



# Artificial Intelligence applications in healthcare: benefits and risks

(Activity Code: AGI-03-P145)

October 10<sup>th</sup> 2023, 4pm

Venue: College of Medicine, Qatar University

Target Audience: All healthcare professionals

## Aim:

To analyze the use of artificial intelligence applications in healthcare.

## Overall learning objectives:

To discuss the use of artificial intelligence (AI) enabled applications in healthcare and shed light on the potential benefits and risks of using such advanced technologies.

## Learning objectives & schedule:

- Describe examples of AI applications currently used in healthcare
- Explain medical AI application development process
- Identify the benefits and potential risks of AI applications such as AI-Enabled Radiology Imaging, AI-Assisted Surgical Robots, AI-Driven Predictive Patient Monitoring, AI-Based Medication Adherence Monitoring, Natural Language Processing (NLP) for Electronic Health Records (EHR).
- Understand the need for proper training, data security, and ethical considerations essential to harness the full potential of AI while ensuring patient safety and privacy
- Discuss legal and liability issues of AI-generated Medical Error

Time and Speakers	Schedule and Learning outcomes
4:00-4:05pm	Welcoming and introduction
4:05-4:30pm Dr Ali Barah	<ul style="list-style-type: none"> <li>• <b>Applications of AI in medical imaging</b></li> </ul> <p>Describe examples of AI applications currently used in healthcare</p>
4:30-4:40pm	Q&As
4:40-5:05pm Dr Muhammad Chowdhury	<ul style="list-style-type: none"> <li>• <b>A Roadmap to Developing Machine Learning Models in Healthcare</b></li> </ul> <p>Explain medical AI application development process</p> <p>Identify the benefits and potential risks of AI applications such as AI-Enabled Radiology Imaging, AI-Assisted Surgical Robots, AI-Driven Predictive Patient Monitoring, AI-Based Medication Adherence Monitoring, Natural Language Processing (NLP) for Electronic Health Records (EHR).</p>



5:05-5:15pm	Q&As
5:15-6:00pm	Clinical Cases Group Discussions
6:00-6:05pm	Break
6:05-6:35pm Dr Susu Zughaier	<ul style="list-style-type: none"> <li><b>Benefits and risks of AI applications in healthcare</b></li> </ul> <p>Understand the need for proper training, data security, and ethical considerations essential to harness the full potential of AI while ensuring patient safety and privacy</p> <p>Discuss legal and liability issues of AI-generated Medical Error</p>
6:35-6:50pm	Q&As
6:50-7:00pm	Conclusion & evaluation

- \* The scientific planning committee has reviewed all disclosed financial relationships of speakers, moderators, facilitators and/or authors in advance of this CPD activity and has implemented procedures to manage any potential or real conflicts of interest.
- \* "This activity is an Accredited group learning activity (Category 1) as defined by Ministry of Public Health's Department of Healthcare Professions - Accreditation Section and is approved for a maximum number of 3 Hours."
- \* "CPD-HP (QU—Health) is accredited by Ministry of Public Health's Department of Healthcare Professions - Accreditation Section (DHP – AS) as a provider of continuing professional development."

### Speakers



Dr. Ali Barah

Clinical Imaging Senior Consultant

Deputy Head of Interventional Radiology

Clinical Imaging Research Committee Chairman

Intervention Oncology Symposium Executive Committee Chairman

Dr. Ali completed his residency program in Radiology at the University of Liege in Belgium. He then completed two years of fellowship program at the University of Paris-sud in France. He also worked as an assistant professor at European hospital Georges Pompidou in Paris/France and as a senior staff at Institute Gustave Roussy in Villejuif/France.

Dr. Ali's clinical interests include oncological and general interventional radiology. Dr. Ali is also interested in quality improvement and research. He is currently the chairman of Clinical Imaging Research Committee (CIRC) and the chairman of Clinical Imaging Quality Improvement and Research Day (CIQIRD).



**Dr Muhammad Chowdhury**

**Assistant Professor of Electrical Engineering**

**AI in Medicine Instructor**

**College of Engineering**

**Qatar University**

MUHAMMAD E. H. CHOWDHURY received his Ph.D. degree from the University of Nottingham, U.K., in 2014. He worked as a Postdoctoral Research Fellow at the Sir Peter Mansfield Imaging Centre, University of Nottingham. He is currently working as an Assistant Professor with the Department of Electrical Engineering, Qatar University. He has filed several patents and published more than 180+ peer-reviewed journal articles, 30+ conference papers, and several book chapters. His current research interests include biomedical instrumentation, signal processing, wearable sensors, medical image analysis, machine learning and computer vision, embedded system design, and simultaneous EEG/fMRI. He is currently running NPRP, UREP, and HSREP grants from Qatar National Research Fund (QNRF) and internal grants (IRCC and HIG) from Qatar University along with academic projects from HBKU and HMC. He is a Senior Member of IEEE, and a member of British Radiology, ISMRM, and HBM. He is serving as Guest Editor for Polymers, an Associate Editor for IEEE Access and a Topic Editor and Review Editor for Frontiers in Neuroscience. He has recently won the COVID-19 Dataset Award, AHS Award from HMC and National AI Competition awards for his contribution to the fight against COVID-19. His team is the gold-medalist in the 13th International Invention Fair in the Middle East (IIFME). He has been listed among the Top 2% of scientists in the World List – 2022, published by Stanford University.



**Dr. Susu Zughaier**

**Associate Professor of Microbiology,**

**AI in Medicine Instructor,**

**College of Medicine, QU Health**

Dr. Susu Zughaier is an Associate Professor of Microbiology and Immunology at Qatar University College of Medicine. Trained as a clinical microbiologist at University College London; MSc and PhD in Microbiology and Immunology from Cardiff University, UK. Postdoctoral training at Harvard Medical School in Boston, USA and was Assistant Professor of Microbiology and Immunology, Emory University School of Medicine in Atlanta, USA. Her research interests are focused on host-pathogen interactions, vaccine development and nanotechnology for rapid detection of bacterial infections. Her translational research is focused on vitamin D immune modulatory effects and she implements artificial intelligence in medical applications in her research. Dr Zughaier published more than 84 scientific research papers with H-index 35 and awarded two patents on her discoveries. She has been listed among the top 2% of highly cited authors with impact in their field in 2020 Stanford study. She is an active member of various international societies and serves as Associate Editor, Editorial board member and ad-hoc reviewer for multiple international journals.