), Dubai Health Authority, Department of Health – Abu Dhabi, and Abu Dhabi Public Health Centre. It is mandated to combat obesity in children from 5 to 17 years, according to Emirati government directions, and based on the recommendations of the World Health Organization (WHO), which outlined six key elements to treat this disease. These elements are healthy eating, weight management, pre- and post-conception care, healthy eating and physical activity in early childhood, and healthy nutrition for school students. The Taskforce is also entrusted with multi-sectoral coordination to oversee obesity-related activities to ensure a comprehensive and integrated approach, based on a clear-phased action plan.

Finally, the U.A.E. has endeavored to detect chronic ailments at an early stage so they can be effectively managed and treated. For instance, the then-Health Authority – Abu Dhabi (now Department of Health) launched the “Weqaya” program, which screens individuals for cardiovascular disease, diabetes, and the risk factors associated with these two ailments.²³⁶ U.A.E. nationals must undergo Weqaya screening in order to qualify for the elite “Thiqa” health insurance program.²³⁷

NYU Abu Dhabi’s “U.A.E. Healthy Future Study,” which published initial research in late 2023, determined that Emiratis face widespread instances of high blood pressure and high cholesterol levels, risk factors for diabetes, obesity, and heart disease. These results, which demonstrated that around one third of the Emirati population of the U.A.E. face these health problems, raised alarm of the “public health emergency” of heart disease.²³⁸

U.S.-U.A.E. Fitness Partnerships

- **New York Road Runners** partners with the U.A.E. Embassy in Washington, D.C. on its annual U.A.E. Healthy Kidney 10K, which benefits the National Kidney Foundation.³²⁸
- **Cleveland Clinic Abu Dhabi** organized and took part in several community events to raise awareness of chronic or prevailing illnesses in the U.A.E. while also encouraging healthier and more active lifestyles. In 2022, the hospital organized the “Ramadan Night Run” to raise awareness for Parkinson’s disease during the month of Ramadan. The event saw participation of over 500 patients, patient families, and individuals from the community.




Environmental Health and Emergency Management

As COP 28 demonstrated by its first-ever Health Day, climate change and environmental degradation are drivers of public health problems. Through increased instances of severe weather and temperatures, the spread of communicable and non-communicable diseases, wildfires and air pollution, and other natural disasters exacerbated by climate change, individual and community health is at risk and will continue to be if the international community does not take steps to reduce global warming. The U.A.E. recognizes this and the intersection between environmental sustainability initiatives and public health protection measures, evidenced by a visit by officials from the Dubai Health Authority’s Public Health Protection Bureau to the United States. These officials visited U.S. health institutions such as the U.S. Centers for Disease Control (CDC), Health and Human Services (HHS), and the Federal Emergency Management Authority (FEMA) in Washington, D.C. and Atlanta, GA to learn best practices for developing the public health and emergency management sectors in Dubai.²⁴¹

PART III: ENTERING THE MARKET

The U.A.E. healthcare market offers enormous opportunities for U.S. companies to expand their presence and forge meaningful partnerships. However, it also poses certain challenges. Fortunately, there are a wide range of resources that companies can draw on to help them seize opportunities and overcome challenges.

A. Opportunities

As previously noted, the U.A.E.'s increasing population, demographic shifts, high prevalence of chronic diseases, wealth, ambitions to become a regional medical tourism hub, and broader economic diversification plans are all driving the expansion of the country's healthcare market. So, too, are the lessons learned by the U.A.E. during the Covid-19 pandemic.

While it has a thriving healthcare market in its own right, the U.A.E. is also an ideal regional hub from which to provide medical goods and services. The country is centrally located at the crossroads of Africa, Europe, and Asia, and it boasts advanced transportation and logistics infrastructure. This strategic geographical location and world-renowned logistical capabilities allowed the U.A.E. to become a global center for COVID-19 vaccine distribution worldwide.



Moreover, the U.A.E. enjoys relative security, political stability, and favorable business regulations. The U.A.E. has recently accelerated the pace of economic reforms meant to solidify its standing as the place to do business in the region. The 'Projects of the 50' initiative, an ambitious fifty-year set of projects to guide the country's development over the next five decades, will surely increase the U.A.E.'s standing as a global business hub for American and international companies.

Within this context, the U.A.E. provides attractive opportunities for U.S. companies in the field of healthcare provision, where there is a high demand for U.S. expertise, particularly in more specialized domains. American healthcare providers could replicate institutions in the U.A.E. as Cleveland Clinic has done and Mass General Brigham and Dana-Farber Cancer Institute are working to do. Alternately, they could manage U.A.E. hospitals in the same fashion as Johns Hopkins Medicine International. They can also provide value through consultations and training partnerships.

The U.A.E. also offers opportunities in the pharmaceutical, medical equipment, and healthcare IT sectors. U.S. companies will not only find the U.A.E. a ripe market for pharmaceutical exports, but they will increasingly find it a suitable platform for the manufacture of drugs, perhaps following the lead of Merck and Pfizer in agreeing to local production arrangements. U.S. companies will find in the U.A.E. a growing market for medical and diagnostic equipment sales and one in which they can potentially sign agreements to install and service their own medical devices, as have GE Healthcare, Medtronic, and Illumina. At the same time, U.S. companies will find clients that are eagerly pursuing the latest innovations in healthcare information technology, as IBM and Oracle Cerner can attest. The COVID-19 pandemic has also showcased the U.A.E.'s demand for state-of-the-art testing equipment, which companies like Abbott provided to the U.A.E.'s airports for high-quality passenger screening.

The U.A.E. presents opportunities in meeting an ever-increasing demand for medical professionals as well. Along these lines, U.S. doctors and nurses may find beneficial employment opportunities in the

U.A.E. In addition, world-class medical institutions will find local counterparts that are eager to partner with them to provide the best education and training to future generations of local medical professionals, as Children’s National Medical Center, Children’s Hospital of Philadelphia, and others know well.

Public health and sustainability advocacy and initiatives are also welcome contributions to the U.A.E.’s health sector. Organon, a women’s-health-focused pharmaceutical company formed out of a spin-off from Merck, has engaged female leaders in the U.A.E. such as Dr. Asma Al Mannaei, Executive Director of Research and Innovation at DOH Abu Dhabi, through panel discussions, events, and advocacy campaigns about gender equity and women’s health. Especially following the country’s hosting of COP28 in November 2023, there is ample opportunity for partnerships for U.S. companies that are pioneering environmental sustainability in the health care industry. Cleveland Clinic Abu Dhabi, for example, was awarded the Ashikaga-Nikken Excellence Award for Green Hospitals by the International Hospital Federation for its commitment to environmental sustainability.²⁴²

The above is far from an exhaustive list of opportunities available for U.S. companies in the U.A.E. healthcare market, and less obvious opportunities exist as well. For instance, Leo A Daly has helped design and build medical facilities in the U.A.E., such as the Zayed Military Hospital Campus, the Al Ain Fertility Clinic, and the Abu Dhabi Policy Clinic and Hospital Complex. Additionally, U.S. venture capital and private equity firms may find promising investment opportunities in the U.A.E. healthcare space, which includes a wide array of innovative healthcare startups.

Regardless of the opportunity U.S. companies are pursuing, one of the keys to success will be an on-the-ground commitment. Fortunately, there are numerous business-friendly environments in which U.S. companies can establish themselves, including free zones like Dubai Healthcare City and Dubai Science Park. The U.S.-U.A.E. Business Council’s newly updated guide to [“Doing Business in the United Arab Emirates”](#) provides U.S. company executives the essential information they need when considering operations in the U.A.E.

B. Challenges

While there are abundant opportunities for U.S. businesses in the U.A.E. healthcare industry, these opportunities are somewhat limited by the size of the market. The U.A.E.’s relatively small population of 10 million people limits the size of local demand making it critical that large healthcare enterprises rely on the U.A.E.’s connections to the wider region or the U.A.E.’s booming medical tourism market.

Limits to local demand are further exacerbated by the large number of domestic firms established in the market and the increase in international competitors entering the fray. Asian firms, mainly from China and South Korea, have invested heavily in the U.A.E., and China in particular is continuously looking for ways to expand. Following the historic Abraham Accords in 2020, Israeli healthcare firms have also begun moving in to the U.A.E.

Another potential challenge for U.S. companies operating in the U.A.E. healthcare market is tightening budgets. In an environment of global inflation and increasing healthcare costs, the U.A.E. government is taking firmer stances regarding controlling prices throughout the healthcare industry. Moreover, there have been efforts to achieve greater efficiencies and cost savings.

C. Resources

American companies that are looking to capture the myriad of opportunities in the U.A.E. healthcare market and forge fruitful partnerships with local counterparts can draw on a variety of resources and services, both in the United States and U.A.E.

They can rely on the assistance of U.S. government institutions, located in both the U.A.E. and Washington, D.C.

U.S. Government Contacts in the U.A.E.

Senior Commercial Officer: Tanya Cole
U.S. Embassy in Abu Dhabi, Commercial Section
P.O. Box 4009, Abu Dhabi, U.A.E.
Tel: +971-2-414-2665
E-mail: Tanya.Cole@trade.gov
Website: <https://www.trade.gov/knowledge-product/united-arab-emirates-market-overview?section-nav=2758>

Healthcare Commercial Specialist in Dubai: Vandana Nair
U.S. Consulate General in Dubai
P.O. Box 121777, Dubai, U.A.E.
Tel: +971-4-309-4963
E-mail: Vandana.nair@trade.gov
Website: <https://www.trade.gov/knowledge-product/united-arab-emirates-market-overview?section-nav=2758>

U.S. Government Contacts in Washington, D.C.

U.A.E. Desk Officer: Naomi Wiegler
U.S. Department of Commerce
U.S. and Foreign Commercial Service
International Trade Administration
14th St. & Constitution Avenue, N.W.
Washington, D.C. 20230
Tel: (202) 482-0879
Email: naomi.wiegler@trade.gov

In addition, U.S. companies can turn to U.A.E. government institutions in both the United States and the U.A.E.

U.A.E. Government Contacts in the U.S.

U.A.E. Commercial Counselor: Saud Al Nowais
U.A.E. Embassy, Trade & Commercial Office
3522 International Court, NW
Washington, DC 20008
Tel: (202) 243-2425
Email: trade@uaeembassy-usa.org
Website: <https://www.uae-embassy.org/services-resources/doing-business>

U.A.E. Consulate in Los Angeles
1999 Avenue of the Stars, Suite 1250
Los Angeles, CA 90067
Tel: (310) 551-6534
Email: protocol.la@mofa.gov.ae

U.A.E. Consulate in New York
535 5th Ave., 32nd Floor
New York, N.Y. 10017
Tel: (212) 419-7670
Email: nycon@mofa.gov.ae

U.A.E. Consulate in Houston
7505 South Main Street, Suite 510
Houston, TX 77030
Tel: (832) 956-6666
Email: houstoncon@mofa.gov.ae

U.A.E. Government Contacts in the U.A.E.

Ministry of Health and Prevention
P.O. Box 848, Abu Dhabi, U.A.E.
Tel: +971-2-652-0590
P.O. Box 1853, Dubai, U.A.E.
Tel: +971-4-230-1000
Website: www.mohap.gov.ae

Emirates Health Services
DSO Digital Park Building A8
Dubai, U.A.E.
Tel: +971-4-665-0000
Website: www.ehs.gov.ae

Department of Health – Abu Dhabi
P.O. Box 5674, Abu Dhabi, U.A.E.
Tel: +971-2-449-3333
Website: www.doh.gov.ae

Abu Dhabi Health Services Company (SEHA)
P.O. Box 109090, Abu Dhabi, U.A.E.
Tel: +971-2-410-2000
Website: www.seha.ae

Dubai Health Authority (DHA)
Dubai Health Authority Building, Al Maktoum Bridge Street, Bur Dubai Area 4545, U.A.E.
Tel: +971-800-342
Email: wasselsotak@dha.gov.ae
Website: www.dha.gov.ae

Finally, U.S. companies can count on major U.S. trade associations and chambers of commerce and their counterparts in the U.A.E.

U.S. Trade Associations/Chambers of Commerce

U.S.-U.A.E. Business Council
2001 K Street, NW, Suite 201 North
Washington, D.C. 20006
Tel: +1 202 863 7285
Email: dgreenhalgh@usuaebusiness.org
Website: www.usuaebusiness.org

U.A.E. Trade Associations/Chambers of Commerce

Federation of U.A.E. Chambers of Commerce & Industry
P.O. Box 3014, Abu Dhabi, U.A.E.
Tel: +971-2-621-4144
Email: info@fccuae.ae
Website: www.fccuae.ae

Abu Dhabi Chamber of Commerce
P.O. Box 662, Abu Dhabi, U.A.E.
Tel: +971-2-621-4000
Email: contact.us@adcci.gov.ae
Website: www.abudhabichamber.ae

Dubai Chamber of Commerce & Industry
P.O. Box 1457, Dubai, U.A.E.
Tel: +971-4-228-0000
Email: customercare@dubaichamber.com
Website: www.dubaichamber.com/

Sharjah Chamber of Commerce & Industry
P.O. Box 580, Sharjah, U.A.E.
Tel: +971-6-530-2222
Email: scci@sharjah.gov.ae
Website: www.sharjah.gov.ae

Ajman Chamber of Commerce & Industry
P.O. Box 662, Ajman, U.A.E.
Tel: +971-600-595-959
Email: info@ajmanchamber.ae
Website: www.ajmanchamber.ae

Fujairah Chamber of Commerce & Industry
P.O. Box 738, Fujairah, U.A.E.
Tel: +971-9-223-0000

Email: chamber@fujcci.ae

Website: www.fujcci.ae

Ras Al Khaimah Chamber of Commerce & Industry

P.O. Box 87, Ras Al Khaimah, U.A.E.

Tel: +971-7-207-0222

Email: info@rakchamber.ae

Website: www.rakchamber.ae

Umm Al Quwain Chamber of Commerce & Industry

P.O. Box 436, Umm Al Quwain, U.A.E.

Tel: +971-6-765-1111

Email: uaqcci1@eim.ae

Website: <http://www.uaqchamber.ae/>



REFERENCES

- ¹ <https://www.thenationalnews.com/uae/government/2023/01/24/sheikh-mohamed-appoints-abu-dhabi-executive-council-members/>
- ² <https://forbesmiddleeastevents.com/Speakers/dr-noura-ghaithi/>
- ³ <https://www.magazine.medicaltourism.com/article/top-10-medical-tourism-destinations-world>
- ⁴ <https://www.thenationalnews.com/business/economy/2023/09/19/uae-to-conclude-6-more-cepa-deals-in-next-3-months-foreign-trade-minister-says/>
- ⁵ <https://insights.omnia-health.com/reports/entering-new-markets-uae-healthcare-market>
- ⁶ <https://www.emerald.com/insight/content/doi/10.1108/IJHG-04-2023-0040/full/pdf>
- ⁷ <https://www.globalbusinessoutlook.com/healthcare/uae-healthcare-industry-set-excel/#:~:text=The%20UAE%20has%20given%20significant,emphasized%20growing%20its%20medical%20personnel.>
- ⁸ <https://www.globalbusinessoutlook.com/healthcare/uae-healthcare-industry-set-excel/#:~:text=The%20UAE%20has%20given%20significant,emphasized%20growing%20its%20medical%20personnel.>
- ⁹ <https://www.thenationalnews.com/uae/2022/01/23/dubai-population-to-surge-to-nearly-6m-in-20-years-amid-urban-transformation/>
- ¹⁰ <https://12ft.io/proxy?q=https%3A%2F%2Fgulfnews.com%2Fspecial-reports%2Fsilent-pandemic-one-in-five-in-the-uae-has-diabetes-which-is-3-times-deadlier-than-covid-19-1.1606991073666>
- ¹¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7462068/>
- ¹² MoHAP, "Cancer Incidence in United Arab Emirates Annual Report of the UAE – National Cancer Registry 2019, www.mohap.gov.ae
- ¹³ <https://www.thenationalnews.com/uae/health/2022/03/24/high-costs-a-barrier-to-mental-health-support-in-uae-report-finds/>
- ¹⁴ <https://www.thenationalnews.com/uae/health/2022/03/24/high-costs-a-barrier-to-mental-health-support-in-uae-report-finds/>
- ¹⁵ <http://www.healthhq.world/issue-sections/country-report/uae/government-led-digital-health-initiatives-drive-adoption-of-telehealth-in-the-uae-and-ksa-says-frost-sullivan/>
- ¹⁶ <https://www.thenationalnews.com/uae/education/2022/10/10/world-mental-health-day-a-guide-on-how-to-access-mental-health-support-in-the-uae/>
- ¹⁷ <https://gulfnews.com/uae/health/emirates-health-services-provides-mental-health-support-on-digital-channels-1.89834964>
- ¹⁸ <https://www.zawya.com/en/legal/regulations/uae-government-issues-federal-decree-on-mental-health-mult8u1v#>
- ¹⁹ <https://www.medicaltourism.com/mti/home>
- ²⁰ <https://www.thenationalnews.com/business/travel-and-tourism/2023/04/12/dubai-received-674000-medical-tourists-who-spent-270m-in-2022/>
- ²¹ https://www.prosperity.com/download_file/view_inline/4789
- ²² <https://www.globalbusinessoutlook.com/healthcare/uae-healthcare-industry-set-excel/#:~:text=The%20UAE%20has%20given%20significant,emphasized%20growing%20its%20medical%20personnel.>
- ²³ <https://www.vision2021.ae/en/national-agenda-2021/list/world-class-circle>
- ²⁴ <https://www.thenationalnews.com/uae/2021/10/31/frontline-workers-to-get-golden-visas-sheikh-mohamed-bin-zayed-says/>
- ²⁵ <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/health/national-strategy-for-nursing-and-midwifery>
- ²⁶ <https://www.newsweek.com/rankings/worlds-best-hospitals-2023/uae>
- ²⁷ <https://gulfnews.com/uae/dubai-healthcare-city-boosts-phase-2-expansion-plans-to-cater-to-growing-healthcare-needs-of-dubai-1.92919644>
- ²⁸ <https://www.who.int/srilanka/news/detail/13-12-2023-focus-on-health-at-cop>
- ²⁹ <https://www.cop28.com/en/news/2023/12/Health-Declaration-delivering-breakthrough-moment-for-health-in-climate-talks>
- ³⁰ <https://news.un.org/en/story/2023/12/1144292>
- ³¹ <https://gulfbusiness.com/special-report-why-uae-has-taken-centre-stage-in-the-healthcare-space/>
- ³² <https://u.ae/en/about-the-uae/initiatives-of-the-next-50/projects-of-the-50/second-set-of-projects-of-the-50>
- ³³ <https://www.khaleejtimes.com/government/abu-dhabi-executive-council-approves-healthcare-strategy>
- ³⁴ <https://www.zawya.com/en/press-release/companies-news/sultan-alqasimi-approves-jawaher-boston-medical-district-project-ykx0jop>
- ³⁵ <https://fastcompany.com/impact/what-will-it-take-for-the-middle-east-to-become-a-manufacturing-hub/#:~:text=The%20country%20is%20eyeing%20to,further%20strengthens%20the%20nation's%20reputation.>
- ³⁶ <https://mohap.gov.ae/en/media-center/news/10/10/2023/statement-he-al-owais-law-establishing-uae-drug-corporation>
- ³⁷ <https://mohap.gov.ae/assets/91d53ac6/Federal%20Decree%20Law%20No.%2011%20of%202023%20Amending%20some%20provisions%20of%20the%20Federal%20Law%20No.%208%20of%202019%20on%20Medical%20Products%20Profession%20of%20Pharmacy%20and%20Pharmaceutical%20Facilities.pdf.aspx>
- ³⁸ https://mohap.gov.ae/assets/4a583b8f/Ministerial%20Resolution%20No.%2089%20of%202023%20Regarding%20Medical%20Products%20and%20Health%20Facilities%20that%20are%20excluded%20from%20Registration%20in%20the%20Drug%20Tracking%20and%20Monitoring%20Platform_638357196975397974.pdf.aspx
- ³⁹ <https://mohap.gov.ae/assets/55a96bee/%D8%A7%D9%84%D8%B3%D9%8A%D8%A7%D8%B3%D8%A9%20%D8%A7%D9%84%D9%88%D8%B7%D9%86%D9%8A%D8%A9%20%D9%84%D8%AA%D8%B9%D8%B2%D9%8A%D8%B2%20%D8%A7%D9%94%D9%86%D9%85%D8%A7%D8%B7%20%D8%A7%D9%84%D8%AD%D9%8A%D8%A7%D8%A9%20%D8%A7%D9%84%D8%B5%D8%AD%D9%8A%D8%A9%20%D8%81%D9%8A%20%D8%AF%D9%88%D9%84%D8%A9%20%D8%A7%D9%84%D8%A7%D9%95%D9%85%D8%A7%D8%B1%D8%A7%D8%AA%20%D8%A7%D9%84%D8%B9%D8%B1%D8%A8%D9%8A%D8%A9%20%D8%A7%D9%84%D9%85%D8%AA%D8%AD%D8%AF%D8%A9.pdf.aspx>
- ⁴⁰ <https://www.doh.gov.ae/en/about/law-and-legislations>
- ⁴¹ https://mohap.gov.ae/app_content/legislations/php-law-en-115/mobile/index.html#p=2
- ⁴² <https://www.doh.gov.ae/en/about/law-and-legislations>

⁴³ <http://www.uaeinteract.com/society/health.asp>

⁴⁴ <https://www.eiuperspectives.economist.com/sites/default/files/Investing%20in%20quality%20WEB%20English.pdf>;
http://export.gov/industry/health/healthcareresourceguide/eg_main_092312.asp; <http://www.thenational.ae/uae/health/ministry-of-health-cuts-prices-on-142-medicines>; <http://www.thenational.ae/uae/health/uae-slashes-cost-of-diabetes-drugs-by-more-than-80>;
<http://www.thenational.ae/uae/health/ministry-of-health-bolsters-uaes-medicine-stockpiles>; <http://www.thenational.ae/uae/health/uae-fast-tracking-new-drugs-in-bid-to-tackle-growing-health-issues>

⁴⁵ <http://www.moh.gov.ae/en/About/Pages/OrganizationStructure.aspx>

⁴⁶ <https://www.wam.ae/en/details/1395303087473>; <https://www.wam.ae/en/details/1395303022446>;
https://tradedearabia.com/news/HEAL_392330.html

⁴⁷ <https://www.zawya.com/en/business/healthcare/emirates-drug-establishment-approves-100-day-formation-plan-qelj1y5e>

⁴⁸ <https://forbesmiddleeastevents.com/Speakers/dr-fatima-al-kaabi/>

⁴⁹ <https://www.abudhabi.ae/portal/public/en/departments/doh>

⁵⁰ <http://sha.gov.ae/en/>

⁵¹ <https://circuit.news/2023/09/04/what-is-pure-health/>

⁵² <http://www.khaleejtimes.com/nation/uae-health/four-hospitals-two-clinics-to-be-set-up-in-al-gharbia>;
<http://www.thenational.ae/uae/health/construction-complete-at-sheikh-khalifa-medical-city-dialysis-centre>;
<http://www.thenational.ae/uae/health/20150609/abu-dhabis-new-centre-to-support-women-with-mental-health-issues>;
<http://www.thenational.ae/uae/health/seha-opens-new-paediatric-dialysis-unit>

⁵³ <http://www.thenational.ae/uae/health/al-towayya-childrens-speciality-centre-opens-its-doors>

⁵⁴ <https://www.ehs.gov.ae/en/services/health-care-facilities>

⁵⁵ <https://www.wam.ae/en/details/1395302835242>

⁵⁶ <https://www.ehs.gov.ae/en/about-us/initiatives>

⁵⁷ <https://www.tahawultech.com/interviews/blockchain-is-creating-an-increased-sense-of-security-and-reliability-for-users-emirates-health-services/>

⁵⁸ <http://nmc.ae/hospitals/umm-al-quwain/sheikh-khalifa-general-hospital-1/>; <http://www.thenational.ae/uae/health/dh750-million-hospital-boosts-health-care-in-umm-al-quwain>; <http://www.thenational.ae/uae/health/dh750m-sheikh-khalifa-hospital-opens-in-umm-al-quwain>;
http://www.tradedearabia.com/news/HEAL_329367.html

⁵⁹ <http://www.thenational.ae/uae/government/rak-ruler-sheikh-saud-opens-sheikh-khalifa-speciality-hospital---in-pictures>;
<http://www.thenational.ae/uae/health/raks-flagship-hospital-to-be-managed-by-leading-korean-medical-institute>; <http://www.sksh.ae/about-us/>; <http://www.thenational.ae/news/uae-news/health/raks-flagship-hospital-will-meet-medical-needs-head-on>

⁶⁰ <https://purehealth.ae/>

⁶¹ <https://www.thenationalnews.com/business/markets/2023/12/20/pure-health-soars-75-as-it-starts-trading-on-abu-dhabi-bourse-after-986m-ipo/>

⁶² <https://www.thenationalnews.com/business/markets/2023/12/20/pure-health-soars-75-as-it-starts-trading-on-abu-dhabi-bourse-after-986m-ipo/>

⁶³ <https://circuit.news/2023/09/04/what-is-pure-health/>

⁶⁴ <https://www.thenationalnews.com/business/markets/2023/12/20/pure-health-soars-75-as-it-starts-trading-on-abu-dhabi-bourse-after-986m-ipo/>

⁶⁵ <https://circuit.news/2023/06/18/uaes-purehealth-israels-sheba-hospital-sign-cooperation-agreement/>

⁶⁶ <https://m42.ae/who-we-are/about-m42/>

⁶⁷ <https://m42.ae/what-we-do/malaffi/>

⁶⁸ <https://www.diaverum.com/corporate/en/footer-links/media/news/diaverum-welcomes-m42-as-its-new-shareholder/>

⁶⁹ <https://m42.ae/what-we-do/cleveland-clinic-abu-dhabi/>

⁷⁰ <http://www.mubadala.com/en/what-we-do/healthcare/healthpoint>; <http://www.mubadala.com/en/news/mubadala-healthcare-and-wooridul-agree-establish-spine-centre-abu-dhabi>

⁷¹ <https://m42.ae/what-we-do/imperial-college-london-diabetes-centre/>

⁷² <https://www.clevelandclinicabudhabi.ae/en/about-us/pages/who-we-are.aspx>; <http://www.thenational.ae/uae/health/sheikh-mohammed-and-moroccan-king-inaugurate-cleveland-clinic-abu-dhabi>; <https://www.thenational.ae/uae/health/cleveland-clinic-abu-dhabi-continues-expansion-as-it-treats-more-than-337-000-patients-1.613332>; http://www.tradedearabia.com/news/HEAL_325323.html;
<https://www.thenational.ae/uae/abu-dhabi-hospital-carries-out-country-s-first-full-heart-transplant-1.684400>;
<http://www.gulftoday.ae/portal/60e61fe9-2c7e-4d2a-98ca-d334281cc03d.aspx>

⁷³ <http://aljalilahospital.com/about-aljalila.aspx>; <http://www.thenational.ae/uae/health/dh700-million-childrens-hospital-set-to-open-in-dubai-by-years-end>

⁷⁴ <https://www.arabianbusiness.com/culture-society/407463-al-jalila-childrens-hospital-performs-dubais-first-paediatric-kidney-transplant>

⁷⁵ <http://www.aljalilachildrens.ae/about-us>

⁷⁶ <https://www.newsweek.com/worlds-best-hospitals-2022/united-arab-emirates>

⁷⁷ <https://ahaliagroup.com/about-us/>

⁷⁸ <https://www.thenationalnews.com/business/nmc-health-expands-buying-sharjah-s-al-zahra-hospital-1.202238>

⁷⁹ <https://www.ahdubai.com/about>

⁸⁰ <http://www.arabianhealthcaregroup.com/content.php?pid=53>; <http://www.arabianhealthcaregroup.com/content.php?pid=59?pid=50>;
http://www.rakhospital.com/node/151/About#.V7yxY_krLIU; <http://www.slh.ch/en/mitglieder/RAK-Hospital-.php>

⁸¹ <http://wam.ae/en/details/1395303015048>

⁸² <https://rakhospital.com/about-us/>

⁸³ <http://www.asterdmhealthcare.com>

⁸⁴ <http://www.asterdmhealthcare.com/global-network/?id=fe#aster-middle-east>

⁸⁵ <https://www.asterdmhealthcare.com/newsroom/detail/medcare-women-children-hospital-enters-metaverse>

⁸⁶ <https://burjeelholdings.com/investor-relations/>

⁸⁷ <https://gulfnews.com/business/corporate-news/emirates-hospitals-group-raises-new-financing-of-dh150-million-from-fidera-1.1641459098757>

⁸⁸ <https://www.imh.ae/about-us/>

⁸⁹ <https://www.thenational.ae/uae/new-cost-controls-to-clean-up-wild-west-uae-healthcare-market-1.628527>

⁹⁰ <https://gulfnews.com/news/uae/health/king-s-college-opens-new-medical-facility-in-dubai-1.2274177>

⁹¹ <http://www.thenational.ae/business/economy/kings-college-hospital-agrees-deal-for-100-bed-dubai-facility-and-network-of-clinics>; <https://www.kch.nhs.uk/news/media/press-releases/view/15643>; <https://www.kchclinics.com/why-kings/kings-dubai/>; <https://www.kchclinics.com/>

⁹² <http://www.mediclinic.com>

⁹³ <https://www.mediclinic.com/en/operating-divisions/mediclinic-middle-east.html>

⁹⁴ <https://www.fin24.com/Companies/Health/mediclinic-parkview-hospital-opens-in-dubai-20180923>

⁹⁵ <http://www.mediclinic.com/About-Us>; <http://www.thenational.ae/business/economy/abu-dhabis-nmc-health-vows-to-fight-on-for-al-noor-merger>

⁹⁶ <http://www.alnoorhospital.com/>

⁹⁷ <https://www.thenationalnews.com/business/economy/2023/07/11/nmc-files-case-against-founder-br-shetty-in-4bn-fraud-suit/>

⁹⁸ <https://www.thenationalnews.com/business/economy/2023/07/11/nmc-files-case-against-founder-br-shetty-in-4bn-fraud-suit/>

⁹⁹ <https://saudigermanhealth.com/en/about-us>

¹⁰⁰ <https://www.zulekhahospitals.com/about>

¹⁰¹ <http://zulekhahospitals.com/about>; <http://www.thenational.ae/business/the-life/day-in-the-life-zulekha-hospitals-executive-driven-by-best-healthcare-practice>

¹⁰² <https://www.zulekhahospitals.com/dubai/best-hospital-in-dubai>

¹⁰³ <http://www.prnewswire.com/news-releases/american-hospital-dubai-joins-mayo-clinic-care-network-582079311.html>; <http://www.emirates247.com/business/corporate/valiant-clinic-to-open-at-city-walk-dubai-this-year-2016-01-18-1.617722>; <http://gulfnews.com/business/sectors/general/emaar-healthcare-group-ends-partnership-1.671004>

¹⁰⁴ <http://www.dhcc.ae/Portal/en/about-us/overview.aspx>; <http://www.dhcc.ae/Portal/en/investments/faqs.aspx#page=1>; <http://www.dhcc.ae/Portal/en/education/medical-education-projects.aspx>; <http://www.thenational.ae/business/economy/staff-and-facilities-growing-fast-at-dubai-healthcare-city>

¹⁰⁵ <https://www.dhcc.ae/news/dubai-healthcare-city-authority-launches-masari-programme-to-empower-emirati-workforce>

¹⁰⁶ <https://gulfnews.com/uae/health/uae-asan-medical-centre-of-south-korea-to-build-65-bed-hospital-in-dubai-healthcare-city-1.96615044>

¹⁰⁷ <http://www.sharjahupdate.com/2017/01/master-plan-for-sharjah-healthcare-city-approved/>

¹⁰⁸ <https://www.zawya.com/en/press-release/companies-news/sultan-alqasimi-approves-jawaher-boston-medical-district-project-ykxo0jop>

¹⁰⁹ <https://www.zawya.com/en/press-release/companies-news/sultan-alqasimi-approves-jawaher-boston-medical-district-project-ykxo0jop>

¹¹⁰ <https://www.hg.org/article.asp?id=36394>; <http://www.haad.ae/HAAD/LinkClick.aspx?fileticket=5exKFrTZQps%3D&tabid=136>

¹¹¹ <https://www.thiqa.ae/opencms/opencms/Thiqa/en/about-us/about-us/>

¹¹² <https://www.hg.org/article.asp?id=36394>; <http://www.tamimi.com/en/section/global/law-no-11-of-2013-concerning-health-insurance-in-the-emirate-of-dubai>

¹¹³ <http://www.thenational.ae/uae/uae-news-in-review-2015-strides-towards-compulsory-health-insurance-for-all>

¹¹⁴ <http://www.thenational.ae/uae/health/mandatory-insurance-deadline-extended-in-dubai>; <http://www.thenational.ae/uae/health/dubais-mandatory-health-insurance-law-comes-into-force>; <http://www.arabianbusiness.com/dha-may-issue-fines-if-firms-miss-out-on-health-insurance-renewal-674959.html>; <http://gulfnews.com/news/uae/health/where-to-get-insurance-cover-for-domestic-workers-1.1950911>

¹¹⁵ <http://www.arabianbusiness.com/industries/healthcare/385432-wkd-dubai-adds-cancer-treatment-to-basic-health-insurance-plan>

¹¹⁶ <https://gulfnews.com/news/uae/health/insurance-to-cover-mental-health-in-dubai-1.2295306>

¹¹⁷ <http://www.thenational.ae/uae/health/sharjah-citizens-aged-55-and-over-eligible-for-health-insurance>

¹¹⁸ <https://damanhealth.ae/en/about-daman/our-values>

¹¹⁹ http://www.haad.ae/haad/Portals/0/Health%20Regulation%20Laws/Book1_En/index.html#/2/

¹²⁰ <https://damanhealth.ae/en/about-daman/>

¹²¹ <https://www.thiqa.ae/opencms/opencms/Thiqa/en/home/>; <https://www.dha.gov.ae/en/HealthFunding/Pages/Enaya.aspx>; <http://www.dubai.ae/en/Lists/Articles/DispForm.aspx?ID=83&category=Citizens>; <http://www.saada.ae/About?Lang=1>; <http://www.thenational.ae/uae/health/health-insurance-scheme-to-benefit-uae-nationals-with-no-other-cover>; <http://www.isahd.ae/Home/About>; <http://www.thenational.ae/business/personal-finance/a-guide-to-dubais-mandatory-health-insurance-law>; <http://www.arabianbusiness.com/dubai-s-poorer-workers-get-more-choice-on-health-insurance-665197.html>

¹²² <http://www.thenational.ae/uae/emiratis-and-expats-to-pay-more-for-health-care-as-cover-is-reduced#full>

¹²³ <http://www.thenational.ae/uae/shock-at-insurance-coverage-cuts-for-most-vulnerable-emirati-patients>

¹²⁴ <http://www.thenational.ae/uae/health/layoffs-at-abu-dhabi-private-health-centres-as-industry-manages-effects-of-new-copay>

¹²⁵ <http://www.gulftoday.ae/portal/79651cad-6338-4ba1-8a0f-4226c829bb7e.aspx>

¹²⁶ <https://www.insurancebusinessmag.com/asia/news/breaking-news/gulf-insurance-group-completes-buyout-of-axas-gulf-region-business-309256.aspx>

¹²⁷ <https://www.thenationalnews.com/business/economy/2022/09/20/uae-central-bank-and-sama-sign-preliminary-deal-to-supervise-insurance-sector/>

¹²⁸ <https://www.dlapiper.com/en/insights/publications/global-insurance-updates/global-insurance-updates-july-2023/the-regulatory-landscape-for-insurers-in-saudi-arabia-and-the-uae>

¹²⁹ <http://www.oxfordbusinessgroup.com/overview/double-digit-growth-projected-continue-2015>

¹³⁰ <http://www.allianzworldwidecare.com/uae-plans>

¹³¹ <https://www.statista.com/statistics/1040805/uae-insurance-market-share-by-insurance-company/>

¹³² <http://www.adnic.ae/en/products/individual/medical-insurance/>; <http://www.adnic.ae/en/products/corporate/corporate-medical-insurance/>

¹³³ <https://www.reuters.com/article/adnic-allianz-ma/abu-dhabi-weighting-sale-of-24-pct-stake-in-insurance-firm-adnic-sources-idUSL4N1LL36X>

¹³⁴ <http://www.arabianbusiness.com/photos/revealed-uae-s-top-50-companies-539053.html?img=3#.V2Q-PbsrLcs>;
<http://www.oxfordbusinessgroup.com/overview/double-digit-growth-projected-continue-2015>; <http://www.tameen.ae/en/about-us/corporate-profile>; <http://www.tameen.ae/en/for-individuals/health-insurance/international-health-insurance>;
<http://www.tameen.ae/en/for-businesses/group-health-insurance/group-health-insurance-product>;
<http://www.thenational.ae/business/economy/competition-and-regulations-to-rein-in-profit-growth-at-oman-insurance>
¹³⁵ <https://www.thenationalnews.com/business/economy/2022/09/20/uae-central-bank-and-sama-sign-preliminary-deal-to-supervise-insurance-sector/>
¹³⁶ <https://www.cigna-me.com/en/blog/cigna-360-wellbeing-survey-2022>
¹³⁷ <https://www.cignaglobalhealth.com/static/docs/pdfs/na/360-report-health-warning-2023.pdf>
¹³⁸ <https://www.metlife.ae/individuals/>
<https://www.metlife.ae/businesses/>
<https://www.metlife-gulf.com/>
¹³⁹ <http://gulfnews.com/business/sectors/banking/metlife-alico-sees-opportunities-1.707795>;
<http://www.wsj.com/articles/SB10001424052748704706304575107830470736008>;
<http://www.wsj.com/articles/SB10001424052748704320104575014834281436288>;
<https://www.aetnainternational.com/en/individuals/make-most-of-plan/contact-us.html>;
<http://www.aetnainternational.com/aiweb/contentMgt/assets/documents/middleeastafrika/IHP-Individual-Presale-Brochure-UAE-RSA.pdf>;
<http://www.cignaglobalhealth.com/products/middle-east.html>;
http://www.aetnainternational.com/aiweb/contentMgt/assets/documents/middleeastafrika/HEA_Product-Brochure-UAEOnly.pdf;
<https://www.thenational.ae/business/money/half-of-uae-residents-cannot-afford-future-health-bills-cigna-survey-reveals-1.667623>;
<https://www.thenational.ae/business/zurich-middle-east-to-focus-on-insurance-ceo-says-1.561022>;
<http://gulfnews.com/business/sectors/insurance/cigna-launches-insurance-specially-tailored-for-uae-residents-1.2109163>;
http://www.dubaicityinfo.com/cityguide/press_news_32566.aspx; <http://www.dubaiprnetwork.com/pr.asp?pr=112917>;
https://www.zawya.com/mena/en/story/Aetna_International_appoints_David_Healy_as_CEO_for_newly_formed_EMEA_region-ZAWYA20171115064845/; <https://gulfnews.com/uae/health/intersystems-data-platforms-that-power-ai-with-healthy-data-1.1664445724619>
¹⁴⁰ <https://www.thenationalnews.com/business/2022/02/23/uae-pharma-market-to-be-valued-at-47bn-by-2025-as-it-boosts-local-manufacturing/#:~:text=The%20country%20has%202023%20pharmaceutical,medicines%20locally%2C%20ADQ%20report%20says&text=The%20UAE's%20pharmaceutical%20market%20is,ADQ%20said%20in%20a%20report>
¹⁴¹ <https://www.biospectrumasia.com/analysis/86/23075/big-pharma-sets-sights-on-middle-east-.html#:~:text=The%20UAE%20now%20produces%20over,to%20%24297%20million%20by%202025>
¹⁴² <https://fwd.adq.ae/healthcare-and-life-sciences>
¹⁴³ <https://www.biospectrumasia.com/analysis/86/23075/big-pharma-sets-sights-on-middle-east-.html>
¹⁴⁴ <https://www.thenationalnews.com/business/economy/2023/01/10/mubadala-and-us-based-resilience-link-up-on-biopharma-manufacturing-in-uae/>
¹⁴⁵ <https://www.lexology.com/library/detail.aspx?g=d18ead6b-0f1e-405e-aef2-e62cbf44a2ac>
¹⁴⁶ <https://www.ihs.com/country-industry-forecasting.html?ID=1065975936>
¹⁴⁷ <http://www.arabianbusiness.com/-72m-medicine-cost-cuts-benefit-uae-patients-with-chronic-illnesses-643708.html>;
<https://www.khaleejtimes.com/news/uae-health/UAE-cuts-prices-by-24-on-select-medicines-12>
¹⁴⁸ <https://fwd.adq.ae/healthcare-and-life-sciences>
¹⁴⁹ <https://wam.ae/en/details/1395303093884>
¹⁵⁰ <https://gulfnews.com/business/neopharma-acquires-antibiotic-facility-in-the-us-1.2286971>
¹⁵¹ <http://www.thenational.ae/business/industry-insights/economics/pharmaceutical-sector-in-the-uae-is-in-good-health>;
<https://www.globalpharma-sanofi.com/our-company.html>; <https://12ft.io/proxy?q=https%3A%2F%2Fgulfnews.com%2Fbusiness%2Fwith-sanofi-agreement-uae-investments-in-healthcare-go-deep-into-the-nature-of-cure-itself-1.91969143>
¹⁵² http://www.ips-me.com/en/news/ips_announces_acquisition_in_medpharma_-_dubai
¹⁵³ <http://business.financialpost.com/investing/valeant-pharmaceuticals-international-inc-expands-in-middle-east-with-800-million-purchase-of-amoun>
¹⁵⁴ <http://www.lifepharmafze.com/about-us/facilities/jebel-ali-dubai/>
¹⁵⁵ https://tradedarabia.com/news/IND_363425.html
¹⁵⁶ <http://www.pharmax.ae/about-us.html>
¹⁵⁷ <http://gulfbusiness.com/uae-pharma-firm-begins-manufacturing-affordable-generic-medicines-dubai/>; <https://fwd.adq.ae/healthcare-and-life-sciences>
¹⁵⁸ <http://gulfnews.com/news/uae/society/more-pharma-companies-coming-to-uae-1.2118265>; <http://www.arabianbusiness.com/building-healthcare-hub-jane-griffiths-615035.html>; <http://wam.ae/en/details/1395228901434>
¹⁵⁹ <http://www.dhcc.ae/Portal/en/directory/pharmaceutical.aspx>
¹⁶⁰ <http://www.dsp.ae/community/business-partners/>; <http://www.arabianbusiness.com/tecom-creates-new-dubai-science-park-after-merger-609328.html#.V2KXsLrLcs>; <http://www.dsp.ae/community/business-partners/>; <http://www.prnewswire.com/news-releases/uae-pharmaceutical-market-at-37b-by-2020-healthcare-industry-in-united-arab-emirates-forecast-to-show-significant-growth-potential-274356961.html>
¹⁶¹ <http://www.ge.com/ae/b2b/healthcare>
¹⁶² <https://www.healthcare.siemens.com/how-can-we-help-you/asia-pacific/contact-united-arab-emirates>
¹⁶³ <http://www.arabianbusiness.com/global-medical-tech-firm-signs-partnership-set-up-uae-business-655441.html>
¹⁶⁴ <http://www.mea.philips.com/a-w/about-philips/company-profile/businesses/healthcare.html>
¹⁶⁵ <https://www.marketresearch.com/product/sample-8292131.pdf>
¹⁶⁶ <http://www.abbott.com/contact.United%20Arab%20Emirates.html>
¹⁶⁷ <http://www.abbott.com/abbott-stjudemedical-en.html>
¹⁶⁸ <https://www.thenationalnews.com/uae/2022/12/09/uae-becomes-third-country-in-world-to-use-leadless-abbott-pacemaker/>

169 <http://tecomdirectory.com/company.php?company=001D0000017JxdzIAC>; <https://www.thenational.ae/uae/health/medical-giant-medtronic-shifts-regional-hq-to-dubai-1.250226>; <https://www.abraaj.com/abraajweek2016/majid-kaddoumi/>

170 <http://www.medtronic.com/us-en/healthcare-professionals/products/cardiovascular.html>

171 <http://www.careers.jnj.com/middle-east-countries/overview>

172 <http://www.admd.ae/home.html>

173 <https://www.thenational.ae/uae/health/medical-database-to-reorganise-health-care-1.501052>

174 <https://www.businesswire.com/news/home/20080512005559/en/Cerner-Millennium-Health-Information-Technology-Implemented-Abu>;
<http://www.arabianbusiness.com/abu-dhabi-s-seha-continues-cerner-hit-roll-out-18417.html>

175 <https://www.mubadala.com/en/news/doh-partners-in-jazat-data-systems-implement-health-information-exchange-system-emirate-abu>

176 <http://gulfnews.com/news/uae/health/integrated-health-record-system-launched-1.1676908>; <http://gulfnews.com/news/uae/health/dha-launches-information-security-project-1.2066242>

177 <https://www.healthcareitnews.com/news/emea/current-state-dubai-s-healthcare-digital-transformation-journey>

178 <https://www.healthcareitnews.com/news/emea/current-state-dubai-s-healthcare-digital-transformation-journey>

179 <https://www.healthcareitnews.com/news/emea/current-state-dubai-s-healthcare-digital-transformation-journey>

180 http://www.cerner.com/About_Cerner/; https://www.cerner.com/uploadedFiles/Content/About_Cerner/uae_sheikh_Khalifa_Hospital.pdf;
<http://www.cerner.com/newsroom.aspx?id=2147485254&blogid=2147483710&langType=14337>; <http://www.khaleejtimes.com/nation/uae-health/wareed-links-14-hospitals-25-clinics-across-the-country>; <https://www.epic.com/Contact>; <http://www.healthcareitnews.com/news/epic-systems-wins-contract-university-hospital-dubai>;
<http://www.fdbhealth.com/~media/downloads/form%20not%20required/ae/cleveland%20clinic%20case%20study.ashx>;
<https://globenewswire.com/news-release/2016/11/21/891682/0/en/UAE-Ministry-of-Health-and-Prevention-Renews-Relationship-with-Cerner-to-Provide-Electronic-Health-Record.html>; <https://globenewswire.com/news-release/2017/01/31/912229/0/en/King-s-College-Hospital-London-Selects-Cerner-s-Clinical-and-Financial-Management-System.html>; <https://globenewswire.com/news-release/2017/06/06/1008637/0/en/Cerner-Middle-East-Africa-Strengthens-Client-Alignment-with-the-Appointment-of-New-Leadership-Roles.html>; <https://www.epic.com/epic/post/2570>; <https://www.healthcareitnews.com/news/uae-based-mubadala-healthcare-launches-cerner-integrated-information-system>

181 <https://www.thenationalnews.com/health/2021/12/04/uae-launches-riayati-national-medical-records-database/>

182 <https://www.mubadala.com/en/what-we-do/healthcare/abu-dhabi-telemedicine-centre>

183 <https://u.ae/en/information-and-services/health-and-fitness/telemedicine>

184 <https://www.arabnews.com/node/2164561/business-economy>

185 <http://www.emirates247.com/news/emirates/dha-launches-second-smart-pharmacy-with-a-dispensing-robot-at-dubai-hospital-2017-08-03-1.657028>

186 <https://agsiw.org/a-race-to-the-future-the-uae-in-the-metaverse/>

187 <https://www.khaleejtimes.com/uae/gitex-2022-medcare-emerges-as-uaes-first-metaverse-hospital>

188 <https://www.pymnts.com/metaverse/2022/the-uae-metaverse-healthcare-projects-pushing-medical-frontiers/>

189 <http://www.cmhs.uaeu.ac.ae/>

190 <https://www.mbru.ac.ae/about-mbru/>

191 <http://www.sharjah.ac.ae/en/academics/Colleges/Medicine/Pages/default.aspx>;
<http://www.sharjah.ac.ae/en/academics/Colleges/Medicine/Pages/dw.aspx>

192 <http://www.sharjah.ac.ae/en/academics/degree-program/Pages/UnderGraduate.aspx>;
<http://www.sharjah.ac.ae/en/academics/Colleges/healthsciences/dept/nu/Pages/default.aspx>;
http://www.sharjah.ac.ae/en/Media/Publications/Documents/UOS%20Catalog/pdf/Health_Sc_English.pdf#Nursing

193 <http://www.uhs.ae/>

194 <http://www.hct.ac.ae/en/programmes/health-sciences/>

195 <http://www.gmu.ac.ae/aboutgmu/>; <https://gmu.ac.ae/academics/>

196 <https://gulfnews.com/uae/health/gulf-medical-university-announces-academic-expansion-1.2263391>

197 <http://www.rakmhsu.com/about-rakmhsu>; <http://www.rakmhsu.com/medical-courses-in-uae>; <http://www.rakmhsu.com/top-medical-school-college-in-uae-FAQ>

198 <http://www.fchs.ac.ae/En/AboutUs/Pages/default.aspx>

199 <http://www.thenational.ae/uae/health/training-programme-to-encourage-uae-students-to-pursue-nursing>

200 <http://www.dmcg.edu/home.php?navmenu=5>

201 <http://www.dpc.edu/#>

202 <https://www.rcsi.ie/dubai>; <http://www.rcsileadership.org/index.jsp?p=0&n=304>; <https://mbruniversity.ac.ae/en/Colleges/College-Of-Medicine/Bachelor-of-Medicine-and-Bachelor-of-Surgery.aspx>

203 <https://www.ku.ac.ae/academics/college-of-medicine-and-health-sciences>

204 <https://www.ajman.ac.ae/en/about/our-story-ajman-university>

205 https://www.tamimi.com/news/introducing-the-concept-of-an-academic-health-center-in-dubai/?utm_source=vuture&utm_medium=email&utm_campaign=the%20dubai%20academic%20health%20corporation%20-%20introducing%20the%20concept%20of%20an%20academic%20health%20center%20in%20dubai

206 <https://www.uae-embassy.org/news-media/uae-embassy-increases-cooperation-children%E2%80%99s-national-medical-center>;
<http://www.thenational.ae/uae/hospitals/kbzf-enters-into-partnership-with-two-hospitals-to-develop-emirati-doctors>;
<http://www.thenational.ae/uae/health/emirati-students-pursue-the-latest-medical-technologies-in-us-internship>;
<http://www.thenational.ae/uae/health/khalifa-university-students-selected-for-us-paediatric-summer-programme>;
https://www.zawya.com/mena/en/story/Emirati_doctors_to_receive_training_in_USbased_hospitals-WAM20171210103124539/;
<http://gulfnews.com/news/uae/health/uae-physician-identifies-a-unique-subtype-of-colon-cancer-1.1948059>;
<http://www.arabianbusiness.com/interviews/healthcare/377539-abe-1828-home-away-from-home>;
<http://gulfnews.com/news/uae/health/cleveland-clinic-abu-dhabi-welcomes-40-interns-1.2063572>;
<https://www.khaleejtimes.com/nation/abu-dhabi/hospitals-need-more-emirati-doctors>; <http://www.jhsp.edu/news/news-releases/2008/abu-dhabi-agreement.html>; <http://www.haad.ae/haad/tabid/58/ctl/Details/Mid/417/ItemID/40/Default.aspx>;

<http://www.thenational.ae/uae/health/cleveland-clinic-abu-dhabi-and-nyu-abu-dhabi-agree-on-collaboration>;
<https://www.chop.edu/news/childrens-hospital-philadelphia-and-united-arab-emirates-sign-medical-services-agreement>
²⁰⁷ <http://www.sharjah.ac.ae/en/Research/SIMHR/Pages/Overview.aspx>
²⁰⁸ <http://www.dsp.ae/offer/nucleotide-lab-complex/>
²⁰⁹ <https://www.tii.ae/biotech>
²¹⁰ <https://www.aspireuae.ae/programs>
²¹¹ <http://gmu.ac.ae/innovation-centre/>
²¹² <http://www.aljalilafoundation.ae/what-we-do/research/research-centre/>
²¹³ <http://gulfnnews.com/news/uae/health/uae-physician-identifies-a-unique-subtype-of-colon-cancer-1.1948059>
²¹⁴ <https://www.illumina.com/company/news-center/feature-articles/increasing-genomic-capability-in-the-united-arab-emirates.html>;
<https://www.thenationalnews.com/uae/2022/11/12/new-dubai-centre-aims-to-shed-light-on-genetic-aspects-of-disease-in-the-middle-east/>
²¹⁵ <http://childrensnational.org/news-and-events/photo-gallery/arab-health-2016>; <http://www.emirates247.com/news/app-to-detect-birth-defects-in-uae-infants-2016-01-27-1.618859>; <http://childrensnational.org/research-and-education/sheikh-zayed/about-the-institute>;
<http://www.dhfmr.hms.harvard.edu/about-the-foundation/overview/>; <http://hms.harvard.edu/news/harvard-medical-school-center-global-health-delivery%E2%80%9494dubai>; <http://ghd-dubai.hms.harvard.edu/about>; <http://nyuad.nyu.edu/en/research/nyuad-institute/institute-research/public-health-research-center.html>; <https://www.thenational.ae/uae/health/biomarkers-could-help-emiratis-discover-if-they-are-susceptible-to-diabetes-study-indicates-1.625484>; <http://wam.ae/en/details/1395302598499>;
https://www.zawya.com/mena/en/companies/story/Emirates_Scientists_Council_signs_strategic_partnership_agreement_with_New_York_University_Abu_Dhabi-ZAWYA20181105121956/
²¹⁶ <http://www.aljalilafoundation.ae/al-jalila-foundation-receives-a-usd100000-health-access-grant-from-the-medtronic-foundation/>
²¹⁷ <http://www.aljalilafoundation.ae/who-we-are/about-us/>
²¹⁸ <http://hmaward.org.ae/#>
²¹⁹ <https://www.gatesfoundation.org/ideas/media-center/press-releases/2023/12/reaching-the-last-mile-ntds-cop28>
²²⁰ <https://www.thenational.ae/uae/bill-gates-surprised-and-honoured-by-medal-from-sheikh-mohammed-1.676208>;
<https://www.thenational.ae/uae/two-million-children-die-from-preventable-diseases-each-year-abu-dhabi-health-conference-hears-1.676108>;
https://site.reachingthelastmile.com/#about_the_event_place; <https://www.thenational.ae/uae/health/reaching-the-last-mile-new-100m-fund-announced-in-abu-dhabi-1.675855>; <https://www.thenational.ae/uae/sheikh-mohammed-donates-more-than-dh18m-towards-global-vaccine-initiative-1.621971>
²²¹ https://www.arabhealthonline.com/content/dam/Informa/arabhealthonline/en/2024/brochures/AH23_PSR.pdf
²²² <https://kallman.com/shows/arab-health-2023>
²²³ http://www.tradearabia.com/news/HEAL_405101.html
²²⁴ <https://www.medlabme.com/en/home.html>
²²⁵ <http://focp.ae/pc/about-us.php#page=ABOUT-PINKCARAVAN>
²²⁶ <http://www.gulftoday.ae/portal/035c3dfd-8fb7-40f1-903a-968fe2ab75f1.aspx>
²²⁷ <http://www.thenational.ae/uae/health/tough-anti-tobacco-laws-come-into-force-across-the-uae>;
<http://www.emirates247.com/news/emirates/uae-anti-tobacco-law-in-effect-rules-and-fines-2014-01-21-1.535551>
²²⁸ <http://www.thenational.ae/uae/health/uae-wide-smoking-ban-in-enclosed-public-spaces-next-year>;
<http://www.thenational.ae/uae/health/six-antismoking-clinics-to-open-across-the-uae>
²²⁹ <http://www.bna.bh/portal/en/news/695252>; <http://www.khaleejtimes.com/nation/uae-health/will-a-100-rise-in-tobacco-taxation-help-quit-smoking>
²³⁰ <http://www.thenational.ae/uae/health/school-canteens-banned-from-junk-and-fast-food-advertising-to-be-controlled-in-uae>
²³¹ <http://www.arabianbusiness.com/gulf-states-set-for-100-tax-on-energy-drinks-tobacco-618052.html#.V4T6OvkrLct>;
<http://www.arabnews.com/economy/news/863486>
²³² <https://www.amgen.com/media/featured-news/2018/12/amgen-lights-up-burj-khalifa-with-see-the-emergency-in-cholesterol-campaign/>
²³³ <https://www.zawya.com/en/press-release/ministry-of-health-amp-prevention-launches-keep-on-beating-campaign-to-reduce-cardiovascular-disease-related-enkkjabp>
²³⁴ <https://www.thenational.ae/uae/dubai-fitness-challenge-a-success-as-participants-hail-healthy-month-1.677050>;
<https://www.thenational.ae/uae/sheikh-hamdan-calls-on-emirates-to-take-dubai-fitness-challenge-1.665064>
²³⁵ <https://mohap.gov.ae/en/media-center/news/18/2/2019/under-the-slogan-dream-small-it-adds-up-ministry-of-health-and-prevention-launches-its-media>
²³⁶ <http://www.thenational.ae/uae/health/experts-tell-gulf-countries-to-do-more-in-fight-against-diabetes-epidemic>;
<http://www.haad.ae/haad/tabid/912/Default.aspx>
²³⁷ https://www.abudhabi.ae/portal/public/en/citizens/health/health_insurance/gen_info44?docName=ADEGP_DF_133720_EN&_adf.ctrl-state=12k1riu1_4&_afLoop=598030364750707#
²³⁸ <https://www.thenationalnews.com/uae/health/2023/11/15/uae-study-highlights-public-health-emergency-of-heart-disease-risk-among-emiratis/>
²³⁹ <https://www.thenational.ae/uae/health/thousands-turn-out-for-new-york-run-in-honour-of-sheikh-zayed-as-course-record-broken-1.725898>
²⁴⁰ <https://www.clevelandclinicabudhabi.ae/en/about-us/pages/cycle-for-health.aspx>; <https://yasisland.ae/events/walk-2017/>;
<https://www.thenational.ae/uae/health/thousands-turn-out-for-new-york-run-in-honour-of-sheikh-zayed-as-course-record-broken-1.725898#5>
²⁴¹ <https://mailchi.mp/usuaebusiness.org/dha-delegation-seeks-public-health-partnerships-and-best-practices?e=5055341e40>
²⁴² <http://wam.ae/en/details/1395303100900>



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