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7 Healthcare Tech Trends to Watch for in 2024

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The healthcare industry has seen unprecedented adoption of artificial intelligence (AI) and deep tech since 2015. This has been at the forefront of the healthcare industry's transformation from being extremely tech averse to leading tech adoption in less than a decade. COVID-19 also presented many challenges to the healthcare industry and accentuated the digital chasm that needed to be bridged. The solution was to enable rapid digitalisation of healthcare that would facilitate new ways of working and addressing the challenges. As a result, 2023 saw rising investments in healthcare technology, specifically in the areas of healthcare financing, personalised healthcare, clinical decision support and AI assisted medical imaging. What, then, can we expect from the new year in this sphere? Let's explore further.

2024 is going to be a watershed moment for the healthcare industry in terms of the scale at which it adopts digital technologies and the varied use cases made possible by it. As alluded to before, the momentum has been building for the last five years with rapid digitisation of healthcare data and large-scale investments by big tech companies and it's now time to combine investments with opportunities to improve patient outcomes and drive down healthcare costs. They are also influenced by various other factors such as technology, demographics, social values and policies.

As we look forward to the new year's, here are seven of the leading healthcare megatrends that will play an increasingly important role and redefine the healthcare industry in 2024.

Edge computing – With the market getting flooded with powerful processors, Edge computing which is a subset of Artificial Intelligence is all set to move out of innovation trigger and quickly move towards a steady state. Edge computing brings the entire computing paradigm to the point of data collection. This also means lesser dependency on cloud computing. For example: Most surgical robots will be edge enabled and computing and decision making do not need the internet or cloud.

Hospitals today prefer robotic equipment used in operation theatres not to be dependent on connectivity due to the extremely critical nature of the operations being performed. According to IDC's June 2021 Edge spending guide, healthcare provider spending on Edge will reach $10.3 billion by 2025 with a CAGR of 17 per cent.

Generative AI For Healthcare & LifeSciences - Generative AI is becoming a crucial technology that Healthcare & LifeScience organisations are looking at leveraging, to enhance customer outreach, service delivery and apply its potential to increase efficiencies. Areas that are in focus that we see will need Generative AI are synthesising patient summary documents, tailoring & auto-generation content that is target-specific, personalising member services, education, and communication. Other areas that healthcare organisations are exploring today to see if there is a potential use case are onboarding management and enhanced auditing, quality management & report generation. Additionally, fraud detection could very well seek help from Generative AI and move away from rule-based programmes that they have today.

Data Protection and Cyber security – Data privacy and Cyber security will be top priority for healthcare organisations and governments in 2024. With widespread digitalisation and new connected medical devices becoming part of a hospital network, healthcare organisations become extremely vulnerable to cyber-attacks. More than 65 per cent of healthcare organisations today see Cyber security as their top IT infrastructure challenge. The emergence of AI and machine learning in cyber security is also set to redefine how we protect our digital assets. But it doesn't stop there – in an age where information is the new currency, protection is the best investment.

Genomics – We have reached a point of technological advancement where DNA can be broken down into digital code to diagnose, treat diseases, and to develop medicines that are personalised for individuals. The key to making rapid advances in genomic research is to manage large volumes of data and improve our understanding of hidden patterns which can now be done more efficiently due to the computational power of Artificial Intelligence.

Wearables & IoT – By the end of 2024, it is predicted that there would be more than 207 billion devices connected to the worldwide network. It should come as no surprise then that we are already seeing smartwatches enabled with Generative AI that will act as your fitness assistants and personal coaches. Microsoft Bag and Humane AI pin are some examples which use Generative AI along with wearables.

Amalgamation of Point of Care diagnostics and telehealth – The pandemic-era telehealth flexibility is here to stay and expand its capabilities. With the emergence of smart medical devices & diagnostics, push towards care at home models, the need of consumers to travel for their routine diagnostic tests will decline. Point of care devices will empower patients to get bedside tests, receive care and health advice without leaving their homes or being restricted by geographic boundaries at their preferred times. A simple example would be blood tests - today, blood sample collection is predominantly done at home instead of a patient having to identify and visit their nearest testing lab.

AI TRiSM (Trust, Risk, and Security Management) - With the evolution of GenAI for Healthcare applications, there is an evident need for tackling the potential misuse of AI models. User acceptance becomes a major driver for wide adoption of AI thereby generating better outcomes. Diagnostic solutions built adhering to the Responsible and Ethical AI governance practices makes this possible. AI TRiSM framework with solutions focussing on explainability of models used in diagnostic applications, privacy and confidentiality of health data, monitoring of AI model operations (ModelOps), solutions to prevent AI adversarial attacks are being developed and are going to be the mainstay moving forward.

Foundation of a New Healthcare Ecosystem

We are in the midst of a transformative phase in healthcare and will witness several new use-cases and disruptions made possible by the emergence of digital technologies. In 2024, Generative AI will make its way into wearables to provide for highly bespoke and personalised experiences to users while enabling greater progress in genome research. Patients will become the epicenter of the healthcare ecosystem with DNA based treatments to facilitate greater care equity and personalisation. And finally, robotics will play a more prominent role in surgeries due to significant advancements in edge computing. The megatrends also reflect the opportunities and challenges that lie ahead for providers, payers, and consumers. We will be applying the human factors principles, knowledge and research methods to enhance safety, quality and efficiency of healthcare in remote and home settings.

A lot of what is likely to happen in the next 12 months will lay the foundation of a new healthcare ecosystem that will fundamentally change how healthcare experiences are delivered for the better.

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