CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Agenda for today:

Wednesday 18th October | 15Hatfields, London

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Welcome to Imaging Innovation Conference South 2023!

18th October 2023
8am – 4pm
15Hatfields, London

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

slido

How are you feeling today?

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

slido

Welcome to the conference, what are you looking to gain out of today’s conference?

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

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Chairs Opening Address

Dr Rizwan Malik
Radiologist & Managing Director -
South Manchester Radiology

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Sheila Black
Deputy head of Imaging Transformation - NHS England

Imaging Transformation Team Update

Sheila Black,
Deputy Head of Imaging Transformation
October 2023

Declaration of Interest

None to declare

Imaging Transformation Team

Kim Robertson
Head of Imaging Transformation

Shelia Black
Deputy Head of Imaging Transformation

Prof. Sam Hare
National Speciality Advisor for Imaging

Josh Day
Imaging Implementation Lead

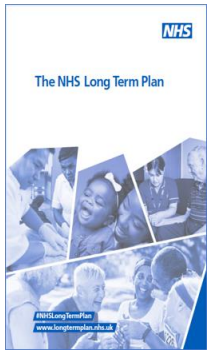
Vacant
Network Implementation Lead

Barry Lethem
Senior Project Manager

Oyin Adebanji
Project Manager

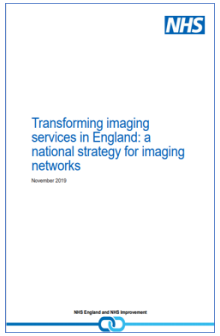
Key National Policy Statements for Imaging

Imaging Transformation work is underpinned by these key documents to ensure patients receive the right imaging test at the right time, by the right healthcare professional, for faster treatment and optimal care.



The NHS Long Term Plan

Included the commitment to establish 22 imaging networks across England by 2023, with the aim of securing improved population outcomes and achieving quality patient care and sustainable imaging services.



Transforming imaging services in England

Recognised significant historic challenges facing imaging services across the NHS, including rising demand, severe shortages in the imaging workforce, ageing imaging equipment and inadequate estates and facilities.

Diagnostics: Recovery and Renewal

Richards Review - Diagnostics Recovery and Renewal, provided the blueprint for imaging transformation over the Spending Review period 2022/23 - 2024/25

Imaging Across England

- Demand for diagnostics is **rising year on year.**
- Recovery of imaging services is still ongoing from the COVID-19 pandemic.
- **Vacancy rates** of imaging staff **are decreasing**, but not at the rate required to meet demand.
- Nationally, cost of imaging services are rising annually. **In 2021/22** the cost of services totalled **£2.8 Billion;** this is a rise from **£2.7 Billion in 2020/21**.
- Cost of outsourcing doubled in **2021/22** to **£241 Million.**

Imaging Transformation 2023-24 Plan on a Page

Imaging Networks

- Support the ongoing maturity of Imaging Networks to "Developing" status or above by Dec 2023 & support ongoing maturity assessment.
- Compete the 2022/23 Imaging Clinical Leadership Programme and deliver the 2023/24 programme.
- Deliver Imaging Network engagement events to share learning and guidance on establishing and maturing Imaging Networks.
- Develop and rollout Imaging Demand & Capacity and Workforce modelling to standardise the planning approach.
- Update current Imaging Network Guidance to support imaging networks develop their maturity.
- As maturity of networks increase, leverage network leads to ensure shared capacity and waiting list management within the network.

Performance

- Gain insight from Imaging KPIs, Performance metrics and Imaging dashboards to monitor performance, track imaging network development, additional equipment benefits and support wider diagnostic planning and performance.
- Support the reduction of 6-weeks and 13-week waits for CT, MRI and NOUS.
- Insights shared with regions and ICS's to support and deliver an optimal throughput per hour for CT and MRI scanners.
- Increased use of MRI acceleration technology and standardised protocols for CT and MRI - where applicable in the clinical setting.
- Increased use of shared acquisition, reporting and administration capacity across the Imaging network in partnership with DDC team.

Equipment

- Allocation and delivery of SR21 2023/24 additional acute imaging equipment capital funding.
- Monitoring of SR21 and underspend allocations, to support equipment installations and associated additional activity.
- Track additional activity delivered from investments and support projections of future investment requirements.

Workforce

- Delivery and evaluation of 10 Virtual Support Tool pilot sites.
- Support the wider imaging workforce objectives from the imaging workforce group, such as: deployment of Imaging Academies, apprenticeships, international recruitment.
- Roll out of the imaging demand & capacity and workforce strategic and operational tools to support workforce planning within trusts, networks, systems and regions.
- Increased use of collaborative banks and insourcing models to reduce agency and outsourcing cost.
- Enable the impact of adoption of new roles and changes in skill mix across imaging to be shared effectively.

Data

- Use of imaging dashboards to support ICS's to benchmark data insights.
- Delivery of the improved and updated 2022/23 National Imaging Data Collection.

Policy

- Conclusion of the PHSO report recommendations 'Unlocking Solutions in Imaging: Working together to learn from failings in the NHS' July 2021.
- Publication and implementation of Imaging Reporting Turnaround Time Guidance.

Over-arching Project

Support maturity development of 22 Imaging networks across England by December 2023 with the aim of securing improved population outcomes and achieving quality patient care and sustainable imaging services.

Outcome Ambitions

- Improved population outcomes, quality and productivity of imaging services.
- Improved productivity and throughput of imaging modalities within Imaging networks.
- Improve waiting times & DNAs across imaging.
- Improved use of staff collaborative banks and insourcing models.
- Increased acute imaging capacity and CT resilience at acute sites.
- Demonstrate benefits of innovative technology to support training, complexity and education in imaging.
- Create and utilise planning tools to support imaging services for demand & capacity and workforce to support more robust service planning.
- Improved use of skill-mix initiatives within imaging networks.

Imaging Transformation Priorities

Imaging Networks

- **AI networked approach**
- **National Imaging Registry**
- **Continued formation** of imaging networks.
- All networks to be at a maturity of **Developing by December 2023**.
- Next milestone is **70% of networks to be operating at Maturing** status with a further **5 operating at Thriving** by **March 2025**.

Performance and Data

- **Reduction** of 6-week and 13-week waits.
- Optimisation of **MRI acceleration software** & sharing of capacity across networks.
- **Sharing insights** gained from national data on KPIs.
- Improve quality of data from the **NIDC**.
- **Demand, capacity & workforce tools** published in Aug 2023.

Equipment

- Allocation and delivery of the SR 21 funding for **additional Imaging** assets.
- **Increase resilience** for CT in type 1 A&E hospital sites.
- **Track and report** on the additional activity gained from **SR21** investments.

Workforce

- Delivery and evaluation of **10 VST pilots**.
- Support with the implementation of wider workforce objectives- academies, apprenticeships etc.
- Support the increased awareness of **collaborative banks** and **insourcing** opportunities.
- Adoption of new roles and changes in skill-mix across imaging services.

Policy

- Conclusion of the **PHSO report recommendations** – 'Unlocking Solutions in Imaging'.
- Delivery of the publication and implementation of **Reporting Turnaround Time Standards** for Imaging.
- Ongoing collaborative work with other **diagnostic pillars and programmes**.

*NIDC (National Imaging Data Collection)

Imaging Networks

Where are we now?

22 Imaging Networks across 7 Regions

South West

- PenRad
- West of England

South East

- Thames Valley
- Frimley, Surrey & Sussex
- Wessex
- Kent & Medway

London

- North West London
- North Central London
- North East London
- South East London
- South West London

East of England

- EDIN
- East of England 2

Midlands

- EMRAD
- West Midlands

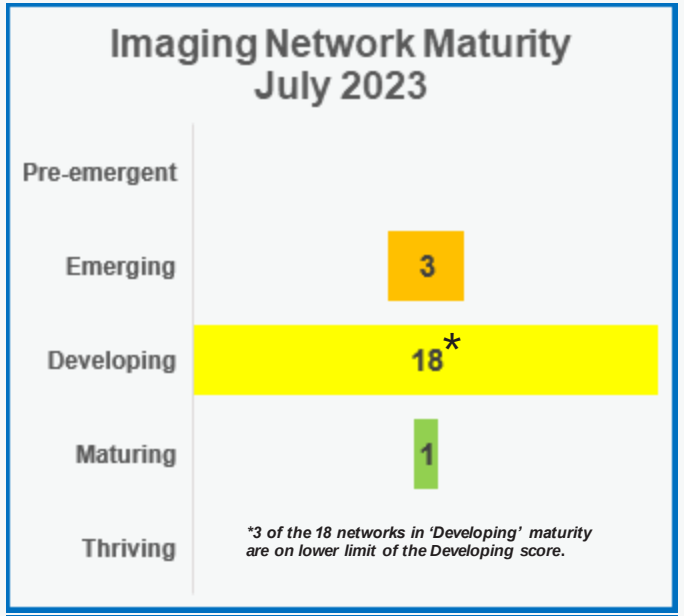
North West

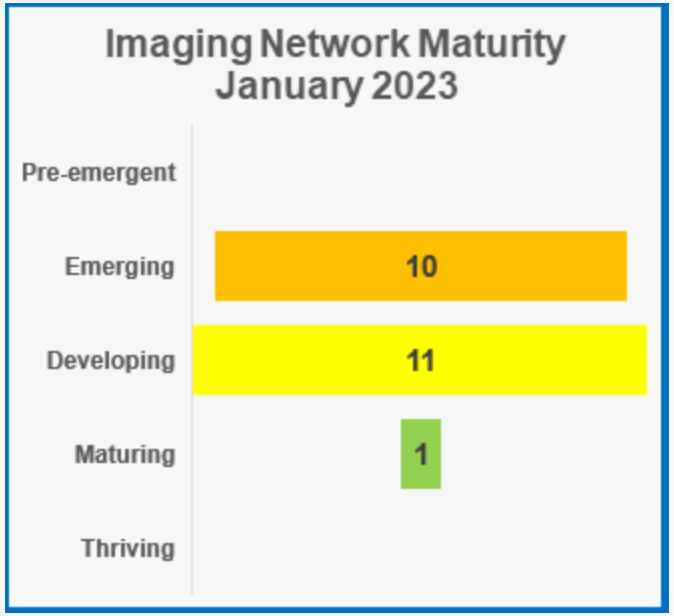
- Greater Manchester
- Cheshire & Merseyside
- Lancashire & South Cumbria

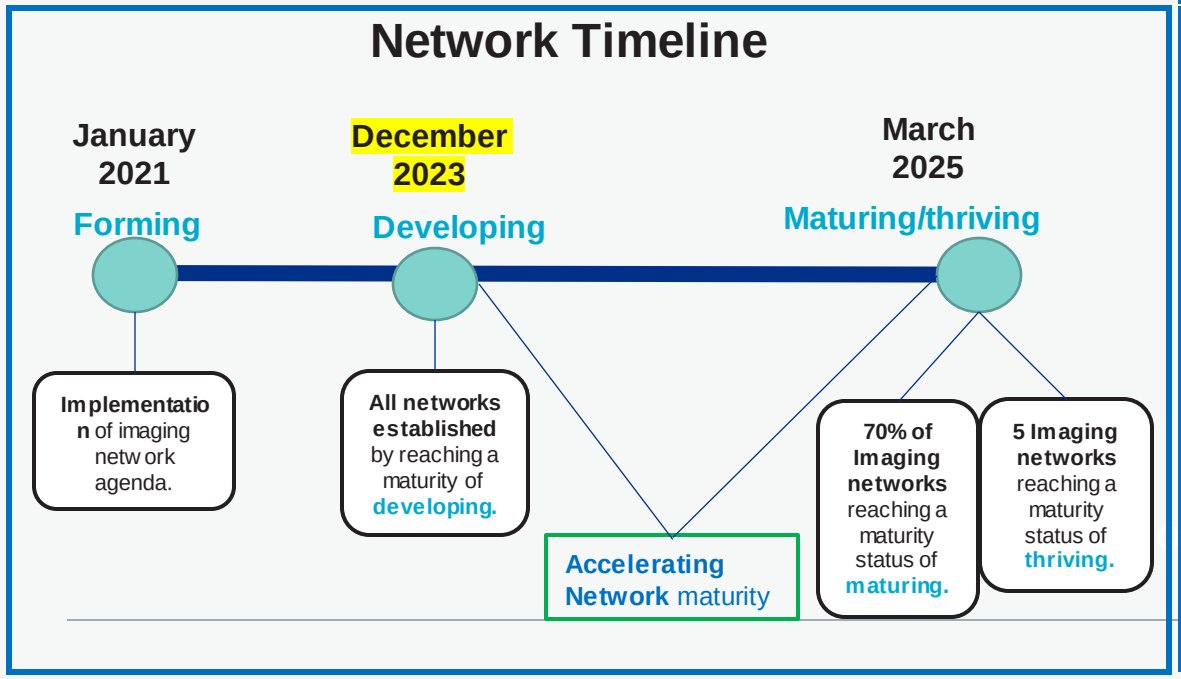
North East & Yorkshire

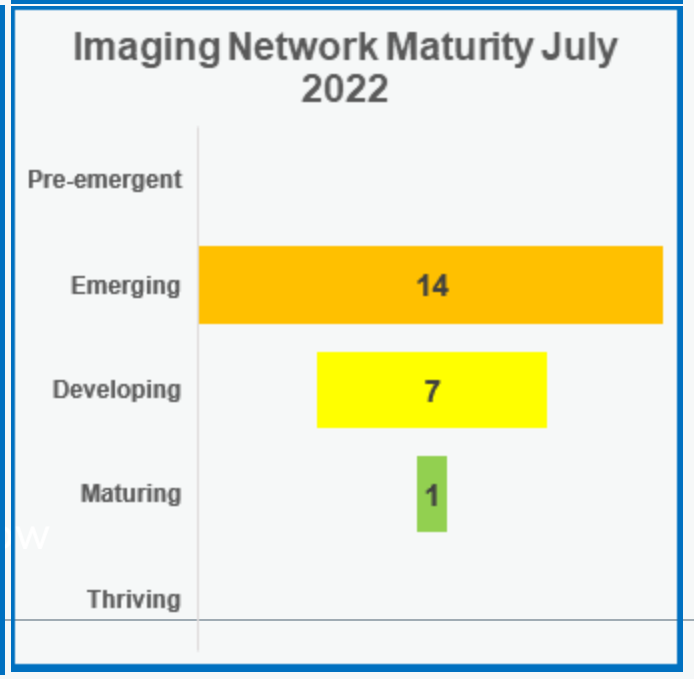
- Yorkshire Imaging Collaborative
- Humber & North Yorkshire
- South Yorkshire & Bassetlaw
- North East & North Cumbria

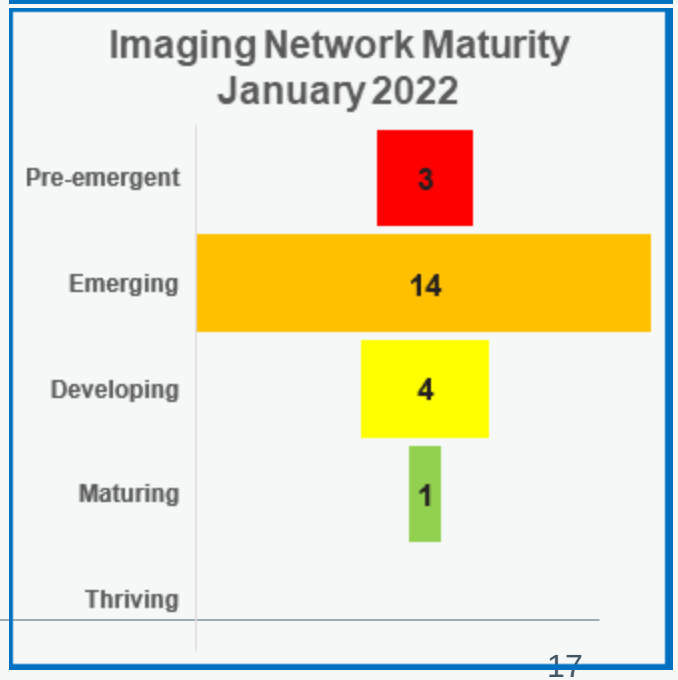
Imaging Network Maturity National Overview



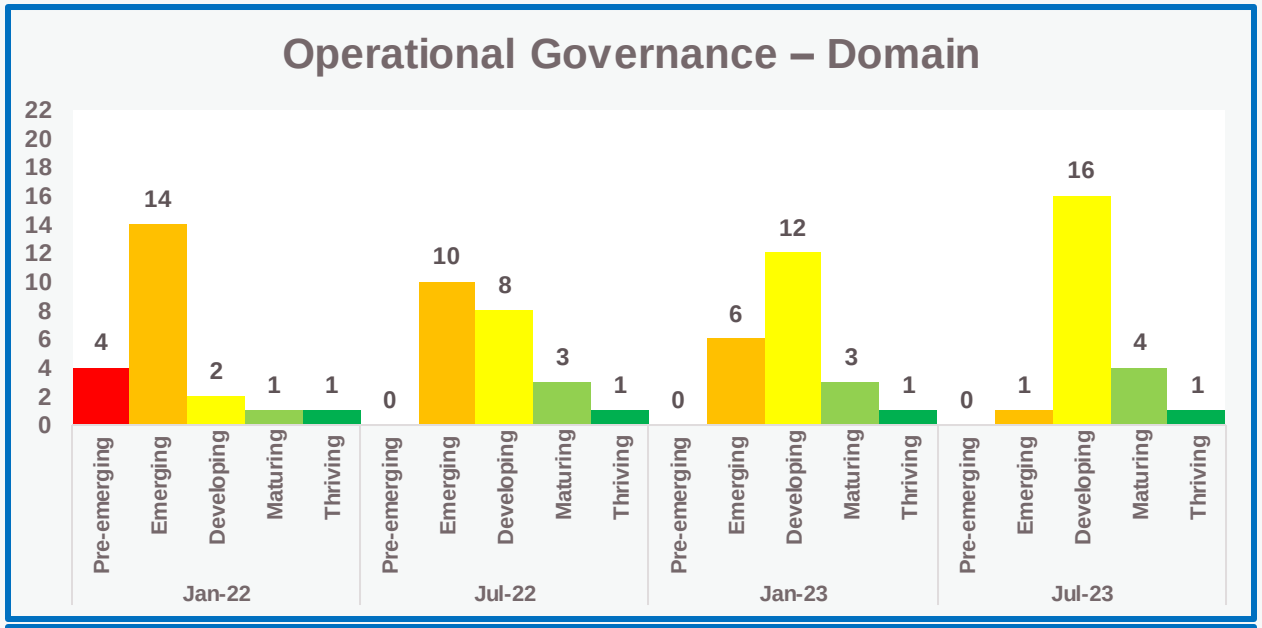




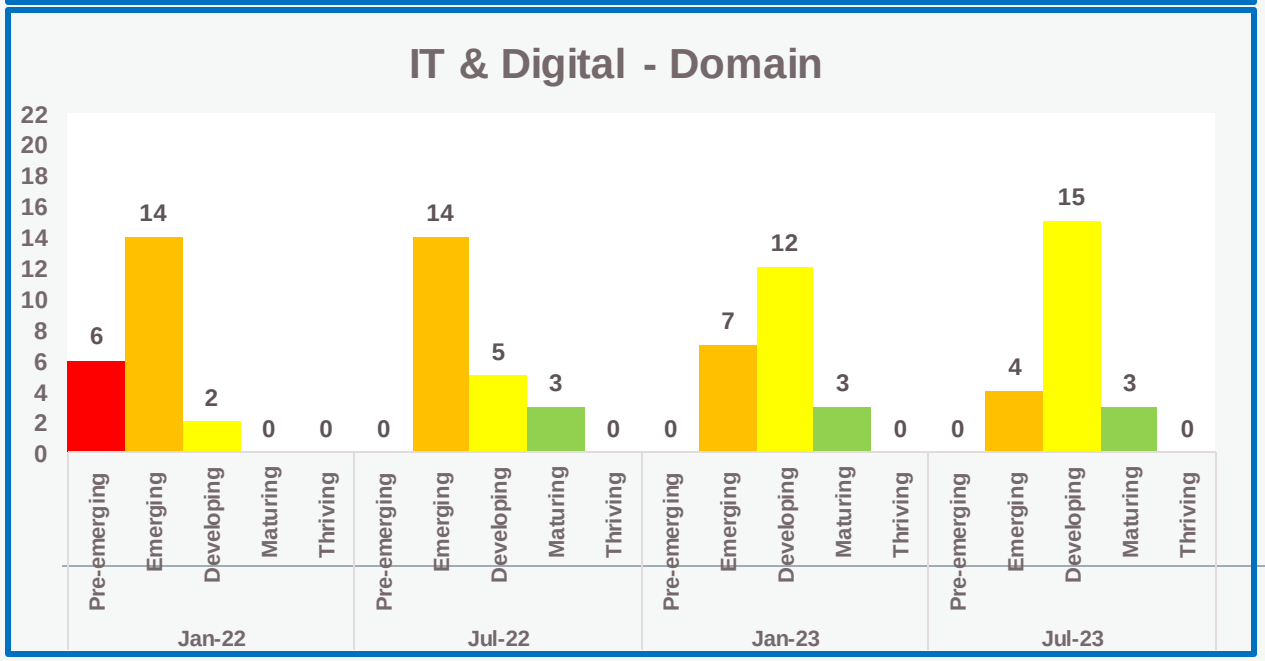




Growth in Domain Maturity – Jan 2022 - July 2023

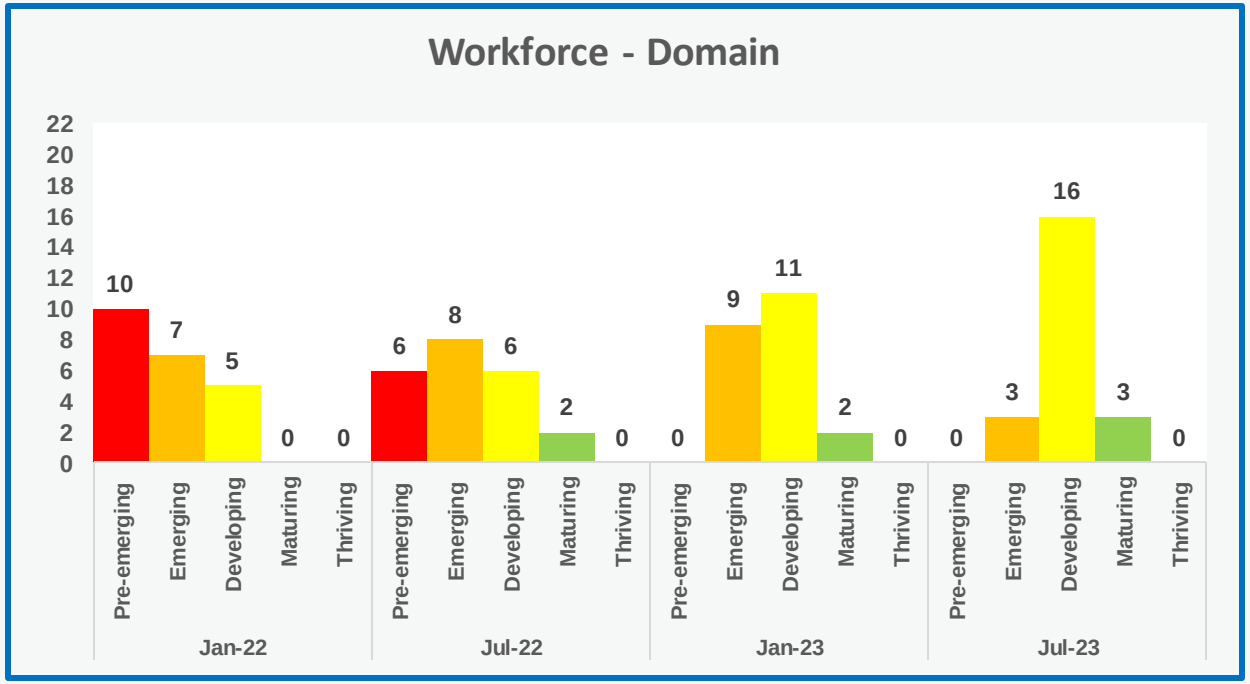


Submission Date	Jan-22	July-22	Jan-23	July-23
Pre-emergent	4	0	0	0
Emerging	14	10	6	1 (4.5%)
Developing	2	8	12	16 (73%)
Maturing	1	3	3	4 (18%)
Thriving	1	1	1	1 (4.5%)

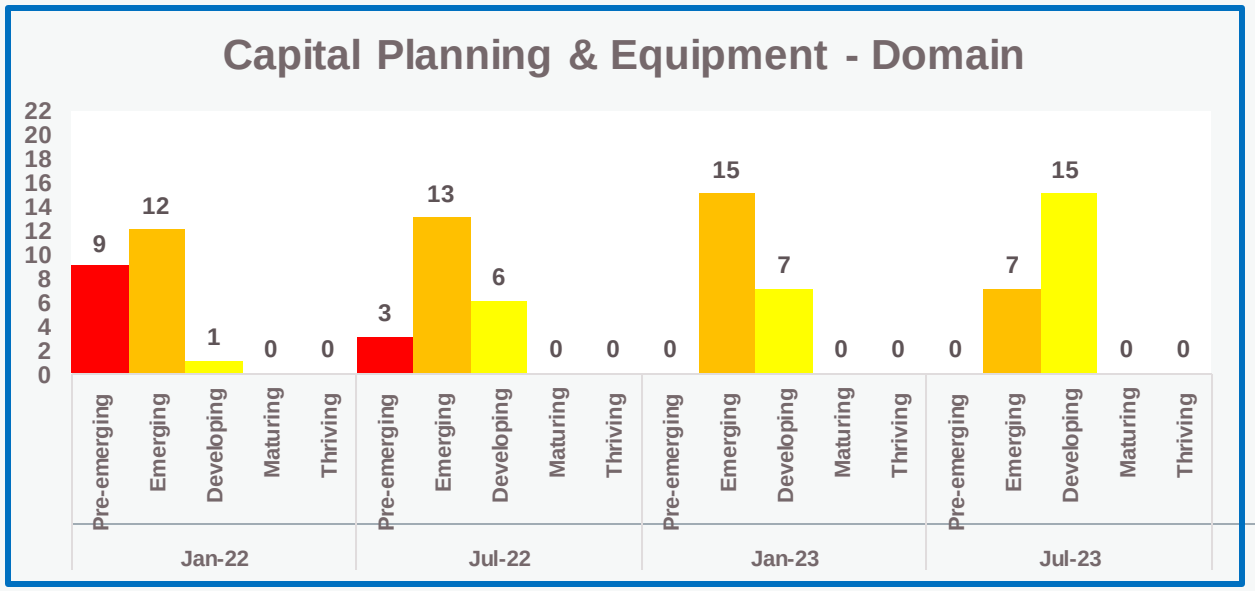


Submission Date	Jan-22	July-22	Jan-23	July-23
Pre-emergent	6	0	0	0
Emerging	14	14	7	4 (18%)
Developing	2	5	12	15 (68%)
Maturing	0	3	3	3 (14%)
Thriving	0	0	0	0

Growth in Domain Maturity – Jan 2022 - July 2023



Submission Date	Jan-22	July-22	Jan-23	July-23
Pre-emergent	10	6	0	0
Emerging	7	8	9	3 (13.5%)
Developing	5	6	11	16 (73%)
Maturing	0	2	2	3 (13.5%)
Thriving	0	0	0	0



Submission Date	Jan-22	July-22	Jan-23	July-23
Pre-emergent	9	3	0	0
Emerging	12	13	15	7 (32%)
Developing	1	6	7	15 (68%)
Maturing	0	0	0	0
Thriving	0	0	0	0

Domain Average Maturity for 22 Networks

Imaging Network Maturity Summary Overall Average Score by Domain	Average Maturity			
Submission period	**Jan-22**	**Jul-22**	**Jan-23**	**Jul-23**
Operational Governance	1.9	2.3	2.5	2.7
	Emerging	Developing	Developing	Developing
IT & Digital	1.8	2.2	2.3	2.5
	Emerging	Developing	Developing	Developing
Workforce	1.8	1.8	2.1	2.5
	Emerging	Emerging	Developing	Developing
Capital Planning & Equipment	1.5	1.7	2.0	2.2
	Emerging	Emerging	Developing	Developing

Maturity	Score
Pre-emerging	1
Emerging	1-2
Developing	2-3
Maturing	3-4
Thriving	4-5

Milestones Next Steps

Scoping

Long-term plan commitment to establish 22 Imaging Networks by December 2023.
Network formation and geographical footprint agreed.

Formation

Funding of Imaging Networks included in the SR21 allocation.
Digital Roadmaps in place.
Maturity self-assessment cycle initiated.

22 Networks Established

December 2023 Long-Term Plan commitment achieved.

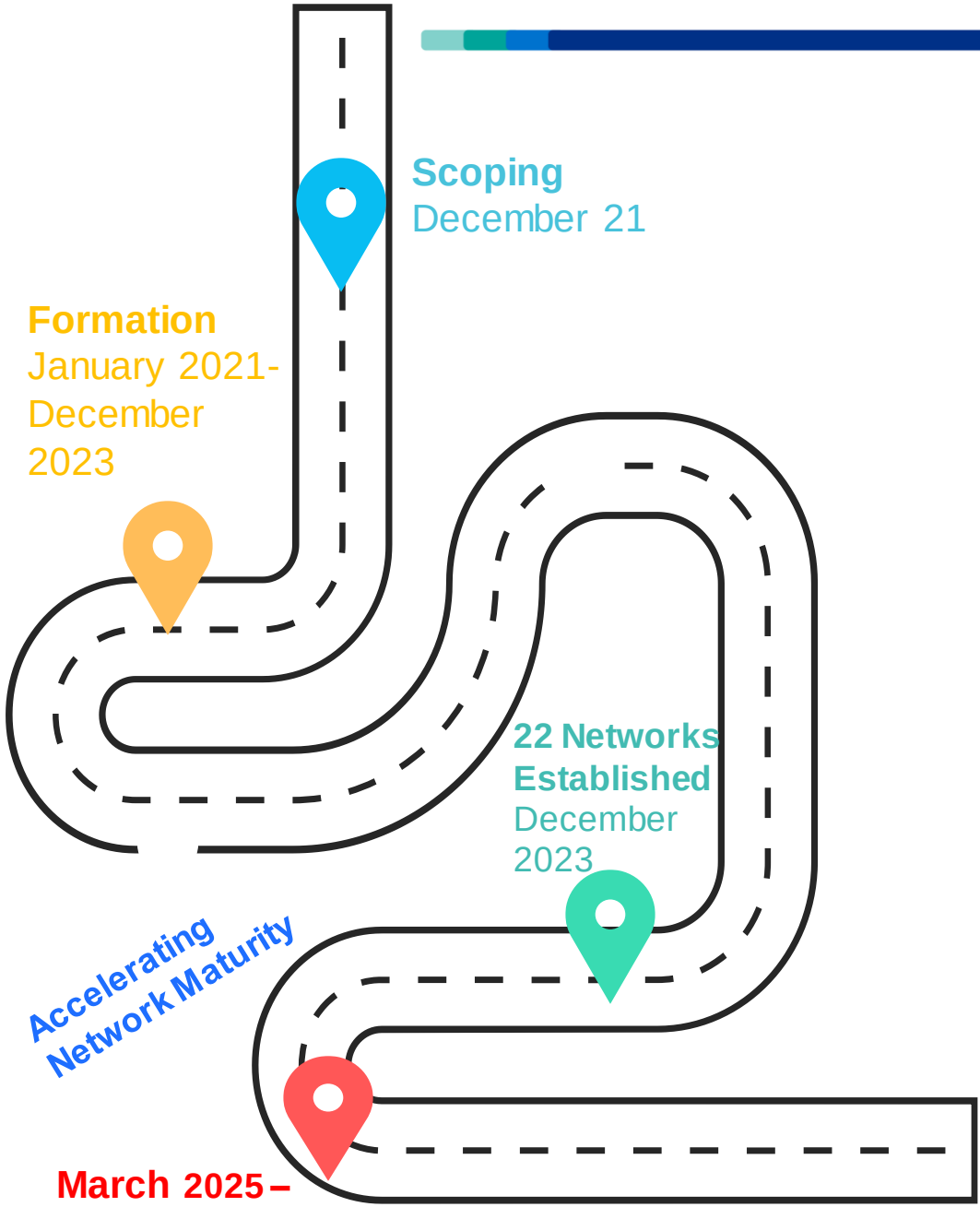
Accelerating Network Maturity

Work ongoing to capture and share the benefits of working as an Imaging Network.
Trajectory plans to be in place for all 22 networks to outline expected maturity from January 2024 to March 2025.

Interested Networks requested to support with benefits realisation work with national team.

Long-Term Plan March 2025

All networks operating at a maturing or above level.



Performance & Tracking of Investment

How are we doing?

Focus on Diagnostics Months - March & October 2023

Focus on Diagnostics I - March 2023

Across March there was an increased focus on the optimisation of services in Diagnostics.

In Imaging a webinar was held '**Framing the Image**' To show case initiatives, including:

- Automation in Imaging
- Patient Portal/ Appointment management
- Improving waiting list management: Vetting radiographers
- Optimising pathways utilising Imaging Navigators

Following the success in **March**, a second Focus on Diagnostics month is being held from **9th October to 9th November 2023.**

The aims of the Focus on Diagnostics Months for Imaging:

- Peer-to-peer **support initiatives**.
- **Lunch and learn sessions** that make best practice case studies accessible.
- **'How to'** guides that transform best practice case studies.
- Series of nationally hosted **best practice webinars.**
- **Dedicated Futures Platform page** providing access to best practice case studies and a community of interest - **Focus on Diagnostics Month - National Diagnostics Transformation Programme - FutureNHS Collaboration Platform**
- Achieve a consistent **reduction in 6-week wait backlogs month on month** - while achieving the optimal level of tests per hour: (CT: 3-4 scans per hour, MRI: 2-3 scans per hour, NOUS: 3 scans per hour).

Focus on Diagnostics II – October 2023

National Webinars

- **MRI Acceleration project –** Siemens case study
- **Demand & Capacity Operational Tool** – Imaging Team
- **Report Turnaround Time Standards** - Imaging Team
- **Collaborative Bank** – NCL Imaging Network
- **NOUS – Deep Dive** – National, Regional & SCoR input

Lunch & Learn Sessions

- **CT Chest Pathway supporting GPDA -** NCL Academy
- **Supporting deteriorating patients in Acute & CDC settings -** NCL Academy
- **Non-medical run cardiac stress and CT cardiac delivery -** NCL Academy

Focus on Diagnostics Month - National Diagnostics Transformation Programme - FutureNHS Collaboration Platform

Imaging Services across the NHS in England

Imaging is a core diagnostic service, central to patient pathways across secondary, primary and community care. Imaging is critical to almost all cancer pathways, with over 40m imaging exams are carried out in England per year.

Diagnostic Imaging Dataset (DID) 2022/23 Total Imaging Activity

2022/23 Annual Imaging Tests	Annual Tests
Computerised Tomography	6,512,160
Diagnostic Ultrasonography	9,806,340
Fluoroscopy including IR	828,630
Magnetic Resonance Imaging	3,858,220
Nuclear Medicine Procedure	305,345
Plain Radiography	20,913,335
PET CT	245,240
SPECT CT	38,985
Total	42,508,225

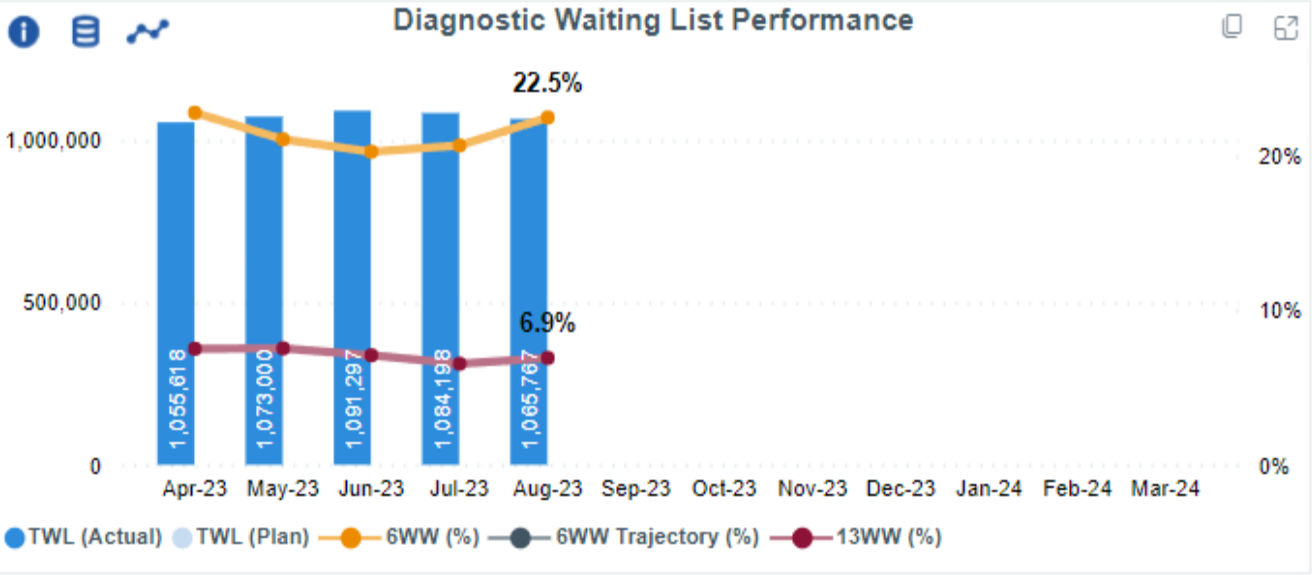
CT & MRI have seen a significant increase in demand since 2019/20.

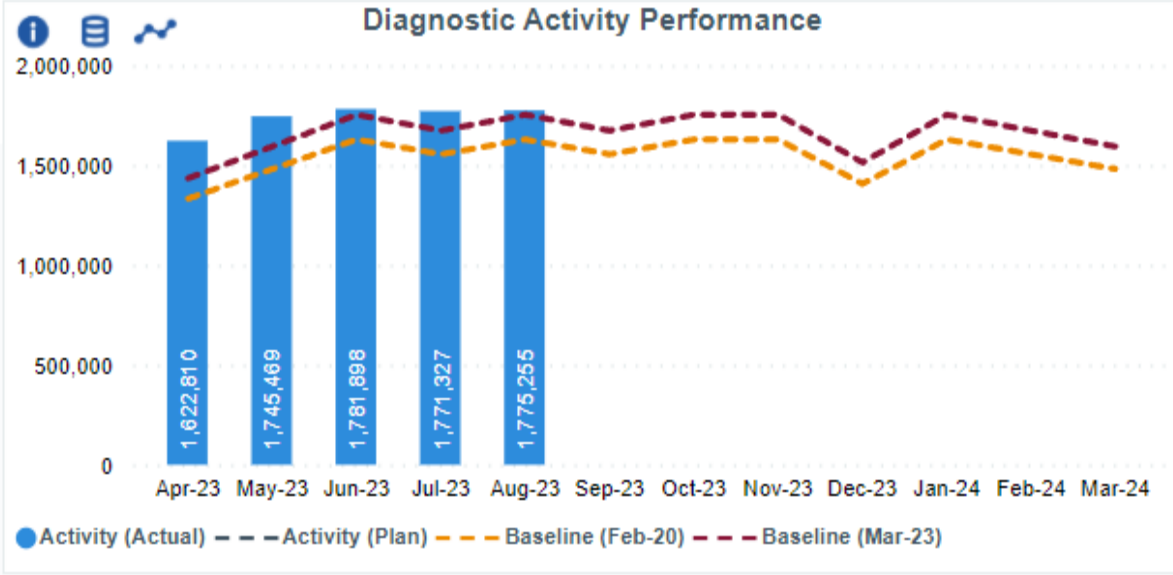
% change in Demand year vs year	2018/19-2019/20	2019/20-2020/21	2020/21-2021/22	2019/20 vs 2021/22
CT	12.2%	-4.8%	19.8%	15.9%
MRI	9.8%	-20.1%	21.2%	5.4%

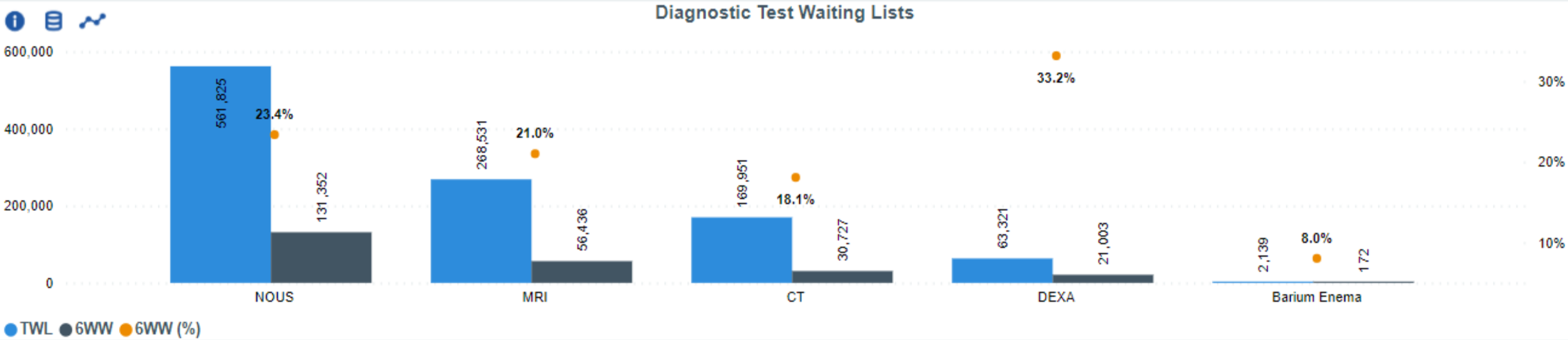
Demand pressures are further increased as systems progress recovery efforts across key healthcare services, such as - elective care, cancer pathways, and wider diagnostic pathways.

Imaging Performance Tracker – National Position

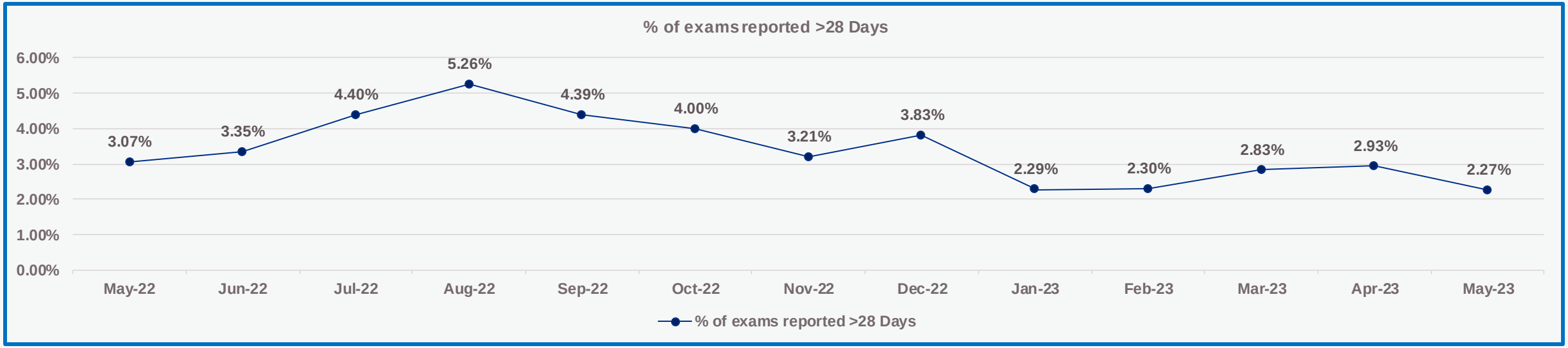
Region: All | System: All | Diag. Group: Imaging | Diag. Test: Imaging | Core Modality: Yes / No

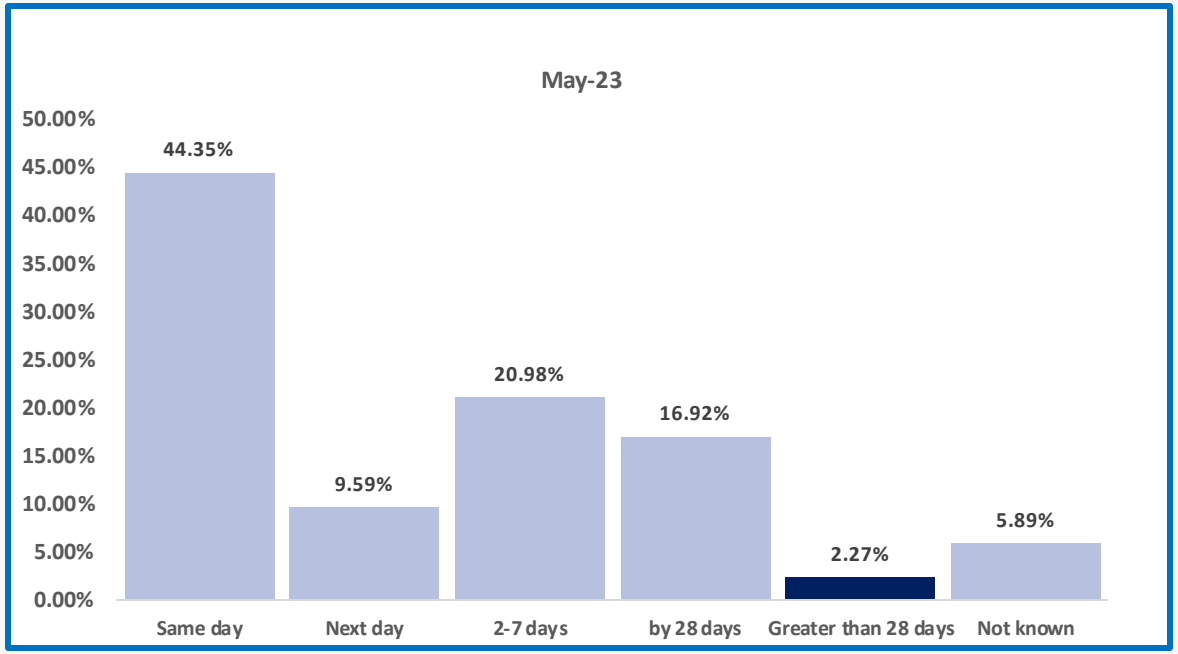






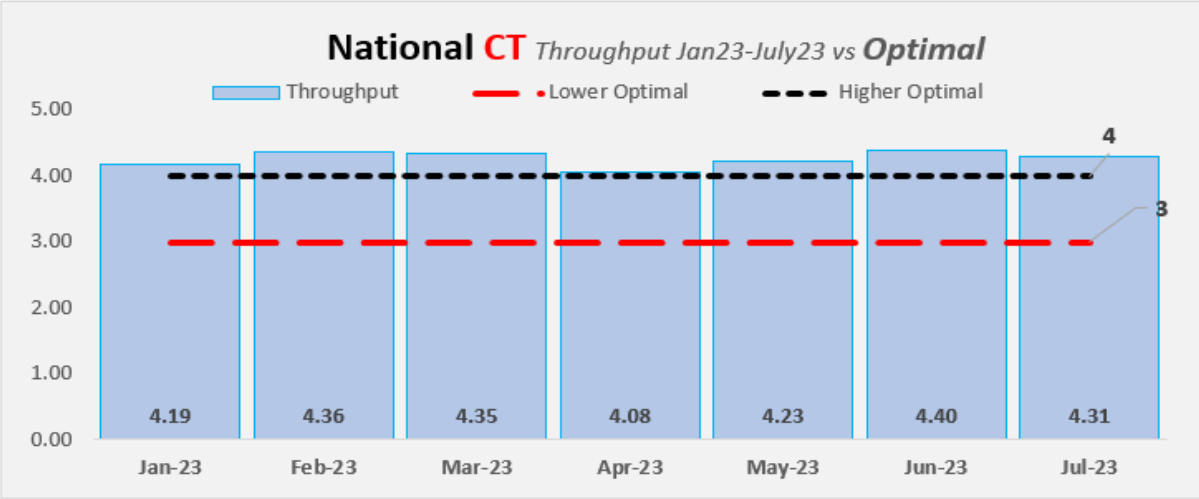
Report Turnaround Times – National Tracker DM01

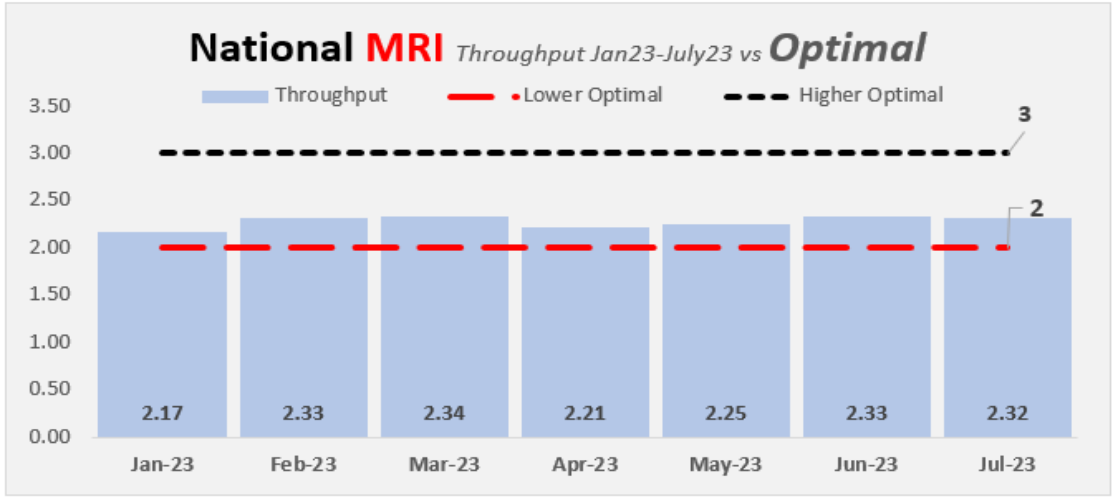


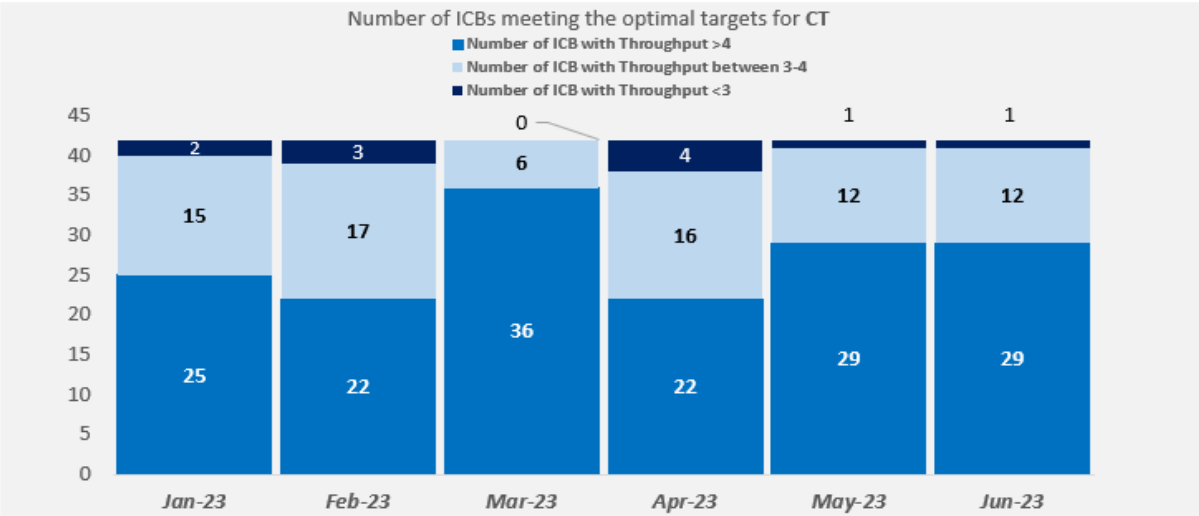


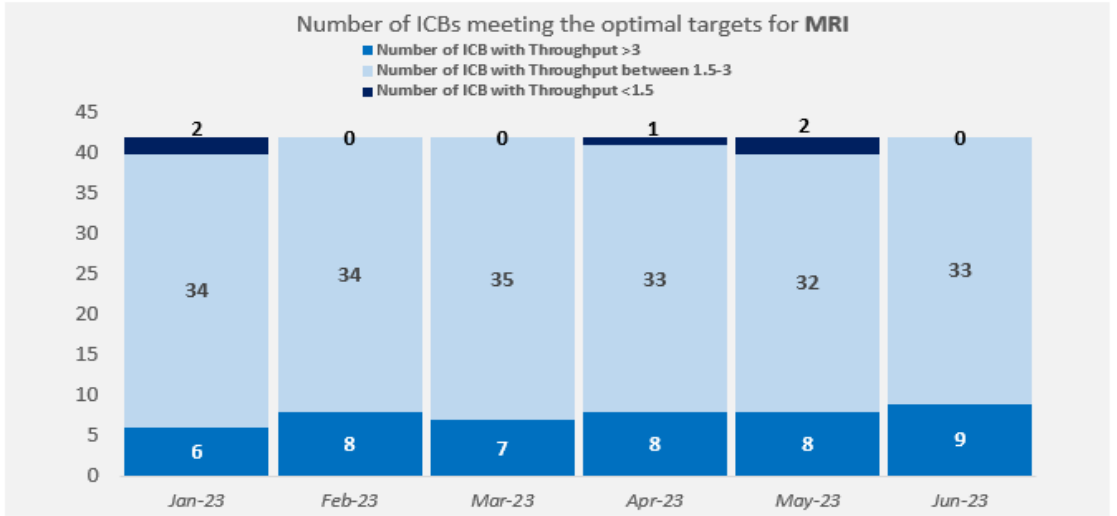
Month	% of exams reported >28 Days	Exams Reported >28 days	Total exams reported all TAT
May-22	3.07%	27,560	898,265
Jun-22	3.35%	28,335	846,725
Jul-22	4.40%	37,345	848,820
Aug-22	5.26%	44,280	841,610
Sep-22	4.39%	36,120	822,595
Oct-22	4.00%	34,020	851,345
Nov-22	3.21%	28,225	880,490
Dec-22	3.83%	30,925	808,400
Jan-23	2.29%	20,795	907,635
Feb-23	2.30%	19,020	827,280
Mar-23	2.83%	24,945	882,575
Apr-23	2.93%	24,170	824,430
May-23	2.27%	16,650	734,155

National Throughput View for CT & MRI – NIDC 2021-22









a) Hourly throughput = Monthly CT activity / (daily scanning hours available **x** calendar days in a month)
b) Scanning hours = average daily **core** scanning hours available **x** number of CT scanners
c) Daily **core** scanning hours available across 7 days a week, excluding out of hours.

Analysis includes any activity that has been performed Out of Hours and outsourced to outsourced providers which could explain over-performance for some systems.

Asset opening hours data based on 21/22 NIDC returns. This asset base is due to be refreshed shortly, which will update the asset base for 22/23.

a) Hourly throughput = Monthly MRI activity / (daily scanning hours available **x** calendar days in a month)
b) Scanning hours = average daily **core** scanning hours available **x** number of MRI scanners
c) Daily **core** scanning hours available across 7 days a week, excluding out of hours
d) For acute sites with a proven higher than average case mix complexity, the optimal range for MRI is 1-3 scans per hour

Analysis includes any activity that has been performed Out of Hours and outsourced to external providers which could explain over-performance for some systems.

Asset opening hours data based on 21/22 NIDC returns. This asset base is due to be refreshed shortly, which will update the asset base for 22/23.

Additional Imaging Capital Allocation

£69.4m over 3 financial years (2022/23 – 2024/25) for **additional** Imaging assets at acute Trust Imaging services.

- Funding will need to be used to increase CT resilience and capacity at acute sites that currently only have 1 CT scanner as per the planning guidance. (9 sites regionally validated)
- Remaining capital at regional level will be allocated for additional imaging capacity to support elective recover and reduce cancer waits.

Funding Split for Acute Services.	Acute Single site CT	Year 1 2022/23	Year 2 2023/24	Year 3 2024/25	Total
	9 regionally validated	**£14.8M & £50.1M for Underspend**	**£26.5M**	**£28.1M**	**£119.5M**

Year 1 (2022/23) Additional Acute Imaging Capital Summary

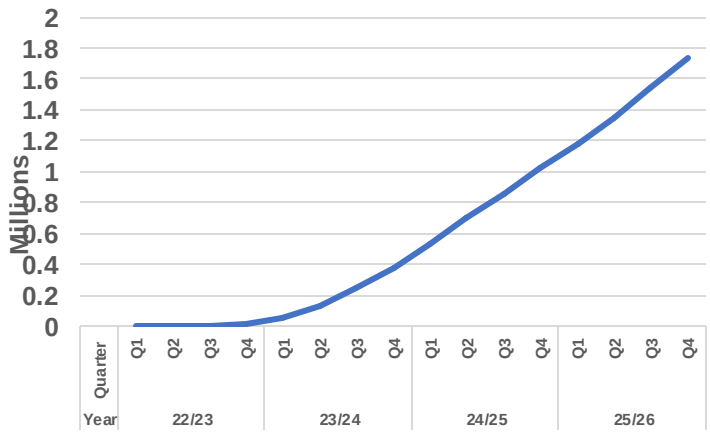
- 57 assets funded
- 5/9 Acute single site CTs funded
- Spent in full

Diagnostic Underspend Year 1

- £50.1 million Imaging bids were approved.
- Funding allocated and spent in 2022/23 FY.
- Additional - 6 CT & 6 MRI
- Replacement - 10 CT & 8 MRI

Year 2 (2023/24) Additional Acute Imaging Capital Summary

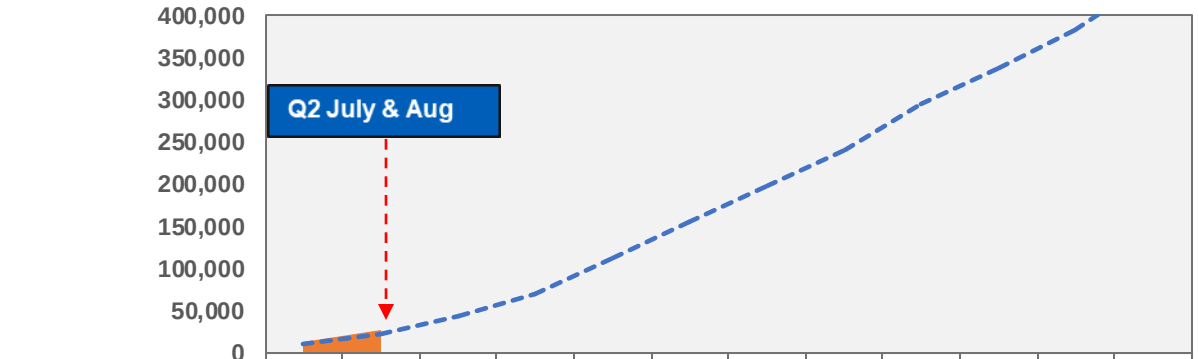
- 43 Assets funded
- Additional – 6 CT & 6 MRI
- 100% capital allocated/bids approved.



Capital investment - Graph shows cumulative forecast additional SR21 Diagnostic Imaging Activity

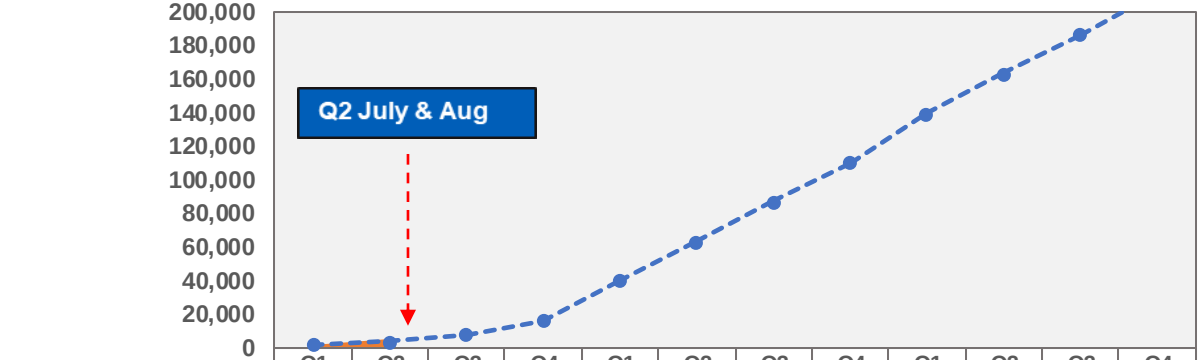
Tracking of Impact of Additional Imaging Funding

CT cummulative Quarterly Activity: Planned Vs Actual



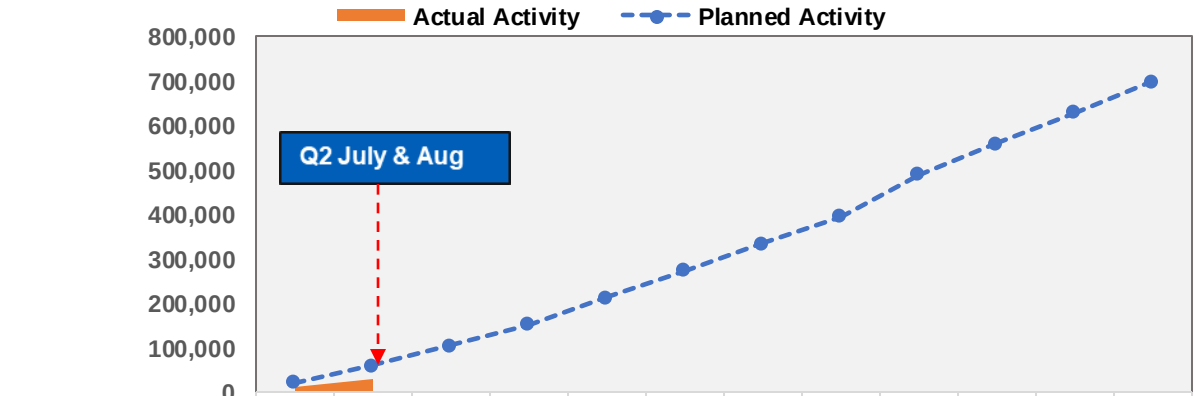
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Year 1 (2022/23)				Year 2 (2023/24)				Year 3 (2024/25)			
Actual Activity	12,665	27,407										
Planned Activity	9,706	22,234	42,327	70,187	112,90	155,62	198,35	241,07	295,79	338,51	383,92	444,64

MRI cummulative Quarterly Activity: Planned Vs Actual



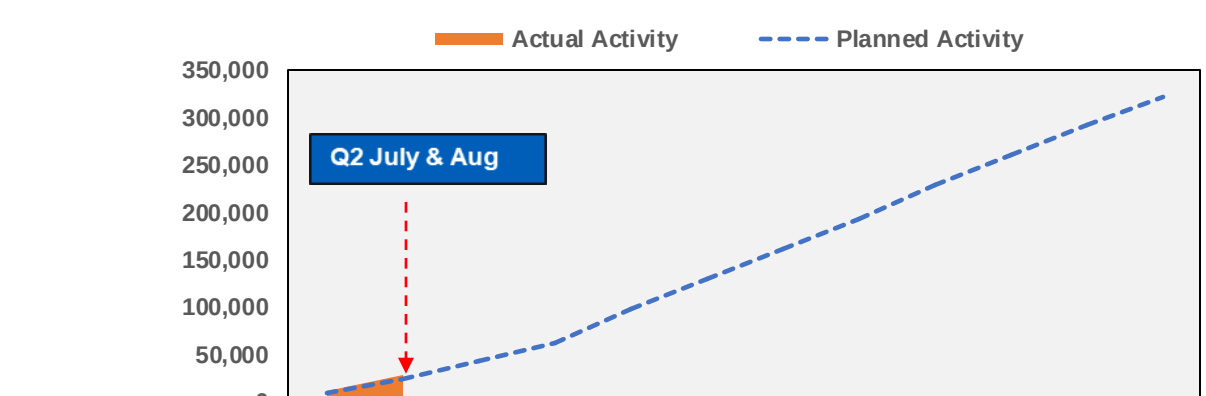
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Year 1 (2022/23)				Year 2 (2023/24)				Year 3 (2024/25)			
Actual Activity	1,688	4,341										
Planned Activity	1,717	3,556	7,305	16,126	39,612	63,098	86,584	110,070	139,439	162,975	186,511	211,042

NOUS cummulative Quarterly Activity: Planned Vs Actual



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Year 1 (2022/23)				Year 2 (2023/24)				Year 3 (2024/25)			
Actual Activity	11,096	27,900										
Planned Activity	21,160	58,112	102,840	151,047	211,895	272,743	333,591	394,439	488,287	558,135	627,983	697,831

All Other Modalities cummulative Quarterly Activity:Planned Vs Actual



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Year 1 (2022/23)				Year 2 (2023/24)				Year 3 (2024/25)			
Actual Activity	9,518	26,704										
Planned Activity	7,705	22,486	41,089	60,201	96,861	128,74	160,62	192,51	228,22	259,16	290,10	321,04

National Imaging Data Collection

NIDC collection started in 2016 to support the NHS Improvement for the Carter review recommendations.
The collection is an annual retrospective of data across imaging services - including breast screening, Targeted Lung Health Checks and Community Diagnostic Centres.
Split into two parts:

- **Part one:** Imaging assets, asset costs, hours of operational and IT and digital information
- **Part two:** substantive, agency and bank workforce, insourcing and outsourcing, non-pay costs, activity and KPIs

Why do we collect data?

Data has informed; the Richards Review - Diagnostics Recovery and Renewal, National Strategy for Imaging in England and Imaging Turnaround Times standards.

Benchmarking	Investment	Insight	Impact
•Planning at a national, regional and local levels. •Benchmarking against peers, regionally and nationally. •Feeds into the imaging demand & capacity and workforce tools at an operational, network and strategic level.	•Used as part of NHSE Diagnostic business case for DHSC funding contributing to: •Additional Acute Imaging asset Capital programme •2020 capital equipment replacement •HEE revenue •Improved digital connectivity •Maturity of imaging services •MRI acceleration software	•Supports delivery of imaging networks, transformation and improvement objectives. •Data presented with year-on-year comparison at National Boards. •Assumptions from data supported the national workforce dashboards	•To inform and support imaging transformation across England. •Improve outcomes to patients. •Year-on-year comparison of data allows tracking of trends and impact of interventions. •Informs Imaging investment and support across other diagnostic programmes.

2022-23 NIDC is under analysis within NHSE, some key data will shared in the next couple of slides.

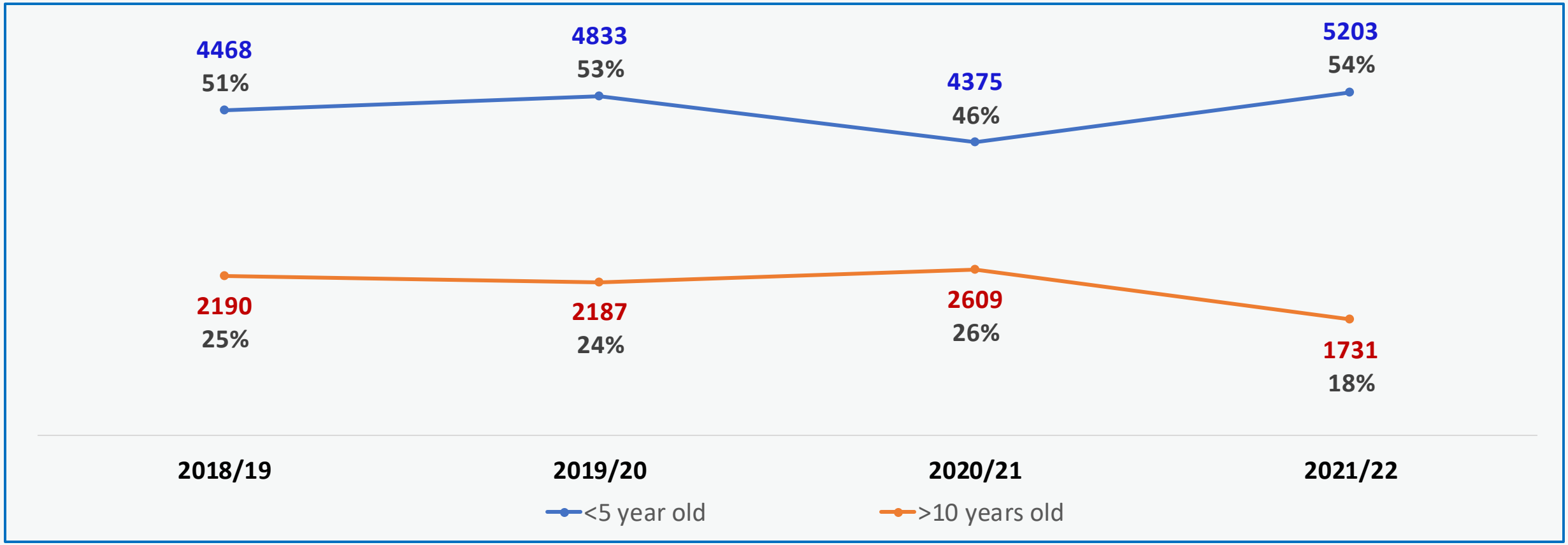
National View – Imaging Assets 2020/21 to 2022/23

Modality – Including CDC & TLHC assets	2020/21	2021/22	2022/23	% Difference
CT	572	602	677	12%
MRI	478	518	587	13%
Ultrasound (Obstetric and Non-Obstetric)*	2,902	2,961	3,469	17%
Interventional Radiology	345	345	378	10%
Mammography**	667	682	487	-29%
Nuclear Medicine***	305	298	289	-3%
Fluoroscopy	1,372	1,353	1,465	8%
DEXA	124	127	129	2%
X Ray (static and mobile)	2,940	2,921	2,999	3%
Dental	397	402	480	19%
Total	**10,102**	**10,209**	**10,960**	**8%**

***Ultrasound** - increased numbers due to mobile assets being submitted by a small number of trusts for financial year 2022-23.

****Mammography -** Decrease in numbers due to screening excluded in financial year 2022-23.
*****Nuclear Medicine** - decreased numbers due to accessory assets being submitted by a small number of trusts in previous financial years

Nationally - Percentage of Assets under 5 years & over 10 years old – (NIDC 2021-22)

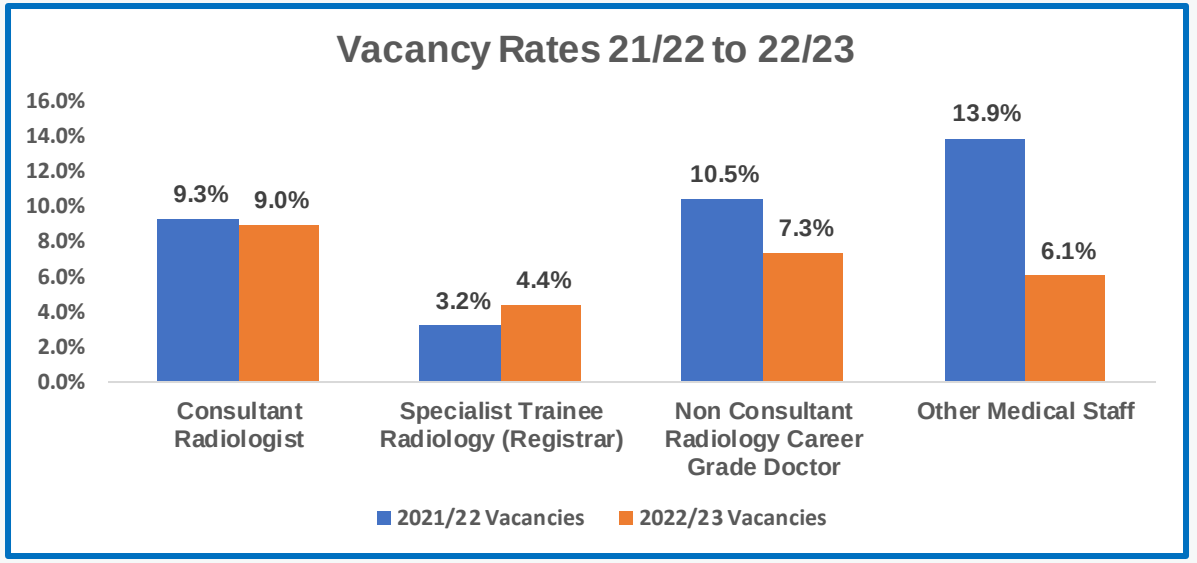


Nationally the percentage of assets over **10 years old has decreased by 7% since 2018/19**

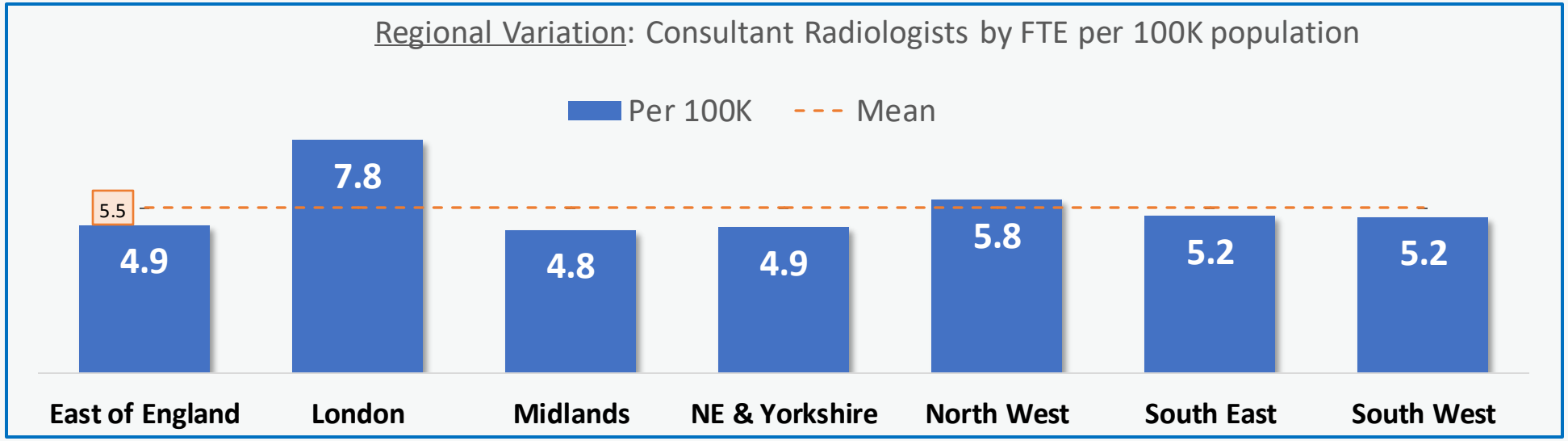
Exclusion criteria: Cath lab, Dental, DEXA, Decommissioned assets

National View - Medical Substantive Workforce (NIDC)

	2019/20	2020/21	2021/22	2022/23	Difference 21/22 - 22/23	% Difference 21/22 - 22/23
Consultant Radiologist	3,134	3,305	3,386	3,650	264	**8%**
Radiologist Career Grade	186	173	167	242	75	**45%**
Trainees	1,174	1,243	1,281	1,442	161	**13%**
Total	**4,551**	**4,787**	**4,911**	**5,334**	**423**	**9%**

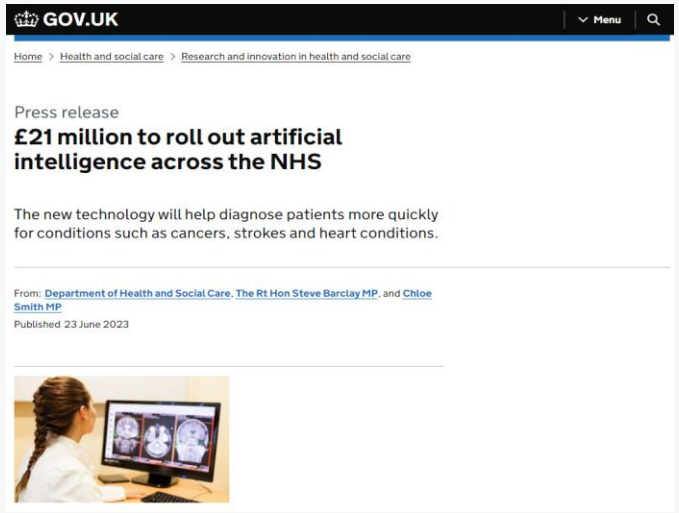


Number of Consultant for 2021/22 per head of population by region



AI Diagnostics Fund

£21m ring-fenced fund to procure AI diagnostics imaging technologies and begin deployment ahead of Winter 2023 was announced in June 2023


GOV.UK

Menu

Home > Health and social care > Research and innovation in health and social care

Press release

£21 million to roll out artificial intelligence across the NHS

The new technology will help diagnose patients more quickly for conditions such as cancers, strokes and heart conditions.

From: Department of Health and Social Care, The Rt Hon Steve Barclay MP, and Chloe Smith MP

Published 23 June 2023

- The policy was based on recommendations from the RCR paper, 'Overcoming barriers to AI Implementation' - https://www.rcr.ac.uk/posts/overcoming-barriers-ai-implementation-day
- The fund was opened to bids to deploy **diagnostic AI tools** in target clinical areas, particularly chest XR.
- Trusts bid through existing **Imaging Networks** to deliver the scale of adoption of AI tools.
- Funding could be used for the technology **licenses for 2 years** and other wraparound services to support deployment and evaluation.

- **Network/Trust Awareness Session – 3rd August 2023 - complete**
- **Suppliers ROM costs will be shared with networks – 4th August 2023- complete**
- **Bid Window Opens – 7th August 2023 - complete**
- **Bid Window Closes – 4th September 2023- complete**
- **Bid Moderation via expert panel – 2nd October 2023- complete**
- **Procurement commences – by 16th October 2023 –**

In progress

- **Networks/trusts complete mini-competitions and award contracts – by 30th November 2023**
- **Capital funding to be distributed in November 2023, revenue funding to be distributed in November 2023 and July 2024**
- **Implementation – from December 2023**
- **Service evaluation – post-implementation**

Summary

- We are in period of unprecedented challenge and change in Imaging Services in England.
- There has been significant capital investment during this spending review period.
- Imaging Networks have significantly matured in the preceding 18 months with a clear appetite for the Imaging network agenda.
- Increasing the reach and traction of networks in removing unwarranted variation and contributing to a shared approach.
- New planning tools, will support services and networks to understand workforce and capacity requirements.
- Workforce is increasing, with vacancy rates decreasing – pace remains a problem.
- Communication and deeper engagement with Imaging Services is vital.

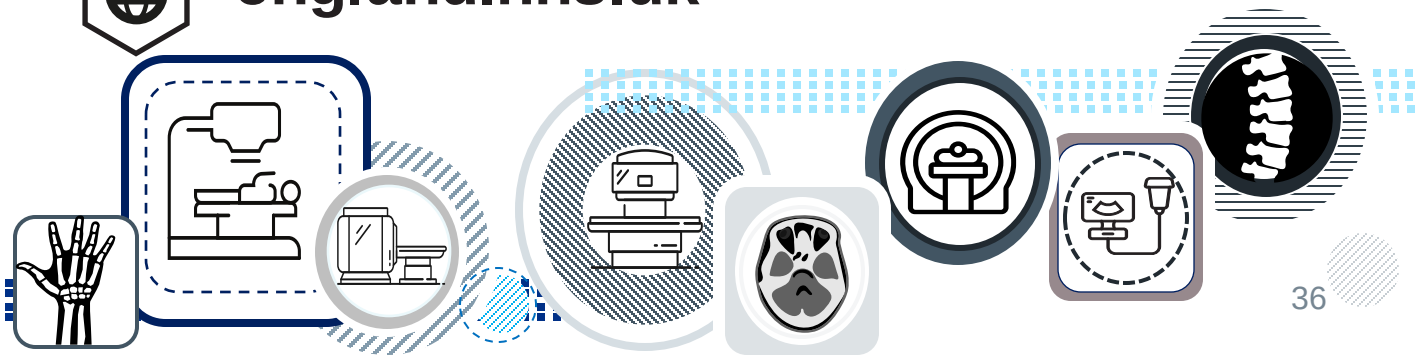
NHS England

Thank You

@nhsengland

company/nhsengland

england.nhs.uk



Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Susan Shelmerdine
Consultant Radiologist - Great Ormond Street Hospital NHS Foundation Trust

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

CONVENZIS

Speaking Now…

Rahul Singh

Consultant spine surgeon & medical devices regulatory expert - NHS & MHRA

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Up next…

Managed Healthcare Services

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Grant Roberts
Chief Executive Officer - Managed Healthcare Services Limited

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Q&A Panel

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Morning Break

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Chairs Morning Reflection

Dr Rizwan Malik

Radiologist & Managing Director - South Manchester Radiology

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Up next…

FUJIFILM

Value from Innovation

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

slido

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

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

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Up next…

exponential-e
APPLIED INNOVATION

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

slido

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

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

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Dr Sarim Ather

Radiology AI Lead - Oxford University Hospitals

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Up next…

PROACT

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Darius Virabi

Healthcare Account Director - Proact IT

PROACT

Imaging Anywhere

Where digitalisation has underpinned a transformation in patient care

healthcare.proact.co.uk

Speaker

Darius Virabi

Healthcare Account Director

NHS

Northern Care Alliance

NHS Group

PROACT

Imaging Anywhere

Where digitalisation has underpinned a transformation in patient care

healthcare.proact.co.uk

Speaker

Darius Virabi

Healthcare Account Director

NHS

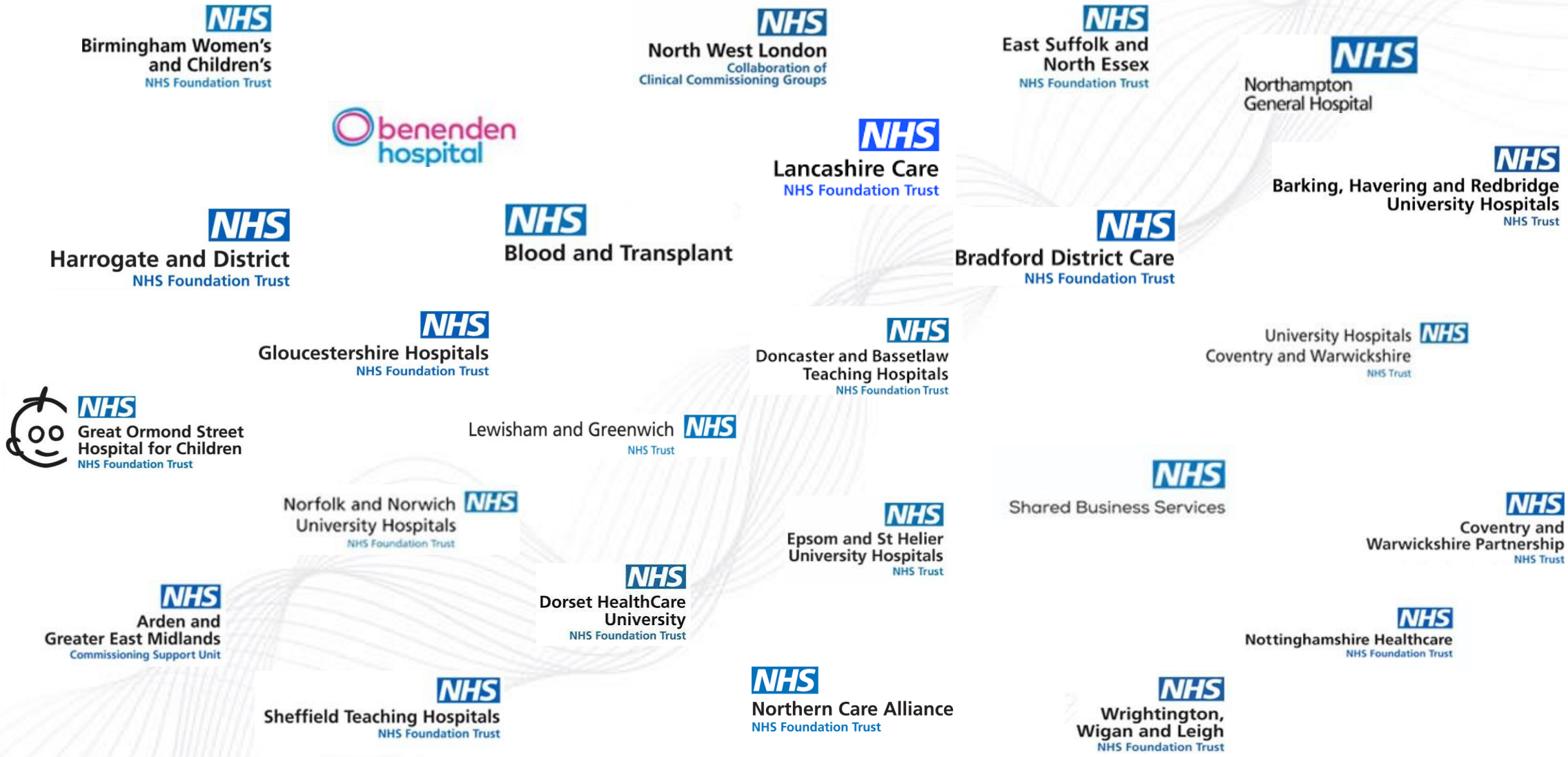
Northern Care Alliance

NHS Group

Our pedigree:

PROACT

Supporting over 75 Healthcare organisations drive digital transformation



NHS

Northern Care Alliance

NHS Group

Improving Patient Care

Radiology Challenges

NHS Northern Care Alliance NHS Foundation Trust

PROACT

Increase in demand

Nationwide shortage of Radiologists

Efficiency and speed of current VPN access

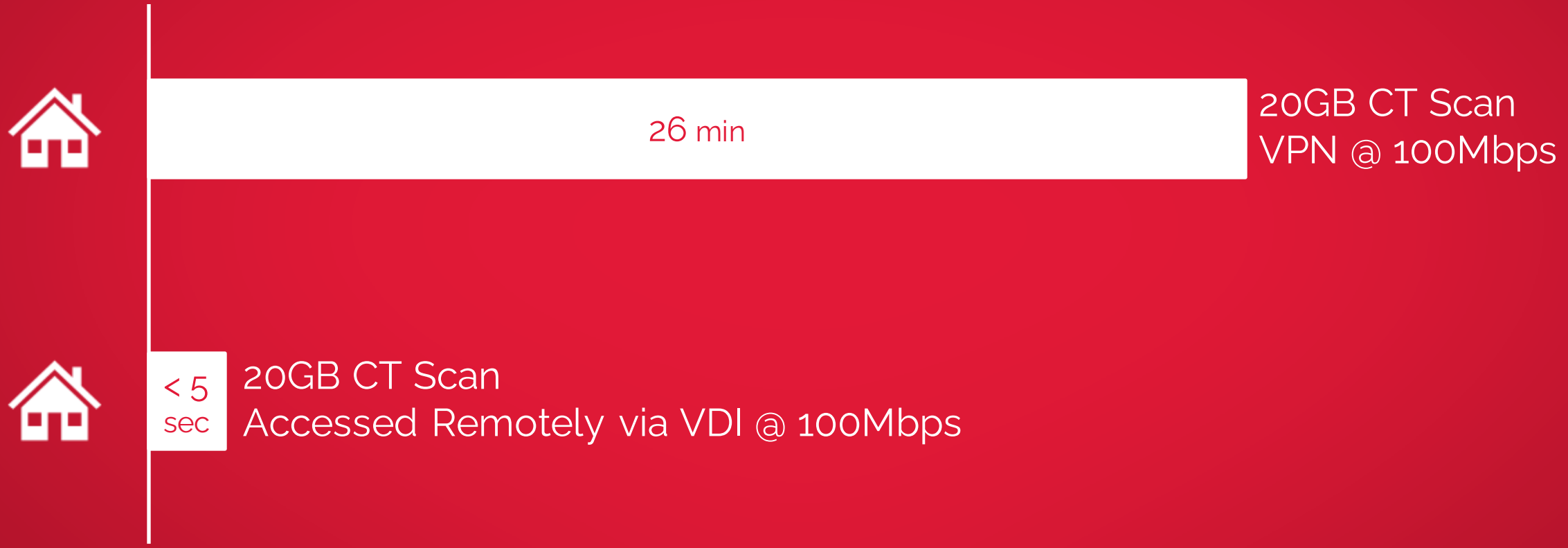
Employee Satisfaction

Operational Management

TeleRadiology = Imaging Anywhere

PROACT

Delivering pixel-perfect images over ‘thin wires’

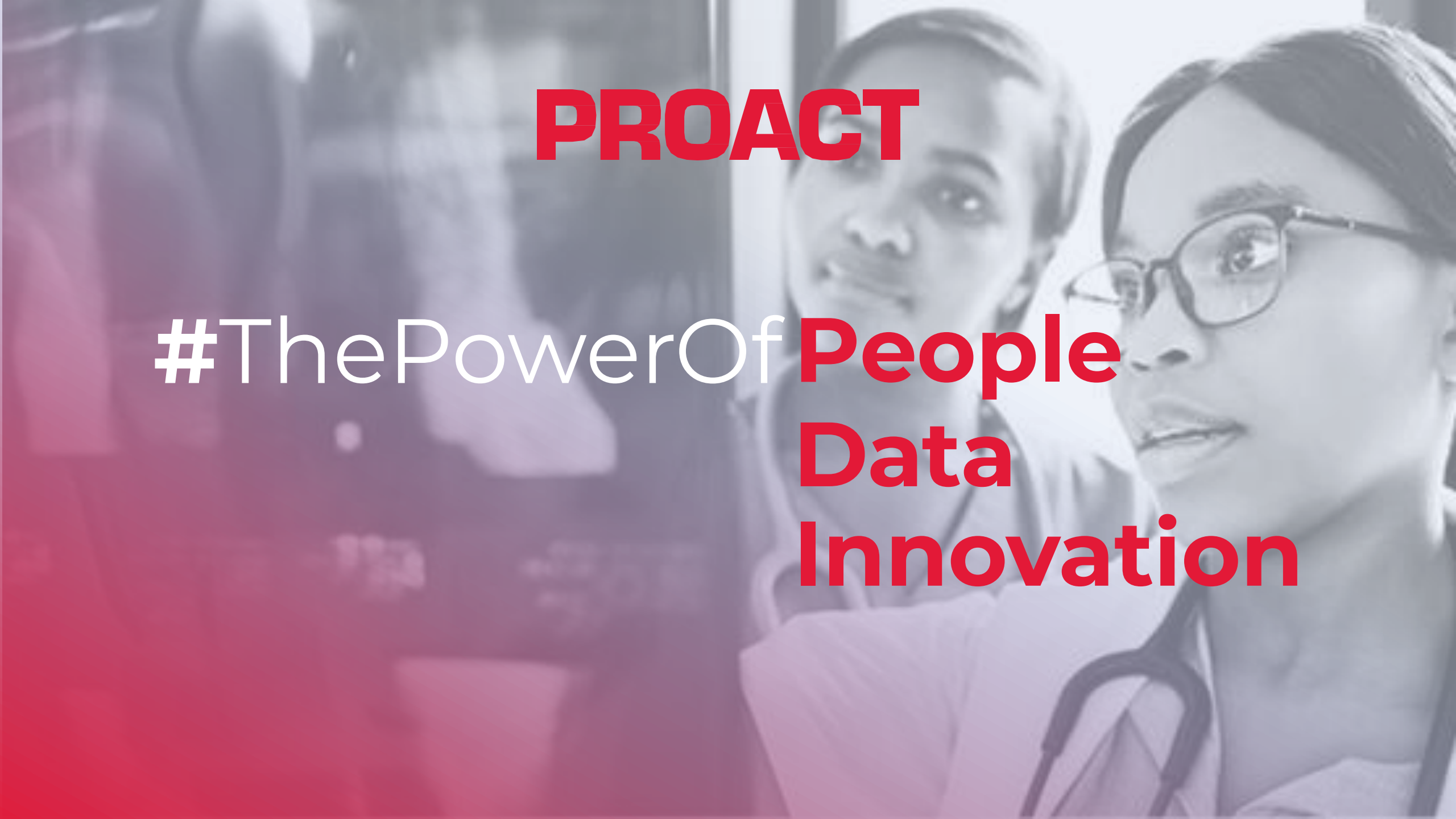


Imaging Anywhere Benefits

NHS Northern Care Alliance NHS Foundation Trust

PROACT

- Reduce the backlog / waiting lists
- Access Global talent pool of Radiologists
- Increase efficiency
- Improved work life balance
- Scalable Operational Management


PROACT
#ThePowerOf People
Data
Innovation

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

slido

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

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

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Q&A Panel

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Lunch & Networking

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Chairs Afternoon Address

Dr Rizwan Malik

Radiologist & Managing Director - South Manchester Radiology

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Up next…

BAYER

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

BAYER

Philip Baker

Business Manager UK & Ireland,
Digital Solutions - Bayer

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

slido

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

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

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Dr Amrita Kumar

Consultant Radiologist & Clinical AI Lead - Frimley Health NHS Foundation Trust

Deploying AI in Imaging

Dr Amrita Kumar

Consultant Radiologist & AI Clinical Lead, Frimley Health NHS Trust
Chair AI & Innovation Committee, British Institute of Radiology

Agenda

01

Why NHS needs to be involved

02

Implementation plan & Governance

03

Pilot Studies & preliminary results

04

Impact to date


English hospitals in urgent need of more scanners and staff to deal with backlog

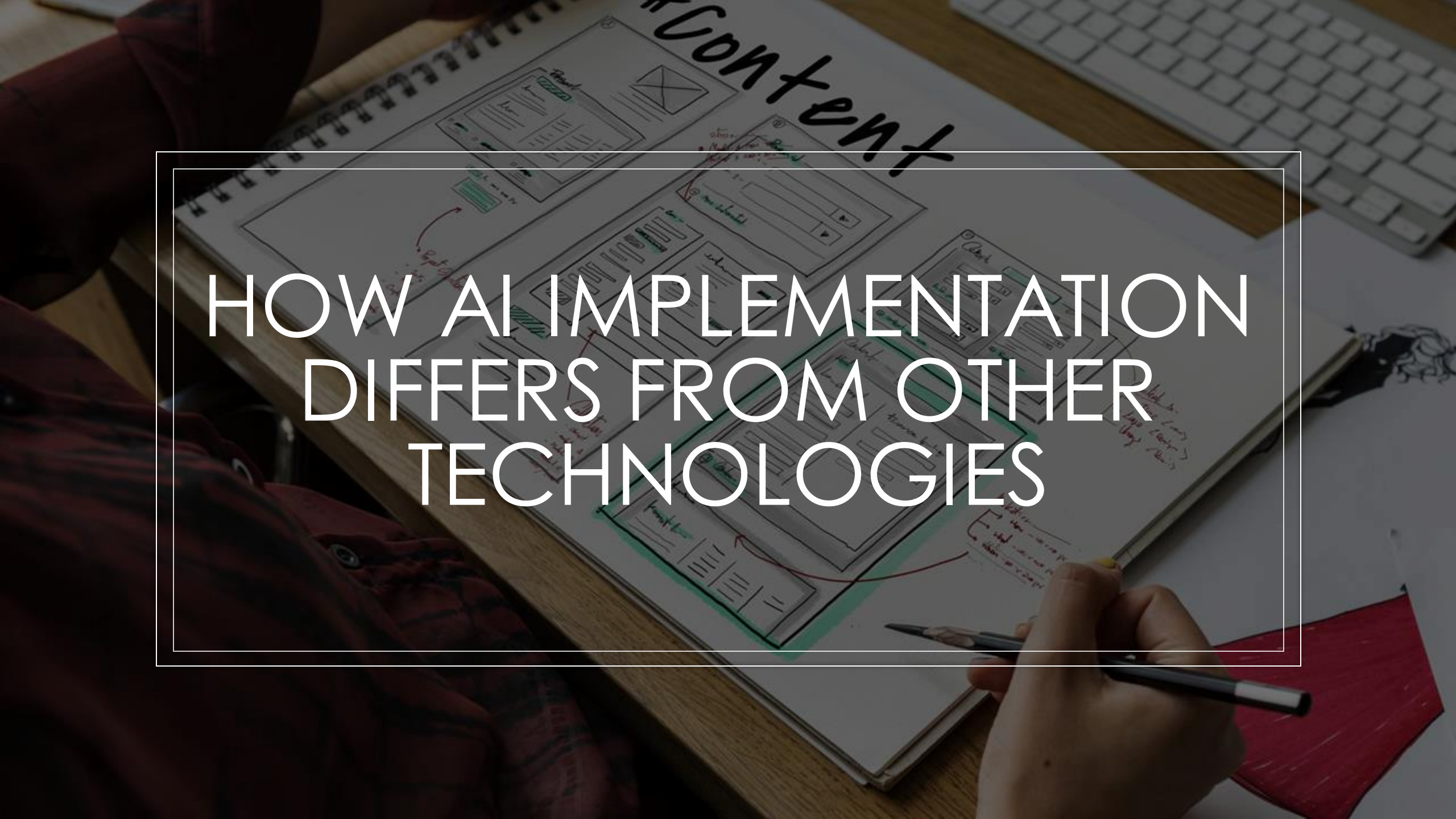
Exclusive: more than half of NHS patients referred for imaging diagnostics are waiting six weeks or more

Coronavirus - latest updates

See all our coronavirus coverage

Why is everyone talking about AI?

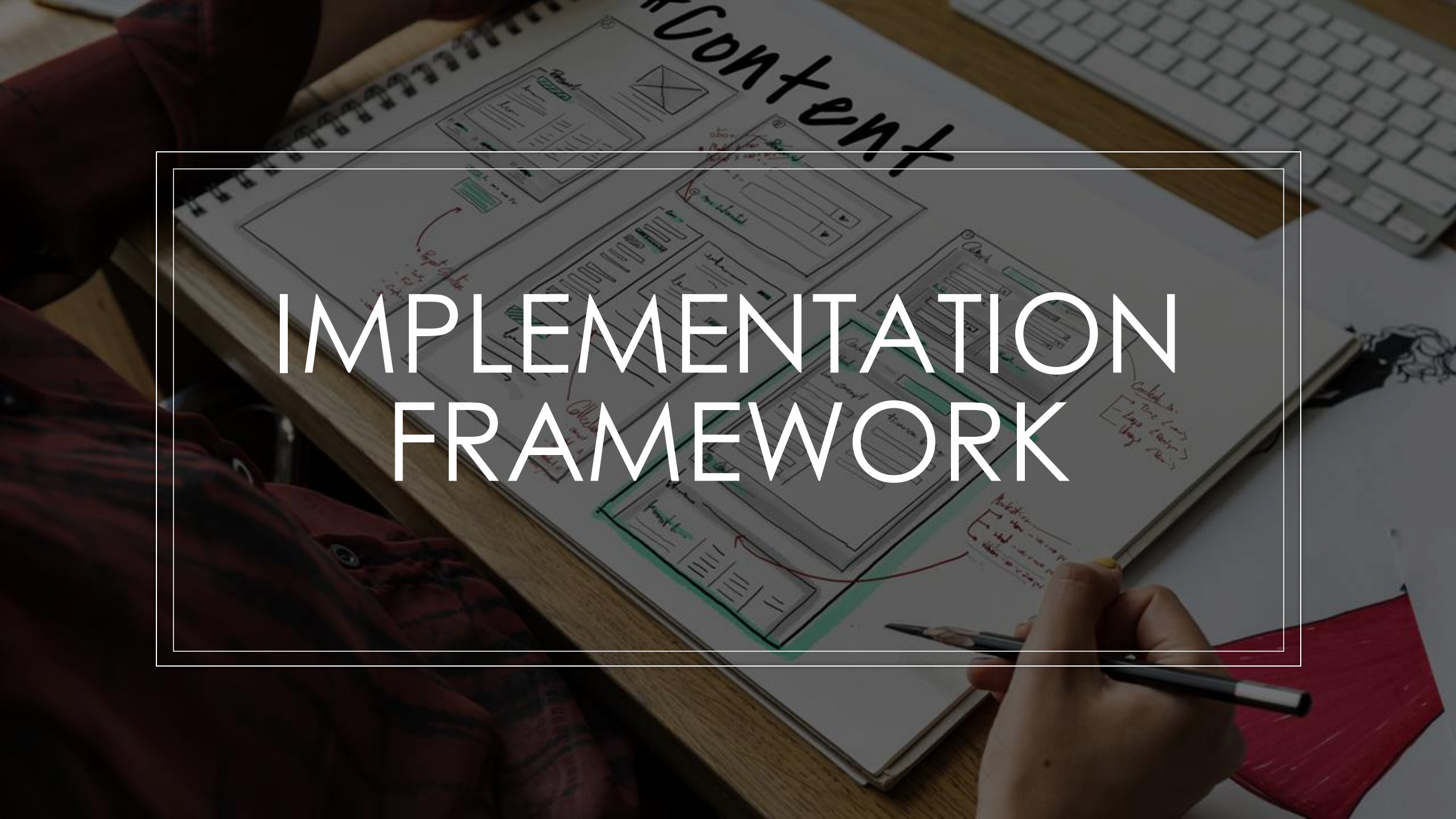
- Imaging backlog
- Radiologist/ radiographer shortage
- Precision medicine/ consumerism
- Big data revolution & exponential increase in computational power



HOW AI IMPLEMENTATION DIFFERS FROM OTHER TECHNOLOGIES

Key Differences

- AI projects can appear costly without any immediate gains in real time
- AI projects require different problem-solving skills
- Significant cultural change is needed
- Robust IT infrastructure in needed
- Different governance demands
- Requires a diverse set of stakeholders



IMPLEMENTATION FRAMEWORK

STAGE OF IMPLEMENTATION	MEASURABLE OBJECTIVE	ACTION ITEMS	DESIGNATED ACTORS
1. DISCOVERY & EVALUATION	Identify clinical priorities Define metrics of success & failure	Scoping document to align with existing vision & 5-year strategy	Exec Team – CEO, Medical Director & Trust Board
2. BUILD THE TEAM	Set up AI & Innovation Working Group	Buy-in from executive team; engage all relevant stakeholders	Clinicians, IG, digital/ PACS, R&D, Procurement, Contracts, HR, ICS

Key Knowledge Stakeholders

Clinicians	IG & Contracts	Digital	IT/PACS
Intended use case	DPIA	Aligned with Trust Digital strategy	Cloud vs On Premises deployment
Peer reviewed journals	Identify data for processing	Digital compliance- CSO/DTAC	Network security
Aware of UK Regulation/ certifications	GDPR regulation	Interoperability: fits with current infrastructure	Server/ hardware requirements

Key Decision Expert Stakeholders

R&D Team	ICS	Trust Board/ Governors	Patient Groups
Maintain portfolio	System wide vision	Aligned with Trust Digital strategy	Advocates
Governance	Help with AI Strategy	Support work & support structures	Align with core values important to patient group
Capability & capacity	Funding access	Advocates	Needed for PPI

Key External Stakeholders

NICE ESF/EVA	MAAS (Multi-agency advisory service)	MHRA	CQC
21 evidence standards relating to different aspects of product life cycle	Understanding regulations for developers, adopters & advisory service	Regulatory Guidance for Medical Devices	Guidance for providers

National AI Strategy	NHS Innovation Service	National Screening Committee	AHSN
UK Government proposals on future regulation of AI	Advice/ information/ courses in Innovation	Reviewing evidence for AI in Breast cancer screening	Projects/ Advice/ courses in innovation & health & tech innovation

STAGE OF IMPLEMENTATION	MEASURABLE OBJECTIVE	ACTION ITEMS	DESIGNATED ACTORS
3. IDENTIFY OPPORTUNITIES & VALUE	Build in-house dataset to leverage AI to create value from available data Vs. Buy evidenced models to address bottlenecks like cancer diagnosis delays	Discuss hybrid approach to build vs buy Scoping document to discuss projects and governance Project requirements	AI Board members, clinical head of depts, analytics team, ICS

STAGE OF IMPLEMENTATION	MEASURABLE OBJECTIVE	ACTION ITEMS	DESIGNATED ACTORS
4. PROJECT PLAN	Consider partnership with external vendors/ academic institutions for help to implement	Bring in funding Gain implementation & evaluation expertise	Industry partners, Regional academic hubs, National AI teams
5. BUILD MINIMUM VIABLE MACHINE	Simple implementation testing Observe biases & mitigate Act fast, fail fast approach	Create scorecard for each study Modification from feedback loop generated from MVM	Liaise with team members in Quality Improvement/ Digital transformation teams

STAGE OF IMPLEMENTATION	MEASURABLE OBJECTIVE	ACTION ITEMS	DESIGNATED ACTORS
6. DEPLOY & SCALE	Build a productive model and test intensively Carry out evaluation(silent vs live) studies of external vendor models Observe any biases & mitigate accordingly	Appropriate governance in place Present & publish initial results locally & nationally Attract funding/ national projects with established infrastructure	AI Board NHS England AI Award/ CQC/ MHRA/NICE

AI PORTFOLIO

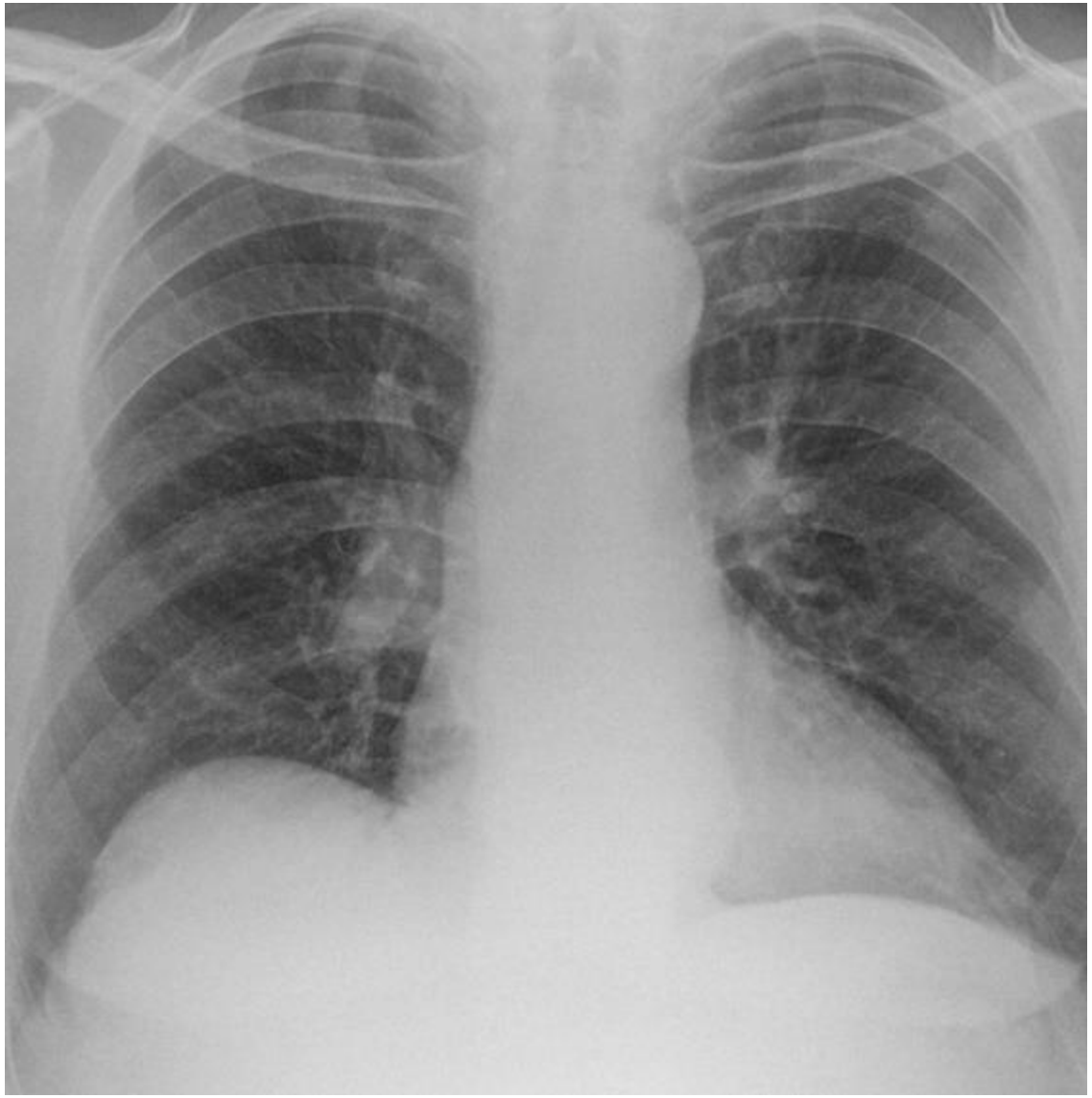
Frimley Health
NHS Foundation Trust

Current AI projects

- **NCIMI Research Portfolio – COMPLETED March 2023**
  - **Chest x-ray AI** reader study
  - **HOST Covid AI** risk stratification study
- **Imaging (service evaluation studies)**
  - **Kheiron** Medical Breast Screening Mammogram AI reader
  - **Qure.AI** Chest x-ray prioritisation & reporting reader
- **Others**
  - **Aria-Cydar NIHR Trial** AI image guidance for endovascular surgery (research)
  - **Ufonia** Autonomous telemedicine for follow-up for cataract patients (pilot)

Qure.AI

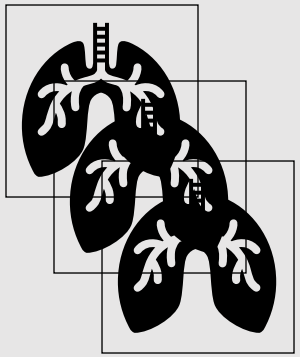
- **Aim:** qXR is an AI enabled software that can detect and create comprehensive interpretation of chest X-rays. AI to triage and report normal chest radiographs to reduce burden on radiologists
- **Patient recruited: pilot** aim 1000 (first **real-world prospective stealth mode** deployment)
- **Patient Benefit:** Faster diagnosis & treatment of lung cancer
- **Other Benefits:** Faster turnaround time; Potentially reduce burden on radiologists for reporting of normal chest radiographs; CQC KPI improvement; independent external cost benefit evaluation – Initial results show 58% normal CXR can be triaged away to radiographers saving up to 2 hours of radiologists' time – can be used for CT/MRI backlog
- **Risks:** IG/data governance
- **Open:** Ongoing



The need for Chest X-ray AI

- GP and OP approx. 150 Chest X-ray daily
- GP CXR are reported within 24-48hours
- OP CXR are at risk of late diagnosis given the high workloads
- Hypothesis: AI - qXR has the potential to triage at least 40% of normal CXR away from the consultant radiologist reporting worklist
    - Allowing faster diagnosis for lung cancer
    - More time given back to Radiologists for CT/MRI specialist reporting

Current Reporting Workflow



Patient 1

Patient 2

Patient 3

....

.....

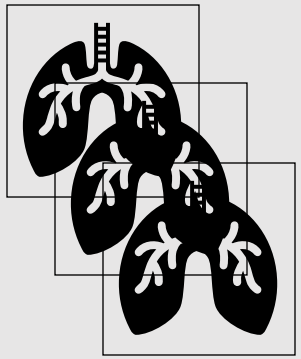
Patient 50

Reporting Turnaround time 1-30 days

Normal

Abnormal – further investigation & biopsy

Pilot Proposed - Reporting Workflow with AI



AI Tool Reading prioritisation

Patient 1

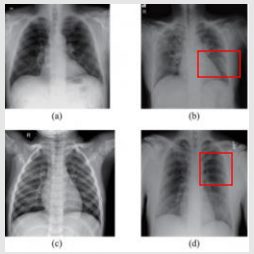
Patient 2

Patient 3

....

.....

Patient 50



Normal TRIAGE TO TRAINED RADIOGRAPHER

Abnormal /Suspected Abnormal

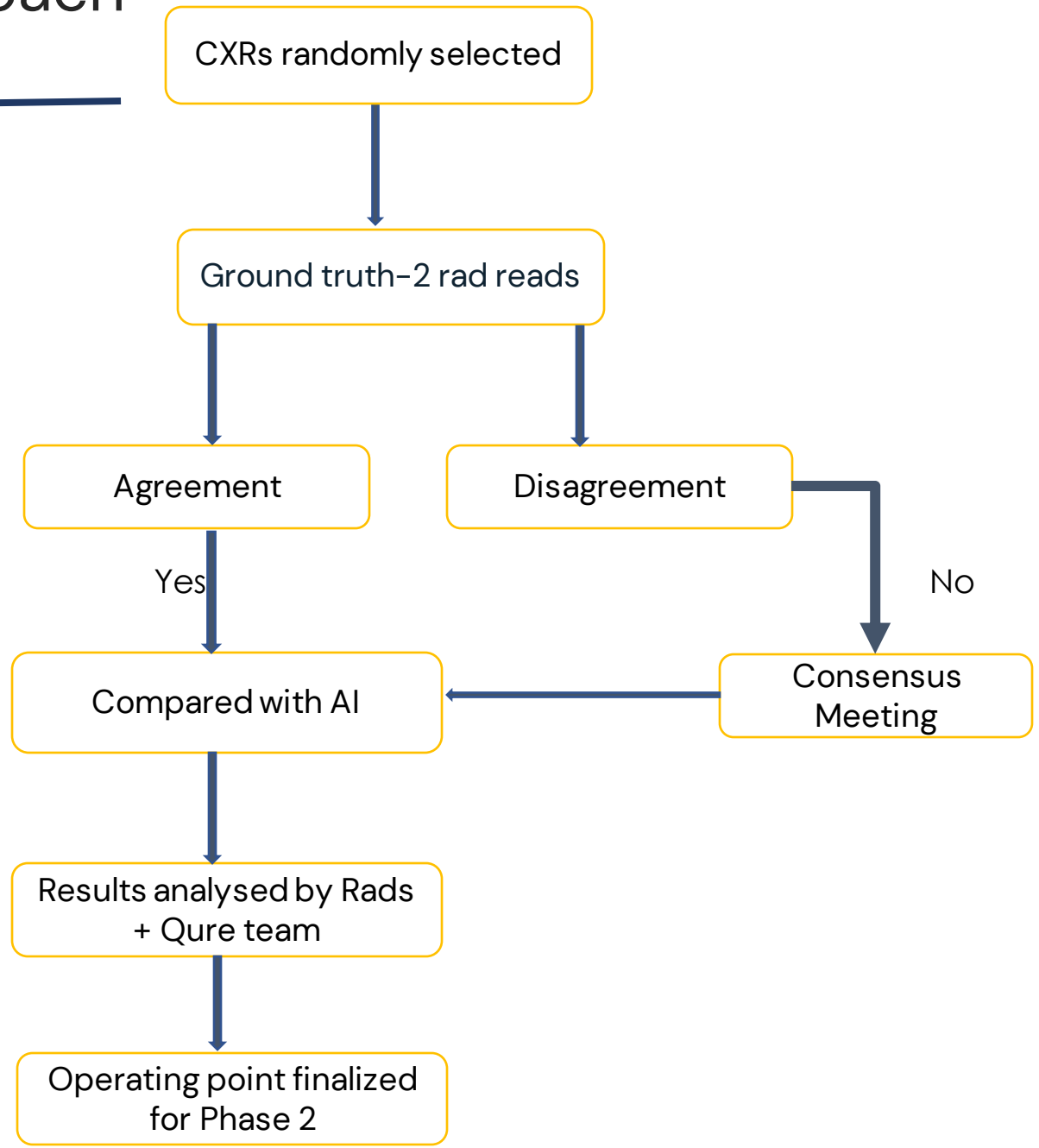
Final Report

Normal

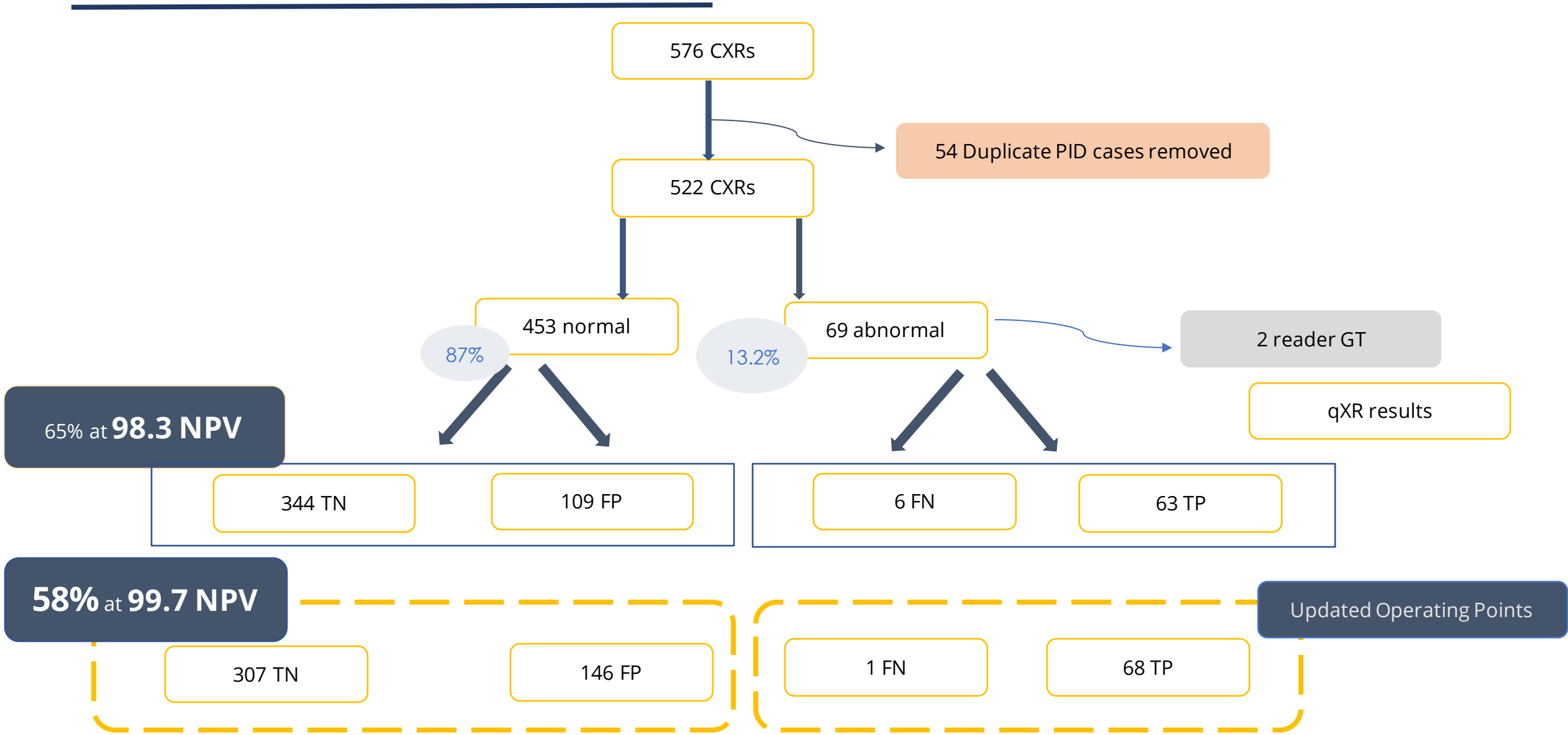
Abnormal

Methodology- A Collaborative Approach

- 522 Chest X-Ray randomly selected ~ 3 months
- OP and GP Pathway
- 2 independent reads by Consultant Radiologist
- Discordant cases were discussed
- AI and Radiologist was compared on QureApp Application
- Data was recorded and analysed



Results of the Phase-1 study



Post analysis- identifying the ideal operating point

	pid	Free text	Category	opacity_pred	opacity_scor	abnormal_pr	hilar_pred	hilar_score
273	1	nodule - ct normal	False Negative	0	0.48794398	No	0	0.08911676
477	2	inflamm changes left base	False Negative	0	0.44619873	No	0	0.25263718
187	3	nodule - CT performed	False Negative	0	0.40480459	No	0	0.21677023
507	4	Lung cancer	False Negative	0	0.37349525	No	0	0.10701009
58	5	Rt hilar fullnes. CT Normal	False Negative	0	0.17822313	No	0	0.87487537
126	6	Rt vascular markings, CT normal	False Negative	0	0.10974643	No	0	0.22672613

Metric	Computation	Value (95% CI)
Negative predictive value	342/348	98.28 (92.29 – 99.21)
Sensitivity	63/69	91.30 (82.30 – 95.95)
Positive predictive value	63/174	36.21 (29.44 – 43.57)
Specificity	342/453	75.50 (71.33 – 79.23)

Metric	Computation	Value (95% CI)
Negative predictive value	307/308	99.68 (97.77 to 99.95)
Sensitivity	68/69	98.55 (92.19 to 99.96)
Positive predictive value	68/214	31.78(28.89 to 34.81)
Specificity	307/453	67.78 (63.25 to 72.06)


AI GOVERNANCE

Governance Objective

Frimley Excellence

The objective of the Project Plan and Dashboard for our Research & Development Artificial Intelligence study portfolio is to provide a structured, organised and transparent method for managing the lifecycle of AI studies from setup to closedown.

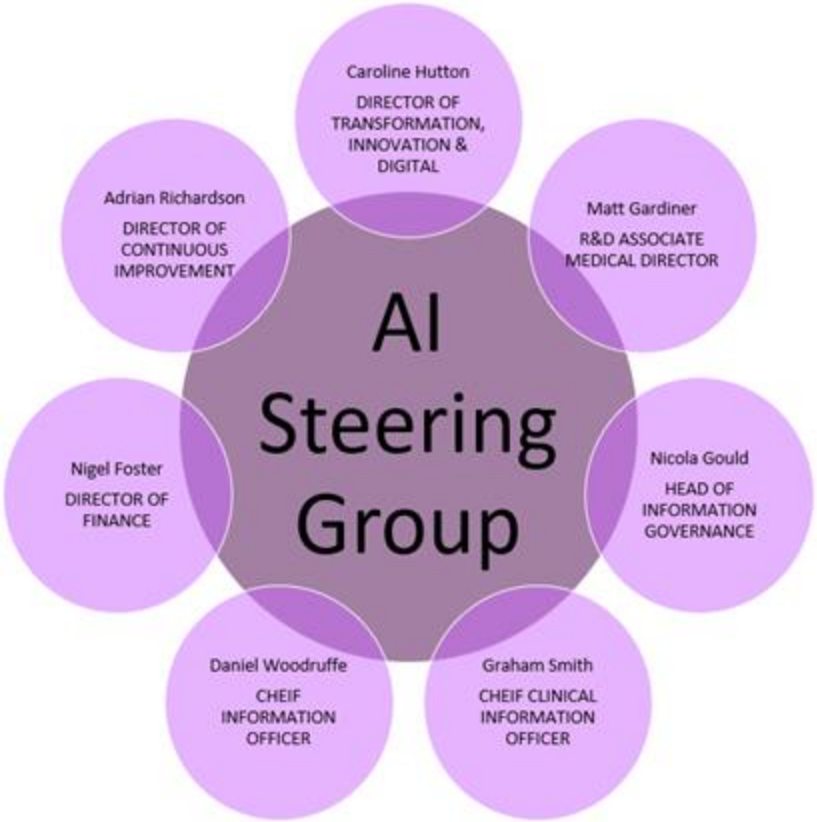
This will enable Frimley Health NHS Foundation Trust to:

- Improve and streamline AI study set up and delivery
- Ensure the focus is on high quality implementation while maintaining clinical excellence
- Formally close-down and archive a completed study.

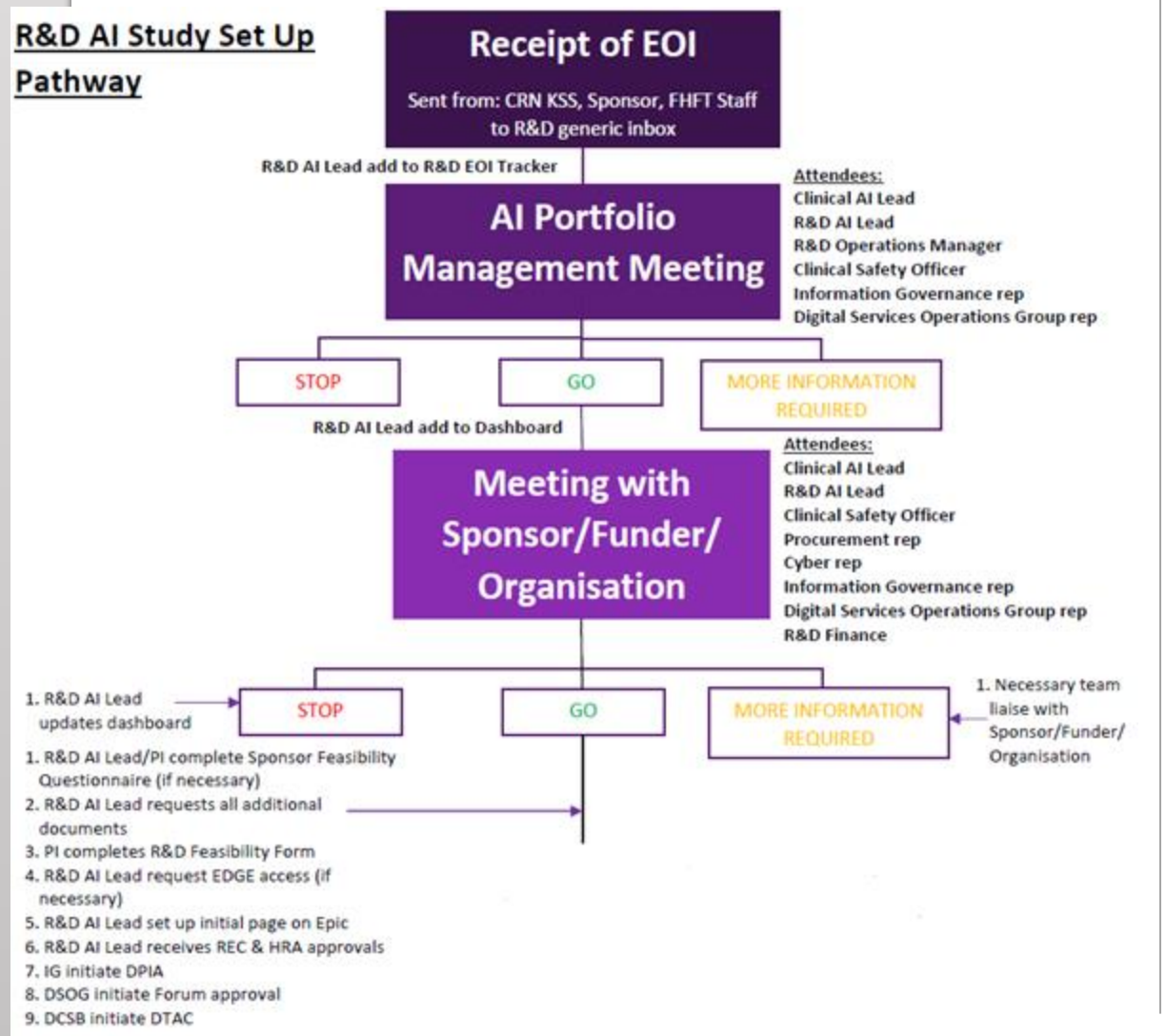
Frimley Health AI Governance

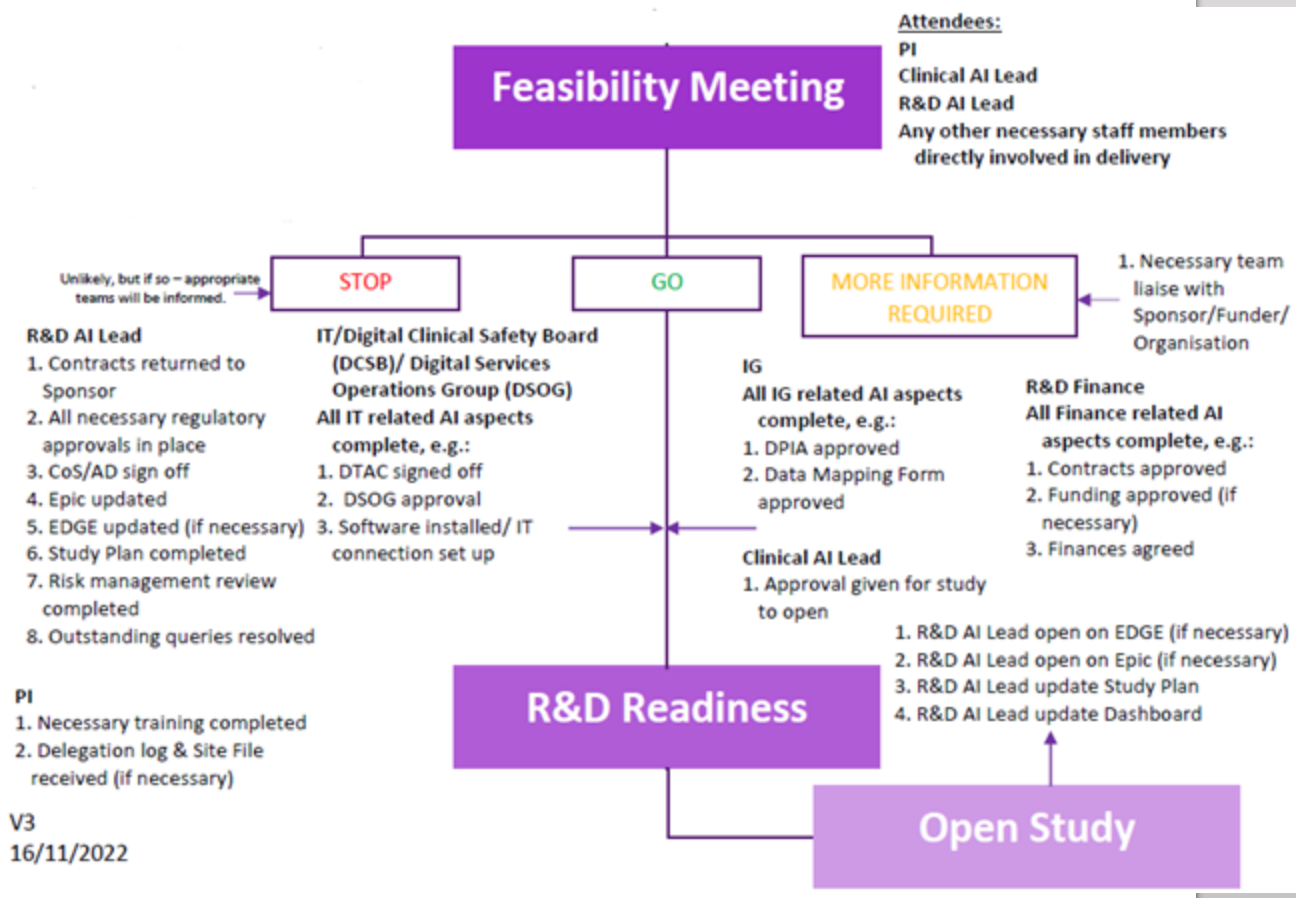
1.With the current gap in AI governance guidance, we set out to create our own pathway.

1.Collaborated with Frimley Excellence to build a pathway and contacted stakeholders within Frimley Health.



AI Study Set Up Pathway





Programme Dashboard

AI Projects - Management Dashboard

PURPOSE OF THIS PLAN IS TO CAPTURE AND COMPLETE ALL KEY TASKS & ACT

Project Nu	Programme	RAG	AI Project	PI	IRAS Number	Feasibility Approved	REC Approved	HRA Approved	CODA Approved	DPIA Approved	Contracts Signed	Clinial AI Lead Approv	CoSR AD Approved	R&D Approved	Date Opened (aspiratio	Date Completed	Date Closed	Date Archived	Owner	Status
1	NCIMI																			
			HOST	Amrita Kumar	282670	26/01/2022	N/A	19/05/2020	N/A	24/06/2021	02/03/2022	24/11/2022	10/12/2020	24/11/2022	24/11/2022					Open
			Back Pain	Naffis Anjarwala	207858															Initiation
			CXR Reader (Market Evaluation)	Amrita Kumar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A							Complete
2	Kheiron																			
			Kheiron Mia Reader (Service Evaluation)	Amrita Kumar	N/A	N/A	N/A	N/A	N/A	23/04/2021	19/05/2022	07/04/2022	25/11/2022	N/A	N/A	29/11/2022					Readiness preparation
3	QureAI																			
			qXR (Service Evaluation)	Amrita Kumar	N/A	N/A	N/A	N/A	N/A	23/04/2021	19/05/2022			N/A							Readiness preparation
4	Moorfields Eye Hospital																			
			PRECISE	Geeta Menon	251170	22/03/2018	29/08/2019	16/09/2019	N/A	N/A	11/12/2019	N/A	14/10/2019	18/12/2019	21/01/2020					Open
5	University of Southampt																			
			PINNACLE	Geeta Menon	256931	31/03/2016	23/08/2019	23/08/2019	N/A	N/A	28/08/2020	N/A	02/01/2020	18/09/2020	18/09/2020					Open
6	Optellum																			
			DOLCE	Siobhan Green	303378															Feasibility
7	CYDAR Medical																			
			ARIA	David Gerrard	280257		10/02/2022	10/02/2022												Initiation
8	OPTIMAM																			
			OPTIMAM Mammograpy	Amrita Kumar	265403															Initiation
9	??																			
			Arraculum	Unknown	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not opened
10	iSchemaView																			
			RapidAI	Ottilia Speirs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not opened
11	BigCOPData																			
			Big COPD	Unknown	266988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not opened
12	Lucida Medical																			
			LM-PCA-1	Simon Bott	278640	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not opened
13	??																			
			ISFBC AI	Thomas Poole	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not opened

Project Plan

AI Generic Project Plan

PURPOSE OF THIS PLAN IS TO CAPTURE AND COMPLETE **ALL KEY TASKS & ACTIVITIES** TO DELIVER THE OBJECTIVE/s.

RAG	TASK	Owner	Status	Date Required
1	**Initiation**			
1.01	Send EOI to R&D	R&D AI Lead		
1.02	Add to EOI Tracker	R&D AI Lead		
1.03	Request HRA & REC approvals	R&D AI Lead		
1.04	Request protocol	R&D AI Lead		
1.05	Decision Point: AI Portfolio Management Meeting -> Stop/Go/More Information Required			
1.06	Add to Dashboard and R&D Study Tracker	R&D AI Lead		
1.07	Protocol received	R&D AI Lead		
1.08	Arrange meeting with FHFT AI Team and Sponsor/Funder/Organisation	R&D AI Lead		
1.09	Decision Point: Meeting with Sponsor/Funder/Organisation -> Stop/Go/More Information Required			
1.1	Complete Sponsor Feasibility Form (if applicable)	PI		
1.11	PI identified	Clinical AI		
2	**R&D Feasibility**			
2.01	Update Dashboard and R&D Study Tracker	R&D AI Lead		
2.02	Request Local Information Pack	R&D AI Lead		
2.03	Local Information Pack received	R&D AI Lead		
2.04	HRA & REC approval received	R&D AI Lead		
2.05	Request EDGE access (if applicable)	R&D AI Lead		
2.06	Set up intial page on Epic (if necessary)	R&D AI Lead		
2.07	Complete Data Mapping Form	R&D AI Lead		
2.08	Arrange Feasibility Meeting	R&D AI Lead		
2.09	Complete R&D Feasibility Form	PI		
2.1	DPIA initiated	IG		
2.11	CODA approval initiated	CODA Forum		
2.12	DTAC initiated	DCSB		
2.13	Decicion Point: Feasibility Meeting -> Stop/Go/More Information Required			
2.14	R&D Feasibility Form sign off	R&D AI Lead		
2.15	Communicate with Sponsor regarding outstanding queries	R&D AI Lead		
2.16	Sponsor provided answers to all queries	R&D AI Lead		
2.17	Identify Project specific deliverable variables	R&D AI Lead/PI/Clinic		
3	**R&D Readiness Preparation**			
2.01	IT	CODA approved	IT		
2.02		Software installed	IT		
2.03		Connection set up	IT		
2.04		DTAC approved	IT		
2.05		IT Requirements complete	IT		
2.06	IG	DPIA Approved	IG		
2.07		IG Requirements Complete	IG		
2.08	Finance	Funding approved (if necessary)	R&D Finance		
2.09		Costings reviewed & approved	R&D Finance		
2.10		Contracts reviewed & approved	R&D Finance		
2.11		Finance Requirements complete	R&D Finance		
2.12	R&D	Contracts Signed & returned to Sponsor	R&D AI Lead		
2.13		All necessary regulatory approvals in place	R&D AI Lead		
2.14		CoSVAD Sign Off (Cheif of Service & Associate Director)	R&D AI Lead		
2.15		Epic Updated (if necessary)	R&D AI Lead		
2.16		EDGE Updated (if necessary)	R&D AI Lead		
2.17		Study Tracker complete	R&D AI Lead		
2.18		Research Investigator Agreeement signed by PI	R&D AI Lead		
2.19		Outstanding queries resolved with Sponsor	R&D AI Lead		
2.20		Delegation Log and Site File received (if applicable)	PI		
2.21		Training complete	PI		
2.22		Risk management review complete	PI		
2.23		Project to Open approval	Clinical AI		
4	**R&D Readiness**			
4.01	Decision Point: R&D Readiness to open Project		R&D AI Lead		
4.02	Readiness email sent to PI, Sponsor & Project team for handover		R&D AI Lead		
4.03	Open Project on EDGE (if necessary)		R&D AI Lead		
4.04	Open Project on Epic (if necessary)		R&D AI Lead		
4.05	Open Project on R&D Study Tracker		R&D AI Lead		
40.50	Update Dashboard		R&D AI Lead		
5	**Project Open**			
5.01	Insert Project specific deliverables		R&D AI Lead		
6	**Project Completed**			
6.01	Above Project specific deliverables met (e.g. Recruitment target reached, data transfer comp		R&D AI Lead		
7	**Project Closed**			
7.01	Close out checklist requested from Sponsor		PI		
7.02	Close out checklist compeleted		PI		
7.03	Close out checklist signed		PI		
8	**Project Open**			
8.01	Project documentation filed into appropriate boxes		R&D Support Officer		
8.02	Project boxes sent to Iron Mountain		R&D Support Officer		

Risk Management

RISK REGISTER - AI Projects

Risks should be registered in accordance with the FHFT Risk Management Strategy 2021-2025

Descriptor Refer FHFT Risk Strategy	Risk Title & Description [Format = Cause & Effect]	Likelihood (0-5)	Consequence (5)	Rating (1-25)	Risk Owner	Target Close date	Response (Tolerate, Treat, Transfer, Terminate)
Sample ie: Patient/Staff Safety	**Title:** If X was to happen, then Y would or could be the outcome resulting in the objective **not** being met to the expected Time, Quality or Cost.	2	3	6	Sunil	31/10/2022	Treat: The action that is being taken to reduce the impact or likelihood
Regulations/Compliancy	within it (Epic) may not be MHRA compliant resulting in breach of regulations.	3	5	15			
		2	5	10			
		4	4	16			
		5	5	25			
				0			
		2	2	4			
		3	2	6			
		4	2	8			
		5	2	10			
		1	3	3			
		2	3	6			
		3	3	9			
		4	3	12			
		5	3	15			
		1	4	4			
		2	4	8			
		3	4	12			
		4	4	16			
		5	5	25			

R (risk) = C (consequence) x L (likelihood)

Likelihood	Consequence				
	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

- Treat - take actions to **reduce** the level of risk – prevent, correct (contingency), direct (e.g. training)
- Tolerate - can the level of risk be tolerated without further action?
- Transfer - can the responsibility for the risk be transferred to someone else?
- Terminate - can you stop doing this activity?

IMPACT SO FAR

Local Impact

- **6 Technologies supported over last 3 years >£300K funding**
  - **1 project with NHS England AI Award**
  - **1 project with Innovate UK via NCIMI**
- **Raised social media coverages**
  - **>25,000 impressions made over Twitter & LinkedIn**
- **Impacting potentially 4500 patients to date (silent evaluations)**
  - **Great potential for triage & prioritisation (58-85% normal studies reported correctly by AI)**
  - **Improve productivity – saving up to 2hrs of Consultant time**
  - **Faster reporting turnaround time – reduce 32-day pathway**
  - **Faster cancer diagnosis – faster treatment – faster recovery back to work**

National Impact

- **Frimley health have created framework for safe & effective implementation of AI into clinical pathways**
  - **Showcased at NHS England SE and uploaded into NHS Futures website 2022**
  - **Presented to DOHSC Jan 2023**
  - **BBC documentary through DOHCS May 2023**
  - **Invited to present at the HM Treasury May 2023**
- **5 National presentations at Conferences UK 2023**


THANK YOU

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Speaking Now…

Chris Sleight
Chief Officer - Greater Manchester Imaging & Pathology Networks -
Greater Manchester Provider Federation Board

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

The Sustainable Workforce of the Future – Do Generations Z and Alpha have the solution?

Mr Chris Sleight
Chief Officer
Greater Manchester Pathology & Imaging Networks
Email: Chris.Sleight@nca.nhs.uk

CONVENZIS

Imaging Innovation Conference South – Advancing NHS Radiology

18th October 2023

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

Who am I am what is my role?

- *I started my career as a Junior B MLSO (with degree in Physics & Mathematics!?!)*
- *Divisional Director for Diagnostics at Pennine Acute Hospitals in 2008*
- *Various Operation and Strategic Senior Roles in Greater Manchester – member of GM PACS Collaborative Board and became SRO for the Board in 2018*
- Chief Officer for the Greater Manchester Imaging Network
- Chief Officer for the Greater Manchester Pathology Network
- SRO for GM Community Diagnostic Centre Programme
- Chair of GM Diagnostics Digital Board
- I have Programme Director responsibilities for GM Pharmacy programmes……and I am a father of 4 boys

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

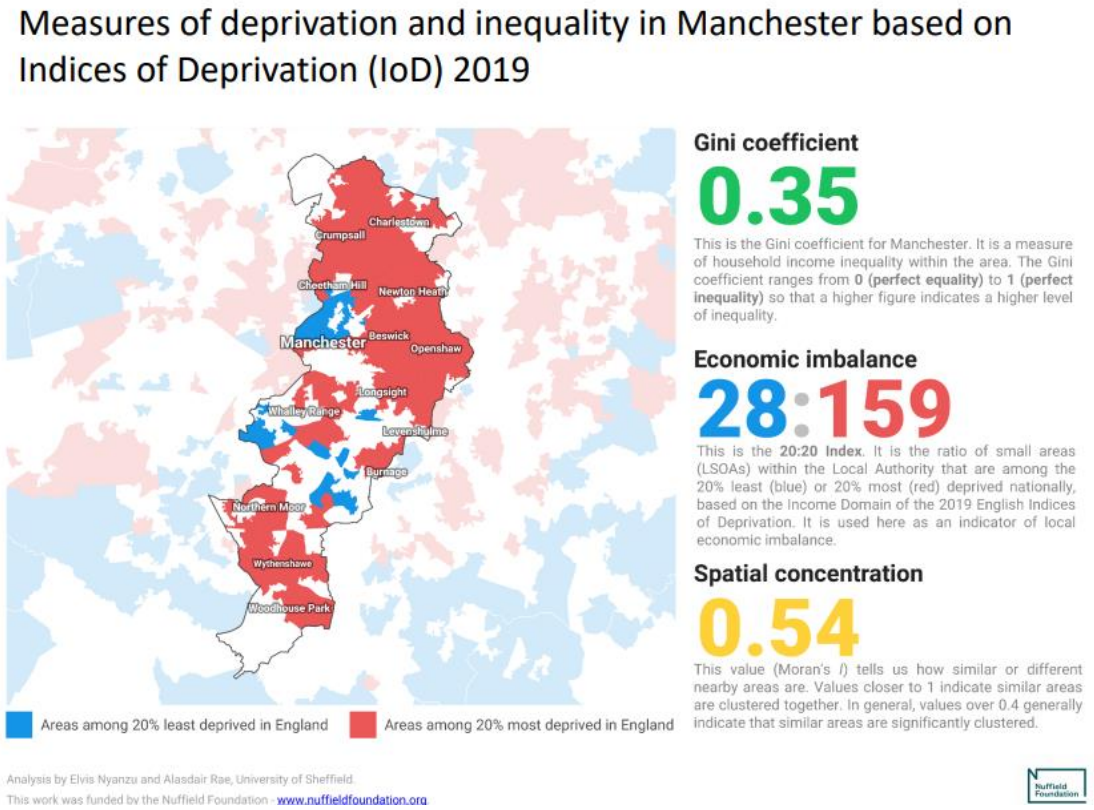
The Sustainable Workforce of the Future Do Generations Z and Alpha have the solution?

- *Priorities for GM Imaging Network; with a focus on*
  - *Reducing Health Inequalities*
  - *Digital Enablers*
  - *Workforce*
- *Why a short-, medium-, and LONG-TERM Workforce Focus is critical now to sustain future services*
  - *An ageing Population*
  - *New Generations with different stereotypes*


Greater Manchester

MANCHESTER
22 05 17
NEVER FORGET
STRONGER TOGETHER


650
THE OLD WELLINGTON
Sinclairs Oyster Bar



Life expectancy at birth for Manchester residents fell by an estimated 3.1 years for men and 1.9 years for women in 2020.

42% of children under-16 in Manchester are living in poverty. Approximately two thirds of those children are in a family where at least one parent is working.

1 in 4 of Manchester's 16-19 years old are unemployed

1 in 3 Manchester children are not school-ready when they start reception

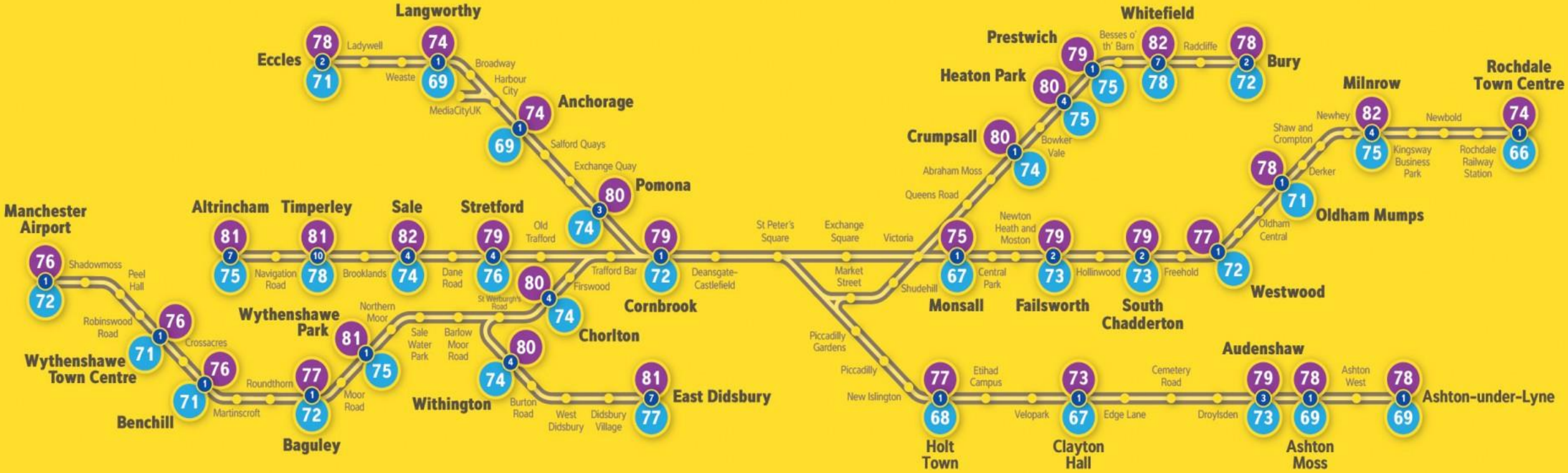
1 in 5 of all unemployed residents aren't in work due to long-term sickness

The ethnic diversity of Manchester's population is increasing. We are the only city outside London to have residents in each of the 90 listed ethnic groups in the census. Over 200 languages are spoken here.

Source: Manchester City Council – Building Back Fairer - Tackling Health Inequalities in Manchester 2022–2027

Life on the line? Differences in life expectancy across Greater Manchester

Female life expectancy at birth (years) **Male** life expectancy at birth (years) **IMD** Decile (1 most deprived; 10 least deprived)



Tram Network: The Metrolink tram network across Greater Manchester includes nearly 100 kilometres of track and 93 stops. In 2015 there were around 33.4 million journeys (Metrolink 2015). The average journey time between tram stops is 2 minutes, but some stops are further apart.

Data Sources: Office for National Statistics experimental ward level life expectancy and health living life expectancy estimates (ONS 2006) linked to selected Greater Manchester Metrolink tram stops. The selection highlights some of the biggest differences between tram stops. We also include information on socio-economic deprivation at ward level from the Index of Multiple Deprivation.

The life expectancy data is based on mortality among those living in each particular ward in 1999-2003. The estimates are not the exact number of years a baby born in the ward could actually expect to live, both because the death rates of the area are likely to change in the future, as is health care provision and because many of those people born in the ward will live elsewhere for at least some part of their lives.

MANCHESTER 1824
The University of Manchester

What makes your area different to other areas? Let us know. Email: life.expectancy@manchester.ac.uk

GM Health and Care System has made a commitment to tackling digital inclusion, directly linked to improving inequalities.

Digital inclusion is a key element of Manchester's approach to reducing Health Inequalities

Linked to GM Health Priorities, the Digital Inclusion Action network has been established to drive mainstream digital inclusion in the transformation of public services, place – making and economic growth.

Also, "Building Back Fairer in Manchester - The action plan", includes one of its primary objectives as "Preventing illness and early death through killers like heart disease, lung disease, diabetes and cancer"

The Diagnostics Digital Enterprise Solution is a key enabler to support early diagnosis for imaging and pathology.

Our ambition for PBR and Digital Pathology is to introduce GM wide operating models so patients receive not only better access to image acquisition, but reporting is undertaken Trust wide by appropriate experts to smooth waiting times across the conurbation, thus improving patient outcomes through faster diagnosis and early intervention.

THE GM Imaging NETWORK

- Bolton NHS Foundation Trust
- Northern Care Alliance Foundation Trust
- Manchester University Foundation Trust
- Tameside and Glossop Integrated Care NHS Foundation Trust
- Stockport NHS Foundation Trust
- Wrightington, Wigan and Leigh NHS Foundation Trust
- The Christie NHS Foundation Trust
- East Cheshire NHS Trust

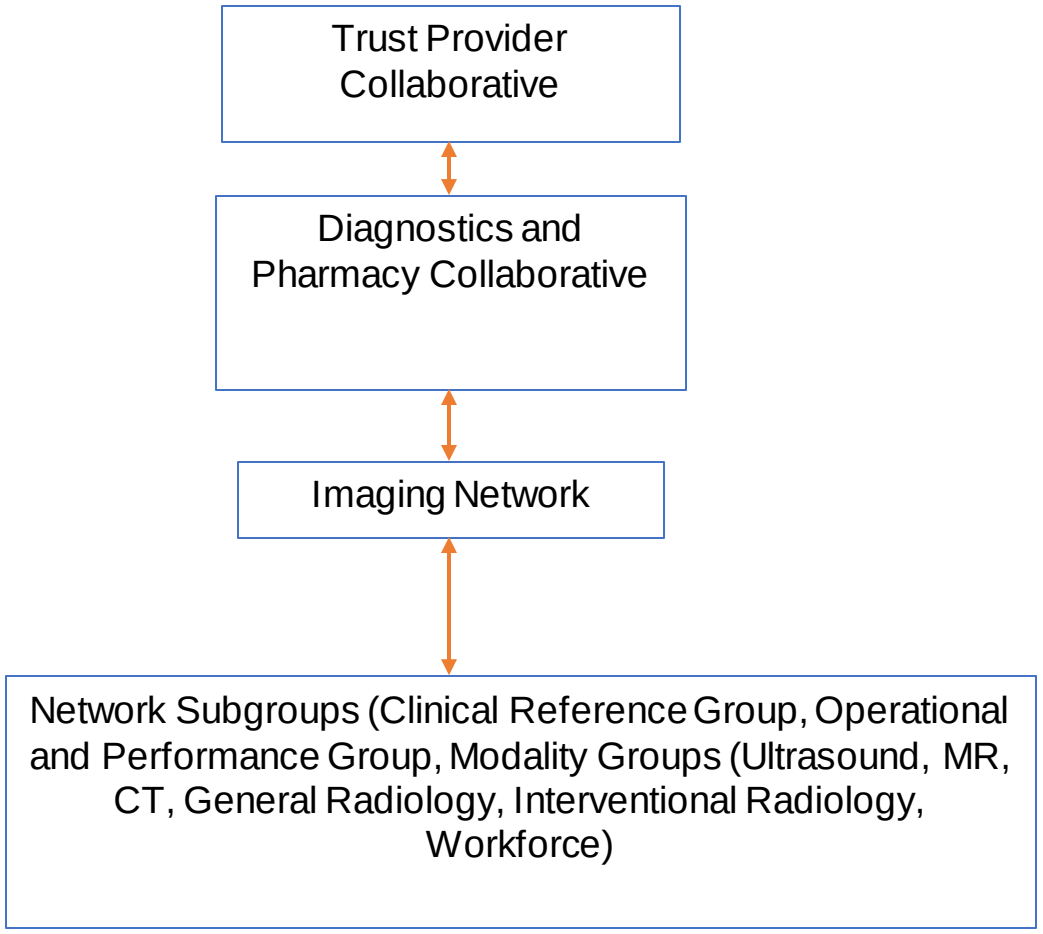
Priority Themes for GM Imaging

- Workforce,
- Workforce,
- Workforce!
- Increasing Capacity
- Improving Efficiency and Productivity
- Pathway Improvement
- Ensuring Demand is Appropriate
- Levelling Up (working as a GM system by sharing and **implementing** best practice & Reducing Health Inequalities)
- Communication

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

GREATER MANCHESTER IMAGING AND PATHOLOGY NETWORKS

Current Governance and network structure



Current major project/programmes of work

Project/Programmes	Impact on service users
Digital Pathology	Introduction of digital pathology in Histopathology, reduce health inequalities across the network.
PACS and PBR	Now we have a single PACS system, swiftly implement and role out PACS based reporting.
CDC	Increase diagnostic capacity, reduce wait time for diagnosis.
Imaging Network Maturity	Collaboration between Imaging services, reduce patient (and staff) inequality and increase efficiencies and robustness of Imaging services in GM.

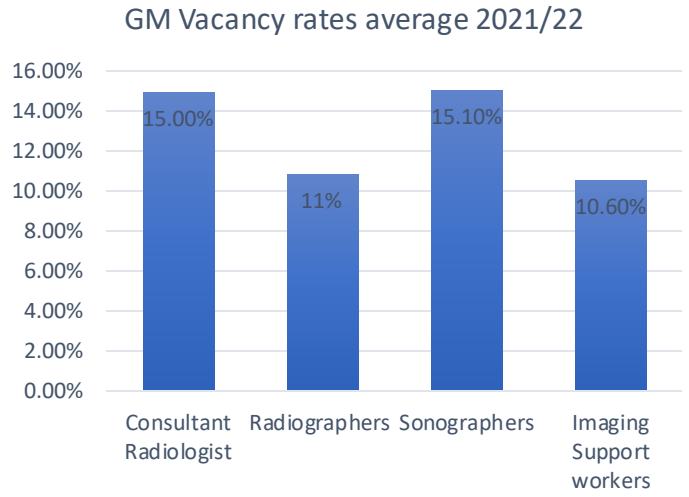
GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

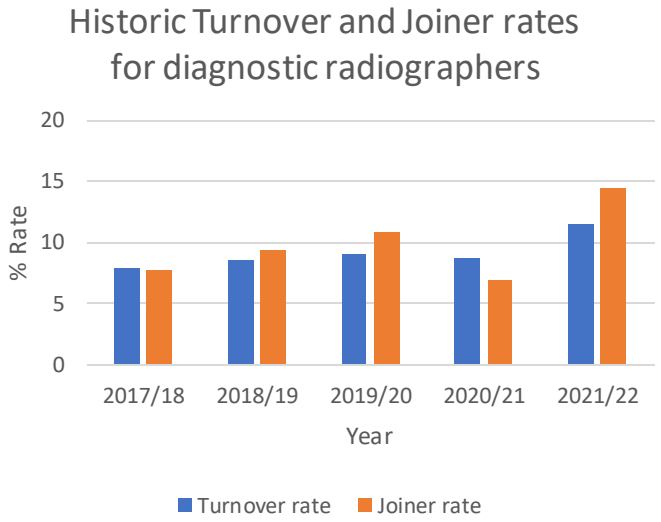
NHS

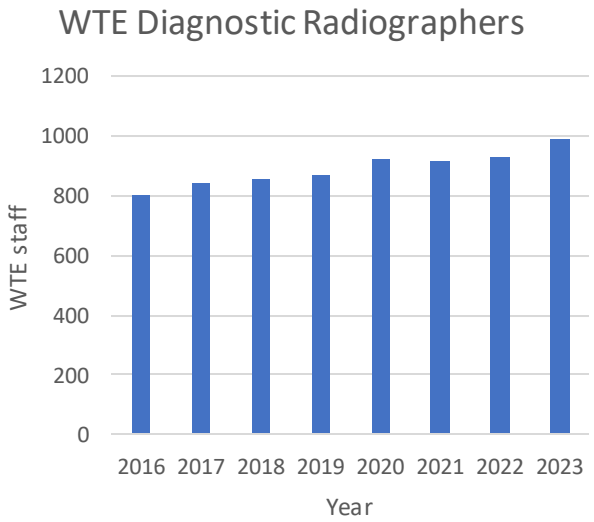
Greater Manchester Imaging Network

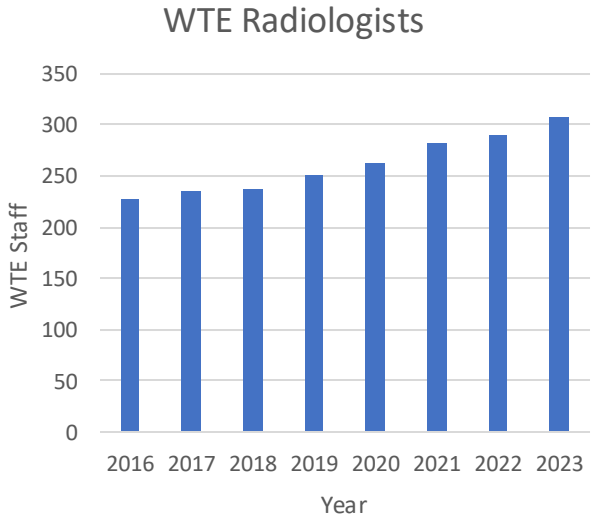
WORKFORCE
WORKFORCE
WORKFORCE

Overview of Imaging Workforce and challenges



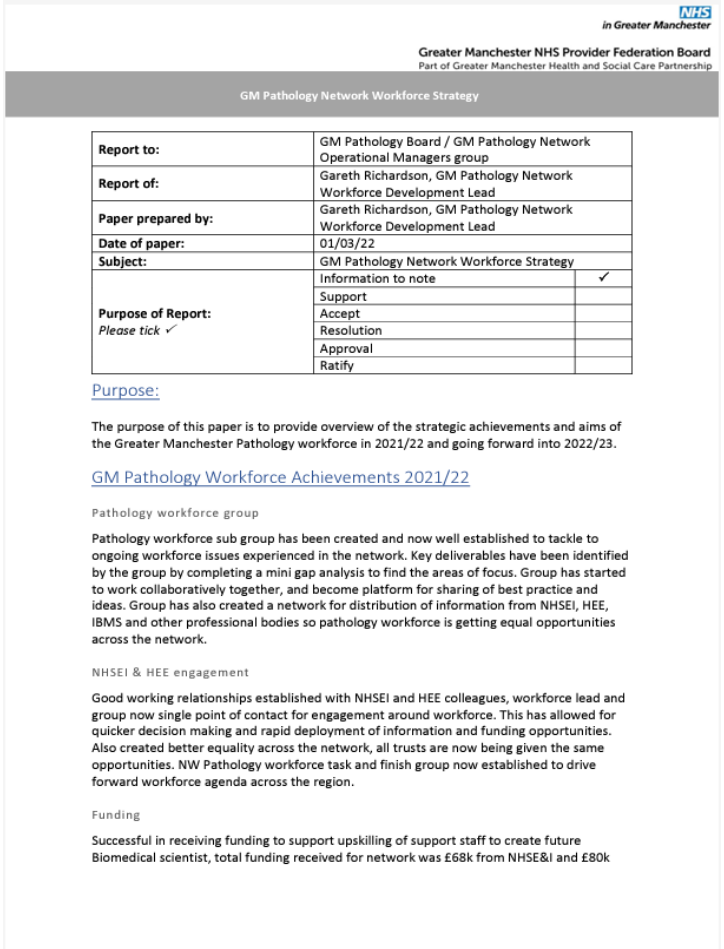






- High vacancy rates across all staff groups in Radiology, difficult to recruit radiologists and sonographers, national shortages.
- Total WTE diagnostic radiographers workforce has increased year on year, majority of joiners are newly qualified. International recruitment has been widely used to bring new radiographer workforce into system. Lots of initial training and lots of newly qualified/new staff in service.
- Majority of leavers are <55 years old and leaving NHS, large attrition to independent sector, especially at band 6 and 7 grade. Loss of skills and experience.
- Total WTE radiologist increased year on year, numbers coming through speciality training have increase slightly across entire NW region, however numbers of completing CCT fairly consistent year on year (approx. per year)
- Due to high vacancy rates, high use of agency/locum staff
- Limited capacity to expand training for apprenticeships and placement students
- Shortage of radiologists resulting in limited capacity to expand reporting radiographer training.
- Significant challenges in sonographer workforce, large attrition to independent sector or to trusts offering better rates of pay.

GM Imaging workforce strategy



NHS in Greater Manchester

Greater Manchester NHS Provider Federation Board
Part of Greater Manchester Health and Social Care Partnership

GM Pathology Network Workforce Strategy

Report to:	GM Pathology Board / GM Pathology Network Operational Managers group	
Report of:	Gareth Richardson, GM Pathology Network Workforce Development Lead	
Paper prepared by:	Gareth Richardson, GM Pathology Network Workforce Development Lead	
Date of paper:	01/03/22	
Subject:	GM Pathology Network Workforce Strategy	
Purpose of Report: *Please tick ✓*	Information to note	✓
	Support	
	Accept	
	Resolution	
	Approval	
	Ratify	

Purpose:

The purpose of this paper is to provide overview of the strategic achievements and aims of the Greater Manchester Pathology workforce in 2021/22 and going forward into 2022/23.

GM Pathology Workforce Achievements 2021/22

Pathology workforce group

Pathology workforce sub group has been created and now well established to tackle to ongoing workforce issues experienced in the network. Key deliverables have been identified by the group by completing a mini gap analysis to find the areas of focus. Group has started to work collaboratively together, and become platform for sharing of best practice and ideas. Group has also created a network for distribution of information from NHSEI, HEE, IBMS and other professional bodies so pathology workforce is getting equal opportunities across the network.

NHSEI & HEE engagement

Good working relationships established with NHSEI and HEE colleagues, workforce lead and group now single point of contact for engagement around workforce. This has allowed for quicker decision making and rapid deployment of information and funding opportunities. Also created better equality across the network, all trusts are now being given the same opportunities. NW Pathology workforce task and finish group now established to drive forward workforce agenda across the region.

Funding

Successful in receiving funding to support upskilling of support staff to create future Biomedical scientist, total funding received for network was £68k from NHSE&I and £80k

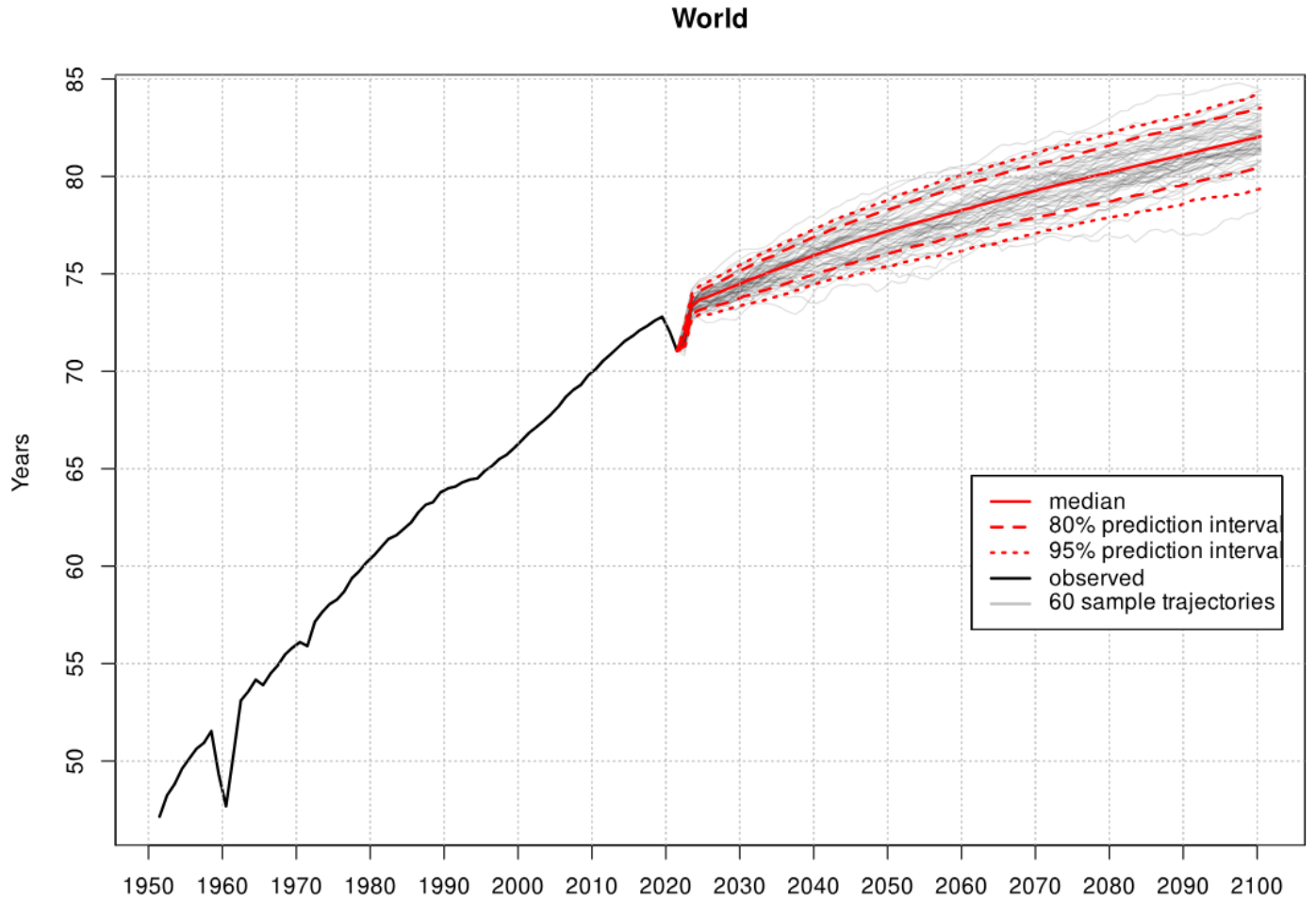
Objective 1 – to attract and retain talent in the network, to decrease vacancy and turnover rates.

Objective 2 – to create clear development opportunities for all Imaging staff to maximize staff potential and create equality in training across the network

Objective 3 – to better understand the workforce needs in Imaging and create a workforce sustainable for the future.

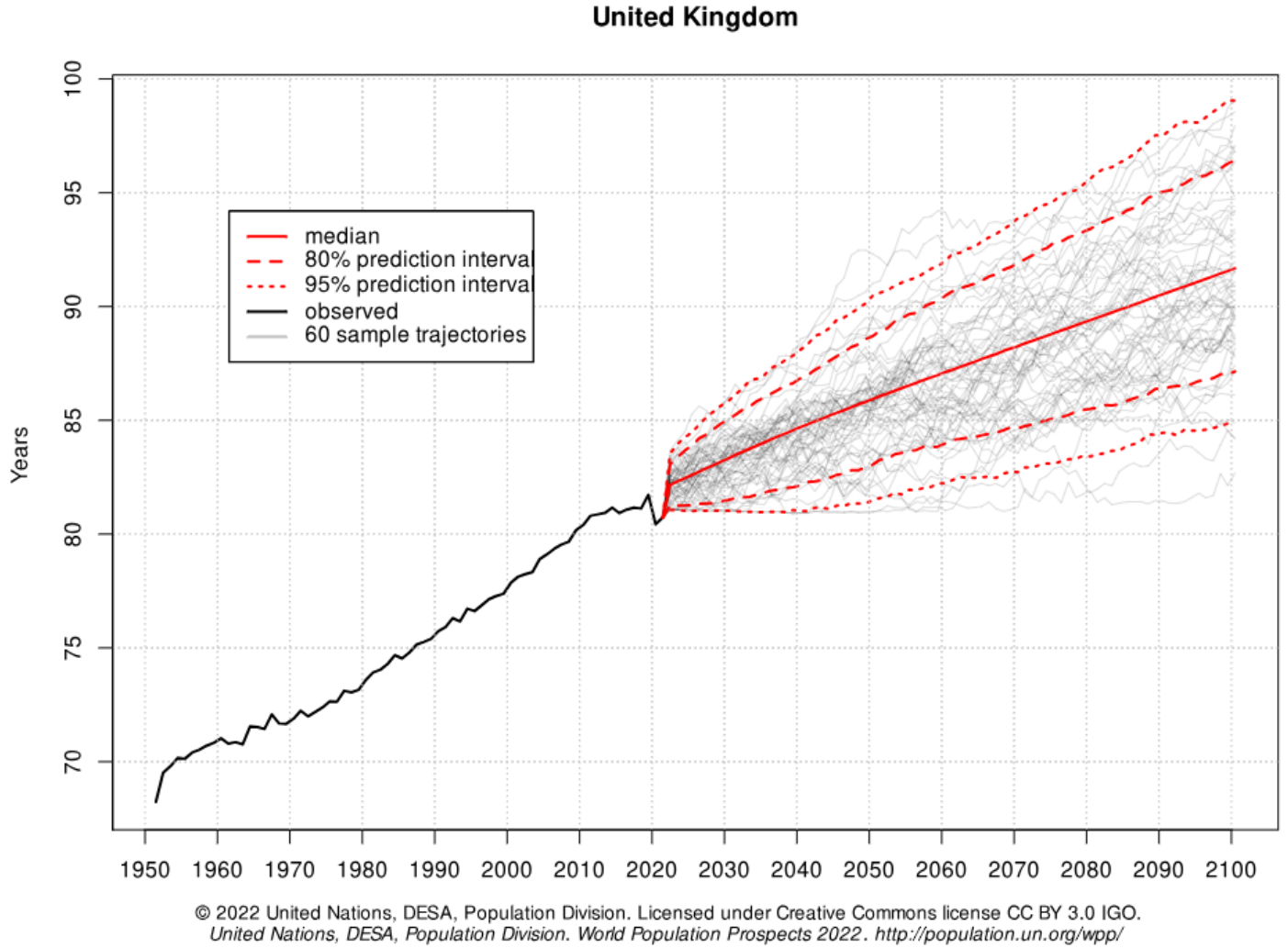
https://greatermanchesterdiagnostics.nhs.uk/about-networks/strategies

World > Probabilistic Projections > Life Expectancy > Both Sexes



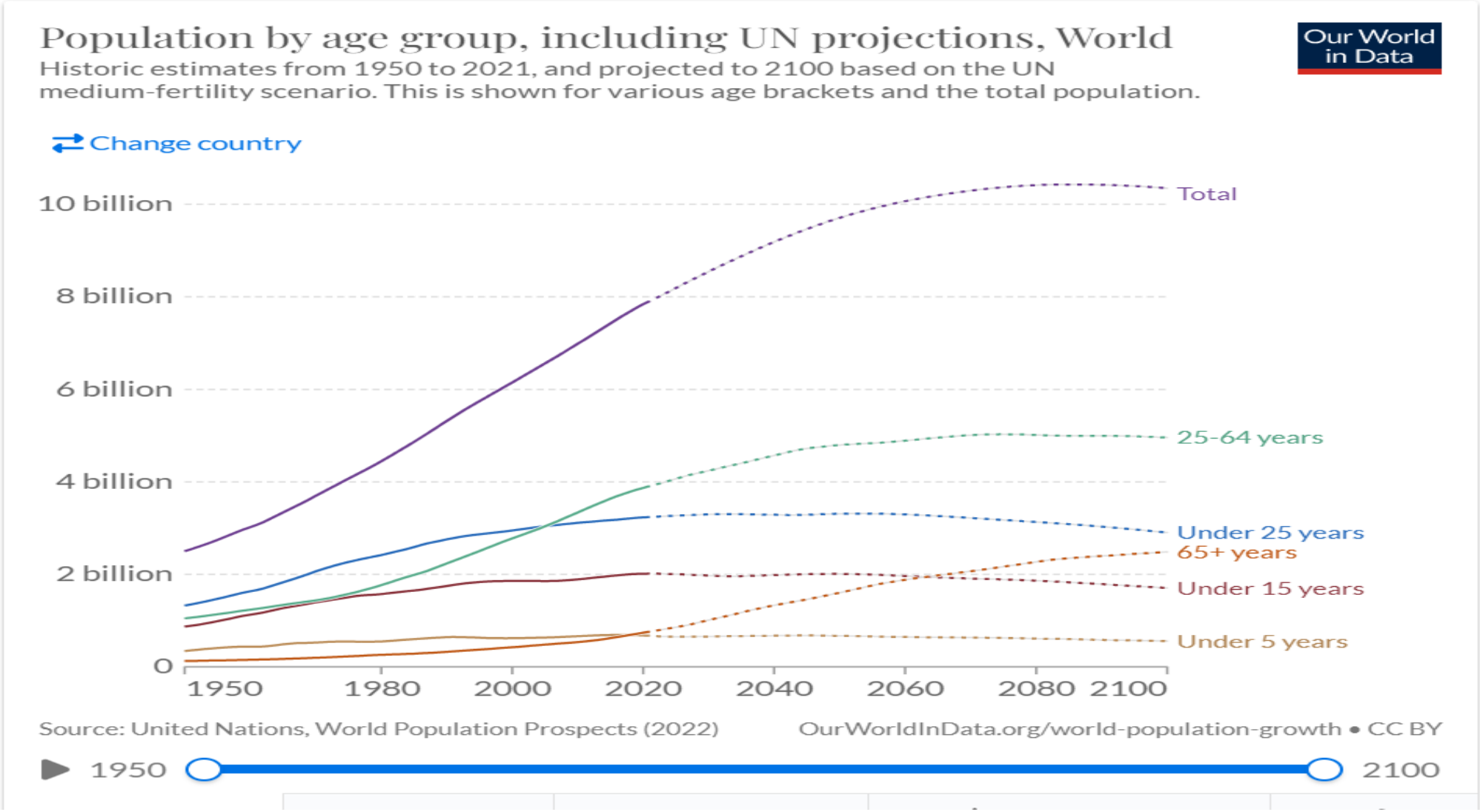
United Nations, DESA, Population Division. World Population Prospects 2022. http://population.un.org/wpp/

UK > Probabilistic Projections > Life Expectancy > Both Sexes



United Nations, DESA, Population Division. World Population Prospects 2022. http://population.un.org/wpp/

So is it all great news?

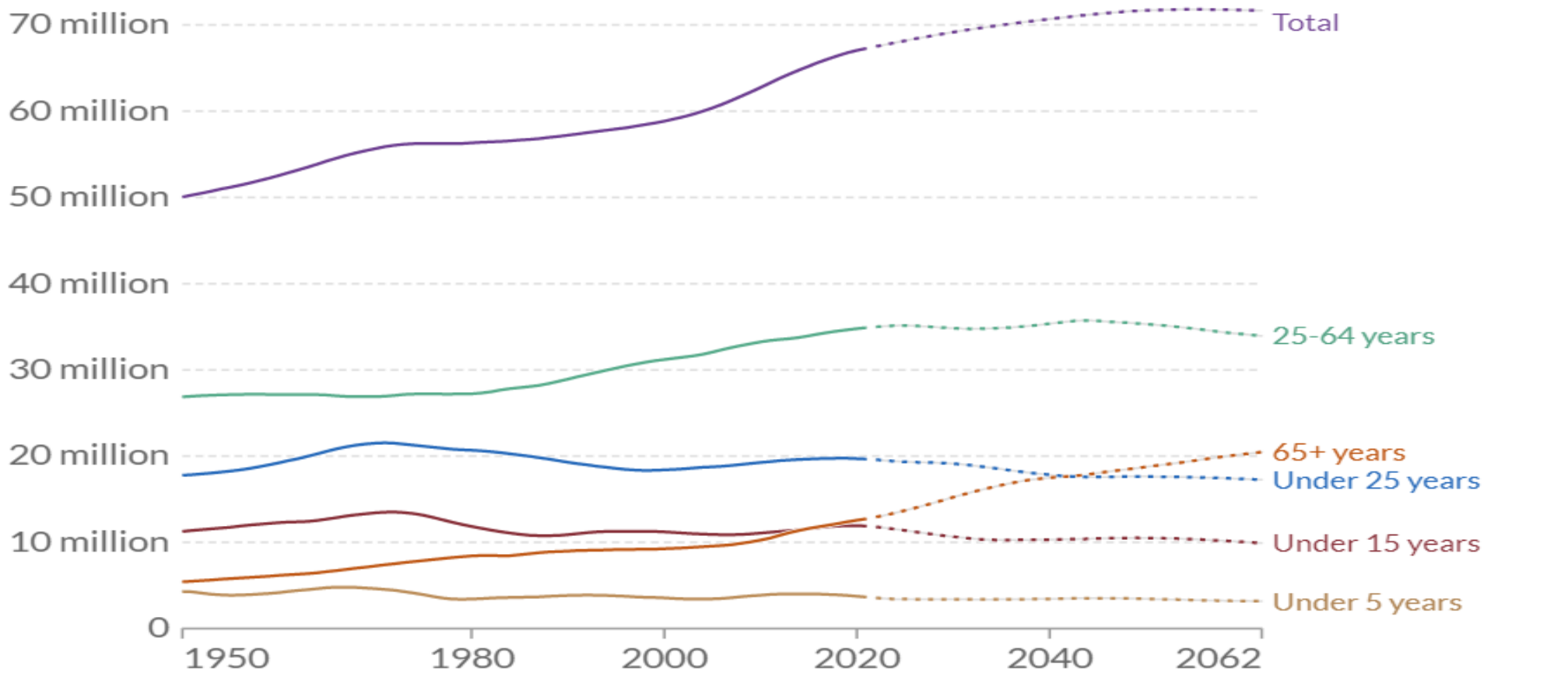


Population by age group, including UN projections, United Kingdom

Historic estimates from 1950 to 2021, and projected to 2100 based on the UN medium-fertility scenario. This is shown for various age brackets and the total population.

Our World in Data

Change country



Source: United Nations, World Population Prospects (2022)

OurWorldInData.org/world-population-growth • CC BY

	Generation Alpha	Generation Z	Millennials	Generation X	Baby Boomers	Silent Generation
Born	2012 - 2024	1997-2012	1981-1996	1965-1980	1946-1964	1926-1945
Age	Up to 13	14-26	27-42	43-58	59-77	78+
Stereotype	Very short attention span. All information needed instantly available. Allergies, obesity and health problems related to screen time. Family Oriented. 80% dictate family activities such as holidays! Exceptional learning abilities and opportunities.	More racially and ethnically diverse than any previous generation. No memory of life before the internet. Give more voice to social causes than previous generations. Ambitious. Confident. Higher Diagnosis of mental health. Prone to anxiety. Puberty onset earlier.	Most educated generation of humans to ever exist, with around 40 percent having a university degree or higher. Ambitious, Confident, Curious, but often labelled as "Spoilt and Lazy" the "Me, Me, Me" generation.	"Latch Key" Generation - left at home alone whilst parents worked. Resourceful. Logical. Problem-Solvers.	So called because of huge increase in birth rates following end of the second World War. Committed. Self sufficient. Competitive.	Grew up during and after World War II; taught to be “seen and not heard”. Disciplined. Loyal.
Communication	Social networks, and streaming services; low interest in TV. Create on line communities.	Hand held or integrated in clothing comms device / Facetime	Text / social media / on line real time text messaging /face to face	e-mail / text	Face to Face / Telephone Landlines	Speaking Face to Face / Formal letters
Major events	Covid 19	Global financial crisis 2008	Nine Eleven (2001)	Fall of Berlin wall (Nov 89)	Moon landing	World War Two
Iconic Toys	Fidget Spinners Playstation 4 X Box 360	Nintendo DS Scooters Fashion Dolls (BRATZ)	Cabbage Patch Kids BMX Bike Little Tykes (Log Cabin/Cozy Coupe)	Lego Rubix Cube Chopper Bikes	Etch A Sketch Spacehopper Frisbee	Bubble Solution Roller Skates Toy Soldiers
Music	Smart Speakers	Spotify	iPod	Walkman /CDs	Audio Cassette	Record Player
Major Influences on lives	Internet. Tik Tok. Pandemic.	Youtubers. Internet. Parents.	Peers. Television. Internet. Parents.	Parents. Television. Books. Magazines.	Parents. Newspapers. Music (e.g. Beatles). World events. Books.	World War Two. Parents /Grandparents/ Siblings. Books.

Unsure Which Generation You Are?

Generation Alpha

Samsung Galaxy Z Flip 5G

(other suppliers are available!)

Generation Z

Smartphone

Millennials

Phone

Generation X

Mobile Phone

Baby Boomers ……..


12
45


wakelet
wakelet
wakelet
wakelet


wakelet

	Generation Alpha	Generation Z	Millennials	Generation X	Baby Boomers	Silent Generation
Attitude to Technology	They don't just use technology; they intuitively understand it. Navigating digital spaces, for them, is as natural as breathing. "Technoholics". Totally dependent on IT - have no grasp of alternatives. More digitally savvy than any previous generation. Will not understand and will become quickly irritated by previous generations "lack of understanding" of modern technology.	Totally dependent on IT - (born with a smartphone and a tablet) - very limited grasp of alternatives.	Digital natives - technology is part of their everyday lives. Activities mediated by a screen. Don't need to be problem solvers as internet does it for them.	Digital immigrants. Technology was growing fast but in its infancy. Understand the importance of digital and non-digital.	Early adopters. Extremely cautious and sceptical. Seen as a luxury.	Largely disengaged. Lack of understanding or interest.
Attitude to Work	No constraints on geography; massively influenced on climate change and saving the planet. Like Generation Z, but moreso, they will have jobs that do not exist in today's world. Extremely curious – will want to learn new things. As yet unknown when they will want to retire – theories on this are diverse.	Career "multitaskers" - will move between employers and job roles. Very low limitation on geography. Want to retire early.	Digitally driven. Work "with" an employer rather than "for". Diminished geography constraint. Want to retire early.	Professionally loyal (not necessarily to employer). Geography constrained. Expect to retire at 65 or earlier. "Workaholics"	Organisational loyalty. High dependence on geography. Expect to retire at 65 or return to work.	Jobs are for Life. Totally dependant on geography.
Aspiration	Predicted to be the wealthiest generation ever, financial savvy and will demand financial stability.	Security and Stability (due to global economic turbulence in formative years)	Freedom and Flexibility	Work Life Balance	Job Security	Home Ownership

- To build a sustainable Imaging services to meet the needs of our growing population we need a workforce that meets not only the needs of our patients, but the needs of our future workforce… “Generation Z” have very different career aspirations to previous generations. And there are less of them to look after a growing and aging population.
- By 2030 Generation Alpha predicted to be 13% of the workforce; by 2040 could be 50%.
- We have to adapt now!!

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

This means asking ourselves some very difficult questions; for example -

- Do we need develop new roles perhaps even working across “traditional professional boundaries?”
- Are we as “attractive” as we can be to meet the needs and aspirations of our future workforce? (Opportunities for Career Change, Cutting Edge Technology, Financial Reward?)
- Do we need to take more control of ensuring demand on services is appropriate and making a difference to patient care?
- Is “Generation X” able to design a strategy to meet the aspirations of “Generations Z and Alpha”?

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

IN SUMMARY - We need to do things differently, and we need to act now to tackle the long-term workforce challenges.

“State of the Art” digital systems and AI in healthcare have never been so important, not just for our patients, managing increasing demand and improving productivity and quality, but because our workforce will expect it – they will only be attracted by high performance technology.

We must create new roles that are attractive to new generations, well remunerated, and which allow for their curiosity and need to learn.

Imaging will remain increasingly critical to the health of our population, and we all have a responsibility to ensure our great profession continues to provide an inspirational and rewarding career for our current and future workforce.

GREATER MANCHESTER
IMAGING AND PATHOLOGY NETWORKS

NHS

Thank you for listening, any questions?

Imaging Network Twitter:
@GM_Imaging

Imaging Network LinkedIn: @GMImagingandPathologyNetworks

Visit our Website
https://greatermanchesterdiagnostics.nhs.uk/

Or you can even send me a written letter ☺

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Q&A Panel

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Panel Discussion

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Slido

Please scan the QR Code on the screen. This will take you through to Slido, where you can interact with us.

SCAN ME

CONVENZIS

Imaging Innovation South

Advancing NHS Radiology

Headlined by: Managed Healthcare Services

Thank you for attending The Imaging Innovation Conference South 2023!

slido

Would you like to receive future updates on the Imaging Innovation Conference: South - Advancing NHS Radiology series?

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

CONVENZIS

NHS Imaging Conference North

In partnership with: GREATER MANCHESTER IMAGING NETWORK

Register for the next NHS Imaging Conference in February 2024….