Evidence Brief: Cancer diagnostics

Contents

Produced by the Knowledge Management team Evidence Briefs offer an overview of the published reports, research, and evidence on a workforce-related topic.

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Key publications – the big picture

NHS Long Term Workforce Plan
NHS England, September 2024
An example of innovative technologies being accelerated to improve flow of clinical data and process across a pathway is the Diagnostics Digital Capability Programme, where investment and support into pathology and imaging networks to implement new technologies is expected to increase productivity across imaging and pathology services by up to 10% by March 2025. Investment is also expected to enable faster turnaround times for diagnostic test results (supporting the delivery of national service delivery standards, such as urgent faster diagnosis standards for suspected cancer cases and six-week diagnostic waits), improved patient and staff experience, and reduced outsourcing spend.

AI has the potential to free up clinical time and improve accuracy and efficiency of diagnostics in services such as ophthalmology, imaging, pathology and dermatology by acting as a first reader on images and eventually automating some clinical decisions where safe to do so. One example is the use of first reader AI technology, which will support the radiology workforce and accelerate diagnostic screening times. Emerging evidence from other trials has shown that using AI software can speed up the diagnostics pathway for patients, for example, reducing the wait for a CT scan following a chest x-ray from seven to less than three days, decreasing the amount of reporting being outsourced, and saving costs.

CDCs Unveiled: Challenges & Triumphs: An Inquiry into Community Diagnostic Centres
Royal College of Radiologists and Royal College of Pathologists, January 2024
Ongoing staff shortages, demonstrated by shortfall figures and reports of unmanageable workloads, compounded by insufficient workforce planning and funding, limit CDC effectiveness. Proposed workforce solutions include acute/CDC rotation models, international recruitment, 'grow your own' initiatives and private sector collaboration, each with its own advantages and drawbacks. Ultimately, there is an urgent need to expand the diagnostic workforce in line with growing patient demand.

Clinical Radiology Workforce Census 2023
Royal College of Radiologists, 2023
Our 2023 clinical radiology workforce census report reveals dangerous shortages of doctors essential in the diagnosis and treatment of serious conditions including cancer and stroke. These delays are the direct result of severe workforce shortages, due to demand for services outstripping consultant growth.

Cancer and diagnostics programme
Health Education England, 2023
The Cancer and Diagnostics programme exists to support the implementation of national cancer strategies and HEE’s Cancer Workforce Plan. We capture, monitor and develop projects which aim to deliver cancer workforce improvements. Within the diagnostic workforce, we support the development of the primarily non-medical, diagnostics workforces to reduce waiting times and increase the likelihood of early diagnosis leading to better care and outcomes for patients nationally.

NHS cancer programme: faster diagnosis framework
NHS England, November 2022
This document sets out the NHS Cancer Programme's strategic approach to delivering faster diagnosis of cancer. It outlines specific and measurable objectives and key requirements for Cancer Alliances until the end of 2023/24, bringing together previously separate objectives relating to rapid diagnostic centres (RDCs) and Faster Diagnosis Standard (FDS) best practice timed pathways (BPTPs). It also seeks to align this work with related programmes such as the community diagnostic centres (CDC) programme.

Why do diagnostics matter?: Maximising the potential of diagnostics services
The King's Fund, October 2022
The centrality of diagnostics to the NHS's ability to deliver patient services cannot be understated (McCaughey and Powis 2020). They are fundamental to clinical decision-making. There is huge potential for diagnostics to play an even greater role in driving improved outcomes through transformation and innovation, particularly via the redesign of patient pathways and the introduction of new technology. This is being realised through a shift to community settings and community diagnostic centres, which has been recognised as an important opportunity to widen access and improve uptake by giving people more choice around when, where and how to access diagnostic services (Roche Diagnostics Limited 2021). While this is cause for optimism, there is also a need for realism.

While the temptation may be to consider community diagnostic centres or community diagnostics as the solution to all questions about diagnostic capacity, this is not the only answer. Concerted policy focus and investment will be needed to address the historic underinvestment in diagnostics over many years, particularly in terms of infrastructure and the workforce, if the major expansion of diagnostic capacity that is needed in the NHS is to be realised (Association of British HealthTech Industries 2020).

Cancer and Diagnostics Careers – a helpful Resource Guide
Health Education England, July 2022
Health Education England South East (HEE SE) has been working with Skills for Health to explore with trusts and cancer alliances in the South East how to help deliver on the priorities of their Cancer and Diagnostics strategy and the focus on new routes into cancer and diagnostic careers. The aim is to ensure a flexible and sustainable, supported cancer and diagnostic workforce, sharing good practice, and capturing innovation. The work included scoping work, focus groups and an on-line consultation to identify the spectrum of cancer and diagnostics training, and roles, as well as potential opportunities for new skills and competencies. The work aimed to identify areas of existing good practice within the South East and/or elsewhere which the South East may wish to implement.

Diagnostic imaging network workforce guidance
NHS England, April 2022
The national imaging strategy proposes transformation by introducing an image-sharing platform whereby all digital images acquired by imaging services within the network can be managed via a single shared worklist and transferred for reporting to any site in the network or beyond. Networking enables imaging services to maximise the benefits of pooling the reporting workforce by making economies of scale and improving access to specialist opinion. At the same time, individual sites continue to image patients close to where they live. Working across a network also supports protocol standardisation.

Expert Panel: evaluation of the Government's commitments in the area of cancer services in England
UK Parliament, March 2022
[Section 2: Diagnostics] We recognise that there has been £325 million capital investment allocated for cancer diagnostics, as well as the £2.3 billion in capital funding dedicated to establish 100 Community Diagnostic Centres (CDCs) across England as part of the comprehensive spending review in 2021.77 CDCs were a key recommendation from Sir Mike Richards' independent review of NHS diagnostic capacity, and were intended to be a 'one stop shop' for cancer checks, scans and tests to support earlier and faster cancer diagnosis.78 CDCs were welcomed in a number of our written evidence submissions, as they have the potential to play an important role in delivering the faster diagnosis ambition.79 However, our evaluation concluded that there was concern about how the new CDCs across England would be staffed, and how the capacity of the workforce would expand to match the investment in diagnostic pathways.

Evidence Review: Early diagnosis of cancer
The Strategy Unit, November 2020
Synthesised evidence evaluating interventions targeting earlier diagnosis identified a range of interventions which we categorised into the following types of interventions: Faecal immunochemical tests, Cancer Decision Support Tools, Rapid Diagnostic Centres, Primary Care (spanning targeting behaviour, improving screening uptake, and safety netting), Cancer awareness (spanning campaigns, patient education and provider education), and Lung Health Checks.

Estimating the cost of growing the NHS cancer workforce in England by 2029
Cancer Research UK, October 2020
The diagnosis, treatment and support of people living with cancer relies on a range of skilled NHS staff conducting specialist tasks such as performing and reporting on diagnostic tests and providing different forms of treatment and support. Ensuring that the NHS has enough skilled staff, now and in the future, is therefore a vital part of fulfilling the ambitions of the LTP and improving outcomes for cancer patients.

Despite attempts to increase size of the cancer workforce, key cancer-related professions have remained under pressure, with vacant posts and staff shortages. Cancer Research UK found that nearly three in four staff surveyed in non-surgical oncology services see staff shortages as a barrier to providing excellent patient experience. Capacity constraints, particularly due to staff shortages in diagnostic services, are associated with poor performance against NHS waiting times standards. Even before the COVID-19 pandemic, the NHS had been reporting worsening performance against both the two-week wait for urgent suspected cancer referrals and the 62-day Cancer Waiting Times treatment standards.

Cancer workforce plan (no date), Health Education England
The plan responds to the independent Cancer Taskforce which set out a strategy to radically improve diagnosis, longer term quality of life and experiences for people who are affected by cancer in England.

Case Studies

Cancer and Diagnostics Careers – a helpful Resource Guide
Health Education England, July 2022
There are many positive examples of new roles and approaches to the delivery of skills which have been developed and rolled out by individual trusts and cancer alliances across the South East which will be helpful for other employers to explore:

- Case Study HEE SE - The use of the Physician Associate role in cancer sites in the South East
- Case Study HEE SE -The Nursing Associate role – East Sussex Healthcare NHS Trust
- Case Study HEE SE - The new Endoscopy Assistant role – East Sussex Healthcare NHS Trust
- Case Study HEE SE - The Doctors' Assistant role – East Sussex Healthcare NHS Trust
- Case Study HEE SE - Introducing the Role of the Pathway Navigator to the South East Region Cancer Alliances

Implementing a Timed Head and Neck Cancer Diagnostic Pathway: Guidance for local health and care systems
NHS Cancer Programme, March 2022
This guidance sets out how diagnosis within 28-days can be achieved for the suspected head and neck cancer pathway. This guidance covers upper aerodigestive tract squamous cell carcinomas. Alongside the pathway itself, resources are highlighted to support implementation of the pathways.

Rapid Access Diagnostic Clinic for patients with vague symptoms at Guy's and St Thomas'
NHS Long Term Plan, January 2019
GSTT RADC provides a diagnostic service to patients who have presented to their GP or at the Accident and Emergency Department with vague but worrying 'red flag' symptoms. It follows a model of fast patient triage; coordinated access to diagnostic tests; second follow up appointment or telephone consultation resulting in rapid specialist referral or patient discharge. Within seven days of a referral being made, a patient will attend an initial 45 minute appointment with Dr Luigi DeMichele, the clinic consultant and Geraint Jones, advanced nurse practitioner. A detailed medical history will be taken, appropriate investigations completed and the patient will be screened for any unmet frailty, mental health and social needs. If further investigations such as a CT scan or endoscopy are needed, the patient will be given a slot on the day or a date and time to return within seven days.

Diagnostic workforce developments
Greater Manchester Integrated Care (no date)
To support conducting an in-depth review of the Greater Manchester (GM) diagnostics workforce funding was secured from HEE. The review will focus specifically on imaging and endoscopy, taking an alternative qualitative approach to provide insights into the GM specific challenges with the diagnostic workforce and directly connect with the teams delivering the services themselves to understand the detail behind these challenges as well as successes and initiatives that have made a difference to their performance. There will be a focus on how staff view their role and how they are valued within the wider system, looking at job satisfaction to understand how to best retain and recruit in the current and future challenging environment.

Macmillan Personalised Care Service Team
Great Western Hospitals Foundation NHS Trust (no date)
The Personalised Care Service is borne out of the increasing demand on cancer services from new referrals and from people living longer with cancer and in remission, so there is less staff time to work with patients including those with more complex

needs who require more support. The new service is available to patients with any type of cancer and at any point in their cancer journey to help empower them to self-manage and improve their wellbeing. The service is available in both the community as well as the hospital.

A Strategic Approach to Workforce Planning for Diagnostic Imaging Workforce
Surrey and Sussex Cancer Alliance (no date)
Surrey and Sussex Cancer Alliance recognised that there was a recruitment and retention issue in some staff groups in cancer and diagnostics services and that workforce supply and demand is challenging across their footprint. The Alliance recognised that the need for a strategic system-wide approach to workforce planning had become imperative across the geography that they cover and adopted an Optimal Workforce Planning Project.

The Star for workforce redesign

More resources and tools are available in the **Cancer** section of the Star

Statistics

You can find relevant statistics on the Health and Care Statistics Landscape under **"Health and Care"** and use the **"Cancer"** filter.

National Data Programme

Workforce, Training and Education staff can look at the National Data Warehouse (NDL) SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

The current troubled state of the global pathology workforce: a concise review
Diagnostic Pathology, December 2024
The histopathology workforce is a cornerstone of cancer diagnostics and is essential to the delivery of cancer services and patient care. The workforce has been subject to significant pressures over recent years, and this review considers them in the UK and internationally. These pressures include declining pathologist numbers, the increasing age of the workforce, and greater workload volume and complexity. Forecasts of the workforce's future in numerous countries are also not favourable – although this is not universal. Some in the field suggest that the effects of these pressures are already coming to bear, such as the financial costs of the additional measures needed to maintain clinical services. There is also some evidence of a detrimental impact on service delivery, patient care and pathologists themselves. Various solutions have been considered, including increasing the number of training places, enhancing recruitment, shortening pathology training and establishing additional support roles within pathology departments.

The future of cancer care in the UK – time for a radical and sustainable National Cancer Plan Abstract only*
The Lancet Oncology, January 2024
In this Policy Review, we describe the challenges and opportunities that are needed to develop radical, yet sustainable plans, which are comprehensive, evidence-based, integrated, patient-outcome focused, and deliver value for money.

Understanding experiences of the radiography workforce delivering medical imaging as part of patients' end of life care: An exploratory qualitative interview study Full text available with NHS OpenAthens account*
Radiography, January 2024
Findings identified an absence of end of life care policy guidance and education accessible to radiography staff, limiting their ability to provide evidence-based informed care for those nearing the end of life during medical imaging examinations. Findings also suggest difficulty identifying patients receiving end of life care further hindered staffs' ability to provide informed person centred care. Lastly, the workforce felt an accumulative emotional burden following their interactions with patients nearing the end of life; findings suggest these feelings were largely supressed. Despite these barriers, it is important to recognise our findings suggest that staff persisted to provide the best care possible and recognised the importance of their role within patients' end of life care journeys.

Current pressure on the UK imaging workforce deters imaging research in the NHS and requires urgent attention Abstract only*
Clinical Radiology, December 2022
This commentary presents a research gap analysis pertaining to the multidisciplinary imaging workforce on behalf of the National Institute for Health Research (NIHR) Imaging Workforce Group. Data were summarised from membership surveys of the Royal College of Radiologists, Society and College of Radiographers, and Institute of Physics and Engineering in Medicine; national reports; and feedback from NIHR Clinical Research Network Imaging Champions meeting in 2020/2021. Common barriers to delivering research were found across the multidisciplinary workforce. The key issues were lack of staff, lack of time, and lack of funding to backfill clinical services. Given the ongoing workforce shortages and increasing clinical demands on radiologists, diagnostic radiographers, and medical physicists, these issues must be tackled with a high priority to ensure the future of clinical research within the NHS.

Diagnostics: a major priority for the NHS
Future Healthcare Journal, July 2022
Diagnostic capacity in the NHS in England was much lower than that in many other developed countries before the COVID-19 pandemic. The relative lack of diagnostic equipment and workforce is now hampering recovery from the pandemic. In response to this, a major programme of work is now underway to improve access to a wide range of diagnostic tests. Establishment of community diagnostic centres is a key component of this programme.

Planning the Radiology Workforce for Cancer Diagnostics
University of Bradford & West Yorkshire Health and Care Partnership, December 2022
The rapid review helped to identify benefits with AI, although there are some caveats. It found that AI can reduce the volume of radiology services' workload, but this is dependent on the nature of the work and the AI function. As a result of faster AI reading, radiologists may be able to focus on high-risk, complex reading tasks. AI can support automation of image segmentation and classification and thus aid the diagnostic confidence of less experienced radiologists and it can contribute to improved workflow efficacy and efficiency of radiology services.

Community diagnostic centres: bringing diagnostics closer to home
British Journal of General Practice, October 2021
The NHS is under very significant workload pressures as a result of the backlogs of care due to the COVID-19 pandemic and high levels of patient demand. General practice is delivering more appointments than ever before, including caring for patients currently waiting for diagnostic tests, outpatient appointments, and specialist treatments. Improving access to diagnostics may address some of the significant waiting times patients are currently facing, allowing diagnoses to be made and treatment commenced in a timelier manner. Patients attending specialist outpatient appointments would also have key investigations already performed, streamlining secondary care. However, diagnostic workforce shortages in the NHS were already significant before the pandemic and it is unclear how these community diagnostic centres would be staffed without a significant increase in radiologists, radiographers, endoscopists, and sonographers in the very near future.

Rural Cancer Disparities: Understanding Implications for Breast and Cervical Cancer Diagnoses Abstract only*
Clinical Journal of Oncology Nursing (CJON), October 2021
Emergent themes indicate that rural populations experience barriers that affect disparities across the breast and cervical cancer continuum, including a changing healthcare landscape, access to cancer-focused care, access to insurance, collective poverty, and demographic factors. Nurses working with rural communities can address these disparities as they fulfil multiple roles and responsibilities.

The Lancet Commission on diagnostics: transforming access to diagnostics Full text available with NHS OpenAthens account*
The Lancet, October 2021
Health workforce expansion is key to improving access to diagnostics and diagnostic services. Expansion of the health workforce with current approaches alone will be insufficient. New approaches are needed to ensure expansion of workforce capacity and acquisition of contemporary skills, including more competency-based education, greatly expanded access to continuing professional development, telehealth for remote services, and greater use of task shifting and sharing. We recommend that each country use these approaches to expand the size and effective capacity of its health workforce.

A survey of anxiety and burnout in the radiology workforce of a tertiary hospital during the COVID-19 pandemic Abstract only*
Journal of Medical Imaging and Radiation Oncology, February 2021
We aimed to study anxiety and burnout among Division of Radiological Sciences (RADSC) staff during the COVID-19 pandemic and identify potential risk and protective factors. These outcomes were compared with non-RADSC staff. A proportion of RADSC staff reported significant burnout and anxiety, although less compared to the larger hospital cohort. Measures to prevent longer than usual work hours and increase feelings of enthusiasm and pride in one’s job may further reduce the prevalence of anxiety problems and burnout in radiology departments.

The effectiveness of the Guy’s Rapid Diagnostic Clinic (RDC) in detecting cancer and serious conditions in vague symptom patients
British Journal of Cancer, January 2021
RDCs provide GPs with a streamlined pathway for patients with complex non-site-specific symptoms that can be challenging for

primary care. The 7% rate of cancer diagnosis exceeds many 2WW pathways and a third of patients presented with significant non-cancer diagnoses, which justifies the need for rapid diagnostics. Rapid Diagnostic Centres (RDCs) are being rolled out nationally by NHS England and NHS Improvement as part of the NHS long-term plan. The aim is for a primary care referral pathway that streamlines diagnostics, patient journey, clinical outcomes and patient experience. This pilot study of 1341 patients provides an in-depth analysis of the largest single RDC in England. Cancer was diagnosed in 7% of patients and serious non-cancer conditions in 36% - justifying the RDC approach in vague symptom patients.

Radiographer reporting: A literature review to support cancer workforce planning in England Full text available with NHS OpenAthens account*
Radiography, May 2019
The evidence from this literature review confirms that the UK has pioneered radiographer reporting and that the reporting radiographer role is well established in many NHS clinical imaging departments. The studies reviewed demonstrate how radiographer reporting is helping modern NHS providers maintain high quality clinical imaging service provision and deliver cost-effective increases in diagnostic capacity. Working within multiprofessional clinical imaging teams within a defined scope of practice and with access to medical input when required, expanding the number and scope of practice of reporting radiographers can make a direct contribution to cancer screening and diagnosis and release radiologist capacity for other complex clinical imaging responsibilities. Transforming imaging service skill mix, to make better use of the respective specialist knowledge and skills of clinical radiologists and diagnostic radiographers, will help improve access to imaging not only for people suspected to have or affected by cancer, but also other patients referred to the service.

The role of the radiography workforce in the management and treatment of cancer patients
Society and College of Radiographers (no date)
The integration of new radiotherapy technologies is an important aspect of any future focused service and radiographers are leading the delivery of techniques such as image guided radiotherapy and adaptive radiotherapy which require decision making at each treatment to ensure that the optimum personalised treatment plan is delivered accurately. Radiographer-led research studies are evaluating the newer technologies and techniques as part of providing evidence-based practice. In order to improve patient access, new radiotherapy services are being planned and commissioned across the UK. Many of these are satellite centres and stand-alone units, staffed by therapeutic radiographers with the skills and expertise to provide high quality radiotherapy with minimal daily direct supervision from clinical oncologists.

Competency Frameworks

Rapid cancer diagnostic and assessment pathways
NHS England, November 2024

- Implementing timed urology cancer diagnostic pathway – bladder, penile, renal and testicular
- Implementing a timed HPB cancer diagnostic pathway. Pancreatic, liver, bile duct and gall bladder
- Faster diagnostic pathways: implementing a timed breast cancer diagnostic pathway: guidance for local health and social care systems
- Implementing a timed head and neck cancer diagnostic pathway
- Implementing a timed gynaecology cancer diagnostic pathway

- Implementing a timed colorectal cancer diagnostic pathway
- Implementing a timed lung cancer diagnostic pathway
- Implementing a timed prostate cancer diagnostic pathway
- Implementing a timed oesophago-gastric cancer diagnostic pathway
- Implementing a timed skin cancer diagnostic pathway

ACCEND Framework
Health Education England, February 2023
The Framework is made up of 3 components:
1. Career pathway component
2. Core cancer-specific capabilities in practice (CiPs) component
3. Education framework component
Combined, these components support practitioners at all levels of the career pathway to develop the core knowledge, skills and behaviours to care for people affected by cancer.

NHS cancer programme: faster diagnosis framework
NHS England, November 2022
This document sets out the NHS Cancer Programme's strategic approach to delivering faster diagnosis of cancer. It outlines specific and measurable objectives and key requirements for Cancer Alliances until the end of 2023/24, bringing together previously separate objectives relating to rapid diagnostic centres (RDCs) and Faster Diagnosis Standard (FDS) best practice timed pathways (BPTPs). It also seeks to align this work with related programmes such as the community diagnostic centres (CDC) programme.