Symposium AI in Healthcare: Bridging Technology and Humanity

Day 1 – June 4th: Setting the Scene: AI in Healthcare

8:30- 9:00 Registration

Morning session: Advancing Healthcare: Technology and AI Innovations

9:00 AI in the current medical technology landscape - Prof. Tom Braekeleirs (UGent - Nexxtt.Health)

AI is front and center, also in Healthcare. But it's not a standalone evolution. When understanding how it all fits together, we can better understand how to navigate the complicated landscape of technology in healthcare and how to make AI acceptable.

9:30 GenAI in healthcare - Prof. dr. Kirsten Colpaert (UZ Gent - UGent)

Generative AI (GenAI) is making its way into healthcare, offering new ways to generate text, synthesize data, and support clinical reasoning. Its potential spans from drafting patient letters to assisting in diagnostic processes and training models from unstructured data. But alongside the promise come important challenges: how do we ensure these tools are accurate, safe, and aligned with clinical workflows? In this talk, we will explore current and emerging use cases of GenAI in healthcare, including clinical decision support, while also discussing limitations, feasibility, and the risk of cognitive bias when humans and AI systems interact. We'll reflect on where GenAI can make a real impact today — and where caution is still warranted.

10:00 AI-enabled health monitoring outside the hospital - Prof. dr. Maarten De Vos (KU Leuven)

Wearables allow to monitor patients outside of a traditional hospital context. However, there is no human expert capacity to review such tsunami of data. The only solution is to have robust and reliable AI solutions that (pre-) analyse the data. In this talk, we will review some of the solutions to bridge the gap between technical developments in wearable brain monitoring and clinical utility outside of the hospital. We will focus on applications of sleep and epilepsy, and question generalisability, explainability and uncertainty of the approaches.

10:00-10:30 Coffee break

11:00 Moderated discussion

12:00-13:30 lunch break + poster session

Afternoon session: Human Interaction in Healthcare: The Role of AI

13:30 Why we should (not) worry about generative AI: personal experience and philosophical reflections on responsibilities, intelligence, and bullshit - Prof. dr. Seppe Segers (UGent)

AI is often seen as a disruptive innovation, but what exactly does it disrupt? This talk explores possible effects of AI on understandings of human agency, responsibility, and expertise, particularly in healthcare and academia. In medicine, AI-driven decisions raise ethical concerns: Who is responsible

when an AI-based diagnosis leads to harm? Does AI challenge traditional moral frameworks, or merely highlight existing gaps? Similarly, in education, large language models may blur the lines between human and machine-generated knowledge, prompting us to rethink originality, authorship, and assessment. Beyond practical concerns, AI triggers philosophical questions about whether AI is truly intelligent (and what that might mean)? From this I hope to arrive at more philosophical musings about how artificial and how intelligent 'artificial intelligence' is, and how such technology relates to human and academic praxis as it relates to 'truth'. The latter element will briefly engage with Harry Frankfurt's work 'On Bullshit'.

14:00 Data sharing and privacy: An oxymoron in the age of digital technology and artificial intelligence? - Prof. dr. ir. Yves Moreau (KU Leuven)

The rapid accumulation of genomic and medical data and the need to share this data among researchers and clinicians for research and better clinical care creates important tensions between data openness and privacy. I will address several cases that show that such concerns are concrete and not just speculative, from the sharing of UK Biobank data with companies from the insurance industry to the use of genetic data by proponents of racist and eugenic ideas. I will also show the limits of well-established ethical principles in practice and how difficult it is to get unethical research retracted. As the digitalization of genomic and clinical data moves forward and as artificial intelligence allows delving ever deeper into such data, I will discuss some ways to mitigate risks and maintain public trust.

14:30 Navigating between assistance and automation: Perspectives on AI's reshaping of relationships between healthcare providers - Prof. dr. Sigrid Sterckx (UGent)

The implementation of AI-based systems is already impacting various workflows and hierarchical structures in healthcare, for example through the reallocation of some medical decisions from physicians to AI systems and from physicians to nurses and technicians supported by AI. This not only contributes to a reshaping of the nature of medical decision making itself, but also affects clinical skills at the level of individuals as well as teams, physician-patient relationships, and interprofessional relationships in healthcare. The realisation of added value of AI in healthcare partly depends on profound behaviour changes by clinicians. This, in turn, depends on levels of trust as well as the extent of meaningful (i.e. active) control of the healthcare provider over the AI systems (in contrast to the mere presence of a human in the loop).

Like most technologies, AI systems influence the actions and goals of their users by pushing, pulling, enabling and constraining certain behaviours. In this talk, we will build on a crucial insight from the research domain of Human-Computer Interaction: rather than displacing human activity, digital support and automation transform people's actions in ways that are often unintended and unexpected by the system designers. From this angle, we will reflect on ways in which AI could transform relationships between healthcare providers by altering the nature of their work, thereby also changing the skills they can(not) develop and the roles and responsibilities they are allocated in their teams. How might healthcare providers come to see themselves and their colleagues, and their role and status in the age of AI?

15:00-15:30 Coffee break

15:30 Moderated debate

16:30 End of session

Day 2 – June 18th: AI in Healthcare: From Data Management to Legal Compliance

8:30- 9:00 Registration

Morning session: Foundations of AI: Data, Evaluation, and Validation

9:00 Enabling trustworthy decision making in healthcare - Prof. dr. ir. Sofie Van Hoecke (UGent)

When integrating AI/ML-driven models into healthcare, ensuring their trustworthiness is critical for safe and effective decision-making. In this talk we will examine key challenges from real-world use cases. We will explore how explainable AI and uncertainty quantification can enhance model transparency, reliability, and clinical adoption. Through practical examples, we will demonstrate how these methods can strengthen AI-driven decision support in healthcare, ultimately fostering more informed and confident use in healthcare settings.

9:30 Data-Driven Healthcare - Prof. dr. Peter De Jaeger (UHasselt)

RADar is actively standardizing and harmonizing healthcare data to ensure the highest quality, especially crucial for its use in AI models. This high data quality standard is vital because the AI models developed are used for personalized and precision medicine, directly impacting patient care. RADar's model development spans a wide range, from classical statistical models to advanced deep learning techniques like masked autoencoders and contrastive learning, ultimately used to predict clinical outcomes. A core focus of RADar is ensuring these models are user-friendly and easily integrated into clinical workflows, directly assisting physicians and other healthcare providers. This emphasis comes from recognizing the necessity of practical usability for effective adoption and utilization in real-world healthcare settings.

10:00 - AI for Causal Learning: A Smooth Path to Evidence or Evidence on Thin Ice? - Prof. dr. Stijn Vansteelandt (UGent)

The increasing availability of digital health data, both within and beyond clinical settings, has sparked interest in using "Real World Data" (RWD) to generate "Real World Evidence" (RWE) for medical decision-making. AI and machine learning (ML) are often seen as powerful tools to transform RWD into actionable insights, potentially reducing reliance on costly and time-consuming randomized controlled trials.
In this talk, I will discuss key challenges in using AI for causal inference and explain why standard ML algorithms fail to establish causal relationships. While AI cannot replace rigorous study design and domain expertise, I will show how specially designed causal ML methods can overcome some of these limitations and contribute to meaningful improvements in patient care.

10:30-11:00 Coffee break

11:00 Moderated discussion

12:00-13:30 Lunch break + Poster session

Afternoon session: Integrating AI: Data, Devices, and Legal Considerations

13:30 AI Act in Medicine - Dr. Sofia Palmieri (UGent)

The AI Act is set to reshape the medical landscape by introducing regulatory requirements for AI-driven solutions. This session will explore its implications on medical innovation, patient safety, and compliance, focusing on risk classification, transparency, and ethical considerations.

Opponent: **Lieselot Burggraeve (HIRUZ) - MDR/AI Act**

Medical Device Regulation (MDR) intersects with the AI Act, creating a complex compliance environment. This response session will assess how medical AI applications navigate the dual regulatory framework, addressing challenges for developers and healthcare providers.

14:00 The European Health Data Space (EHDS) – Prof. dr. Griet Verhenneman (UGent)

The European Health Data Space (EHDS) aims to facilitate secure health data sharing across the EU while ensuring patient privacy. This session will discuss its potential for research, innovation, and cross-border healthcare, as well as key legal and ethical challenges.

Opponent: **Drs. Jens Declerck (UGent) - Data Quality**

High-quality data is the foundation of reliable AI in healthcare. This response session will address the challenges of data accuracy, bias mitigation, and standardization, particularly in light of EHDS implementation.

14:30 AI Liability - TBA

As AI takes on a greater role in clinical decision-making, questions of legal responsibility become critical. This session will explore liability frameworks, from malpractice considerations to accountability for AI-driven errors in patient care.

Opponent: **Prof. dr. Sylvie Tack - Liability**

Building on the discussion, this session will examine how existing legal frameworks apply to AI-related healthcare incidents and what gaps remain. It will highlight potential policy recommendations and legal precedents shaping the future of AI liability.

15:00-15:30 Coffee break

15:30 Moderated debate – Prof. Dr. Sofie Bekaert

16:30 End of session