FROST & SULLIVAN

FUTURE OF DIGITAL HEALTH 2024

Perspectives, Challenges, and Possibilities Shaping the Healthcare Landscape

Prepared Exclusively for

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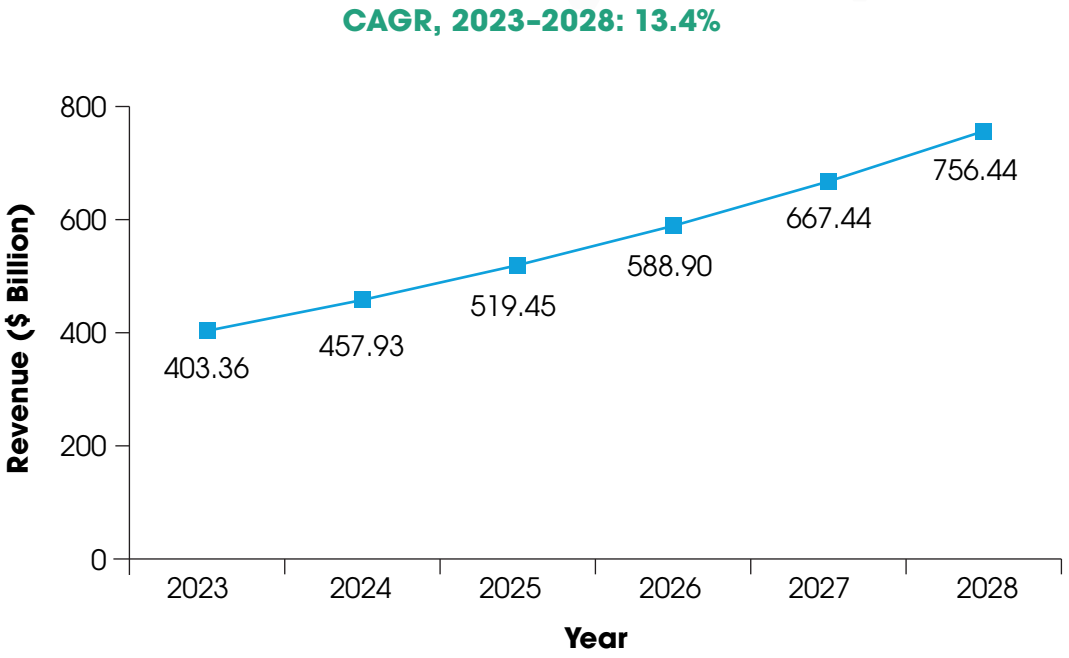
DIGITAL HEALTHCARE LANDSCAPE

The global digital health ecosystem is characterized by rapid innovation, adoption of new technologies, regulatory advancements, and increased focus on improving patient outcomes and healthcare delivery. As technology continues to evolve and healthcare paradigms shift, digital health is expected to play an increasingly vital role in shaping the future of healthcare delivery and management.

Digital Health: Revenue Forecast, Global, 2023–2028 ($ Billion)[3]



The digital health segment has maintained a consistent growth trajectory primarily to address the multi-faceted challenges plaguing patients, healthcare providers, payers, life sciences, and pharmacy. There is a continuous focus on investing in technology, that has demonstrated a return on investment and helps organizations move towards the quintuple aim.

Value-based care models, health equity goals, Social Determinants of Health (SDoH) tools, rising healthcare costs, and workforce shortage provide a lucrative turf for health IT vendors to target. In addition, the rise of consumerism and the need to support patients beyond the walls of the hospital to maintain continuity of care and improve patient satisfaction have led to the increased adoption of virtual and remote monitoring solutions.

The digital front door is being replaced by digital care pathways to coordinate care delivery between different sites and to keep the patient engaged throughout their care journey. This will provide a medium to make patients more active participants in their care journey.

Although 2023 was another year that showed a decline in digital health investment after the COVID-19 pandemic, 2024 is expected to show improvement. While not reaching the 2021-2022 influx, 2024 will witness investment in solutions that show long-term profitability and are based on newer technologies that advance the current

ways of working and alleviate pressure from the stakeholders. The digital health industry in the GCC region is supported by a favorable growth environment with growing investment in digital healthcare infrastructure consistently, with a focus on virtual care, remote patient monitoring, and artificial intelligence. Digital Health investment in the GCC region is rising, estimated to grow from $0.5 billion to $1.2 billion in the coming two years[1]. Saudi Arabia has planned to invest ~$65 billion in healthcare infrastructure by 2030. Around 40% to 50% of this investment will be targeted at infrastructure till 2025, and post-2025, the investment will be focused on digital technologies and medical products[2].

INNOVATIVE TECHNOLOGIES

The healthcare sector faces various challenges in delivering accessible, equitable, cost-effective, and high-quality care, all while contending with workforce burnout and safety issues.

Cutting-edge innovative technology initiatives have the power to circumvent these challenges and improve the experience of all the stakeholders. AI, XR, IoT, and Robotics, among others, are creating new workflows and processes that are enabling stakeholders to work more efficiently while improving care delivery.

Consequently, digital solutions are entering the healthcare workspace with a bang, claiming to disrupt the current ways of working and to be closer to the patients, ultimately moving the system towards achieving the quintuple aim. These solutions can help create a safer and more engaging workplace for providers, enable patients to be more active in their care journey, and providers to have better oversight of the care process and maintain continuity.

As the focus changes to making care facilities smarter by increasing the adoption of IoT sensors, dynamic AI, cloud, and robotics, provider and payer enablement will become the key discussion point. Change management initiatives will require stakeholder education to understand the pros and cons of newer technology initiatives and work alongside these to improve clinical and operational processes.

Virtual care is also becoming a pivotal factor in care delivery at home, supported by devices and tools to remotely manage patients. Increased use of digital tools is leading facilities to create their command or monitoring centers to manage patients at home and harmonize scheduling and visiting processes.

Generative AI

Generative AI use cases are gradually expanding across payer and provider administrative functions with a focus on efficiency, innovation, and improvement. In the provider context, Gen AI will be used to address staff shortage and burnout, by augmenting the current workforce with AI-based tools to increase their efficiency. Meanwhile, payers are looking to implement Gen AI to support the creation of a value-based care environment that utilizes data to generate insights and next steps.

Generative AI: Key Use Cases in Digital Health

Provider

- Evaluation of individuals and personalized, immediate healthcare through Gen Alomics
- Automated clinical documentation
- Medical image analysis
- Interoperability of EHR systems

Payers (Health Plans)

- Preventive health management using predictive algorithms
- Streamlined claims handling through automation
- Member Engagement and Education Support

Governments

- Community health monitoring through data analytics
- Distribution and efficient use of resources through automation

Till more healthcare-specific large language models (LLMs)/ small language models (SLMs) become available and the technology is understood in a better way, developers are focusing on the summarization capability instead of synthesis to remove hallucinations and avoid incorrect information flow.

Generative AI Case Study

Case Study - Bon Secours Mercy Health[4]

Bon Secours Mercy Health and its portfolio of digital health companies are looking to adopt Gen AI and test and scale different use cases within the next two years.

Initiation

Message Reply

Assist providers in answering patient queries using MyChart messages via Epic Conversational Care

Patient Chat

Help patient find the right information at the right time instead of turning to Google

Corporate

Analytics

- Explain code to users
- Translate code between languages
- Develop new code faster

Increase efficiency

Automate workflows

- Bon Secours Mercy Health is one of the leading integrated delivery networks in the United States that is exploring the use of Gen AI for quick wins.
- If test cases deliver the expected ROI, the organization should then scale these and target other complex challenges, such as clinical decision support.
- Patient chat, when developed, should be shared with other organizations, especially primary care practices, to build new revenue-generating opportunities.

DIGITAL HEALTHCARE REGULATORY FRAMEWORK

Despite being in its early stages, digital health regulation is trying to adapt to new business models, such as value-based care, addressing challenges related to data sharing, payment structures, technology adoption, and patient engagement to ensure its successful implementation and regional scalability. As each region and country sets its agenda to support this transformation, regulatory bodies are taking measures to ensure that they achieve their goals within the desired timelines, especially on new technology development such as generative artificial intelligence (AI) and large learning models (LLMs) in the clinical field.

Physicians raise concerns about potential ways in which digital health technologies can impact their decision-making and accountability, affecting application rates. A clear understanding of the legal responsibility of each party (physician, payer, and technology provider) is demanded.

Across the globe, governments are allocating funds (by way of grants, subsidies, and tax incentives) to support startups and foster innovation to accelerate the development and adoption of digital health. They are also developing collaborative programs with players from the private sector.

Given the sensitivity of health data, governments are additionally prioritizing the security and privacy of users, leading to the prohibition of specific applications of digital health solutions. Examples include the US White House Executive Order on Safe, Secure, and Trustworthy AI. In UAE, for instance, AI tools need to comply with the 'Health Information Exchange Policy' set by the Department of Health that addresses privacy and transparency conditions.

CHALLENGES AND OPPORTUNITIES

The digital health segment has retained a consistent growth pace, with notable attention focused on at-home care, value-based care, health equity acceleration, the global healthcare workforce shortage, and rising healthcare costs. Burning challenges across these areas have led to lucrative growth opportunities for healthcare IT and telehealth market segments.

While investment in digital health startups has dropped off from the surge generated as a response to COVID-19 pandemic, there remains a strong financial commitment on the part of providers and payers to invest in the sector in terms of piloting and deploying new solutions as well as expanding and scaling existing capabilities.

Providers and payers alike will continue to invest in and dedicate resources toward expanding the use of voice conversational artificial intelligence (AI) of both text chat and voice solutions to obtain benefits such as improved patient and clinician satisfaction, patient outcomes, and lower costs. Physician overload and fewer physicians in the job market are major drivers.

The digital front door in healthcare has emerged as a term in the healthcare dictionary to capture the myriad solutions that are digitizing and virtualizing healthcare operations across the continuum of care, into the back office, and events extending to marketing and patient acquisition plus retention.

Competitive threats from big tech and startups will continue apace from previous years' strong activity in healthcare IT and digital health. Strong emphasis on AI-based solutions included:

- ChatGPT by OpenAI has emerged (with immense hype) as an artificial intelligence (AI) tool with potential healthcare applications yet to be seriously explored and measured. Microsoft has invested over $1B into the company with plans to invest $10B more and integrate the technology across its product offerings.

- Google and Deep Mind have launched 'MedPaLM' to develop and commercialize conversational AI.

These will serve as market drivers to a limited extent, as healthcare may not be the primary focus of ChatGPT and other semi-automated conversational AI solutions already dominate in healthcare, particularly Microsoft's Nuance, which has a near-50% market share in the category.

The consumerization of healthcare trends will remain strong, with patients placing expectations on healthcare organizations to provide seamless user experience and on-demand information and care services much like consumer companies provide. The convergence of telehealth and remote patient monitoring will be effective tools for healthcare providers to address these dynamic consumer demands.

KEY CHALLENGES & IMPLICATIONS FOR DIGITAL HEALTH ADOPTION

Interoperability

Challenges: Interoperability continues to be a top concern when healthcare providers adopt new digital health technologies. The use of AI models for clinical and nonclinical workflows, along with the incorporation of IoT devices and XR, enables care facilities to interact with patients on the edge while keeping their data centralized for greater organizational efficiency. There is also an increasing focus on integrating nonclinical and clinical data to generate a 360-degree view of the consumer.

Implications: To achieve long-term benefits, system-level integration/interoperability becomes a necessity. This is a major concern with the adoption of new solutions and requires vendors to develop flexible systems that could be plugged into existing IT infrastructure. Given the current regulatory focus and market forces, we will see considerable investment in the interoperability space by established as well as new vendors. Push for utilizing FHIR as the common data exchange language and the inception of various national alliances, support stakeholders in the ecosystem to develop solutions that can act across organizations.

Cybersecurity and Data Privacy

Challenges: The increased adoption of IoT devices, the interconnected nature of the ecosystem, the growing volume and complexity of data, evolving cyber threats, and regulatory compliance requirements are increasing security risks and patient safety concerns. The increased use of outsourcing also opens the gate for data breaches. Hence, organizations would need to invest in stringent data security and privacy policies and applications.

Implications: Healthcare providers, device manufacturers, and regulatory bodies must collaborate to share knowledge and proactively implement cybersecurity strategies. To prioritize cybersecurity, healthcare organizations must understand the risks, allocate adequate resources for cybersecurity initiatives, update legacy systems, foster a culture of security, and implement comprehensive training programs to educate personnel about cybersecurity best practices.

Readiness among Healthcare Professionals

Challenges: Healthcare professionals including physicians, nurses, and support staff are critical elements of successful digital health transformation. Although digital health has witnessed a positive trajectory in terms of adoption across patients as well as providers, healthcare professionals' resistance towards this rapidly changing approach to healthcare restraints the pace of digital health growth to some extent.

Implications: Resistance for evolving digital healthcare models among some healthcare professionals is mainly due to a lack of technology awareness, a struggle to understand the change, a lack of training to operate new technologies, etc. These difficulties lead to failure in achieving desired operational efficiency from the healthcare technology and rather add up to the existing healthcare burden and challenges. These stakeholders need to be aligned with the goal of digital transformation and need to be empowered with the required training and guidance.

STRATEGIC IMPERATIVES IN THE DIGITAL HEALTHCARE INDUSTRY

Each passing year brings forth various factors that exert pressure on the industry's growth trajectory. To disrupt factors that collapse growth, it is necessary to work on Strategic Imperatives according to context, market performance, current trends, changes, and challenges. For 2023 and 2024, Frost & Sullivan has identified Strategic Imperatives to make the digital health industry grow: Disruptive technologies, Customer Value Chain Compression, and Innovative Business Models

New Disruptive Technologies such as AI, XR, IoT, and Robotics are improving the healthcare industry by making better workflows and processes, making stakeholders work more effectively, and therefore, improving care delivery. Digital healthcare solutions are disrupting the current ways of working by offering care closer to patients and safe and engaging providers' workplaces. This will empower patients to take control of their healthcare decisions, while also providing healthcare providers with a more comprehensive understanding of the care journey, ensuring continuity.

Healthcare facilities and payor organizations need to **compress the customer value chain** by acquiring additional services or partnering with physician clinics, enabling them to engage with more patients and expand. This vertical integration benefits patients by having better services with a smooth flow of their data. Also, it can enable players to develop systems that support data integration and interoperability. To reach the goals of this strategic imperative it is necessary to consider M&A option.

To **innovate the care delivery business model**, it is necessary to consider the current demand for care. Virtual care is changing the delivery of care at home, supported by devices and remote patient management tools. Care facilities and home care organizations must provide last-mile service. The use of digital tools will increase, creating facilities with monitoring centers and allowing them to manage patients at home, appointments, and schedule visits, among other services.

CONCLUSION

The digital health transformation in GCC has taken up momentum in the past few years with the region tackling with multi-faceted challenges related to cost, health equity, workforce shortage, and infrastructure. In the current stringent economic environment, GCC has a favorable digital health investment environment supported by a long-term and visionary transformation roadmap by healthcare bodies in the region. Innovative technologies such as AI/Gen AI, XR, IoT, and Robotics as well as virtual care and remote patient monitoring will be at pivotal for the innovation of the care delivery model. The GCC region is well-positioned to succeed in transforming the care delivery model with key enablers such as investment availability, technology capabilities, regulatory support, and consumer readiness in place.

Footnotes

[1] https://www.healthcareitnews.com/news/emea/investment-gcc-healthcare-digital-infrastructure-reaching-12bn
[2] International Trade Administration
[3] Frost & Sullivan Analysis
[4] Bon Secours Mercy Health

GROWTH PIPELINE ENGINE™

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