Taking Healthcare Everywhere

On Thursday, June 16th, 2022, at 1:30 pm (Sweden time), a seminar titled "Taking Healthcare Everywhere" was held by Dr. Ankica Babic, a professor in clinical informatics at IMT. The seminar covered topics related to health informatics, clinical informatics, digital health, social media, and robotics.

An overview of the workflow of Multiple Sclerosis, Cystic Fibrosis, and Diabetes Mellitus clinics was discussed. In such clinics, a patient can start by scheduling an appointment and registration through the front office, he can also provide some information about his insurance. The nurse checks his medical history. The therapist does some procedures and tests. The lab technician makes lab tests. The therapist analyzes these results and prescribes some medicines for the patient.

There is a gap between how informatics tools are used and institutional expectations. Also, understanding the workflow can help in developing strategies to maximize the use of health information technology. Where utilizing the health information technology can help in improving the healthcare delivery and thus achieve better patient outcomes.

Health information exchange has evolved to supply the need for information flow between community and hospital, where institutional factors and economic incentives have been key players where health information is shared between providers.

A comparison of the health information exchange has been done during this seminar between the USA and Israel.

A discussion about digital health has been done. Where digital health encompasses integrating technologies with healthcare, each is associated with different methods of data collection and analysis. Also, the implementation of such technology can help in reducing the costs and improving the overall health care value, quality of life, and patient outcomes.

Also, a discussion about digital twins was done. Where a digital twin is a virtual model of a physical entity, with dynamic links between the physical entity and its corresponding twin in the digital domain. Such approach can be used for testing and comparing different treatments of preventive intervention in order to find out which option will work best for that individual.

Also, a discussion about the role of social media was done. A survey of 35 questions was done in Texas for healthcare workers. The use of social media was identical. A higher number of physicians reported awareness of a social media policy in their hospital compared to nurses.

In addition, the steps of prototype development were discussed. Where the needs are identified through a literature review, then a conceptual model is generated, after that, a low-fidelity prototype is designed, and it's evaluated through interviews with experts.

The seminar was concluded by talking about robots and how robots can involve in service and nursing care.

Taking HealthCare Everywhere

Seminar held on June 16th 2022

Speaker: Ankica Babic

Summary made by Eng. Imane Haidar – Beirut Arab University

The seminar shed the light on many important points.

First came the definition of Clinical Informatics (CI) that transforms healthcare data into useable actionable information. It is how data is acquired, structured, stored, processed, retrieved and communicated.

Second, many papers where summarized; they showed the main stakeholders of the healthcare systems and how different clinics have different data flows; which forms a challenge in communicating data among clinics. Understanding the workflow and providers needs in chronic disease care environment can contribute in developing strategies to maximize Health Information Technology (HIT) use.

The solution lays in putting standards in data management and transfer, but the most important is to employ computerized Health Information Exchange (HIE) systems. This could be promoted by institutional factors and economical incentives.

Third, digital health was introduced. It encompasses the integration of technologies with health care in the domains of data collection and information flow. It aims at reducing costs and workflow inefficiencies and improving overall health care value, patient outcomes, and quality of life. Examples: wearable devices, artificial intelligence, chatbots, internet-connected biometric devices...)

Fourth and fifth points deal with the information flow types as bidirectional, unidirectional, passive, or active between patient and nurses using devices, databases, internet... The application should be user-centered to obtain the optimal outcomes.

Sixth topic provides an overview about precision medicine which can lead to the right choice of medicine to the right patient by using genetic or molecular profiling.

This could be applied by the aid of digital twin technology. A digital twin is a virtual model of a physical entity, with dynamic, bi-directional links between the physical entity and its corresponding twin in the digital domain. Digital twins enable learning and discovering new knowledge, new hypothesis generation and testing. Real life implementation: TRANSLATE for diabetes and MiProstate for Prostate Cancer care.

Seventh point discusses the social media trend and how some patients are encouraged by nurses to take their knowledge from the social media. In addition, some nurses were not aware of the fact that sharing some data is considered as privacy breach.

Real life phone applications were shown that help in matching patients to doctors and in making questionnaires.

The **eighth** and final point reviews the importance of integrating robots and other technologies in healthcare systems. They support patients psychology and help in enhancing medical imaging and surveillance.