



Improving Productivity in Radiology Services

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Context

As the NHS struggles to come out of the COVID pandemic, reduce the considerable waiting times that people face, and attempts to transform its services to put the NHS onto a sustainable footing for the decade ahead, it is clear that some areas of service are in need of significant transformation if we are to boost productivity and take advantage of the digital era. No area of service fits this bill more than the area of radiology.

Significantly improving the productivity of radiology services is mission critical for the NHS elective recovery, as diagnostic capacity and outpatient activity are the major bottlenecks in the smooth and timely flow of patients through most pathways of care. Simply put, without a diagnosis there is no treatment.

Pre-pandemic underinvestment in equipment and staff has left radiology services facing major challenges. As well as meeting current demand, radiology services have to become future-proof, equipped to manage the challenges of growing, ageing populations and the increased prevalence of chronic disease.

However, with the advent of new ways of thinking, the application of technology and a step-up in clinical leadership, there is hope that the service can modernise and deliver the improved productivity needed plus added value for every pound currently invested.

Improving Productivity in Radiology Services Thought Leadership Paper

The round table held on 17th May 2023 with radiology leaders from many areas across the country, provided an opportunity to take an informed in-depth look at the problems radiology services face and, more importantly, to identify the short and longer term solutions to them.

Ten Observations on the Challenges for Radiology

1. There is a clear mismatch between demand and capacity whereby the demand for scanning outstrips the capacity to perform and report scans.
2. There are limitations on workforce, with an insufficient number of both radiographers and radiologists. Given current financial constraints, there is little prospect of significant investment in additional senior posts or training expansion within the current financial environment.
3. Robbing capital to pay revenue debt has denuded the level of diagnostic imaging equipment available. The NHS lags behind comparable health systems in other countries with a significantly lower scanner to population ratio.
4. Moving towards 24/7 working in imaging makes the specialty less attractive to an already stretched workforce. However, not providing a comprehensive 24/7 radiology service may lead to a weakening of the authority and credibility of imaging amongst other medical specialties.
5. There is a widespread misperception at senior levels that the development of artificial intelligence (AI) will eliminate the need for radiologists. Current AI tools have been designed to aid decision-making rather than replace radiologists. In addition, the functionality of many of these tools is limited to certain pathologies and modalities. AI may not be the 'white knight' that some policy makers think it will be but this misperception impacts the decisions and policies regarding investment within radiology.

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6. Radiology services are logistically complicated to deliver. Despite being perceived as a 'high tech' specialty, radiology lacks the technical tools to streamline its logistics. This manifests as suboptimal rostering of staff, the inability to predict ebbs and flows in capacity and demand (and plan accordingly) as well as the inefficient allocation of scans. This can lead to a high administrative burden across a radiology department with clinical time being spent on administrative tasks. It can result in radiology departments constantly 'firefighting' which erodes morale and further diminishes the workforce.
7. As a professional group, radiologists are highly variable in their working preferences, which leads to difficulty if they are managed uniformly, without agility. An inflexible approach may alienate the workforce and lead to reduced manpower.
8. The move towards using for population health screening is driving up the demand for radiology services without evidence that the scans will identify more pathology. For example, scanning for early cancer diagnosis will not necessarily improve cancer outcomes in some cases.
9. Whilst radiology networks are clearly part of the solution (see below) they are variable in size, capability and maturity at the present time. Some are bedeviled with legacy behavioural issues of staff identifying with their Trust at the expense of the network or geography. This is often reinforced contractually.
10. Radiologists typically have no overall responsibility for the patient, which reduces their authority within the management of the patients and their pathways.

Ten Observations on Solutions

1. There is an opportunity to work with junior doctors in training schemes to ensure that new qualified staff are able to understand the importance of working for a 'system' and a network rather than a single Trust.
2. There are now easily accessible radiology logistic tools (e.g. OptiRad by Hexarad) that can have a significant beneficial impact on the productivity of the existing workforce through scheduling and matching availability to need. These provide data-driven business intelligence tools that can aid radiology workforce planning and design.
3. There is an opportunity to highlight radiology as an essential service, this may need a greater commitment to providing 24/7 working.
4. Technology and screening can play a major role in ensuring that the diagnostic radiological intervention is targeted at those with a higher likelihood of abnormalities. However, this will need to be balanced with the desire to identify abnormalities at an earlier stage.
5. Flexible job planning, optimal work conditions, remote/ office work balance and strong team morale are all factors that will attract and retain clinical staff within radiology. This requires departmental leaders to be agile in their management styles and approaches.
6. Radiology departments face increasing pressures to expand their sonography services. Streamlining the pathway for sonographic qualification could address this issue.
7. Radiology has the opportunity to embrace the networking structure at an ICS/ multi-ICS level thereby optimising its workforce diagnostic capacity, patient throughput, job satisfaction, ability to deliver on-call services and clinical quality.

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8. It should be possible to link radiology networks into the emerging provider collaborative governance structures.
9. Better management of commercially supplied teleradiology services and contracts, especially by increasing the scale at which they are procured (e.g. on a network rather than individual trust basis), could bring greater value for money and quality assurance.
10. Radiology is a technology based specialty and has a great opportunity to demonstrate the value of new technologies such as AI. However, the effective deployment of technology requires skilled clinical staff to apply it. By demonstrating the notion of co-piloting, working in conjunction with AI tools, radiology could set become the exemplar. For example, Microsoft's programme of next generation AI underpinned technologies, have been branded 'Co-Pilot' to emphasise this point.

Recommendations

We have distilled the observations on challenges and solutions into 6 practical recommendations:

1. Empower radiology networks with clear mandates such as deploying staff across the network, procuring large contracts, addressing unwarranted clinical variability, provide out-of-hours services and promote recruitment to radiology.
2. Create and promote 2-3 exemplar networks to demonstrate how these tasks can be done well, including how these fit into the new governance models in Provider Collaboratives and ICBs. The focus must be on accelerating the effectiveness of the networks across the NHS.
3. Employment contracts for radiology staff should reflect the move towards network working. Staff should be contracted to work for an imaging network rather than a hospital, which may mean imaging networks need to become statutory bodies.
4. Investment in technology to streamline workforce planning, rostering, supply demand management and business intelligence within radiology departments.
5. Ensure workforce planning makes appropriate assumptions on the need for radiology staff commensurate with application of technology and new ways of working. Avoid the assumption that AI replaces this need and design new ways of working whereby AI augments and enhances performance.
6. Maintaining strong team morale is essential for attracting and retaining a high-quality workforce within radiology. There is no 'one size fits all approach' so local departments require flexibility and autonomy to develop a high-quality workforce.

Conclusion

We were delighted by the desire of radiologists and service managers to engage with the need to find solutions to the current productivity challenge. We have attempted to capture their key points in a clear and succinct way, however to implement these solutions will require action on behalf of policy makers, national directors and local leaders.

We believe that once agreed at these levels there could be a major programme to implement these changes. Money is clearly tight but with a combination of reform, invest to save and clinical goodwill there is a clear pathway to manage the problems we currently face.