WELCOME TO

NHS Radiology Conference North

SEE THE AGENDA HERE

Managed Healthcare Services

17th May 2023 - 8:00am – 3:15pm – Manchester

Conference hosted by Convenzis Group Limited

NHS Radiology Conference North 2023

Headlined by: Managed Healthcare Services

NHS Radiology Conference North

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XWAVE TECHNOLOGIES

NHS Radiology Conference North

Chairs Opening Address

Dr Ram Senasi

Consultant Paediatric Radiologist - Doctor - Medpreneur - Superconnector - Closer - Mentor – Volunteer - **Hull University Teaching Hospitals**

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SPEAKING NOW

Sheila Black

Deputy head of Imaging Transformation -
NHS England

I will be discussing...

"Imaging Transformation – National view of our Programme and why Imaging Networks matter?"

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NHS Radiology Conference North

Panel Discussion

Sheila Black

Deputy head of Imaging Transformation **- NHS England**

Katherine Jakeman

Quality Improvement Partner - **RCR/CoR**

Dr. Naman Bhatt

MSK Radiologist - **The Queen Elizabeth Hospital, The University Hospital Birmingham NHS Trust**

Dr Kieran Zucker

Clinical Lecturer in Health Data Science and Machine Learning Engineering, Honorary Clinical Oncology Specialist Registrar, Co-Chair of UK Faculty of Clinical Informatics (FCI) - **University of Leeds, Leeds Teaching Hospitals, UK Faculty of Clinical Informatics**

Exploring AI Imaging Panel Discussion

NHS Radiology Conference North

UP NEXT...

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NHS Radiology Conference North

SPEAKING NOW

Grant Roberts

Chief Executive Officer - **Managed Healthcare Services Limited**

I will be discussing...

"The impact of insourced diagnostic imaging services on waiting list backlogs – Increased capacity, reduced waits, improved service efficiency a experience."

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How would you like to follow up with Grant post-event?

ⓘ Start presenting to display the poll results on this slide.

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Sheila Black

Deputy head of Imaging Transformation - **NHS England**

Q&A PANEL

Managed Healthcare Services

Grant Roberts

Chief Executive Officer - **Managed Healthcare Services Limited**

NHS Radiology Conference North

Morning Break, Networking & Refreshments

NHS Radiology Conference North

Chairs Morning Reflection

Dr Ram Senasi

Consultant Paediatric Radiologist - Doctor - Medpreneur - Superconnector - Closer - Mentor – Volunteer - **Hull University Teaching Hospitals**

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SPEAKING NOW

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Mitchell O'Gorman

CEO - **xWave Technologies**

I will be discussing...

"Tackling the radiology backlog using Clinical Decision Support (CDS)"

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How would you like to follow up with Mitchell post-event?

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UP NEXT...

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SPEAKING NOW

CONVENZIS

Daniel F. Jones

Business Lead UKI - **Gleamer**

I will be discussing...

"AI Adoption in Healthcare: Considerations, Barriers & Solutions"

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How would you like to follow up with Daniel post-event?

ⓘ Start presenting to display the poll results on this slide.

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SPEAKING NOW

CONVENZIS

Prof. (Dr.) Sanjay Gandhi

Research & Innovation Lead Core Clinical Directorate, Lead for Radiology and Diagnostic Imaging, University of Bristol Chairman, British Institute of Radiology South West - **North Bristol NHS Trust**

I will be discussing...

"The potential of AI/intelligence to improve patient experience, reduce radiology errors and improve health care efficiency"

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NHS Radiology Conference North

SPEAKING NOW

Dr Dheeraj Giri

Consultant Radiologist, Director of Innovation & communication (NHSE-EM) - **Kettering General Hospital, NHSE**

I will be discussing...

"Presentation - Dr Dheeraj Giri, Consultant Radiologist, Director of Innovation & Communication (NHSE-EM), Kettering General Hospital, NHSE (Confirmed)"

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Q&A PANEL

CONVENZIS

Daniel F. Jones

Business Lead UKI - **Gleamer**

Prof. (Dr.) Sanjay Gandhi

Research & Innovation Lead Core Clinical Directorate, Lead for Radiology and Diagnostic Imaging, University of Bristol Chairman, British Institute of Radiology South West - **North Bristol NHS Trust**

Dr Dheeraj Giri

Consultant Radiologist, Director of Innovation & communication (NHSE-EM) - **Kettering General Hospital, NHSE**

xWAVE TECHNOLOGIES

Mitchell O'Gorman

CEO - **xWave Technologies**

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Networking and Lunch

NHS Radiology Conference North

Chairs Afternoon Address

Dr Ram Senasi

Consultant Paediatric Radiologist - Doctor - Medpreneur - Superconnector - Closer - Mentor – Volunteer - **Hull University Teaching Hospitals**

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SPEAKING NOW

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Katherine Jakeman

Quality Improvement Partner - **RCR/CoR**

I will be discussing...

"Quality Imaging - what they can do for your service"

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SPEAKING NOW

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Raghu Lakshminarayan

Consultant Vascular Radiologist & Honorary Senior Lecturer - **Hull University Teaching Hospitals NHS Trust & Hull York Medical School**

I will be discussing…

"Mechanical thrombectomy for Stroke – A stroke of genius but a challenge to deliver!"

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SPEAKING NOW

CONVENZIS

Dr David White

Clinical Lead - **Cheshire & Merseyside Radiology Imaging Network (CAMRIN)**

We will be discussing...

"CAMRIN's Approach to Collaborative AI Adoption"

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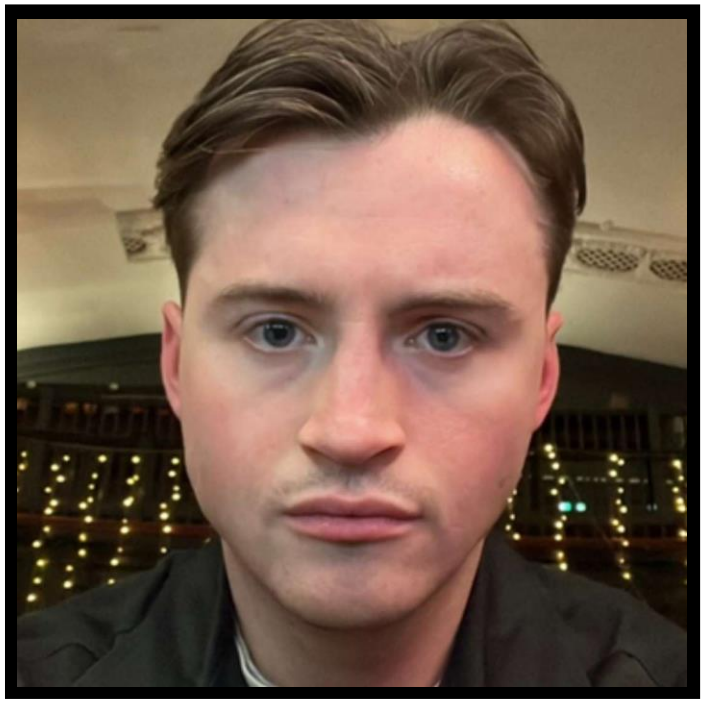

Thomas Hill

Programme Manager - **Cheshire & Merseyside Radiology Imaging Network (CAMRIN)**

NHS
Cheshire and Merseyside

CAMRIN

Approach to Collaborative AI Adoption

May 2023

Cheshire and Merseyside Radiology Imaging Network

NHS
Cheshire and Merseyside

Dr David White
Clinical Lead

Thomas Hill
Programme Manager

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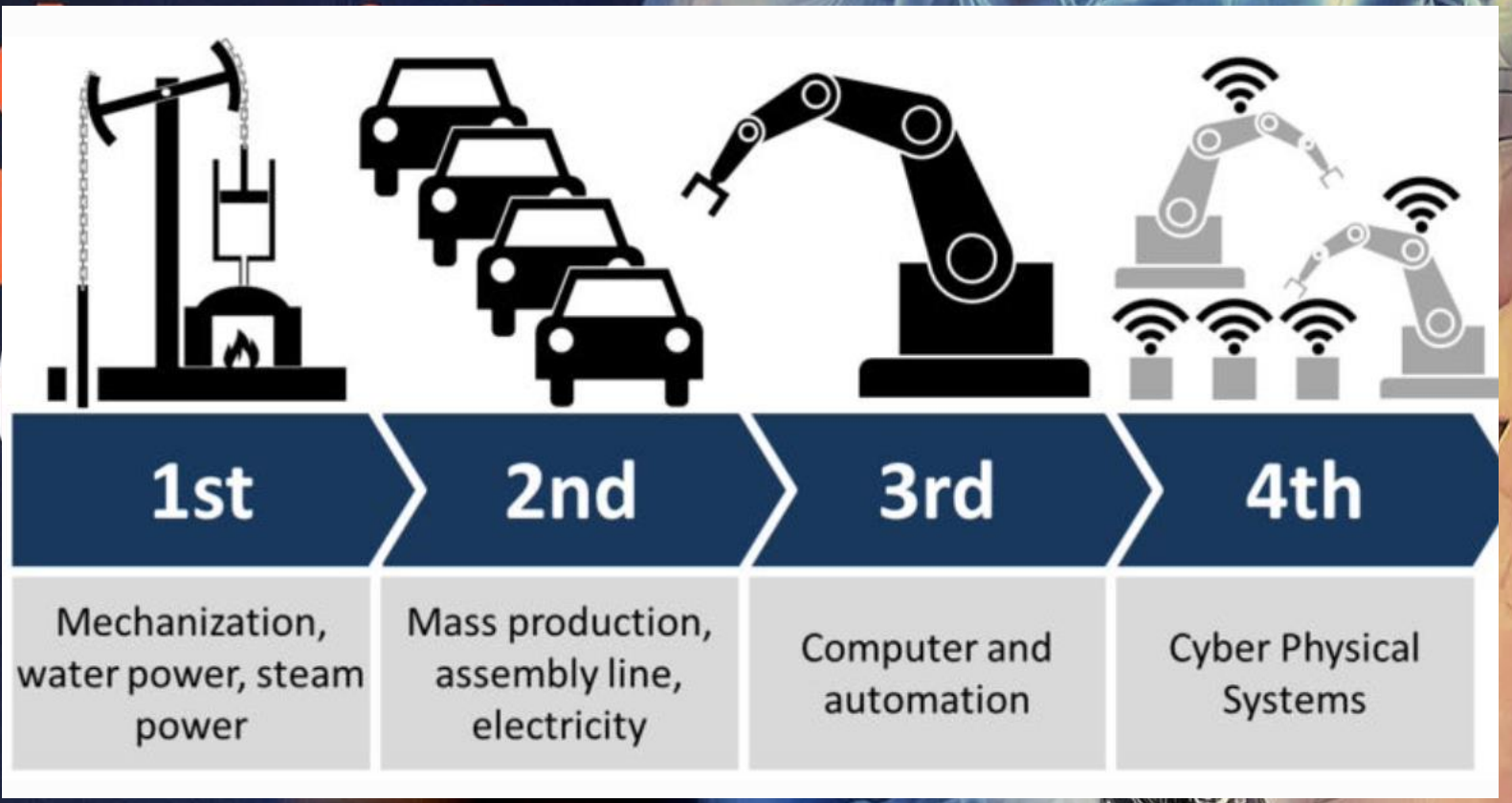

The Doctor by Sir Luke Fildes 1891

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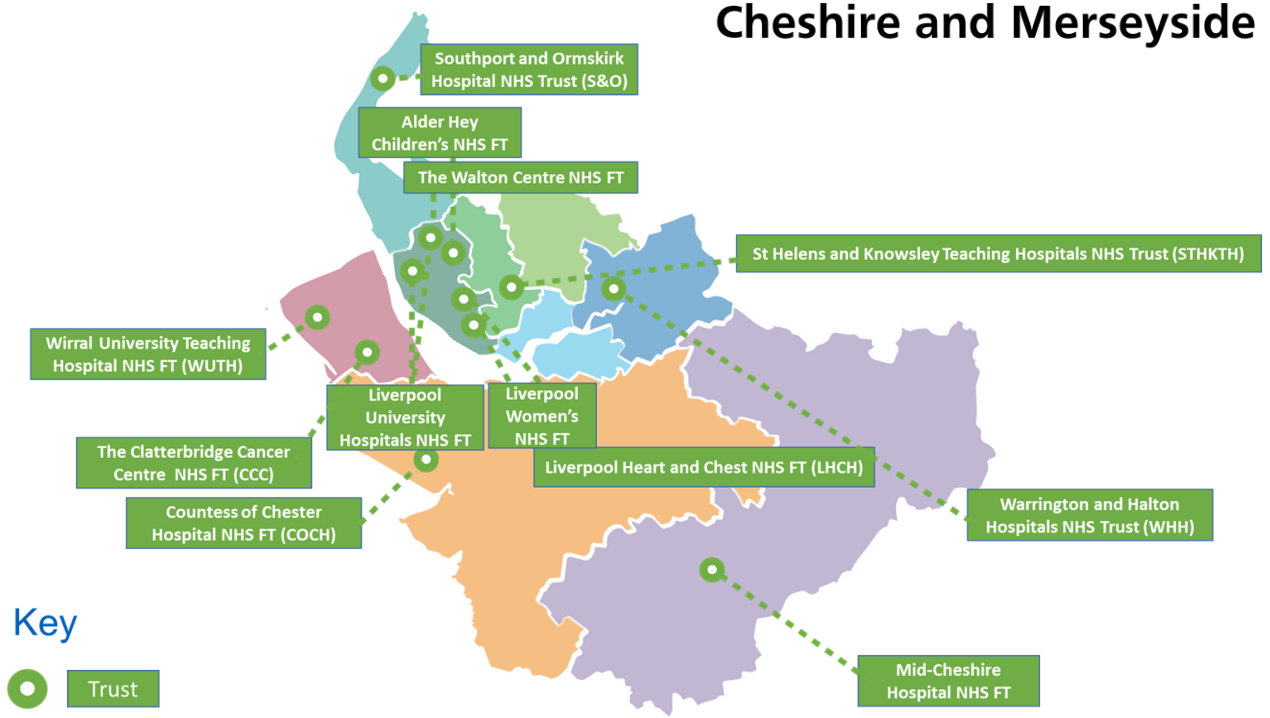
hire and Merseyside

Background

- 2.5 million people
- 12 Trusts, 21 Hospital Sites
- 1 Integrated Care Board
- 1 Cancer Alliance



CAMRIN; Values, Vision, Aim & Objectives

NHS Cheshire and Merseyside

AIM

"Striving for sustainable quality in Cheshire & Merseyside Radiology Imaging Network"

VISION

"World class imaging services for the people of Cheshire & Merseyside"

VALUES

CAMRIN are united under the core values of the NHS

OBJECTIVES

People

Placing patients & staff at the centre of transformation

Quality

Standardisation of policies & procedures in accordance with best practice & reduction of variation

Innovation

Enable the uptake of high impact improvement for the patient populations & staff

Efficiency

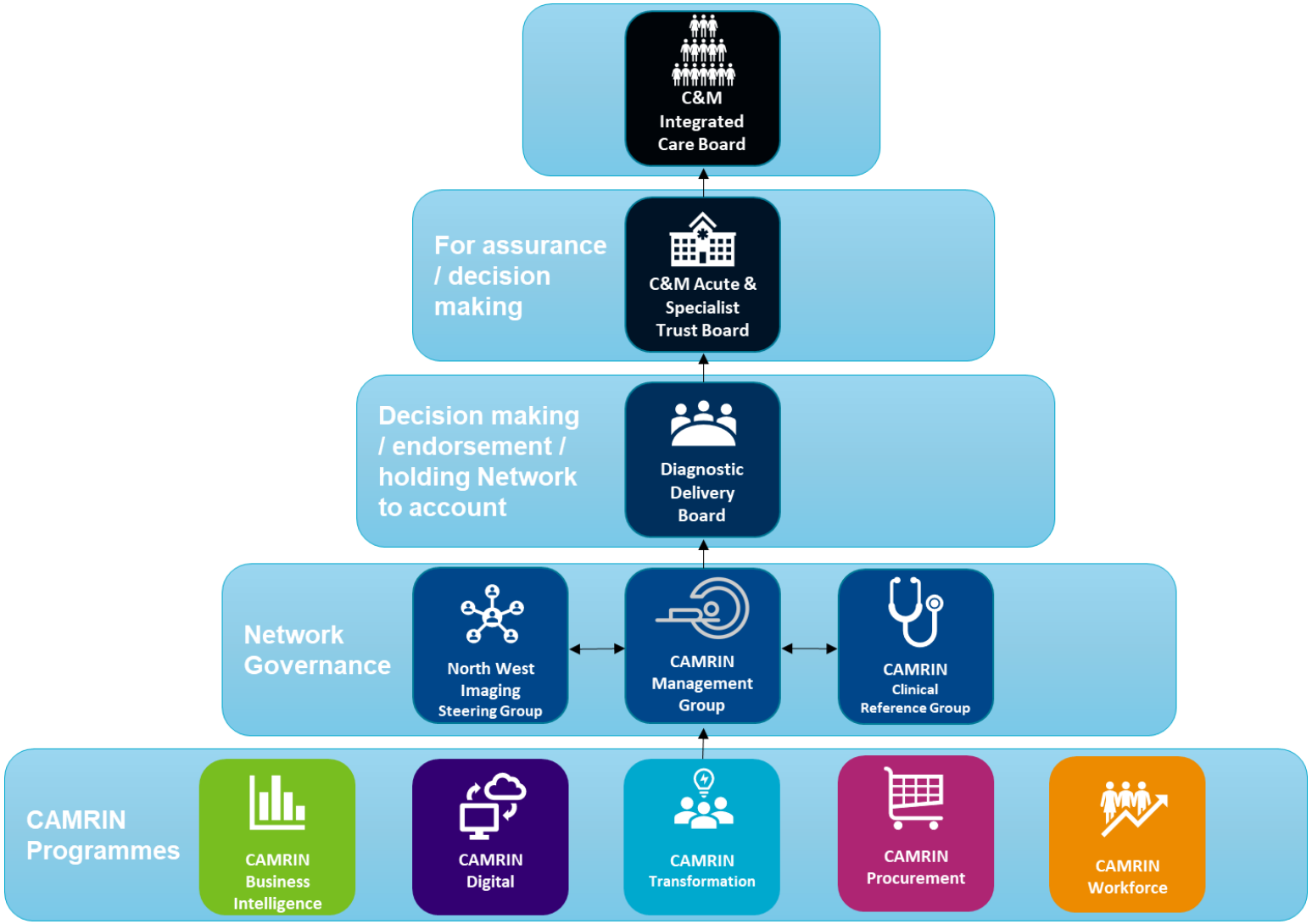
Making the best use of resources available across Cheshire & Merseyside

Collaboration

Work together to ensure sustainable high quality imaging services

Governance & Team

NHS
Cheshire and Merseyside



Governance & Team

Cheshire and Merseyside

- CAMRIN Clinical Lead
- CAMRIN Head of Imaging Collaboration
  - Programme Manager
  - Procurement Lead
- CAMRIN Programme Lead
  - Imaging Systems Data Manager
    - Clinical Scientist
    - Senior Information Analyst
  - Programme Manager
  - Programme Manager
  - Programme Manager
  - Ologies Programme Manger

Collaborative Approach

NHS
Cheshire and Merseyside

Trusts trial AI software individually

Brainomix implementation

Network Approach

Appoint Clinical Lead

AI Workshop

Clinical Prioritisation

Collaboration first

Brainomix

Brainomix® #TreatingStrokeTogether

NHS Cheshire and Merseyside

CAMRIN worked collaboratively with the Stroke Network to implement Brainomix to six stroke centres across Cheshire & Merseyside

Lessons Learnt

- Complete the DPIA as soon as possible and circulate to the Trusts for approval
- Governance processes are not standard across the region this caused delays at certain Trusts for sign off of the DPIA
- Due to COVID it was difficult for the scanner suppliers to come on site to set up Brainomix on the scanners, this caused delays
- Some Trusts did not feel they had enough support due to the current situation of COVID in order to start providing the CTP service

Successes

- Once end users were able to see the benefit of reducing time spent identifying trauma to the head they embraced AI in a positive way
- Number of thrombolysis procedures increased (not sure of % Iain may be able to provide)
- Proportion of patients who were thrombolysed within 1 hour of clock start increased from 33.3 to 66.7

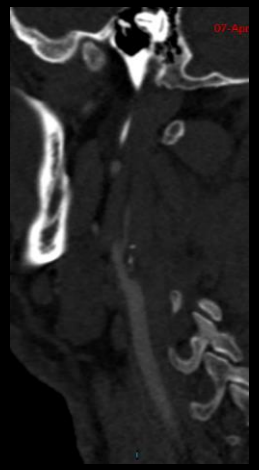
"Our familiarity with the Brainomix system makes it a significant practical and operational benefit if implemented across the stroke centres in North Wales along with better PACS system links. The clinicians here are now well used to the outputs and markers identified by the Brainomix technology on NCCT, CTA and becoming more so with CTP. We remain in regular communication with the Brainomix team since go-live as the system is regularly updated allowing us to make the most of the features available"

- Dr. Sacha Niven, Deputy Medical Director, Consultant Interventional Neuroradiologist, The Walton Centre NHS Foundation Trust

Performance of AI powered software solution for selection of intracranial thrombectomy candidates in routine

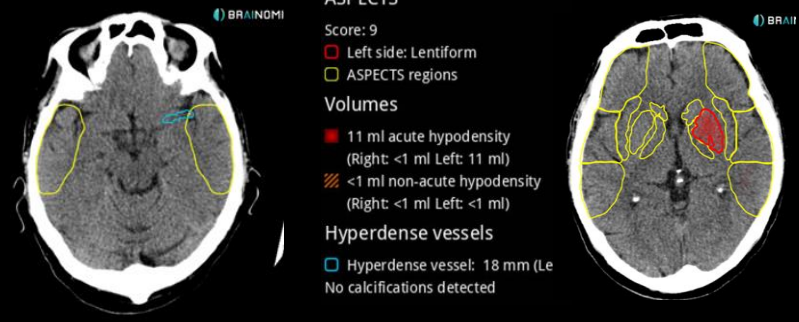
Background

Since October 2020 AI powered software solution (e-Stroke suite, Brainomix) has been available at our institution. Its e-ASPECTS tool applied to non-contrast CT brain scans measures volume of hypodense ischemic brain undergoing acute infarction, calculates ASPECTS numerical score of the damage and detects hyperdensity of large vessel occlusion (LVO) by thrombus. This has been demonstrated in studies to improve patient outcomes thanks to reduction in time to treat with intracranial thrombectomy (IAT) by speeding up selection of appropriate candidates, who have LVO and ASPECTS >6. Sensitivity of 44% and specificity of 94% in detecting acutely hypodense ischaemic brain by e-ASPECTS has been quoted in literature. No data is available to our best knowledge about its performance in detection of LVO.



Methods

- Out of 369 consecutive unenhanced CT brain scans performed at LUHFT from 01/04/22 to 14/04/22, 112 had e-ASPECTS applied, of which 72 were for acute stroke presentation, and 41 had follow up brain imaging (principally MR brain) on median of 3 days from initial unenhanced CT.
- e-ASPECTS outputs were compared with presence of infarction as detected by follow up MR or CT scan, and with CTA/DSA report of intracranial arterial occlusion, taken as definitive.
- Sensitivity and specificity of e-ASPECTS for detection of acute brain infarction and LVO were calculated.

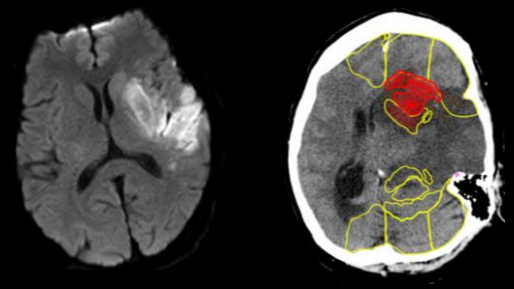


Aims

- To establish sensitivity and specificity of Brainomix e-ASPECTS tool used for selection of IAT candidates in routine clinical practice.

Example case

- 60 y male, brought in with global aphasia.
- e-ASPECTS: ASPECTS score 9, acute hypodensity LEFT basal ganglia, LVO LEFT MCA (Fig. 1), confirmed by MR DWI (Fig. 2) and CTA (Fig. 3).
- CTA showed also occlusion of LEFT ICA (Fig.4).
- Patient was referred for IAT, but turned down as his identity/stroke onset time/PMH could not be established due to global aphasia and no NOK.
- Unfortunately patient progressed to malignant MCA infarct and passed away on day 4.(Fig. 5).



Results

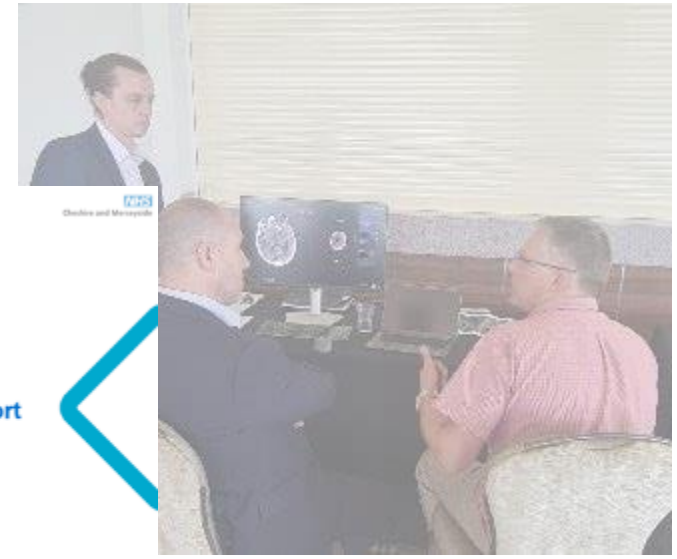
- Performance of e-ASPECTS for detection of acute infarction: sensitivity **43%**, specificity **52%**
- Performance of e-ASPECTS for detection of LVO: sensitivity 40%, specificity 100%

Conclusion

- e-ASPECTS AI powered software solution performed in line with published sensitivity and below published specificity for detection of acute infarction.
- e-ASPECTS specificity for detection of LVO on unenhanced CT brain was excellent.

AI Workshop 2022

- Representatives from all 12 Trusts and nine AI companies
- The overarching aim of the AI roadshow was to educate and inform clinical staff from across CAMRIN of the potential that Artificial Intelligence and Machine Learning software.

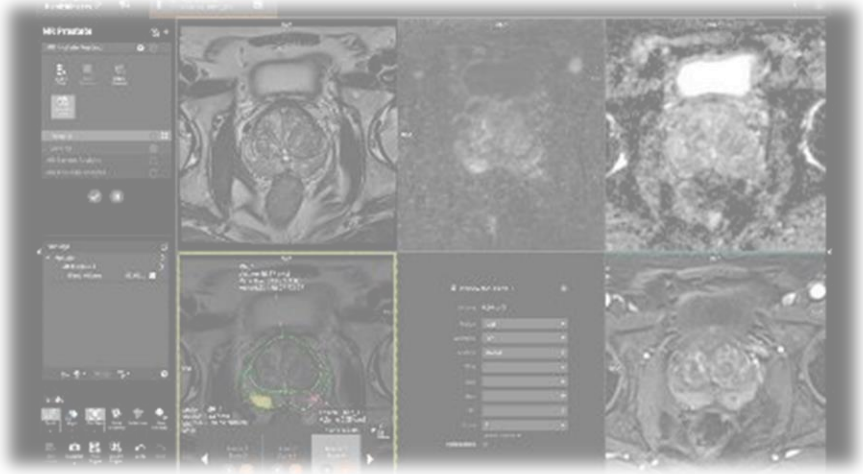


"After COVID and the lack of face to face meetings we wanted to organise a day to bring all the Trusts together to see some of the great AI innovation that is available. This was the beginning of our clinically lead AI work and had a great result of identifying prostate as an area we want to prioritise for AI"

- Alexi Shenton, Programme Lead, CAMRIN

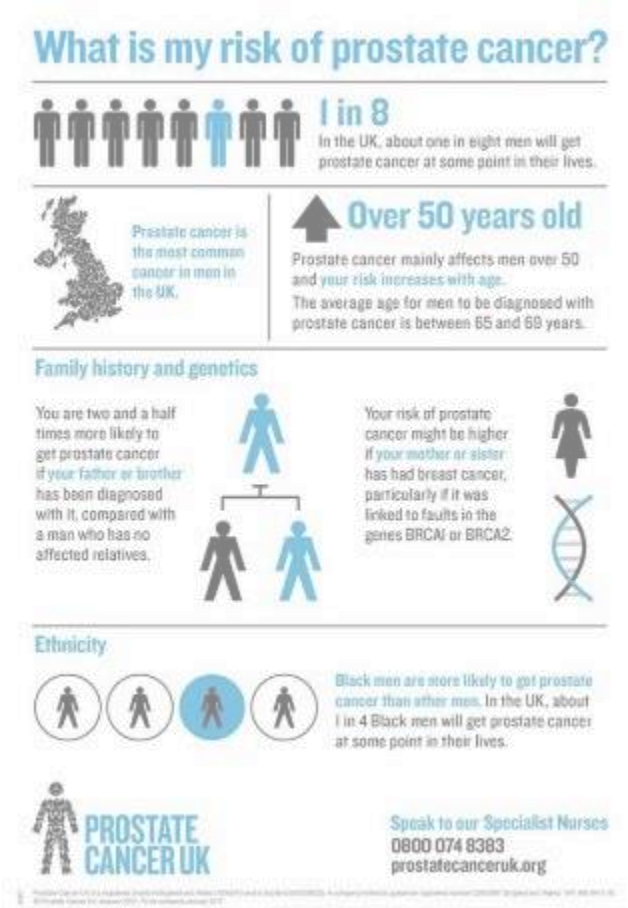
Prostate AI

NHS
Cheshire and Merseyside



- Pilot of the software to begin 2023 at Liverpool University
- Benefits being baselined
- If successful full roll out utilising the new PACS Cloud

- Prostate AI received an overwhelming clinical endorsement at the AI workshop.
- The market was tested for appropriate solutions
- CAMRIN developed a bid for the Cheshire & Merseyside Cancer Alliance funding



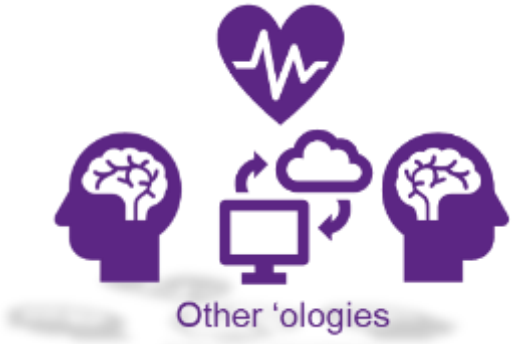
Cheshire and Merseyside Cancer Alliance are delighted to be working with CAMRIN on a range of projects to improve access to timely cancer diagnostic tests. We are pleased to have the opportunity to provide funding to support this innovative AI prostate cancer project and look forward to seeing the benefits it can bring for patients.

- David McKinlay, Associate Director, Cheshire & Merseyside Cancer Alliance

Key Projects to support AI Adoption

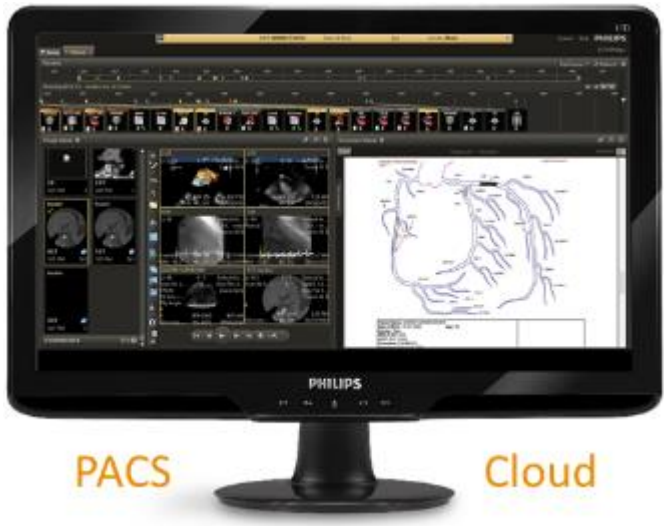
NHS
Cheshire and Merseyside

CAMRIN has a well establish digital programme with multiple inflight projects. These projects support the adoption of AI across the network.



CAMRIN
Clinical
Reference Group

CAMDASH



At Clatterbridge, I am responsible for spearheading the technical development and deployment of advanced digital solutions at a state-of-the-art specialised NHS cancer center. I was impressed by the outstanding digital initiatives undertaken by CAMRIN and was eager to assume the position of solutions architect for digital transformation across the Cheshire and Merseyside network. The ongoing projects undertaken by CAMRIN are particularly intriguing as they are geared towards optimising efficiencies, sustainability, and enhancing patient outcomes through the use of cutting-edge technologies, such as AI solutions.
James Crowther, Chief Technology Officer, The Clatterbridge Cancer Centre NHS Foundation Trust & Solutions Architect for CAMRIN

Clinical Leadership

NHS
Cheshire and Merseyside

- Established clinical leadership at the start
- Brainomix & Prostate AI identified by clinicians
- Future projects will be prioritised through our Clinical Reference Group

As a Radiologist, I have a passionate interest in the potential possibilities of AI to augment medical imaging. Collaborating with the CAMRIN team was a fantastic opportunity to investigate not only the feasibility but also the challenges of integrating AI within Radiology. Our primary objective was to ensure that AI adhered to our high standards, was transparent, and explainable.

To achieve this we examined various solutions. This included outlining distinct roles and responsibilities for human-AI collaboration. We also ensured training for Radiologists and other stakeholders to understand AI results. Furthermore, we engaged stakeholders to convey the potential of AI including arranging an 'AI in imaging' away day.

My knowledge and understanding of AI in imaging has been enriched by this experience, and I would like to express my gratitude to the CAMRIN team, Alexi and Tom, without whose leadership and dedication this project would not have been feasible.

Dr John Mullany, Consultant Radiologist & Clinical Lead for AI in CAMRIN

NHS
Cheshire and Merseyside

Thank you for listening

Any Questions?

CAMRIN@liverpoolft.nhs.uk

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Q&A PANEL

Katherine Jakeman

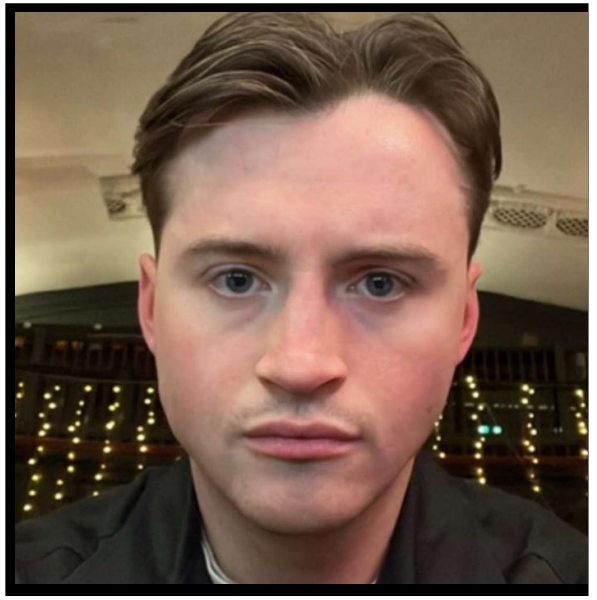
Quality Improvement Partner - **RCR/CoR**

Raghu Lakshminarayan

Consultant Vascular Radiologist & Honorary Senior Lecturer - **Hull University Teaching Hospitals NHS Trust & Hull York Medical School**

Dr David White

Clinical Lead - **Cheshire & Merseyside Radiology Imaging Network (CAMRIN)**



Thomas Hill

Programme Manager - **Cheshire & Merseyside Radiology Imaging Network (CAMRIN)**

NHS Radiology Conference North

Drinks Reception, Networking and End of Day

THANKS FOR ATTENDING

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SOUTH

2023

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