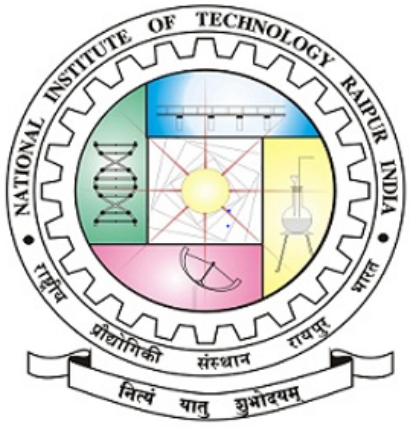
National Institute of Technology, Raipur

ASSIGMENT-3

[Feb 11,2022]

Two page write-up on "Future of HealthCare"



SUBMITTED BY:
Animesh Diwan

Roll no : 21111010

Branch: Biomadical

Under the supervision of :
Mr. Saurabh Gupta
Department of Biomadical Engineering

Contents

"Health care is the maintenance or improvement of health via the prevention, diagnosis, treatment, amelioration, or cure of disease, illness, injury, and other physical and mental impairments in people. Health care is delivered by health professionals and allied health fields. Medicine, dentistry, pharmacy, midwifery, nursing, optometry, audiology, psychology, occupational therapy, physical therapy, athletic training, and other health professions are all part of health care. It includes work done in providing primary care, secondary care, and tertiary care, as well as in public health"

1 RELATED SECTOR OF HEALTH CARE:-

1.1 Health care system

A health system, also sometimes referred to as health care system or healthcare system, is the organization of people, institutions, and resources that deliver health care services to populations in need.

1.2 Health Care Industry

The healthcare industry incorporates several sectors that are dedicated to providing health care services and products. As a basic framework for defining the sector, the United Nations' International Standard Industrial Classification categorizes health care as generally consisting of hospital activities, medical and dental practice activities, and "other human health activities." The last class involves activities of, or under the supervision of, nurses, midwives, physiotherapists, scientific or diagnostic laboratories, pathology clinics, residential health facilities, patient advocates[22] or other allied health professions

1.3 Health Care Research

The quantity and quality of many health care interventions are improved through the results of science, such as advanced through

the medical model of health which focuses on the eradication of illness through diagnosis and effective treatment. Many important advances have been made through health research, biomedical research and pharmaceutical research, which form the basis for evidence-based medicine and evidence-based practice in health care delivery. Health care research frequently engages directly with patients, and as such issues for whom to engage and how to engage with them become important to consider when seeking to actively include them in studies. While single best practice does not exist, the results of a systematic review on patient engagement suggest that research methods for patient selection need to account for both patient availability and willingness to engage.

1.4 Health Care Financing

There are generally five primary methods of funding health care systems:
General taxation to the state, county or municipality
Social health insurance
Voluntary or private health insurance
Out-of-pocket payments
Donations to health charities

2 FUTURE OF HEALTH CARE :Meaning

n the future of health, we expect six key areas—data sharing, interoperability, equitable access, empowered consumers, behavior change, and scientific breakthrough—to collectively transform the existing health system from treatment-based reactionary care to prevention and well-being.

Early Life

Foetal scanning and surgery is already in place, however these are set to improve. This means that health problems in foetuses will be detected before birth and a plan of treatment can be put into place that the parents can follow for a healthier life for the child.
The Internet of Things and wearable technology will spot signs of illness quicker, as our health will be constantly monitored. Devices will recognise

changes in your health by comparing it to your data when you were in full health, then alert you before anything bad has a chance to develop further.

3 INNOVATIONS RELATED HEALTH CARE:-

In the latest version of Innovate Predictions Series, they take a look at the emerging technology in healthcare and how it will affect all of us. The future of healthcare looks bright, improving every stage of our lives, from birth to old age. The technology can help us live healthier and longer lives in ways we didn't think were possible, changing the whole healthcare system in the process.

A Visit to the Doctorss

You will no longer need to tell your doctors your symptoms, you can simply step into a scanner like at the airport, or it could even be as easy as breathing into something. The technology will be able to detect illness, giving the doctor one less job and more time to focus on more important tasks.

The scanner will use your data, including lifestyle and diet, and data from the in-depth check up to create a full report on your current health. This will be particularly useful with monitoring chronic diseases such as diabetes and dementia.

If an illness has been detected, the doctor will be alerted to come and give the patient a consultation, or the scanner will even be able to dispense the

medication needed, just like a vending machine! This allows the patient to get medicine quicker than ever, revolutionising the healthcare system. The medicine that will be dispensed will likely be made by artificial intelligence, meaning the scanner will look through vast amounts of chemical or medical data and use this information to create the drug needed. The drug will be printed out in 3D and placed by the patient's bedside table.

What About Hospitals?

Hospitals are likely to have a dramatic change, robots will be used to transport patients around the hospital, and this will also create a more sterile environment for the patients. A wireless sensor will be able to detect a change in the patient, which will be sent to the doctor instantly. Diagnosis will be more accurate, as using algorithms and AI will be much better than a diagnosis from a human.

SOME INNOVATIONS IN HEALTH CARE FEILDS:-

An ultrasound in your pocket

Ultrasound machines are used to generate two-dimensional images of tissues and organs by sending beams of ultrasound waves into the body. A handheld transducer is applied to the skin; this transducer sends out ultrasound waves and then receives them back in the form of echoes

Cancer-diagnosing artificial intelligence

The computer correctly identified tiny specks of cancer on CT scans about 95perst of the time — much higher than the 65perst accuracy rate that radiologists typically achieve.
In precision oncology, AI is reshaping the existing scenario, aiming at integrating the large amount of data derived from multi-omics analyses with current advances in high-performance computing and groundbreaking deep-learning strategies

3-D digital hearts

A needle prints the alginate into a hydrogel bath, which is later melted away to leave the finished model. Modeling incorporates imaging data into the final 3D printed object.

Artificial Intelligence

AI is replacing conventional labor-intensive and time-consuming processes in healthcare with rapid, remotely accessible, and real-time solutions for diagnosis, treatment, and disease prevention. HealthTech startups develop software platforms, application programming interfaces (APIs), and other digital products to extend the benefits of AI. Some of the applications of artificial intelligence in healthcare include clinical workflow management, advanced surgery assistance, and medical diagnostics.

4 CONCLUSION

As we are all aware, advances in diagnosis and treatment are coming almost daily, as new approaches and technologies are developed. But many carry with them high costs, and health care is consuming an ever greater portion of national GDP around the world. This is on top of the fact that access to health care is very uneven within and among countries, highlighting profound inequities.
Overall, the transformation of health care systems globally presents a huge challenge to our social, cultural, and economic systems, and it is through efforts such as these that we will uncover the necessary insights and commitments to address them. fdgfdrtdjbhnvbnvmkjlijuffdgf