



WEST MIDLANDS
IMAGING NETWORK
Creating Excellence Together



West Midlands Imaging Network Current Operating Model



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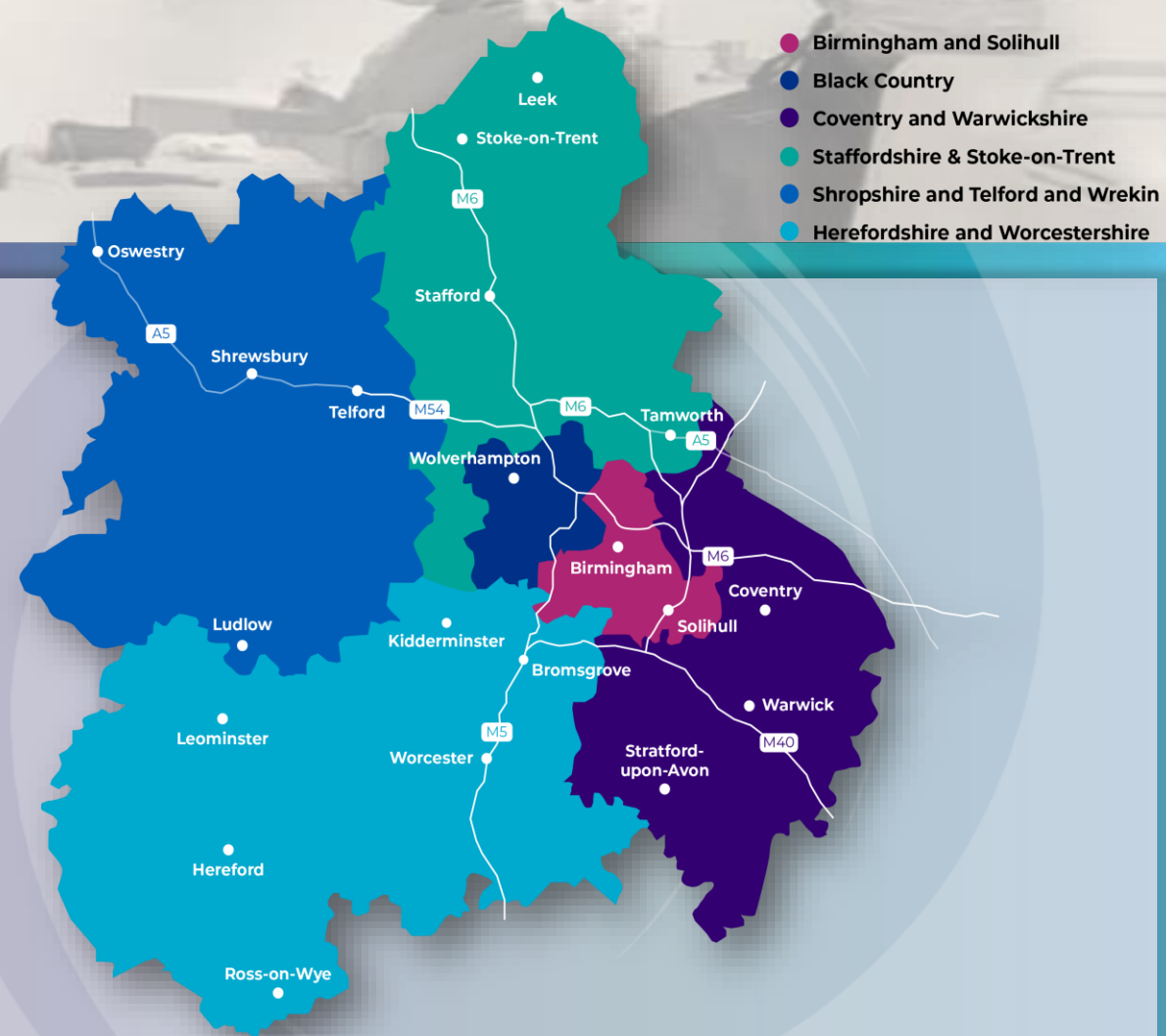


Executive Summary

This document outlines the West Midlands Imaging Network's Current Operating Model. A Current Operating Model describes how an organisation is set up to deliver its goals via a clear structure.

A review of specific region challenges within imaging has been completed and we have found that 2 of our ICBs have the highest percentage of people living in deprivation in England. The historical need for change is highlighted clearly along with current data for workforce, patient flows, digital flows and assets. Exploring the network's Current Operating Model has enabled us to define the issues and challenges our Trusts are experiencing as well as discover specific concerns in our region.

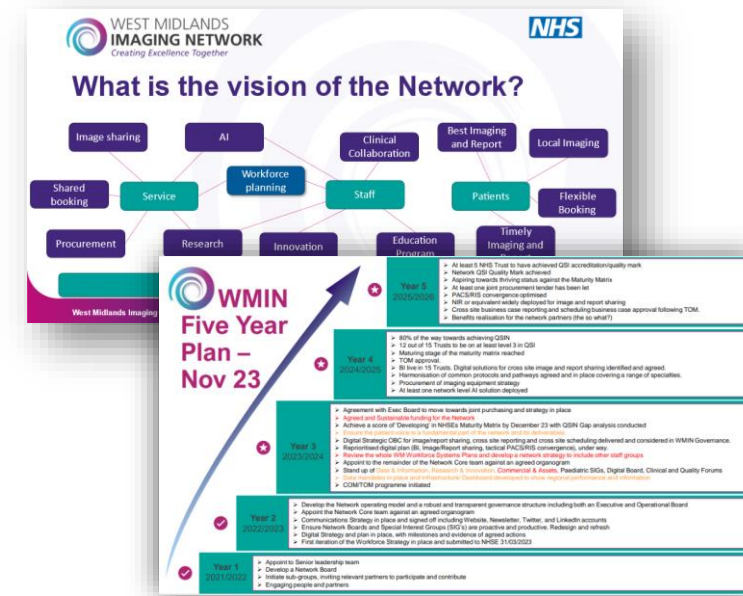
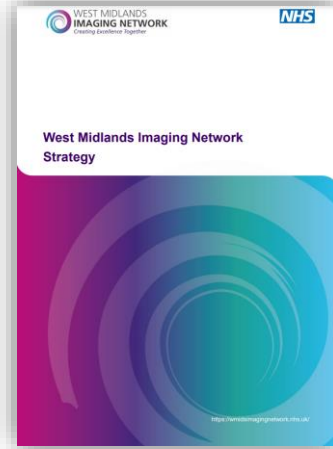
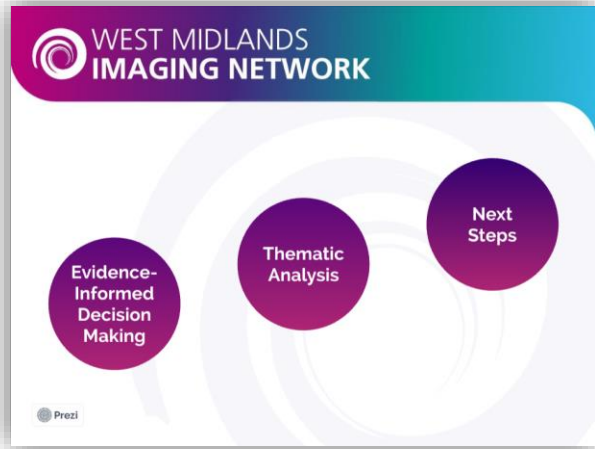
The next step will be to devise a 'Target Operating Model' looking to the future for our services. This will take into considering information from this model, as well as understanding our members needs and wants.



Introduction: Current Operating Model

Early into in the inception of the Network it was important to identify the key principles and vision to gain the support from the key stakeholders from each member organisation.

This vision has slowly evolved as the Network has matured. In May 2023, a Strategy was launched based on a **detailed thematic analysis of national policies, guidance, and reports**. For more information, please click on the images below.



This document summaries the challenges faced by our services. Information has been gained from many sources, including published data, local surveys and discussions within our Special Interest Group.

By **being transparent** with this information, we aim to build trust and improve engagement with our organisations. Looking at data on a Network level will help support our members to make decisions on the direction of travel and map our work programmes. Exploring the difference in service provisions will **help identify any inefficiencies and opportunities** which may only require 'quick-wins' and **help trusts benchmark** their service, demonstrating a local evidence base for their decision making.



About Our Region

A deep dive into the imaging infrastructure and needs of the West Midlands

Network Facts

In 2021 the West Midlands Imaging Network was established as the largest Network in England, carrying out more than 11% of all imaging activity

6.6m

Population registered with a GP in the area ¹

423k

Examinations carried out each month ²

6

Integrated Care Boards

15

NHS Acute Trusts

1

Community NHS Trust

47

Imaging Sites

3,850

WTE working in imaging ^{*3}

124

CT and MRI scanners ²³

14

Community Diagnostic Centres ^{**4}

For more information, watch this video or see [appendix 1](#):



Health Inequalities

Reducing health inequalities and addressing unwarranted variation in care is one of the priorities in the [NHS Long Term Plan](#). Within our Network we have a significant number of populations at risk of these variations



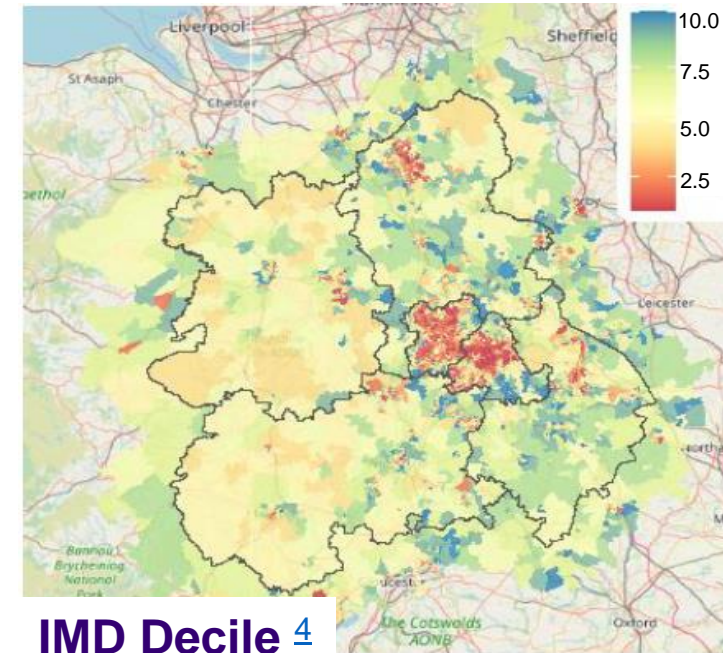
The West Midlands is a **young and highly ethnically diverse** area (second after London) with the population having a median age of 38. It is important that we understand our demographics and communities to understand any perceived barriers or challenges to accessing healthcare- specifically healthcare services. The Black Country and BSoI ICSs have the **highest percentage of people living in deprivation in England**⁵ with **one in three children in Birmingham living in poverty**⁶. There is clear evidence demonstrating that these groups of people have poorer health outcomes. One report by Cancer Research UK ⁷ stated that deprived populations are more likely to have their cancers diagnosed following an emergency presentation.

Deprivation is not the only cause of health inequalities; differences in health literacy, language barriers, awareness of symptoms, and the ability or willingness to seek support are some other factors ⁸. Within our Network we have a number of areas with low levels of health literacy. These include Stoke-on Trent, Sandwell and Wolverhampton ⁹.

It is well documented that LBGTQ+ people have disproportionately worse health outcomes and healthcare experiences ¹⁰. Within the West Midlands region, we have the **second highest population who identify as transgender, non-binary or a different sex than that registered at birth** ¹¹.

Whilst some services have access to LBGTQ+ networks within their organisation, we only found one (out of 7 respondents) with dedicated gender inclusivity training for their imaging staff. Tailored training is important to support staff in carrying out pregnancy enquiries which are an everyday event in imaging services.

Our region has some of the largest groups of people at risk from health inequalities, it is therefore important that **services within our region help to tackle these problems**. We have a responsibility to ensure people's interactions with healthcare professionals are positive and personalised, and that our workforce is displaying the right behaviours.



IMD Decile ⁴

“

At age 60–64, 81% of people living in the least deprived areas report good health, compared with just 45% in the most deprived areas ¹²

”

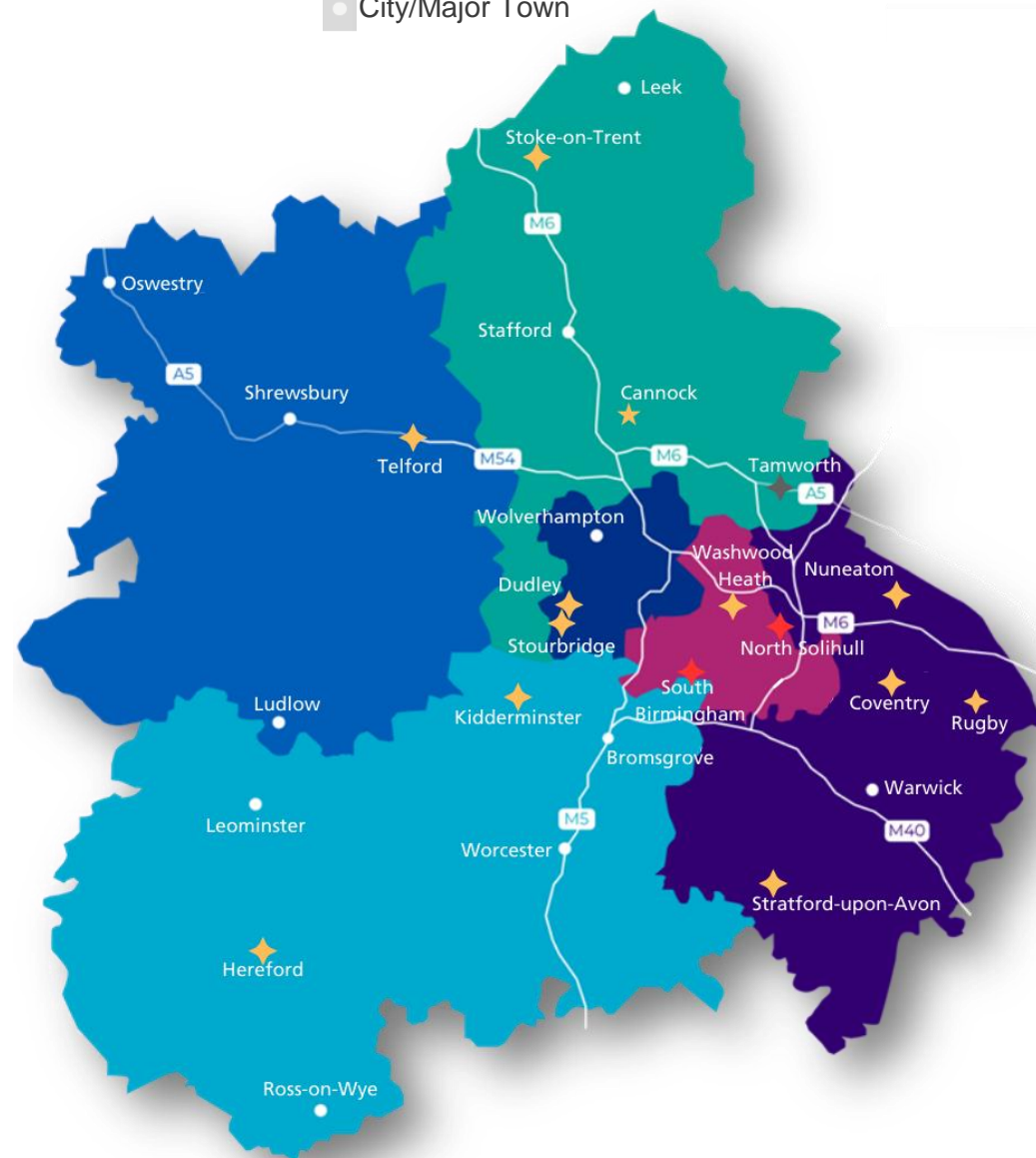
Community Diagnostic Centres

Community Diagnostic Centres are designed as one stop shops used to deliver MRI, CT and other diagnostic services to patients away from hospitals so that patients can receive life-saving checks closer to home.

The concept was first introduced in 2020, in the [Diagnostic: Recovery and Renewal](#) report, aiming for the separation of emergency/acute and elective scans. The government aimed to open 160 CDC by March 2025.

- Cannock Chase Hospital CDC
- Corbett Hospital (Stourbridge) CDC
- Guest Hospital (Dudley) CDC
- Coventry City Centre Health Facility CDC
- Hospital of St Cross (Rugby) CDC
- Hereford CDC
- Kidderminster Treatment Centre CDC
- Chelmsley Wood Shopping Centre (North Solihull) CDC
- South Birmingham CDC
- Stratford Hospital CDC
- Hollinswood House (Telford) CDC
- George Eliot Hospital CDC
- Washwood Heath CDC

- ◆ NHS CDCs
- ◆ Independent Health CDCs
- ◆ Host Within East Midlands, Spoke in West Midlands
- City/Major Town





The Need for Change

1. Issues Facing our Services
2. Strategic Drivers
3. Establishment of Imaging Network

Why Things Need to Change

Imaging services play an important part in many patients' health care journeys, with diagnostic activity involved in over 85% of clinical pathways ¹³

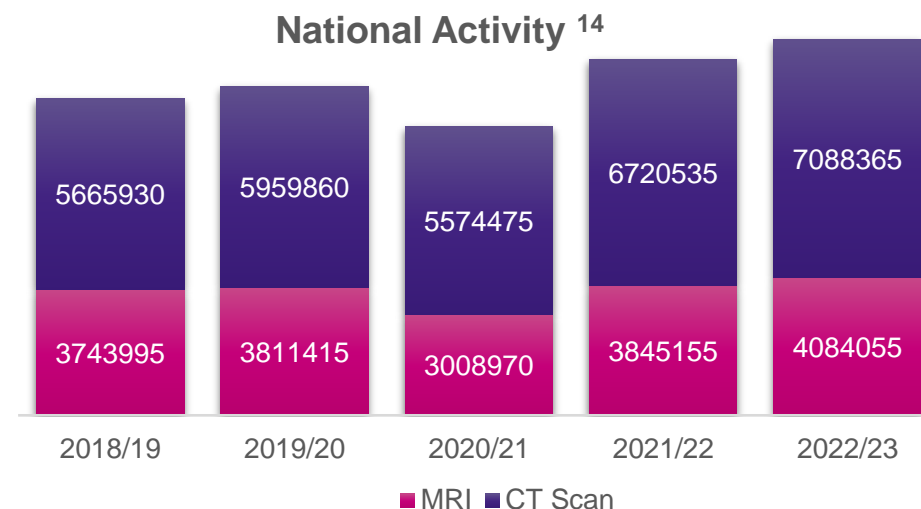
A report, commissioned by The King's Fund, in October 2022, summarised the unique issues felt by diagnostic services (including imaging) which include:

- Significant increase in activity
- Historical underinvestment on imaging equipment
- Chronic workforce shortages
- Poor planning meaning service growth has not kept pace with demand and activity
- New and changing pathways needing more imaging such as the Targeted Lung Health Check Programme

In short, there are pressures from multiple sources to do more imaging, faster, and to find prior imaging more efficiently.

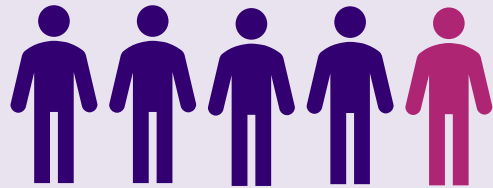
Between 2018/19 and 2022/23 ¹⁴ across England, we saw an increase in the number of examinations being carried out. Complex Nuclear Medicine, scans such as PET-CT and SPECT imaging, saw the biggest increase with **27% increase and 213% in the last 10 years**. Other modalities saw an increase with **20% for CT in the previous 5 years and 8% for MRI**.

The 2022 RCR workforce consensus reported a **29% shortfall of clinical radiologists** within the UK ¹⁵ with a **growth of just 3% in a year**. This impact of this shortfall was that **99% of departments were unable to manage their reporting demand without incurring additional costs**. In the SCoR 2022 consensus report found the average diagnostic radiography **workforce turnover was 10.21%** in the previous year ¹⁶. Respondents reported **recruitment of 8.1% of their headcount internationally** over the past year.



Challenges Within Our Network

Any delays with imaging has a knock-on effect with patient care. This can have a significant impact on the patient's care with delays starting treatment or receiving the next stage of appropriate care.



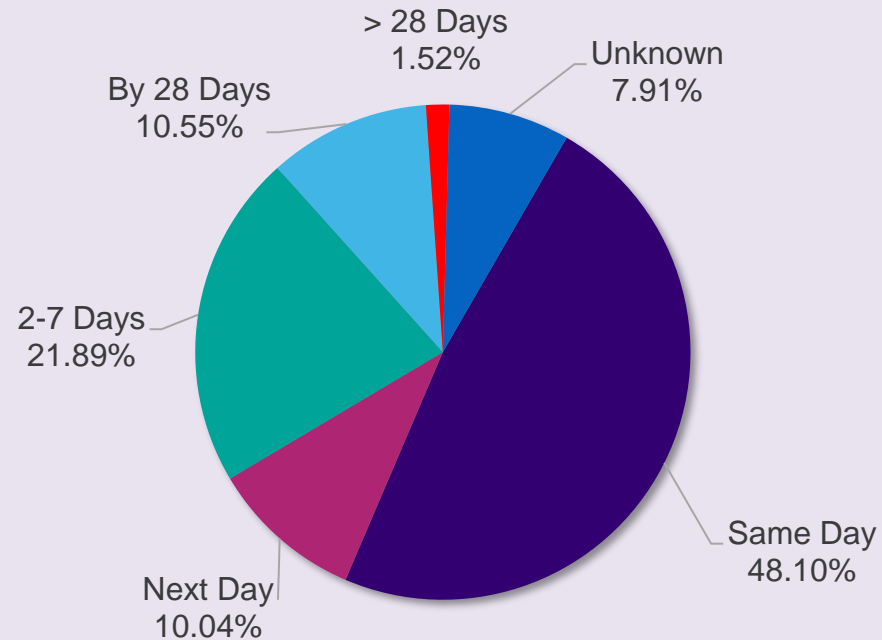
1 in 5

people in our Network were waiting more than 6 weeks to have their imaging test ¹⁷

8,800

Patients waiting more than 13 weeks for their test (7%)¹⁷

Report Turnaround Time¹⁸



15%

Vacancy rate for imaging staff ³

18%

Vacancy rate for other clinical staff ³

364,627

Examinations outsourced for reporting in 22/23

Further **52,669** both acquisition and reporting services

£32M

Spent on outsourcing*³

Impact on Services

The numbers only show part of the picture....

Impact on staff:

With the ever-growing pressures put on staff, it is unsurprising that burnout and retention issues are being seen. A survey found **35% Radiographers and support staff had considered leaving radiography** in the last 6 months and in 2022 an RCR workforce census report¹⁵ found **concerns about staff morale and burnout** were identified in 100% of clinical directors surveyed.

As of March 2023, main losses from the workforce were due to **Radiographers leaving the NHS workforce** of which 283 WTE were aged <55 and 132 WTE were aged > 55 (assumed retirements or early retirees) ¹⁹

Not only do these pressures add to the existing workforce, but it also impacts our **ability to train future generations**. Insufficient staffing levels mean that radiology departments are unable to free up resources for training. In addition, efforts towards bridging the gap to improve the pipeline in and continue efforts to retain staff are urgently required to maintain a fully established workforce in the region.

Impact on patients:

Too many patients are having to wait too long to receive an appointment for their scan which will cause delay in their diagnosis and furthermore to starting treatment or receiving the next stage of appropriate care.

Having to wait long periods of time to receive test results can cause **huge anxiety and stress for patients and their families**.

With staff having to prioritise throughput within services, care is not optimal. Staff frequently state they **do not have the time to support the patient experience** that they would like/used to give.

Impact on quality:

The [Quality Standard for Imaging](#) is a framework which sets out best practice to improve patient care and outcomes through a programme of continuous quality improvement. The inability to protect resources to undertake this valuable work can mean the **quality of services and patient care can suffer**.

Financial constraints placed on departments limit the ability to fund dedicated quality posts and constraints with staff capacity means QI projects are unable to progress.

“

At best, longer waits for both diagnostics and care mean inconvenience and discomfort for patients, but for some it will mean deteriorating health and more severe illness, waiting in pain and cancers being diagnosed later ³

”

Strategic Context for Change

From late 2019, several significant reports have been published highlighting the issues experienced by imaging services across England. With the impact of the pandemic exacerbating these issues, recent policies and recommendations have been made with the aim of not only expanding capacity, but to also transform services

Diagnostic: Recovery and Renewal (2020)

- “New pathways should separate emergency/ acute and elective diagnostics (community diagnostic centres)”
- “CT scanning capacity should be expanded by 100% over the next five years”
- “All imaging equipment older than 10 years should be replaced”
- “There should be a major expansion in the imaging workforce”

Getting it Right First Time (GIRFT) Radiology report (2020)

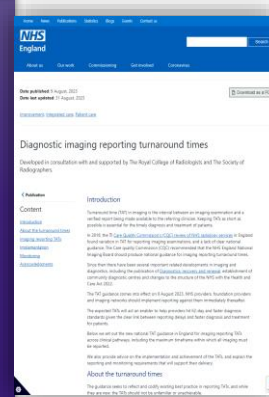
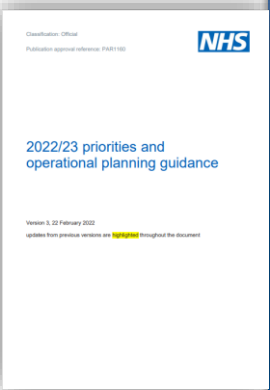
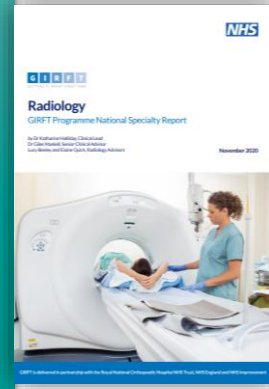
- “Imaging should be arranged at a time and place to suit patients and ensure their safety”
- “Reporting should be carried out expeditiously”
- “Standardised protocols should be introduced”
- “Every trust or imaging network must have a sustainable plan for the purchase and/or replacement of capital equipment, PACS and RIS, to meet anticipated patient needs and increase capacity”

NHSE - 2022/23 priorities and operational planning guidance (2022)

- “Increasing diagnostic activity to a minimum of 120 per cent of pre-pandemic levels across 2022/23”
- “95 per cent of patients would receive a diagnostic test within six weeks of referral by March 2025”
- “Expansion the Target Lung Health Checks programme from 2023/24”

NHSE - Diagnostic imaging reporting turnaround times (2023)

- “No verified report should take longer than 4 weeks to be provided after image acquisition, under any circumstance”
- “The current guidance is considered a stepping stone to more ambitious turnaround times (e.g. 2 weeks) for consideration in the future.”



Inception of Imaging Networks

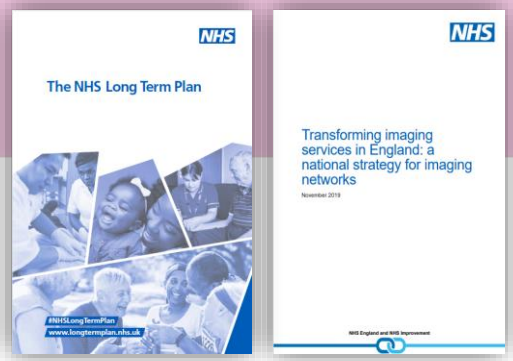
In 2019, we saw the first commitment made through the release of the NHS Long Term Plan and the National Strategy for Imaging Networks. The concept of these Imaging Networks were based on existing successful models, such as the ones used in the trauma and cancer alliances; bringing people together to tackle issues and improve services at a regional level.

Local Service Management

Service and issues were managed at a local level.
Some informal networks are in place for lower volume more specialised work (neuro-radiology, interventional radiology, paediatric etc.)

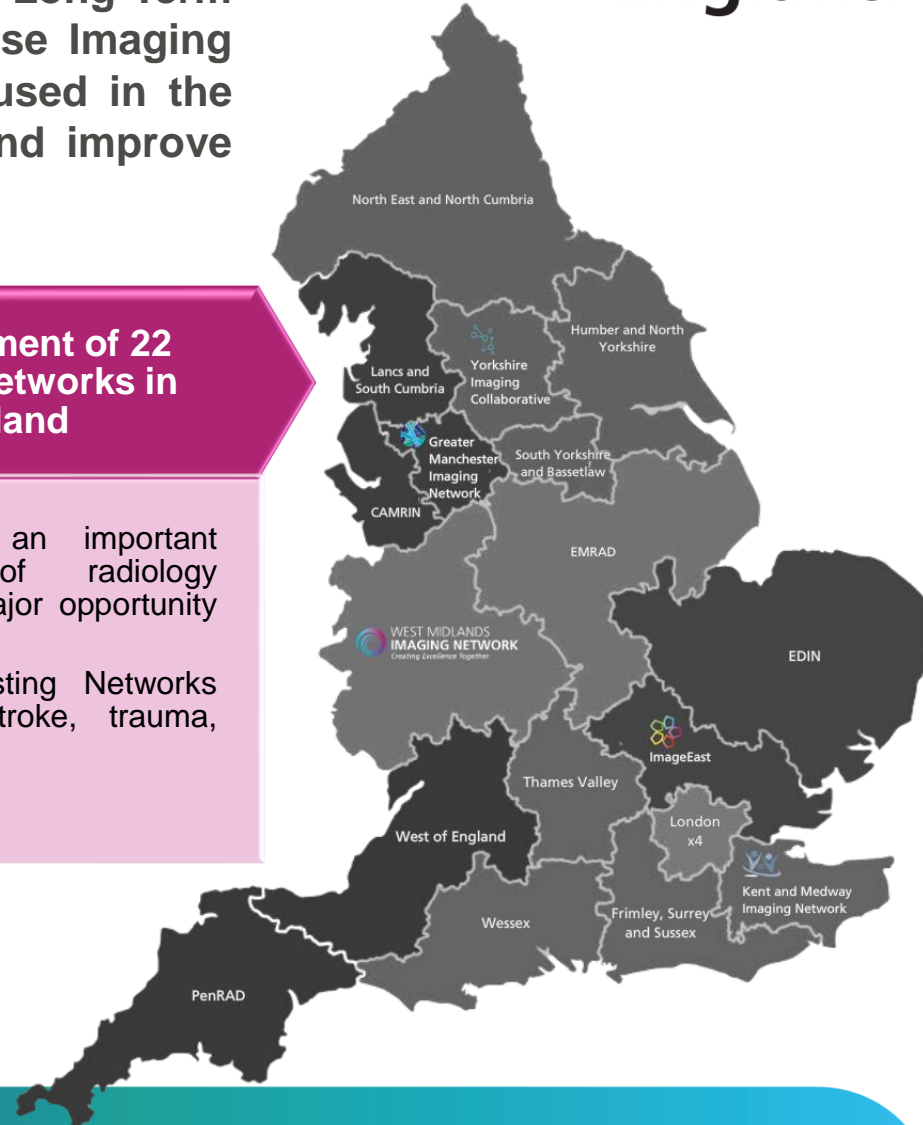
NHS Long Term Plan and National Strategy for Imaging Networks (2019)

“Our proposal is that acute Trust based imaging departments should align themselves into collaborative imaging networks”



Establishment of 22 Imaging Networks in England

This represents an important reconfiguration of radiology services and a major opportunity for change.
Alignment to existing Networks and Alliances (stroke, trauma, cancer).



Benefits of an Imaging Network

Patient Choice - Where Trusts work together patients will have the option to choose where they have their imaging. It could mean they have their scans at their local hospital, somewhere closer to work, or visit a CDC

Better Outcomes - At the heart of everything we do, we will be able to improve patient outcomes. Staff will have access to specialist opinions, best practice will be shared, and images will be available quicker

Reduced Anxiety – As a region we will work towards reducing the waiting times so patients will not only receive appropriate imaging faster, but they will also receive their results faster too



Patients



Staff

Networking - By developing relationships with colleagues outside of their usual local services, this will foster a trusted peer-to-peer support network. Our staff will meet and be encouraged to share their experiences widely

Avoid Duplication of Effort - We will produce and share policies, protocols and pathways with other members ensuring we make the best use of people's time and utilising the skills and experience available to us

Improved Recruitment and Retention - We will ensure these remain at the forefront of our strategy. We will strive to provide access to high quality training, CPD, and explore opportunities for flexible working

Increased Capacity - Services will have more resilience, with the opportunity to share resources and address areas where capacity is restricted by equipment failure or sickness

Digital Solutions - Services will have the ability to work together in developing platforms which enable images and reports to be shared without the need for manual processes

Cohesive Approach to Quality - By creating a forum, services will be able to come together to champion quality improvement and increase the visibility of imaging within their Trusts

Service



System



Wider collaboration - We will be able to work with other Networks and Alliances, ensuring we bring together the right people when looking at optimising patient pathways

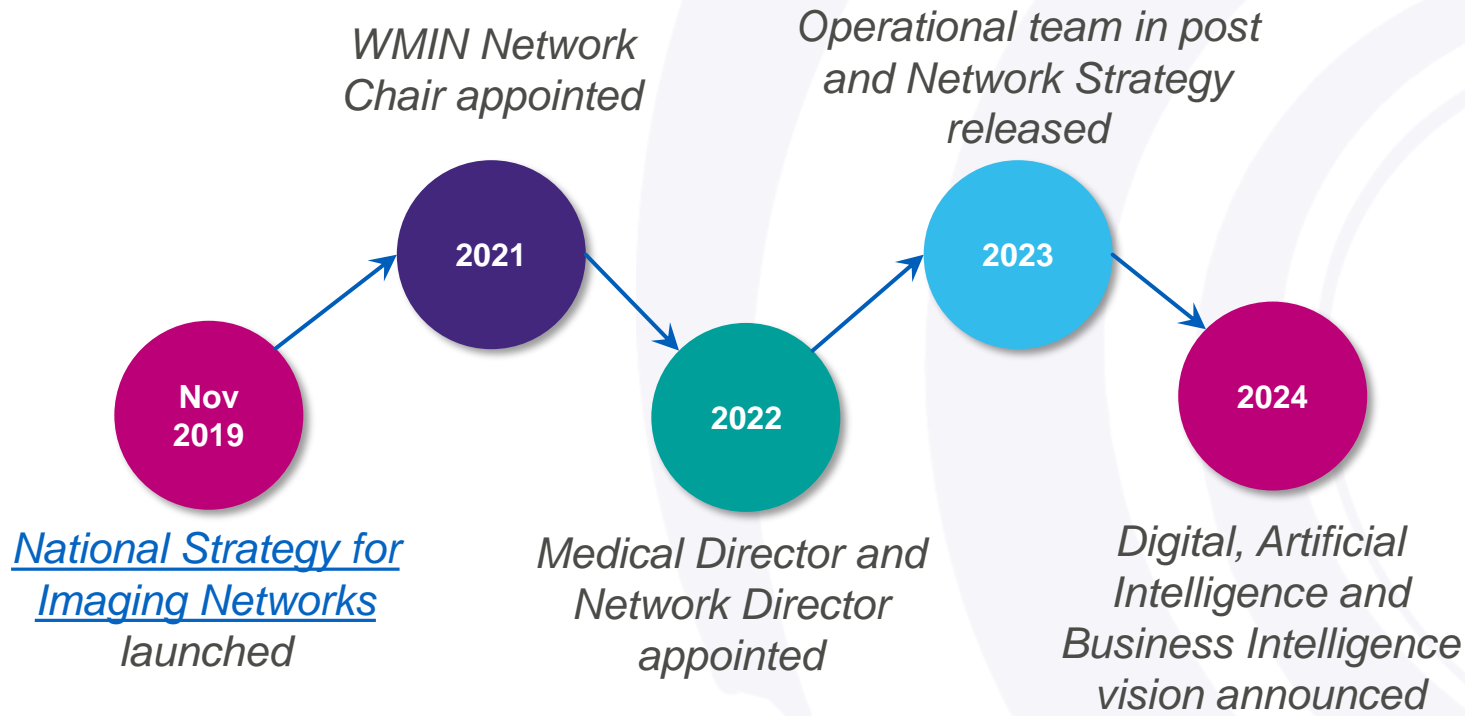
System-wide Planning - With business intelligence available at a Network level, there will be opportunities to benchmark activity, share innovations and make cost savings using economies of scale

Network-wide Strategies - As the largest imaging network in the country, our large clinical expert groups will be able to address changing national policy and tackle health inequalities on a wider scale

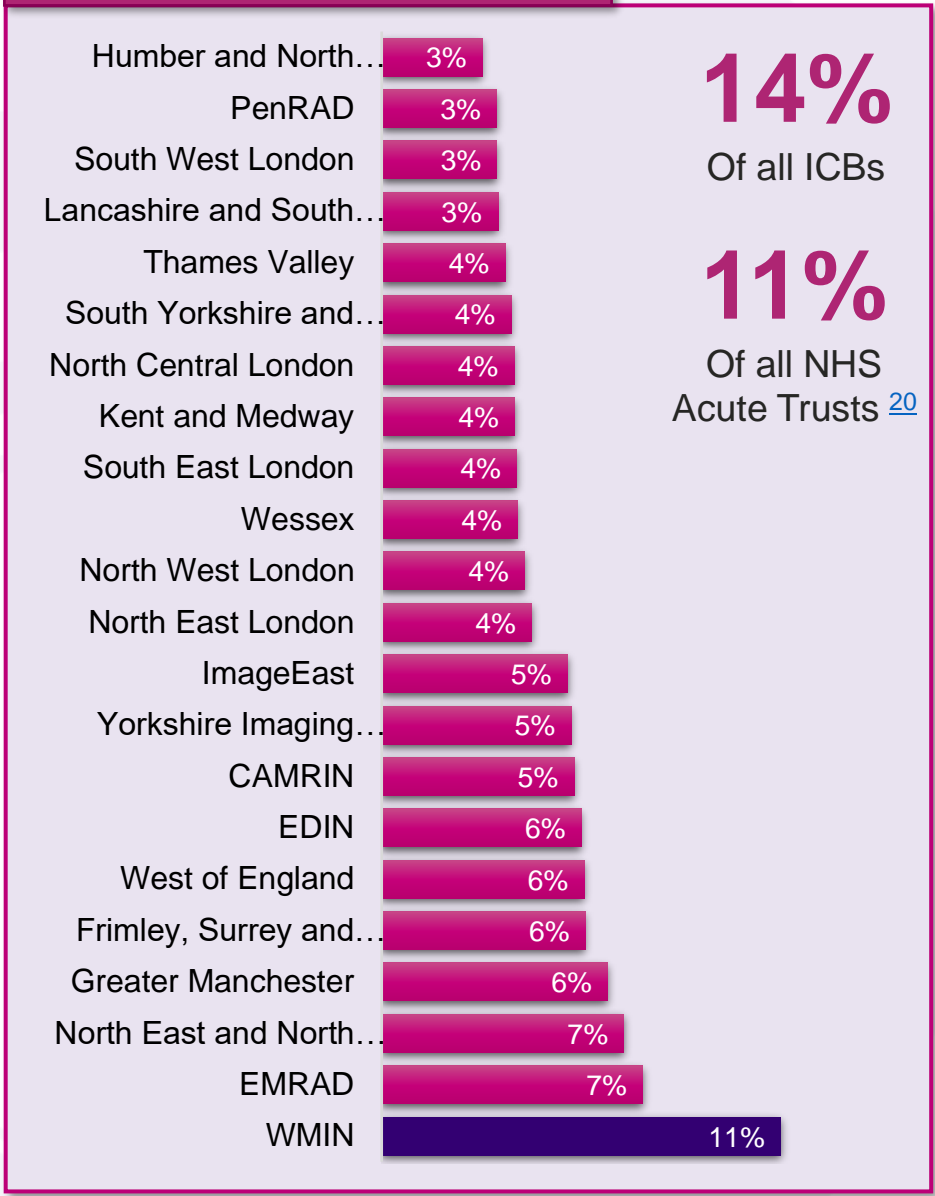


About the West Midlands Imaging Network

1. Establishment of the Network
2. The Development of Target Operating Model

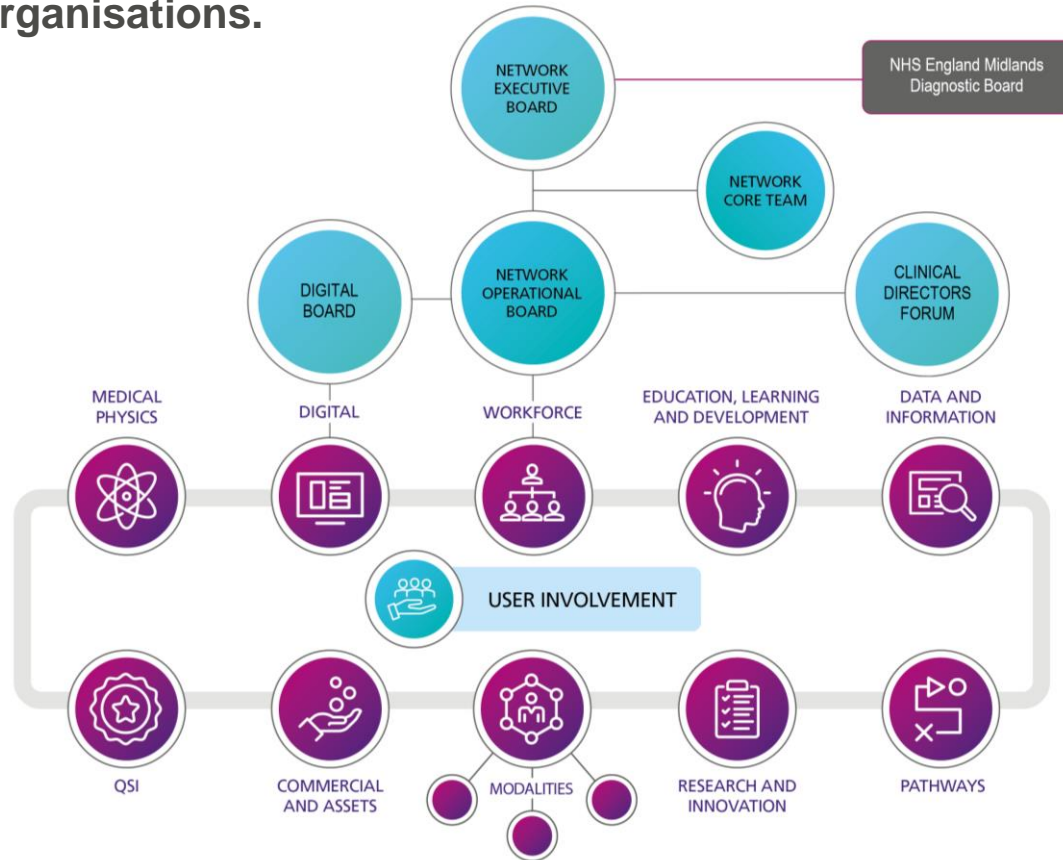


% National Imaging Activity ²



Governance Structure

The Network has a strong governance framework that encompasses representatives from each of our member organisations.



Our structure guarantees suitable expertise at every level of the Network so that it continues to **provide strong strategic and operational leadership** whilst ensuring clear lines of accountability.

In developing our structure, we took into principles set out in the NHSE [Diagnostic Imaging Network Commercial Structure and Operational Governance Guide](#) (April 2021) as well as those in the [Quality Standard for Imaging Networks \(QSIN\)](#).

A range of Special Interest Groups (SIGs), in purple on the diagram left, are in place **representing the varying priority work areas** from across the WMIN strategy. These groups are **made up of specialist and experts in their relevant fields**. Chaired by our members, each SIG has their own programme of work and is accountable to the Operational Board

Our governance structure will be forever changing as we incorporate new workstream and priorities. For more information, please watch the video below:

WEST MIDLANDS IMAGING NETWORK

Introducing Our Governance Framework

Creating Excellence Together

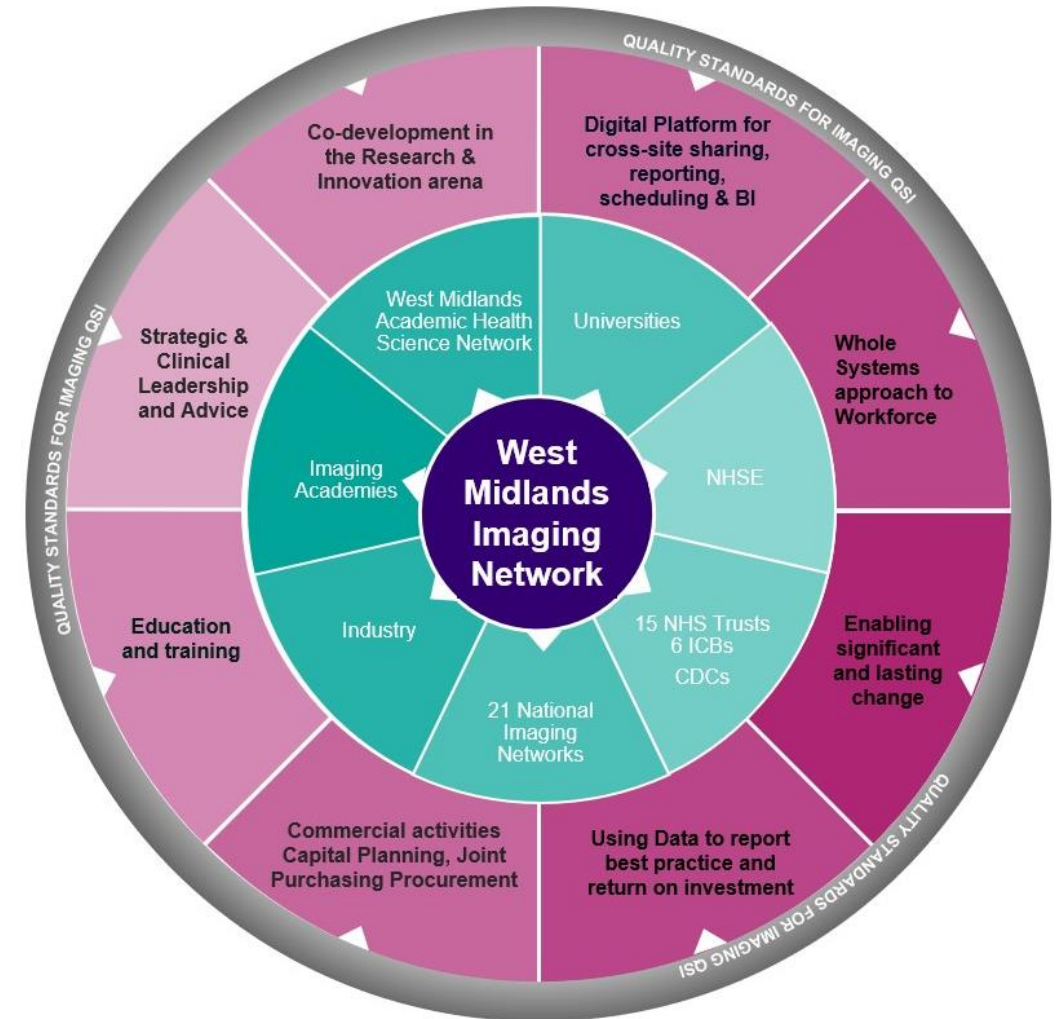
Our Stakeholders



As a Network, we work with a variety of different stakeholders, as seen on the green sectors, on the diagram to the right.

Our SIGs work alongside other Operational Delivery Networks, such as the **West Midlands Children's Network**, the **Stroke Network** and the **West Midlands Cancer Alliance**. This is because imaging services are integral to the wide range of patient pathways. Our workforce and education groups link with the **Midlands Imaging Training Academy** and **Universities** offering mutual support.

The **NHS England Regional team** are fundamental members of our Operational and Executive Boards.



Current Operating Model

Workforce
Data
Digital
Assets

Artificial Intelligence
QSI
Clinical
Access





Flow Analysis : Projections

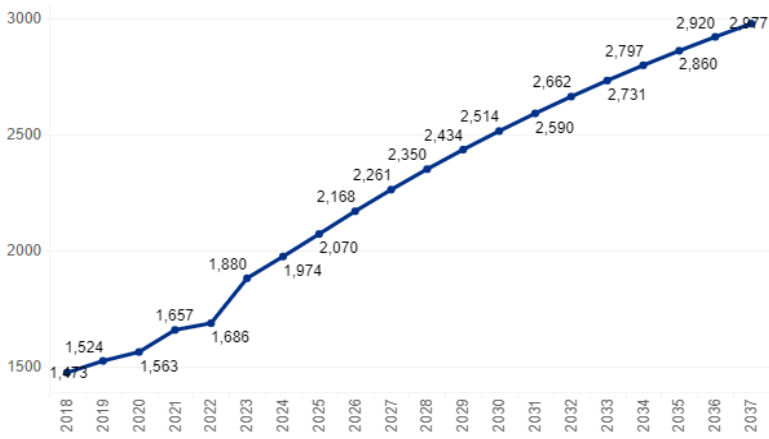
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Start WTE	1,880	1,974	2,070	2,168	2,261	2,350	2,434	2,514	2,590	2,662	2,731	2,797	2,860	2,920	2,977
Under 55 Leavers	-86	-90	-94	-99	-103	-106	-110	-113	-116	-119	-122	-125	-127	-130	
Over 55 Leavers	-23	-25	-26	-27	-28	-29	-30	-31	-32	-33	-34	-35	-35	-36	
Net Churn Within NHS	-28	-29	-30	-32	-33	-34	-36	-37	-38	-39	-40	-41	-42	-42	
Wider Labour Market	35	37	38	40	42	44	45	47	48	50	51	52	54	55	
International Recruitment	71	71	71	71	71	71	71	71	71	71	71	71	71	71	
Domestic Supply - Undergraduates	116	120	120	120	120	120	120	120	120	120	120	120	120	120	
Domestic Supply - Postgraduates	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Domestic Supply - Apprenticeships	3	6	12	12	12	12	12	12	12	12	12	12	12	12	
End WTE	1,974	2,070	2,168	2,261	2,350	2,434	2,514	2,590	2,662	2,731	2,797	2,860	2,920	2,977	
Growth	94	97	98	93	88	84	80	76	72	69	66	63	60	57	
% Growth	4.7%	4.9%	4.7%	4.3%	3.8%	3.6%	3.3%	3.0%	2.8%	2.6%	2.4%	2.2%	2.1%	2.0%	

- Future Workforce Projections are based on a **'Do Nothing Scenario'**
- Projections should be used as a conversation starter and not as an **'absolute'** answer
- March 2023 2018 Diagnostic Radiography Start stock 1,880 WTE
- Short Term projections (5 years) up to March 2028 suggest start stock of 2,350 WTE, growth of 470 WTE
- Medium Term (10 Years) projections up to March 2033 suggest start stock of 2,731 WTE, growth of 851 WTE
- Long Term projections (15 years) up to March 2037 suggest start stock of 2,977 WTE, growth of 1,097 WTE
- Short Term growth projections due to Undergraduates (595 WTE) and International Recruitment (356 WTE)

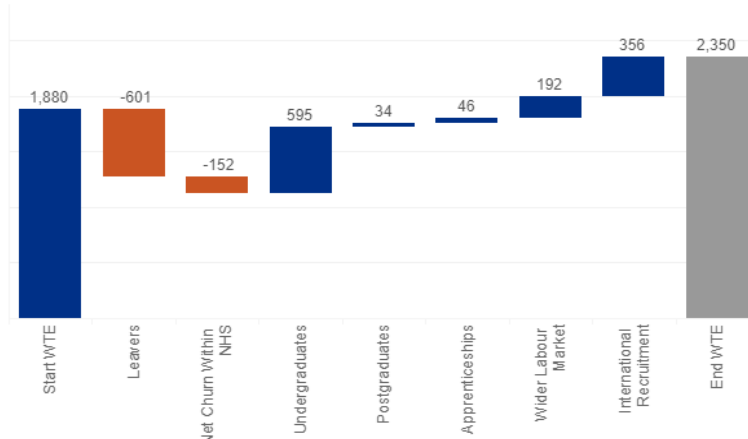
Waterfall to 2028

Start WTE, 2023	1,880
Leavers	-601
Churn Within NHS	-152
UG	595
PG	34
Apprenticeships	46
UK Wider Labour Market	192
International Recruitment	356
End WTE, 2028	2,350

Historic and Projected Supply, 2018 to 2037



Expected Waterfall, 2023 to 2028





Data and Information

Currently within the WMIN Network Trusts are able to view dashboards and data utilising their own Business Intelligence (BI) tools within their own ICBs and Trusts

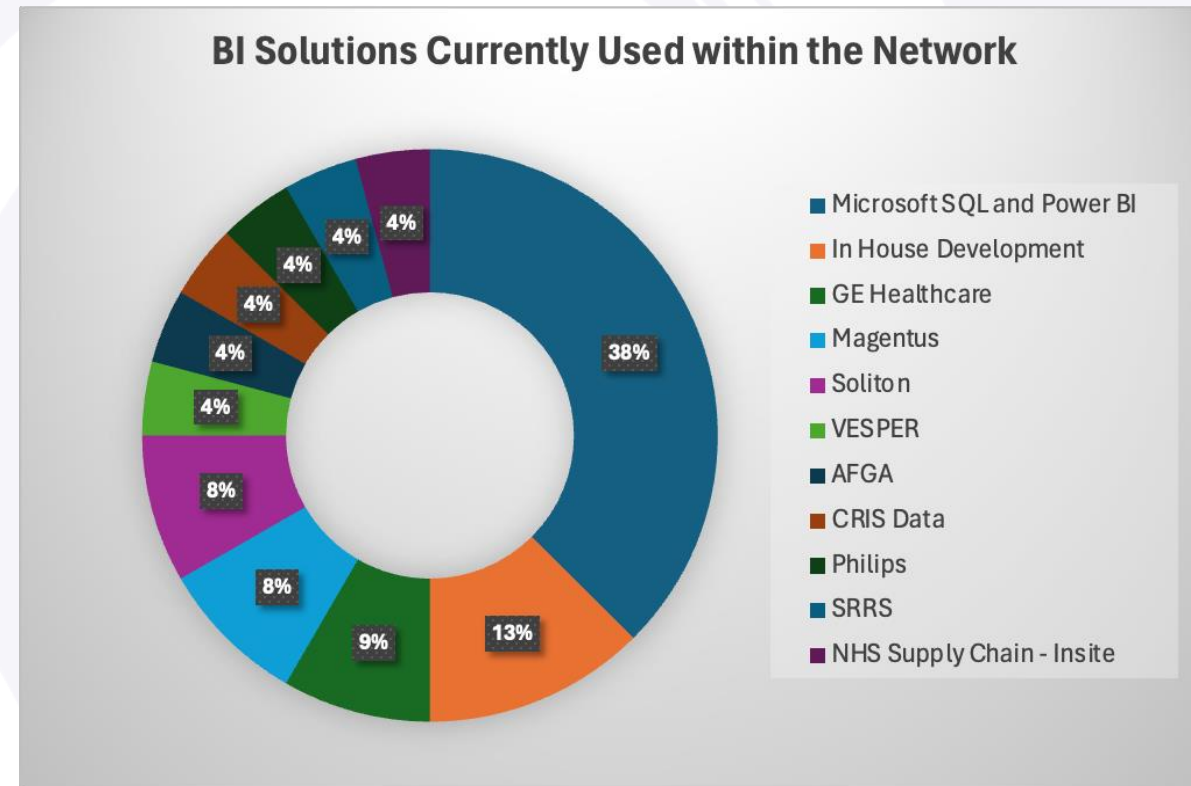
However, these tools are limited and do not give a network shared view of data such as the below:

- Procedure volumes – by modality and by time period
- Staffing Levels and absences
- Appointment data and did not attend (DNA) analysis
- Image sharing volumes (within WMIN and beyond via IEP)
- Technical metadata relating to image transfer speeds between Trusts

Reporting is generated by Trusts utilising data extracted from their current PACS and RIS systems and imported into various 3rd party supplier BI solutions such as GE Healthcare, Magentus and Soliton, however, 8 Trusts currently utilise Microsoft SQL, Power BI and in some instances Excel to query their datasets and produce dashboards and reporting.

Current Limitations:

Although there is some shared reporting within ICB's and their own Trusts this is currently a manual process and there is no automated shared reporting or dashboards across the wider WMIN Network.



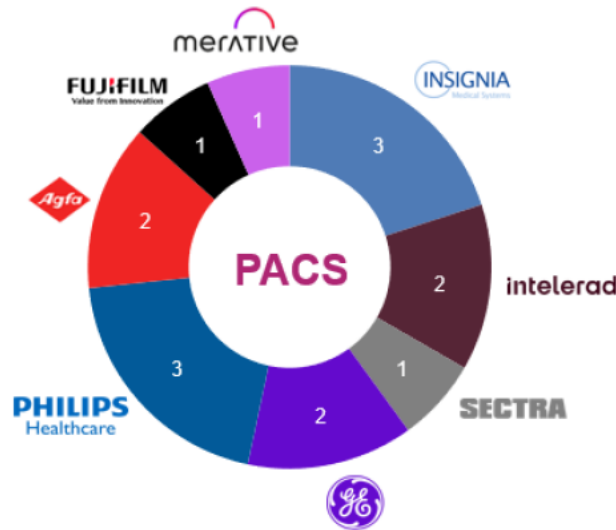
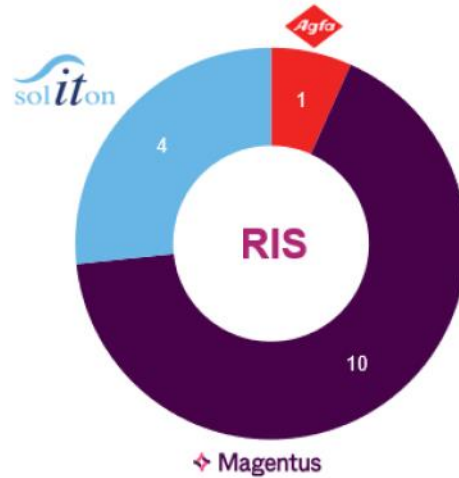


Digital – Image Storage, Reporting and Sharing

Currently, each Trust of the WMIN procures and operates a digital platform for imaging. Images are captured on imaging devices that are connected to a Picture Archiving and Communication System (**PACS**), where the images are stored and accessed. Clinicians access images on the PACS and create diagnostic reports that are stored on the Radiology Information System (**RIS**).

Most of the Trusts of the West Midlands have an independent PACS and RIS, so clinicians cannot see a patient's prior images if they are moved from one Trust to another. The notable exception in our region is in **C&W and H&W**, where excellent progress has been made. Four of the five Trusts are using the same PACS solution, and three have the same RIS. Although they are separate instances, they can move images between those Trusts with the same PACS.

A national image sharing solution, the **Image Exchange Portal (IEP)** exists to enable images to be moved between trusts. All of the WMIN Trusts are connected to IEP, which was an excellent digital step forward from the previous solution of sending images in ambulances and taxis.



While IEP is much better than not being able to exchange images at all, it does have its limitations.

IEP is essentially a manual process. A clinician in Trust A needs to know an image exists in Trust B and request it. They will ask a PACS manager, often via a secretary, for the image. The PACS manager at Trust A will request the image from Trust B. The PACS manager at Trust B will put the image onto IEP and notify the PACS manager at Trust A who will then download the image to Trust A's PACS. The Trust A clinician will then be notified that the image is available.

Current Limitations:

1. IEP is not an instant process. It can take as little as an hour to get an urgent image or over 5 days in some cases.
2. Transferring images manually introduces avoidable costs and risks
3. Images are replicated, creating duplicate storage costs and clinical issues (multiple copies of the same image with different reports).
4. With IEP you cannot search for previous images at other Trusts if you don't know they exist.
5. MDTs are known to pass over a patient because images have not been sourced by IEP. Instant access would improve MDT efficacy considerably.



Visualising the Patient Image Flows

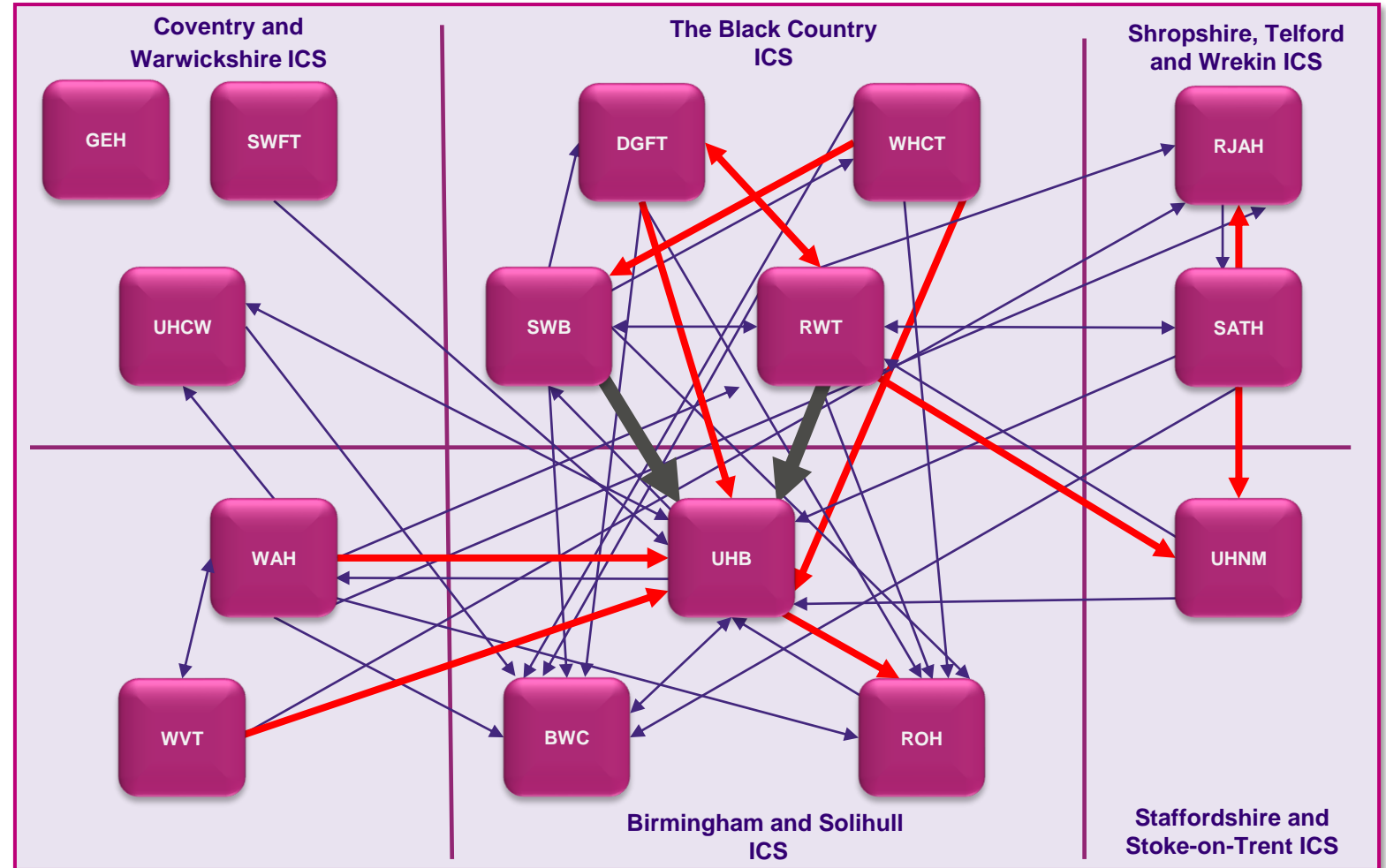
Current Model:

You can see where patient flow goes, and where images are transferred to and from, by looking at the IEP data, as shown.

Experience from elsewhere in England is that image related patient flow is up to ten times greater than image transfer. This means that there is a high amount of duplicate imaging because clinicians are not able to identify where to request a prior image from. So, they request a new image.

This causes unnecessary cost, delays in patient care and increased radiation dose for patients, as well as other issues.

Note that the flow diagram does not include arrows for annual image exchanges below 1,000. Those patients are important, but that would create a visual spaghetti, so are zoomed out. But some examples are detailed below (for **GEH** and **UHB**), with lower volume exchanges included.



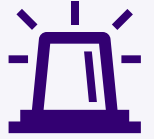
Potential Impact from IEP Image Transfer Delays



Acute or Emergent Patients

Making life-changing decisions for patients is an everyday occurrence in imaging:

- Every minute counts in making decisions with diagnoses such as Acute Aortic Dissections or Major Trauma
- Access to specialist opinions or decisions to transfer patients to a tertiary service for treatment will rely upon access to images. This is important for diagnoses of stroke for mechanical thrombectomy and cauda equina for spinal surgery, both of which can cause severe ongoing disability if not treated as emergent



Expert Review

- Where images are not available for MDT, they may be 'skipped' where patient will need to be rescheduled delaying treatment decisions and increasing time on waiting lists
- Access to specialist opinions outside of the trust is either via formal arrangement (IEP or access to workstation) or work arounds (giving rise to image quality/governance issues). These can restrict the ability to ask questions and discourage continuing professional development



Outpatient Appointments

Images and/or reports not being available prior to an appointment:

- Wasted appointment and requirement to reschedule
- Decisions are made without waiting for results
- Reports may not be read in a routine/timely manner, meaning there is a risk that findings are not acted upon



Patient Care

Most importantly, the delays in image reporting and transfer has the potential to impact on patient care and outcomes:

- Anxiety from waiting for results
- Low patient satisfaction from waiting times, or the need to 'chase' results
- Poorer patient outcomes from delays to treatment or patient pathways

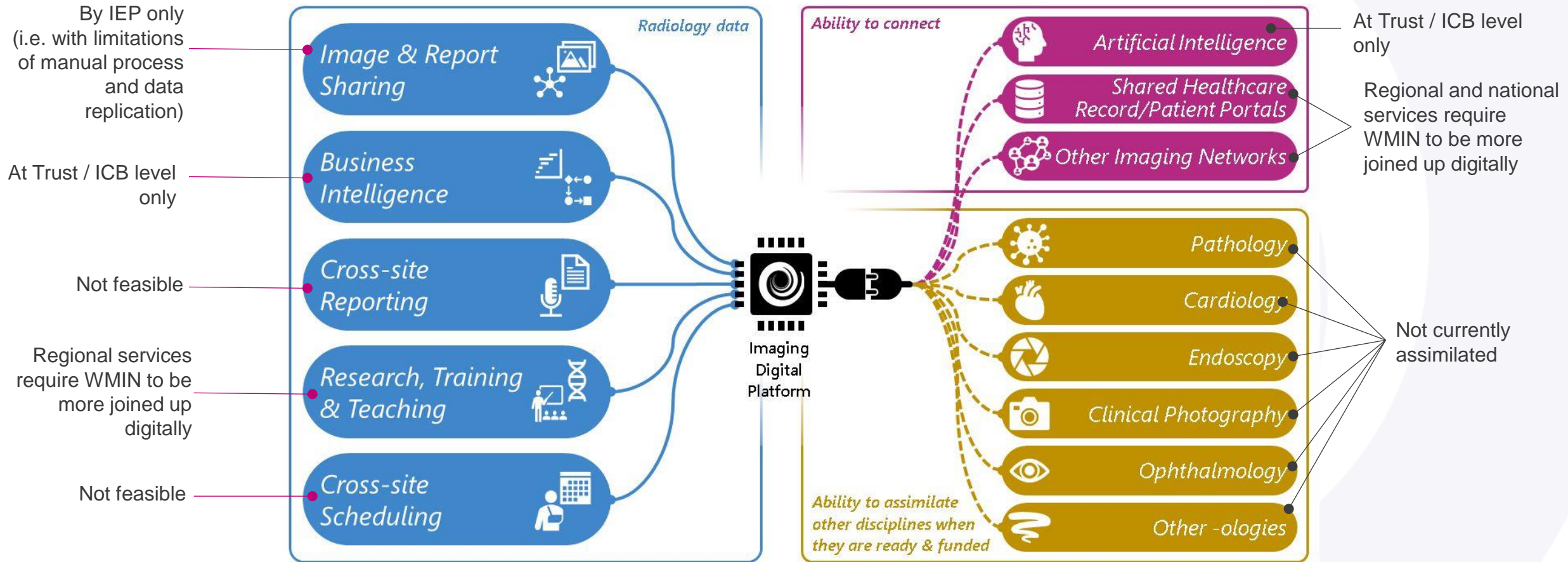


Digital Objectives



There is no digital solution in place currently to deliver many of the aspirations of the WMIN, or the desire of the NHS plan, or of patients in our care.

Current Model:



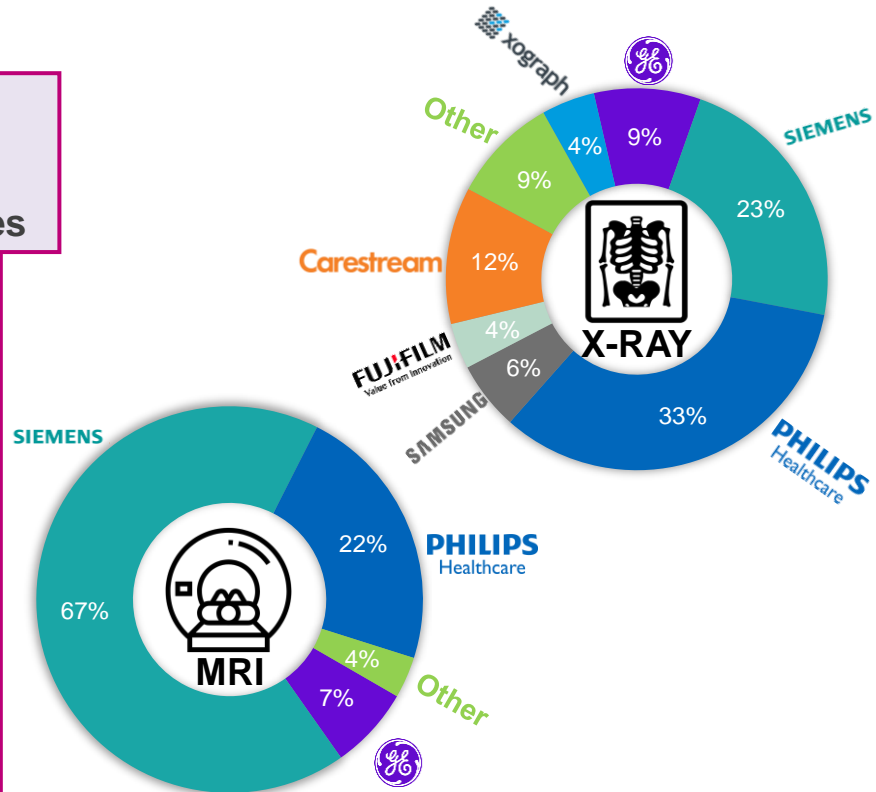
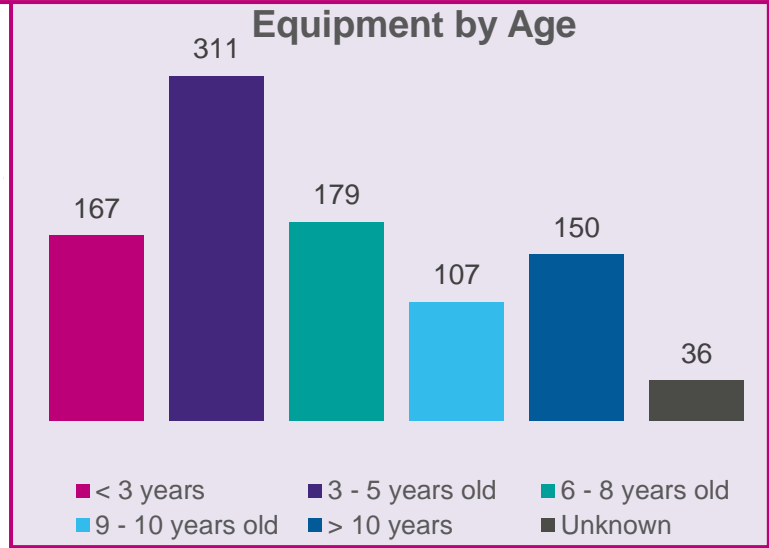
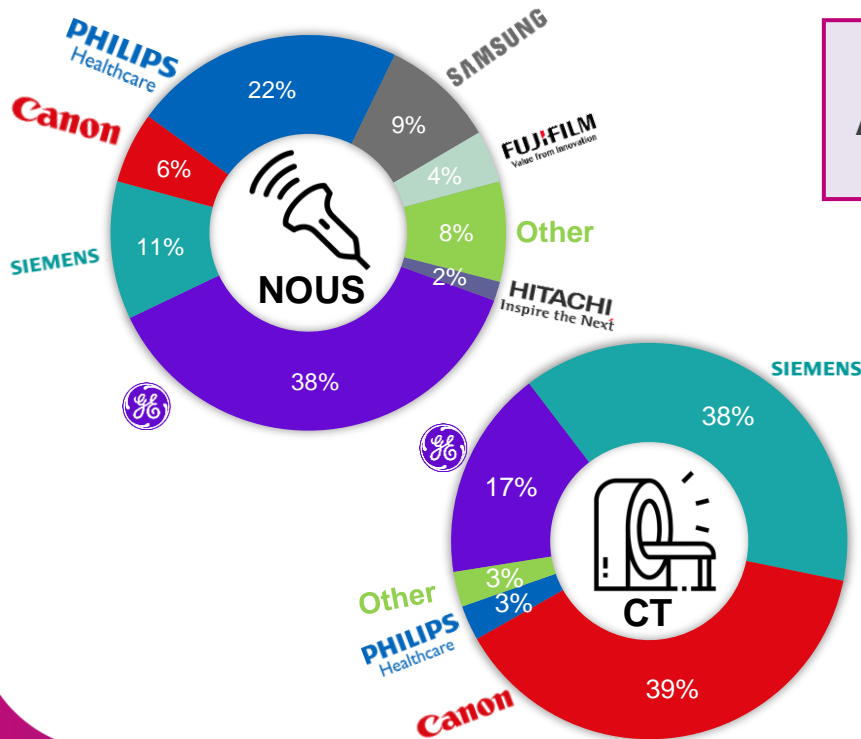


Equipment

The National Imaging and Diagnostics Collection (NIDC) dataset¹ can provide insights to the 15 Trusts Asset Registers. This collection provides an annual snapshot in time and is limited to the equipment age, ownership type, and manufacturer.

Current Model:

Equipment and consumables are mainly **purchased at an individual Trust level**. As a Network, we have had opportunities to bid for NHS England capital funding such as via SR21 or underspend pots to support the purchase of new, or replacement equipment. In 2023/24 the Network Trusts **secured £2.3m for a new MRI scanner, ultrasound machines, a mobile pad and other equipment**[△].

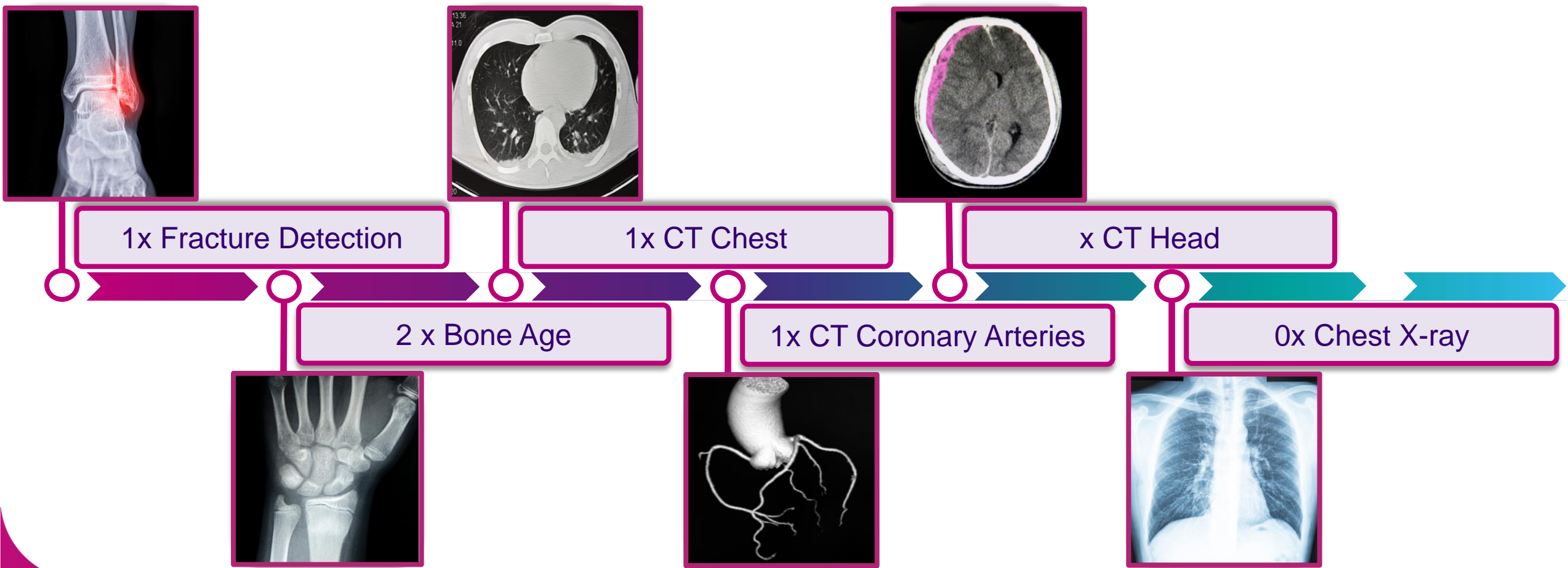




Artificial Intelligence

Current Model:

The AI Forum are currently working towards collating an evaluation of existing products used within the region, building a Network wide strategy to better position the Network for applying for funding, collaboration with external stakeholders and better position our organisations to embrace AI technologies within radiology.





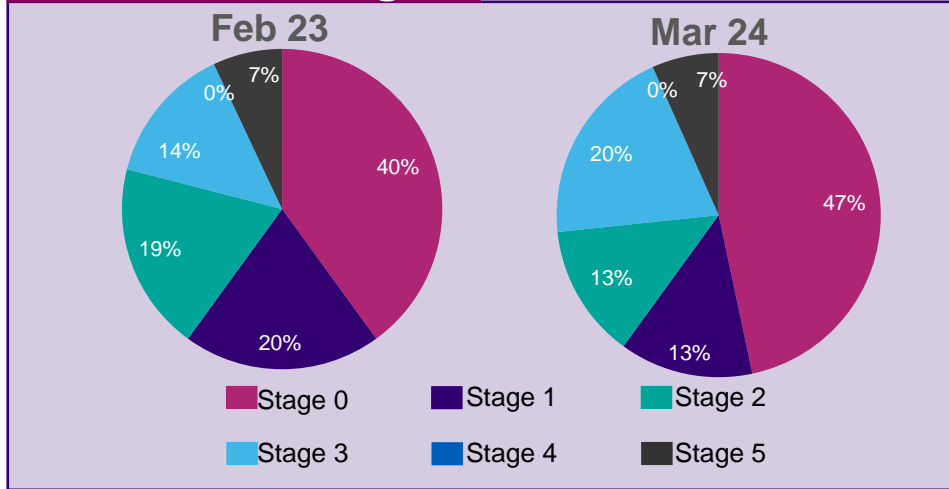
Quality Standard for Imaging

Current Model:

As of March 2024, only **UHNM has full UKAS accreditation**. Despite this, all 15 Trusts have indicated their support for gaining accreditation but have come across **significant barriers to progressing with their journeys**.

With the aim of raising the profile of QSI and assisting trusts, the Network employed a Senior Quality Improvement Manager who established a '[Quality Forum](#)'. Whilst providing support to members, there has been **challenges with engagement across the Network**, particularly where trusts did not have dedicated leads within their service. This echoes finding across other Networks across England.

QSI – Trust Stages



The [Quality Standard for Imaging \(QSI\)](#) is the Standard adopted by the Executive and Operational Boards as the expected quality measure for imaging services across the Network.



What Barriers Do You Experience?:



Imaging Patient Pathway

A patient's journey through our services will differ depending on the referral source and type of examination, but broadly follow a similar pattern to that below



Current Clinical Models

With some of our Clinical Special Interest Groups becoming more established, we have taken the opportunity to **look at the current service provisions**. The SIG members developed surveys containing what mattered to them as well as their compliance against national guidance. Our paediatric²¹ and MRI²² surveys results identified clear differences in practice across the Network. These results are currently being analysed to look at **sharing good practice, developing peer relationships and standardising protocols**.

Through speaking to our SIG members when developing work programmes, there are clear inefficiencies and common barriers that trusts face when working in isolation:

Differing roles and opportunities The types of advanced practice available ranges from none at some Trusts to carrying out interventional procedures and MRI reporting. This impacts some services abilities to recruit and retain staff and increase capacity in some areas.

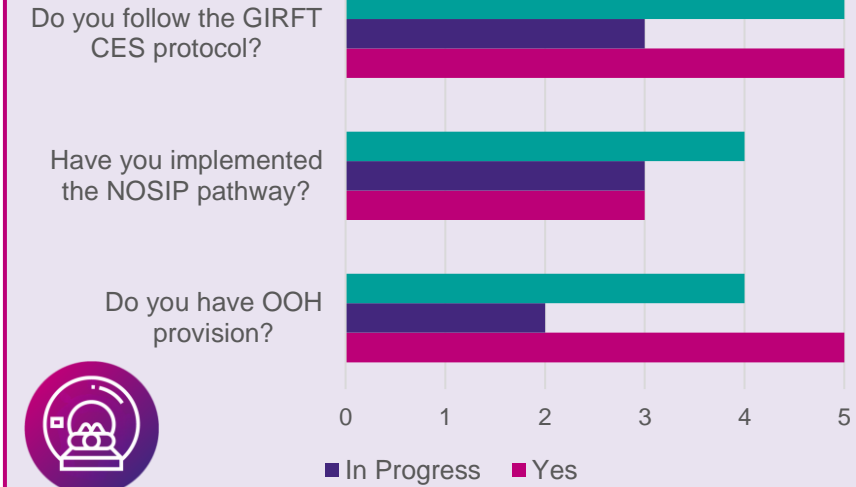
Repeating examinations When patients move between Trusts or are referred to specialist centres, there may be protocol variations. This may require patients to be unnecessarily re-scanned resulting in increased patient radiation doses, and additional capacity requirements

Lack of support for the generalist Having access to specialist advice can be limited and informal for smaller, general hospitals. REALM meetings can have a limited scope for complex or difficult examinations, and education opportunities are not readily available

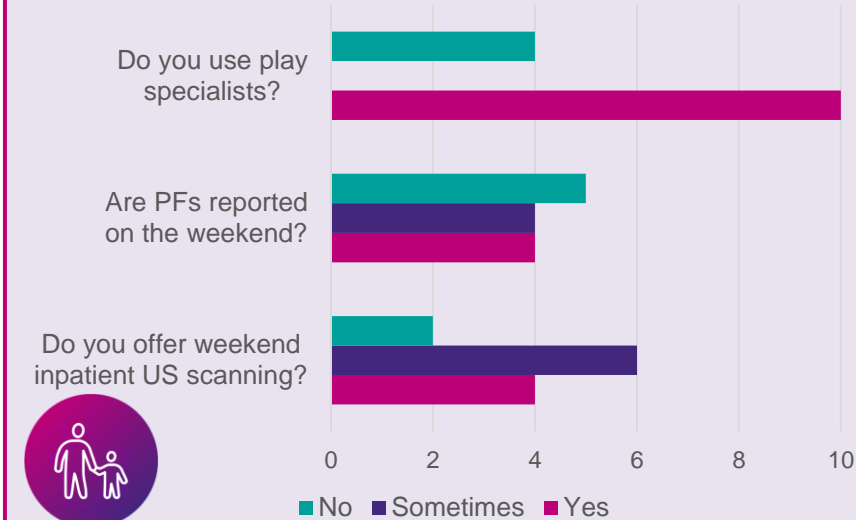
Isolated Working Each service has their own clinical strategies, training programmes and pathways which they maintain locally within their own Trust.

Single points of failure Some services have single points of failure, meaning there is not always sufficient support for sickness, leave or training. There may also require, for example, support for a second read for SPA imaging or for a single ARSAC licence holder in NM.

MRI Survey:



Paediatric Survey:



Access and Yield

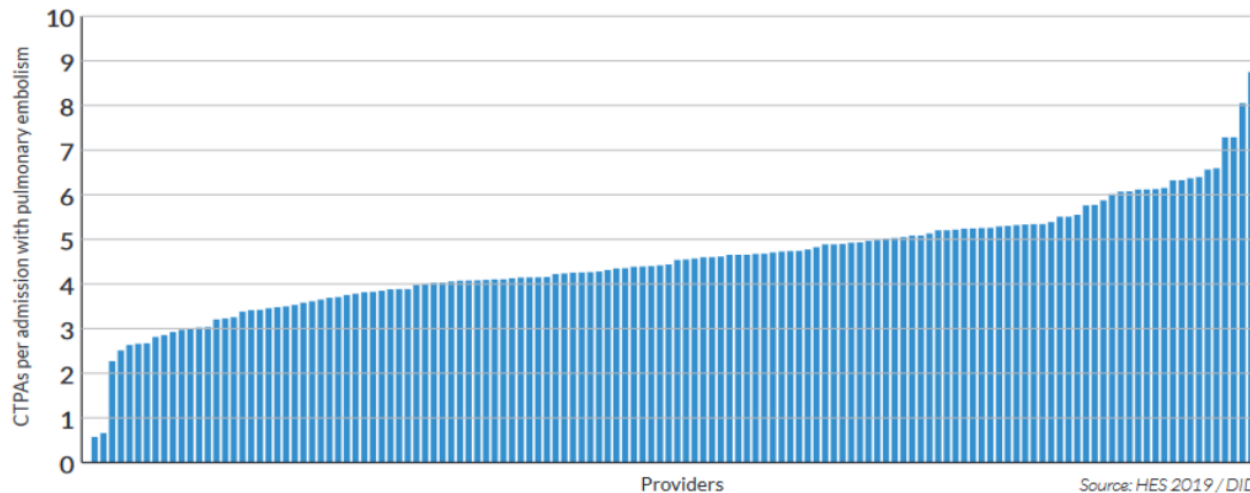
Within our Network alone, there is a 62% difference in imaging rates for NOUS scans between the highest and lowest ICSs with BSoI ICS having the 3rd lowest rate in England and C&W ICS having the highest rate out of all 42 ICSs in England²

As a Network, we can look at the difference in access and demand and capacity rates across all 6 ICSs. Evidence suggests there is **no clear correlation between the number of assets and imaging rate**. For example for SST, when comparing to imaging rates for MRI, the ICS has the lowest number of scanners in the Network but actually carried out the 3rd highest number of scans across all 42 ICBs in England. We see the opposite pattern with the STW ICS.

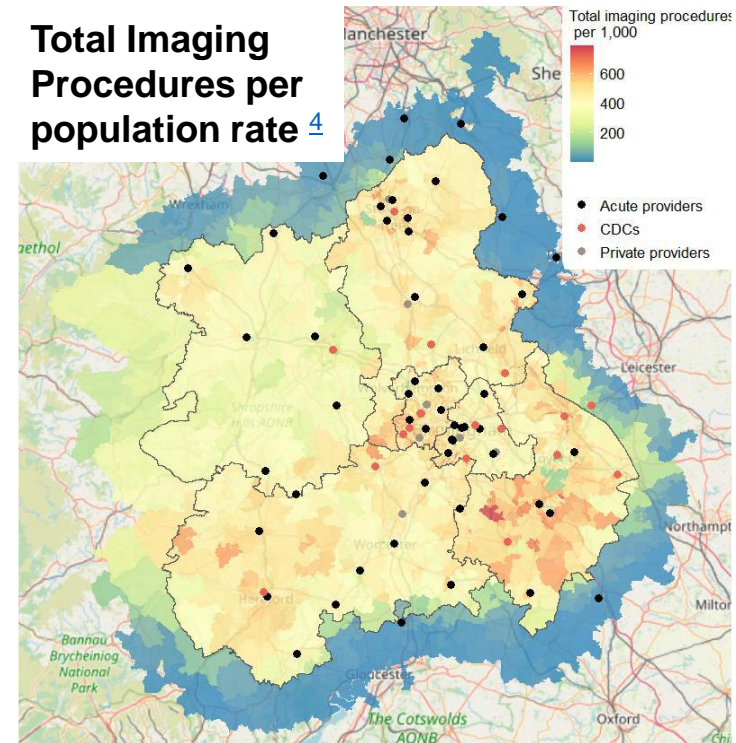
We recognise a number of caveats related to this data, for example equipment utilisation rates are likely to differ significantly between services, depending on opening hours, specialist services and imaging demand.

The GIRFT diagnostics delivery guide ²⁴ provided useful data looking at the number of positive CTPAs per scan across trusts.

This **variation again shows the inconsistency in practice** across the country.



2022/23 System	Asset per 100k of population ²³		Imaging rates per 10k of population ²		
	CT	MRI	CT	MRI	NOUS
BC ICB	1.17	1.17	1,039	816	1,798
Bsol ICB	0.89	1.01	1,011	609	1,144 (3rd Lowest in England)
C&W ICB	1.04	1.04	1,142	883 (2nd highest in England)	2,161 (highest in England)
H&W ICB	1.1	0.61	1,148	523	1,775
SST ICB	0.68	0.51	1,086	879 (3rd highest in England)	1,579
STW ICB	1.53	1.34	997	745	1,204
England	1.11	0.95	1129	652	1,663



Next Steps: Target Operating Model (TOM)

The purpose of this 'Current Operating Model' is to demonstrate to our stakeholders, the unique challenges experienced across the region, and how they may differ to the national picture.

As our work programmes develop, we need to look to the future at how our services can work together in the most productive way. The next steps will be to develop a 'Target Operating Model'. This work aims to take information gained from this 'Current Operating Model', as well as the Network's early vision, to look towards the future.

By ensuring we have **evidence-based work programmes** based on a clear model, defined by our members, we aim to improve engagement and build trust and by encouraging ownership by our experts. We will also be able to **promote transparency by demonstrating the rationale** behind all the decisions we make. This will enable us to build an **evidence-based work programme** which has designed and driven by our members.

While the Network develops the future operating model, the digital requirement has particular urgency and is being developed in parallel.

An emerging set of digital objectives has been developed with stakeholders and is being ratified through the Outline Business Case and Output Based Specification process.

It is very clear, for instance that there is an urgent **cross site image sharing and report sharing** requirement. Delivering this would improve current operations and create a platform for a future operating model. **Cross site reporting**, would enable a significant shift in the ways in which Trusts work together and is expected to be formalised in the TOM.

There is more **divided opinion on cross site scheduling**. While many strategic leaders believe this would deliver material patient benefits and operational efficiencies, those who are currently delivering image scheduling in Trusts caution that this may create as many problems as it solves.

Therefore, the digital program has set out a prioritised functional requirements list, which will be developed with Trusts and ICBs along with the TOM.



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FutureNHS

<https://future.nhs.uk/westmidlandsimagingnetwork>



Twitter

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Appendix 1 - WMIN Trusts



The Shrewsbury and Telford Hospital
NHS Trust



The Dudley Group
NHS Foundation Trust



Birmingham Women's and Children's
NHS Foundation Trust



South Warwickshire University
NHS Foundation Trust



University Hospitals of North Midlands
NHS Trust



The Robert Jones and Agnes Hunt Orthopaedic Hospital
NHS Foundation Trust



Walsall Healthcare
NHS Trust



University Hospitals Birmingham
NHS Foundation Trust



University Hospitals Coventry and Warwickshire
NHS Trust



Worcestershire Acute Hospitals
NHS Trust



Sandwell and West Birmingham
NHS Trust



The Royal Wolverhampton
NHS Trust



The Royal Orthopaedic Hospital
NHS Foundation Trust










George Eliot Hospital
NHS Trust










Wye Valley
NHS Trust

Appendix 1

	Birmingham and Solihull ICB			Coventry and Warwickshire ICB			Herefordshire and Worcestershire ICB	
	Birmingham Women's and Children's	University Hospitals Birmingham	The Royal Orthopaedic Hospital	University Hospital Coventry and Warwickshire	South Warwickshire University	George Eliot Hospital	Worcestershire Acute Hospitals	Wye Valley
 Number of Sites	2	6	1	2	3	1	4	2
 Activity 2022/23* ²	148,405	793,755	64,830	470,150	241,645	161,350	733,610	164,285
 Number of Staff (WTE) ¹	350	1419	74	670	225	203**	584	711
 Nuclear Medicine Service	Y	Y	N	Y	N	N	Y	Y
 Number of CT Scanners ²³	●●	●●●●●●●● ●●●●●●●● ●●●●●●●●	●	●●●●●●●●	●●	●●	●●●●●●●● ●●	●●●●
 Number of MRI Scanners ²³	●●●●	●●●●●●●● ●●●●●●●● ●●●●●●●● ●●●●●●●●	●●●●	●●●●●●●●	●●	●●	●●●●	●●
 Number of NOUS machines ²³	20	39	3	28	12	5	19	20

Appendix 1

	Staffordshire and Stoke-on-Trent ICB	Black County ICB					Shropshire, Telford and Wrekin ICB	
	University Hospitals of North Midlands	The Royal Wolverhampton	Walsall Healthcare	Sandwell and West Birmingham Hospitals	The Dudley Group	The Shrewsbury and Telford Hospital	The Robert Jones and Agnes Hunt Orthopaedic Hospital	
 Number of Sites	2	2	1	2	2	2	1	
 Activity 2022/23* ²	563,520	311,835	210,050	364,565	314,960	306,580	84,975	
 Number of Staff (WTE) ¹	1095	513	185	433	400	355	119	
 Nuclear Medicine Service	Y	Y	Y	Y	Y	Y	N	
 Number of CT Scanners ²³	●●●●●	●●●●●●	●●●	●●●●●●	●●●	●●●●●●	●	
 Number of MRI Scanners ²³	●●●●●●	●●●●●●	●●	●●	●●●●	●●●●●●	●●●	
 Number of NOUS machines ²³	52	12	11	50	42	14	4	

Appendix 2 - References

- ^ Internal Survey/Metric
1. [Patients Registered at a GP Practice - NHS Digital](#) (as of April 2024)
2. [Diagnostic Imaging Dataset – Examinations carried out each month - NHS England](#) (November 2023)
3. [National Imaging Data Collection - NHS England](#) - (March 2023)
4. WMIN [Community Diagnostic Centre Analysis Report](#) (MLCSU Strategy Unit)
5. [Population and Person Insight - Core20 and Ethnic Minorities % - NHS England](#) (as of April 2024)
6. [Our Places - Birmingham and Solihull Integrated Care System](#) (Accessed April 2024)
7. [Cancer in the UK 2020: socio-economic deprivation – Cancer Research UK](#) (September 2020)
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9. [Health Literacy: Prevalence Estimates for Local Authorities – University of Southampton and NHS England](#) (Accessed April 24)
10. [NHS England » LGBT health](#) (Accessed April 24)
11. [Gender identity, England and Wales: Census 2021 - Office for National Statistics](#) (January 2023)
12. [Proportion of population reporting good health by age and deprivation - The Health Foundation](#) (January 2022)
13. [Why Do Diagnostics Matter – The King’s Fund](#) (October 2022)
14. [Diagnostic Imaging Dataset Annual Statistical Release 2022/23 – NHS England](#) (November 2023)
15. [Clinical Radiology Workforce Census 2022 - Royal College of Radiologists](#) (June 23)
16. [Diagnostic Radiography Workforce UK Census 2022 – Society of Radiographers](#) (January 24)
17. [Diagnostics Programme Dashboard – NHS England](#) (as of February 2024)
18. [Diagnostic Imaging Reporting Turnaround Times - NHSE Data Hub - FutureNHS Collaboration Platform](#) (as of November 2023)
19. ESR
20. [NHS Imaging Network Map – NHS England](#)
21. [Paediatric Service Provision Survey Results - West Midlands Imaging Network](#) (March 2024)
22. [20240213 MRI Service Provision Survey Provisional Results - West Midlands Imaging Network](#) (February 2024)
23. [National Imaging Data Collection March 2023 – NHS England](#) (January 2024)

■ Appendix 3 – List of Terms

For a list of terms used, please visit

[Current and Target Operating Model - West Midlands Imaging Network \(wmidsimagingnetwork.nhs.uk\)](https://www.wmidsimagingnetwork.nhs.uk)