Landing AI in the Real World- Case Study from Greater Glasgow and Clyde

Dr Sean Duncan

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HIMSS 24

29–31 May | Rome

DIGITAL HEALTH VALIDATION LAB

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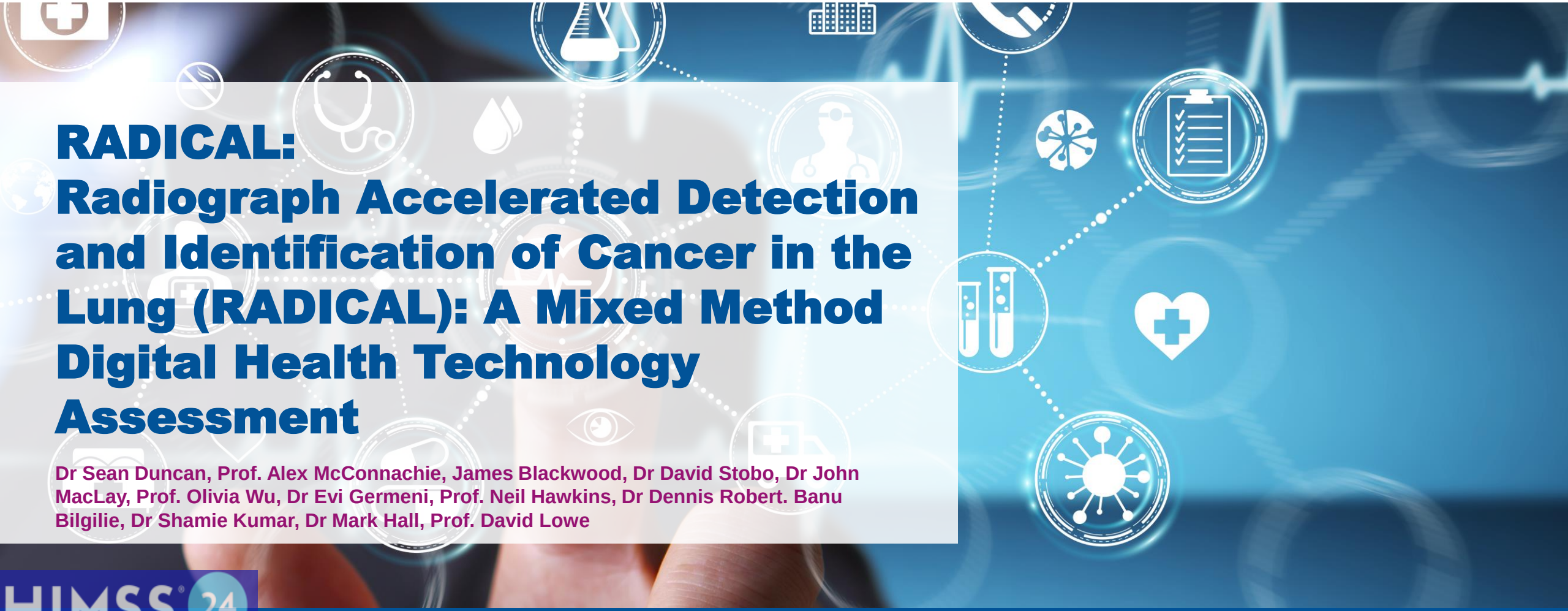

RADICAL: Radiograph Accelerated Detection and Identification of Cancer in the Lung (RADICAL): A Mixed Method Digital Health Technology Assessment

Dr Sean Duncan, Prof. Alex McConnachie, James Blackwood, Dr David Stobo, Dr John MacLay, Prof. Olivia Wu, Dr Evi Germeni, Prof. Neil Hawkins, Dr Dennis Robert. Banu Bilgilie, Dr Shamie Kumar, Dr Mark Hall, Prof. David Lowe

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The Digital Health Validation Lab delivers an evaluation environment for digital health technologies and solutions.

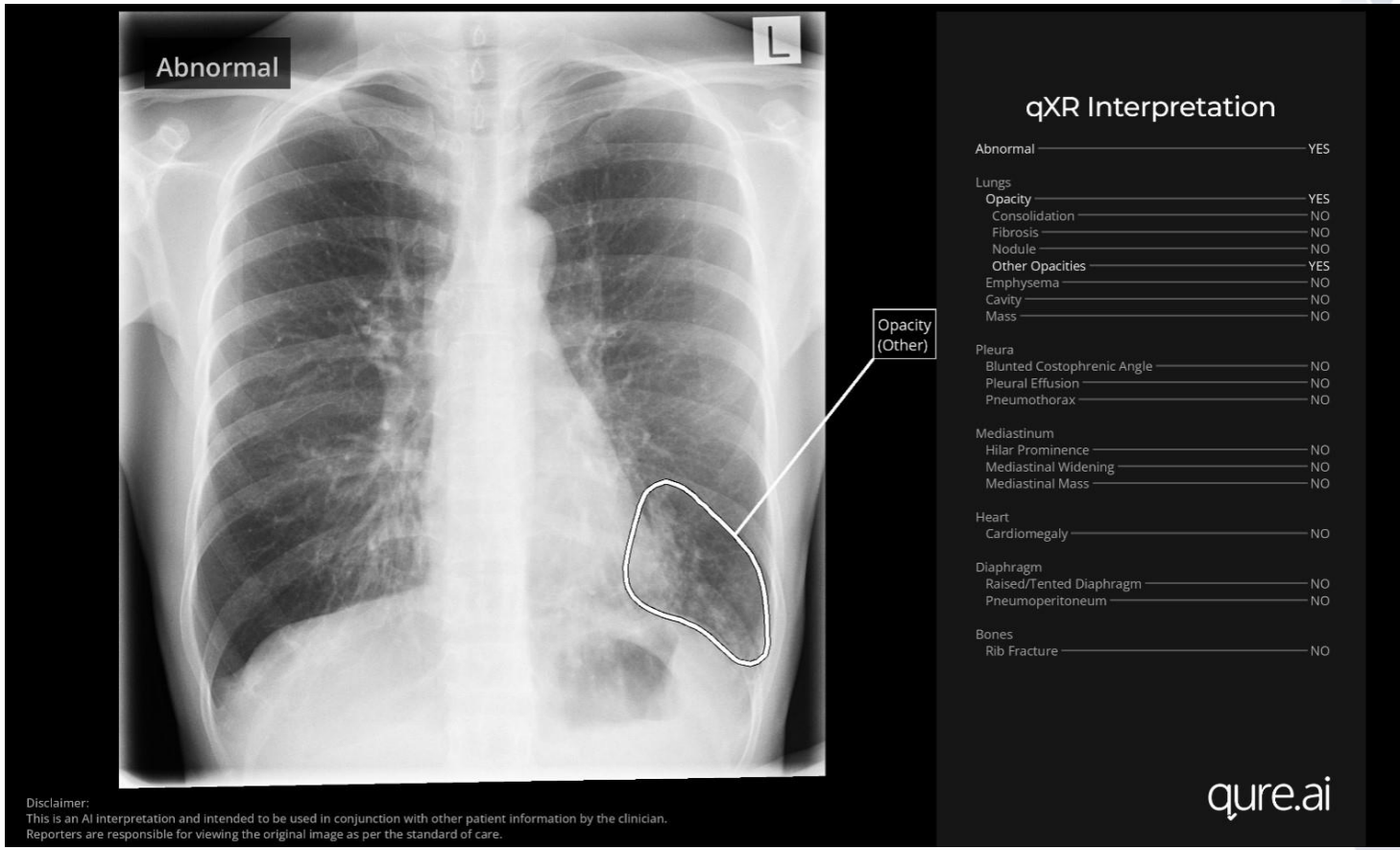
We aim to accelerate product development and support their adoption into clinical settings through robust evaluation, with the aim of tackling healthcare challenges and improving patient outcomes.

OUR SERVICES

- Expert clinical input from ideation through co-design and co-evaluation
- Health economic assessments and cost impact evaluations
- Secure access to clinical resources and data to test and validate innovations
- Evidence clinical effectiveness and technical performance
- Collect insights through patient, public, and stakeholder groups
- Expert review and development of clinical studies

‘qXR’ by Qure.ai

- Trained on 4.4m scans
- 25 Different abnormalities
- 5 of these abnormalities were used as a flag for Urgent Suspicion of Cancer (USC):
  1. Mass
  2. Mediastinal widening
  3. Cavity
  4. Nodule
  5. Hilar Enlargement



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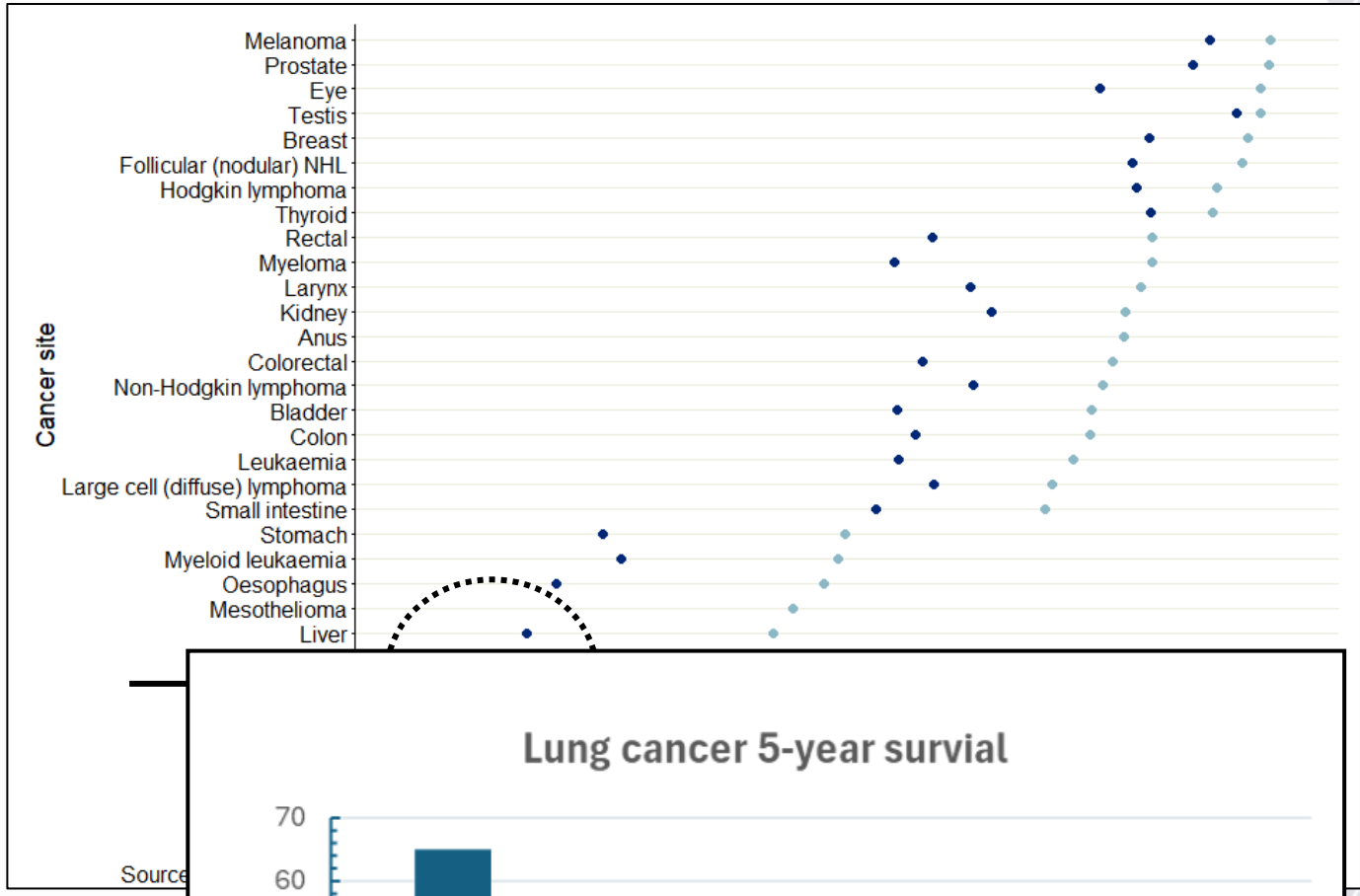
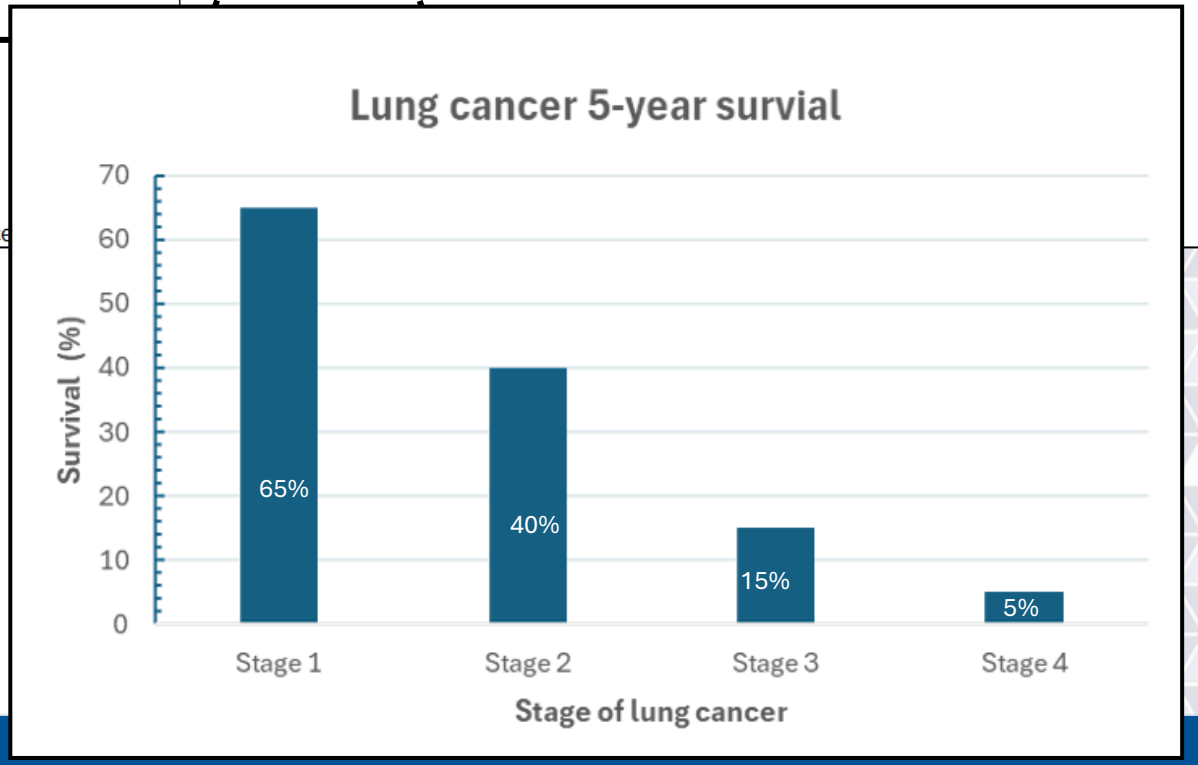
Lung cancer

- The leading cause of cancer-related death worldwide
- Prognosis is extremely poor at 5 years
- 71% of lung cancer patients present with stage 3 or 4 disease
- Delays in treatment **make a difference**





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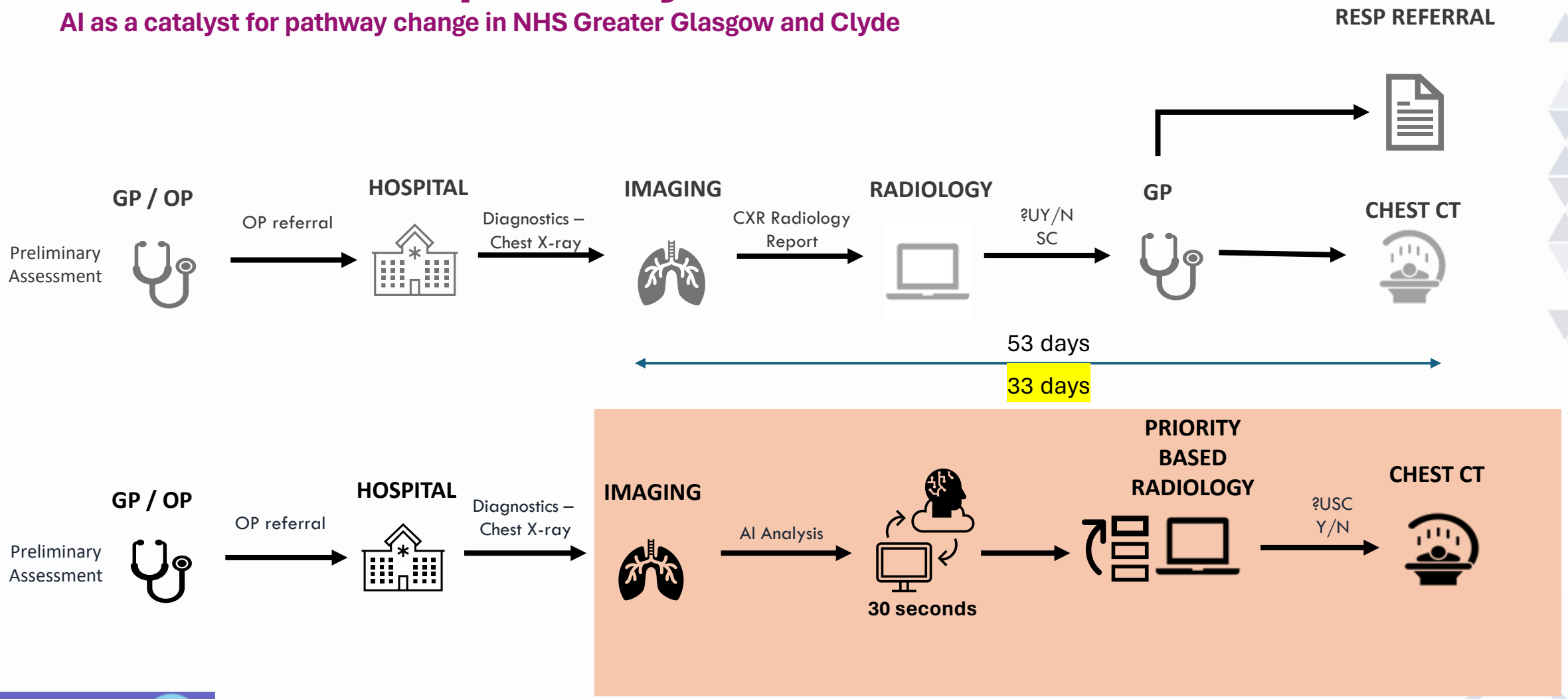
An AI-Enabled pathway

AI as a catalyst for pathway change in NHS Greater Glasgow and Clyde



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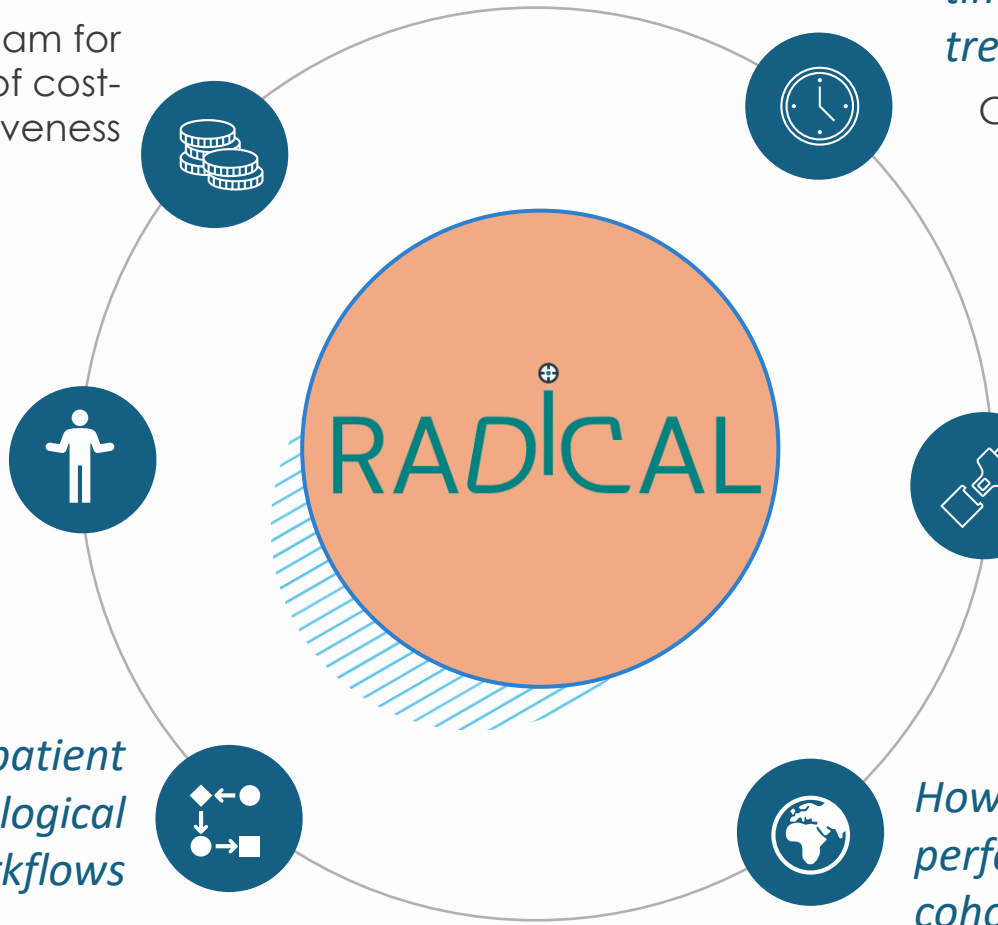
Is it cost-effective?

Health economics team for evaluation of cost-effectiveness

Is it effective at reducing time to CT and Cancer treatment?

Clinically linked outcomes



Is the new pathway acceptable to patients and staff?

Qualitative research team conducting interviews on staff and service-users

Is it safe?

Capturing rates of false negative

How does it impact patient treatment and radiological workflows

Does an AI-enabled pathway integrate with human systems?

How does the model perform in our patient cohort?

Retrospective technical evaluation

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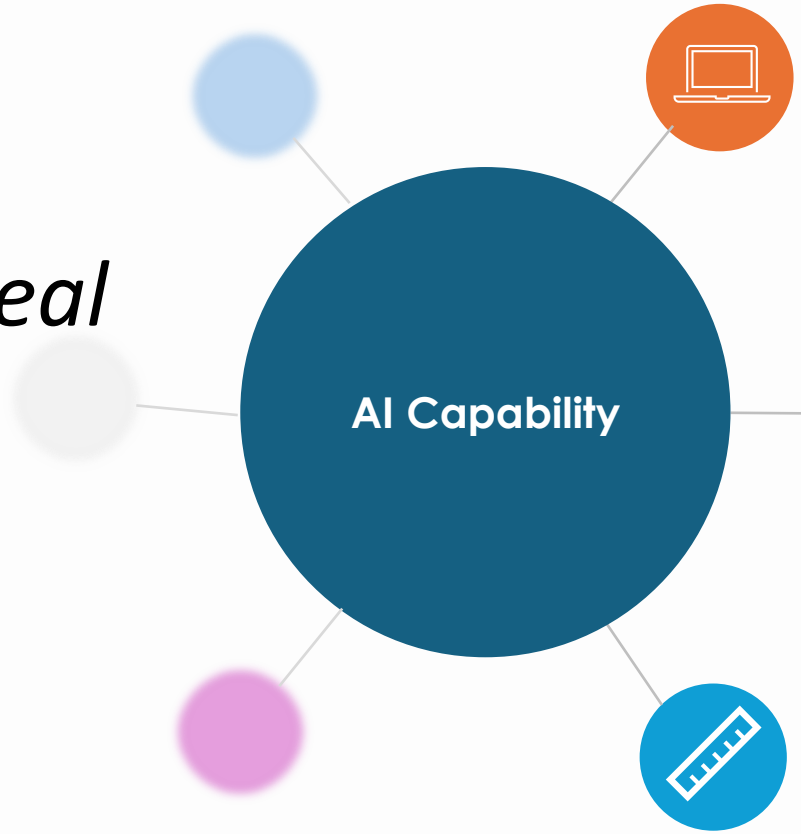
Landing in the real world

What makes it hard?



IT infrastructure

Cross disciplinary collaboration with e-health, administrators, third party contractors.

Initial Workflow disruption

Pathway changes cause stress

Ground Truth?

Validation of diagnostic technology needs a benchmark

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ANIA pathway

A 'Once for Scotland' Approach for accelerated deployment of innovative science and technology

1

Innovation proposal

High impact innovations that meet a national policy and clinical need

2

Strategic assessment

Review and triage by ANIA assessment Panel

3

Value case development

Driven by strategic assessment recommendation and evidence

4

National innovation adoption

With data capture and optimisation input.

5

Handover from ANIA to 'business as usual'

Sustainable ongoing integration of the innovation into routine care

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References

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