

## Perspective

# Smart Health Care System its Challenges and Potential Benefits

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## 1. Introduction

Smart healthcare can be defined as the integration between patients and doctors on a common intelligent health monitoring platform by analysing people's daily activities. Smart healthcare uses a large number of interconnected devices combined with intelligent algorithms to support healthy living and wellness at home and in healthcare facilities. Strong connected devices that automatically perform computing tasks and simultaneously exchange data with other devices are called "smart devices". Smart healthcare includes many stakeholders, such as doctors and patients, hospitals and research institutes. It is an organic whole that deals with many aspects, including disease prevention and monitoring, diagnosis and treatment, hospital management, health decision-making, and medical research. Information technologies, such as IoT, mobile internet, cloud computing, big data, 5G, microelectronics and artificial intelligence, as well as modern biotechnology, form the foundation of care. Smart health care system technologies are widely used in all aspects of smart healthcare. From the patient's perspective, they can use wearable devices to monitor their health at any time, seek medical help through virtual assistants, and use remote homes to perform remote services; from the physician's point of view, many intelligent clinical decision support systems are used to assist and improve diagnosis. Doctors can manage medical information through an integrated information platform that includes laboratory information management systems, imaging communication and storage systems (PACS), and electrical medical records. Death, etc. more precise surgery can be done through surgical robots and mixed reality technology. From a hospital perspective, Radio Frequency Identification (RFID) technology can be used to manage employee and supply chain documents, using integrated management platforms to collect information and help make decisions. The use of mobile health platforms can improve the patient experience. From the perspective of scientific institutions, it is possible to use techniques like machine learning instead of manual drug screening and find the right subjects using big data. Through the use of these technologies, smart healthcare can effectively reduce the costs and risks of medical procedures, improve the efficient use of medical resources, promote the exchange of innovation and cooperation in different regions, promoting the development of telemedicine and self-service medical care, and ultimately making personalized health services ubiquitous.

## 2. Description

Artificial intelligence in healthcare the ability of computer algorithms to approximate conclusions based solely on input data is referred to as Artificial Intelligence (AI). AI is precisely the capacity of computer algorithms to make approximations of conclusions based only on input data. It is a comprehensive term used to describe the use of machine learning algorithms and

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software, or Artificial Intelligence (AI), to mimic human cognition in the analysis, presentation, and understanding of complex medical and health-care data. The primary goal of health-related AI applications is to investigate the connections between clinical techniques and patient outcomes. Diagnostics, treatment protocol development, drug development, personalised medicine, and patient monitoring and care are all areas where AI programmes are being used. What distinguishes AI technology from traditional healthcare technologies is its ability to collect data, process it, and deliver a well defined output to the end user. AI accomplishes this through the use of machine learning algorithms and deep learning.

### **2.1. Application of Artificial Intelligence (AI) in Smart Healthcare Systems**

The potential for AI to revolutionise patient medical care is endless. This revision examines the results of implementing an AI-driven universal healthcare strategy to assess decision-making in light of the state of health care systems as revealed by the 2020 COVID-19 pandemic. The goal of this learning is to critically analyse the state of the art intelligent healthcare systems, with a particular emphasis on mobile and smartphone devices for patient monitoring, machine learning for disease diagnosis, and assistive structures like social robots designed for flexible living environments. Under the headings of personal, group, and social sensing, remote surveillance systems can offer localised and global sensing on various scales. The single person data collection and analysis capabilities of the real-time tracking systems are designed for them. Common examples include tracking users' exercise routines, estimating activity levels, and spotting symptoms of mental health issues. Sharing the data with medical professionals may serve a purpose even though it was only intended to be used for the user's information. The Nike Fuel Band, Google Glass, and Fitbit are all capable personal monitoring gadgets.

### **2.2. Drawbacks and Benefits**

The development of mature concepts and systems has occurred since the introduction of smart healthcare. However, there is still much room for improvement, and numerous challenges are now appearing, due to the emergence of new technologies and problems. Smart healthcare currently lacks macro-level direction and programmatic documents, which results in unclear development objectives and ultimately resource waste. Additionally, there is a lack of uniform standards for medical institutions across regions and organisations, and more needs to be done to guarantee data integrity. Communication and data sharing are difficult as a result of the complexity and volume of the data. Compatibility issues with various platforms and gadgets are another issue. From the standpoint of the patient, there are risks associated with the misuse of personal data and privacy due to the absence of pertinent legal standards in the field of smart healthcare. Even some users struggle to use the technology. Technically speaking, some smart healthcare technologies are still in the experimental stages and require significant funding to be upheld and improved. If used hastily, there is also an unidentified risk. So, in order to address the aforementioned issues, we must concentrate on two areas: Technology and regulation. First, we can use technological advancements to hasten the stability and maturity of related technologies.

## **3. Conclusion**

It's also crucial to develop the capacity for big data analysis. By doing this, we can enhance data integrity and get rid of obstacles to information sharing. Finally, by using methods like block chain, data security and transmission stability should be as much as possible guaranteed. In terms of regulation, experts from pertinent fields can collaborate to define the industry's development objectives. Legislation is a practical way to ensure the confidentiality of important personnel and increase the security of smart healthcare.