

Designing, evaluating and integrating AI decision support systems in healthcare

1. Welcome and Introduction (5 min)

- Introduce the objectives of the session and agenda
- Outline the desired outcomes

2. Background (10 min)

- Overview of decision support systems and research
- Demo of current apps
- Q&A

3. Quick fire 'How Might we' questions on mentimeter (10 min)

- Participants answer questions online

4. Interactive Breakout Session (45 min)

- Split in groups. 8 min to discuss and come up with ideas. Objective is to come up with 5 statements of the form: User – Need/Goal – Benefit/Insight
 - E.g., "As a doctor, I want the AI system to automatically integrate with our EHR, to enable real-time decision support as I don't have time to manually enter patient data."
- Each group presents their statements for 2 min. Then groups rotate topics.
- 3 topics:
 - Design
 - Clinical evaluation
 - Intergration and Infrastructure

5. Closing Remarks and Next Steps (10 min)

- Develop 3 SMART goals as a whole group. Identify key steps, responsible parties, and timelines.
- Discuss potential collaborative opportunities

- Conclude key points and next steps

Pre-reading material if the participants have time:

1. Randomised controlled trials evaluating artificial intelligence in clinical practice: a scoping review, The Lancet Digital Health, 2024, [LINK](#)
2. Prospective, multi-site study of patient outcomes after implementation of the TREWS machine learning-based early warning system for sepsis, Nature Medicine, 2022, [LINK](#)
3. Artificial intelligence (AI) and machine learning, NHS England, 2023, [LINK](#)
4. Reporting guidelines in medical artificial intelligence: a systematic review and meta-analysis, Communications Medicine, 2024, [LINK](#),
5. TRIPOD+AI statement: updated guidance for reporting clinical prediction models that use regression or machine learning methods, The BMJ Research Methods and Reporting, 2023, [LINK](#),
6. Reporting guideline for the early stage clinical evaluation of decision support systems driven by artificial intelligence: DECIDE-AI, The BMJ Research Methods and Reporting, 2022, [LINK](#),
7. Software and artificial intelligence (AI) as a medical device, Medicines & Healthcare products Regulatory Agency, 2023, [LINK](#),
8. Potential effectiveness and efficiency issues in usability evaluation within digital health: A systematic literature review, Journal of Systems and Software, 2024, [LINK](#).