NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR(C.G)

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Figure 1: National Institute of Technology, Raipur

ASSIGNMENT-2 OF BASIC BIO-MEDICAL ENGINEERING UNDER THE SUPERVISION OF DR.SAURABH GUPTA SIR

DISRUPTIVE INNOVATION IN HEALTHCARE

Definition of Disruptive Innovation

Disruptive innovation is a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.
As the digitalization of healthcare continues to expand throughout the industry, innovative medical technologies are set to deliver substantial new value opportunities to those hospital organizations that successfully implement them. In a world where disruptive and exciting digital technologies are revolutionizing patient care, being innovative is not just desirable but necessary.

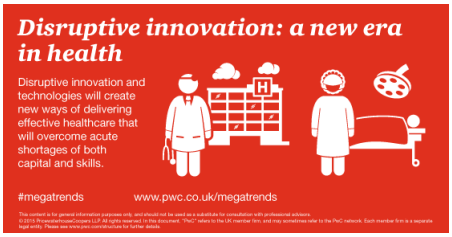

Figure 2: Disruptive Innovation by pwc.co

The role of disruptive innovation

Disruptive Innovation in healthcare can influence a new system that provides a continuum of care focused on each individual patient's needs, rather than focusing primarily on complex disorders and urgent health crises.
Because of advances in diagnostic and therapeutic technologies, and physician assistants can competently diagnose and treat disorders that would have previously required a physician.
As nurses, we experience the progress of innovation each day, and we feel its impact on our work as we use "smart" patient-care devices and electronically document our care. But the premise of disruptive innovation isn't about the technology itself, rather it's about applying that technology in a simpler, more radical way to either create a new product or a new environment for using the product that didn't previously exist. Several examples of disruptive innovations are apparent in our daily lives.

Examples of disruptive innovations in healthcare include the use of ***miniaturized blood glucose meters*** that patients can take along wherever they go. As a result, patients can self-manage most aspects of diabetes more effectively and conveniently, whereas in the past, they would have access to treatment solely through healthcare professionals. Another example of a disruptive innovation in healthcare is ***angioplasty.*** When I was in nursing school, bypass surgery was the most common treatment for patients with coronary artery disease. Today, the treatment of choice is angioplasty, which is less invasive, less disabling, and less costly. Initially, experts viewed the procedure with skepticism, but over time, increasing skill, experience, and technologic innovations (such as stents) have allowed angioplasty to be reliably performed in stand-alone cardiac centers.

How Technology Helps us?

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.

Figure 3: IOT And Telemedicine

1. Consumer devices, wearables, and apps .
2. AI and machine learning
3. Blockchain
4. IoT
5. Telemedicine

6. Smartphones

   Apart from these there are so many such examples are present.

How data synthesis and analysis happens?

For the purposes of the review, both independent reviewers agreed on the categorisation of the healthcare-specific disruptive innovations into six domains based on those identified in a report on disruptive innovation:

- Basic science: this domain relates to novel laboratory (eg, 'omics' disciplines, RNA centric discoveries) and pharmaceutical techniques or discoveries (eg, novel compounds, novel drugs delivery mechanisms).
- Device: this domain relates to device innovations (eg, point-of-care glucose testing).
- Diagnostics: this domain relates to either pathological or radiological diagnostic modalities (eg, nerve conduction studies).
- Digital health: this domain relates to broad use of digital information and communication technology (eg, electronic health records, augmented reality to assist surgery).
- Education: this domain relates to either the access or provision of education (eg, distance learning).
- Processes: this domain relates to novel health policy or the reorganisation of structures/health institutions, processes or roles (eg, introduction of nurse practitioners).

Some disadvantages of Disruptive Heathcare

- Unrefined inventions
- Early performance problems
- Lack of awareness about it
- Problems not well understood