

# Capacity to deliver: unlocking the resources required to improve cancer outcomes in England

**Mike Birtwistle**  
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## Foreword

Almost all of us have been touched by cancer. We have family members, loved ones, or friends who have received that life-changing diagnosis and have their story to tell. With thousands of these stories ending painfully each year, it's a disease that never fails to draw in hearts and minds, to catalyse scientific discovery, and to inspire powerful advocacy. Yet even today, in 2023, too many patients are waiting too long for cancer diagnosis and treatment initiation. The ramifications of this are significant, from the anxiety experienced while waiting for delayed test results, to patients missing out on optimal treatment opportunities that could lead to better outcomes.

The COVID-19 pandemic compounded pre-existing challenges in delivering high-quality cancer care sustainably and equitably across the NHS. Despite being a leader in cancer science, cancer outcomes in the UK persistently lag those in comparable countries<sup>1</sup>. And while the UK provides some of the best cancer services in the world, there are persistent inequalities associated with cancer care and outcomes. People living in the most deprived parts of England are over two-times more likely to die from cancer<sup>2</sup>.

AstraZeneca UK commissioned this report to make a constructive contribution towards current discussions on how we can build capacity within cancer services that enables better outcomes for patients and supports healthcare professionals to deliver world-class care. There is no silver bullet that will address the capacity constraints facing the NHS in England, and it will take time to reverse declining trends in cancer waiting times performance. But this makes it all the more important to take concerted action – and take that action now.

Long term investment in workforce, infrastructure and prevention is critical to ensuring system sustainability in the face of rising patient demand and the increasing complexity of care. However, there are changes that can be made today to shift the dial in cancer survival. This report sets out tangible steps to create more sustainable ways of working within current budgets and system constraints, which will improve patient access to cancer care today while preparing the system to face the challenges – and opportunities – of tomorrow.

We are in the golden age of science, advancing a revolution in cancer that has already begun. Breakthrough innovations in how cancers are detected, diagnosed and treated are redefining cancer care with curative potential, transforming patient outcomes. We are committed to working with health systems, governments, and industry peers to achieve our long-term ambition to eliminate cancer as a cause of death.

*David Brocklehurst, Head of Oncology UK, AstraZeneca*

## Acknowledgements

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During the course of this project, I have been fortunate to speak to a wide range of experts, including national and local health service leaders, central government departments, royal colleges, charities and professionals working in the NHS and independent sector. To enable them to speak candidly, their input has been anonymised and I will not name them here. They know who they are.

Finally, I am grateful to colleagues at Evolve Incisive Health for support in researching this paper and advice on its content. In particular, it would not have been possible without the work of Valentina Buccoliero, Matthew Kersey and Ed McIntosh.

The opinions, recommendations and any errors in this paper are mine alone.

Mike Birtwistle, March 2023



## Summary

- This paper is intended to make a constructive contribution to discussions on how to improve cancer services. All health systems are facing capacity challenges, but the situation in the NHS in England – the focus of this paper – is particularly acute.
- Capacity is the ability of a system to deliver cancer care effectively to those who need it when they need it.
- Patients will only be able to benefit from the advances which have been made in cancer if there is sufficient capacity to diagnose, treat and care for them in a timely and high-quality manner.
- Cancer waiting times provide a good barometer of the capacity challenges facing cancer services. Standards have not been met for nearly a decade, meaning that thousands of patients are waiting too long for diagnosis and treatment. In many cases these delays will materially impact on their outcomes.
- The cancer capacity crunch predates the COVID-19 pandemic and is driven by both increases in health need and challenges with the supply of workforce, facilities and equipment. Any long-term solution will require concerted investment in training and the employment of more skilled professionals, as well as investment in new equipment (for example in the area of diagnostics). However, expanding the workforce will take time and there are actions which should be taken now to unlock additional capacity.
- Actions identified by experts include:
  - Simplifying cancer pathways by reducing the number of steps between a referral, diagnosis and treatment
  - Prioritising interventions that free-up capacity, releasing staff time for other tasks
  - Streamlining the work of multidisciplinary teams, enabling more time to be devoted to considering complex cases
  - Improving the coordination and personalisation of cancer care
  - Drawing on the skills and expertise of the widest range of professionals
  - Making better use of the independent sector
  - Preventing disruption to capacity by ringfencing cancer and elective services from acute care
  - Focusing resources on interventions which can reduce future health need
- There is no shortage of good ideas, or indeed examples of these ideas being put into practice. However, progress is unequal and action is required to accelerate implementation. Otherwise some areas of the NHS risk being left behind. Now is the time to inject urgency into efforts to free up capacity, benefiting patients and staff.
- Change happens when it is clinically led and supported by local services, who can see clear benefits for their staff and patients. However, there are national policy changes which can be made to support and accelerate this process. This paper makes 15 recommendations which, if implemented, should help release capacity, benefitting patients and staff.
- The focus on unlocking short-term capacity should not come at the expense of the longer-term action to reduce the need for cancer services, such as preventing and diagnosing cancer before it has spread.





## Recommendations

These recommendations for policy change are intended to support local action to unlock capacity.

- 1 The publication of a fully-funded workforce plan should be a priority. The plan should set out future demand projections, how gaps will be filled and what action will be taken to retain existing healthcare professionals.
- 2 The Government should ensure that measures to expand and optimise service capacity are a key theme in the forthcoming Major Conditions Strategy, of which cancer will be a part. Cancer alliances should support integrated care boards in developing plans which set out how they intend to optimise cancer capacity within their health system.
- 3 Action on cancer in the Major Conditions Strategy should — as a minimum — seek to emulate the levels of cancer capacity available in countries whose outcomes we seek to match.
- 4 Given the pressing need to expand capacity, funding flows which incentivise investment in new capacity should be adopted.
- 5 Efforts should be redoubled to remove unnecessary appointments which introduce delays and occupy staff time. Funding mechanisms such as tariffs should be designed to reward efforts to reduce the number of steps between referral, diagnosis and treatment.
- 6 Encouraging the universal adoption of best practice timed pathways (BTPs) should be a priority. NHS England should publish metrics to track progress on implementation with linked incentives to reward those services which can demonstrate plans to make rapid progress.
- 7 NHS England should apply a 'capacity premium' in evaluating and procuring technologies which can free-up staff time.
- 8 NHS England should work with cancer alliances to identify a series of high impact capacity-releasing interventions which would benefit from the development of large-scale procurement and roll out plans.
- 9 Efforts to streamline multidisciplinary teams (MDTs) should be redoubled, enabling teams to work differently and freeing up time to focus on complex cases.
- 10 Care coordination and personalisation should be seen as interventions which can improve quality and optimise the use of capacity. Digital approaches to support on issues such as holistic needs assessment and side effect management should be piloted.
- 11 Further opportunities for staff such as community pharmacists and advanced nurse practitioners to deliver different aspects of cancer care should be developed and evaluated.
- 12 The NHS should be encouraged to make greater use of independent sector (IS) capacity. To accelerate this process, the Government and NHS England should conduct a national procurement process for IS-delivered Community Diagnostic Centres.
- 13 Safeguards should be established in IS Community Diagnostic Centre contracts, establishing a right to choice of diagnostic provider, ensuring workforce is additional and providing the long-term certainty required to invest.
- 14 Building on the model used for many Community Diagnostic Centres, future service design should seek to, wherever possible, separate cancer / elective and urgent care capacity so as to minimise disruptions to the delivery of cancer care.
- 15 Long term sustainability demands a focus on interventions which can reduce health need. These include prevention initiatives, efforts to encourage earlier diagnosis and 'prehabilitation'.



## Introduction

Close to 140,000 people die because of cancer each year in England and the disease devastates countless more lives<sup>3</sup>. Yet there is good news. Our ability to diagnose and treat cancer has been transformed in recent decades, enabling many people who receive a diagnosis to lead longer, healthier and more active lives, often being ‘cured’ of the disease<sup>4</sup>.

The chances of achieving a positive outcome are greatly increased by an early diagnosis, combined with prompt and effective treatment. A patient is also more likely to have a positive experience of care if it is timely and tailored to their needs. All of this can only be delivered when NHS cancer services have the right level of capacity available.

The capacity challenge facing NHS cancer services is significant and can only be expected to increase. More people are requiring diagnosis and treatment and, as the population ages, the complexity of managing cancer will continue to grow. Better diagnostics and treatments should improve outcomes and reduce side effects, but they can also increase the capacity pressures faced by health services, with more people requiring more treatments, for longer. Without the necessary capacity, patients will miss out on the best possible of care, opportunities to improve outcomes will be squandered and NHS staff will be placed under intolerable pressure.

England is not alone in facing a cancer capacity crunch. All countries are managing an increasing need for cancer care whilst grappling with staffing shortages<sup>5,6</sup>. Addressing these challenges has clearly been made more difficult by the ongoing effects of the COVID-19 pandemic and the economic shocks created by the current geopolitical situation. However, the pressures on cancer services predate these issues and must be addressed despite them. Action certainly cannot wait until other challenges have abated.

The NHS in England has recognised the imperative of increasing diagnostic and treatment capacity for cancer, outlining a series of actions which should be taken in the operational planning guidance for 2023/24, based on the expectation that diagnostic capacity will be required to increase by 25% and treatment capacity by 13%<sup>7</sup>.

The intention of this paper is to make a constructive contribution to the policy debate about how best to recover cancer service performance, demonstrating the actions that can be taken now to free up capacity in addition to making the longer-term investments in building the cancer workforce which are clearly required.

### *Methodology*

The paper has been developed using a five-stage process:

1. Desk research was undertaken to assess the pressures facing cancer services and to review the literature on cancer capacity
2. Cancer service data was analysed, including publicly available information and internal business intelligence kindly made available by AstraZeneca



3. A series of initial semi-structured interviews were conducted with experts from a range of backgrounds, including national and local health service leaders, central government departments, royal colleges, charities, as well as professionals working in the NHS and independent sector
4. Examples were sourced from the literature as well as experts
5. Findings and emerging recommendations were then played back to experts for further comment and reflection

In order to enable experts to speak candidly and offer their considered personal perspective rather than repeating an established organisational position, all feedback has been anonymised and is referred to as personal communication.

### *The critical importance of workforce*

Despite many technological advances, cancer care is still fundamentally a human endeavour. There are insufficient staff to meet current or future demands and the starting point for this report is that concerted action is required to address this shortfall. The commitment to develop “*an independently-verified plan for the number of doctors, nurses and other professionals we will need in 5, 10 and 15 years’ time,*” together with Health Education England’s recent announcement of an expansion in specialty training posts, are therefore to be welcomed<sup>8,9</sup>.

Efforts to address workforce shortages will, however, take time and there are actions that can and should be taken now to free up capacity, making the working lives of staff easier, improving the experience of patients and enabling us to continue to rise to the challenge of increasing health need.

This paper identifies some of the examples of good practice which could be replicated and identifies some of the policy actions which should be taken to optimise capacity in the interests of both patients and staff.

## The capacity context

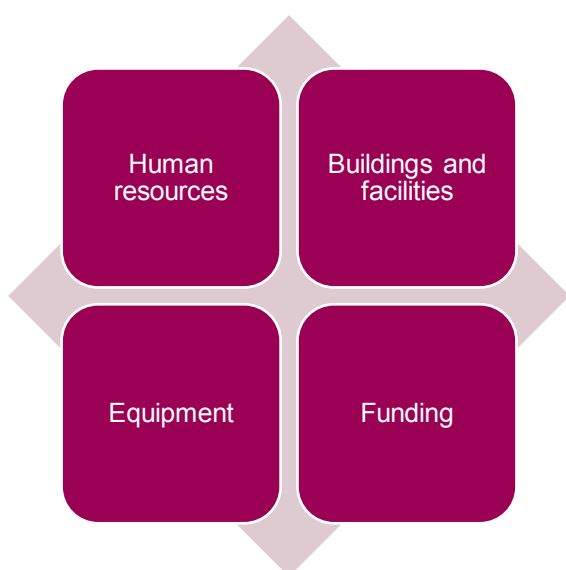
### *What do we mean by cancer capacity?*

This paper uses the following definition of cancer capacity:

*“Capacity is the ability of a system to deliver cancer care effectively to those who need it when they need it.”*

Getting the right capacity in place is not simply about effectiveness or efficiency. It is about making the lives of patients and staff easier, creating a service which is responsive, offers high quality care, delivers good value and is sustainable.

There are four essential and interdependent components of cancer capacity:



**Human resources** – the staff available to directly care for cancer patients and deliver wider healthcare, as well as patients and carers themselves. More staff, or enabling existing staff to do more, as well as better supported patients and carers, may increase capacity.

**Buildings and facilities** – the primary and secondary care buildings used to deliver cancer care. Newer or better located facilities may increase capacity.

**Equipment** – the technology required to deliver cancer diagnostics and treatment. More equipment or advances in technology may increase capacity.

**Funding** – the money available to fund cancer care. Additional funding may allow for the greater use of existing capacity or the development of new capacity.

To deliver effective and efficient care, adequate capacity is required for every part of the cancer pathway:

- Preventative services such as smoking cessation, weight management and vaccination services
- Diagnostic services including cancer screening programmes, GP referrals, initiatives such as lung health checks and community diagnostic centres, as well as imaging and in-vitro diagnostic services, such as biomarker testing
- Treatment services, including cancer surgery, radiotherapy and the administration of cancer medicines, as well as the multidisciplinary teams which guide decision-making
- Supportive care, including palliative care, psychological support, occupational therapy, dietetics, rehabilitation and return to work advice
- Follow-up, including monitoring for recurrence and managing ongoing or late effects of treatment



Capacity might be focused on one part of the pathway or alternatively deployed on delivering multiple parts. For example, a clinician may have a role in the diagnosis of cancer, as well as treatment, support and follow-up.

### *To what extent is cancer capacity under pressure?*

Since the NHS Cancer Plan was published in 2000, there has been a focus on minimising the waits experienced ahead of a cancer diagnosis and treatment. A standard was established that “there will be a maximum two month wait from urgent GP referral to treatment for all cancers.”<sup>10</sup> Performance against this standard is a good indicator of the pressures on cancer service capacity.

There are good reasons to focus on limiting cancer waiting times:

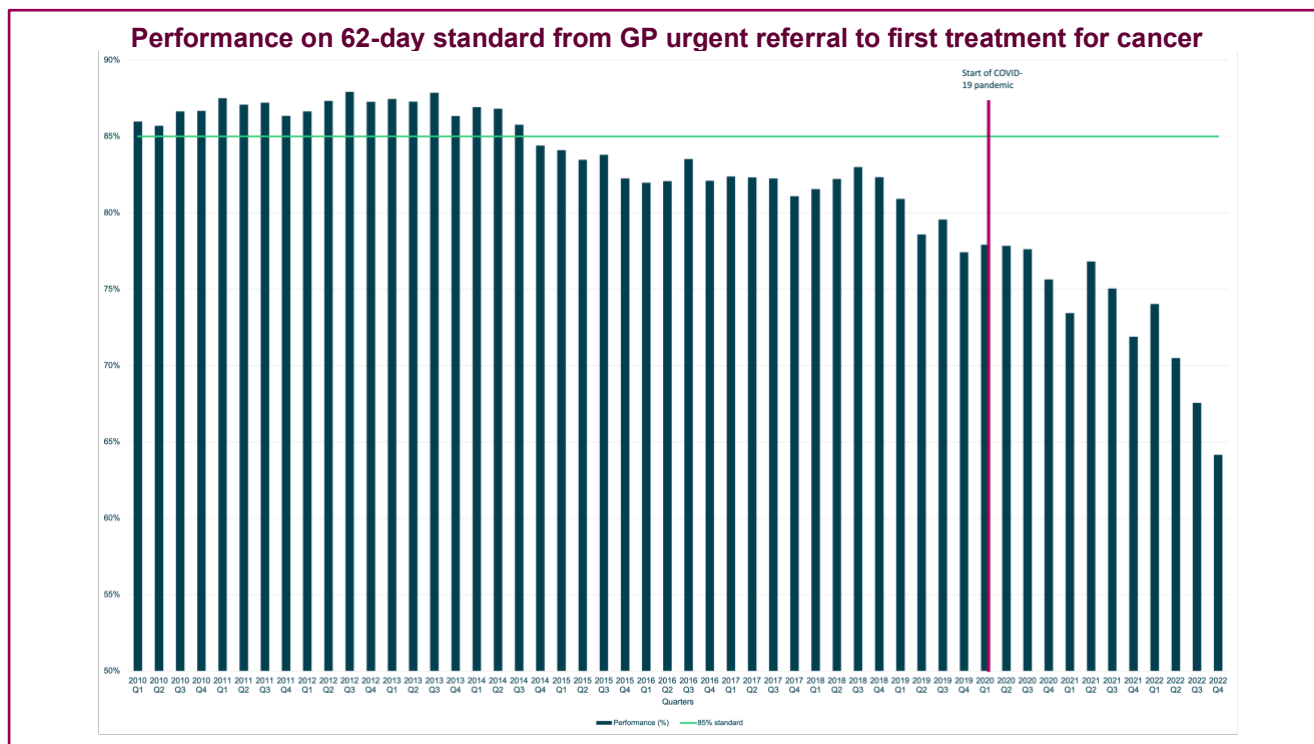
- Delays compromise outcomes. Recent research has found that even a four-week delay in treatment is associated with an increase in mortality for all forms of cancer treatment and that the risk continues to increase with further delays<sup>11</sup>
- Delays cause anxiety. The wait for a cancer diagnosis and then treatment is often associated with psychosocial distress<sup>12</sup>. As one expert said: *“when thinking about the 62-day standard, it is as important to think about the 61 sleepless nights. This is a hugely worrying time for patients and their families”*<sup>13</sup>
- Delays cause inefficiency. For NHS services, bottlenecks in patient pathways can result in unpredictable workloads and underutilised resources

During the 2000s and early 2010s, good progress was made on cancer waiting times, with standards consistently met for many years. However, performance has dipped considerably. For example, the 62-day standard (that 85% of patients should receive a first definitive treatment within 62-days of an urgent referral) was last met for an individual month in 2015 and for a quarter in 2013/14<sup>14,15</sup>.

In February 2022 NHS England set an ambition to see the number of cancer patients waiting more than 62 days to return to pre-pandemic levels by the end of March 2023<sup>16</sup>. This would still mean that the standard will be missed, but would nonetheless represent an improvement. All the signs are that this ambition will be missed.

As of the end of December 2022, there were over 4,100 people in England with a ‘decision to treat’ for cancer who were still waiting to start treatment more than 62 days after their initial urgent referral for suspected cancer<sup>17</sup>.

The extent to which cancer services are struggling with capacity pressures varies, but all services are facing significant pressure.



*Why is cancer capacity under pressure?*

The pressure on cancer capacity is being driven by both increases in demand (or health need) and challenges with supply.

**Increases in health need**

NHS cancer services have successfully improved outcomes, with more people living for longer and with better quality of life. However, they have been required to manage an increasing burden of health need:

- **More investigations** – as the imperative to diagnose cancers earlier to improve outcomes has become clearer, so more people have required cancer investigations, with urgent referrals for suspected cancer rising by 10% per year<sup>18</sup>. This has combined with increasing demand for investigations for non-cancerous conditions to result in pressures on diagnostics increasing at a significantly faster rate than for other areas of NHS activity
- **More diagnoses** – between 2001 and 2020, the number of cancer diagnoses in England has increased by 36%. This means that over 100,000

**Growing diagnostic activity**

- CT scanning (increase of 6.8% per year)
- MRI scanning (5.6%)
- PET-CT scanning (18.7%)
- Non-obstetric ultrasound (3.8%)
- Colonoscopy (5.3%)
- Flexible sigmoidoscopy (8.4%)
- Gastroscopy (3%)
- Data is not collected nationally on genomic testing or molecular diagnostics, but usage is also growing significantly



additional people are being diagnosed with cancer every year<sup>19</sup>. Incidence is higher than in many other European countries<sup>20</sup>. By 2040, the number of diagnoses in the UK is expected to reach half a million a year<sup>21</sup>

- **More people living with cancer** – as a result of improvements in cancer survival and changes to the structure of the population, the number of people living with a cancer diagnosis has increased from 2 million in 2008 to 3 million in 2020 and is projected to continue growing by about 3% per year<sup>22,23</sup>
- **More complexity** – increasing numbers of older people have been diagnosed with cancer. For the over 70s alone, the number of diagnoses in England per year increased by nearly 69,000 since 2001 (a 45% increase)<sup>24</sup>. Older patients are more likely to have multiple conditions, are at higher risk of side effects and therefore have more complex treatment pathways
- **More treatment** – advances in technology mean that more patients are able to benefit from multiple lines and modes of treatment, either delivered alone or in combination, often over a prolonged period of time<sup>25</sup>

These pressures have been compounded by the pandemic, with many cancer professionals having to cope with both the physical and emotional impact of caring for COVID-19 patients and the consequences of the pandemic for cancer services.

Cancer referrals and diagnoses fell during the early stages of the pandemic, probably resulting in more people being diagnosed with more advanced cancer<sup>26</sup>. By May 2022, the proportion of patients being diagnosed with early-stage cancers had recovered to 57% – slightly above pre-pandemic levels – but the dip can be expected to have long-term consequences for NHS services, as well as for patients. Later diagnosis is associated with poorer outcomes and treatment for advanced cancer is more resource intensive (and often more expensive)<sup>27</sup>.

The need for cancer care would have been expected to grow even if the pandemic had not occurred. By 2022, it was significantly higher than in the pre-pandemic period. For example:

- By September 2022, the number of urgent suspected cancer referrals was at 129% of pre-pandemic levels<sup>28</sup>
- The number of patients receiving a first cancer treatment reached 107% of pre-pandemic levels in September 2022<sup>29</sup>
- The number of cancer drugs being administered was significantly higher in early 2022 than in 2019<sup>30</sup>

## Challenges with supply

At the same time as there has been a growth in need for cancer services, there has also been an increasing challenge with the supply of workforce to meet it. Effective workforce planning has been a weakness for the NHS since its inception, with policymakers struggling to balance anticipated demand for staff with the costs of training additional personnel<sup>31</sup>. Workforce shortages are not a symptom of lack of interest in careers in healthcare<sup>32</sup>. For example, in 2020 specialty training places in medical oncology were oversubscribed by nearly five times<sup>33</sup>.

In recent years workforce shortages have become particularly acute, resulting in widespread vacancies within the NHS. In September 2022, there was a national vacancy rate of 9.7% – over 133,000 posts<sup>34</sup>. This includes over 47,000 registered nursing vacancies (a vacancy rate of 11.9%)<sup>35</sup>.



Many aspects of cancer diagnosis and treatment require a highly specialised workforce and high levels of vacancy are apparent in these roles as well. In April 2022, the Health and Social Care Committee reported that the NHS is short of – on a full-time equivalent basis – 189 clinical oncologists, 390 consultant pathologists and 1,939 radiologists. The Committee concluded that, “*such shortages... threaten diagnosis, treatment and research equally.*”<sup>36</sup>

These shortages are projected to worsen in the coming years, partly because of increased health need but also as the cancer workforce continues to age:

- The clinical nurse specialist workforce is projected to have 3,371 vacancies by 2030<sup>37</sup>
- The Royal College of Radiologists estimates that the clinical radiology workforce shortfall will be 44% by 2025<sup>38</sup>

The issue of burnout has long been recognised as a particular challenge for the cancer workforce<sup>39</sup>. Workforce shortages, combined with the pressure of increased need for cancer care, risk exacerbating this<sup>40</sup>.

The wider social and economic context for human resources is important. Staff, patients and carers are all living in a challenging and uncertain environment, which will affect their resilience. There will be limits to what more they can be expected to contribute.

Workforce challenges have been compounded by problems with buildings, facilities and equipment. Healthcare professionals will work less efficiently and effectively if they are operating in outdated buildings, with poor quality equipment and without access to up-to-date IT infrastructure. In recent years, NHS capital budgets have been squeezed to cover shortfalls in budgets for ongoing activity. This has resulted in a maintenance backlog of over £10 billion, as well as delays in replacing or upgrading equipment.<sup>41,42</sup> Although replacing, upgrading and expanding diagnostic and radiotherapy equipment has been identified as a priority, there will still be shortfalls, at least in the immediate term<sup>43</sup>.

### *How does NHS cancer capacity compare to other countries?*

It is well-established that cancer outcomes in England are poorer than in comparable countries<sup>44</sup> and this is reflected in key indicators on capacity. Although all countries are facing cancer capacity pressures, the NHS appears to be in a somewhat worse position. For example, OECD data for 2021 or the latest year for which information is available shows that the UK is<sup>45</sup>:

- 32<sup>nd</sup> out of 37 countries on hospital beds per thousand in habitants (with Germany, as a comparison, having over three times as many beds)
- 26<sup>th</sup> out of 29 countries on hospital CT scanners per million habitants (with Germany having nearly twice as many)
- 18<sup>th</sup> out of 29 on hospital MRI scanners per million habitants (with Germany having 50% more)

Figures on activity are marginally better, suggesting that the NHS makes better use of its asset base than other countries, although its provision of imaging equipment is considerably poorer<sup>46</sup>. Nonetheless, feedback from experts suggests that there is still scope for more effective utilisation of imaging capacity, although this does not negate the need for investment in more and better equipment<sup>47</sup>.

Closing the gap in cancer outcomes will require concerted action to address the disparity in cancer capacity. However, there are steps that can be taken now to free up some cancer capacity, resulting in better care for patients and a more positive experience for staff.



## Unlocking additional capacity in cancer services

The capacity shortfall in cancer is stark, deep-rooted, and urgent. Addressing it will require long-term investment in staff, equipment and facilities. However, the experts interviewed for this project identified immediate steps that could be taken to release some capacity, enabling services to do more in a way which is good for patients and supportive of staff, including:

- Simplifying cancer pathways
- Prioritising interventions that free-up capacity
- Streamlining the work of multidisciplinary teams (MDTs)
- Improving the coordination and personalisation of cancer care
- Drawing on the skills and expertise of the widest range of professionals
- Making better use of the independent sector
- Preventing disruption to cancer capacity
- Focusing resources on interventions which can reduce future health need

These steps are already being taken in some services, some of the time. The challenge is to spread them and accelerate adoption, removing barriers to implementation at a time when services are pressured and there is little 'improvement bandwidth' within the NHS<sup>48</sup>.

### *Simplifying cancer pathways*

Cancer pathways can be complex, often involving multiple investigations and treatments. However, there are variations in approach which are not justified by differences in clinical need – for example, some services require many more appointments for a patient before diagnosis than others<sup>49</sup>. Unnecessary appointments are costly, occupy scarce clinical time and are stressful for patients. Furthermore, they can delay a definitive diagnosis, resulting in any treatment commencing later than it should do.

Best Practice Timed Pathways (BTPs) are intended to identify the specific clinical events and tests which will be required for patients and to ensure that they are organised and delivered according to a defined timeline, reducing variation and minimising unnecessary interventions or waits<sup>50</sup>. BTPP guidance has been well-received, but implementation remains variable. NHS England has observed:

*“There is currently a lack of focus on the pathways. In many cases the required diagnostic tests and actions are happening, but not within the required timelines and in some cases possibly not in the right order.”<sup>51</sup>*

The absence of clear and consistent metrics makes it challenging to track implementation, reward services who have made significant progress or support those where challenges are occurring.

A key part of streamlining pathways is the use of 'straight to test' approaches, which remove clinical appointments ahead of tests, remove some other tests which will not change whether further investigations are needed or even enable self-referral. An example of this is in lung cancer, where some trusts have successfully implemented pathways where the chest x-ray step is skipped and all

patients with suspected lung cancer go straight to CT scan<sup>52</sup>. Likewise, in prostate cancer the use of MRI is reducing the need for biopsies, although this also increases demand for imaging<sup>53</sup>.

It is also possible to reduce the need for referrals to secondary care. Suspected skin cancer drives large and increasing numbers of referrals. Roughly 500,000 suspected skin cancer two-week wait referrals are made each year and diagnoses are doubling every 14 to 15 years<sup>54,55</sup>. Teledermoscopy enables primary care staff to take digital photographs of skin lesions which can be sent to specialist clinicians who can then provide a timely diagnosis and advise on appropriate next steps. Evaluation from areas that have adopted teledermoscopy suggests benefits, including<sup>56</sup>:

- Significantly reduced referrals to secondary care
- Shorter waiting times
- High levels of patient satisfaction

Implementing the service requires the establishment of a new virtual pathway, where specialist clinicians are still able to request to see the patient face-to-face if there is uncertainty, as well as modest capital investment in teledermoscopy equipment and appropriate IT systems. However, the greatest barrier has been clinical engagement, ensuring that primary and secondary care staff understand the benefits and recognise the safeguards that are in place to avoid cancers being missed<sup>57</sup>.

### *Prioritising interventions that free-up capacity*

Another example of how different approaches to diagnostic tests can free up capacity is the implementation of bowel faecal immunochemical test (FIT) triage, which can significantly reduce demand for colonoscopies (a major and growing capacity bottleneck)<sup>58,59</sup>. For example, in North Tees & Hartlepool NHS Foundation Trust, FIT implementation has contributed to a 9% increase in bowel cancer detection, alongside a 24% fall in demand for symptomatic colonoscopies<sup>60</sup>.

Progress on the use of Bowel FIT triage has been encouraging, moving from roughly one in five referrals to over half within a year<sup>61</sup>. Again, however, this progress has been patchy and there is scope for a significant acceleration.

Many cancer treatments are complex and intensive, requiring access to specialist expertise and hospital capacity to deliver. There are, however, opportunities to reduce the need for hospital capacity, freeing up staff time and increasing convenience for patients. Examples include:

- Introducing artificial intelligence (AI) to support radiologists in analysing imaging, reducing the duplication of clinical resource and freeing up clinicians to focus on the aspects of the diagnostic process where they can add greatest value<sup>62</sup>
- Adopting minimally invasive surgical techniques with shorter recovery times, such as keyhole or robotic surgery<sup>63</sup>
- Implementing new approaches to radiotherapy, such as precision techniques with fewer side effects or shorter courses<sup>64,65</sup>
- Providing cancer medicines which are prepared according to standardised protocols or delivered at fixed doses using rapid infusions<sup>66</sup>
- Using cancer treatments with similar efficacy but gentler side effect profiles, thereby reducing the risk of emergency admissions<sup>67,68</sup>



- Creating hub and spoke models for chemotherapy delivery so that capacity can be released due to efficiencies of scale, but staff can work closer to home and travel times for patients can be reduced
- Utilising biomarker testing so that treatments can be focused on those who are likely to benefit, reducing ineffective or unnecessary treatment<sup>69</sup>
- Utilising 'liquid biopsies' instead of repeat imaging, reducing the pressure on radiology services and enabling earlier detection of recurrence, enabling timely changes in treatment (including escalation or de-escalation, switch of therapy or ending treatment at the point it has become ineffective)<sup>70</sup>

However, there are barriers to adopting these technologies. Change will not happen if clinicians do not recognise the clinical value of the new approach and are not engaged in leading its design and implementation.

New technologies may also require upfront capital investment and/or increased ongoing acquisition costs. NHS decision-making does not always reflect the true value (or scarcity) of healthcare professional time. Instead, processes may view healthcare professional resource as less costly resource, failing to place a premium on capacity-saving interventions and therefore missing opportunities to avert pressure on overstretched staff.

### *Streamlining the work of multidisciplinary teams (MDTs)*

MDTs are the cornerstone of cancer care in England, ensuring that every patient's care is guided by expertise from different specialists. They have also been a useful tool for clinical education and standardisation, providing peer support and input into complex cases. However, MDTs occupy a significant amount of clinical time and require administrative and IT investment to run effectively.

MDTs are under increasing strain for the same reasons that cancer services as a whole are under increasing pressure. A study by Cancer Research UK found<sup>71</sup>:

- Around half of patients were discussed for two minutes or less
- There was insufficient time to discuss more complex cases
- There are opportunities to free-up MDT time by adopting protocols or standards of care for straightforward treatment, with patients suitable for protocol-based care identified at a pre-MDT triage meeting

Examples from pilots demonstrate that the use of pre-MDT triage can reduce MDT caseloads significantly, improving staff satisfaction and minimising bottlenecks<sup>72</sup>. In order to support streamlining:

- Standardised reporting should be adopted to ensure that the minimum core data requirements are recorded for all patients
- There should be a clear right to refer any patient for discussion at the MDT if there are issues of uncertainty or new clinical information comes to light
- It should be made clear that MDT approval is not required to request diagnostic or monitoring tests, such as PET-CT scans
- Asynchronous meetings should be tested, whereby clinicians can contribute at a time of their choosing





- ‘Sub-MDTs’ should be considered for groups of patients with similar characteristics, for example older people where frailty may need to be managed or for patients receiving treatments associated with particular side effects
- Investment should be made in administrative support and IT to enable the effective operation of MDTs and to reduce unproductive time before and in meetings

Efforts to streamline MDTs were disrupted by the COVID-19 pandemic but should now be redoubled.

### *Improving the coordination and personalisation of cancer care*

Cancer pathways are increasingly complex, often involving multiple diagnostics and treatments delivered by different providers over a prolonged period of time. Improving the coordination and personalisation of care can both improve patient experience and outcomes and make better use of capacity by:

- Focusing resources and effort on the issues which matter most to patients
- Reducing duplication and avoiding missed appointments
- Increasing accessibility so that problems are rapidly addressed before they escalate
- Supporting patients and carers in playing a more active role in managing their own care

Examples include:

- The creation of oncology orientation centres in Apulia, Italy that coordinate diagnostic tests and manage referrals, enabling better use of regional cancer resources<sup>73</sup>
- The Programme d’Optimisation du Circuit des Chimiothérapies (PROCHE) at the Georges-Pompidou European Hospital in Paris, which involves the proactive identification and management of potential side effects from chemotherapy and has minimised side effects, shortened the length of hospital sessions, reduced drug wastage, symptoms and reduced healthcare costs<sup>74</sup>
- An initiative in Maidstone to put breast cancer patients in control of when to seek follow-up support, which has saved 3,000 outpatient appointments and enabled faster access to support when patients have concerns<sup>75</sup>. Action on personalised follow-up has the potential to deliver benefits for many different cancer types. For example, in South East London the approach is now being implemented for breast, prostate, bowel, endometrial, head & neck and thyroid pathways<sup>76</sup>.
- Working with patients to agree planned treatment breaks, improving quality of life and freeing up capacity<sup>77</sup>

There is a good deal of attention on the potential of digital or remote support to improve coordination and personalisation. In relation to cancer, experts identified two areas of particular potential<sup>78</sup>:

- Holistic needs assessment – digital assessments which patients and carers complete could improve the capture of information which is vital to effective care planning and free up clinical nurse specialist time
- Acute oncology support – many patients receiving treatment will need advice on side effects, including whether to attend hospital. Digital resources could help patients identify when self-care is appropriate or whether they need to seek urgent medical assistance



## *Drawing on the skills and expertise of the widest range of professionals*

Given the workforce shortages which exist, it is particularly important that services support professionals in maximising their contribution, based on their skills and experience. In practice, this means practising at the top of their licence and devolving tasks to others where this is possible. Examples of this include:

- Nurse-led diagnostic clinics, for example for breast cancer symptoms
- The use of non-medical endoscopists
- Immediate reporting of chest x-rays directly by radiographers<sup>79</sup>
- Enabling community pharmacists to direct refer for cancer signs and symptoms<sup>80</sup>

Support staff can also play a vital role in freeing up clinical capacity. For example, one expert highlighted that in some hospitals imaging productivity declines in the late afternoon, when hospital porters go off duty<sup>81</sup>. Likewise, a recent *Getting It Right First Time* report highlighted the critical importance of administrative navigator posts in supporting Clinical Nurse Specialists, freeing up their time to spend with patients<sup>82</sup>.

## *Making better use of the independent sector*

The independent sector (IS) offers the potential to provide additional capacity to NHS cancer services and there are examples of where IS involvement has delivered important benefits, including:

- During drive to reduce waiting times in the 2000s, when additional IS activity helped reduce waiting times
- During the COVID-19 pandemic, when some cancer services were moved to IS locations to free up NHS hospital beds and enable cancer care to continue with lower risk of infection

So long as services are delivered to NHS standards (as a minimum), at costs which are comparable to NHS providers and in a way which is consistent with NHS values (free at the point of delivery, based on need and not ability to pay), any additional capacity provided by the IS should be welcomed and encouraged. There are, nonetheless, important issues which need to be managed if this is to work effectively, including<sup>83</sup>:

- Cancer care can involve multiple episodes of treatment, often delivered concurrently, over a long period of time. It is important that care is joined up and overseen by an MDT, irrespective of who provides it
- Data is critical to improving cancer care and all providers need to submit to the Cancer Outcomes and Services Dataset (COSD), as well as relevant clinical audits
- IS providers will need to deliver care at a comparable cost to NHS providers. Tariffs will need careful adjustment to ensure that they cover the full cost of an intervention but are not overpriced so as to create inefficiency
- Agreements need to provide assurance that IS capacity will be genuinely additive, rather than simply removing workforce from the NHS

Given these challenges and the pressing nature of the NHS cancer capacity crunch, it makes sense to focus IS involvement on the areas of the pathway where the capacity need is greatest and where the

demands for integration are simpler. This means focusing on creating additional diagnostic capacity, including for:

- Early diagnosis programmes such as Lung Health Checks, where some IS providers are already involved in implementation
- Community Diagnostic Centres (CDCs), which are intended to provide additional capacity, accessible to local communities. Experts have suggested that additional CDCs could be operational with only a six month lead time

In addition, experts reported that some cancer surgeons are frustrated at their inability to undertake more surgical lists in the NHS. Operating theatre capacity may be inaccessible due to priority being given to addressing elective backlogs or because of a shortage of intensive care or recovery beds<sup>84</sup>. There is a case for involving the IS in the development of new surgical hubs where this will create additional operating theatre capacity for NHS patients. In cancer, this could be focused on relatively straightforward procedures such as low risk breast, prostate and skin cancer patients. Payment mechanisms would need to be adjusted to reflect the lower complexity.

Potential benefits to using the IS in these areas include the ability to:

- Invest in capital projects (facilities and equipment) at short notice
- Secure new premises in locations which are accessible to local communities (such as shopping centres), without the pressure to utilise less suitable redundant NHS estate
- Recruit, train and retain staff who may not otherwise want to work in the NHS, including through flexible working

However, experts cited barriers to increasing IS involvement, including<sup>85</sup>:

- Lack of experience in procuring large scale IS projects
- A tendency to create inconsistent service specifications, which increases the costs, complexity and length of procurement exercises
- An absence of certainty about the volume of NHS activity that will be referred, making it more difficult to justify upfront investment

### *Preventing disruption to cancer capacity*

Cancer services do not operate in isolation. Pressure on other aspects of healthcare will also affect cancer delivery. For example:

- If a hospital is unable to discharge medically-fit patients, then it may need to cancel cancer treatments, such as surgery, which will require an inpatient bed
- Efforts to reduce elective waits impact upon theatre capacity for cancer surgery
- Emergency pressures create additional demand for imaging, impacting on cancer lists

Such disruption can be reduced by separating elective and acute capacity, ensuring that elective activity can continue even at times of high pressure. CDCs – which in many cases are located separately from hospitals – should help with the continuity of cancer diagnostic activity, even at times of acute pressure.

High quality IT can also reduce disruption, enabling services to identify where spare capacity exists (for example for imaging) and move appointments accordingly, maximising utilisation<sup>86</sup>. An example of this is the introduction of shared capacity across Greater Manchester for Endobronchial Ultrasound-guided Transbronchial Needle Aspiration (EBUS-TBNA), an important diagnostic in the staging of lung cancer, introducing a single scheduling system<sup>87</sup>. The outcome was shorter waits for patients and better use of existing capacity.

### *Focusing resources on interventions which can reduce future health need*

Although the capacity crunch facing NHS cancer services is immediate, it is important not to neglect interventions which can reduce future health need, easing pressures on capacity. Examples include:

- Smoking cessation programmes – smoking is a major cause of cancer and it is never too late to quit. For example, even for people already diagnosed with lung cancer, quitting can reduce side effects and delay a return or exacerbation of the disease<sup>88</sup>
- Early diagnosis and treatment – diagnosing and treating cancer before it has spread improves outcomes and averts costs and the use of health service capacity<sup>89</sup>. Therefore encouraging people with potential signs and symptoms of cancer to seek help, ensuring that clinicians can refer them for rapid investigation and testing new approaches to identifying cancers before symptoms are apparent are all important ways of reducing long term pressures on health services
- ‘Prehabilitation’ – helping people take steps to increase their physical fitness ahead of cancer treatment enables faster recovery, reduces complications leading to emergency admissions and helps patients cope better with side effects, all of which reduces the often unplanned need for health service capacity<sup>90</sup>

At a time when services are stretched, these important interventions can sometimes be deprioritised.

## Taking action to unlock capacity

There are plenty of actions that can be taken to make better use of cancer capacity, benefiting patients and staff. The examples cited in this paper are by no means exhaustive, but they do have a common theme: progress is uneven and often frustratingly slow, hindered by a lack of bandwidth to focus on introducing changes. There is no shortage of good ideas, or indeed examples of these ideas being put into practice. The challenge is spreading these ideas so that they become the standard.

Ultimately, it will be for local services to introduce changes to unlock capacity. Change happens when it is clinically led and supported by local services, who can see clear benefits for staff and patients. However, there are national policy changes which can be made to support and accelerate this process. This paper makes the following recommendations to improve the adoption and spread of capacity-saving changes:

1. Healthcare is and will remain primarily a human endeavour and there is no substitute for an adequate workforce. The publication of a fully-funded workforce plan should be a priority. The plan should set out future demand projections, how gaps will be filled as well as what action will be taken to retain existing healthcare professionals.
2. Efforts to unlock capacity require leadership at every level. The Government should ensure that measures to expand and optimise service capacity are a key theme in the forthcoming Major Conditions Strategy, of which cancer will be a part<sup>91</sup>. Cancer alliances should support integrated care boards in developing plans which set out how they intend to optimise cancer capacity within their health system.
3. Action on cancer in the Major Conditions Strategy should – as a minimum – seek to emulate the levels of cancer capacity available in countries whose outcomes we seek to match, building on the approach taken by Professor Sir Mike Richards' work on diagnostic capacity.
4. Given the pressing need to expand capacity, funding flows which incentivise investment in new capacity should be adopted, updating the approach taken in the 2000s to tackling long waits.
5. Efforts should be redoubled to remove unnecessary appointments which introduce delays and occupy staff time. Funding mechanisms such as tariffs should be designed to reward efforts to reduce the number of steps between referral, diagnosis and treatment.
6. Encouraging the universal adoption of BPTPs should be a priority. NHS England should publish metrics to track progress on implementation with linked incentives to reward those services which can demonstrate plans to make rapid progress, building on *CQUIN04: Compliance with timed diagnostic pathways for cancer services* published in the Commissioning for Quality and Innovation (CQUIN) guidance for 2023/24<sup>92</sup>.
7. NHS England should apply a 'capacity premium' in evaluating and procuring technologies which can free-up staff time, recognising that additional staff time is not currently available and therefore unnecessarily time-consuming activities have a high opportunity cost.



8. NHS England should work with cancer alliances to identify a series of high impact capacity-releasing interventions which would benefit from the development of large scale procurement and roll out plans.
9. Efforts to streamline MDTs should be redoubled, enabling MDTs to work differently and freeing up time to focus on complex cases.
10. Care coordination and personalisation should be seen as interventions which can improve quality and optimise the use of capacity. Digital approaches to support on issues such as holistic needs assessment and side effect management should be piloted.
11. Further opportunities for staff such as community pharmacists and advanced nurse practitioners to deliver different aspects of cancer care should be developed and evaluated.
12. The NHS should be encouraged to make greater use of IS capacity, focusing on diagnostics and – where additional operating theatre capacity is needed – low complexity cancer surgery. To accelerate this process, the Government and NHS England should conduct a national procurement process for IS-delivered Community Diagnostic Centres. These should be in areas of poor cancer outcomes or long diagnostic waiting times, in genuinely accessible settings, such as shopping centres or close to public transport hubs. To minimise duplication of effort, the procurement should be based on a standard specification which can then be adjusted to local need.
13. Safeguards should be established in IS Community Diagnostic Centre contracts, including:
  - Establishing a right to choice of diagnostic provider, mirroring the current right to choice of first outpatient appointment<sup>93</sup>
  - Including a provision ensuring that additional workforce will be recruited and trained, ensuring that an IS contract does not simply substitute for existing NHS activity
  - Agreeing to a length of contract which provides greater certainty to justify capital investment (for example, 10 years)
14. Building on the model used for many Community Diagnostic Centres, future service design should seek to, wherever possible, separate cancer / elective and urgent care capacity so as to minimise disruptions to the delivery of cancer care.
15. The pressures on cancer service capacity are longstanding and will continue to grow. Long-term sustainability demands a focus on interventions which can reduce health need. These include prevention initiatives, efforts to encourage earlier diagnosis and ‘prehabilitation’ so that patients are as fit as possible before cancer treatment.





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Holborn Gate, High Holborn,  
London WC1V 7QH

[evokeincisivehealth.com](http://evokeincisivehealth.com)