

Beyond recovery: The case for transforming UK clinical cancer research

Summary & recommendations

Clinical research is pivotal to improving health outcomes for cancer patients. By developing new ways to prevent, diagnose and treat cancer, clinical cancer research plays a vital role in achieving Cancer Research UK's ambition of 3 in 4 people surviving their cancer by 2034. The benefits of clinical research extend far and wide, as evidence shows hospitals involved in research provide higher-quality care and have lower levels of patient mortality.^{1,2}

The UK routinely punches above its weight in cancer research,³ leveraging its internationally renowned discovery and translational science base to identify, develop and launch new cancer technologies and treatments. This strong science base explains why cancer is the most successful field in UK commercial clinical research,⁴ which drives economic growth through innovation. In 2018-19 alone, clinical research supported over 47,500 jobs and generated £2.7 billion in Gross Value Added for the UK economy.⁵ And when the Government invests in medical research, every pound invested delivers a return equivalent to 25 pence every year, forever.⁶

This success enables clinical cancer research to attract new investment⁷ into the UK science base and forge ground-breaking scientific partnerships⁸ around the world. Maintaining and building on this success is therefore vital to achieving the Government's ambitions for a UK science superpower.

Yet, this success has also been inhibited. The UK's capacity to deliver clinical cancer research was overstretched long before COVID-19 due to years of under-funding and limited support,⁹ restraining the UK's ability to innovate and improve cancer outcomes.

The pandemic has exacerbated these pre-existing obstacles to innovation by disrupting cancer clinical trials and reducing research capacity. But the pandemic has also presented a once-in-a-generation opportunity to transform clinical cancer research for the better, build on Government strategies like the *Future of UK Clinical Research Delivery*, and accelerate improvements in cancer outcomes.

These advances are not guaranteed, however. Simply recovering to a pre-pandemic 'normal' for cancer research will not be enough. Instead, to help the UK to achieve world-class cancer outcomes, the UK Government must choose to go beyond recovery by:

Expanding the UK's capacity to deliver clinical cancer research

- The Managed Recovery programme should take steps to prevent further disruption to cancer research, increase researchers' access to the resources needed to restart clinical trials, and set clear targets to coordinate local NHS leaders and their resources.
- NHS England and its devolved equivalents should operate a pilot scheme that offers a cohort of NHS staff contracts that include dedicated time for research.
- The National Institute for Health Research's annual budget should be increased from £1 billion to £1.4 billion by 2025, with proportionate uplifts for its devolved equivalents.
- NHS England and its devolved equivalents should work with health research funders and academia to increase NHS staff's access to research training.
- The UK Government should take steps to make clinical cancer research more accessible and inclusive by reviewing the regional distribution of research and building on its investment in widening opportunities for careers in clinical research.

Transforming how the UK delivers cancer research to make it more efficient and equitable

- NHS England and its devolved equivalents should embed clinical cancer research into everyday practice by incorporating research into workforce strategies and developing metrics to better capture the impact of NHS research.
- The UK Government should streamline the set-up and delivery of non-commercial clinical cancer research and invest in expanding the capacity of local NHS R&D offices.
- The life sciences sector should learn from COVID-19 to make cancer trials more accessible, and the UK Government should support this by investing in decentralised clinical trials.

Leveraging the UK's scientific strengths to deliver impactful innovations for cancer

- The Government should support innovative cancer research, by:
 - Addressing market failures that inhibit research into early detection and diagnosis
 - Implementing the sector's recommendations for delivering complex clinical trials¹⁰
 - Maintaining a regulatory environment that facilitates international cancer studies
- The UK Government should work with Cancer Research UK and others in the sector to conduct a review exploring the future of cancer research.

About Cancer Research UK

Cancer Research UK is the world's largest cancer charity dedicated to saving lives through research. We support research into over 200 types of cancer, and our vision is to bring forward the day when all cancers are cured. Our long-term investment in state-of-the-art facilities has helped to create a thriving network of research at 90 laboratories and institutions in more than 40 towns and cities across the UK, supporting the work of over 4,000 scientists, doctors, and nurses. In 2020-21, Cancer Research UK invested £421 million on new and ongoing research projects into the causes and treatments for cancer.

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Cancer Research UK is a registered charity in England and Wales (1089464), Scotland (SC041666) and the Isle of Man (1103).

Going beyond recovery

Pre-pandemic problems

Even before the pandemic, the environment for clinical cancer research was overstretched, efforts to improve cancer outcomes were inhibited, and UK science was at risk of falling behind its competitors.

The NHS faces persistent and significant obstacles to expanding its capacity to conduct ground-breaking research and generate life-saving innovations in cancer care. Many of these obstacles are the result of long-term underfunding. For instance, the National Institute for Health Research's (NIHR's) budget has remained flat for four years¹¹ despite its vital role in funding health research and training the research workforce. This underfunding is a systemic issue, with 60% of surveyed NHS research directors saying there is insufficient funding for research.¹² The UK Government allocated £5 billion to health research in the last Spending Review, which is welcome. However, this uplift will take years to materialise,¹³ and it is unclear how much of this funding will be used to support cancer research.

The most common consequence of this underfunding is a lack of dedicated time for research, which is a barrier to research for 64% of surveyed NHS staff working in research-inactive Trusts.¹⁴ Without this dedicated time, staff cannot deliver research, which reduces the NHS's research capacity and its ability to develop innovations that could benefit the next generation of cancer patients. Growing pressures on cancer services¹⁵ have restricted access to this dedicated research time even further, as increased clinical demands on NHS staff have reduced the time available for research.

The NHS's research capacity is also limited by insufficient levels of research training, with 41% of surveyed NHS staff in research-inactive Trusts facing barriers to research because they lack the requisite knowledge and skills.¹⁶ Many staff attribute this skills gap to the limited research training provided by medical schools, which leaves many graduates without the capabilities required to conduct research¹⁷ and therefore limits the NHS's research capacity even further.

Despite these limitations, the UK routinely punches above its weight in cancer research¹⁸ by leveraging its strengths in discovery and translational science, and cancer is the UK's most successful field of commercial clinical research.¹⁹ Yet, we cannot take this position for granted.

The UK's scientific competitors have significantly outpaced its spending on R&D,²⁰ and the UK's global share of clinical trials is declining.²¹ Whilst we welcome the UK Government's plans to invest £20 billion a year in R&D by 2024-25,²² it is years away from increasing R&D spending to 2.4% of GDP – and this target is now below the 2.5% OECD average.²³ Action must be taken to maintain UK competitiveness.

In short, there have been long-standing pressures on the UK's capacity to deliver clinical cancer research that, in the long run, risk undermining the UK's competitive advantage in cancer research and its ability to improve cancer outcomes through innovation.

COVID-19: Obstacle and opportunity

These pressures on clinical cancer research are not new, but COVID-19 has exacerbated them. This presents us with an unprecedented challenge – and an opportunity.

The pandemic severely disrupted clinical trials by forcing study sites to redeploy research staff and resources to frontline care, which reduced the NHS's research capacity. COVID-19 also disrupted clinical trials that retained their staff and resources, as the threat of infection made many site-based research activities less safe for both participants and researchers. As a result, 40% of NHS trusts had to pause non-COVID research,²⁴ and 95% of Cancer Research UK's clinical trials were paused during the pandemic's first wave.²⁵

COVID-19 may also have longer-term ramifications for the UK's capacity to deliver cancer research. When surveyed, 3 in 10 people working in the UK on clinical cancer research said their experiences during the pandemic had made them more likely to leave the field in the next five years²⁶ – [learn more](#).

Although many studies have since reopened, recruitment to cancer trials remains well below pre-pandemic levels,²⁷ and the UK's recovery continues to be outpaced by countries like Italy and Spain.²⁸

Limited capacity remains the primary constraint on clinical research's recovery.

The pandemic has significantly increased rates of sickness and fatigue amongst NHS staff, with 63% of surveyed clinical cancer researchers feeling more fatigued since the pandemic began.²⁹ Unsurprisingly, this has reduced the number of staff available to deliver clinical research,³⁰ including cancer trials, thereby limiting the NHS's capacity to deliver existing studies and set-up new ones.

COVID-induced sickness and fatigue also affect non-research staff, including those working in facilities such as pathology and radiology. These facilities provide vital support to cancer research, including tests, diagnostics, and other services needed to deliver studies. However, these facilities also support cancer services, and so they must balance demand between the two. Due to the lowered staffing levels caused by COVID-19 and the current backlog in cancer diagnostics and treatments,³¹ the capacity of these facilities is severely overstretched, which limits their ability to support research delivery and, in turn, the NHS's capacity to deliver cancer research. This limited access to facilities and their support services is not a new problem for clinical research – affecting 24% of NHS staff in research-inactive Trusts³² – but COVID-19 has exacerbated it.

A driving force behind this persistent scarcity of support is the NHS's limited research culture. Although the pandemic has raised the profile of clinical research, the NHS continues to see research as a burdensome (but beneficial) add-on to standard care.³³ This attitude is widespread across the NHS, with 43% of NHS staff in research-inactive Trusts reporting it as a barrier to research.³⁴ Consequently, the allocation of resources between research and services is often viewed within the NHS as a zero-sum game, even though clinical research plays a vital role in delivering and improving care. By making these resources even scarcer (for reasons described above), the pandemic has intensified this zero-sum mentality and the competition for resources between research and services. Therefore, researchers are finding it harder to secure the facilities and capacity needed to deliver cancer trials, which reduces the NHS's clinical research capacity even further.

The pandemic has undoubtedly challenged clinical cancer research by disrupting its clinical trials, exacerbating pre-existing barriers to NHS research, and inhibiting efforts to restart research at a time when cancer survival rates are at risk of going backwards for the first time in decades.³⁵

But the pandemic has also created a once-in-a-generation opportunity to optimise the environment for clinical cancer research and accelerate improvements to cancer outcomes.

Firstly, high-profile COVID-19 studies like RECOVERY have galvanised public enthusiasm for clinical research to an unprecedented level, with 78% of the public now wanting the NHS to routinely conduct health research.^{36,37} This surge in support for research is well warranted, as evidence shows that research-active Trusts deliver better patient outcomes.³⁸ Yet this fervour may not last forever, so we must leverage this opportunity to drive beneficial changes to research, such as increased patient and public involvement in clinical trials.

Secondly, clinical research's role in developing treatments and vaccines for COVID-19 has raised its profile on the Government's policy agenda. A year after the pandemic began, clinical research received a cross-government strategic vision, the *Future of UK Clinical Research Delivery*,³⁹ which was shortly

followed by the *Life Sciences Vision* and its commitments to support cancer research.⁴⁰ Despite significant pressures on public finances, the UK Government has backed these strategies with plans to invest £5 billion in health research between now and 2024-25.⁴¹ If effectively implemented and sufficiently financed, this renewed government interest in clinical research should provide cancer researchers with much-needed support and help to accelerate innovation.

Thirdly, the pandemic has expedited the adoption of innovative approaches to research design and delivery. Although platform trials (studies of multiple drugs and/or diseases) pre-date COVID-19, their use during the pandemic has raised their profile immensely. Trial design is now a focal point of science policy,⁴² creating new opportunities for the UK Government to spur innovation in cancer research. Similarly, delivering trials outside of conventional study sites (e.g. hospitals) was a pre-existing practice that erupted in use during the pandemic. These decentralised delivery methods were first used to keep trials running safely during the early stages of the pandemic, but there is a growing interest in applying this approach to make clinical research more accessible and inclusive.⁴³

Lastly, the rapid regulatory approval of COVID-19 studies (in days rather than months)⁴⁴ has demonstrated that clinical trials can be set up much faster. Although it is unlikely these timeframes could be replicated for cancer trials, there is certainly room for improvement, and the Experimental Cancer Medicine Centre Network has established a pilot programme to explore this potential further. If cancer trials could be set up more quickly, it would accelerate patient access to new treatments and technologies that could improve cancer outcomes.

The case for transforming cancer research

Whilst it has been undoubtedly challenging, the pandemic presents a once-in-a-generation opportunity to transform clinical cancer research for the better and drive improvements in cancer outcomes. Simply recovering to a pre-pandemic 'normal' for cancer research is insufficient if the UK is to achieve world-class cancer outcomes. Instead, the UK Government must choose to go beyond recovery by:

- Expanding the UK's capacity to deliver clinical cancer research
- Transforming how the UK delivers cancer research to make it more efficient and equitable
- Leveraging the UK's scientific strengths to deliver impactful innovations for cancer

Expanding research capacity

Optimising the environment for clinical cancer research can only happen if the UK has the capacity to design and deliver innovative studies that benefit patients and improve cancer outcomes.

Recuperating from COVID-19

Firstly, before the UK can expand its clinical research capacity, the Government must recoup the capacity occupied by the pandemic.

To prevent further disruption to clinical cancer research, we must increase study sites' resilience against COVID-19. Where feasible, **sites should move research activities off-site** (e.g. by consulting patients online) and enable staff to work from home with secure remote access to site-based systems and data. Where this is not feasible, sites should **reduce the risk of infection faced by research staff and participants** by using sufficiently resourced Track & Trace procedures. If these measures cannot prevent COVID-19 from disrupting cancer trials, then disruption should be minimised by **only redeploying research staff and infrastructure in exceptional circumstances** and with a clear timeframe for their return.

Next, to accelerate the restart of clinical cancer research disrupted by COVID-19, we recommend **local NHS leaders take steps to increase research capacity** by:

- Pre-assigning the capacity of facilities shared between cancer trials and cancer services to give researchers the stability required to plan and deliver studies
- Utilising private sector and academic resources to deliver trials without impacting NHS capacity
- Managing trial delivery seven days a week by enabling research staff to work flexibly
- Including representatives of facilities shared by research and services (e.g. radiologists) when making decisions on restarting or setting up cancer trials

Whilst individual sites can take these steps to maintain and recoup capacity at the local level, success requires effective coordination of decision-makers and resources at the national level. The cross-government Managed Recovery programme has sought to achieve this by fast-tracking high-priority studies, intending to complete them faster to reduce pressure on the NHS. However, Managed Recovery has not communicated what it wants to achieve and by when, and this lack of specific goals makes it harder to communicate clearly with local NHS leaders and coordinate their decisions. This situation is in stark contrast to the recovery of health services, which is full of metrics (e.g. cancer waiting times) used to monitor and incentivise performance. Therefore, to improve coordination of local NHS leaders and their resources, we recommend **Managed Recovery sets clear, measurable, and timely goals that it will achieve to successfully recoup clinical research capacity**.

Time for research

Secondly, the Government must ensure the UK's existing clinical research capacity has the time and resources required to deliver cancer research and improve patient outcomes.

The NHS's scarcity of dedicated research time^{45,46} is its most common barrier to research – even in research-active NHS Trusts, 51% of NHS staff have insufficient access to research time.⁴⁷ For prospective researchers, the scarcity of dedicated time makes it harder to start getting involved in research; and for established researchers, the lack of time forces many to self-fund their research (e.g. by using annual leave),⁴⁸ which disincentivises them from staying in research and developing their expertise and experience. By limiting the development of new researchers and underutilising the abilities of experienced researchers, this lack of dedicated time for research restricts the NHS's capacity to conduct clinical research and its ability to expand that capacity.

Gaps in dedicated research time are also limiting the NHS's ability to attract and retain the staff needed to deliver world-class cancer services, as evidence shows that research-active hospitals have increased rates of staff retention and find it easier to recruit healthcare professionals.^{49,50,51} Concern for NHS staff wellbeing and retention predate the pandemic, as 36.8% of staff reported feeling unwell due to work-related stress in 2016, but COVID-19 has exacerbated the situation, increasing this number to 44.0% in 2020.⁵² Due to this heightened burnout, record numbers of staff are now leaving the NHS – 27,000 staff (2% of the entire NHS workforce) left in the third quarter of 2021 alone.⁵³

Therefore, to expand its capacity to deliver life-saving cancer research and strengthen its position as an employer, the NHS should increase staff's access to dedicated research time. To achieve these goals, we recommend **NHS England and its devolved equivalents adopt the Academy of Medical Sciences' proposal of a pilot scheme offering a cohort of consultants contracts that include dedicated research time**.⁵⁴ We also recommend **offering similar contracts to staff in professions that are underrepresented in research, including nurses, midwives and Allied Health Professionals (AHPs)**.⁵⁵

To implement this pilot, NHS Trusts will need additional funding to resource staff's research and backfill the time allocated:

To provide the necessary research funding, we recommend the **Department of Health and Social Care (DHSC) increase the NIHR's annual budget from £1 billion to £1.4 billion by 2025**. This funding should be drawn from the Spending Review's £5 billion investment in health research.⁵⁶ Doing so would ensure the NIHR's funding keeps pace with the overall uplift to government investment in health research, enabling it to continue investing in cancer studies and the workforce that delivers them.⁵⁷ We also recommend the **devolved administrations draw on their increased capital block grants⁵⁸ to uplift funding for the Chief Scientist Office (CSO), Health and Care Research Wales (HCRW), and Health and Social Care (HSC) R&D**.

To backfill the time allocated to research, we recommend the **UK Government invest in expanding the cancer workforce to meet the rising demand for cancer services**, as doing so will free up capacity for clinical cancer research. Critical to achieving this is sustained investment to grow the workforce in key cancer professions, with CRUK estimating that to achieve world-class cancer outcomes the UK Government must invest an additional £216 million in Health Education England – [learn more](#).⁵⁹

Research skills & training

Thirdly, the Government should increase the UK's clinical research capacity by training more staff to have the skills needed to deliver clinical cancer research.

The NHS workforce's limited research skills and knowledge is a major obstacle to expanding clinical research capacity. This skills gap is rooted in limited access to research training both before and during staff's employment in the NHS. Increasing the availability of research training and development opportunities should therefore help to fill this skills gap, and 85% of surveyed NHS staff agree this would promote research activity.⁶⁰

To develop these skills, national- and local-level NHS leaders must take a systematic approach to supporting their staff's research careers. Providing one-off research opportunities rarely gives staff the training and experience needed to drive research and innovation in the long run. For example, NHS staff that get the opportunity to study and develop research skills can then struggle to find jobs that utilise their research training.⁶¹ Instead, staff need to be given sustained opportunities to advance their research careers and cumulatively develop expertise. There are many ways to deliver this approach, and we recommend:

NHS R&D offices work with local universities to increase the number of opportunities for students to undertake research in clinical settings.⁶² Doing so would introduce the next generation of NHS staff to clinical research, its benefits to patient outcomes, and their potential role in generating health innovations.

NHS Trusts establish mentorship programmes that pair prospective researchers with established researchers, including those from neighbouring Trusts and universities.⁶³ These programmes should provide prospective researchers with guidance on how to develop their research skills and careers and secure early-career research funding.

The NIHR, CSO and HSC R&D develop research training programmes modelled on the HCRW's Pathway to Portfolio Development Funding Scheme.⁶⁴ These programmes should support early-career researchers by funding small-scale research projects that develop the skills and experience they need to progress.

Access to research

Finally, the Government must develop clinical research capacity throughout the UK so that cancer research is accessible and inclusive.

First, regional disparities in cancer research activity must be addressed. Our report, [Creating Time for Research](#), found that funding for clinical research is often “skewed towards larger Trusts/Health Boards with established research capacity and expertise.”⁶⁵ As a result, cancer trials are typically clustered in urban centres with specialist infrastructure and personnel, which creates stark regional differences in patients’ access to research. For example, in 2019 cancer patients in the North West and South West London Cancer Alliance were 71% more likely to be asked if they would want to take part in cancer research than cancer patients in the Cheshire and Merseyside Cancer Alliance.⁶⁶ The consequences of these regional disparities, and their impact on health inequalities, require further investigation, which Cancer Research UK is pursuing. However, studies show that research-active hospitals deliver higher-quality care and better patient outcomes,⁶⁷ including cancer outcomes,⁶⁸ which indicates these research disparities could be contributing to wider health inequalities.

Therefore, we recommend the **UK Government conduct a regional review of clinical cancer research activity**, including the impact regional disparities in patient access to cancer trials have on cancer outcomes.⁶⁹ This review’s findings should inform how DHSC allocates its £5 billion investment in health research, one of the goals of which should be expanding research capacity in underserved regions.

Second, inequalities in access to research opportunities and support within the NHS workforce must be reduced. Whilst all staff can face barriers to research, underrepresented professions (such as nurses, midwives and AHPs) face greater barriers to accessing support and often receive less recognition for their contributions to research.⁷⁰ For instance, 36% of nurses and midwives report difficulties accessing research training compared with 25% of doctors.⁷¹ These disparities are partly the result of research funding being “disproportionately skewed to doctors rather than anyone lower on the food chain.”⁷² However, even professions that are well-represented in research experience inequalities in access and support. The Royal College of Physicians, for example, found that physicians who were women or ethnic minorities had fewer opportunities to participate in research and were more likely to face difficulties accessing research training.⁷³ By limiting the opportunities available to under-represented professions, women, and ethnic minorities in the NHS to participate in research, these inequalities in training and support limit the NHS’s capacity to conduct research and therefore inhibit innovations that could improve cancer outcomes.

Therefore, we recommend the **NIHR and its devolved equivalents increase their provision of research training and funding opportunities to groups that are underrepresented in clinical cancer research**.⁷⁴ We welcome the UK Government’s £30 million investment in research skills and training opportunities for nurses, midwives and AHPs.⁷⁵ This investment is a vital step towards making research more inclusive and expanding the NHS’s clinical research capacity, and we encourage further such investments to be made using the £5 billion allocated for health research by the Spending Review.

Transforming cancer research

Expanding clinical research capacity is essential if the UK is to generate the innovations needed to realise Cancer Research UK’s ambition of 3 in 4 people surviving their cancer by 2034. But increasing the UK’s output of cancer studies is not enough to achieve this. Researchers still face major obstacles to delivering these studies quickly, and there are significant disparities in patient access to cancer research. Therefore, alongside expanding the UK’s research capacity, we must transform how clinical cancer research is managed and delivered to make it more efficient and equitable.

Valuing cancer research

Firstly, the NHS must overcome the attitude of seeing research as a ‘nice to have’ on top of standard care⁷⁶ by embedding cancer research into everyday practice and decision-making.

The NHS’s limited research culture is a substantial barrier to staff developing the expertise required to deliver research and improve services. For example, our survey found that only 51% of NHS staff believe research engagement is recognised in promotion criteria.⁷⁷ This view of career advancement discourages staff from developing their research expertise and capabilities, which inhibits the NHS’s ability to improve patient outcomes through research. Despite these barriers, there is widespread enthusiasm for research amongst the NHS workforce, with 57% of Physicians wanting to conduct research.⁷⁸ To leverage this interest and make the NHS workforce an “innovation partner”,⁷⁹ we recommend **NHS England and its devolved equivalents incorporate research training and career progression into both national- and Trust-level workforce strategies to recruit, develop and retain healthcare professionals.**⁸⁰

To embed research into NHS decision-making more widely, the Government must improve how NHS research engagement and impact is monitored and evaluated. Metrics, such as Trust-level cancer waiting times, play a crucial role in informing decisions, evaluating performance, and motivating improvements to cancer services. Yet cancer research, in contrast, faces a dearth of metrics,⁸¹ which makes it difficult to demonstrate research’s benefits, such as cost savings⁸² and increased staff retention.⁸³ Consequently, when faced with scarce resources, NHS decision-makers face a far stronger incentive to prioritise services over research. To provide NHS decision-makers with the data they need to effectively support research, we recommend **all four national departments of health develop a coordinated set of metrics to better capture NHS research engagement and impact.**⁸⁴ We would welcome an approach similar to the “UK-wide clinical research dashboard” proposed by the Association of the British Pharmaceutical Industry.⁸⁵ This dashboard should be delivered through the Future of UK Clinical Research Delivery vision’s commitment to build digital research platforms.⁸⁶

Streamlining cancer research

Secondly, regulators and the NHS must streamline how clinical cancer research is set up and delivered to increase efficiency and accelerate patient access to new treatments and technologies.

One of the most significant bottlenecks to fast and efficient clinical trial set-up is the process of costing and contracting research in the NHS.⁸⁷

“What is Costing and Contracting?”

Costing is the process of determining which costs of delivering a clinical trial should be paid for by the NHS and the trial’s funder. Broadly speaking, the NHS meets the costs of treatments that fit within standard care whilst the costs of research are met by the trial’s funder.

Contracting is the process of clinical trial Sponsors negotiating contracts with the various external organisations who help deliver the trial. An example of these contracts is a site agreement, which governs the involvement of a study site (e.g. a hospital) and sets out the roles and responsibilities of the site and the trial’s Sponsor.

Costing is a key source of inefficiency when setting up clinical trials, especially non-commercial trials. Although there is a cost attribution template (SoECAT) to aid non-commercial costing at the national level,^{88,89} it cannot be used to calculate the trial’s full costs. Instead, to proceed with the next stage of set-up, a trial must agree separate costings with each site involved in the study. This decentralised

approach makes costing much more complex, as the Sponsor must coordinate across multiple sites, which, in turn, makes the process time-consuming and inefficient.

Contracting creates similar inefficiencies in trial set-up. When negotiating site agreements, trial Sponsors must negotiate with each participating site individually, making site-specific adjustments to the contract where needed. The requirement to contract with multiple sites further decentralises the process of setting up trials, which delays patient access to innovative treatments and technologies.

Fortunately, efforts have been made to address these inefficiencies in commercial research in the NHS through the National Contract Value Review. For example, the Review has streamlined costing by mandating the use of a standardised cost methodology⁹⁰ designed to minimise back-and-forth between Sponsors and the NHS. Improvements have also been made to contracting by assigning commercial trials a national coordinator who represents all NHS providers in negotiations with the Sponsor,⁹¹ removing the inefficiency of negotiating with individual sites. Additionally, the Review has mandated the use of unmodified model site agreements for commercial NHS research,⁹² which are intended to streamline contracting even further by minimising site-specific changes to contracts.

Therefore, to translate these improvements to costing and contracting to non-commercial trials, we recommend **NHS England develop and deliver a streamlining programme for non-commercial cancer trials based on the National Contract Value Review**. At a minimum, this programme should introduce national coordinators to facilitate contracting for non-commercial cancer trials and expand the use of standardised methodologies and agreements. The resources for this programme should be allocated through the Future of UK Clinical Research Delivery's phase-two implementation plan, which will help deliver the Government's commitment to improve the speed and efficiency of clinical trial set-up.⁹³

Alongside costing and contracting, the efficiency of clinical cancer research is also shaped by the capacity of local NHS R&D offices, which play a crucial role in setting up new clinical trials and costing them.⁹⁴ R&D offices also provide vital support to the Chief Investigator or Principal Investigators of a clinical trial by acting as either its Sponsor or host organisation respectively.⁹⁵ Additionally, R&D offices provide Good Clinical Practice training,⁹⁶ which is a vital set of skills used to deliver clinical trials, and thus contribute to expanding the NHS's clinical research capacity. Therefore, to enhance their ability to streamline research, we recommend the **UK Government increases investment in NHS R&D offices**. This investment should be drawn from the £5 billion recently allocated to health research and informed by the regional review of clinical cancer research activity recommended earlier.

Learning from COVID-19

Lastly, we must learn from the pandemic by translating emergency adaptations to clinical trial delivery into long-term improvements that will make cancer research more accessible and inclusive.

One adaptation with the potential to widen access to research is decentralised delivery. Decentralised delivery describes a variety of practices that some researchers used to keep clinical trials running during the pandemic whilst maintaining patient safety. For example, to continue offering patient consultations without the risk of visiting study sites (e.g. hospitals), some face-to-face consultations were replaced with phone or online alternatives. Similarly, some trials administered their treatments at participants' homes or GP offices (though this was not feasible for all types of treatment).

Beyond making research participation safer during the pandemic, moving activities outside of conventional study sites also expanded the geographic 'net' cast by clinical trials. In doing so, decentralised delivery could widen access to research, making it more accessible to underrepresented groups that face barriers to attending site-based trials, such as disabled people with limited mobility

(though further research into these approaches is needed). The applicability of decentralised delivery methods will vary from trial to trial (due to factors like study design and medicinal product) and some activities, such as MRI scans, rely on specialist personnel and equipment that cannot be replicated off-site. However, decentralised delivery still has the potential to make cancer research more accessible and inclusive, and COVID-19 has presented an unprecedented opportunity to realise this potential.

Therefore, we recommend the **UK Government increase investment in the workforce and infrastructure needed to deliver clinical trials through decentralised methods**. This investment should be informed by a scoping review of the decentralised methods used during the pandemic and their applicability for use in standard practice. This review should be delivered through the Future of UK Clinical Research Delivery vision's commitment to improve diversity in research and better support underserved communities.^{97,98}

Focusing on impactful innovations

Expanding the UK's capacity for clinical cancer research and transforming how it delivers studies are both essential to improving cancer outcomes. But in an increasingly competitive global life sciences market,⁹⁹ the UK must concentrate its expertise and resources into high-impact, innovative research – prioritising quality over quantity.

The UK has internationally recognised expertise in discovery and translational science, and we must build on these strengths to deepen our understanding of how cancer starts, grows and spreads. Doing so will develop the UK's ability to develop more effective cancer diagnostics and treatments, accelerating improvements in cancer outcomes and increasing the competitiveness of UK science.

Early detection & diagnosis

A key tool in cancer research's arsenal to increase cancer survival is to develop ways of detecting and diagnosing cancers at early stages. For example, 92% of patients with bowel cancer diagnosed at stage 1 survive their disease for at least five years, compared with 10% of patients diagnosed at stage 4.¹⁰⁰ Early detection and diagnosis (ED&D) research studies are vital to enabling this earlier diagnosis and improving cancer outcomes. The PROMISE study into multiple myeloma¹⁰¹ is a notable example of this research, as it uses genomic testing to understand a person's risk of developing cancer. This information can then be used to help diagnose cancer earlier (if necessary) – or even prevent it from posing a threat to health.

Research into earlier cancer diagnosis continues to be hamstrung by market failures in the commercialisation and adoption of ED&D technologies,¹⁰² which leads to this research being undervalued. Although the Life Sciences Vision does prioritise early cancer diagnosis as a healthcare mission,¹⁰³ the **UK Government and devolved administrations must do more to address this market failure and support ED&D research** – [learn more](#).

Complex clinical trials

Unlike clinical trials that test a single treatment for a single condition, Complex Innovative Design (CID) trials study multiple treatments and/or multiple conditions across multiple 'arms'. This approach can make research more efficient by answering several questions in parallel and more flexible by allowing arms to be added and removed without ending the whole trial. An example of CID research is STAMPEDE, a Cancer Research UK platform trial studying prostate cancer, which the NIHR has credited with informing the design of the world-renowned COVID-19 study, RECOVERY.¹⁰⁴

Like ED&D research, CID trials offer innovative approaches to improving cancer outcomes but face significant barriers that can make them difficult to deliver. For instance, CID trials can impose a heavier workload on researchers, particularly statisticians, as they must analyse new data on a rolling basis so that adaptations (such as adding a new medicine) can be made to the trial.¹⁰⁵ To ensure the UK can fully leverage the potential of CID cancer trials, we recommend the **UK Government and devolved administrations use the Future of UK Clinical Research Delivery vision's phase-two implementation plan to implement the proposals laid out in the Experimental Cancer Medicine Centres network's consensus statement.**¹⁰⁶

Rare & children's cancers

Cancers that are rare or affect children often have limited treatment options compared with those available for more common cancers. Clinical trials help to fill these gaps by developing new treatments for rare and childhood cancers, which they often do by recruiting participants from multiple countries. These international trials are particularly important for patients with limited or no treatment options, as participating in a trial may provide them with curative treatment when they would otherwise only have access to palliative care.

To deliver impactful innovations for cancer, researchers in the UK must be able to work with partners around the world. This International collaboration is critical to cancer research (42% of Cancer Research UK's trials are international), and research into rare or children's cancers relies on this collaboration because their patient populations can make single-country clinical trials unfeasible. Therefore, we recommend the **UK Government commits to maintaining a regulatory environment that facilitates international cancer studies, including a commitment to maintain the UK-EU data adequacy agreement and the compatibility of UK and EU clinical trial regulation.**

Precision medicine

By testing a cancer patient's tumour for specific genetic mutations, healthcare professionals can tailor their treatment to more precisely target their cancer and improve the patient's care. This approach has huge potential to increase cancer survival rates, but further research is needed to understand the genomic architecture of tumours and develop targeted treatments. An example of this research is the National Lung Matrix Trial, which tested several precision medicine treatments for lung cancer using Cancer Research UK's Stratified Medicine Programme 2.¹⁰⁷

Finally, cancer researchers in the UK should operate in a future-oriented research environment, with governance and regulatory frameworks that look forward at the innovation pipeline to pre-empt the needs of researchers and patients. Not only is a proactive approach to cancer innovation necessary to support clinical cancer research, but it is also essential to ensure the NHS can efficiently and equitably adopt proven cancer innovations into standard of care. Therefore, we recommend the **UK Government work with Cancer Research UK and others in the sector to conduct a review exploring the future of cancer research.**

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