

PRESENTATION ON SUMMER TRAINING

- ▶ **PART 1– DIGITAL HEALTH: An emerging healthcare model for hospitals of India**
- ▶ **PART 2– ONLINE COURSE ON “eHealth: More than just an electronic record**

Presented by-

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PART 1- DIGITAL HEALTH: An emerging healthcare model for hospitals of India

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1. INTRODUCTION
2. METHODOLOGY
3. LIMITATIONS
4. DATA ANALYSIS
5. RECOMMENDATIONS
6. CONCLUSION
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1. INTRODUCTION

- ▶ Coronavirus disease (COVID-19), which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in December 2019 in Wuhan, China, and has since spread globally, thereby declared as global pandemic on March 11, 2020 by World Health Organization.
- ▶ India too is greatly impacted by this disease, causing infection to tens of thousands of people and as a measure against it, government of India declared lockdown on 24th March, 2020 which continued till 31st May, 2020. Making social distancing being a key system to fight against the crisis.
- ▶ Several industries were severely affected due to the lockdown with healthcare industry being no exception.
- ▶ Hospitals across the country faced a major turmoil as they were directly affected by the disease. For instance, massive drop in OPD footfall, elective surgeries and medical tourism.

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- ▶ Medical and paramedical staff working as frontline workers are in 24*7 contact with coronavirus positive patients. This is indeed a turbulent time and to keep up with the new way of things, hospitals are forced to go through a major digital transformation like never before.
 - ▶ For a long time, digitalization in healthcare was trying to acquire its position, but due to certain barriers it couldn't get that push which was needed to make its inherent position in the sector.
 - ▶ COVID-19 has acted as a catalyst to boost the implementation of digital health across the hospitals of India.
 - ▶ From using artificial intelligence for easy and rapid screening of COVID-19 patients, to using interactive chatbot services to generate awareness amongst people and using wearables to provide COVID-19 related information, digital health has clearly marked its significance in times like COVID-19 pandemic.

Research Question:

- What is the impact of digital health on hospitals of India amidst the COVID-19 pandemic?

Aim:

- The study aims to assess the benefits of incorporating digital health model for hospitals of India amidst COVID-19.

Objectives:

- To study the impact of digital health as a model for hospitals of India during COVID-19 crisis.
- To study about digital health and to examine the challenges faced by the hospitals due to COVID-19 and how digital health can help them to amend amidst the ongoing pandemic.
- To give a brief with illustrations about various digital platforms that have been implemented in the hospitals of India as a potential measure against the pandemic.
- To state some recommendations and future of digital health in India post COVID-19 situation.

2. METHODOLOGY

STUDY METHOD

semi-systematic literature review approach



STUDY DESIGN

Descriptive semi-systematic literature review design



STUDY STRUCTURE

Identification (articles identified using E-database.
PubMed, google scholar etc)

Screening
(articles screened by title and abstract)

Eligibility (Articles were assessed for
eligibility)

- Key terms used- Digital health, COVID-19, Virtual healthcare, Tele-health, Hospitals, Healthcare industry, India.
- Total number of articles and reports included - 23

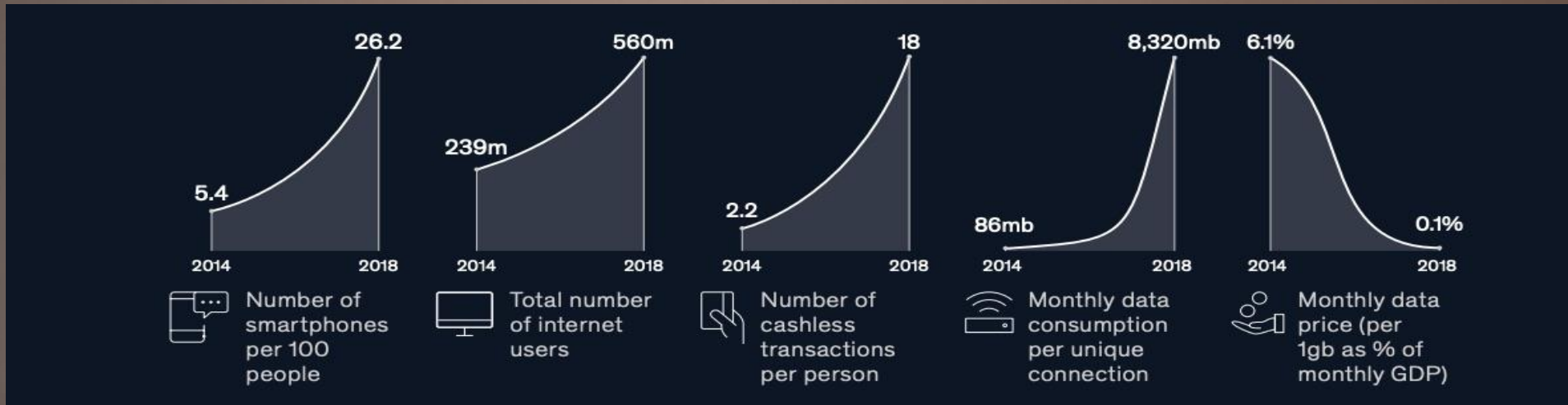
3. LIMITATIONS

- ▶ As COVID-19 crisis is relatively new and as the study is to see the impact of digital health on hospitals of India amid the pandemic, the number of articles for the exact study were limited.
- ▶ As the pandemic is ongoing, the exact impact of digital health on hospitals of India cannot be known, hence assumptions were made based on previous studies, current news and articles on the related topic.

4. DATA ANALYSIS

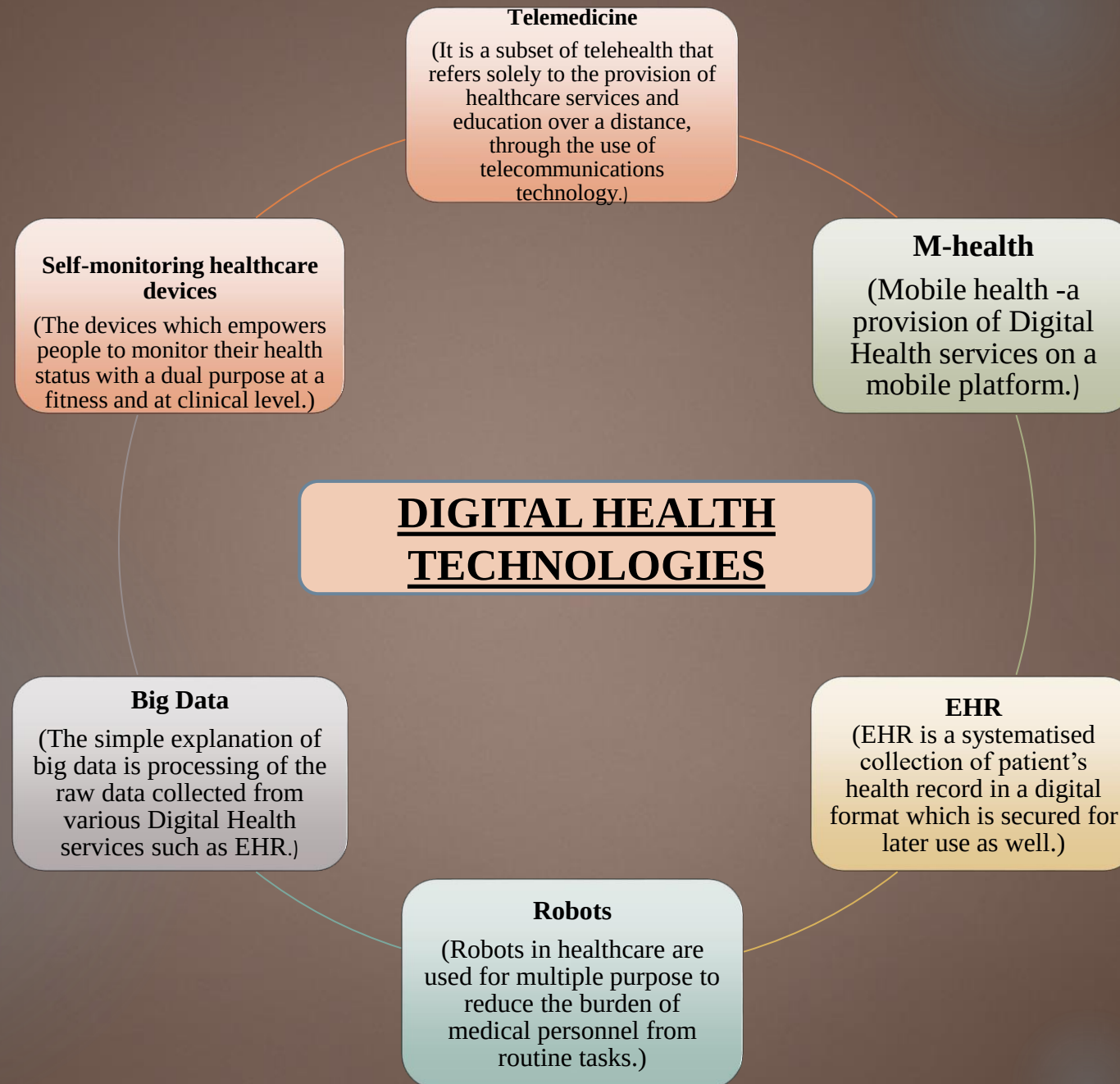
► DIGITAL HEALTH

- The World Health Organisation defines digital health as “a broad umbrella term encompassing eHealth, as well as emerging areas, such as the use of advanced computing sciences in big data, genomics and artificial intelligence”.
- India is one of the largest and fastest-growing markets for digital consumers, with 560 million internet subscribers in 2018, second only to China.



Source: McKinsey Global Institute analysis

Figure 1. Digital usage by the population of India





► Challenges faced by hospitals amid COVID-19 pandemic

Hospitals across India is facing numerous challenges amid the ongoing pandemic. Healthcare workforce, which is already limited, are the frontline workers during this crucial time and hence it is the most demanding time for hospitals.

The following are few of the challenges which are faced by hospitals-

- Staff shortage
- Fear of Infection
- Reduction in OPD footfall
- Drop in elective surgeries
- Halt in medical tourism
- Effect on revenue

► How Digital Health can help the hospitals to mend amidst the pandemic—

- COVID-19 calls for urgent measures. With limited medical personnel it is difficult for hospitals of India to handle such situation . Hence digital solutions is the need of the hour. This is not only more efficient and accurate but also guards the hospital staff against COVID by eliminating physical contact.



TELEMEDICINE

- Telemedicine is a safety valve for our strained healthcare.
- A massive acceleration in the use of Telemedicine amidst COVID-19, likely to be in place for at least the next 12-18 months. WHO mentioned telemedicine as one of the essential services under “strengthening the health systems response to COVID-19” policy. As estimation of 60-80% implementation of telemedicine in India by the year 2025 was made by McKinsey Global Institute Analysis (estimated in 2019. After COVID-19 pandemic the growth shall accelerate even more).

In India, registered medical practitioners are entitled to practice telemedicine and can prescribe medications online under the new guidelines stated by Government on March 25,2020.



EHR

- Electronic Health Record system can help doctors to make more accurate diagnosis reducing the risk of medical errors.
- Paperless accounting of patients’ medical history can help reduce the spread of infection amongst staff. Remote clinicians can access the health records in real time by exchanging it through secure portals.



ROBOTS

- handling COVID-19 patients with the help of Robots can reduce the spread of infection from patient to staff. Adoption of Robots to treat COVID-19 patients is expected to grow in India due to shortage of PPE. It can assure minimal contact between healthcare personnel and patients.
- Though expensive, it's still expected to find increasing use in countries such as India due to less number of professional available for more than 1.3 Billion population.



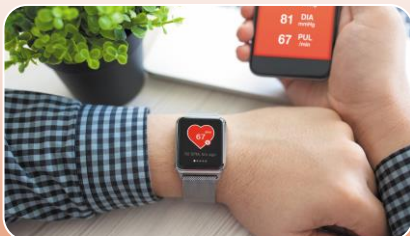
BIG DATA

- can help in predicting community as well as individual risk of infection. Also in predicting patient treatment outcome using Machine Learning. Such software makes accurate treatment recommendations (to hospitalise the patient or to move them into Intensive unit) . Hence, can help with the limited ICU facilities available and staff shortage.
- It can help in scanning people entering the hospital premises with the use of face scan and AI technology, which determines who has fever and who doesn't, can help the staff as well as other patients from getting the infection.



M-HEALTH

- M-health solution has been implemented by government by launching Aarogya Setu App. It enables Bluetooth based contact tracing of patients, mapping of likely hotspots as well as spreading of relevant information about COVID-19.
- Such solutions can help hospitals to identify a coronavirus positive patients and take the necessary steps to avoid the spread of infection.



WEARABLE DEVICES

- Devices such as wearable biosensors can be used to monitor and manage the stress among healthcare workers.
- It can also detect early patient deterioration, limiting exposure of staff, preserve PPE and improve patient safety.

► Few examples of implementation of Digital Health in Hospitals of India -

- As a coordinated response strategy to COVID-19, **Apollo** has launched a self-risk assessment scan, 24*7 doctor helpline as well as online consultation with Apollo certified doctors. This app is known as **Apollo 24|7**.
- In a bid to protect healthcare workers and intensify screening process, **Fortis Hospital** has launched **Mitra robot** for COVID-19 screening. Its consultation via tele-consultation is around 12-15% per day.
- Robot Named "**Nightingale-19**", is deployed to provide food and medicines among patients at the district coronavirus centre in Ancharakandi in Kannur district where many cases have been reported.
- Medicity has been offering telemedicine to domestic and international patients for the past five years through its **Medanta e-clinic app** and telemedicine portal.
- Cloudnine group of Hospitals has launched an app name **It's our Baby**, is a committed app built in the wake of the ongoing pandemic, currently has one lakh users.
- Tele-consultation services have been implemented in other hospitals such as **Max Healthcare, BLK Hospital, Nanavati Hospital, Artemis Hospital, and NH Hospital**, etc.



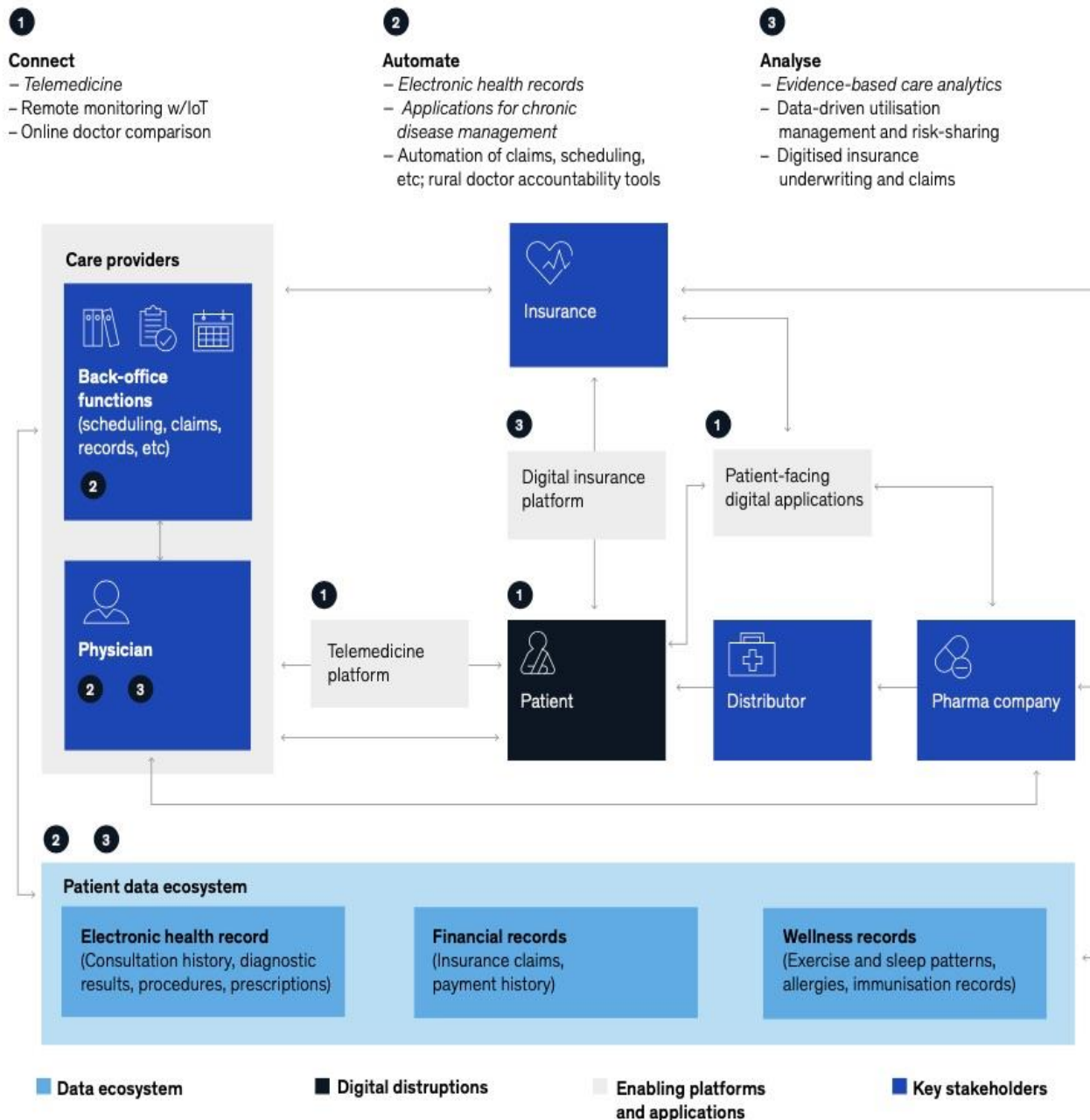
► Limitations of adoption of Digital health

- Data privacy and security
- Patient privacy
- Expensive
- Complex process
- Not a stand-alone solution

5. FUTURE OF DIGITAL HEALTH AND RECOMMENDATIONS

- ▶ According to a report given by India Health, the following are some digital health stats for India-
 - Digital solutions in healthcare is anticipated to drive the industry at a CAGR of 23% by 2020.
 - Telemedicine in India is estimated to rise at a CAGR of 20% during 2016-2020, making US\$ 32 million by 2020.
 - The execution of telemedicine technology could save India US\$ 4-5 billion every year.
 - The applications of AI in healthcare in India will be worth US\$ 6 billion (INR ~431.97 bn) by 2021.
- ▶ The above stats were made before the pandemic hit our nation when there was a slow encompassment of healthcare digitisation in India due to lack of government regulations and also due to people's perception towards healthcare. As a result of which there was comparatively less pressure on hospitals to go digital. However, COVID-19 has changed everything. Government have suddenly eased healthcare regulations. The industry received the much-needed push to go digital and embraced new challenges using technology.

Recommendations continued..



- Image depicting future of healthcare industry in India if digital applications were widely adopted.
- Coronavirus has changed the dynamics of the existing healthcare delivery system. People are getting cautious like never before. There is no way for healthcare industry to address the situation in an ‘old-fashioned’ response and definitely a new model is the key. Digital health model can help hospitals to mitigate the ongoing crisis.

6. CONCLUSION

- ▶ Deficit in the number of trained healthcare workforce in a situation like COVID-19, calls for an immediate action plan for healthcare sector. Digital health definitely has the potential to reduce the healthcare burden in our country. Its execution is the main key and the window to act is now. The pandemic has clearly established the relevance of digital health, thereby creating an opening to modernize the healthcare system.
- ▶ Working with the traditional healthcare models in the current crisis is clearly insufficient, especially for a country with more than 1.3 billion population. Our hospitals need new healthcare models, a more efficient and a cutting-edge one, like digital health model to control such crisis. It's high time that hospitals should stop considering digital health as a separate entity but instead an integral part on the overall system.

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PART 2- PRESENTATION ON ONLINE COURSE

□ CONTENT

1. COURSE NAME
2. PLATFORM USED
3. COURSE DURATION
4. COURSE DESCRIPTION
5. OBJECTIVES
6. COURSE CONTENT
7. METHODOLOGY
8. KEY LEARNINGS



1. COURSE NAME

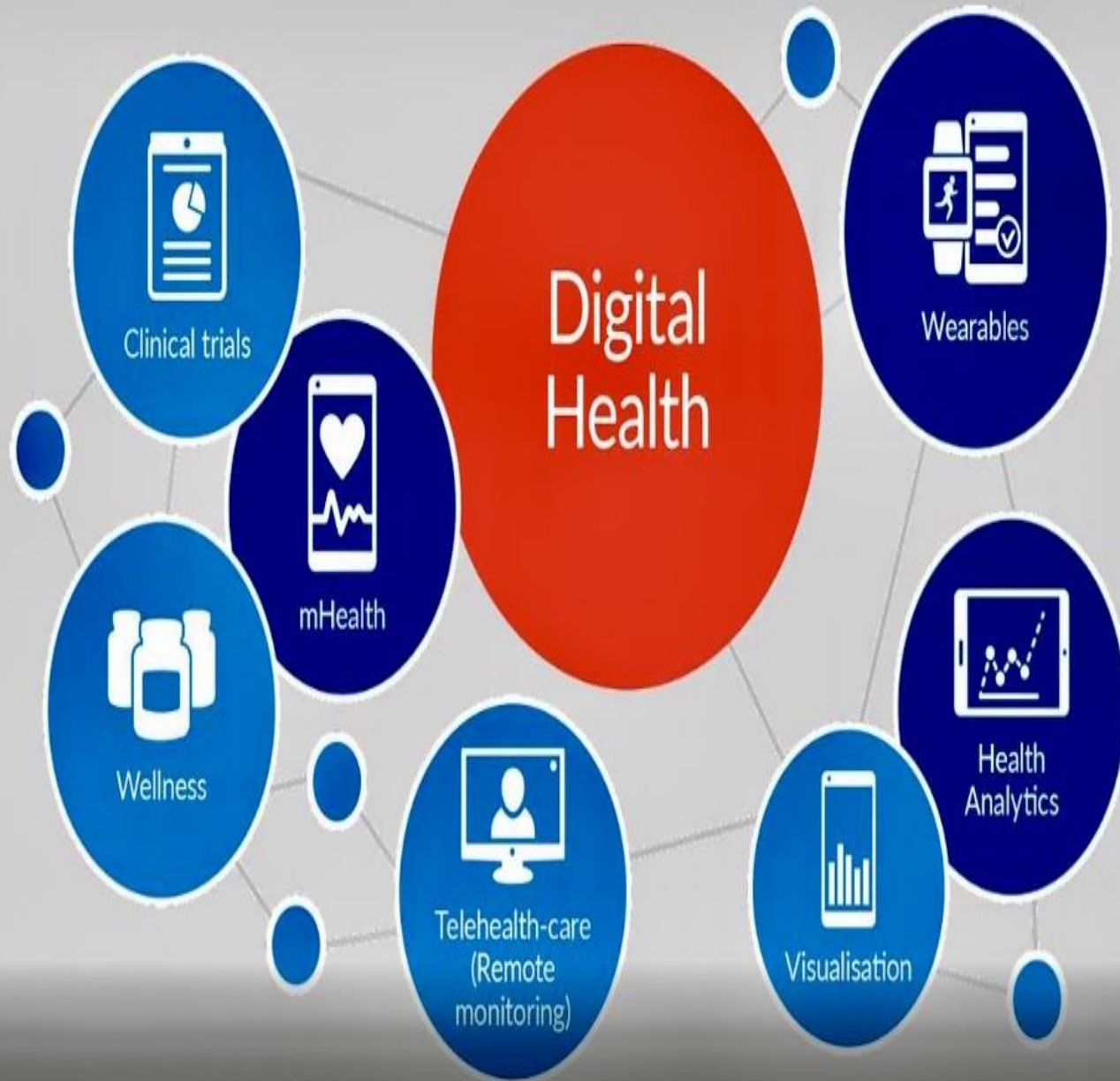
e-Health: more than just an electronic health record. (By The University of Sydney)

2. PLATFORM USED

Coursera

3. COURSE DURATION

15 Hours (5 modules, 5 weeks)



4. COURSE DESCRIPTION

- The MOOC, "eHealth: More than just an electronic record", is multidisciplinary in nature, and aims to equip the global audience of health clinicians, students, managers, administrators, and researchers to reflect on the overall impact of eHealth on the integration of care. It explores the breadth of technology application, current and emerging trends, and showcases both local and international eHealth practice and research.
- The entire eHealth Course consists of 5 modules and takes about 5 weeks to complete.

5. OBJECTIVES OF THE COURSE

- The fundamentals of eHealth and where it is heading
- What kind of health data we are currently collecting and how it will transform healthcare in the future
- How new technologies are helping health consumers participate in their own healthcare
- How eHealth can improve the coordination and efficiency of healthcare and what the barriers might be.
- Length: Self-paced 5 weeks course Study time commitment: 3 hours per week
Assessable components: Assignment 1 in Module 2 (40%) and Assignment 2 in Module 5 (60%).

6. COURSE CONTENT

- Module 1 - What is eHealth?
- Module 2 - Health in our Hands.
- Module 3 - Data and the Quantified Self
- Module 4 - Interacting with Health Professionals using New Technologies
- Module 5 - eHealth in Professional Practice

7. LEARNING METHODOLOGY USED IN THE COURSE

- Video lectures
- Reading material
- Quizzes
- Applicative Assignments

8. KEY LEARNINGS FROM THE COURSE

▶ Module 1

- To compare e-health definitions
- Current and future challenges of e-health

▶ Module 2

- To understand the potential of mobile technology as an integral part of e-health

▶ Module 3

- Various strategies to include mobile health apps in professional practice
- To analyze health apps using MARS analysis

▶ Module 4

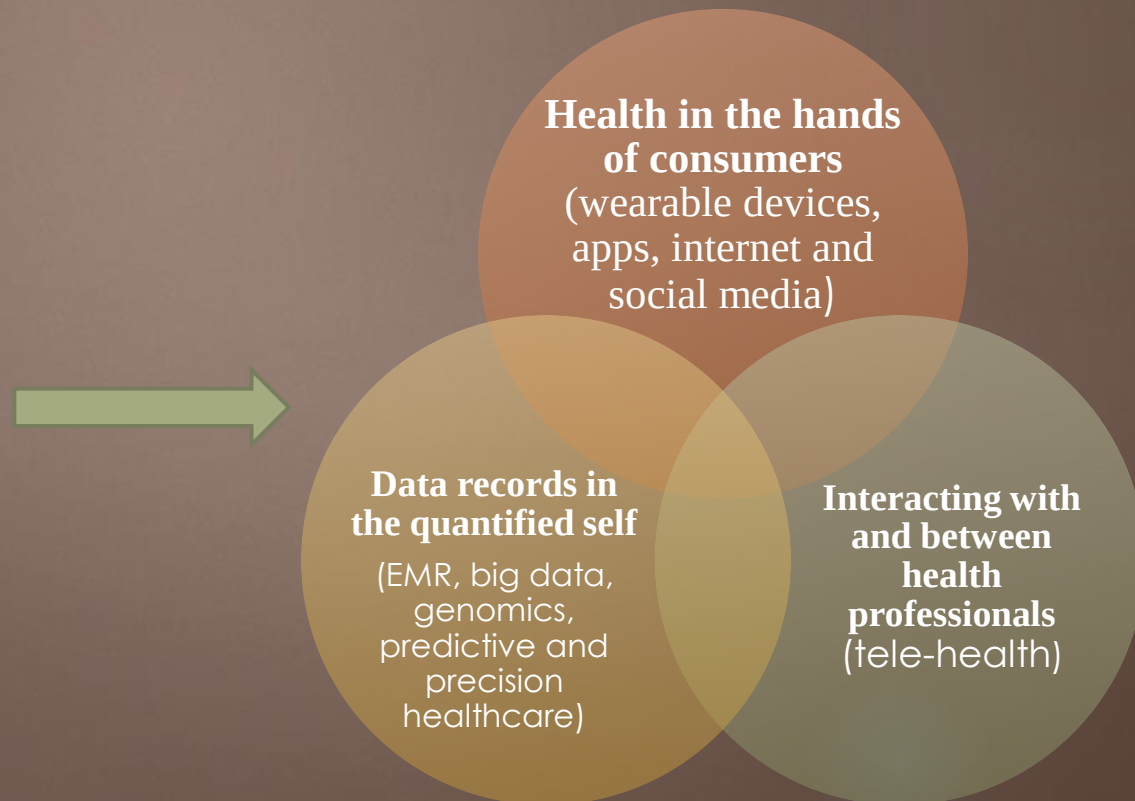
- Evaluation of advantages of technology-based e-health service in improving healthcare
- Considering new models of healthcare supported by tele-health and apps.

▶ Module 5

- To review a variety of case-based examples of e-health professional practice.

- ▶ The course in general instils learning about how digital technology, especially apps, data and communication technology, is being used to support health and healthcare management and how it's being deployed to improve healthcare delivery and quality. It also gives an insight about the framework to rate apps more objectively. For instance, how to use MARS Analysis to rate health apps.

Venn diagram showing the 3 overlapping eHealth domains.



Approaches used to imply knowledge based on learning

Quizzes- At the end of each module there were quizzes which helped to gain knowledge about current progress in e-health.

Interviews- Interviews from the experts across the campus involving private sector helped to gain variety of perspectives regarding eHealth.

MARS Analysis- it is a simple, objective and reliable tool to classify and assess the quality of mhealth apps. A peer review assignment was done to analyse a health app using MARS analysis.

(Assignment 1)

Case study- a case study was given as a second assignment where I have to provide an eHealth strategy based on the given case.

(Assignment 2)



A background image featuring a laptop screen displaying a medical interface. The screen shows a 'Personal Info' section with a patient's photo, ID number, name, gender, birth date, and age. Below this is a central anatomical diagram of a human torso with callouts to various organs. To the right, there's a section with a date '99/16' and a chest X-ray. At the bottom, there's a section with icons of a pill bottle, a pill, and a pill box. The entire image has a dark, semi-transparent overlay. A white rectangular box is centered over the text 'THANK YOU!!'. A blue rectangular box is located in the top right corner. A pen and a clipboard are visible in the bottom right corner.

THANK YOU!!