

# ***CQC Radiology review: where are we now?***

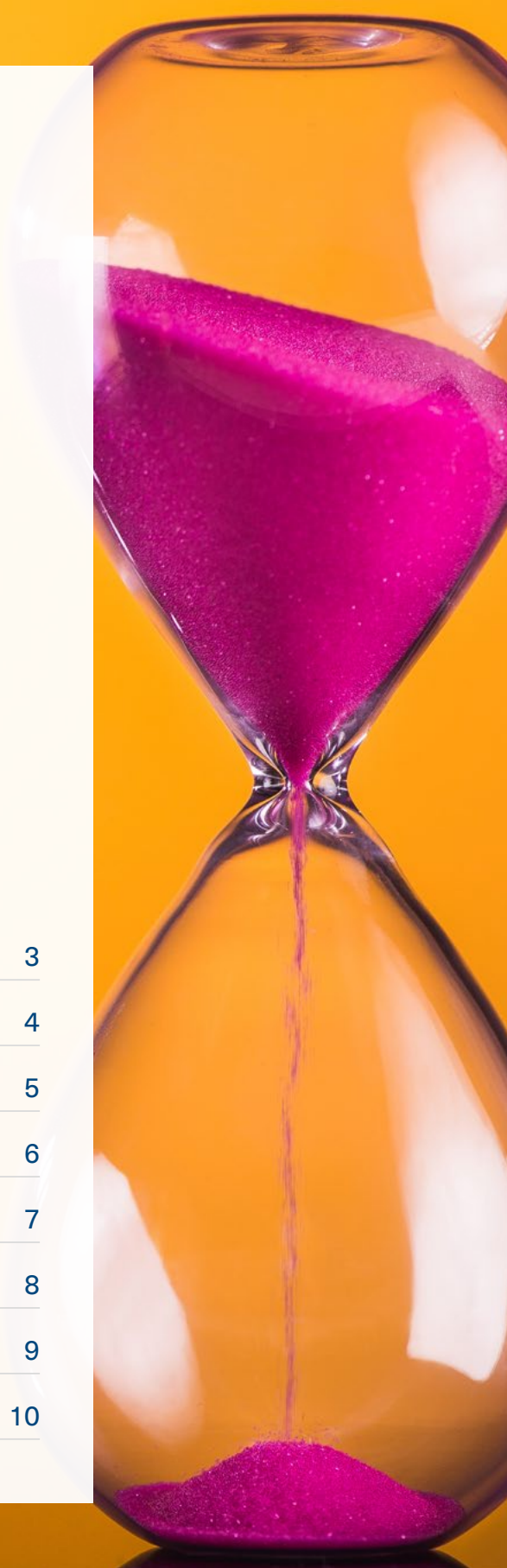
Exploring the reality of image reporting turnaround times in England

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In July 2018, the Care Quality Commission (CQC) published *Radiology review: a national review of radiology reporting within the NHS in England*.<sup>1</sup> The report found that radiology departments across England are facing difficulties in reporting patients' examinations in a timely manner. A lack of national standards means that trusts 'can be unclear about what good looks like', which naturally leads to variation in practice.<sup>1</sup>

The CQC report further noted that methods of managing workload, such as outsourcing and autoreporting, bring their own challenges for radiology departments. It was stressed that it is vital for trusts to assure themselves that reports are performed by appropriately trained professionals and that the quality of these reports is systematically audited. Staffing shortages also cannot be underestimated and are seriously contributing to delays and backlogs. High vacancy rates for radiologists and underutilisation of the skills of reporting radiographers are key issues.

The report put forward three recommendations.

1. NHS trust boards should ensure that:
  - They have effective oversight of any backlog of radiology reports
  - Risks to patients are fully assessed and managed
  - Staffing and other resources are used effectively to ensure examinations are reported in an appropriate timeframe.
2. The NHS Improvement National Imaging Optimisation Delivery Board (NIODB) should advise on national standards for report turnaround times, so that trusts can monitor and benchmark their performance.
3. The Royal College of Radiologists and the Society and College of Radiographers (SCoR) should make sure that clear frameworks are developed to support trusts in managing turnaround times safely.

Framed almost a year on from the CQC report and in the context of NHS England's (NHSE) *Long Term Plan*, this position statement explores the reality of image reporting turnaround times across the NHS in England.<sup>2</sup> It outlines RCR activity in response to the CQC's report and makes recommendations for the future.

## Discussion

Workforce shortages within radiology are critical. Resultant levels of unreported images and imaging backlogs can have implications for clinicians, trusts and ultimately, patient safety. This includes delays in diagnosis which can cause stress and anxiety for patients, potentially leading to poorer outcomes. The reality of imaging backlogs and delays is incompatible with national ambitions – including those put forward in NHSE's *Long Term Plan* – to improve early diagnosis.<sup>2</sup> At present, the *Long Term Plan*'s ambitious target to see 75% of all cancers diagnosed at stages 1 or 2 by 2028 seems unachievable.

Imaging backlogs and the use of auto-reporting to manage them can result in missed diagnoses, particularly if the member of staff interpreting the image is inadequately trained.\*

The cost of outsourcing is a further issue: the CQC report found that 76% of trusts were outsourcing at least some of their radiology work to external companies in an attempt to keep up with demand. The RCR's *Clinical radiology UK workforce census 2018* report found that radiology departments in the UK spent an estimated £165 million on outsourcing, insourcing and the employment of locums over the financial year 2017/18.<sup>3</sup> This is equivalent to the salaries of 1,887 whole-time equivalent (WTE) consultant radiologists.<sup>4</sup> As demand for imaging increases, these unsustainable levels of expenditure will rise exponentially unless the workforce grows accordingly. Unmanageable reporting workloads are putting further strain on the already stretched radiology workforce, and radiologists are showing indications of stress and burn out – currently, half retire at or before 61.<sup>3</sup> This wide array of implications demonstrates that unreported images and imaging backlogs must be promptly and effectively addressed.



**The reality of imaging backlogs and delays is incompatible with national ambitions**

\*An autoreport is a standardised automatic response sent to referring clinicians, stating it is their responsibility to either provide a formal imaging report or to request one from the radiology department.

## How has the RCR responded?

### Reporting framework

The RCR has taken on board the CQC report's recommendations and has been working with SCoR to develop a clear reporting framework. This framework is due to be announced in summer 2019.

### Unreported images survey

At the start of 2019, the RCR conducted a snapshot survey of English, Scottish and Welsh health services to determine levels of unreported images and reporting turnaround times.\*\* Northern Ireland was not included due to specific legislation on turnaround times. Since data was returned from only two health boards in Scotland and two in Wales, the findings are not necessarily representative of the situation in these nations individually. However, the results from Scotland and Wales are included in the following summary of the survey.

The results of the survey are illustrated in Appendix A. For the purposes of our analysis, we assessed these services against two key standards – four-hour turnaround times for emergency department patients (in line with NHSE's four-hour emergency department wait time standard) and a 24-hour reporting turnaround time for inpatient images (corresponding with NHS England clinical standards for non-urgent inpatients).<sup>5,6</sup>

### Alarming, the survey found that no services were consistently able to meet these key standards.\*\*\*

Unfortunately, due to limitations in the information technology (IT) systems used by many services, it is not straightforward to gather data on critical, urgent or non-urgent patient categories. The RCR believes that recording and measuring turnaround times according to the nature of a patient's condition rather than at what point they enter the system would be more valuable for monitoring reporting turnaround times, for assessing standards of care, and to enable optimum use of radiology departments for patient benefit.

Overall, **less than a third (32%) of patient images taken when presenting in emergency departments were reported within four hours.** This demonstrates

a huge discrepancy between expected standards of care and what trusts can reasonably achieve, posing a significant threat to patient care. **For inpatients, only six in ten images were reported within 24 hours.** Since this incorporates critical patients, urgent patients and non-urgent patients, this means that even though this statistic appears at first to be less concerning than the emergency department results, it still includes unacceptable delays for patients who require urgent care.

Such significant gaps between existing standards and the levels at which services actually operate indicate that the CQC is correct in its assertion that delays 'cannot solely be addressed through improving governance and escalation processes in local trusts'.<sup>1</sup> Confronting delays and backlogs will require major overhauls, not least an increase in the number of radiologists and reporting radiographer posts. Measures and future developments that would help to improve this situation are explored in more detail later in this document.

The results of the survey also include **significant regional variation.** The full breakdown of these data is available in Appendix B. For emergency department patients, the proportion of images reported within the four hour waiting time target ranges from 37% in London to 23% in Wales. The proportion of inpatient images reported within 24 hours varies even more greatly, from 77% of images in the South West to 40% in the North East of England.

While we hope that NIODB's national standards for report turnaround times, when published, will go some way to addressing this regional variance, workforce issues and other constraints mean that these standards alone are unlikely to be sufficient. More must be done to better understand and minimise regional variation.

\*\* The term 'services' refers to both trusts and health boards.

\*\*\* Based on responses of 68 out of 174 services in the UK (excluding Northern Ireland), December 2018

## The solutions

To address the challenge of unreported images effectively, several changes and developments are necessary. First, **all of the CQC's recommendations should be fully implemented as soon as is feasible**. As outlined previously, **NHS trust boards should ensure that they have effective oversight of any backlog of radiology reports** – the RCR has called for hospitals to publish backlogs on a weekly basis.<sup>7</sup> **Trusts must fully assess and manage risks to patients**. This is particularly true in relation to outsourcing and autoreporting where it must be assured that: reporting staff are adequately qualified; quality audits of the reports are performed; and systems are in place to flag up urgent and unexpected findings.<sup>1</sup> It is also essential that **staffing and other resources are used effectively** – a recommendation mirrored in the *Long Term Plan's* commitment to 'Ensuring staff are making the most of their skills and expertise'.<sup>2</sup> This will help the overstretched radiology workforce in maximising its efficiency.

The RCR also supports the CQC's suggestion that **NIODB should advise on national standards for report turnaround times**. These standards should serve to reduce regional variation and enable trusts to monitor and assess their performance more effectively. RCR recommendations for maximising the impact of these standards are that:

- **The quality of reporting must be weighted equally to turnaround times**. A report that is accurate and offers recommendations for treatment is essential for patient management, and this should not be considered as secondary to the timeframe in which it is produced.
- **Targets must prioritise patients who are at a higher risk** and should be based around specific patient pathways.
- **Standards should reflect the ambitions and priorities of the NHSE Long Term Plan**, including making sure that staff have the support and backing they need.<sup>2</sup> This must include reducing the undue pressure put on clinicians by unrealistic targets, and emphasising joined up care.

Targets incorporating these features and considerations should form the basis of a more effective and uniform system for reporting.

It is clear that, in addition to the recommendations above, addressing the challenge of unreported images and imaging backlogs will require **more radiologists and reporting radiographers**. As has already been noted above, improvements in the governance and processes of trusts alone cannot resolve these issues – tackling staffing shortages is crucial.<sup>1</sup> Ultimately, this will require an increase in training places for both clinical radiologists and reporting radiographers. For example, rectifying the shortfall of 1,867 full-time consultant radiologists that is expected by 2023 would require UK specialist training numbers to treble, from the current average of 265 new trainees each year to 808 per year.<sup>3</sup> Since this is not feasible, training places should be increased radically as soon as possible. Other measures, such as supporting overseas recruitment, will be necessary to address the gap between demand and supply in the shorter term. As long as the workforce crisis in radiology continues, it is inevitable that imaging backlogs and missed turnaround targets will follow.

The **implementation of diagnostic imaging networks** by 2023, as outlined in the NHSE *Long Term Plan*, should go some way to helping radiology departments manage and limit imaging backlogs.<sup>2</sup> According to the plan, these networks would 'enable the rapid transfer of clinical images from care settings close to the patient to the relevant specialist clinician to interpret.' This infrastructure would support 'improved and timely reporting', as well as facilitating the adoption of new technologies and developing large clinical data banks to fuel research and innovation.<sup>2</sup>

If properly implemented, as demonstrated in Merseyside and Cornwall, clinician-led imaging networks enable services to coordinate on-call reporting, speeding up turnaround times and reducing variation. However, uncertainty remains as to how new networks will function, and whether the NHS has the IT infrastructure necessary to support them. Furthermore, imaging networks will only work effectively if there are sufficient levels of reporting staff across the country. The RCR

strongly supports the creation of imaging networks in line with our 2016 guidance document *Who shares wins: efficient, collaborative radiology solutions*.<sup>8</sup>

Many of these recommendations and developments will rely on **investment in IT infrastructure**. Effective IT underpins many measures that can help to prevent and manage imaging backlogs: insourcing and outsourcing, diagnostic imaging networks and effective governance and monitoring of reporting workloads all depend on more consistent and advanced IT systems. In particular, ensuring that the picture archiving and communication systems (PACS) that are used by most radiology departments are able to record any new reporting standards or metrics – such as the nature of a patient’s condition – is essential.

At present, IT systems in the NHS are generally considered unreliable and underdeveloped. The CQC report highlights case studies where such issues have dramatically reduced reporting productivity in multiple trusts, resulting in substantial backlogs.<sup>1</sup> Preventing these issues and establishing an adequately funded IT system that can help the NHS modernise and adopt new technology solutions will require commitment and investment in the infrastructure.

In the longer term, **new technologies, machine learning and artificial intelligence (AI)** will play a significant role in radiology reporting. Written evidence presented to the House of Lords Artificial Intelligence Select Committee asserts that medical imaging will be ‘revolutionised by machine learning’.<sup>9</sup> The RCR expects these technologies to improve the efficiency of clinical processes and act as a diagnostic aid – for example, prioritising images with concerning characteristics so that they can be reported on immediately.<sup>10</sup> This could potentially release time for radiologists to focus on other commitments, such as conducting vital research and guiding patient care.

As these technologies grow, the RCR is working to ensure that they are effectively governed and regulated to maximise potential, while prioritising patient safety. The RCR will provide the workforce with the necessary knowledge base so that they can be confident in using the algorithms as they are developed and implemented. If properly regulated and introduced into practice, AI and machine learning will be hugely important in preventing and managing imaging backlogs.

## Recommendations

In summary, the RCR recommends that:

- All of the recommendations in the CQC’s radiology review are implemented fully and promptly
- NIODB’s standards should: emphasise the quality of reports, not just the turnaround time; prioritise high-risk patients and be centred around the nature of a patient’s condition rather than the setting in which they are imaged; and reflect the ambitions of NHSE’s *Long Term Plan*
- Numbers of radiologists and reporting radiographers must be increased. This will require a radical increase in training places, as well as short-term international recruitment
- Diagnostic imaging networks should be effectively implemented, and organised around the principles of the RCR’s *Who shares wins* document
- There is increased investment in IT infrastructure, which is essential for many of the other recommendations to function as necessary. PACS systems must be able to record any new standards or metrics
- New technologies, machine learning and artificial intelligence should be supported and embraced. They must be properly governed and regulated, and the workforce adequately trained so that they are confident using these technologies.
- Many of these developments will depend upon ongoing workforce reviews and forthcoming health budgets – for England, this will include the Long Term Plan’s People Plan and subsequent Spending Review. The RCR hopes that these reflect the concerns and recommendations put forward in this document.

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## Appendix A. The proportion of patient images reported within target turnaround times, December 2018

Figure 1. The proportion of emergency department images reported within four hour target\*

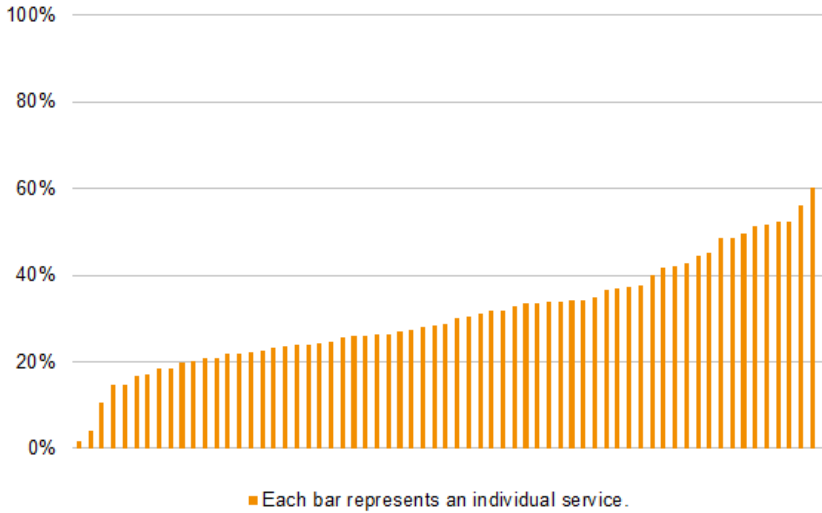
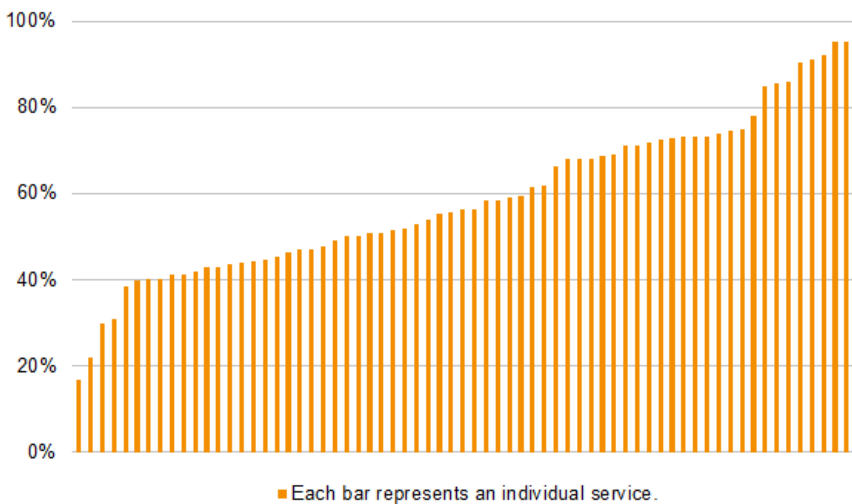


Figure 2: The proportion of inpatient images reported within 24 hour target\*\*



\*Four-hour turnaround time for emergency department patients, in line with NHSE's four-hour A&E wait time standard.<sup>5</sup>

\*\*24-hour reporting turnaround time for inpatient images, corresponding with NHS clinical standards for non-urgent inpatients.<sup>6</sup>

## Appendix B: Regional variation: the proportion of patient images reported within target turnaround times, December 2018

**Table 1: The proportion of emergency department images reported within four hour target\***

Region/country	% of images reported within four hours	No. of trusts/health boards responding to survey
England – East Midlands	32%	5
England – East of England	35%	5
England – London	37%	9
England – North East	24%	4
England – North West	30%	11
England – South Central	31%	6
England – South East	30%	3
England – South West	35%	9
England – West Midlands	32%	3
England – Yorkshire and the Humber	31%	7
Scotland	27%	2
Wales	23%	2
UK (excl NI)	32%	66

\*Four-hour turnaround time for emergency department patients, in line with NHSE's 4 hour A&E wait time standard.<sup>5</sup>

**Table 2: The proportion of inpatient images reported within 24 hour target\*\***

Region/country	% of images reported within 24 hours	No. of trusts/health boards responding to survey
England – East Midlands	43%	5
England – East of England	66%	6
England – London	61%	9
England – North East	40%	4
England – North West	54%	12
England – South Central	59%	6
England – South East	59%	3
England – South West	77%	9
England – West Midlands	74%	3
England – Yorkshire and the Humber	66%	7
Scotland	55%	2
Wales	57%	2
UK (excl NI)	60%	68

\*\*24-hour reporting turnaround time for inpatient scans, corresponding with NHS clinical standards for non-urgent inpatients.<sup>6</sup>

Figures 1 and 2 and Tables 1 and 2 are based on X-ray, computed tomography (CT) and magnetic resonance imaging (MRI) reporting data collected for period specified in December 2018 from 68 (out of 174) services across the UK (excluding NI).

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