



# Ethics in AI in Practice

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# Kheiron develops cutting-edge deep learning solutions that support radiologists to improve cancer detection



## Human intelligence

Detecting cancer and tracking it accurately is challenging and time-consuming for even the most experienced radiologists.



## The power of AI

Adding AI into imaging workflows can achieve better outcomes for patients.



## Transform cancer detection & diagnostics

It's a revolutionary AI approach to solve real-world problems.

And that, in short, is what we're about.

# Mia integrates throughout the breast screening pathway



**Scheduling**  
RSViP™



**Image Acquisition**  
MiaIQ™



**Case Management**  
MiaTriage™



**Read & Recall**  
MiaReader™



**Follow up**  
by screening programme



**Auditing**  
MiaIQ™

# Recall or no recall? Mia supports a critical decision



## Case-wise recall suggestion

Mia suggests a decision for the entire case, just like asking a radiologist colleague for an opinion



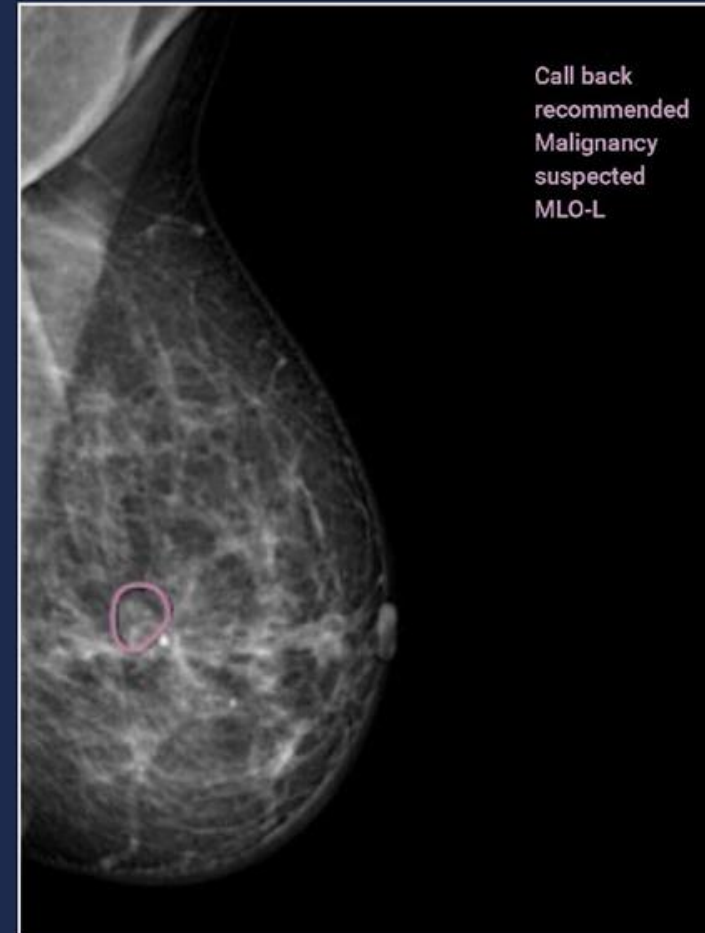
## Images indicated

Where malignancy suspected



## Auxiliary ROIs\*

Only relevant areas marked



## Ethics in AI

# How does the topic of ethics in AI influence day to day work in the development and deployment of AI?

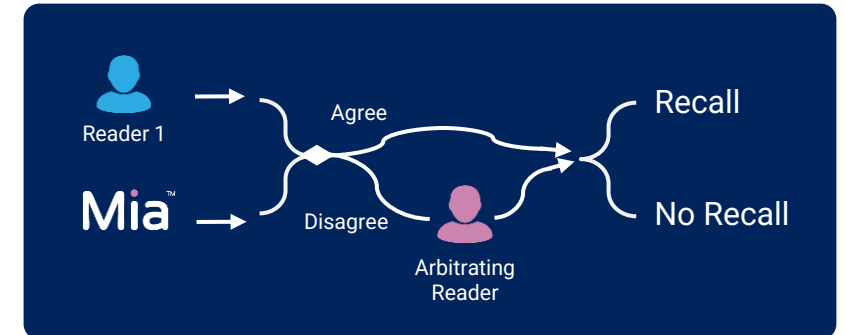
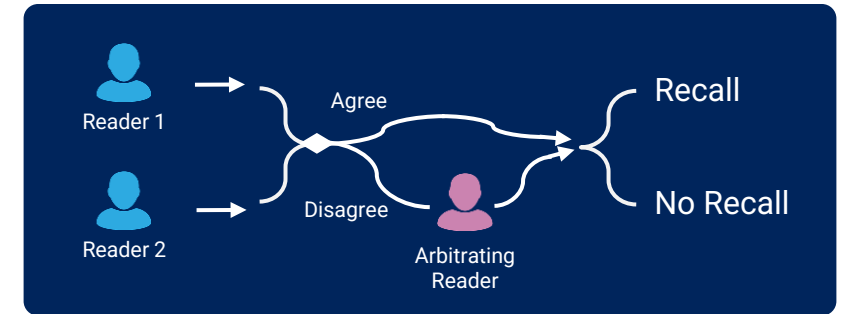
- Safety assurance processes and deployment methodologies
- Generalisability
- Data protection
- Patient and public involvement (PPI)



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# Safety Assurance Processes Clinical workflows and safety frameworks

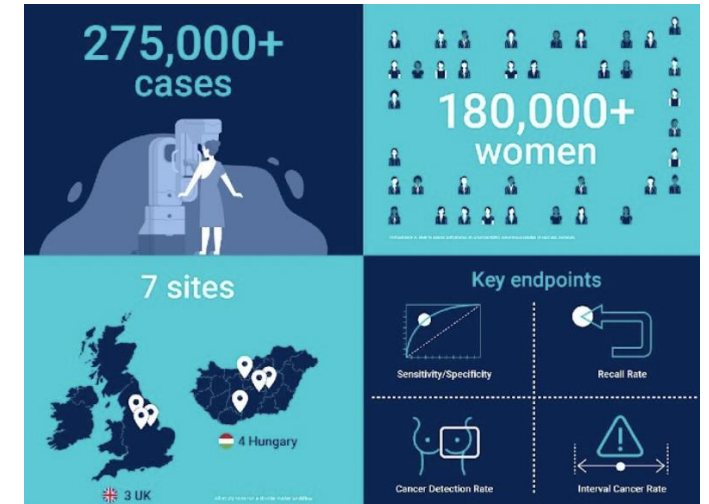
- **Decision making impact** of Mia in clinical workflows
  - Supports radiologists in their clinical workflows
- **Safety and risk assessment** compliance
  - CE marking - QARA team
  - NHS specific standard (DCB0129/0160)
- Industry advisors on **safety assurance in AI projects**
  - Contributing to the development of safety in healthcare AI
- **Deployment methodologies** with clinical impact in mind
  - Understand, Validate, Connect, Launch, Monitor



## Generalisability

# Mia works for every woman, everywhere

- Previous run trial was across 7 sites and two countries using;
  - **unenriched data**, representative of real world screening populations & **clinically relevant** endpoints
- NHSX AI Award will build on this across the UK
  - including building **prospective evidence**
  - government funded UK wide collaborative partnerships
- Reducing algorithmic bias
  - partners that cover all **ethnicities and demographics**
- Global partners and **active research**
  - RSNA panel - importance of **inclusivity and diversity** in healthcare AI



The AI in Health and Care Award  
Congratulations to innovators



## Data Protection & Information Governance

# Handling patient information safely and appropriately

- **Pseudonymisation** of patient information before extracting from sites or being handled by Mia
- Worked closely with **data protection consultants** to generate data protection positioning and supporting documentation
  - Supporting NHS Trust IG teams to ensure comfort and compliance
- Involvement in ICO workshops to help **drive the agenda on information governance in AI**
- **Strict security and privacy processes** and procedures to ensure that pseudonymised patient information is handled safely
- **Appropriate consent models** as and when prospective data will be used for research





## Patient and Public Involvement (PPI)

# We put women and patients at the heart of our efforts

By engaging with the people who are impacted by breast cancer we are able to focus our products on solving the problems they care about.

Our PPI efforts have been cited as **industry leading** and include:

- **A PPI Advisory Board** curates the insight, knowledge, and experience to guide product development and deployment
- **Literature review and interviews** to enlighten our understanding of attitudes and beliefs around the adoption of AI in screening
- **Collaboration with PPI Leads at hospitals to** ensure all views are represented in what we deliver
- Co-designing **high quality information materials** to educate, inform, and engage women about our work



**Mary Beth Chalk**  
Kheiron PPI lead, Chair of  
our PPI Advisory Board and  
breast cancer survivor