5. Delivering world class cancer care through world class research

The transformational leaps forward in cancer survival achieved in the last 100 years have only been possible because of research, development and innovation. As we set out in the 10 Year Health Plan, and the Life Sciences Sector Plan (LSSP), the next decade beckons an even faster pace of scientific discovery.[56] In cancer, we stand on the cusp of:

- AI and genomics combining to drive a more preventative, predictive and targeted care model
- New blood, urine and breath tests, which will transform early detection at scale
- More durable and precise immunotherapy, including personalised cancer vaccines
- Advances in continuous monitoring, that transform the quality of life of people living with cancer
- Once in a generation prevention breakthroughs like GLP-1 medicines and the HPV vaccine. The latter will, alongside increased cervical screening uptake, make it possible to eliminate cervical cancer by 2040
- Advances in cell and gene therapy and genomic analysis of blood-based biomarkers (known as liquid biopsies).

Cancer innovation is a major health opportunity but also has significant promise for economic growth.

In the 10 Year Health Plan, we noted that:

> "Health research and innovation has become a global 'race to the top'. Nearly every country in the world is grappling with the health consequences of an ageing

56 Department of Health and Social Care. Life Sciences Sector Plan. gov.uk (viewed on 08 January 2026)

population and a rise in chronic illness. The countries that provide the best solutions will reap substantial economic benefit from exports, private investment and the high productivity jobs associated with the life sciences sector."

This particularly applies to cancer. Globally, incidence is projected to nearly double by 2070[57] – putting strain on health systems and undermining national economic prosperity.[58] As a result, there will be few countries that are not in the market for new cancer interventions – from medicines, to digital therapeutics, to wearable technology and advanced diagnostics. That makes a bold cancer innovation strategy a necessity for both health and economic growth.

Patient Voice

"[…] The most important priority for me as a brain tumour patient is for the government to invest in research into rarer cancers to ensure we develop kinder more effective treatments to give patients equality of hope for more time with a higher quality of life."

Call for evidence respondent

We have rich history and competitive edge, but we're falling behind

We are well placed to lead the world into the future on cancer discovery and innovation. Beyond our general strengths in the life sciences – brilliant universities, world-renowned scientists and significant pharmaceutical, HealthTech and bioindustry footprints – few countries have as illustrious a history as the UK on cancer breakthroughs. This includes:

- Real, current world leadership on genomics, including through the Sanger Institute's Cancer Genome Project.[59]
- The development of modern chemotherapy, including Cancer Research UK's major role in early chemotherapy trials and the development of combination chemotherapy regimens.[60]
- The first studies on the link between smoking and lung cancer (Doll & Hill) in the 1950s.[61]
- Some of the earliest discoveries in T-cell recognition of cancer and cancer immunotherapy – laying the biological groundwork for innovations like cancer vaccines.[62]

Despite this, our call for evidence showed a perception that we are not exploiting our full potential, and that we are falling behind. In line with the results of the engagement that informed our 10 Year Health Plan, respondents highlighted a lack of clear leadership and strategic direction; poor partnership and insufficient collaboration; challenges with both the adoption and spread of innovation (linked to weak incentives). A further, clear theme was the opportunity and need to do far better on clinical trials. Building on both the 10 Year Health Plan and the LSSP, we will address these challenges and ensure that we are a world leader in cancer research and innovation.

We will provide clearer and stronger strategic leadership

The 10 Year Health Plan's approach to providing strategic clarity and leadership was

57 International Agency for Research on Cancer, Planning for tomorrow: global cancer incidence and the role of prevention 2020–2070. Iarc.who.int (viewed on 12 January 2026)
58 Chen, S. and others. Estimates and Projections of the Global Economic Cost of 29 Cancers in 204 Countries and Territories From 2020 to 2050. JAMA Oncology 2023: volume 9 (viewed on 13 January 2026)
59 The Wellcome Sanger Institute, Cancer Genome Project. sanger.ac.uk (viewed on 12 January 2026)
60 Cancer Research UK, Past research into cancer drugs. cancerresearchuk.org (viewed on 12 January 2026)
61 Clinical Trial Service Unit & Epidemiological Unit, University of Oxford, British Doctors Study. ctsu.ox.ac.uk (viewed on 12 January 2026)
62 NHS England, NHS to roll out personalised CAR-T cancer therapies to hundreds more people. england.nhs.uk (viewed on 12 January 2026)

the articulation of 5 big bets to drive healthcare reform:

- data to deliver impact
- AI to drive patient empowerment and service productivity
- genomics and predictive analytics for personalised, pre-emptive care
- wearables to make care 'real time'
- robotics to support precision.

We chose these technologies because they are the best placed to disrupt the healthcare status quo, and to change patient experiences of care, levels of empowerment and outcomes. As such, the next step in this National Cancer Plan is to apply these 5 bets to outcomes we want to see delivered in cancer.

Action 1. To this end, we have developed 6 research priorities to improve cancer outcomes – each describing what we want to see these 5 big bet technologies achieve.

These priorities will cover at least the next 3 years, after which we will review them. They will be a bridge between big bets and real outcomes. Our priority will always be the research themes that best align with our goals of better performance, higher quality of life and world-leading survival. The 6 are:

- Screening and diagnostic tools that detect multiple cancers. This will include a focus on the innovations discussed in Chapter 3 that have most potential to transform and modernise the cancer pathway: including blood biomarker tests, as well as breath, saliva and urine tests. The ability to screen or test for multiple cancers at once, often pre-emptively – moving away from the NHS' reactive and episodic default care model – will be a particularly transformative breakthrough. The NHS is already leading the way through its world-leading NHS Galleri (produced by GRAIL) trial and further progress will be boosted by our big bet on data. Subject to UK NSC review – and evidence of their efficacy, safety and value – our ambition is that multi-cancer early detection tests can become part of our national screening programmes during the course of this plan. We will spearhead further efforts to discover and develop effective screening tests for rare cancers using multi-cancer early detection tests.
- Creation and roll out of the next generation of personalised treatments. New technologies, including AI, molecular radiotherapy, genomics, and mRNA vaccines, offer the possibility of greater advances in efficacy but need further work and ability to scale. Our big bets on genomics will support the development of new treatments that have the best opportunity of curing an individual's specific cancer and preventing its recurrence. We are already seeing progress in cancer vaccines through the Vaccine Innovation Pathway and Cancer Vaccine Launch Pad and will deliver up to 10,000 cancer vaccines by 2030. Our ambition is that these kinds of treatments are more widely available by 2035.[63]
- Fewer side effects and long-term impacts on the lives of young survivors from children and young people's cancers. Children and young people's cancers are different to those in adults and behave differently. While there have been advances in treatments, severe side effects remain a problem.[64] Our focus needs to be on new approaches to diagnosis and finding new, gentler treatments. This will depend on whole system collaboration. An example of how this can be achieved is the RAPID and RATHL trials, funded by NIHR, Blood Cancer UK and Cancer Research UK. These trials demonstrated how PET imaging could allow for less intensive treatment of Hodgkin lymphoma patients, who are mostly teenagers and young adults, reducing long-term side effects

63 NHS England, Cancer Vaccine Launch Pad. england.nhs.uk (viewed on 12 January 2026)
64 The Children & Young People's Cancer Association. Late effects of treatment. cclg.org.uk (viewed on 13 January 2026)

from treatment and is now NICE approved.[65]

- A step change in cancer prevention. GLP-1 medications are one of the most impressive innovations in recent decades. These are a huge boon in tackling obesity – a leading risk factor for cancer – and are showing positive indications on survival for some cancers,[66 67] though more research is needed. Elsewhere, the HPV vaccine is critical and has made elimination of cervical cancer a possibility. We are trialling the world's first preventative vaccine for lung cancer, LungVax, thanks to funding from the NIHR, which will begin trials with high-risk individuals this year. We will actively prioritise similar, future advances in prevention.
- Progress on rare cancers where survival rates are stubbornly low. Some rare cancers, such as brain and pancreatic cancer, have stubbornly low survival rates[68] – and few treatment or diagnostic breakthroughs. We need new diagnostic tools, research into biomarkers, and targeted therapies to achieve any major changes to survival. Genomics and data will be particularly important enablers to progress. We will also need intensive work across the research system, from foundational research on biomechanical underpinnings of the disease (e.g. through UK Research and Innovation (UKRI) and academia), through to diagnostic and treatment development (NIHR, commercial and charitable research funders, OLS), and innovative approaches (technology and pharmaceutical companies, regulators, OLS). The development of Tebentafusp, an immunotherapy of uveal melanoma (a rare form of melanoma that starts in the eye) – through the NIHR/CRUK Experimental Cancer Medicine Centres – increased 2-year survival from 30% to 45%.[69] This shows what is possible. By 2035, we want to see similar breakthroughs and increases in survival for the least survivable rare cancers.
- Better long-term care and support, as the number living with and beyond cancer rises further. The 2.4 million people with cancer are living longer after a diagnosis but are at higher risk of secondary cancers and ongoing side effects from new treatment.[70] Living with and beyond cancer will need to become a greater focus in research – including, what surveillance, follow-up, and support is needed in neighbourhood health settings to support the ambitions outlined in Chapter 4. Our shift to neighbourhood, combined with the big bets on digital and wearables, will help us to monitor the long-term impacts and support further research into surveillance and support to increase long-term quality of life by 2035.

DHSC and NHSE will work with NIHR (as the R&D arm of DHSC), UKRI and key charity partners – and through the Cancer Research Strategy Forum and the Office for Strategic Coordination of Health Research – to establish a 3-year review cycle to inform future prioritisation. This will ensure that research remains an enabler for the lifetime of

65 Johnson, P. and others. Adapted Treatment Guided by Interim PET-CT Scan in Advanced Hodgkin's Lymphoma, New England Journal of Medicine 2016: volume 374, p. 2419–2429 (viewed on 12 January 2026)
66 Fawzy, M.S. and others. Survival Benefits of GLP-1 Receptor Agonists in Patients with Neuroendocrine Neoplasms: A Large-Scale Propensity-Matched Cohort Study, Cancers 2025, volume 17, no. 9 (viewed on 15 January 2026)
67 Wang, M. and others. Association between glucagon-like peptide-1 receptor agonists and ovarian cancer survival: A population-based cohort study, Gynecologic Oncology, Volume 199, p. 57 – 63 (viewed on 15 January 2026); Cuomo, R. E. The Influence of GLP-1 Receptor Agonists on Five-Year Mortality in Colon Cancer Patients, Cancer Investigation 2025, volume 43, issue 10, p. 982–991 (viewed on 15 January 2026); Chen, P. and Hibler, E. A. Abstract 735: The associations between the use of GLP-1 receptor agonists, cancer recurrence and all-cause mortality among cancer survivors, Cancer Res 2023, Volume 83, Issue 7, supplement (viewed on 15 January 2026)
68 NHS England. Cancer Survival. digital.nhs.uk (viewed on 07 January 2026)
69 Hassel J. C. and others. Three-Year Overall Survival with Tebentafusp in Metastatic Uveal Melanoma, New England Journal of Medicine 2023: volume 389, p. 2259 (viewed on 08 January 2026)
70 NHS England. Cancer prevalence dashboard – NDRS. digital.nhs.uk (viewed on 13 January 2026)

this plan (and beyond). We will work with partners across the research and innovation landscape and the cancer community, to involve them in these challenges – including by working with life science companies and medical research charities to align our actions, avoid duplication and to push in the same, common direction.

We will speed up implementation of proven cancer innovation

Despite significant investment in R&D, the NHS has struggled to adopt evidence-based innovations into routine clinical practice at scale and pace. This is a problem. Beyond the missed opportunities to save lives, achieve wider social benefit and reduce health inequalities it represents, it also makes the UK a less attractive place for global life sciences investment.

Our new operating model will help us to change that. Multi-year budgeting, funding tied to outcomes not activity, and real incentives for innovation will help leaders take better risks. The National HealthTech Access Programme for innovative technology laid out in the 10 Year Health Plan will accelerate approvals and adoption. Devolution will give local leaders more freedom to pull through innovation, so they do not need to wait for top-down permission. The Health Innovation Zones[71] announced in the LSSP will support this approach, including by giving systems and providers more scope to work closely with industry in reshaping their services.

Action 2. Building on the 10 Year Health Plan and LSSP, we will develop a clear innovation pathway, with cancer as an exemplar condition.

This pathway will include support, at different stages, from the NHS Cancer Programme Innovation Call, NIHR and the Office for Life Sciences' Cancer Technology Adoption Fund. In particular, we will provide investment at the adoption end of the development pathway and to support implementation research to generate the evidence needed for regulatory approval and NHS adoption,areas of weakness in this country.

Case study: Circulating tumour DNA testing: delivering better outcomes for patients and the NHS

In recent years, the NHS has pioneered the use of circulating tumour DNA (ctDNA) testing, which uses blood rather than tissue samples to detect cancer-causing variants.

Through an innovative pilot for non-small cell lung cancer (NSCLC), over 2,500 patients were tested across 3 years. Compared to traditional tissue biopsies, ctDNA results were delivered on average 16 days faster, allowing patients quicker access to targeted treatment and avoiding mistreatment and its associated consequences.

As part of the pilot, a healthcare economics analysis found that ctDNA could save the NHS approximately £11m per year by reducing unnecessary diagnostics and shortening the diagnostic pathway, to deliver quicker results to patients. Following the pilot's success, ctDNA testing for NSCLC was added to the National Genomic Test Directory in May 2025 and is available to all eligible patients in England.[72]

Action 3. We will use the new National HealthTech Access Programme to accelerate access to new technologies.

The programme brings the approval process for technologies into line with the appraisal process for medicines, to streamline the adoption of innovation and help end the postcode lottery. We have identified 4 priority areas for the programme:

71 UK Government. Life Sciences Sector Plan. gov.uk (viewed on 12 January 2026).
72 NHS England. NHS first in world to roll out revolutionary blood test for cancer patients. england.nhs.uk (viewed on 08 January 2026).

- technologies for sampling abnormal cells in the oesophagus, to improve early diagnosis of oesophageal cancer
- AI-assisted interpretation of pathology images for suspected prostate and breast cancer diagnosis
- technologies to improve detection of endometrial cancer in women with postmenopausal bleeding
- AI-derived software to analyse chest X-rays for suspected lung cancer in primary care referrals.

The first 2 areas will be referred for assessment from NICE this year; the latter 2 are expected to follow as ongoing evidence matures.

Action 4. We will work across government to ensure innovative approaches are joined up with wider objectives on life sciences, AI and technology.

For example, we will take advantage of the huge opportunities of AI to design new treatments. The government's AI Research Resource Initiative, led by the Department of Science, Innovation and Technology (DSIT) and UKRI, is giving cancer vaccine researchers access to one of the country's most powerful supercomputers.[73] Training our sovereign AI capability on the NHS's uniquely rich cancer data will help us develop a new generation of more personalised cancer treatments.

Action 5. We will make sure that clinicians, researchers and other professionals have the right data to develop practical insights.

This will include developing national linkable datasets, including datasets on all cancer screening programmes.

The Health Data Research Service will provide a secure single access point for researchers, including data relevant to cancer diagnosis, care and outcomes, aligned with our unique National Disease Registration Service (NDRS). The combination of linking our unique national datasets, improvement in the regulatory environment and government investment will help turn the UK into a global destination for cancer clinical trials.

We will ensure faster set up of clinical trials and more equitable access

In April 2025, the Prime Minister announced a major initiative to accelerate UK medical research – including a pledge to cut clinical trial setup times from over 250 days to 150 days, by March 2026. Our call for evidence showed that this prioritisation of clinical trials is a shared priority with partners. This Plan will go yet further to ensure quick clinical trial set-up – but also to ensure more equitable access for cancer patients.

This is vital for science, but it is also important for patients. For many cancer patients, participating in a trial is an important way of helping to improve treatments for those that follow. For others, a trial holds the possibility of improving their outcomes or quality of life. Despite this, the 2024 national Cancer Patient Experience Survey found that less than half of respondents were offered the chance to take part in a clinical trials.[74] Patients from deprived areas – particularly in more rural or coastal parts of the country, a long way from large academic centres – were less likely to be offered the opportunity.[75] Teenagers and young adults can also face age limits on trial participation (see Chapter 6), while people from Black, Asian and other ethnic minority backgrounds remain unfairly

73 Nuffield Department of Medicine, University of Oxford. 'Researchers granted AI supercomputing award to advance cancer vaccine work' ndm.ox.uk (viewed on 8 January 2026)
74 National Cancer Patient Experience Survey (NCPES). Latest National Results. ncpes.co.uk (viewed on 08 January 2026)
75 Mohd Noor, A. and others, The Impact of Patient Socio-Econonomic Status on Access to Early Phase Cancer Trials, Annals of Oncology 2012: Volume 23. (viewed on 13 January 2026)

underrepresented.[76] Through this plan, we will ensure that every cancer patient gets the opportunity to access relevant clinical trials quickly, fairly and easily.

Patient Voice

How do patients know about clinical trials? It's all very well providing funding and them going ahead, but key is how patients get the opportunity to participate in them.

Patient and Public Voice Forum member

Action 6. We will establish a Cancer Trials Accelerator Programme to increase the speed, scale and reliability of cancer clinical trials across the UK.

It will build directly on the operating principles and delivery models proven through the Vaccine Innovation Pathway (VIP) and the Cancer Vaccine Launch Pad (CVLP) and apply them systematically across all cancer clinical trials. It will strengthen patient access to innovative cancer therapies and reinforce the UK's position as a competitive, reliable and scalable destination for cancer clinical research. It will also provide a single national oncology commercial trials delivery pathway, coordinated through the NIHR Industry Hub and delivered through existing NIHR infrastructure, giving sponsors a clear and reliable route from feasibility to first patient and through to study completion.

- Establish national pre-screening and referral approaches, enabling patients to be identified locally and referred efficiently into trial-ready sites, improving access and reducing delays while retaining local clinical oversight.
- Work with NHS diagnostic services, including the NHS Genomic Medicine Service, to optimise biomarker and companion diagnostic workflows and reduce delivery risk for complex oncology trials.
- Expand delivery beyond traditional hospital settings, including community-based recruitment and decentralised follow-up, where appropriate and safe to do so.
- Operate with clear national performance standards, real-time data visibility and active delivery management through the Industry Hub.
- Provide a coherent platform for industry co-investment, enabling public and private funding to be aligned around shared delivery objectives.

Case study: Personalised Cancer Vaccines: accelerating recruitment and delivery of trials.

Personalised cancer vaccines are a form of immunotherapy treatment tailored to each person's cancer, based on the genetic changes unique to each tumour. The UK has established global leadership in research into cancer vaccines through the Cancer Vaccine Launch Pad (CVLP) and the Vaccine Innovation Pathway (VIP). The CVLP provides an extended network of referral sites across parts of the country, to broaden trial access and to streamline processing and analysis of cancer biopsies for genetic analysis. The VIP provides the systems and processes to optimise trial set up and patient recruitment. As a result of these innovations, the UK was the fastest-recruiting country for the first international trial of personalised vaccination after surgery for colorectal cancer, and is at the forefront of trials in melanoma, head and neck cancer and pancreatic cancer. This has led to multi-million pound investments in vaccine research in the UK by the companies developing these technologies and a rapidly-expanding portfolio of new trials.

76 Pardhan S. and others, Barriers and facilitators for engaging underrepresented ethnic minority populations in healthcare research: an umbrella review, International Journal for Equity in Health 2025, Volume 24 (viewed on 13 January 2026)

Action 7. NIHR will make research more inclusive, so it reaches more under-represented communities.

This is not just the right thing to do, it is critical to ensuring that trials give us accurate data and that results are generalisable to our population. If the people who participate in a trial do not reflect the whole population, then the results may be unreliable. That's one reason why inclusion is a condition of NIHR funding and must be built into all stages of the research lifecycle. NIHR is supporting commercial life sciences, working through its NIHR Industry Hub, to offer research within a greater diversity of sites and settings to ensure a representative population can participate.

Action 8. Cancer trials will be made more accessible.

New multi-neighbourhood providers will mean general practice, primary care and other neighbourhood services can be delivered at greater scale. One of the opportunities that will create is better GP recruitment into clinical trials (as is already demonstrably the case in some pioneering 'GP at scale' models) – with people able to join research in a GP surgery, a neighbourhood health centre, or potentially even from within their own home. The NIHR Primary Care Commercial Research Delivery Centres will serve as centres of excellence, providing leadership and building sustainable capacity for commercial clinical research delivery in primary care.

Action 9. The NIHR Be Part of Research service will allow patients to browse trials and find those best suited to them.[77]

Boosting sign-ups to Be Part of Research, and extending access to people aged under 18, will help increase trial recruitment. We will support this further by integrating Be Part of Research into the NHS App and by improving its interoperability as new opportunities for participation are enabled. We will improve patient and clinician awareness of current clinical trials through targeted campaigns, and the use of new digital tools.

Action 10. We will harness the opportunities of genomics to bring more patients into clinical trials.

Experimental cancer therapies are increasingly personalised and based on genomic testing. To be selected for these trials, a patient needs to have had a genomic test. That means improving the availability and timeliness of genomic testing will increase access. The NHS Genomic Medicine Service will make sure that patients are tested for suitability for trials at the start of their cancer pathway as part of routine genomic testing. This will open up the opportunity for potentially life-saving therapies earlier in people's treatment journey. Genomics England will work with the NHS Genomic Medicine Service to populate the National Genomic Research Library, to make cancer genomic data available to researchers and industry to drive up diagnostic discovery and the identification of new treatments.

77 National Institute for Health and Care Research (NIHR). Be Part of Research. bepartofresearch.nihr.ac.uk (viewed on 08 January 2026).

Delivering world class cancer care through world class research and data – and commitments

Commitment	Responsible organisations	Timeframe
Action 1. Prioritise 6 research priorities to improve cancer outcomes		
Deliver up to 10,000 cancer immunotherapies to patients, enabled through the NHS Cancer Vaccine Launch Pad and Vaccine Innovation Pathway	NHSE/DHSC	2030
Set 6 priorities for the research system and review every 3 years	NHSE/DHSC, OLS	Across the lifetime of the plan
Action 2. Building on the 10 Year Health Plan and LSSP, we will develop a clear innovation pathway, with cancer as an exemplar condition		
Deliver Office for Life Sciences Cancer Healthcare Goals and NHS Cancer Programme cancer innovation funding calls	NHSE/DHSC, OLS	2030
Action 3. We will use the new National HealthTech Access Programme, set out in the LSSP, to accelerate access to new technologies		
Use the initiatives set out in the Life Sciences Sector Plan to accelerate the adoption of innovative technologies, starting with using the National HealthTech Access Programme for four new approaches to diagnostics	DHSC/NHSE, NICE	2027
Action 4. We will work across government to ensure innovative approaches are joined up with wider objectives on life sciences, AI and technology		
Work across government to ensure innovative approaches are joined up with wider objectives on life sciences	DHSC, DSIT	Across the lifetime of the plan
Action 5. We will make sure that clinicians, researchers and other professionals have the right data to develop practical insights		
Ensure that a sustainable data infrastructure is in place to enable more timely, better linked and more accessible data by working with central data teams and HDRS	NHSE/DHSC, OLS	2028
Develop national linkable datasets to cover all cancer screening programmes to improve our understanding of uptake and support risk stratification	NHSE/DHSC	2028
Action 6. We will establish a Cancer Trials Accelerator Programme to increase the speed, scale and reliability of cancer clinical trials across the UK		
Establish a Cancer Trials Accelerator designed to increase the number of cancer trials in the UK and streamline delivery	NHSE/DHSC, OLS	2027

Commitment	Responsible organisations	Timeframe
Action 7. NIHR will make research more inclusive, so it reaches more under-represented communities		
Support developments across the life sciences ecosystem to ensure the UK continues to be a world leader in cancer trial delivery	NHSE/DHSC	Across the lifetime of the plan
Action 8. Cancer trials will be made more accessible		
Increase recruitment into cancer clinical trials and reduce inequalities in access	DHSC/NHSE, /NDRS	2028
Action 9. The NIHR Be Part of Research service will allow patients to browse trials and find those best suited to them		
Support patients to find trial best suited to them through Be Part of Research	DHSC, NIHR	2027
Action 10. We will harness the opportunities of genomics to bring more patients into clinical trials.		
Report on potential genomic targets for experimental cancer therapies as part of routine genomic testing upfront in the patient pathway	NHS Genomic Medicine Service	2027