NIHR | Imperial Biomedical Research Centre

Community Outreach Report: Health information hybrid session at the Parklife Café on 'Artificial Intelligence to predict death and heart diseases'

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Background and development of the session

On Thursday 30 January 2025, the National Institute for Health and Care Research (NIHR) Imperial Patient Experience Research Centre (PERC) was invited to undertake a session held at the ParkLife Café in Harrow, on "Artificial Intelligence to predict death and heart diseases".

PERC identified Dr Hesham Aggour who is a Clinical Research Fellow in Cardiology at Imperial College London as a speaker.

Prior to the session, we held a briefing call to introduce Dr Aggour to community representatives to discuss the content of the talk and to get insight into any specific community interests. Draft slides were provided in advance to PERC and some amendments were made and feedback forms were prepared which included questions about Dr Aggour's research about which he was also going to explain during the talk.

Format of the session

- 7:00pm | Welcome and refreshments
- 7:30pm | "Artificial Intelligence to predict death and heart diseases" presentation by Dr Hesham Aggour
- 8:00pm | Q&A discussion about the selected topic
- 8:30pm | Close

Aims of the session

- Sharing health literacy information about the use of Artificial Intelligence in predicting heart diseases with underserved communities who may potentially benefit from it.
- Increasing awareness about research at the Imperial Biomedical Research Centre Cardiovascular Theme and obtaining feedback from the community about a proposed research project.

The session was hybrid which meant that some people were in the room and others joined on Zoom, with a PowerPoint presentation used for visual aids and to get key information across.

Attendees

The session was disseminated on the Parklife Café website and across their community networks (see more in **Appendix A).**

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There were 18 attendees in person and approximately 12 attendees on Zoom. Those who attended in person were asked to provide their demographic details (voluntarily) on the session feedback form (see details of attendee demographics at **Appendix A).**

Agenda of the session

During the session, the following topics were covered:

- Introduction to Dr Aggour
- What is Artificial Intelligence (AI)?
- What is an 'Electrocardiogram (ECG)'?
- Types of smart devices to measure the heart rate
- Introduction to Dr Aggour's research project
- **Why:** Cardiovascular diseases should be one of the top priorities of the UK government, as the number of heart rhythm conditions has risen exponentially in a decade
- **What:** Project AIRE, an AI risk estimator platform which could predict death, Heart Failure (HF), Atrial Fibrillation (AF), Hypertension (HTN), Diabetes Mellitus (DM) from a normal ECG
- **What's next:** two types of trials, a wearables trial to test the AI model using data from wearable devices and a randomised controlled trial to estimate the impact of AIRE in clinical settings
- Discussion on the use of AI in clinical practice and the prevention of heart diseases

Questions asked during the session:

- What's the normal heartbeat rate of a healthy person?
- What's the highest heartbeat rate at the exercise level?
- When should I be concerned about how breathless I am when you exercise? What is the balance e.g. for preventing a heart attack?
  Answer: when sat down people should be able to catch their breath.
- Is walking a good exercise for an old person?
- Is there a correlation between AF or heart attack and dementia?
  Answer: There is a correlation (meaning that AF/heart attach can be linked with dementia) but not causation (meaning that there is no evidence that AF/heart attack can directly lead to someone being diagnosed with dementia) to a disease called vascular Dementia
- Can the risk of having AF be cured by medication?
- Can we get a warning of a heart attack from an ECG?
- Are there any suggestions that AI can help with retaining our taste?
- How is AI using our information? Are they trying to fool us? How is this done? Who is controlling it?

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Comments made during the session:

- People are not aware of the triggers of a disease. They should be aware so they can go to the doctor.
- An attendee shared that all GPs have an ECG device and can guarantee that has seen that through their work. They also questioned 'why don't we request ECGs as part of the national NHS screening programmes?' Brent, Harrow and Hammersmith and Fulham boroughs have available ECGs, but why don't we implement these tools in Harrow? The NHS wants us to validate everything but with COVID we've seen that NHS Digital was created within a week. Why do some GPs have ECGs and some don't? Is that equitable? Why do we need to validate everything when it comes to preventative care?
- We want the confidentiality of our family's health to be guaranteed.
- People need time to familiarise themselves with the tool so it can be used. How are you training the population for this?

Comments and questions shared about Dr Aggour's research project:

- How are you going to apply your tools at a practical level? How are you going to apply these preventative tools in primary care?
  Answer: the tool initially needs to work in the NHS population and secondly, we will work on finding ways to implement them in NHS.
- What is your timeline for the project? From the bench to the bedside?
- Are there any other diseases where AI is being implemented?
- How do you build your AI models? Are these in-house or do you collaborate with other people external to Imperial eg tech companies?
- What AI advancements in recent years have enabled you to do your work?
- Do you have any papers published that I could check?
- What about angioplasty and stents? Can AI help with this?
- How accurate are the predictions of your AI project?
- How can we volunteer in this study whenever you get started?

Session feedback

At the end of the session, we shared a printed feedback form with all the attendees to explore the experience of the attendees, including what worked well, what could be improved and questions asking for feedback on Dr Aggour's research project. We received 10 responses and 50% of the attendees rated the session as 'Excellent'. Furthermore, the attendees shared that the presentation was very clear and interesting while the majority would be happy with AI being used to analyse their hospital ECG data. Please see **Appendix B** for all details provided in the feedback forms.

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Appendix A: Demographics of attendees (non-mandatory to provide):

Taken from the feedback forms:

Characteristics	**n**
Age groups (in years)	
25 or under	0
26 – 35	0
36 – 45	1
46 – 55	1
56 – 65	1
66 – 75	3
76 – 85	2
86+	0
Prefer not to say	1

Ethnic group (self-reported)

Characteristics	**n**
Black Caribbean	1
Indian (British)	1
Asian/Indian	2
Mixed British	1
Prefer not to say	4

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Appendix B: Responses to Feedback Form Questions completed by 10 attendees

Q1. Overall, how would you rate the session?

No response	Very bad	Bad	Average	Good	Excellent
2	0	0	0	2	5

Q2. What did you like most about the session?

- Got more knowledge
- Talking about AI
- It was very interesting. To make early diagnosis – prevent by early treatment
- Presentation was very insightful and very interesting location
- Very organised and very clear explanation
- Being able to understand what was said to us
- Easy to understand/interactive
- The talk was really awesome, I enjoyed it a lot! I would definitely join in-person next time!

Q3. What could be done better next time?

- Perform a practical AI demonstration (heart-wise)
- More time for the audience to ask questions
- Explain about the AI stethoscope

Q4. If you were a patient in this proposed study:

a. Would you be happy with AI being used to analyse your hospital ECG data?

- Yes, I would be really happy
- Yes, certainly but anonymously
- Definitely
- Sure, why not

Additionally, 4 other attendees replied 'Yes' to this question.

b. After the ECG is analysed, should we only contact people considered to be 'high-risk' of a certain disease, as indicated by AI, to be enrolled into the study?

- It would depend on the people and if they would agree to analyse their data
- No, I think all patients should be contacted (mild, moderate and high-risk)

Additionally, 4 other attendees replied 'Yes' to this question and 1 replied 'No'

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