

NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR



BIOMEDICAL ENGINEERING ASSIGNMENT

Disruptive Innovations in Healthcare

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DISRUPTIVE INNOVATION ON HEALTHCARE

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1 INTRODUCTION

In the early 2000s, the healthcare industry was ripe for disruptive innovation. As Christensen and colleagues wrote in a 2000 article in the Harvard Business Review, “Health care delivery is convoluted, expensive, and often deeply dissatisfying to consumers.” The authors said that a whole host of disruptive innovations could end the crisis – but only if entrenched powers got out of the way and let market forces play out. “If the natural process of disruption is allowed to proceed,” they wrote, “we’ll be able to build a new system that’s characterized by lower costs, higher quality, and greater convenience than could ever be achieved under the old system.”

2 WHERE IS DISRUPTION HAPPENING NOW?

Just as Christensen and colleagues wrote in the early 2000s, startups and new entrants often drive disruption in healthcare. NEJM Catalyst recently surveyed healthcare executives, clinical leaders, and clinicians, who concluded that disruptive innovation in healthcare will come from beyond traditional organization’s. “Whether talking about disruptive innovation in hospitals, health care IT, or primary care,” they conclude, “respondents say focused start-ups will lead the way.” “Whether talking about disruptive innovation in hospitals, health care IT, or primary care, respondents say focused start-ups will lead the way.”

3 EXAMPLES OF DISRUPTIVE HEALTHCARE IN TECHNOLOGY

Disruption is happening everywhere in healthcare – from AI to mHealth to 3D printing and robotics. Here are a few contemporary examples of disruptive healthcare technology:

3.1 Consumer devices, wearables and apps

In the past, patients could only get biometric data when they went to the doctor’s office. Now health data gathered from smartwatches and mobile fitness trackers allow consumers to play a new role in their health journey.

3.2 AI and machine learning

AI applications are everywhere in healthcare, from patient intake to predictive analytics to new drug development. This technology is changing how health systems operate and how care is delivered.

3.3 Telemedicine

COVID-19 accelerated the expansion of telemedicine, but with long-ranging impacts. Most patients say they are interested in virtual care going forward.

3.4 Blockchain

– Blockchain is a database technology that stores data in a way that enhances security and usability. This innovation is changing many aspects of healthcare, including patient records, supply and distribution, and research.

4 HOW DISRUPTION INNOVATION HAPPENS

In addition to technological innovation, experts say there are two processes that often facilitate disruption in healthcare specifically.

4.1 Decentralization

The first is decentralization. Disruption typically involves new market entrants creating products that bring in new consumers. But in healthcare, everyone is already a consumer. In healthcare, disruption often shifts care from hospitals to clinics and office settings, and even into patients' homes. Telemedicine is the most obvious example.

4.2 Transference of skills

The second process is matching clinician's skill level with the difficulty of the medical problem. This means transferring skills from highly trained, expensive personnel, to more affordable providers, including technology-based care. This helps address expensive care due to overshoot of patient needs by health care institutions.