



10 Year Health Plan

RCR consultation response

Q1. What does your organisation want to see included in the 10-Year Health Plan and why?

About us: The Royal College of Radiologists is the professional membership body for clinical radiologists, doctors who are experts in interpreting diagnostic images and delivering minimally-invasive procedures, and clinical oncologists, who sit at the heart of treatment. Our specialties are crucial for delivering the government's three healthcare shifts, but most of all, the shift from analogue to digital.

Context – rising demand: We are facing constantly increasing demand, for example with the rate of treatment delivery for systemic anti-cancer therapies (SACT, including chemotherapy) is rising 6-8% per annum. Oncology departments are struggling to keep pace. The government rightly recognises that prevention and early intervention is the key to managing rising demand, and more diagnostics will be a critical enabler to this. We are already beyond our limits, and we will never have enough capacity unless we work in different ways. We understand this at the RCR and are focusing hard on driving innovation, most notably through harnessing technology.

Promise of digital innovation: Radiology and oncology are both technology-centric specialties and will be at the forefront of the digitisation of the NHS. In radiology, artificial intelligence (AI) is already being used to speed up and improve the accuracy of diagnostic imaging, and promises to greatly improve their productivity. In oncology, advancements in cancer treatment rely on cutting-edge technologies like stereotactic ablative radiotherapy and advances in computer science to develop new cancer drugs.

The cost of getting this wrong is significant: a successful approach to digital and AI will save doctors time, but an unsuccessful approach will only lead to them spending more and more time struggling with bad technology, slowing them down and reducing their productivity. This is the case at the moment, with doctors facing barriers such as slow PCs, frequent software failures and a lack of interoperability. Poor interoperability between different NHS sites also limits cooperation and collaboration. The government must improve basic IT systems, as well as harnessing innovative tools such as AI.





Workforce: However, another crucial underlying and unavoidable enabler of any actions to fix the NHS remains its workforce. Even if we succeed in harnessing technology, we still need to train more doctors – and we can't do system change when the system is so overstretched that it is struggling to provide the essentials. There is a 30% shortfall amongst radiologists and a 15% shortfall amongst oncologists. These shortages are expected to rise to 40% and 20% by 2028, if no action is taken. Trusts are turning to costly and unsustainable fixes to this problem; in 2023, the NHS spent £276 million on outsourcing, insourcing and locum staff to manage excess imaging reporting requirements.

To tackle workforce shortfalls, the NHS needs to do more to recruit, retain and train its staff. The NHS must (a) expand the number of specialty training posts available, (b) ensure trusts are able to expand their consultant posts and (c) improve retention rates. International recruitment must play a part but is not sustainable as a long-term solution. Focusing on improving training for resident doctors is also vital, as is building clinical leadership.

What our members say: The RCR have surveyed our members for their thoughts on the 10-Year Health Plan. Throughout our answers, we include those survey results as they relate to each of the three shifts. The government may find it useful, however, to recognise upfront the degree of pessimism many doctors currently feel about the potential for the NHS's performance and their working conditions to be improved. 75% of respondents to our survey said they were not so confident or not at all confident that patient waiting lists would decline significantly, based on all they had heard about the 10-Year Health Plan. Improving workforce morale will be essential to boosting NHS productivity and to any successful reversal of the NHS's fortunes.

If the government and the NHS were to implement the proposals we have suggested in this consultation response, then we believe strongly that the NHS could meet, and perhaps exceed, its cancer and diagnostic waiting times targets, at the same time as successfully making the three shifts.

Q2. What does your organisation see as the biggest challenges and enablers to move more care from hospitals to communities?

RCR members say: Amongst our members who responded to our survey, by far the most supported measures that would achieve this shift were workforce growth and workforce retention. Closely following these were ensuring community sites offered the right services



to patients and improving data sharing between acute and community sites. Collaboration with the private sector was the least supported option.

Challenges

- **Workforce shortages:** large and longstanding workforce shortfalls limit the ability of the NHS to open new health centres in community locations. The Community Diagnostic Centre programme is instructive. CDCs were opened to segregate elective from acute tests, checks and scans and enable the former to be taken directly in communities. However, the APPG for Diagnostics found significant concerns that workforce shortages limited CDCs' effectiveness.

Enablers

- **Workforce:** action is needed to ensure workforce capacity is sufficient for both hospital and community settings to enable this shift to take place successfully. This will involve recruiting, training and retaining more specialist staff such as oncologists and radiologists. Training should be provided in hospitals and CDCs to maximise training capacity. In the short-term, acute/community staffing rotation models should be implemented, as should collaboration with the private sector. Both could enable more manageable staffing across both settings. The latter option would not be sustainable in the long-term, however, since private capacity is finite. For instance, most private providers in radiology rely largely on NHS radiologists working in their spare time, in addition to their NHS commitments.
- **Supportive oncology:** some cancer care currently done in hospital settings could be done in the community, if the provision were in place. For example, palliative care could be delivered closer to home, but for a lack of capacity in the community palliative care sector. Supportive oncology (also called enhanced supportive care) is the interface between oncology, palliative care and primary care; greater investment in these services would allow cancer patients to spend less time in hospital, leading to better experiences for the patient and a more efficient use of NHS resources. Driving down the unnecessary hospitalisation or hospital appointments for patients would boost NHS productivity by promoting more efficient use of resources. Every cancer centre should be commissioned to provide a supportive oncology service.
- **Data:** another enabler will be the collection and use of accurate and complete data about the NHS's assets to inform the shift of resources into community settings.
 - The government should ensure the rollout of the new National Equipment Tracking and Inventory System (NETIS) system goes ahead; NETIS should provide greater visibility over the locations and ages of assets like diagnostic



scanners, and thereby inform policymakers about which areas and regions are most in need of further investment. Efficient allocation of expensive resources will be an important driver of increased productivity.

- o Datasets like the Diagnostic Imaging Dataset (DID) need to be upgraded to increase their functionality and the accuracy of the data they collect. They also need to be linked with other datasets to unlock vital insights, such as demonstrating the value to patients of receiving early diagnoses.
- **Interventional radiology:** Where hospital admission is unavoidable, there is nonetheless action to be taken to minimise the length of hospital stays and get people back into their community. Interventional radiology is a subspecialty of radiology, which involves the use of image-guided surgery to diagnose and treat acute illness such as stroke.
 - o Mechanical thrombectomy is an IR procedure in which a guidewire inserted via the groin is used to remove blood clots from the brain's arteries in cases of ischaemic stroke. When successful, patients are, in the best cases, able to walk out of the hospital that same day and return to home and work. Almost all patients have a significantly better outcome, with fewer long-term effects or disabilities, than patients treated with conventional methods. Compared to traditional surgery, hospital stays are significantly reduced. This means patients are able to return to work or to their community, and means the NHS can deliver more care with fewer resources, thus boosting productivity.
 - o IR services need funding to increase their access to inpatient and day case beds, and to provide the necessary equipment with which to conduct procedures like thrombectomy.

Q3. What does your organisation see as the biggest challenges and enablers to making better use of technology in health and care?

What our members say: Amongst respondents to our survey, capital investment in basic IT infrastructure was by far the most supported enabler of this shift; 60% of respondents ranked it as the number one enabler. Action to improve interoperability standards followed closely behind, as did expansion of the NHS's IT workforce.

Challenges

- **Data:** the NHS possesses a huge amount of data, but this data is siloed, both within and between individual NHS organisations. These problems are powerfully



illuminated in the recent Sudlow Review, whose recommendations should be strongly considered for adoption. This limits its potential for driving improvements to care. For example, the Diagnostic Imaging Dataset and Hospital Episode Statistics dataset are not integrated, so it is not possible to directly track the differential outcomes of patients who receive diagnoses more/less rapidly – meaning we cannot identify and act on actions to improve the service.

- **Interoperability:** NHS IT systems are likewise heterogeneous and frequently do not communicate directly with one another. A clinician can often have a dozen applications open at once, but will need to manually re-enter the same information into each, because they do not integrate. This causes huge amounts of lost time and low levels of productivity.
- **IT infrastructure:** basic IT systems – hardware and software – vary hugely in terms of their age and maturity across the NHS. Many sites operate with old systems that are slow, frequently crash, and cause productivity loss. In some cases, innovative solutions like AI applications or iRefer (software that recommends the idea diagnostic test to request, minimising error) cannot be integrated, because the underlying IT systems are too old.
- **Funding:** digital transformation projects come with large upfront costs that NHS organisations often cannot meet, in a context in which they struggle to fund their day-to-day operations. This obviously slows down implementation.
- **Staff time:** workforce shortages limit the time staff have available to dedicate to digital transformation projects, which are time-intensive. Instead, clinicians are spending most of their time directly delivering care to patients, or else on time-intensive administrative work that previously was performed by support staff. A lack of IT staff in the NHS exacerbates this problem.
- **Lack of trust:** Also important is the potential lack of trust in the use of AI in healthcare. Potential adverse effects, such as those arising from inadvertent bias built into AI systems, need to be planned for, which can be done most effectively by involving clinicians in such projects from the outset. Amongst the public, concern about their privacy and the use of their data will be important to address when implementing new AI tools in the NHS.
- **Information governance:** whilst extremely important, existing IG processes are often confusing and time-intensive, as well as varying from NHS site to site. For instance, Data Protection Impact Assessment (DPIA) forms can be both lengthy and substantively different from trust to trust. This variation and complexity slows down deployment of digital tools such as AI.

Enablers





- **Workforce:** the NHS must be helped to recruit and retain IT staff who can deliver digital transformation projects – including software engineers, data scientists, systems architects and others. The Hewitt Review made recommendations to this end, which should be implemented.
- It is important to note that artificial intelligence and other digital innovations will **not** eliminate the need to expand the radiology workforce. Radiologists do not simply interpret and report scans. Not only do they increasingly undertake therapeutic procedural work; they collate information from multiple diagnostic sources and interpret it in conjunction with case-specific information and their wider experience to guide the patient’s treatment via impactful treatment recommendations. They are the glue that binds all the specialties together, communicating with them, interpreting ever-more complex data, and explaining the findings in the context of a real patient who may have many complex health conditions. AI will boost radiologists’ productivity and accuracy – but radiologists remain critical to future, high-quality healthcare delivery.
- In addition, workforce shortfalls amongst clinical staff must be addressed (see Q1). Clinicians also need sufficient ‘supporting professional activities’ (SPA) time in their job plans to enable them to contribute to digital transformation projects. Protecting SPA time is partly a matter of policy and partly a matter of tackling workforce shortfalls.
 - Similarly, SPAs will be required to ensure sufficient time to deliver training to resident doctors (“trainees”) in the use of AI in clinical practice. For many resident doctors and consultants, AI is a new frontier and experience in its use remains limited.
- **IT infrastructure:** basic IT systems must be updated and improved as a precursor to innovative digital solutions such as AI tools.
 - In some cases, this will involve replacing old PCs and moving to modern operating systems. In others, it will involve taking measures to improve interoperability between existing software packages.
 - The NHS should ensure that the National Interim Clinical Imaging Procedure (NICIP) codes are properly aligned to medical procedures. NICIP codes need to be used in a consistent manner, with each code identifying a single procedure and each procedure having one, universally-used code, to ensure they are of value. If this were the case, they would ensure that information about how many procedures and their outcomes are accurately recorded and made comparable across trusts or regions. They would also hold the potential to link to clinical decision support software to ensure patients get



the best test at an optimal time. NICIP codes should be reviewed regularly, with mandated updates to software providers' contracts.

- **Funding:** Medium-long-term funding settlement large-scale digital transformation projects, such as the deployment of AI tools in clinical practice. This would enable NHS trusts to commit to such projects, and would give vendors confidence to market their products in the UK.
- **Information governance** processes should be simplified where possible and standardised, such that they are identical at the regional, if not national level. One example of this would be a single, standard DPIA form. Reducing variation and unnecessary duplication will help increase productivity.
- **A regulatory framework for AI** and other digital technologies must be developed, covering quality assurance and post-market surveillance. For AI algorithms in clinical practice, large Secure Data Environments should be created containing data with which algorithms can be regularly tested to assure their performance over time. Regulations for how often AI tools should be revalidated should be developed and adopted. Regulators like NICE and MHRA may need additional resources to take on this work.
- **Public research** should be commissioned to assess (a) where tools such as AI will have greatest value in the NHS and (b) to track patients' long-term health outcomes where AI has been used to deliver their care.
- **Educational resources:** the use of digital technologies and AI will become a core skill of all clinicians in future years. Further educational resources are required to prepare future doctors for this aspect of their work. Centrally, the NHS Digital Academy is well-placed to deliver resources and training on this topic; the resources it offers should be expanded. Royal Colleges have a role to play also.

Q4. What does your organisation see as the biggest challenges and enablers to spotting illnesses earlier and tackling the causes of ill health?

What our members say: RCR members who responded to our survey said that the most important enabler of this shift was greater public awareness of risk factors and healthy lifestyles. 48% of respondents ranked this as the number one enabler. In second place came expansion of diagnostic workforce capacity (25% ranking it #1, and 32% at #2). Respondents also recognised that digitising NHS communications and patient records and replacing outdated equipment (like scanners) would be an important enabler of this shift. Expanding diagnostic capacity will enable the NHS to make earlier diagnoses.

Challenges





- Radiologists will play a central role in spotting and diagnosing illnesses earlier.
- **Workforce:** as with the previous two shifts, critical shortages of clinical staff impede the NHS's ability to diagnose illnesses early. There is a clear link between the shortage of radiologists and the NHS's poor performance on its 28-day target, which measures the time from referral for a test for suspected cancer to the patient receiving a diagnosis. For complex scans reported almost entirely by radiologists, over 100,000 patients waited 28+ days for the results of their MRI scan and over 75,000 waited 28+ days for the results of their CT scan in the first 6 months of 2024.
- **Equipment:** a secondary cause of delays to diagnosis is a shortage of modern diagnostics equipment. OECD data shows that the UK has fewer CT and MRI scanners per capita than comparator countries. Moreover, 29% of radiology departments told the RCR that their equipment breaks down most months, and 14% say it breaks down most weeks. A lack of scanners, and frequent breakdowns of older scanners still in service, means fewer patients can have their scans acquired. Though not as severe a bottleneck as the one at the reporting stage, this is nonetheless a problem. Recent announcements in the Autumn budget for investment in modern scanners are extremely welcome.
- **IT systems:** As detailed above, old and slow IT systems cause delays at all stages of the patient pathway, and thus also stand as a barrier to early diagnosis.
- **A lack of space** is also a problem across many radiology departments. In radiology, a shortage of radiology workstations (computers loaded with specialist radiology software) limits the amount of reporting and training that can take place. Very often, there are far fewer workstations than there are radiologists to do their work. This inhibits potential productivity gains to be had by expanding the workforce.
- **Public awareness** about what signs and symptoms to look out for, and what to do if they occur, could also be improved. For instance, take-up rates of the NHS's cancer screening programmes could be further increased by making the public aware of their existence and eligibility, particularly in hard-to-reach communities.

Enablers

- **AI:** The analogue to digital shift holds significant promise to enable early detection of illnesses, and thus better outcomes for patients. AI will play a significant role. It has the potential to boost NHS productivity and enable prevention and early diagnosis by selecting the right patients to receive tests and by incidentally detecting the early signs of illness in tests or scans conducted for other purposes, thereby enabling effective early intervention.



- o AI tools in radiology promise to speed up and increase the accuracy of diagnoses. For example, AI algorithms can analyse a large volume of CT scan images in a short time and flag those with likely anomalies for urgent review by a radiologist. By raising these scans to the top of the pile, it is likely that fewer diseases will be left undetected for long periods within large backlogs of images awaiting diagnosis.
- o AI could be used to prevent illness. Scans performed in emergency departments for acute illness could, if analysed by AI, detect anomalies that are incidental to the reason the scan was performed, but which point to additional, early-stage illness. Osteoporosis and coronary artery calcification could all be detected more accurately in this way and thus managed early, preventing conditions like hip fractures or other serious disease later.
- o There is also scope to analyse data, using AI tools, from GP records to proactively identify patients who need to be part of a screening programme because they are at greater risk of disease. This enable the right patients (i.e. those most at risk) to be selected for diagnostic imaging, thereby increasing early detection, increasing productivity, and reducing unnecessary testing.
- o AI tools could also be helpful in automating and streamlining appointments and the allocation of resources (e.g. staff rotas) in the NHS. Other applications include ambient dictation and organising multidisciplinary team meetings. This has the potential to save huge amounts of time, especially since it would be far less complicated than AI in clinical applications. Indeed, the biggest potential improvements to productivity afforded by AI are likely to be found in this aspect of its integration within NHS systems.
- **Digitisation:** The shift towards digital communications with patients will also be a great enabler. If patients are given notice of appointments quickly via email or the NHS App, then potential delays caused by paper communications can be avoided. Even more impactful would be the ability for the patient to book and reschedule appointments themselves via the NHS App, as this would increase attendance rates and thus the diagnosis of illnesses at earlier stages.
- **NHS capital budgets** must be ringfenced to prevent them being raided to fund day-to-day expenditure, as happened frequently throughout the 2010s. This would ensure they are spent as intended, including increasing the NHS's capacity to acquire diagnostic scans. These budgets should be used to replace diagnostic scanners and radiotherapy machines as they surpass their optimum lifetimes.



- **iRefer:** this is a clinical decision support system which helps healthcare professionals determine the right diagnostic test to request for their patients, first time. It boosts productivity by eliminating unhelpful or repeat imaging investigations, promoting best use of resources and uniform care for patients, and enabling early diagnoses by preventing delays in the right tests being requested and conducted.
 - In Trusts using it, iRefer has led to an average reduction in inappropriate referrals by 10-15%, and cost avoidance savings of up to £330,000 per annum.
 - Its rollout to NHS Trusts should be completed as soon as possible, and should further be expanded to cover NHS A&E departments, as well as other diagnostic tests (such as pathology).
 - The implementation of iRefer is enabled by the right basic IT systems – please see our answer to the previous question.
- **Workforce:** underlying all these enablers is the NHS workforce. Without the clinical, IT and admin staff to deliver on these projects, they simply will not be successful. Radiologists are essential if early diagnosis rates are to be improved; without radiological expertise, diagnostic images will not be analysed and reported on rapidly and accurately enough to catch diseases at an early stage.
- **Preventive programmes,** such as those that encourage stopping smoking, healthy lifestyles and lifting people out of poverty, should continue to be prioritised. They have the effect of reducing the incidence of diseases such as cancer.
- **Screening programmes:** action to increase uptake, launch new programmes, and select patients with greater accuracy should be explored.

Q5. Please use this box to share specific policy ideas for change. Please include how you would prioritise these and what timeframe you would expect to see this delivered in, for example:

- **Quick to do, that is in the next year or so**
- **In the middle, that is in the next 2 to 5 years**
- **Long term change, that will take more than 5 years**

Quick



- The NHS should not only maintain but expand the number of specialty training posts for clinical radiology and clinical oncology to keep up with rising demand. England currently has 1,678 fewer full-time radiologists and 159 fewer full-time clinical oncologists than are necessary to meet the demand the NHS faces; these gaps must be progressively filled over time.
 - (Although specialty training takes upwards of five/six years, the decision to increase the number of posts available can be made immediately, and resident doctors are active members of their team from their first training year.)
- Hospitals, particularly those with the highest shortages of clinical radiologists and oncologists, should ensure they have a long-term funding plan for training and consultant posts.
- Doctors should have sufficient, funded time in job plans to deliver training.
- The NHS Emeritus scheme should be continued and expanded.
- The government should protect NHS capital budgets and NHS England should support trusts and imaging networks to use them for their intended purpose
- To support retention, trusts and health boards should ensure basic staff wellbeing measures, including but not limited to hot food and drink access, support with parking, and rest spaces.
- Trusts should provide administrative and clerical support to doctors to enable them to focus their time on providing patient care, and thus improve NHS productivity.
- To support the ongoing rollout of CDCs, trusts should investigate the use of solutions such as acute/community staff rotation models.
- The government should accept the recommendations of the Sudlow Review and begin to implement them.
- NHSE should deliver a recruitment campaign for clinical oncology, focused on attracting medical students and early career resident doctors to the specialty, to ensure all available specialty training posts are filled.
- The government should invest in healthcare research and the adoption of its findings, e.g. into the effect of AI technologies on long-term patient outcomes

Medium-term

- The government should provide new funding for an expansion of clinical and office space, and PACS access, to accommodate diagnostic and interventional radiology resident doctors. Office space must be expanded to accommodate oncology residents.





- The NHS should explore innovative solutions to expanding training capacity, including through hybrid models, increased use of technology, and sharing training materials across the country.
- NHS England should progress towards a robust and connected IT infrastructure across the NHS, connected to policies for data and system standardisation.
- The NHS must develop and execute a plan for addressing poor levels of interoperability across its sites and systems by setting clear standards and driving a move towards meeting them.
- Trusts should implement processes to regularly update equipment fleets, in line with demand and agreed unit lifetimes. This should include a rolling replacement programme for radiotherapy equipment. Modern equipment is faster and more effective, so can enable more patients to be diagnosed or treated each day.
- The government should provide the necessary funding to complete the rollout of iRefer to all NHS trusts and emergency departments, and to expand iRefer to encompass all diagnostic tests.
- The government should affirm it intends to complete the rollout of the new NETIS dataset and set out a target for its launch.
- The NHS should move to rationalise the use of NICIP codes, ensuring they are used consistently, and that each procedure has one, universally-used code. This would greatly improve our ability to make effective decisions about service improvements.
- The NHS should simplify and standardise information governance processes to speed up the rate of implementation of innovations like AI. NHSE should support imaging networks to formulate comprehensive Data Protection Impact Assessment (DPIA) forms for each AI use case, which could then be shared with individual organisations.
- The NHS should expand the NHS Digital Academy to ensure all clinicians have access to AI training. This training should cover assessment, implementation, audit and service evaluation, data security and information governance, and ethics.
- The government should develop a plan for the robust validation of AI algorithms, which must include the provision of Secure Data Environments (SDEs). Funding will be needed to both deliver the infrastructure and to enable the collection of the necessary data.
- The NHS should establish professional standards for the audit and quality assurance of AI tools in healthcare settings, to be performed at regular intervals following implementation.
- The government should implement the Hewitt Review's recommendations for the recruitment and retention of Digital, Data and Technology (DDaT) staff into the NHS.



- The NHS should recruit more administrative and clerical staff to enable doctors to spend more time directly caring for patients and thereby boost productivity.
- Trusts should expand access to day case beds and facilities for IR procedures to deliver less invasive care for patients and allow them to return to their communities and work more quickly.
- The NHS should share best practice on the use of advanced practice (aka skills mix) should be shared and promoted across the system, so capacity to train and deliver care can be increased in a safe and sustainable manner. (This capacity should be built up gradually, since it is important that resident doctors receive the training opportunities they need to meet their curricular requirements.)
- The NHS should implement more ambitious cancer waiting times – such as reporting turnaround times in days, rather than weeks – to drive improvements in patient care.
- The government should finalise the CDC programme by establishing the remaining 11 CDCs in areas of high deprivation, in order to meet the target of 3 CDCs per million population.
- The NHS should establish a national SACT protocols programme and website, supported by permanent funding to keep it up-to-date. This would standardise SACT protocols across the country and thereby deliver productivity gains by eliminating unnecessary duplication and resource use.

Long-term

- The government should increase the number of medical school, foundation year, and internal medicine training posts over time, so that the NHS sustainably increases its number of consultant doctors over many years. This should be codified in successive iterations of the Long-Term Workforce Plan.
- The government should provide a long-term funding settlement for AI and other digital innovations to enable Trusts to meet the upfront costs and provide confidence to AI vendors.
- The government should develop and adopt a strategic approach towards implementing AI tools in the NHS, one which makes evidence-based decisions about where AI will be of greatest impact and concentrates resources on implementation in those areas. The NHS should be able to signal to developers the AI tools that the service needs (rather than simply accepting the tools on offer that developers *think* the NHS needs).



The Royal College of Radiologists

- The NHS should establish a fully-staffed supportive oncology service in every cancer centre to move cancer care from hospitals and into the community, where possible.

