PFARRKIRCHEN, GERMANY

DigiHealthDay-2021
Global Digital Health — Today, Tomorrow, and Beyond

12 NOV 2021

DigiHealthDay™ Premeeting Workshop: Clinical Decision Support Systems

April 26-27, 2021, 9:45-13:00 (CEST)

ABSTRACT

Clinical decision making and the ability to arrive at a correct diagnosis is still very much an art for many physicians. Physicians adopt different paths to this thought process and to improve patient care. The skills of decision making evolve over time and play pivotal role in determining the success and the quality of care provided. There have been tremendous advancements in healthcare, and this has produced an over expansion of the number of treatment options that are available to manage and treat many conditions. This has added a significant increase to the complexity of decision-making to the already complex healthcare landscape.

Clinical decision support systems (CDSS) have the potential to assist the healthcare workforce and fasten their decision-making process. CDSS can execute simple tasks, such as alerts, reminders, critique, or more complex tasks, including interpreting data, supporting diagnosis, predicting an outcome, assisting orders/prescriptions, and presenting suggestions.

Data plays a key role in the development of these systems and the data used by such systems originate from different sources. These include clinical data, contextual data and data from biomedical knowledge, including clinical guidelines and relevant research. It is important to note that the performance of CDSS is only as good as the (quality and quantity) data used to develop the system. For efficient use of data, it is important that the data used for training the system needs to be 'FAIR'. Once data is 'FAIR', decision systems can use different analytical techniques to develop the 'decision model'. Recent systems also rely on advanced Machine Learning (ML) and Artificial Intelligence (AI) to deliver their results.

CDSS is a vast spectrum which includes knowledge on theoretical understanding, data standards, decision models and understanding on various ML and AI algorithms. This workshop will help the participant to understand the basic concept.

Some key topics shall include:

- Introduction and theory behind decision support systems

- Introduction to AI

- Introduction to ML concepts, algorithms, and models

- Hands on with tools for data analysis

- Hands on with ML/ AI tools

Agenda

Date	Time	Topic
Monday, 26 April 2021	9:45-11:15	• Introduction to CDSS • Components of CDSS
	11:30-13:00	• Case studies of CDSS use • 'FAIR' • Practical examples of 'Dirty Data' • Introduction to data analysis and data mining tools
Tuesday, 27 April 2021	9:45-11:15	• AI and Machine learning concepts for CDSS
	11:30-13:00	• Data mining hands-on with tools for data analysis and data mining