How can we best incentivise world class cancer services in England?

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A report produced by Incisive Health for Cancer Research UK
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Cancer Research UK

Cancer Research UK is the world’s largest independent charity dedicated to saving lives through research. We support research into all aspects of cancer which is achieved through the work of over 4,000 scientists, doctors and nurses. In 2018/19, we committed £546 million to fund and facilitate research in institutes, hospitals and universities across the UK. Thanks to research, survival in the UK has doubled since the 1970s so, today, 2 in 4 people survive their cancer. Our ambition is to accelerate progress and see 3 in 4 patients surviving their cancer by 2034.

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

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Executive summary

It has never been more important to ensure that NHS services can deliver the best outcomes for people with cancer. Cancer remains the leading cause of death in the UK, and a growing and aging population means incidence continues to rise.\(^1\) By 2035, the number of new cancer cases in the UK is projected to rise to over half a million a year.\(^2\) Although we have seen improvements over the last 40 years, survival in England remains lower than in comparable countries internationally, and significant regional and demographic variation in outcomes persist.\(^3\) Where 4 in 10 cancers can be linked to avoidable risk factors, there is also much progress still to be made in preventing cancer.\(^4\)

In early 2019, the NHS in England published its Long Term Plan (LTP) for the next ten years, setting out a vision of how healthcare, and the NHS itself, needs to change to provide the best care. Improving outcomes for people affected by cancer features strongly in the LTP. It rightly recognises the need to prevent more cancers and to diagnose more cancers at an early stage, where prospects of survival are substantially greater. We welcome its ambition to diagnose 75% of cancers at the earliest stages by 2028 - an increase of 21% on current levels.\(^5\)

To facilitate implementation, NHS England has set out to reform local, regional and national bodies to support more efficient, integrated care – and concurrently drive reform to how services are commissioned.\(^6\) Implementation will also be supported by a new funding settlement for the NHS of an extra £20.5 billion per year by 2023/24.\(^7\)

This context presents an opportunity to review how these reforms, and any additional funding made available to cancer care, can make the biggest difference. This paper explores how to best use financial levers and incentives to support the delivery of the LTP cancer ambitions, summarising findings and recommendations developed through consultation with experts.

It is important to note that this paper only examines NHS funding – that held by NHS England for commissioning primarily acute, primary and community care, and mental health services. However, this is not the whole picture. Even with the right incentives, it will be impossible to achieve the LTP ambitions without investment in the NHS workforce, public health, NHS facilities and equipment, and social care. The budgets for these sit outside NHS England and it is vital that the Government provides sufficient funding in these areas to support full implementation of the LTP.

Understanding cancer funding and guiding the right decisions

Funding is a vital feature of service improvement, but the current system of funding, commissioning and service provision makes it highly challenging to understand how funding is used and where improvements can be made to incentivise best practice. Different aspects of cancer services are commissioned through many sources and different mechanisms. This complicates efforts to assess the implications of any funding settlement for cancer,
particularly when funding decisions are often cited in ways which are not necessarily comparable (e.g. cash versus real-terms funding). Cancer Research UK has therefore developed a set of principles to help guide decisions about where funding for cancer services should be committed to have the greatest impact (see Box 1).

**Box 1 - Principles that should guide decisions on cancer funding:**

- Funding should take into account predicted increases in incidence, survival and comorbidity	extsuperscript{8}, ensuring that resources keep pace with need and are sufficient to deliver the ambitions of the Long Term Plan.
- Funding should be prioritised for the areas of cancer services where evidence shows it can deliver the biggest improvement in outcomes.
- Financial incentives should be used to support improvements in quality and service transformation, and to incentivise innovation, not just as a measure to stabilise current performance.
- Funding should also be used to encourage all those involved in cancer services to come together to design, test and implement radical new approaches to improved cancer outcomes.
- Funding should be allocated in a way which enables the NHS, at both a national and a local level, to track how money is used and to account for the progress delivered.

Decisions on cancer funding should be evidence-based, but data on the cost and efficiency of cancer services have not improved in line with the development of data on cancer treatments and outcomes. An accurate composite figure of resourcing committed to cancer services is therefore extremely difficult to produce, with the last estimate for annual cancer spend in England now over 6 years old (£6.7 billion in 2012-13).

Collecting and utilising data in a timely way would allow the system to better understand where incentives could be best targeted to improve outcomes. It is therefore welcome that NHS England and Improvement have committed in the LTP to drive more value from investment in the NHS. There is action can be taken now to improve understanding of cancer activity and expenditure, including before diagnosis where it is challenging to understand what proportion of current diagnostic activity is related to investigating suspected cancer.

1. **NHS England Improvement and Integrated Care Systems** should use the principles set out in this report to guide how funding is directed in all NHS Long Term Plan implementation planning, to support the delivery of commitments related to cancer services in the Plan.

2. **NHS England and Improvement, NHSx, NHS Digital and the Department for Health and Social Care** must prioritise the generation, collection and publication of better data about the costs of high-volume cancer pathways, as well as making better use of data currently available, for example by linking the Cancer Outcomes and Services Dataset with NHS Reference Costs.

3. **To guide efforts to plan increases in diagnostic activity**, NHS England and Improvement should conduct research to:
   - Produce contemporary estimates of the proportion of diagnostic activity that relates to suspected cancer in imaging, endoscopy and pathology
• Produce estimates of the likely increase in diagnostic activity due to interventions to improve cancer outcomes

Delivering the NHS Long Term Plan

The LTP contains welcome ambitions but there are practical challenges to implementation. The system is struggling to meet current demand and continued poor performance against waiting time targets\(^\text{10}\) demonstrates the serious strain on cancer services. The health needs of the population have also changed over time, for example with greater numbers of older people with cancer, who are more likely to have multiple health conditions.\(^\text{11}\)

NHS funding is rising at a slower pace than it has historically\(^\text{12}\) and there is a significant underlying shortfall in provider funding.\(^\text{13}\) The NHS payment system is also increasingly dated, with many aspects designed almost two decades ago. As a result, payments often encourage behaviours that are no longer considered best practice, including drawing activity into hospitals, prioritising activity over outcomes and hindering efforts to prevent or diagnose more cancers at an earlier stage. This means there is a risk that, without appropriate safeguards and effective incentives, any new funding may be diverted to simply address existing pressures, rather than radically improving outcomes and managing long term demand. Well-designed funding mechanisms are therefore needed to achieve the following:

Meeting patient need in the short term

There are unavoidable pressures on health and care services which must be addressed urgently. The greatest issue is workforce capacity and investment to grow the number of NHS staff remains vital.\(^\text{14,15}\) Funding for workforce training sits outside the NHS budget, and it can take considerable time to train new healthcare professionals. Nevertheless, steps can be taken in the short term to maximise existing capacity. Where almost 65% of NHS providers’ operating expenditure relates to staff costs, including temporary agency staff, there is significant scope to make sure that the present resource committed to workforce is used as efficiently and effectively as possible.\(^\text{16}\)

Funding mechanisms should be designed to encourage investment in capacity-saving alternatives, even where upfront investment may be required. They must also incentivise quality of care and outcomes rather than process. For example, cancer waiting times, while a useful performance measure, are not an appropriate metric to guide funding decisions.

4. NHS England and NHS Improvement should design funding incentives that support the delivery of wider LTP objectives and quality of care and outcomes, for example through:

• Streamlining pathways between referral, diagnosis and initial treatment, including through the use of best practice tariffs such as the Endoscopy Best Practice Tariff
• Building diagnostic capacity, including consideration of a ‘capacity premium’ to enable investment in approaches which can free up scarce workforce
• Testing innovative models of service delivery
• Encouraging services to take steps to ensure urgently referred patients are seen

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long before there is a risk of a breach occurring, and all patients receive timely diagnosis and first definitive treatment

Embedding routine high-quality care

Investment to improve services supporting prevention and earlier diagnosis, as well as digital transformation and better adoption of new treatments, offer the potential to significantly benefit patients. Reducing smoking prevalence delivers improved outcomes across a range of diseases including cancer. The LTP signalled that the NHS will play a greater role in prevention and public health, and it will be important to reward efforts to prioritise prevention as NHS services and local government work more closely together through Integrated Care Systems.

The LTP ambition to diagnose 75% of cancers at the earliest stages by 2028 will require a concerted effort. For example, it is important that initiatives to encourage greater referral for diagnostic testing through primary care, and creating sufficient capacity in diagnostic services, are funded and incentivised appropriately.

Perverse incentives, which may hinder uptake and spread of best practice and innovation – as seen historically in the uptake of new radiotherapy techniques - must also be addressed.

5. NHS England and Improvement should ensure that appropriate contractual levers and incentives across Integrated Care Systems are in place when implementing commitments on smoking cessation. NHS England and Improvement should explore a sustainable future for NHS preventative services through multi-year budgeting approaches.

6. Appropriate contractual arrangements and incentives, for example the Supporting Early Diagnosis Network Service Specification outlined by the new GP contract, should be used to encourage optimal, timely referrals for those with suspected cancer.

7. NHS England and Improvement should consider incentives to increase diagnostic activity as part of efforts to enable earlier diagnosis, including for example activity-based payments.

8. NHS England and Improvement should consider reforms to the National Tariff to support service optimisation and mitigate any potential perverse incentives. This should include the delivery of outpatient services, such as supporting implementation of stratified follow up based on risk and greater use of remote outpatient appointments.

Investing in transformation

Investing in transformation is crucial for long-term NHS sustainability. Services across the cancer pathway need to be incentivised and supported to work together to deliver and transform services.

Cancer Alliances are well positioned to draw together key stakeholders, provide strategic direction and deploy resources across their geographical footprint, focusing on local priorities.
alongside national objectives. The current funding model for Cancer Alliances hinders longer-term transformation.

Payment reforms in other areas like A&E could be useful models for some cancer initiatives, such as Rapid Diagnostic Centres.

9. **NHS England and Improvement should empower Cancer Alliances to be as effective as possible, through guaranteeing budget certainty and allowing the flexibility to invest in local priorities and longer-term system transformation.**

10. **NHS England and Improvement should examine whether recent changes to the way Accident and Emergency units are funded provide a basis for considering how ‘on call’ diagnostic capacity, such as Rapid Diagnostic Centres, could be sustainably resourced.**
Introduction

The NHS Long Term Plan (LTP)\textsuperscript{17}, published in January 2019, sets the strategic direction for the NHS in England for the next 10 years, with an emphasis on integration, prevention, innovation and personalised care for patients. This plan is accompanied by a funding settlement that will see the NHS receive a real terms increase of £20.5bn by 2023/24.

In this context, there is an opportunity to accelerate investment in improving cancer services and outcomes, as well as to assess funding for cancer services more broadly. Understanding the funding of cancer services is crucial, so that any additional funding made available for cancer is directed to the areas of cancer care where it can make the biggest difference, such as the cancer workforce, prevention, early diagnosis and access to innovative treatments.

With this in mind, Cancer Research UK commissioned Incisive Health to undertake a consultative exercise with experts to better understand the opportunities that exist to use financial levers and incentives to support the delivery of world class cancer outcomes, within the scope of the NHS LTP.

To develop the ideas presented in this paper, we undertook desk research to evaluate financial incentives in use in the NHS. We also brought together Cancer Research UK’s own internal experts on different aspects of cancer care and we facilitated a roundtable discussion with external experts. Our methodology is explained in more detail in Appendix B.

This paper summarises the conclusions and ideas generated by this process. It is intended to be a constructive contribution to discussions on how the commitments made in the NHS LTP will be implemented.

The first chapter of this paper explores how funding and commissioning of services currently operates in the NHS in England. It goes on to set out the way in which the complex nature of service commissioning, alongside increasing need and funding pressures, means that as the LTP enters its implementation phase there are a number of challenges that must be overcome. Five overarching principles to guide decisions on cancer funding are set out, which could ensure funding could have the greatest impact. Finally in this section, the need to generate and collect better data about the costs of current cancer pathways, and the proportion of service provision in diagnostics related to cancer, is set out, outlining the importance of this for informing funding decisions.

The second chapter assesses what opportunities exist to deliver the ambitions of the NHS LTP and is split into three sections. The first section looks at what must be done to meet patient need in the short term, in a system which, after a prolonged period of squeezed funding, rapidly rising need and workforce shortages, there are unavoidable pressures on health and care services which need to be addressed. The second section looks at how funding mechanisms could be used to incentivise routine high-quality care across prevention, diagnosing cancer at an earlier stage, expanding capacity across the pathway and streamlining the delivery of care. The final section examines where investment in transforming the way
organisations function and care is delivered could ensure the long-term sustainability of the NHS. This includes ways to drive consistent and equitable access to treatments, exploring innovative changes to payment systems to help sustainable resourcing, as well as how Cancer Alliances can deliver the greatest impact from investment in transformation at scale and over time.

Finally, the conclusion reflects on the opportunity that exists, with the NHS LTP and accompanying funding settlement, to ensure funding for cancer services is optimally delivered to improve outcomes – and emphasises the importance of not letting this opportunity pass us by.
Understanding cancer funding

Funding flows in the NHS

How funding flows through the NHS is one of the key levers through which policymakers, managers and clinicians can effect change in the system.

The NHS is extremely complex, with multiple streams of funding and accountability. The Treasury (on behalf of Parliament) allocates money to the Department of Health and Social Care (DHSC), which in turn delegates the majority of funding decisions to NHS England. The DHSC retains a proportion of the budget for its running costs and the funding of other arm’s length bodies such as Public Health England and Health Education England.

NHS England retains some of the budget to pay for its running costs and the services it commissions directly (including some primary care and specialised services). The remainder is passed on to Clinical Commissioning Groups (CCGs), on a weighted capitation basis to enable them to commission services for their local populations.

Figure 1 sets out the current funding system for revenue spending. It is important to note that this diagram does not include capital spending, which is allocated separately.

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* CCG allocations are based on the weighted capitation formula, which starts with a per capita population-based formula, which is then ‘weighted’ based on variables including need due to age, health inequalities, deprivation levels, and variations in the cost of delivering care in different localities.
Providers of NHS services are paid in a number of different ways, including:

- **Block budgets** (also known as block contracts), where a lump sum payment is made to a provider to deliver a specific but broadly defined service, independent of the level of activity
- **Capitation payments**, where lump sum payments are made on a per patient basis
- **Case-based payments**, where providers receive a prospective fixed sum for an episode of care
- **Blended payments**, where a provider receives both a fixed payment linked to expected levels of activity, and a variable payment that reflects actual levels of activity
- **Fee-for-service**, where providers are paid retrospectively per unit of activity undertaken

The national tariff, a form of case-based payment known as Payment by Results, covers the largest segment of NHS spend (approximately 60% of total income received by all NHS trusts and 67% of acute provider income in 2014/15\(^\text{19}\)). However, in recent years there has been a trend for trusts to move to block contracts for services covered by the national tariff.\(^\text{20}\) This has been overlaid by a complex mosaic of different incentives and funding streams, including payment by performance schemes such as the Quality and Outcomes Framework (QOF)\(^\text{b}\) and the Commissioning for Quality and Innovation (CQUIN) scheme.\(^\text{c}\)

It is important to note that the promised £20.5bn funding settlement for NHS England by 2023 is being added to a health system that is already struggling to meet current levels of demand. At the end of 2018, NHS providers had deficits amounting to almost £1.25bn,\(^\text{21}\) and there is an underlying £4.3bn annual shortfall recognised by NHS Improvement.\(^\text{22}\)

Many aspects of the current NHS payment system were designed during the early 2000s, when funding was rising by close to 6% a year, and the priorities of the NHS as well as the health needs of the population were different. The context the NHS finds itself in has now materially changed. Public spending on health rose on average by 1.1% in real terms between 2009/10 and 2014/15.\(^\text{23}\) NHS Trusts now face an overall control total as the ultimate financial incentive, which they must meet to be eligible for national sustainability funding.\(^\text{24}\)

In recent years, the increasing strain on local and regional NHS organisations’ budgets due to demand outstripping capacity has been absorbed in a number of ways, in order to reach financial balance across the NHS. The approaches used have proven neither sustainable nor optimal for improving performance. At the local level, pressure has been released through performance metrics being systematically missed, and capital funding meant for estate maintenance and transformation being diverted into revenue funding – leading to a backlog of maintenance costs in the region of £5.5bn at the end of 2016/17.\(^\text{25}\) Substantial deficits

\(^\text{b}\) Quality and Outcomes Framework (QOF) is a voluntary annual reward and incentive programme for all GP surgeries in England. The QOF rewards practice for the provision of ‘quality’ services and helps to fund further improvements in the delivery of clinical care.

\(^\text{c}\) Commissioning for Quality and Improvement (CQUIN) is a payment framework which enables commissioners to link a proportion of provider income to the achievement of quality improvement goals.
across the provider sector have been counterbalanced at the national level with surpluses in central budgets, such as specialised commissioning or capital budgets. Whilst this has produced a break-even position for the system as a whole in recent years, this has come without significant remediation of the underlying financial issues.

The consequence is that over the last 3 years nearly £7.9bn of transformation funding, intended for investment in transforming primary and community care in line with the aspirations of the Five Year Forward View, has instead been used to remedy deficits in the acute sector. According to the National Audit Office, in 2016-17 40% of payments were made to create or increase trust surpluses, rather than to transform services. Only allowing Trusts that have met their financial control total access sustainability funding has had the effect of increasing surpluses in organisations that are either already stronger-performing or have been able to temporarily improve their finances by selling surplus assets. This has smoothed out the overall provider sector deficit, but has relied substantially on short term, non-recurrent measures and has largely failed to effectively support struggling providers to address their structural deficits.

This context means there is a risk that, without appropriate safeguards and effective incentives, funding which is accompanying the LTP will be used only to address existing pressures, rather than being invested in improving outcomes and managing demand in the long term. It is also important to note that though the new NHS funding settlement is welcome, it applies only to the budget held by NHS England. Key determinants of the success of the LTP, namely public health, workforce training, capital investment and social care, will not benefit from this increased funding, and indeed in some cases currently face budget cuts. At the 2018 Budget, the Government did not confirm that the overall budget for the DHSC will see an increase commensurate with the increased funding for NHS England. If the DHSC budget is not uplifted to match the increase in funding for NHS England, there is a danger other these other budgets will face further pressure. It is vital that the 2019 Spending Review recognises that the NHS LTP cannot be delivered without increased funding for workforce training, preventative public health services, capital investment and social care.

Funding flows for cancer

Responsibility for commissioning cancer services in England is fragmented. The need to clarify which organisations are best placed to be responsible for commissioning specific services was identified in the Cancer Strategy for England. Recommendations were made to clarify responsibility for commissioning (see Figure 2), and this remains a challenge. CCGs commission diagnostic testing and some routine cancer treatment such as non-specialist surgery. NHS England commissions specialised services through its area teams, including chemotherapy, radiotherapy and specialised cancer surgery. Public Health England commissions established screening programmes in collaboration with NHS England.

A product of this is that it is often challenging to identify which organisation is responsible for the overall outcomes of care and where expenditure on cancer is incurred. This is
compounded by the fact that some expenditure on cancer is difficult to distinguish from expenditure on other conditions. For example:

- Preventative services, such as smoking cessation, are often intended to reduce the risk of multiple conditions
- Diagnostic activity may relate to the investigation of potential cancer, or it may relate to the investigation of other conditions
- Primary care activity is required for multiple conditions and many cancer patients who use it will also have other conditions
- Some cancer medicines are also used to treat other conditions and it can be challenging to identify the reason for expenditure

This also means it is extremely difficult to get an accurate picture of what money is being spent on, and where. No NHS body routinely produces an aggregate estimate for annual spend on cancer in England, and there has been no official estimate since 2012/13, when it was estimated at least £6.7 billion of revenue spending was on cancer. In developing this figure, the National Audit Office noted that the then Department of Health and NHS England did not have a robust estimate of the total cost of cancer care at this time. This was because the methodology of measuring spending on cancer care relied on Programme Budgeting data and excluded key services, including cancer-related GP appointments and diagnostic testing for suspected cancer, among others.
Programme Budgeting data also suffered from data quality issues, and is no longer published publicly, making contemporary estimates challenging. However, we can assume that revenue spending on cancer services will have increased over the period since 2012-13, driven by an increase in new cancer diagnoses from 292,680 in 2013 to 305,683 in 2017. Demand on cancer services has also dramatically increased over the period, with for example the number of urgent referrals for suspected cancer increasing from 1.2 million in 2012-13 to almost 2 million in 2017-18. We also know the cost of some cancer treatments has increased, with reported spending on chemotherapy rising from £978 million in 2012-13 to £1.36 billion in 2016-17, an increase of 39%.

There are also a wide range of payment mechanisms used when commissioning cancer services (Figure 3). These payment mechanisms often encourage activity to be pulled into hospitals, prioritise activity over outcomes and do not place incentives on commissioners or providers to prioritise diagnosing more cancers at an earlier stage, or cancer prevention. More detail on the current financial levers for cancer services can be found in Appendix A.

![Figure 3: Payment mechanisms for commissioning cancer](image)

This report has sought to identify some possible payment mechanisms which could be used to optimise the way that funding is used to improve outcomes, summarised in the table below. In the subsequent sections of this paper we identify where these could be deployed in practice in more detail:

<table>
<thead>
<tr>
<th>Examples of different forms of payment mechanism</th>
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<tr>
<td><strong>Activity-based incentives</strong></td>
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<td>Activity-based incentives offer payment for delivering a specific service or activity in the NHS. Fixed payments for a procedure or group of procedures can be effective in encouraging activity and efficiency. A similar approach proved to be effective in encouraging increased elective activity in the early 2000s. However, they can create perverse...</td>
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How can we best incentivise world class cancer services in England?

Incentives as services may be reluctant to change approach if they will be financially penalised. This has occurred in radiotherapy, where modern, more targeted approaches can result in lower payments; and the delivery of chemotherapy closer to home, where services have been reluctant to give up the payments associated with outpatient attendances.\textsuperscript{39}

### Quality-based payments

Over time, various performance incentives have been layered on to the NHS payment system, such as the Quality and Outcomes Framework (QOF) for primary care and the Commissioning for Quality and Innovation (CQUIN) scheme, which has been successfully used to incentivise service changes on issues such as the provision of lung cancer clinical nurse specialists.\textsuperscript{40}

Similarly, the use of best practice tariffs – which seek to encourage the adoption of optimal approaches to care – have proven successful in changing clinical practice in a range of areas, such as hip fracture care.

### Bulk purchasing

Procuring specified volumes of care can be effective at changing clinical culture, creating ‘supply-induced demand’ in areas where an increase in activity is desirable. Bulk purchasing of imaging capacity in the 2000s helped challenge perceptions about a shortage of capacity.

### Multi-year budgeting

Where upfront or prolonged investment is required, multi-year budgeting can provide services with additional certainty, or with the flexibility to front-load investment.

This may be effective for activities such as stop smoking services or interventions to reduce obesity, where savings may take longer to be realised.

### Ringfencing

Ringfencing can be effective in safeguarding funding for a specific issue and requiring health services to account for how resources have been used. The challenge is to ensure that sufficient funds are allocated and that the operation of the ringfence does not interfere with the wider delivery of services.

Ringfenced budgets exist on a national and local level, for example the national level Cancer Drugs Fund, and the transformation funding given by NHS England to Cancer Alliances which is ringfenced for local priorities.

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**Evaluating the impact of the NHS funding settlement**

Funding is only one feature of service improvement, but it is a vital one. It is challenging to assess the implications of any funding settlement for cancer services, particularly when different aspects of cancer services are funded from different sources, and funding decisions are often cited in ways which are not necessarily comparable (e.g. cash versus real-terms
How can we best incentivise world class cancer services in England?

As a result of this project, Cancer Research UK has developed the following principles that we believe should guide decisions on cancer funding:

• Funding should take into account predicted increases in incidence, survival and comorbidity, ensuring that resources keep pace with need and are sufficient to deliver the ambitions of the Long Term Plan
• Funding should be prioritised for the areas of cancer services where evidence shows it can deliver the biggest improvement in outcomes
• Financial incentives should be used to support improvements in quality and service transformation, and to incentivise innovation, not just as a measure to stabilise current performance
• Funding should also be used to encourage all those involved in cancer services to come together to design, test and implement radical new approaches to improved cancer outcomes
• Funding should be allocated in a way which enables the NHS, at both a national and a local level, to track how money is used and to account for the progress delivered

NHS England and Improvement and Integrated Care Systems should use the principles set out in this report to guide how funding is directed in all NHS Long Term Plan implementation planning, to support the delivery of commitments related to cancer services in the Plan

Prioritising the generation and collection of data to inform funding decisions

Decisions on cancer funding should be informed by evidence on patterns of expenditure and outcomes. However, data on the cost and efficiency of cancer have not improved in line with the development of information on cancer treatments and outcomes, and information on activity is not routinely linked to cost data for cancer treatments. Collecting and utilising data in a timely way would allow the system to develop a better understanding of where incentives could be best targeted to improve outcomes.

Data on activity related to cancer services is of a higher quality than for many other conditions. However, at present, it is underutilised. There are also important gaps, particularly outside of the acute care setting, which hinder our ability to effectively scrutinise spending decisions or understand the impact or causes of variation.

Even within the acute sector there are concerns that delays in publication, and gaps in completeness and accuracy can reduce the usefulness of treatment datasets. In the case of
the Systemic Anti-Cancer Therapy (SACT) dataset, whilst coverage is broad, there are some issues around completeness, particularly with respect to data in the outcome fields around final treatment, regimen changes and regimen outcome summary. From September 2019 there will be an additional outcomes extract submitted alongside the core SACT upload. It is hoped this will improve the quality and completeness of outcome data. The quality of National Radiotherapy Dataset (RTDS) data is improving rapidly, thanks to continued investment and effort by PHE, and further work is underway to address the remaining issues. Continued investment in maintaining and analysing these datasets is vital for assessing how treatment is delivered across the country, and identifying any variation.

There have also been considerable challenges with collecting and utilising funding data in the NHS. Historically, programme budgeting data provided a useful overall insight into how the NHS was using resources. However, inconsistencies in how information was recorded meant that the data was of limited reliability for evaluating spend by condition at the local commissioning level. Moreover, the data has not been updated and published at CCG-level in recent years. It is therefore welcome that NHS England and Improvement have indicated they are exploring opportunities to develop new ways of presenting CCG-level data, and this work should be supported.

The development and testing of new approaches will inevitably take some time. However, there is action that can be taken now to improve the transparency of cancer expenditure. As an interim measure, relevant data, for example the Cancer Outcomes and Services Dataset, the National Radiotherapy dataset, and other available datasets should be linked to NHS Reference Costs so that estimates can be generated for the costs of common pathways, and the implications of earlier diagnosis can be better quantified.

NHS England and Improvement, NHSx, NHS Digital and the Department for Health and Social Care must prioritise the generation, collection and publication of better data about the costs of high-volume cancer pathways, as well as making better use of data currently available, for example by linking the Cancer Outcomes and Services Dataset with NHS Reference Costs.

It has been particularly challenging to understand the costs of cancer pre-diagnosis, where a person can subsequently be found to have (a) cancer, (b) another condition or (c) be given the ‘all clear’. The National Audit Office (NAO) found that these costs were not always included in cancer planning because they were challenging to allocate. More recently, work by Cancer Research UK and Incisive Health has found that clinical commissioners are often unable to explain how additional funding to support the increases in diagnostic activity, which will be required to deliver earlier diagnosis, has been spent or whether indeed the planned uplift in activity has been achieved.
To guide efforts to plan increases in diagnostic activity, it should be possible to estimate the proportion of imaging, endoscopy and pathology that relates to suspected cancer. These plans should also be informed by research to develop estimates of the likely increase in diagnostic activity that will be seen due to interventions to improve cancer outcomes, so that sufficient capacity can be developed. Cancer Research UK commissioned a series of reports to assess diagnostic activity in endoscopy, imaging and pathology to support the Cancer Strategy for England 2015-2020.\textsuperscript{47, 48, 49} NHSE should commission similar research to inform ICS and Cancer Alliance local system planning.

To guide efforts to plan increases in diagnostic activity, NHS England and Improvement should conduct research to:

- Produce contemporary estimates of the proportion of diagnostic activity that relates to suspected cancer in imaging, endoscopy and pathology

- Produce estimates of the likely increase in diagnostic activity due to interventions to improve cancer outcomes
 Delivering the NHS Long Term Plan

Change takes time to design, implement and embed. We believe it is likely that actions resulting from the NHS Long Term Plan will broadly focus on the following three areas, each of which have implications for cancer:

1. **Meeting patient demand in the short-term**: after a prolonged period of squeezed funding, rapidly rising need and workforce shortages, there are unavoidable pressures on health and care services which need to be addressed in the short term.

2. **Embedding routine high-quality care**: consideration must be given to how the funding system can be optimised to incentivise the right kind of behaviours and, as a result, improve quality of care and patient outcomes in the long term.

3. **Investing in transformation**: in order to ensure the long-term sustainability of the NHS, there will need to be investment in transforming the way organisations function and care is delivered.

**Meeting patient need in the short-term**

The new funding settlement for the NHS is being added to a system that is struggling to meet current levels of need. After nearly a decade of austerity, finances are stretched, and performance has deteriorated. Performance measures, including cancer waiting time standards, are not being met, and there is an underlying £4.3bn annual shortfall in provider funding.

Without appropriate safeguards, there is a risk that future funding may simply be diverted to help services manage existing pressures, rather than being invested in improving outcomes and managing demand in the long term. LTP implementation and delivery plans will need to be realistic about the time and resource that will be required to recover performance, finding the balance between this task and other more aspirational priorities.

**Waiting time standards**

The most prominent performance target in cancer is the 62-day standard, measuring the interval between an urgent GP referral for suspected cancer, or a referral from a screening programme, and a patient’s first definitive treatment. In September 2010, 13.5% of patients covered by this metric waited longer than two months to start treatment. By September 2018, this had risen to 21.7%. Long waits cause anxiety for patients and in some cases could lead to a person’s cancer developing before treatment is initiated. As such, it is right that efforts continue to ensure that performance standards are met. Moreover, it is likely that
there will continue to be emphasis on meeting performance standards, in particular following the introduction of the new 28-day Faster Diagnosis Standard (FDS).

However, performance measures can also be blunt instruments and efforts to meet waiting time standards could be counter-productive to earlier diagnosis if, for example, they influence GP appraisal and tendency to refer, or result in limits being placed on the number of urgent referrals that GPs can make. Using performance measures to determine funding can also produce perverse outcomes in which the best performing providers are given extra resourcing, whilst those providers that require more support to improve performance have their funding reduced, making the challenge of delivering care at the expected standard within budget even more challenging.

At a systemic level this challenge has manifested as a consequence of the Provider Sustainability Fund, in which the financially best-performing trusts have been able to access the £2.1 billion fund by making cuts they could more easily absorb. Conversely, trusts that are struggling financially and cannot make similar savings are unable to access this funding. In cancer services, until 2019-20 transformation funding for Cancer Alliances, intended to improve cancer services and deliver on the recommendations of the Cancer Strategy for England, was partly conditional on performance against the 62-day referral to treatment target. This meant that less well performing areas requiring support to improve services had resource withheld, whilst areas already able to perform well against these waiting time standards received all transformation funding in a timely way.

It is important, therefore, that financial incentives are directed at measures which will both support early diagnosis and enable the delivery of waiting time standards. These might include investing in additional capacity or introducing streamlined pathways for investigation and diagnosis.

**Designing and delivering approaches that compensate for scarcity of resources**

Meeting rising patient need in cancer will require additional capacity. Unfortunately, at least in the medium term, workforce shortages will create a significant barrier to this. For example, across four key groups who diagnose and treat cancers (radiologists, gastroenterologists, therapeutic radiographers and oncologists), the number of staff may need to double by 2027, just to meet the needs of the extra people we expect to be diagnosed with cancer in the next 10 years. Increased investment in the cancer workforce, accompanied by effective workforce planning, will be critical to deliver on the aspirations of the NHS Long Term Plan. However, there are also steps that can be taken in the short term to support the workforce that is available. If the greatest barrier to progress is workforce shortages, then funding mechanisms need to be designed in such a way that encourages investment in capacity-saving alternatives to existing
models of provision, even where the costs of these alternatives may initially be higher. As such, the concept of establishing a ‘capacity premium’ should be explored to enable investment in services that free up scarce clinical time. For example, there may be opportunities to make greater use of technology and/or remote analysis, particularly in the diagnostic phase of the pathway.

Furthermore, where £52.1 billion was spent on staff costs by NHS providers in 2017/18 – equal to almost 65% of provider spending – there are significant opportunities to deploy this resourcing in ways which support the objectives of the LTP. For example, phase 1 of the Cancer Workforce Plan highlights that skills mix approaches can increase capacity by training the current cancer workforce to work at the top of their skill set. However, to embed these approaches staff must be supported to take up training, which will require trusts to allow staff to do so and backfill their positions during their training.

Realising these opportunities will require careful planning, service design and investment, which is unlikely to occur organically at a local level. Instead, design and procurement approaches at the population level may be required, alongside additional financial certainty.

The implementation of guidance on diagnostic pathways can play an important role in ensuring that diagnostic capacity is being used appropriately and is subject to clear standards of quality control. There are lessons that can be learned from endoscopy, where the Joint Advisory Group on Gastrointestinal Endoscopy has developed a clear approach to audit, accompanied by specific targets. These are now being used to inform the development of best practice tariffs, whereby some services are paid an enhanced tariff providing that care is delivered in a way which accords with good practice standards and delivers savings or improvements elsewhere in the pathway. It is important that the ongoing assurance of such tariffs is responsive to external pressures, such as a sudden, significant increase in demand – and that such increases in demand do not result in services losing out financially.

One of the solutions to workforce challenges will be to address workload and job planning issues, including by encouraging and enabling different groups of professionals to take on more responsibility or to organise their job plans in different ways. The recently agreed GP Contract is an example of how this can be encouraged.

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NHS England and Improvement should design funding incentives that support the delivery of wider LTP objectives and quality of care and outcomes, for example through:

- **Streamlining pathways between referral, diagnosis and initial treatment**, including through the use of best practice tariffs such as the Endoscopy Best Practice Tariff

- **Building diagnostic capacity**, including consideration of a ‘capacity premium’ to enable investment in approaches which can free up scarce workforce
How can we best incentivise world class cancer services in England?

- Testing innovative models of service delivery
- Encouraging services to take steps to ensure urgently referred patients are seen long before there is a risk of a breach occurring, and all patients receive timely diagnosis and first definitive treatment

**Incentivising routine high quality care**

Although the immediate focus for the NHS will be on recovering performance and stabilising finances, it will be important that work starts on embedding the approaches to diagnosis, treatment and care outlined in the NHS Long Term Plan.

As previously discussed, many aspects of the current NHS payment system were designed during the early 2000s, when funding was rising by close to 6% a year and the priorities of the NHS were different to today’s. What started as a simple system has, over the last two decades, been made increasingly complex.

As reform of payment arrangements and incentives occur in line with the direction of the NHS Long Term Plan, it will be important to identify the issues and behaviours in cancer services which should be prioritised for incentivisation. A new, simplified system of financial incentives should be:

- Focused on the changes that can deliver the biggest impact
- Supported by appropriate resource to facilitate implementation
- Designed in a way that prevents different incentives working against each other, or encouraging perverse behaviours

**Encouraging investment in the areas of care that can deliver the biggest wins**

Pressures on the health system mean that often funding is directed towards more immediate demands, rather than what is better to deliver longer term transformation and improvements in patient outcomes. Other areas offer the potential to deliver more significant benefits in terms of improving cancer services, including prevention and earlier diagnosis, as well as investment in digital transformation and new treatments.

**Prevention**

For prevention, benefits will accrue through outcomes for many different conditions, not just to cancer. There are particular challenges to ensuring accountability for prevention, as services are currently commissioned by both local authorities and NHS organisations. Further work to track and evaluate the impact of preventative interventions can help strengthen the case for funding public health services sufficiently.
Prevention measures outlined in the LTP will be funded from the new NHS funding settlement, increasing the role of the NHS in public health and prevention. With NHS services and local government encouraged to work more closely together through Integrated Care Systems, it will be important to look at ways to reward behaviour that seeks to prioritise prevention.

Currently, the public health grant from the Department of Health and Social Care is expected to fall by around £200m, from £3.3bn in 2018/19 to £3.1bn in 2019/20.61 This is following an extended period of cuts to the public health grant, with a £700 million real terms reduction in funding between 2014/15 and 2019/20, equal to a fall in spend per person of 23.5%.62 This has had a significant impact on public health services: between 2013/14 and 2016/17, budgets for smoking cessation services and interventions were cut by 36%.63

This has also had a significant impact on the provision of stop smoking services; 44% of local authorities no longer have a specialist stop smoking service open to all smokers in their area, and 3% of local authorities commission no support for smokers at all, meaning over 100,000 smokers no longer have access to any local authority commissioned support to quit.64 This is despite strong evidence that Stop Smoking Services are effective at supporting smokers to quit, using a combination of behavioural support and prescription medication.65 Smokers using these services are around three times more likely to quit successfully than those attempting to quit unaided.66 Irrespective of where responsibility for prevention lies, it is important that it is adequately resourced.

The Department of Health and Social Care should ensure that any transfer of responsibility for public health into the NHS is accompanied by the requisite funding, otherwise the burden of underfunding will simply be shifted from one part of the system to another.

A recent survey of GPs67 also reported a reduction in funding for smoking cessation treatments, leaving many unable to provide patients with support to quit.68 GPs must have sufficient support to provide preventative support and referral (where appropriate), including through the reformed Quality and Outcomes Framework to incentivise GPs to undertake preventative and public health activities.

As the LTP recognises, the NHS can play an important role, complementing action by local government and others, on the prevention of ill-health. The NHS comes into contact with people at moments in their lives that bring home the personal impact of ill health. As such, it is well-placed to offer support on issues such as smoking cessation, weight management and alcohol dependency. The NHS Long Term Plan commits to implement the Ottawa Model for Smoking Cessation intervention across NHS trusts, but appropriate funding must be provided in an effective way to deliver this.

Multi-year allocations provide NHS organisations with a valuable forward-view of the funding they can expect to receive in future years, and hence with the opportunity to plan accordingly. This is well suited to enable investments which will generate a new financial saving, but which are impossible for NHS organisations to fund directly without the ability to borrow funds or to...
operate a balance sheet. The benefits of prevention often occur over a longer time period. For example, there is a long lead time to developing lung cancer, and the benefit of the smoking cessation intervention does not often satisfy narrow criteria of multi-year budgeting delivering within a “reasonable timeframe”. However, there is evidence to suggest that that tobacco control interventions may in some cases generate savings within a reasonable timeframe if non-cancer costs are also included. As such, the case for using multi-year budgeting to enable investment in prevention services, which may deliver a return on investment in a longer timeframe than the annual budget cycle, should be considered.

NHS England and Improvement should ensure that appropriate contractual levers and incentives across Integrated Care Systems are in place when implementing commitments on smoking cessation. NHS England and Improvement should explore a sustainable future for NHS preventative services through multi-year budgeting approaches.

Early diagnosis

Diagnosing cancers at an earlier stage is one of the key ambitions for cancer in the NHS LTP, with the ambition set out to diagnose 75% of cancers at the earliest stages (Stage 1 or Stage 2) by 2028. This will require bold efforts to diagnose earlier, where at present 54% of cancers are diagnosed at an early stage. Measures set out in the LTP to work towards this ambition include establishing a Rapid Diagnostic Centre in each Cancer Alliance, rolling out targeted lung health checks, creating pathology and imaging networks to optimise resources in these diagnostic services, and investing in new equipment including MRI and CT scanners.

Early diagnosis is vital to improving cancer outcomes. The earlier the stage at which cancer is diagnosed, the better the chances of long term survival. For example, more than nine in 10 people (93%) will survive for five years or more if they are diagnosed in the earliest stage of bowel cancer (Stage I), compared to less than one in 10 for those diagnosed at Stage IV. Earlier diagnosis also often enables less invasive and less costly treatment, reducing side effects and impact on quality of life, as well as averting treatment costs for the NHS.

However, there are barriers to earlier diagnosis:

- People can be reluctant to make an appointment to see a healthcare professional, even if they are concerned about potential signs and symptoms.
- Primary care clinicians can be reluctant to refer patients where there is a possibility of cancer, if they feel that sufficient diagnostic capacity is not available.
- Cancer services can be reluctant to build diagnostic capacity if there are concerns that it will go unused.
- Efforts to manage overall health service activity may impact on activity related to cancer, even if this is not the intended target.
Positive efforts to diagnose cancer at an earlier stage will also create increased demands on diagnostic services, heightening pressures on such services. For example, as the bowel screening programme is expanded through the reduction of the screening age to 50, and the programme is optimised with the Faecal Immunochemical Test (FIT), pressures on endoscopy services will increase. These perceived barriers will need to be addressed if the ambition of the LTP to diagnose more cancers at an earlier stage are to be successful.

A significant uplift in diagnostic activity is required to deliver the cancer recognition and referral recommendations set out in NICE Clinical Guideline 12. Financial levers can play an important role in building this capacity and encouraging clinicians to use it. The new GP Contract creates a significant opportunity to support earlier diagnosis.

Appropriate contractual arrangements and incentives, for example the Supporting Early Diagnosis Network Service Specification outlined by the new GP contract should be used to encourage optimal, timely referrals for those with suspected cancer

There are also useful examples of where financial levers have helped to expand capacity and increase activity in secondary care. For example, during the early 2000s, payment by activity was an important driver in tackling elective waits, encouraging providers to rapidly expand capacity and streamline patient pathways. Likewise, the use of bulk purchasing of imaging in the 2000s helped challenge perceptions about a shortage of capacity and enabled services to plan investments in equipment and staffing from a position of certainty. The situation today is clearly different from that in the 2000s, but there are lessons that can be learned from previous successful efforts to address capacity shortfalls and scale up activity.

NHS England and Improvement should consider incentives to increase diagnostic activity as part of efforts to enable earlier diagnosis, including for example activity-based payments

Expanding capacity and streamlining the delivery of care

Embedding routine high quality care can also improve the efficiency of services. The 2018 Budget makes it clear that the final funding settlement for the NHS is contingent on the NHS continuing to achieve cash-releasing productivity growth of at least 1.1% a year. Outpatient services have been identified as an area where significant variation and inefficiency occurs.

Equally, this is an area which can be inconvenient for patients, compromising experience of care. Given that many cancer treatments and follow up appointments are delivered on an outpatient basis, there is scope in cancer to explore how targeted investment can reduce inefficiency and improve quality of care, for example through stratified follow up based on...
risk, and greater use of remote outpatient appointments. Greater efficiency would give clinicians more time to support patients with varying or more complex needs, whilst tailoring services more appropriately to all patients’ conditions.

**Driving consistent access to treatments**

It is also important to ensure that current payment mechanisms do not disincentivise uptake of new treatments which represent best practice. Improving cancer outcomes will require efforts to ensure equitable access to the most effective cancer treatments. Although many experts believe that the NHS has a good track record of enabling access to effective treatments, there is evidence of unwarranted variation in the usage of some treatments that have been deemed to be clinically- and cost-effective.

Where a form of treatment clearly represents best practice, it is important that there are proactive and forward-looking efforts made to encourage their rapid uptake. As chemotherapy, radiotherapy and some types of cancer surgery are commissioned at a national level through specialised commissioning, it should be easier to reduce unwarranted variation in access to these interventions. Despite this, patients still face variation in access to treatments.

Well-targeted financial incentives can support the rapid and equitable uptake of new treatments once the decision has been made to introduce them, which could help ensure that there is a consistent approach to uptake and access of the most effective treatments across geographies and patient groups. In the case of radiotherapy, hypofractionation – in which fewer, high dose fractions are delivered – can be as effective as traditional radiotherapy techniques, whilst freeing up capacity and requiring fewer trips to hospital for patients.

However, under the tariff payments are made per fraction, which disincentivises centres from undertaking hypofractionation. Therefore, there is a risk that this payment mechanism can hinder transformation and best practice, and where perverse incentives in current system are present, efforts much be made to mitigate their effects.

In the example of hypofractionation, a mandated QIPP target was introduced to incentivise the adoption of best practice for breast cancer. Though this approach has been successful in this case, it is important that longer-term solutions are built into routine payment mechanisms, and this principle is relevant across all services which are funded through the National Tariff.

If proactive efforts are made to identify and rectify these perverse incentives as introduction of new and innovative treatments is being considered, rather than retrospectively addressing them once evidence of sub-optimal practice emerges, patients will benefit from more rapid rollout of best practice services and treatments.

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8 The Quality, Innovation, Productivity and Prevention (QIPP) programme is a tool developed by the DHSC to drive quality improvement throughout the NHS
NHS England and Improvement should consider reforms to the National Tariff to support service optimisation and mitigate any potential perverse incentives. This should include the delivery of outpatient services, such as supporting implementation of stratified follow up based on risk and greater use of remote outpatient appointments.

Some new treatments may require upfront investment to make them available to all centres. This is particularly the case with radiotherapy, where equipment or software upgrades may be required\(^\text{84}\), or new forms of surgery where enhanced training or new equipment can be needed.\(^\text{85}\) As in the case of the Radiotherapy Fund, for significant upgrade programmes where new and expensive equipment is needed, it is important that there is sufficient capital funding from the Department of Health and Social Care to allow for this investment.\(^\text{86}\) It will also be important that decisions to make such treatments available are accompanied by sufficient transformation funding to ensure rapid diffusion throughout the system. This approach can work, as demonstrated by the Radiotherapy Innovation Fund, a £23 million fund to support uptake of intensity-modulated radiotherapy (IMRT). The Fund allowed flexibility to invest in and deliver rapid adoption and was used to invest in new software and machine upgrades, as well as clinical backfill to allow staff training in IMRT. This approach meant that in the nine months from August 2012 to April 2013, IMRT use increased from 13.6% of patients receiving radiotherapy in England to 22.3%.\(^\text{87}\)

This approach could also be applied to medicines. The new Voluntary Scheme on Branded Medicines Pricing and Access agreed in December 2018 by the DHSC and ABPI is a positive step in the right direction with respect to medicines access. This scheme commits NHSE to providing ‘tailored uptake and implementation support’, including financial and other incentives, for new medicines which offer a substantial health gain. The scheme also covers medicines for conditions with high unmet need or where there are health inequalities in terms of healthy life expectancy.\(^\text{88}\) It is important going forward that further detail is provided on how this scheme will work in practice, and the level of resourcing that will be committed.

**Investing in transformation**

It is important that once efforts to address short and medium-term demands are in motion, steps are taken to place the health service on a more secure, sustainable and effective longer-term footing. This will require consideration both of how payment systems could be optimised, and how different parts of the NHS could be encouraged to work more collaboratively.

The National Audit Office has identified that funding flows in the NHS are complicated, and do not always support partnership working, integration or the better management of demand.\(^\text{89}\) This is certainly the case in cancer, where fragmented commissioning responsibilities have hindered work to:
• Encourage earlier diagnosis through the proactive investigation of potential signs and symptoms of cancer, including through expanding the use of diagnostic services and increasing urgent referrals
• Manage the 62-day standard across multiple providers in the cancer pathway
• Coordinate a person’s care when different interventions are delivered by different providers

Consideration must be given to designing and procuring new service models, at sufficient population size and for sufficient duration, to deliver the greatest impact from investment in transformation. There are opportunities to support efforts to do so, in particular through Cancer Alliances and other networked approaches. These approaches must be supported by a payments system which can overcome existing barriers to collaborative working.

Many capacity-saving approaches will require fundamental service redesign and investment in equipment or the NHS estate. Unfortunately, there is uncertainty about capital budgets, as well as a significant backlog in maintenance and equipment replacement. Funding mechanisms can help support investment by providing longer-term certainty and ensure that services are contracted for at scale.

Supporting a collaborative approach to cancer services

The NHS LTP makes clear that the NHS should be more proactive and coordinated in the way that it delivers care. Cancer services are well placed to serve as an exemplar for this change. Cancer Alliances were created as part of the Cancer Strategy for England and were tasked with being the main vehicles for the delivery of many of its recommendations, such as driving efforts to diagnose more cancers at an earlier stage, reducing variation across local health economies, and supporting and delivering transformation to cancer services.  

Cancer Alliances are strongly positioned to draw together key stakeholders, provide strategic direction and deploy resources to deliver transformation to cancer services in their geographical footprint, focusing on local priorities alongside national objectives. Their leaderships represent clinical expertise across the whole cancer pathway from primary care to post-treatment. They also seek to reflect the diversity of the population across the Alliance geography through commissioners, representatives from arms-length bodies, patient representatives, the third sector and local authorities. This inclusive model helps foster collaborative approaches to system-wide transformation. This approach is further supported by the expectation of a commitment to a shared vision, values and strategy, as well as the ability to drive change with the Cancer Alliances leadership having decision-making authority for their geographical area.

Cancer Alliances play a vital role in improving cancer outcomes, and will see increased prominence through leading on LTP cancer priorities for Integrated Care Systems. As such it is important that they are enabled to work as effectively as possible, including through being sufficiently and sustainably resourced. It is a positive development that indicative budgets for
Cancer Alliances have been set out until 2023/4, and have been allocated broadly on a capitation basis.

However, individual Cancer Alliance budgets remain reliant on the annual budgeting cycle, and all funding must be spent in the financial year it is allocated, reducing certainty in Alliances that they can budget for longer-term transformation. This budgeting cycle is also highly constrained by restrictive planning guidance that prevents Cancer Alliances from easily addressing local priorities alongside national ambitions. The adoption of a multi-year funding model could allow for Cancer Alliances to plan longer-term, more ambitious transformation of cancer services without potential funding uncertainty mid-project.

Previous attempts to move towards capitated budgets and alliance contracts for cancer services have had limited success. This is due to legislative barriers that hinder collaborative system working, which has contributed to problems associated with risk-sharing across organisations and the legacy of a culture of competitive behaviour between local organisations and/or individual providers.

Commitments to break down traditional barriers between care institutions, teams and funding streams are welcome and should create opportunities for cancer, including:

- Improving the transparency of cancer funding flows, so that outcomes can be tracked and progress measured against investment made
- Enabling local health and care economies to invest appropriately in areas that would make the most impact to patient outcomes locally, through greater collaborative responsibility and pooled budgets
- Supporting the move towards radiotherapy networks, spreading best practice and reducing variation in access to high-quality radiotherapy, as well as making best use of the radiotherapy workforce. This approach could also be taken in the move towards diagnostics networks

NHS England and Improvement should empower Cancer Alliances to be as effective as possible, through guaranteeing budget certainty and allowing the flexibility to invest in local priorities and longer-term system transformation

Changing the payment system

It will also be important to determine what further funding mechanisms will enable the removal of barriers to integrated care. Funding mechanisms which have been suggested to improve integration at the local level include:

- Whole-population annual payments, involving providing a single payment to a health system based on population factors
- Blended payment arrangements, made up of a fixed payment for delivering services as well as a volume-related element that reflects actual activity
The development and testing of new financial levers takes time and resource. Therefore, careful consideration should be given to how payment models can be changed, and how quickly. There are trade-offs to be had between completely overhauling the system and making smaller scale-changes.

An early priority should be to consider how best to resource Rapid Diagnostic Centres (RDCs). It is welcome that funding to establish RDCs has been set aside in Cancer Alliance budgets for 2019/20, and looking forwards, choosing the right payment mechanism for RDCs will be important to ensuring that they are effectively integrated with other diagnostic pathways as they are rolled out.

Lessons can be learned from other areas, such as payments for emergency and urgent care, where there is now a blended approach to emergency care tariffs, covering accident and emergency attendances, non-elective admissions and ambulatory emergency care, comprising both a fixed amount (linked to expected levels of activity) and a volume-related element (reflecting actual levels of activity), aligning both providers and commissioners. The variable element of the blended payment approach may provide a basis for considering how ‘on call’ diagnostic capacity could be sustainably resourced, but care must be taken to ensure that a blended payment system does not provide perverse incentives.

Any payment system will also need to take account of the consequential impact that Rapid Diagnostic Centre activity might have on other areas of diagnostic services, including elective imaging and endoscopy.

NHS England and Improvement should examine whether recent changes to the way in which Accident and Emergency units are funded provide a basis for considering how ‘on call’ diagnostic capacity, such as Rapid Diagnostic Centres, could be sustainably resourced.
Conclusion

The funding settlement and NHS Long Term Plan present an important opportunity to ensure that funding for cancer services is optimally delivered to improve outcomes. Now is the time for the NHS to act to ensure that any additional investment for cancer is directed at areas of cancer care that can deliver the biggest benefit to cancer outcomes. As this report highlights, well-designed funding mechanisms can help direct investment towards building necessary capacity and maximising existing capacity, allowing for funding to be effectively delivered to the areas where the biggest impact can be made.

The policy recommendations presented in this report and reiterated below advocate for a greater understanding of cancer funding, incentivisation of routine high-quality care and investment in transformation. These should be pursued to ensure that this opportunity is not missed, and that the UK achieves its aim of delivering world class cancer services.

1. NHS England and Improvement and Integrated Care Systems should use the principles set out in this report to guide how funding is directed in all NHS Long Term Plan implementation planning, to support the delivery of commitments related to cancer services in the Plan

2. NHS England and Improvement, NHSx, NHS Digital and the Department for Health and Social Care must prioritise the generation, collection and publication of better data about the costs of high-volume cancer pathways, as well as making better use of data currently available, for example by linking the Cancer Outcomes and Services Dataset with NHS Reference Costs

3. To guide efforts to plan increases in diagnostic activity, NHS England and Improvement should conduct research to:
   - Produce contemporary estimates of the proportion of diagnostic activity that relates to suspected cancer in imaging, endoscopy and pathology
   - Produce estimates of the likely increase in diagnostic activity due to interventions to improve cancer outcomes

4. NHS England and Improvement should design funding incentives that support the delivery of wider LTP objectives and quality of care and outcomes, for example through:
   - Streamlining pathways between referral, diagnosis and initial treatment, including through the use of best practice tariffs such as the Endoscopy Best Practice Tariff
   - Building diagnostic capacity, including consideration of a ‘capacity premium’ to enable investment in approaches which can free up scarce workforce
   - Testing innovative models of service delivery
• Encouraging services to take steps to ensure urgently referred patients are seen long before there is a risk of a breach occurring, and all patients receive timely diagnosis and first definitive treatment

5. NHS England and Improvement should ensure that appropriate contractual levers and incentives across Integrated Care Systems are in place when implementing commitments on smoking cessation. NHS England and Improvement should explore a sustainable future for NHS preventative services through multi-year budgeting approaches

6. Appropriate contractual arrangements and incentives, for example the Supporting Early Diagnosis Network Service Specification outlined by the new GP contract, should be used to encourage optimal, timely referrals for those with suspected cancer

7. NHS England and Improvement should consider incentives to increase diagnostic activity as part of efforts to enable earlier diagnosis, including for example activity-based payments

8. NHS England and Improvement should consider reforms to the National Tariff to support service optimisation and mitigate any potential perverse incentives. This should include the delivery of outpatient services, such as supporting implementation of stratified follow up based on risk and greater use of remote outpatient appointments

9. NHS England and Improvement should empower Cancer Alliances to be as effective as possible, through guaranteeing budget certainty and allowing the flexibility to invest in local priorities and longer-term system transformation

10. NHS England and Improvement should examine whether recent changes to the way Accident and Emergency units are funded provide a basis for considering how ‘on call’ diagnostic capacity, such as Rapid Diagnostic Centres, could be sustainably resourced
Appendix A: Current funding and financial levers across Cancer Research UK’s priority areas

There are various funding flows and financial incentives that currently exist for each of the key priorities identified by Cancer Research UK to improve cancer services in England. It is not always clear, as set out above, how this funding is delivered or how much of it is genuinely directed to the purpose for which it was intended. The funding flows and incentives are summarised below.

A focus on the cancer workforce

- Health Education England holds overall responsibility for the planning, training and development of the workforce, historically spending £4.8bn a year on undergraduate and postgraduate education and training. From 2017/18, HEE’s focus moved away from nonmedical education commissioning (with the move to student loans for nurses and allied health professionals), but they retain responsibility for clinical placements and postgraduate education.
- Health Education England has been given responsibility for developing and implementing the Cancer Workforce Plan. No additional funding was promised for this plan, so increased training and recruitment promised will have to be paid for out of HEE’s £5bn annual budget.
- In the 2017 Autumn Budget an additional £2.8bn was provided by the Government to the DHSC for staff salaries. £800m was also distributed across NHS and non-NHS providers, commissioning organisations and ALBs to meet the costs of the Agenda for Change pay deal in 2018/19 (calculated using a payment mythology based on 2018/19 financial plans and Electronic Staff Records).
- £52.1 billion was spent on staff costs by NHS providers in 2017/18 – equal to almost 65% of provider spending.

A radical shift to prevention

- The Department of Health and Social Care Section 7A grant provides ringfenced funds for national immunisation programmes (including HPV vaccinations) and screening programmes (breast, bowel and cervical cancers).
- Quality-based payments including CQUINs, the CCG Improvement and Assessment Framework, and QOF (for example the smoking cessation CQUIN indicator). However,
these are often ‘process’ focused rather than outcome focused, and are often linked to performance against the 62-day referral to treatment target

• Public health allocations to local authorities for smoking cessation, weight management and drug and alcohol misuse services. Many of these services have suffered significant cuts in recent years.

**Bold efforts to diagnose cancers early**

• £200m Cancer Transformation Fund committed to Cancer Alliances in 2016 to develop new models of care to improve early diagnosis. The awarding of this funding is linked to performance against the 62-day RTT target.

• Department of Health and Social Care Section 7A grant provides ringfenced funds for national immunisation programmes (including HPV vaccinations) and screening programmes (breast, bowel and cervical cancers).

• Government commitment to increase funding for diagnostic capacity by up to £300m by 2020 compared to the 2015 baseline.

• £15m from National Diagnostics Capacity fund to explore new and innovative ways to deliver diagnostic services.

• Quality-based payments including CQUINs, CCG Quality Premiums and QOF. For example, the Quality Premium for CCGs incentivises CCGs to increase the proportion of cancers diagnosed at stage 1 or 2.

**A world leading innovator**

• £230m commitment in 2012 to develop two proton beam therapy centres.

• Cancer Drugs Fund (£340m budget in 2018/19).

• £130m investment in radiotherapy services to upgrade and replace existing technology and equipment between 2016 and 2018 through the National Cancer Transformation Programme, of which £46m had been spent on 26 new machines by the end of 2017/18.

• Funding allocated to National Cancer Vanguard.

• £200m of Cancer Transformation Fund promised between 2017/18 and 2018/19 to ‘accelerate rapid diagnosis and enhance quality of life’

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*For example, the most heavily-weighted prevention-related CQUIN indicator (CQUIN 9c) offers 0.06% of contract value for achieving a threshold of 30% of smokers being offered both a referral to stop-smoking services and stop-smoking medication. Attaching the incentive to a measure of activity (the offering of services and medication) rather than an outcome (e.g., increase in the number or proportion of smokers who quit) creates the possibility that achieving the activity threshold could be prioritised above the outcome in order to guarantee the additional payment.*

How can we best incentivise world class cancer services in England?
Appendix B: Methodology

In order to develop the ideas presented in this paper, Cancer Research UK and Incisive Health undertook a three-stage process:

1. Desk research to evaluate the different forms of financial incentive in use in the NHS, the policy issues these create and examples from other conditions which might be relevant for cancer
2. A workshop that brought together experts on different aspects of cancer care from across Cancer Research UK, to identify the behaviours that should be encouraged in the NHS. From this, potential opportunities to develop incentives to encourage these behaviours through financial levers were identified.
3. A roundtable discussion with external experts, including leaders from Cancer Alliances, the Department of Health and Social Care, national NHS bodies, charities and representatives of NHS commissioners and the healthcare finance profession. All attendees contributed in a personal capacity, rather than representing an official organisational position

Roundtable attendees

<table>
<thead>
<tr>
<th>Name</th>
<th>Job title</th>
<th>Organisation</th>
</tr>
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<tbody>
<tr>
<td>Lawrence Atkins</td>
<td>Account Executive</td>
<td>Incisive Health</td>
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<tr>
<td>Sara Bainbridge</td>
<td>Head of Policy and Delivery</td>
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<td>Mike Birtwistle</td>
<td>Founding Partner</td>
<td>Incisive Health</td>
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<td>George Butterworth</td>
<td>Senior Policy Manager</td>
<td>Cancer Research UK</td>
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<td>Matthew Case</td>
<td>Policy Manager</td>
<td>Cancer Research UK</td>
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<tr>
<td>Matthew Cripps</td>
<td>Director of Sustainable Healthcare</td>
<td>NHS England</td>
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<tr>
<td>Richard Douglas</td>
<td>Deputy Chair</td>
<td>Senior Counsel</td>
</tr>
<tr>
<td>Tim Elliott</td>
<td>Senior Policy Advisor, Cancer</td>
<td>Department of Health and Social Care</td>
</tr>
<tr>
<td>Maddy Farnworth</td>
<td>Account Manager</td>
<td>Incisive Health</td>
</tr>
<tr>
<td>Brian Ferguson</td>
<td>Chief Economist</td>
<td>Public Health England</td>
</tr>
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</table>
We are very grateful for the insights and suggestions provided by external experts. However, the ideas presented in this paper represent the views of Cancer Research UK and Incisive Health alone.
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