National Institute of Technology
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assignment 04

Disruptive Innovations in Healthcare

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1 Introduction

1.1 Technology

Technology is the biggest driver of many disruptive innovations in healthcare since every aspect of healthcare is dependent on some form of tech. From wearables and mobile phone apps to big data and artificial intelligence (AI) use in diagnosis, any new technology could potentially shake up healthcare.

1.1.1 1. Consumer devices, wearables, and apps

In the past, a patient could get only biometric data about their pulse, heart rate, blood oxygen, and blood pressure when they went to the doctor's office. Now, consumers take charge of their own health journey, using data gathered from their Fitbits, smartwatches, and mobile phone fitness apps. Physicians can use the data gathered from these wearables to make treatment decisions, although the vast amount of personal information collected by these apps has led to legal and ethical concerns over data privacy.

1.1.2 2. AI and machine learning

AI applications can manage patient intake and scheduling as well as billing. Chatbots answer patient questions. With natural language processing capabilities, AI can collate and analyze survey responses. AI will probably increase in use as a way to bring down healthcare costs and let doctors and staff focus on patient care. Healthcare leaders must be knowledgeable about the issues surrounding database management and patient privacy.

1.1.3 3. Blockchain

Blockchain is a database technology that uses encryption and other security measures to store data and link it in a way that enhances security and usability. This innovation facilitates many aspects of healthcare, including patient records, supply and distribution, and research. Tech startups have entered the healthcare sector with blockchain applications that have changed how providers use medical data.

1.1.4 4. IoT

What if public health managers could gather data from wearable devices, thermometers, smartwatches, and various other consumer devices — and then use that data to discover disease clusters and provide care to patients more effectively? That's

the vision of the internet of things (IoT). Some of the complex issues surrounding IoT include patient data security and how to define smartwatches — are they consumer products or medical devices that require Food and Drug Administration (FDA) approval?

1.1.5 5. Telemedicine

COVID-19 has undoubtedly accelerated the delivery of telemedicine, and experts affirm that telemedicine is here to stay. It's effective, doctors will be reimbursed for a telehealth consultation, and many patients prefer it. However, telemedicine is highly dependent on internet access, and some areas of the U.S. still have poor connectivity.

1.1.6 6. Patient rights

EHR data security, billing transparency, and access to medical records are all part of a major shift in healthcare that ensures that patients receive all the information they need to make informed decisions about their care. As of early 2021, hospitals must make their prices more transparent, per the Centers for Medicare Medicaid Services (CMS). Other upcoming reforms include the introduction of online pricing tools so patients can see their out-of-pocket costs.

1.1.7 7. Retail competition

In 2019, Walmart formed Walmart Health, freestanding clinics that provide primary and urgent care. The same year, Amazon bought the online pharmacy PillPack, setting itself up to move into the pharmaceutical retail market and potentially disrupt the pharmacy benefits management market. In 2018, CVS acquired Aetna, moving from retail into health plans. All of these moves create new giants in the industry, changing the way healthcare operates.