

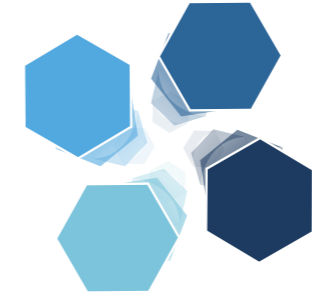


شركة وادي الرياض
Riyadh Valley Co



Medical Technology – An engine of innovation

July, 2024



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Introduction

The landscape of MedTech has witnessed notable progress and spurred remarkable advancements in the realm of patient care. The field of MedTech is vast and encompasses technologies employed in the diagnosis, treatment, and improvement of a person's health. From prosthetics to radiation therapies, MedTech has changed healthcare for the benefit of patients and health care providers. The integration of artificial intelligence (AI) and machine learning algorithms has further augmented the potential of advanced medical technology. These systems can analyse profuse medical device data, recognize patterns, and offer actionable insights.

By harnessing AI, advanced medical technology furnishes personalised treatment recommendations, empowering healthcare providers to deliver precise medical care and achieve superior patient outcomes. The global MedTech market size is projected to grow at a CAGR of 4.4% during 2023-33 supported by the rising frequency of chronic diseases, aging population, and increased investments in emerging markets¹. The U.S. is the largest medical device market in the world, comprising over 40% of the global MedTech market². The revenue of the MedTech companies witnessed a decline after the COVID-19 pandemic owing to the pandemic aftereffects, shifting geographical influence, macroeconomic volatility, and rising costs. The Venture Capital (VC) financing for the MedTech sector is expected to witness a modest uptick and return to pre-COVID levels in 2024. Despite the challenges posed by cybersecurity, the global MedTech sector is anticipated to sustain its growth momentum due to increasing awareness of healthcare, rapidly evolving technological advancements, and faster pace of M&A deals.

The MedTech sector in the GCC region is still evolving, with Saudi Arabia and UAE spearheading the regional peers in terms of technological advancements. The Medical Devices sector in Middle East and Africa is expected to grow at a steady pace and record a CAGR of 2.68% between 2024-29³. The expansion of key players in the countries, government regulation supporting the operations of the MedTech companies in the region and faster pace of R&D developments by the regional players foster the sector expansion. Additionally, the governments are increasingly spending on healthcare, thus turning the GCC countries into an interesting space for medical device manufacturers. In the long term, the GCC MedTech sector is expected to track the global technological developments in the field of medicine.

Saudi Arabia's potential to emerge as a hub for medical devices drives the strong growth forecast for the country's MedTech sector in the long term. The government's support for R&D (research and development) in the healthcare sector, encouraging adoption of AI-driven diagnostics, precision medicine, and advanced medical technology, is becoming more prevalent within both public and private sectors. Saudi Arabia's establishment of NPHIES (National Platform for Healthcare Information Exchange Services) in 2020 is a key to adoption of latest technologies such as AI (Artificial Intelligence) and ML (Machine Learning) in healthcare.

¹ Future Market Insights

² Advanced Medical Technology Association

³ Market Data Forecast

Overview of MedTech

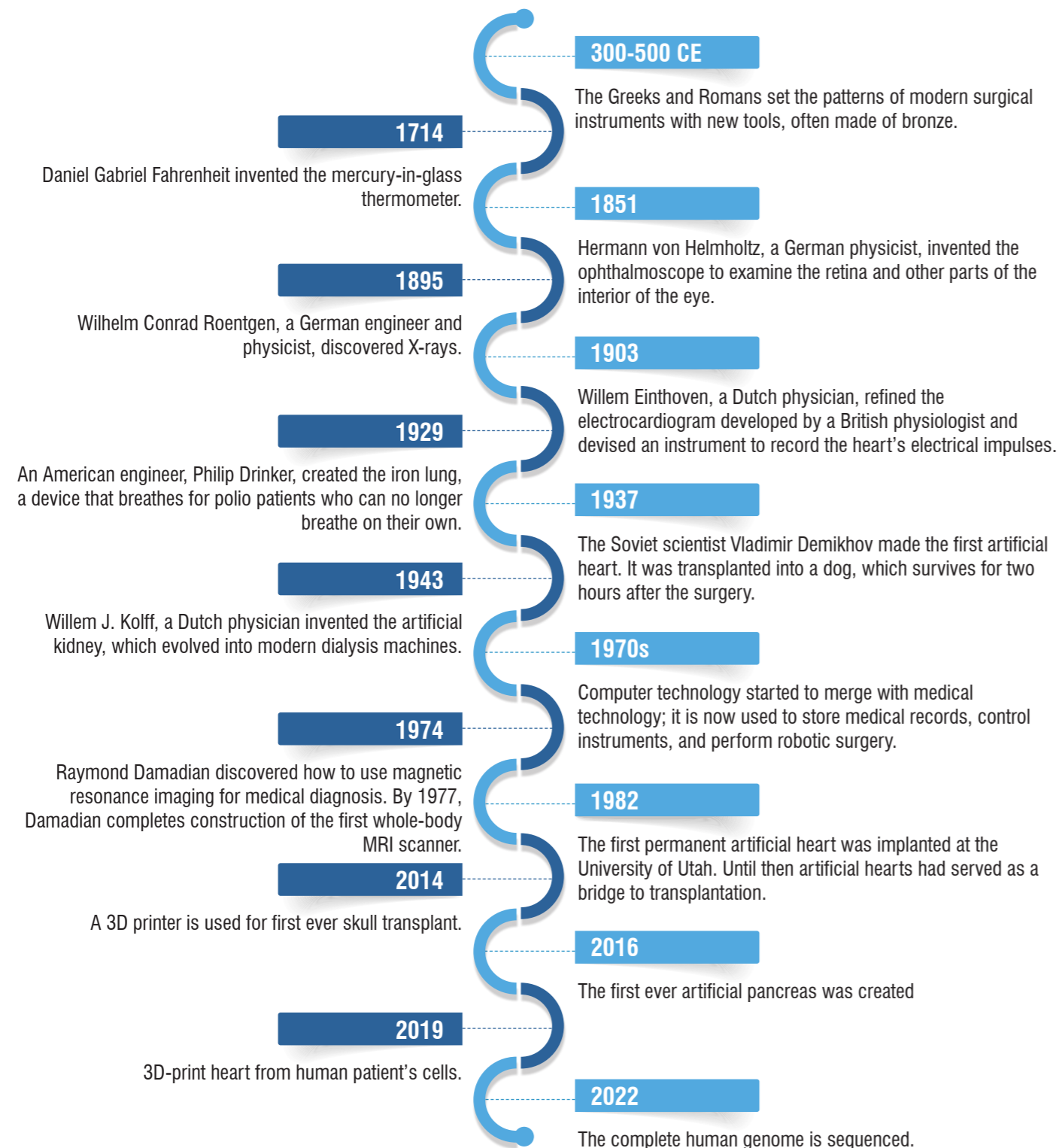
MedTech, or Medical Technology, is a broad field and covers technologies used in diagnosis, patient care, treatment, and improvement of a person's health. The technologies encompass both low- and high-risk Medical Technology - from tongue depressors, surgical gloves and medical thermometers to insulin pumps, pacemakers and in vitro diagnostics.

The medical technology falls under healthcare and is dedicated to providing patient care using technology. MedTech provides the equipment, tools, and devices which are employed to diagnose and treat a patient. Medical technology assist healthcare professionals to diagnose and treat patients with a higher level of accuracy and in a well-timed manner and improve the quality of life of patients.

The evolution of MedTech has been continuous and dates to ages. Before more intricate technologies came into the picture, people relied on folk medicine, and magical practices for healing and revival from diseases and injuries.



Evolution of MedTech



Source: Yale University

The digitalization of the medical device sector has advanced over the past five decades, since the use of computers in early 1970s. Medical Technology have increasingly incorporated digital technology and algorithms such as large language models as standard components with the evolution of cloud computing and AI in the 21st century. However, MedTech sector is in the early stage of digital maturity and no single market player has developed a digital ecosystem comprising multiple players and steps across the value chain.

Digitalization in MedTech – An ongoing revolution



Digital imperatives for MedTech clusters

- Companies that sell medical aids are fairly mature regarding their use of digital in pricing and customer access. However, they can make continued progress by looking at other industries such as FMCG players that apply digital to understand the needs of different customers. FMCG companies have made sizable investments in data and analytics, generating an attractive return on investment.
- Diagnostics companies are strong in their use of digital in the product portfolio and in advanced business models. However, diagnostics companies are expected to shift away from selling primarily through sales reps and develop more digital sales channels to be more cost-efficient.
- Surgical products companies are reasonably mature in their use of digital products and sales channels. The opportunity for these companies is to apply new tools and solutions to manufacturing processes, enabling greater customization.

Digital imperatives for geographic expansion



- Some medtech companies are regional players that want to globalize. These companies are likely to focus on using digital to improve pricing where their capabilities lag behind those of globalized competitors with a more diverse base of customers across different regions.
- Each market has different sales configurations. Regional players should invest in digital pricing management tools and concepts to improve pricing and manage complexity as they expand into new geographic markets.



Digital imperatives for diversifying the customer base

- Medtech companies that are trying to diversify their customer base also need to build up digital capabilities. In addition to digitalising their business model, digitization is imperative when it comes to the dimensions of market and customer access, value chain, and processes.

Source: Strategy&

COVID-19 has brought the MedTech sector to the limelight with increased demand for diagnostic tests, personal protective equipment (PPE), ventilators, and other critical medical supplies. According to a survey conducted by Supplyframe (Sourcing and supply chain focused company headquartered in Los Angeles), lack of alternatives, supply shortages and production delays were the key challenges faced by the sector during the pandemic. However, the sector was characterized by innovation and collaborations across the world during the crisis.

Reimagining MedTech for the COVID-19 pandemic

1 New business models and virtual health

- According to an EY poll, 80% of doctors in the U.S did not use virtual health in their patient relationships at the beginning of 2020. However, six months later, 95% had expanded their use of virtual media. The transition to virtualized medical business models grew at a faster during the pandemic.
- Online customer service, webinars, digital media, and virtual consultations were used by healthcare organisations to respond to patient demands in real-time.
- Remote healthcare became one of the top priorities for chronic diseases.

2 New diagnostic testing opportunities

- Due to the need for quickly discovering and isolating those who are infected by the virus, organizations developed COVID-19 diagnostic tests that provide fast results.
- Many companies developed solutions that were more flexible than the traditional PCR tests.
- For example, Colorimetrix developed experiments in which a single drop of blood from a finger prick is combined with a solution in a test tube and scanned using a mobile application. The outcome is interpreted by an algorithm, and the test subject will learn right away if their body has formed antibodies against COVID-19.

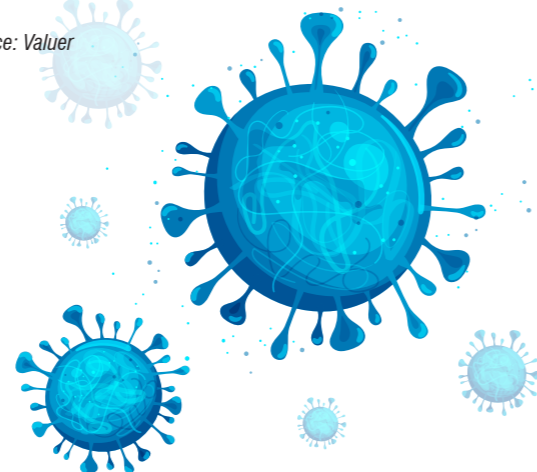
3 Changes in the healthcare supply chain

- One of the major supply chain challenges during the pandemic was vaccine production and delivery due to the necessity for ultra-cold supply chains.
- Supply chains became more intertwined than they have ever been and supplies of related materials remained scarce.

4 The rise of remote medical device design

- Remote medical device development gained momentum due to the need to cut down on physical contact. There were increased efforts to collaborate on medical device design and production across the world.
- Medtech companies were compelled to depend more on external sources for developing medical technology as a result of the pandemic.
- According to study by Technavio, medical device outsourcing services are expected to rise to USD 39.25 billion by 2024.

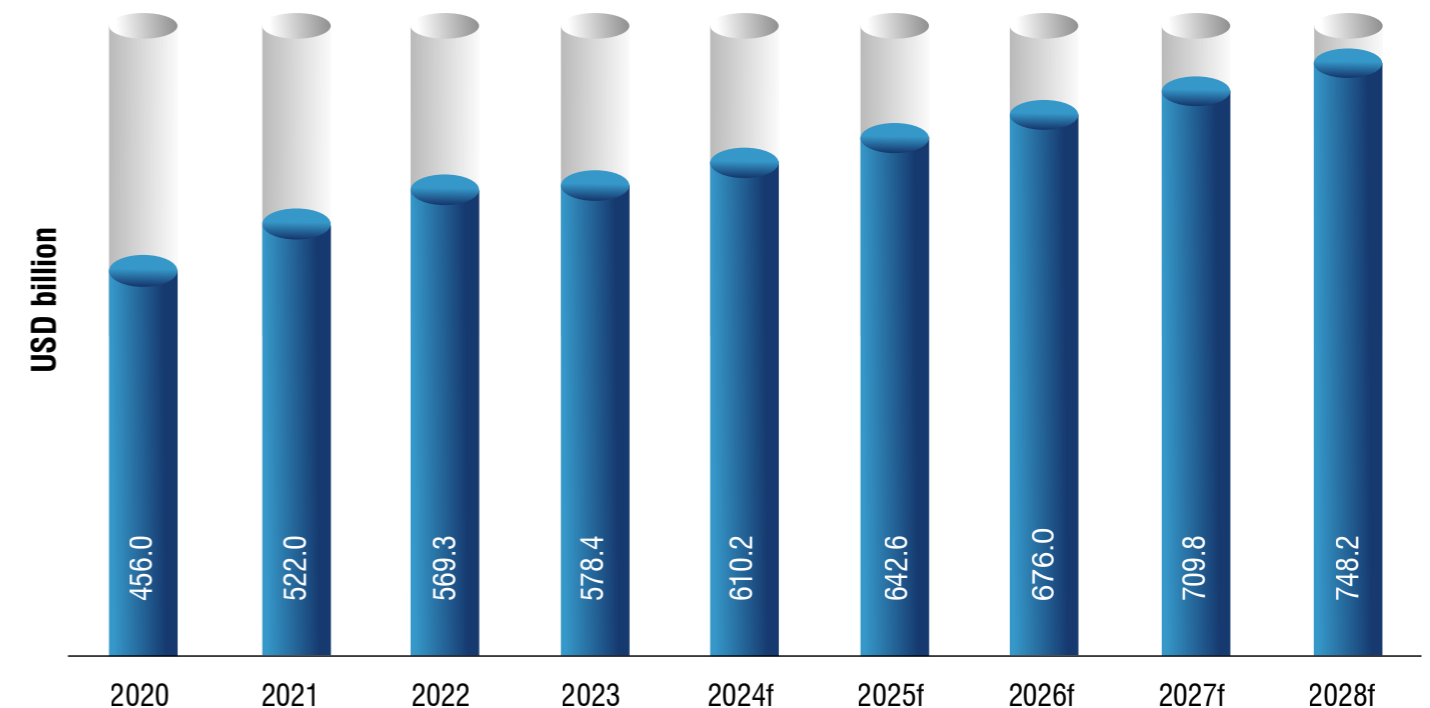
Source: Valuer



Global MedTech Sector

The global MedTech market size is projected to grow at a CAGR of 4.4% during 2023-33 driven by the rising frequency of chronic diseases.⁴ Chronic diseases such as diabetes, cardiovascular disease, and obesity are on the rise around the world, and MedTech is increasingly being employed to aid people manage these conditions. Aging population worldwide, heightened focus on preventive care, including early detection and diagnosis of diseases and growing demand for digitalised healthcare services in emerging markets further propel the sector expansion. Regulatory environment around the world is tightening to ensure safety, efficacy, and quality of Medical Technology.

Global MedTech Market size

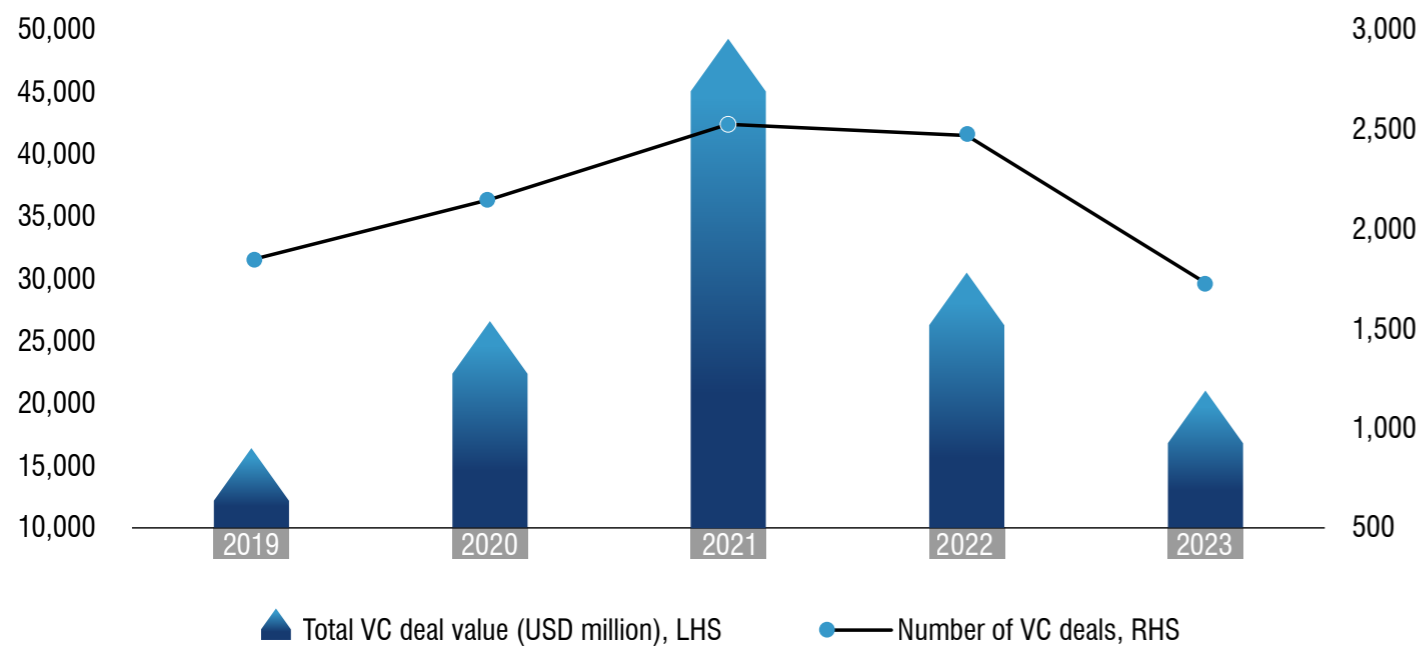


Source: Statista

The total value of Venture Capital (VC) deals in the MedTech sector amounted to USD 21 billion in 2023 - down by 31.1% y/y from USD 30.5 billion in 2022 due to the higher interest rate environment. The number of VC financing deals was also down by almost 30% y/y in 2023 compared to the previous year. However, the fall was less significant when compared to 2022, when the value of VC deals fell by 57.4% y/y. The value of VC deals reached USD 49.3 billion in 2021 owing to 0% base interest rate and COVID-19 pandemic.

⁴ Future Market Insights

Venture Financing deals in Medical Technology Sector



Source: GlobalData's Medical Technology Intelligence Center

The future trends of the sector are reflective of the swift pace of development of medical technologies observed over the past few years. As MedTech companies realize the benefits of analytics, AI, and new digital technologies, the MedTech sector is likely to witness a new wave of opportunities for increased growth and market share. Conversely, new regulatory guidelines and cybersecurity concerns are likely to impede development of new products.

Key Market Trends



Development of advanced technologies

- Advances in digital technologies, such as robotic surgery units and 3D printing, have led to uptake of digital devices in the industry. This has been coupled with increasing clinical evidence for the benefits of digital applications in chronic diseases.
- In 2017, major MedTech companies began collaborating with startup digital device manufacturers and global technological companies such as Google, Apple and IBM. For example, Medtronic has collaborated with IBM Watson, Qualcomm and Glooko to create an integrated diabetes management program that allows patients to track their blood sugar levels and receive appropriate therapeutic doses of insulin.



Long-term investment in emerging markets

- Emerging markets are likely to see increased usage of medical technology in the coming years due to government healthcare initiatives, high prevalence of chronic diseases, increased insurance coverage and affordability.
- The growing medical awareness in these countries have made them perceive as good investment opportunities. The market share of emerging markets in the MedTech industry is expected to increase, encouraging key market players to make long-term investments.
- In addition, stringent regulatory guidelines in developed regions such as the U.S. and Europe have shifted the focus of major MedTech companies to emerging countries such as China, India and Brazil.



Moving towards a value-based reimbursement model

- The value based reimbursement model is likely to replace the fee for-service model completely, suggesting that doctors will receive their payments based on the outcomes of the treatment for patients.
- Hence, companies are investing money in developing medical technology that offer superior therapeutic results.



Increase in M&A and strategic partnerships

- M&A has become a driving force of MedTech industry growth. MedTech companies have invested considerably in M&A in order to maximize the number of therapeutic segments in which they operate.
- M&A is focused on the development of innovative Medical Technology, expansion into different geographies and increase in market share, together with accelerated revenue growth.








Increase in aging population

- According to the National Institutions of Health, the number of people aged 65 or above is expected to reach 1.6 billion.
- An aging population is increasing the need for medical technology especially those used in the diagnosis and treatment of orthopedic, cardiovascular and eye disorders.

Source: IQVIA MedTech

The MedTech sector is expected to grow at an appreciable pace in all regions across the world. The rate of growth may vary based on the adoption of R&D process, compliance with the evolving regulatory requirements and pace of implementation of latest trends in the sector.

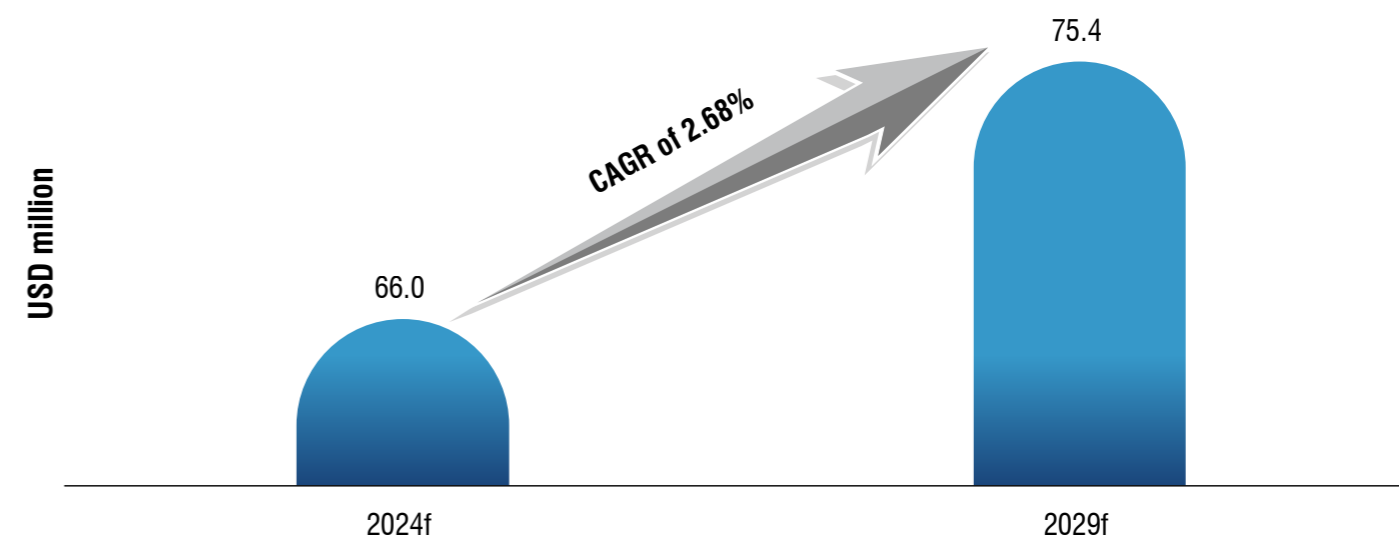
Market drivers and Barriers across countries

Geographies	Market drivers	Barriers
 <p>North America</p>	<ul style="list-style-type: none"> Investment in development of advanced technologies Aging population High prevalence rate of chronic diseases 	<ul style="list-style-type: none"> Stringent regulatory norms Investment by local investors in emerging markets
 <p>Europe</p>	<ul style="list-style-type: none"> Rise in mergers and acquisitions Inclination of MedTech companies towards development of AI based technologies 	<ul style="list-style-type: none"> Changing regulatory environment Stringent and frequent screening by notified bodies making it difficult for companies to enter the European market. High cost of development of advanced technologies
 <p>Latin America</p>	<ul style="list-style-type: none"> Availability of cheap and skilled labor Rise in patient awareness 	<ul style="list-style-type: none"> Increase in the complexity of approval process High cost of advanced technologies
 <p>Asia-Pacific</p>	<ul style="list-style-type: none"> Expansion in insurance coverage Economic expansion of middle-class population Initiatives taken by government to improve healthcare infrastructure Aging population and increased incidence of diseases 	<ul style="list-style-type: none"> High cost of advanced technologies Lack of development of advanced technologies Poor accessibility of medical device in rural areas
 <p>Middle East and Africa</p>	<ul style="list-style-type: none"> Increased burden of lifestyle-related disorders such as diabetes and cardiovascular diseases Expanded insurance coverage Increase in healthcare expenditure 	<ul style="list-style-type: none"> Challenging regulatory processes Non-transparent regional political environment hinders foreign companies to enter into MEA markets Availability of regulatory documents in only the local language makes documentation difficult

Source: IQVIA MedTech

MedTech in the MENA and GCC region

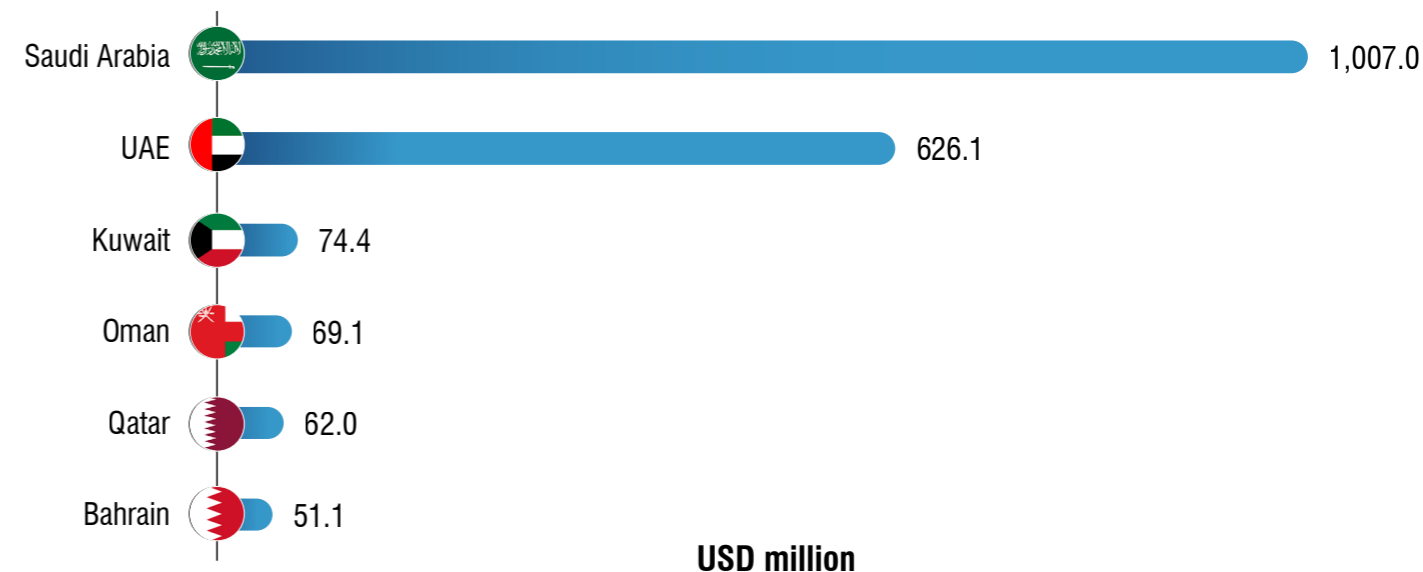
The medical technology sector in the Middle East and Africa (MEA) is expected to sustain its growth momentum in the long term fostered by the expansion of key players in the countries, government regulation supporting the operations of the MedTech companies in the region and faster pace of R&D developments by the regional players. In GCC region, the MedTech sector is witnessing continued traction as the healthcare providers are increasingly fostering technology as the major focus of their business strategy.



Source: Market Data Forecast

Saudi Arabia’s digital health sector is the largest in the Gulf Cooperation Council (GCC) region, at about one billion U.S. dollars of revenue in 2024. Digitalization of healthcare services is facilitated through the integration of new technologies and increased personalization. The degree of digitalization varies across the GCC region. Saudi Arabia and UAE lead the GCC region in terms of adoption of technology in the medical sector.

Estimated revenue of the digital health in GCC countries in 2024



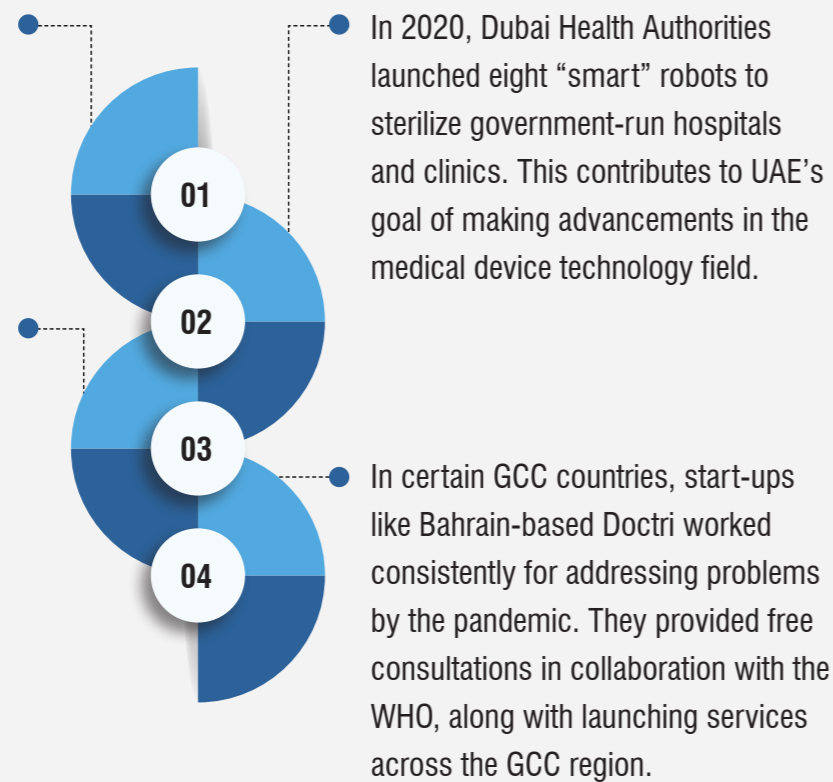
Source: Statista

Alike the global scenario, the MedTech sector in the GCC region was transformed with the onset of the COVID-19 pandemic. The pandemic has increased the adoption of molecular diagnostic devices and equipment, focussing on the power of sequencing-based diagnostic testing. Following the pandemic, key players in the GCC region are directing their efforts on improving their operational and business presence in the molecular diagnostic market via developing new and innovative technologies and strategic acquisitions of the emerging companies in the medical device sector.

Developments in the MedTech industry post the COVID-19 pandemic

The UAE’s health regulators have increased the adoption of new and smart medical technology to modernize their healthcare ecosystem after the pandemic.

Investments in medical technology has witnessed a steady surge after the crisis. UAE-based Vezeeta and Okadoc raised USD 50 million in February 2020. Also, Abu Dhabi’s tech ecosystem, known as Hub 71, added 15 newer companies to their program, supporting the private and public MedTech sector.



Source: Duphat

For improving the MedTech industry within the GCC region, the government and regulators have improvised procurement, import processes and liberalized restrictions on Medical Technology. Various government initiatives taken by the GCC countries during the pandemic have a major impact on the current medical devices sector.

Government initiatives supporting MedTech

Introduction of smart monitors and AI-associated Medical Technology in UAE to improve the patient outcome

Introduction of innovative electronic platforms such as GHAD in Saudi Arabia that had replaced the existing medical device systems for listing, registration, and establishment of licensing.



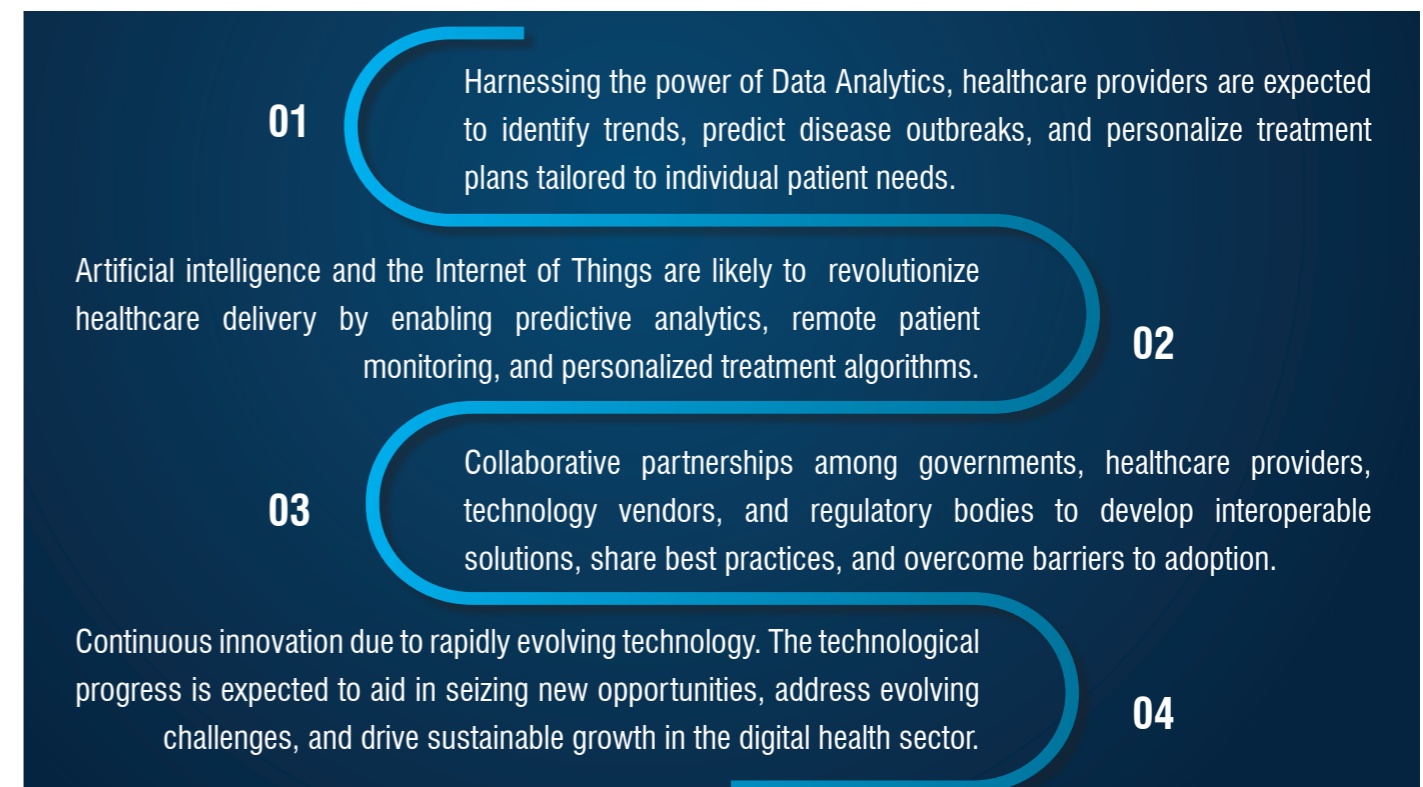
Adoption of wearable technologies among patients for preventive care

Launching social infrastructure projects in line with Saudi Vision 2030 to improve healthcare systems via privatization

Source: Duphat

The future of the GCC MedTech industry looks bright with continued digitization of healthcare services, increasing consumer demand for telehealth solutions, and relentless innovation by market players.

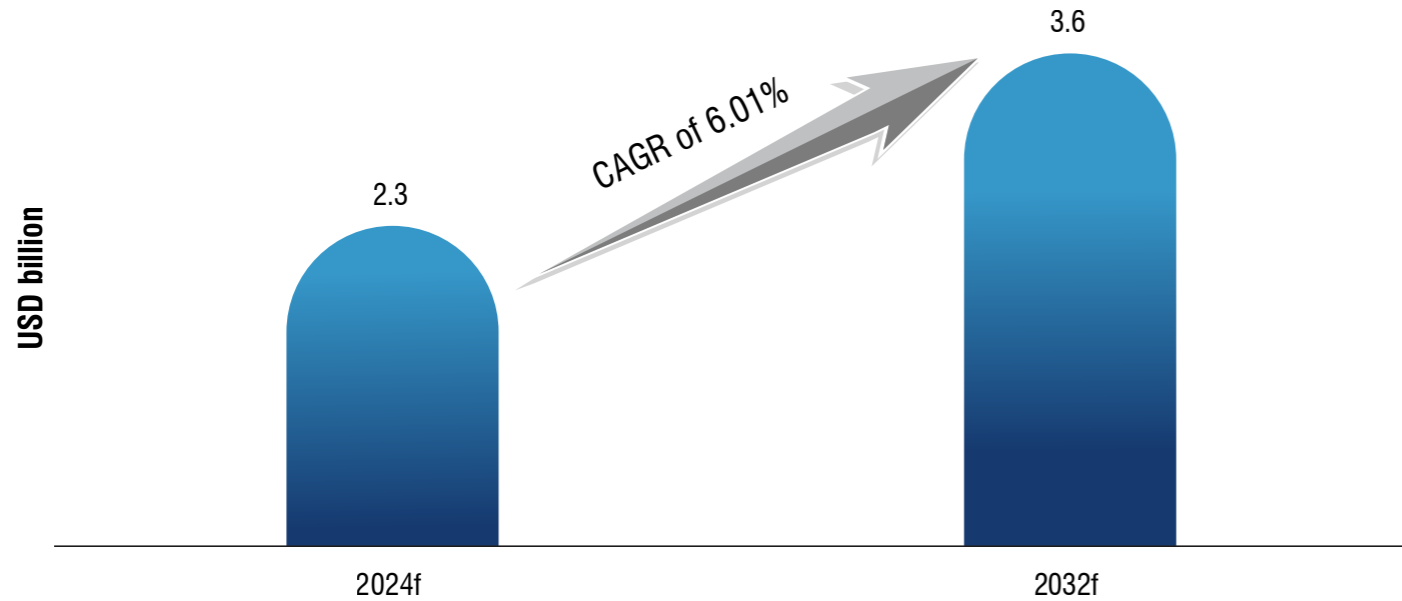
Future of GCC MedTech industry



Source: Duphat

MedTech in Saudi Arabia

Saudi Arabia's MedTech sector is poised for continuous growth due to rising ubiquity of chronic diseases such as cancer and diabetes, increasing customers' preference for wearable devices and growing government healthcare expenses. In addition, the government of Saudi Arabia is spearheading digital health initiatives, channelling significant investments into healthcare IT and digital transformation.

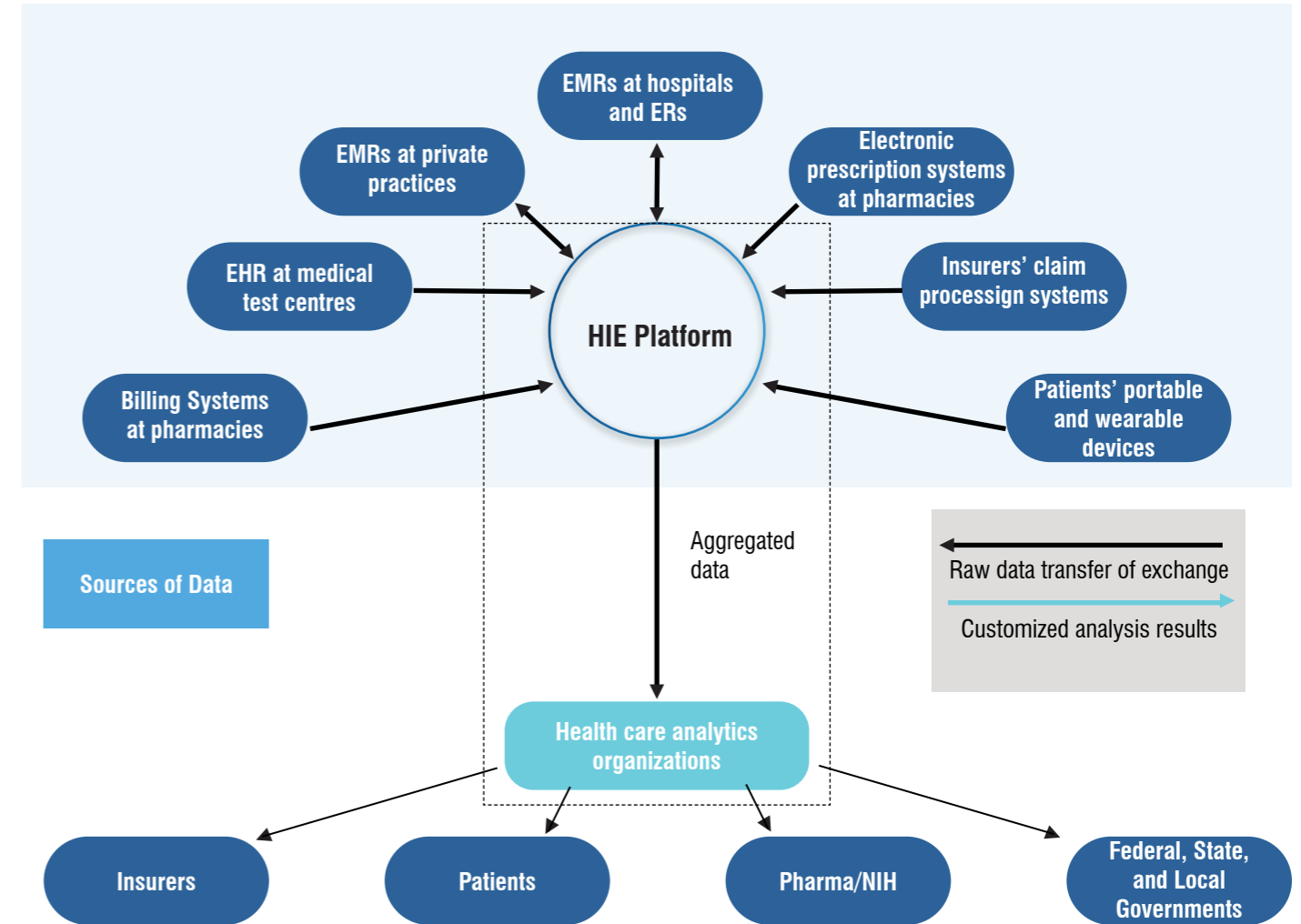


Source: Market Research Future

Information technology has transformed the healthcare sector and sharing of medical data has opened a whole new dimension of opportunity for the industry in Saudi Arabia. The reluctance of people as well as medical institutions in sharing medical data due to privacy and security concerns and gaps in existing solutions to harness the potential of the medical data have been the key reasons behind the implementation of NPHIES (National Platform for Healthcare Information Exchange Services) in Saudi Arabia in 2020.



National Platform for Healthcare Information Exchange Services

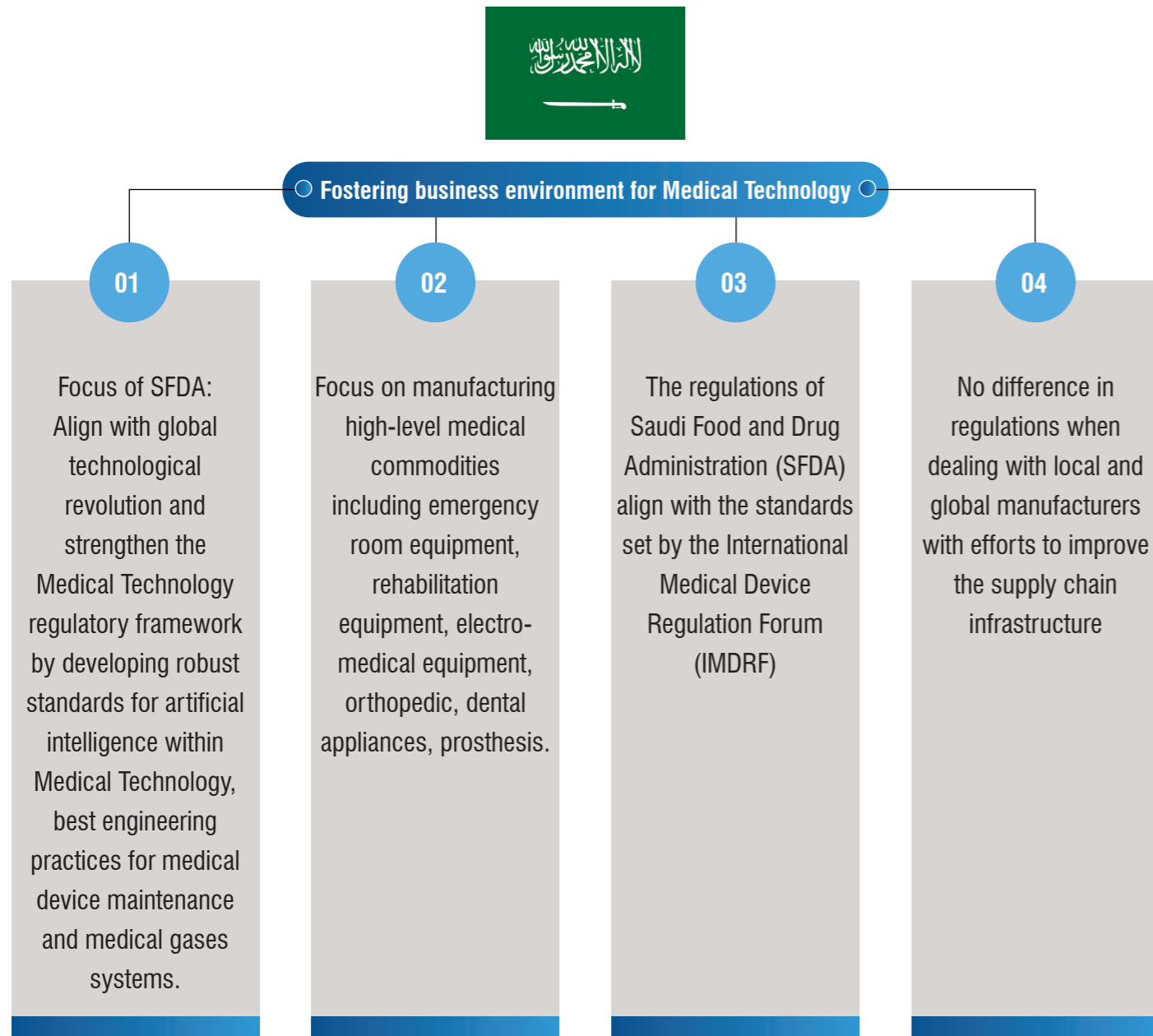


Source: Brookings

Saudi Arabia's Medical Technology sector is expected to grow at a CAGR of 4.1% between 2022-27 and reach a market value of SAR 8.4 billion (USD 2.2 billion) by 2027.⁵ Saudi Vision 2030 is anticipated to be the key driver of the Medical Technology industry growth. The key targets of Heath Sector Transformation program include improving geographical distribution of health services, expanding the use of digital health technologies and improving the quality of health services. Adoption of best practices and the introduction of high-level commodities are fuelling the medical device industry in KSA.

⁵ Fitch

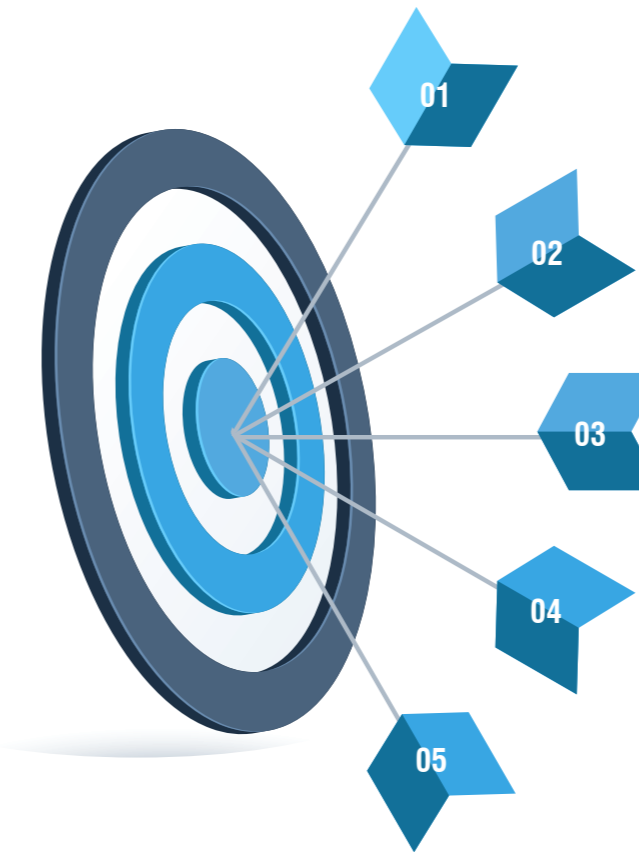
Saudi Arabia – An emerging hub for Medical Technology



Source: Fitch, Omnia health

The Kingdom of Saudi Arabia espoused “Vision 2030” as a strategy for economic development and national growth. To fulfill this, the Kingdom launched a national transformation program (NTP) as outlined in “vision 2030” in June 2016. The health care transformation is one of the eight themes of the NTP’s. Some of the major challenges the programme aims to address are the rates of avoidable injury and non-communicable disease that remain high by regional and international standards.

Saudi Vision 2030 initiatives for healthcare



- 01** **The Saudi Patient Safety Center** to promote the patient safety concepts, support the healthcare practitioners, analyze data, publish reports, and propose legislation related to patient safe
- 02** **The “Tawakkalna” application** aims to be the digital companion for individuals by providing integrated and consistent healthcare services
- 03** **The Seha Virtual Hospital** uses latest innovative technologies to provide specialized services including virtual consultations for critical care
- 04** **The National Biotechnology Strategy** will aid in advancement of vaccines, bio-manufacturing & localization, genomics, and plant optimization
- 05** **Saudi National Institute of Health (SNIH)** aims to facilitate medical research and clinical trials at a national level and oversee and support all translational research and clinical trials

Source: Various

The business-friendly environment for medical sector has resulted in a wave of innovative homegrown start-ups in the Saudi Arabia. These startups are harnessing the power of AI to create innovative healthcare solutions that not only cater to the local population but also hold the potential to make a global impact.

Healthcare startups in Saudi Arabia



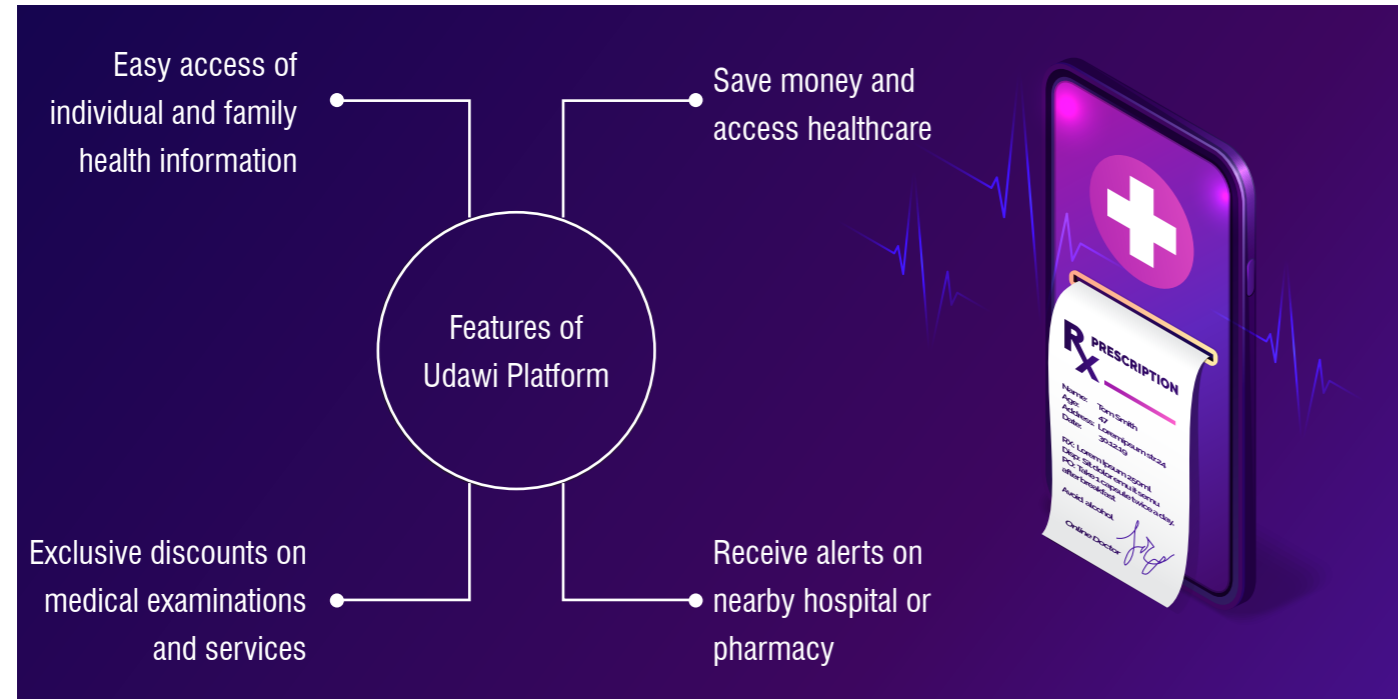
Source: F6s

Spotlight: “UDAWI”

Udawi Company is one of Riyadh Valley Company’s investments, through fund investments from FLAT6LABS. Founded in 2020, Udawi is a digital healthcare platform headquartered in Saudi Arabia that offers healthcare services at subsidised cost. There is no subscription fee to join the Udawi platform.



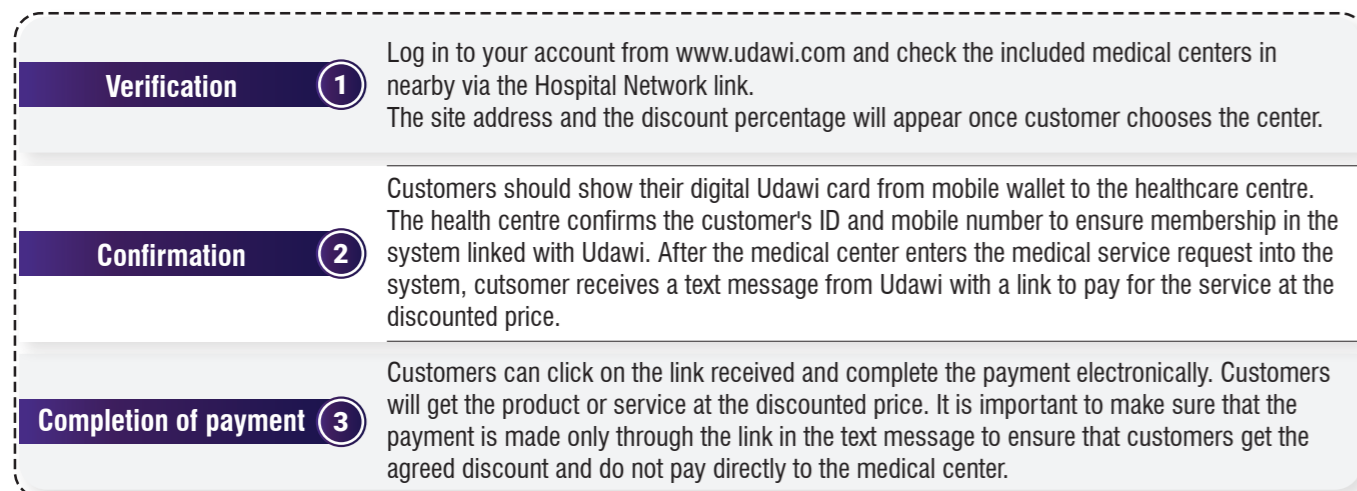
Benefits of “UDAWI” platform



Source: UDAWI website

There are more than 2,500 health facilities, including hospitals, clinics and pharmacies linked to the Udawi platform. Payment for health services is made through the platform via the link received in text message to ensure that the discount is reflected in the prices.

Working of “UDAWI” Platform



Source: UDAWI website

Conclusion

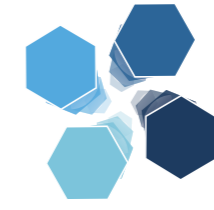
The long history of patient-centered innovation in the MedTech sector has improved the quality of healthcare services available to people around the world. The USD 42 billion R&D investment in MedTech during 2022 is evidence of the sector being prioritized despite the macroeconomic challenges. The MedTech sector has empowered the healthcare sector to embrace the latest technologies resulting in reduced cost and superior range of services to the patients.

A noteworthy stride in the MedTech sector is the integration of smart features and data analytics. Many Medical Technology now incorporate advanced data processing capabilities, delivering real-time insights, and assisting healthcare professionals in making informed decisions. By leveraging data collected by these devices, healthcare providers can offer personalised treatments and care plans tailored to individual patient needs and health conditions.

These technologies have also been increasingly employed to improve the quality of mental health services offered to the patients. Emotion-based algorithms and virtual assistants to deliver psychological support, information, and resources and diagnostic support screening tools, both self-guided and assisted, to gather data for psychological assessment have evolved in the field of counselling psychology.

The near future of healthcare services is poised for massive change, due to artificial intelligence. AI simplifies the lives of patients, medical professionals, and hospital administrators by carrying out those tasks that are typically done by humans, but in fewer time and at a fraction of the cost.

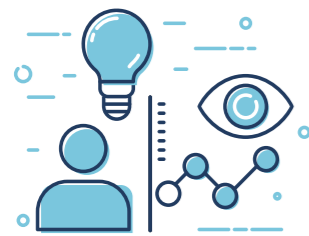
Powered by data and technological innovation, the proliferation of mobile apps, augmented reality and cloud computing, today’s healthcare is human-powered health, driven by technological innovation. The integration of the technologies will undoubtedly continue to evolve, driven by ongoing advancements and the needs of a changing world. The medical sector is expected to increase collaboration that connects their people and their patients for seamless digital transformation in the future.



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Riyadh Valley Company established in 2010 by Royal Decree No.116 dated 13/4/1431 AH to be the investment arm of King Saud University in the fields of Knowledge Economy and the university strategic projects.



Vision

To be the regional leader in knowledge-based investment and technology.



Mission

Riyadh Valley Company is a strategic investor, focused on leveraging the local capabilities, investing locally and globally in growth - stage businesses to create financial and strategic returns that will support the future of economic development in the Kingdom.



The Core Focus Areas of RVC

Venture Capital Investments

- Healthcare Investment
- Renewable energy & Sustainable Resources
- Information & Communication Technology
- FinTech
- Education
- Logistics and Transportation



Strategic Investments

- Innovation and R&D Projects
- Educational Projects
- Healthcare Projects
- Commercial Projects
- Residential Projects
- Mixed-use Projects



Enriching Innovation Ecosystem

- Attract distinguished scientists and consultants
- Prepare students for work experience through training
- Supporting Scientific Research and technology industry
- Enhance the environment to support the knowledge economy

Strategic Investment Portfolio



Sudair Pharma Company Project

Research center and offices



ELM Information Security Company Project

Research & Innovation center



Four Directions Company Project

Office project



Majd Real Estate Company Project

Offices project



Derma Clinic Company Project

Residential project



City Lights Real Estate Company Project

Mixed-use project



Qasr Alaareh Company Project

Building



Sahat Al-Ardh Company Project

Mixed-use project



NMR Real Estate Company Project

Mixed-use project



Takween Altanmia Company Project

Offices project



Al-soroo Al-Mubarakah Company Project

Offices project



Obeikan Company Project

Commercial project



Derma Clinic Company Project

Healthcare project



Dur Alkuttab Company Project

Educational project



Four Directions Company Project

Commercial project



U WALK Project

Commercial project



The Esplanade Project

Commercial project



Almaarefa University Project

Building project



Arrowad Education Company Project

Educational project



Innovation Tower Project

Office building project