Vision for the Future Hospital

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Abstract

Keywords:

Introduction

Technology: development and innovation.

A hospital without technology is almost inconceivable when it comes to the hospital of the future. The use of robots, big data, etc. is already a path that can be further developed until 2030.

New medication and treatments will be available in the hospital of the future, thanks to the progress that is being made. However, many people will not be able to pay for it or have access to it.

Data collecting and processing

While the entire healthcare system is evolving into patient-centred care, effective data management is essential to provide doctors and other healthcare providers with insight not only into individual patients' data, but also into public health data, data of patent's history, and family history in order to identify underlying patterns and to discover disorders.

Big data can considerably increase the capacity to generate new knowledge. The cost of answering many clinical questions prospectively and even retrospectively, by collecting structured data, is priceless. Big data can also help in distributing knowledge. In the future, patients will themselves have access to their medical data and will play a more active role in this data collection. The possible consequence is that patients can help determine who can access their health and disease data (for example, general practitioner, pharmacist, caregiver, etc.).

This data sharing must not only take place between hospitals, but also with primary care, home care, chronic care and the government. This can form the basis of real-time quality control.

Security

Data security in healthcare is not just about protecting the confidentiality of data. If its integrity and availability are compromised, there is a potential risk for patients. What threats will hospitals face in the future? How can they protect themselves? What are the challenges of the future? There are three major problems when considering the use of data: the availability, integrity and confidentiality of data. In healthcare, it is not the confidentiality of data that is most important, but the integrity of data.

With the spread of digital technologies, cyber offenses can pose a major threat to the hospitals of the future. Managers must understand that cyber security is the other half of digital implementation.

Materials and methods

Artificial Intelligence (AI) and Machine Learning (ML)

The application of Artificial Intelligence and Machine Learning in healthcare ensures that data from large groups of patients can be used to predict disease progression.

Development of medication

Medicines Optimization is defined as a person-oriented approach to safe and effective drug use, to ensure that people obtain the best possible results from their medicines.

The hospital of the future will make data-driven decisions possible to automate the patient's 5Rs (right doctor, right medication, right time for medication, right dosage, right delivery).

Genetics

Genomics has become an important part of digital health. Computers and robotics are needed to, among other things, scale genomic sequencing and enable gene editing. This development has delivered the most value for oncology, but also on a smaller scale, non-cancer indications have identified targeted approaches.

The hospital of the future will provide new and extremely complex healthcare services, such as genome-based and personalized medicine based on new health technologies that require expert skills.

Developments in genetics improve the scientific understanding of links between genetics and susceptibility to diseases.

Technology of point of care, Lab - on - a - chip and liquid biopsies

Nanotechnology and 3D printing technology are evolving rapidly and the construction of micro- and nanomachines is rapidly approaching. As a result, it will be possible to perform tests faster and closer to the patient or the patient's bed and thus saving time and ability to start the necessary therapy faster. This is preceded by the continuous blood sugar measurement, which it is currently used.

Liquid biopsies will allow you to make faster and perhaps better cancer diagnoses. Nanotechnology could also be used to bring therapeutic agents in the body to the right target organ.

Robotics

The challenge will be to enable penetration into the hospitals of the future through a sufficiently diversified and competitive range of robots.

Health apps

The hospital of the future will use digital patient journals or apps that are directly shared with the hospital and medical staff to gain a better understanding of how the patient feels. TÄ&D L@ Ä7&D H U T• $Ð "d@ ð p ¸ 0 @ 0 0 `

Hospitals function within a larger healthcare system. This study is limited to indicating the future responsibilities of hospitals as institutions in themselves; however it does not unfold or prioritize care assignments for the entire care system.

Furthermore, hospitals are embedded in a complete society that is also subject to many other factors. Consider, for example, socio-