Delivering on the Conservative Party Manifesto cancer commitments - Cancer Research UK representation to the Comprehensive Spending Review 2020

Progress over the last 50 years has transformed the prospects for people diagnosed with cancer in the UK. By 2010, half of people diagnosed with cancer survived for 10 years or more, up from a quarter in the 1970s.[i]

But the challenge ahead is immense, made more difficult by the significant impact COVID-19 is having on cancer care. Even before COVID-19 we were not on the right trajectory, with poor cancer waiting times demonstrating the need for urgent action. We must accelerate progress. Cancer remains the leading cause of death in the UK, and a growing and ageing population means that cancer incidence continues to rise at an alarming rate. 1 in 2 people in the UK will get cancer in their lifetime. By 2035, the number of new cancer cases is projected to rise to over a half a million cases per year.

We see lower survival in the UK than in comparable countries around the world, and significant variation in outcomes between cancer types and across regions of the UK. Cancer shines a strong spotlight on the importance of the Government's levelling up agenda. Unfortunately, inequalities are still evident across the cancer pathway. A person's survival from cancer should not be determined by their wealth or where they live. Sadly, too often it is.

The importance of this challenge is recognised by the Government. The 2019 Conservative manifesto committed to *'boost early cancer diagnosis across 78 hospital trusts'* and *'increase cancer survival rates'* in this country. The NHS Long Term Plan makes the commitment to detect 75% of cancers at an early stage by 2028. The Government has also put science at the heart of its agenda, committing to raise public investment in R&D to £22 billion per year by 2024/25, to achieve the ambition of 2.4% of GDP invested in research by 2027.

By bringing together bold actions to address barriers in the NHS alongside boosting science to drive the innovations that will help the patients of tomorrow, we believe we can make huge strides towards achieving these commitments. But the Government is facing a cancer crisis and will fail to deliver on its manifesto commitments unless the Comprehensive Spending Review:

1. **Invests to grow the NHS cancer workforce to fill current gaps and adequately meet rising demand for cancer diagnosis and treatment.** We estimate that an additional investment of £260m will be needed in Health Education England over the next 3-5 years to achieve growth in key cancer professions – however, more may be needed.
2. **Significantly invests in the necessary diagnostics equipment and technology**, to support new service models and drive the paradigm shift needed to diagnose more cancers at an early stage. This is a fundamental requirement to improve survival from cancer.
3. **Creates a time-limited Life Sciences Charity Partnership Fund over the next 3 years (2021/22 to 2023/24), of at least £310m in year 1 and anticipated tapering in years 2 (e.g. 75%) and 3 (e.g. 50%)** to reflect expected recovery in fundraising income**.** This Fund will protect critical R&D jobs, infrastructure and projects funded by medical research charities in the UK.

A paradigm shift in our ability to diagnose cancer at an early stage is critical to improving survival. Patients diagnosed early, at stages 1 and 2, have the best chance of curative treatment and long-term survival. But in the UK, we diagnose just over half of patients at an early stage, demonstrating significant opportunity for improvement. Early diagnosis saves lives and would likely be cost-saving for health systems in the long term due to the high cost of treating late stage disease.[ii] The UK has the opportunity to become a world leader in early detection and diagnosis of cancer, if the right investments and policies are put in place.

However, we do not have enough cancer professionals working in the NHS or enough diagnostic equipment to enable this shift. This was highlighted in the 2015 Cancer Strategy and despite some progress we are yet to see the significant growth in the cancer workforce needed to allow us to keep up with demand and deliver improved outcomes for patients. COVID-19 has exacerbated this. Long-term investment to grow the cancer workforce is a critical chance to recast the NHS as a driver of transformation and innovation, investor in skills and creator of much needed jobs across the UK. This must come alongside investment in more diagnostic equipment, technology and data infrastructure to support new service models and drive innovation to address the critical barriers of diagnosing cancer at an early stage.

Ambitions to significantly improve outcomes for cancer patients cannot be met without continued and sustainable investment in medical research. Charities that fund medical research are a vital pillar of the UK's unique R&D ecosystem and help make the UK a global hub for life sciences. For the UK to build on its strengths and cement itself as a world-leader in cancer research over the next decade, the contributions of medical research charities need to be preserved. This will support our post-COVID-19 economic and social recovery, foster scientific talent, and ensure the UK remains a science superpower. And on the eve of our departure from Europe, we need to invest in medical research and talent, to help build brand Britain and increase our reputation as a global scientific partner, innovator and leader.

It is also key to continue to improve the nation's health and reduce demand on the NHS through increased investment in prevention and public health. Nearly 4 in 10 cancers are preventable, but strong support needs to be in place to help people make healthy choices. COVID-19 has provided a further stark reminder of the importance of investing in prevention and public health.

Investment in research and health services will not only improve cancer survival in this county but will act as a catalyst for improvement in other disease areas, wider wellbeing and economic benefits: preventing ill health; boosting economic activity and driving global medical breakthroughs. These reflect the concerns of the British people and must be among the key priorities for this Government. The Comprehensive Spending Review is an opportunity for a cancer reset. It is an opportunity to build back better.

Below we set out several recommendations to make this reality, aligned to Government ambitions and manifesto commitments.

Full Cancer Research UK (CRUK) Representation

Improving outcomes in public services, including supporting the NHS

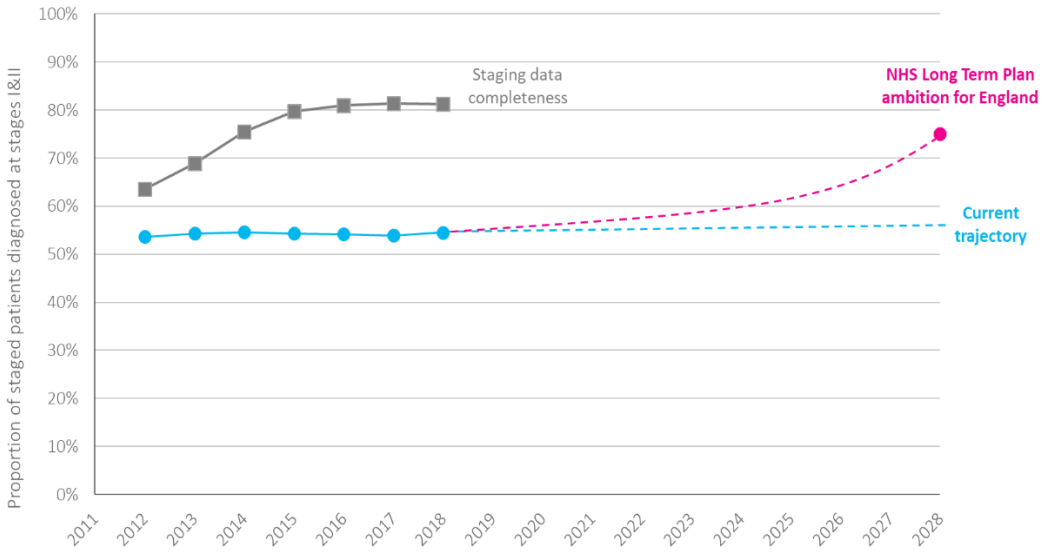
Invest in the NHS cancer workforce to support jobs, fill gaps and improve outcomes for patients

1. The COVID-19 pandemic has had a profound impact on healthcare services across the UK. Service disruption has resulted in a substantial cancer backlog delaying diagnosis and treatment for cancer patients. As the NHS works to recover from this crisis, it must also take the opportunity to transform into a more resilient system which delivers world-class outcomes for its patients – and Government must support it to do so.

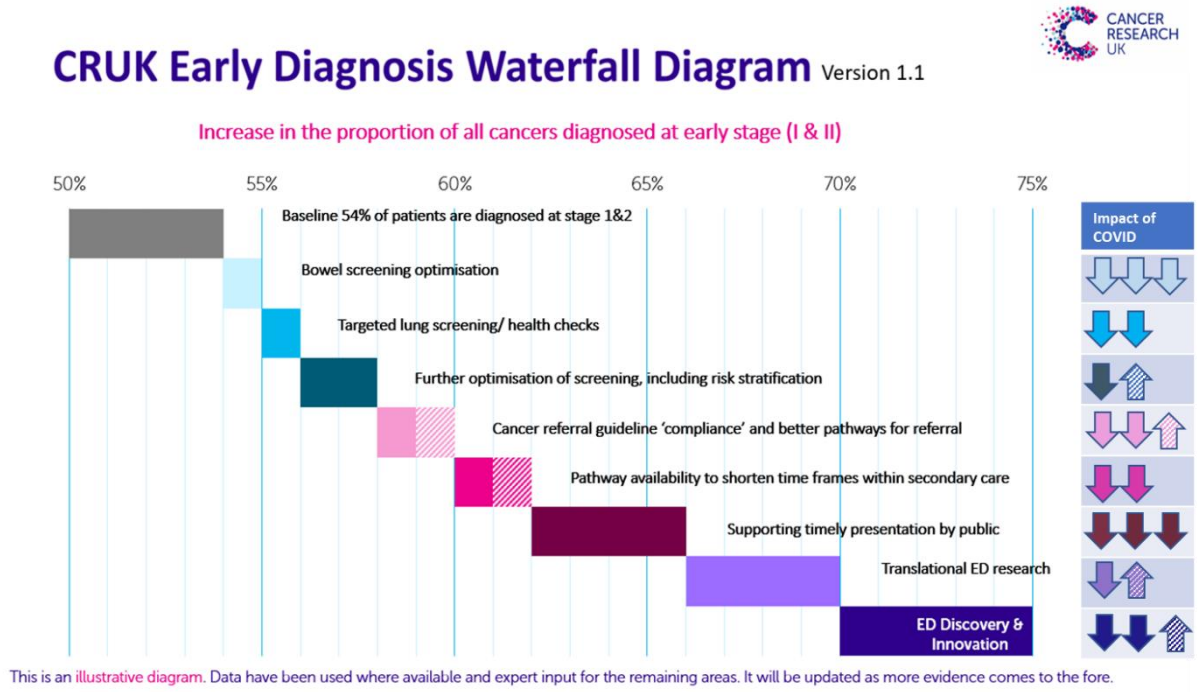
2. The International Cancer Benchmarking Partnership (ICBP)[iii] has led the way in trying to understand differences in survival between countries including Canada, Denmark, Australia, Norway, New Zealand, Sweden and Ireland. Compared with many of these countries (based on wealth, health system and data quality), we remain behind. Our analysis estimates that we need to more than double the pace of improvement in 5-year survival for the UK to be among the best.

3. The Government has set a welcome ambition to improve early diagnosis in England from 54% to 75% of cancers diagnosed early (at stage 1 or 2) by 2028. If this ambition is met, it would significantly improve cancer survival and help close the gap between the UK and other comparable health systems. [iv] However, the challenge is huge based on current trajectories (as shown below). It would mean diagnosing more than 100,000 additional cancer patients at stage I or II each year by 2028.

Percentage of staged (stageable) cancers diagnosed at stage 1 and 2 in England, with staging data completeness, and the Long Term Plan ambition trajectory



4. Meeting this ambition will require substantial investment and effort, to implement a range of interventions, as captured in CRUK's Early Diagnosis Waterfall Diagram below. Furthermore, the impact of COVID-19 is likely to make the ambition even more challenging. The Waterfall Diagram also attempts to capture the impact of COVID-19 on each intervention's capability to shift the stage of diagnosis. Most of this has been in a negative direction, but it is possible that some of the rapid service transformation will have a positive impact. Unfortunately, overall, it is reasonable to assume that the pause of cancer screening, altered patient and health professional behaviour, reduced availability of tests and protracted pathways will contribute to a poorer stage distribution which, for some patients, will contribute to poorer survival outcomes.



5. It is therefore essential that the Government doubles its efforts to mitigate the impact of COVID-19 and transform health services to deliver its ambitions. A fundamental issue that must be addressed first and foremost is NHS staff shortages in key professions important to cancer (hereafter referred to as the 'cancer workforce'). The NHS continues to be significantly understaffed, limiting the ability of current staff to deliver the best care for its patients and innovate. In January 2020, the 62 day wait between urgent referral for suspected cancer and first treatment was the worst on record (not counting during COVID-19)[v].

6. This creates a vicious cycle as the impacts are also felt by staff themselves, causing stress, burn-out and further attrition. Delivering the initiatives outlined above, as well as others to improve cancer treatment, will not be possible without a significant uplift in the NHS cancer workforce. It is imperative that action is taken to invest in workforce growth in this spending review.

7. Before COVID-19, staff shortages affected every part of the cancer pathway. 1 in 10 posts across the NHS were vacant in 2018/19 and it was estimated that, with no action taken, this would rise to 1 in 7 posts vacant by 2023/24.[vi] According to the Royal College of Radiologists, 70% of clinical directors of UK radiology departments feel there are insufficient clinical radiologists to deliver a safe and effective level of patient care, whilst outsourcing costs to the UK increased by 32% from 2018 to £108m in 2019.[vii] According to the Royal College of Pathologists, only 3% of

histopathology departments have said they had enough staff to meet clinical demand – and pressures are compounded by an approaching retirement crisis with a quarter of all histopathologists aged 55 or over.[viii]

8. Unfortunately, this situation has been exacerbated by the COVID-19 pandemic. Between April and July 2020, around 3 million people were left waiting for cancer screening, urgent cancer referrals plummeted leaving hundreds of thousands without cancer tests, and more than 30,000 fewer cancer treatments took place compared to normal.[ix] Whilst the NHS continues to operate at below pre-pandemic levels, this backlog will continue to grow. Tackling the backlog is going to require the NHS to operate at above pre-pandemic levels. NHS operating capacity is further reduced by the necessary implementation of measures to prevent and control the spread of COVID-19. These measures – such as PPE, deep-cleaning of equipment and social distancing – are time and resource intensive. Addressing the cancer backlog must be a national priority, with additional resources put in place as quickly as possible.

9. The Government must also act now to ensure that the cancer workforce is fit for the future. Demand on cancer services is set to grow. An ageing and growing population will mean that, by 2035, over 500,000 people will be diagnosed with cancer in the UK each year (150,000 more than in 2015); of these, 46% will be over 75 (up from 36% in 2015), meaning that thousands more patients with cancer will be presenting with complex needs and require greater staff attention.[x,xi]

10. Staff shortages are already limiting the success of positive initiatives and creating inefficiencies. For example, the NHS Long Term Plan commits to rolling out the faecal immunochemical test (FIT) in the bowel screening programme and to lowering the age range to 50. This will result in more people needing follow up tests which will require more endoscopy staff to deliver this commitment. The bowel screening programme is one of the best ways to detect bowel cancer at an early stage, when it is easier to treat successfully. Yet, due to shortages in the endoscopy workforce, FIT has been introduced in England at a less sensitive level than in Scotland. This means that more than 1,000 cancers and nearly 7,000 potentially pre-cancerous growths might be missed every year, compared to if England use the same sensitivity as used in Scotland.[xii]

11. As more cancers are diagnosed, including many at an earlier stage of disease, there must be enough staff to deliver swift treatment if it is to lead to improved cancer survival outcomes. The type of treatment patients receive will be affected by the shift to earlier diagnosis: as many as 70% of patients diagnosed with stage 1 cancer receive surgery compared to 13% at stage 4.[xiii] The needs of the future workforce will also be impacted by emerging forms of treatment, like advanced radiotherapy techniques and the growth of genomic medicine, which require staff with specialist skills.

12. While we recognise that technological developments, such as the use of AI, and better ways of working, such as use of skills mix, may contribute, they will not provide the entire solution. Ultimately, we need more staff in addition to these innovations.

13. We welcomed the commitments that have been made so far to support the expansion of the cancer workforce – including the Government's announcement in September 2019 that Health Education England (HEE) would receive a 3.4% increase to its budget in 2020/21, and

commitments made to growing the cancer workforce in 2021 as set out in the NHS People Plan 2020/21. However, these commitments are not sufficient.

14. HEE previously estimated that the NHS will require an aggregate growth of 45% in its cancer workforce to be able to deliver world-class cancer services by 2029.[xiv] Forthcoming research commissioned by CRUK estimates that, to achieve this level growth across seven key cancer professions, an additional investment of between £142mm and £260m would be required in staff training and education. However, we understand that growth of 45% is no longer considered enough, and therefore the required investment is likely to be higher.

15. It takes a minimum of three to five years to train newly qualified staff to become specialists in these professions. Investment in HEE is therefore needed over the course of the next spending review period to deliver the cancer workforce needed by 2029.

16. Investing in the cancer can be a catalyst for improvements in other disease areas. Growing the NHS workforce has benefits beyond cancer, improving the health and wealth of the population more widely. Diagnostic staff that are essential for cancer services are also essential for diagnosing non-cancer conditions. As an example, a recently published study followed 2961 patients who were referred to multidisciplinary diagnostic centres in England. Whilst 8% went on to be diagnosed with cancer, over 50% were diagnosed with non-cancer conditions.[xv]

17. Moreover, investing in the NHS workforce provides a source of economic opportunity for the local community through job creation. The NHS employs more than 1.6 million people across the UK, and in some parts of the country, health employment accounts for as much as 10% of total employment.[xvi] In many local economies, hospitals act as anchor institutions providing a valuable source of employment and opportunities for skills development. Therefore, increased funding for NHS workforce training and planning will also contribute to the Government's priorities to level up economic opportunity across the country and invest in jobs and skills to strengthen our economic recovery from COVID-19.

18. **Government must provide enough investment for the long-term NHS People Plan – we estimate that an *additional* £142-£260m will be required for HEE to deliver 45% growth across 7 key cancer professions by 2029. But we understand that higher growth levels are required and so it is likely that investment will need to be greater. Further action is necessary in the short term to adequately grow the cancer workforce to address the backlog caused by COVID-19 as well as build capacity for the future. This is critical to meet the demands of a growing and aging population, to have the chance at achieving ambitions to transform cancer survival, level up variation across the country, and provide valuable jobs and skills.**

Building back better – capital investment to transform cancer services

19. COVID-19 has tested the resilience and adaptability of the NHS, putting strain on the system but also driving innovation. Sufficient and sustainable capital investment is now required to ensure the NHS has the capacity to deliver cancer diagnosis and treatment safely and efficiently, deliver on the commitments of the NHS Long Term Plan and further develop and embed innovative, evidence-based approaches to service delivery.

20. The spending review offers a powerful opportunity to provide the NHS with the longer-term certainty to invest in the capacity it needs – both in terms of kit and workforce (covered above) –

to operate efficiently and effectively into the future. This will be vital not only to addressing the growing backlog of cancer patients we face today, but also accelerating progress towards the ambitions set out in the NHS Long Term Plan.

21. However, recent years have been marked by underinvestment, with the UK spending on average half as much on capital in health care compared to similar countries.[xvii] While the NHS Long-Term Plan was matched with a multi-year revenue funding settlement, committed to in legislation, no such commitment was made for wider health budgets including capital.

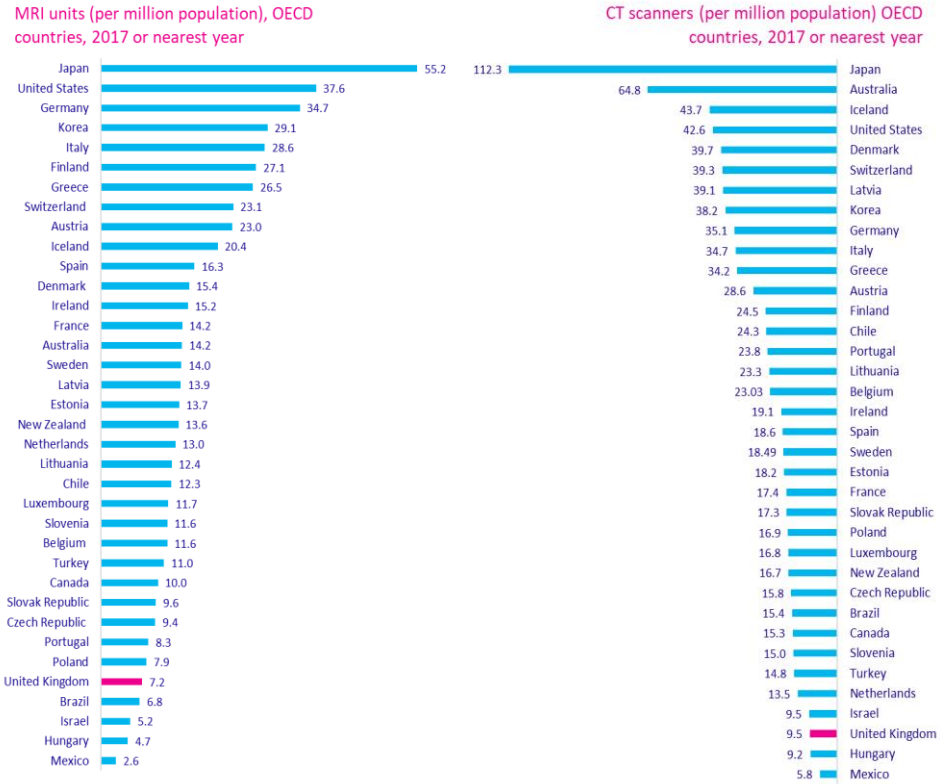


Figure 1, Source: OECD, "Health at a Glance 2019: OECD Indicators," OECD Publishing,

22. The UK lags behind comparable countries in terms of diagnostic capacity, with the number of MRI and CT scanners well below the OECD average per million population. While there was welcome investment in diagnostic equipment in 2019, the £200 million committed was well below the estimated £1.5 billion required to reach the OECD average.[xviii]

23. Investment is also needed in broader diagnostic infrastructure, as recognised by the NHS Long Term Plan, to ensure that patients can be diagnosed quickly. Whether through Rapid Diagnostic Centres (RDCs) or Community Diagnostic Hubs (CDHs), a model for delivering rapid diagnostics to patients needs to be funded and rolled out.

24. Pathology plays a major role in the diagnosis and treatment of cancer, as well as many other conditions – and demand on pathology services will increase due to higher cancer incidence, the growing complexity of referrals and requests, and the introduction of initiatives to increase earlier diagnosis.

25. There are major opportunities to improve the effectiveness and efficiency of pathology services, through recent moves to a networked model for example. However, this will require a move away from the current outdated system – reliant on physical samples moving between hospitals

and labs – to a modern, digital pathology service. Investment in digital pathology, both within labs and the IT infrastructure to support this, will be vital to support an efficient service. This is also true for imaging networks, where a digitisation programme will be crucial to delivering on potential efficiencies.

26. Radiotherapy centres should be replacing their linear accelerator machines (LINACs) every 10 years. The last major investment programme saw £130m delivered as part of the Cancer Strategy for England.[xix] However, with 46% of trusts still using machines which are 10 or more years old, with one that has been in use for 17 years[xx], this investment has not gone far enough. Outdated LINACs are unlikely to be working as well or be able to deliver innovative treatment modalities. They are also more likely to break and suffer more downtime.

27. To make the most of the opportunities that lie ahead, the NHS must have the funding it needs to plan for the replacement of outdated LINACs, without it impacting on individual Trusts and Trust Foundations' ability to access capital funding for other projects. A centralised investment strategy for maintenance and upgrading of LINACs – as recommended by the Cancer Strategy in 2015 – will be the most effective way of achieving this.

28. Used to its full potential, data routinely collected by the NHS in national datasets and medical records has the potential to transform outcomes for cancer patients through supporting the innovative medical research and analysis. The NHS is well placed to support research and innovation; as the Life Science Industrial Strategy highlights, the NHS has the benefit of being a single national provider with population-level datasets and a large, diverse population. But to fulfil this potential there must be adequate and sustained investment to build a world leading health data infrastructure, so that data is collected accurately, collated into reusable datasets and is accessible for research, innovation and service improvement in a safe, secure and straightforward way. CRUK has a vast range of expertise in data analysis and strong ties with our research and patient communities. We would welcome the chance to work with Government to maximise the opportunity of health data.

29. **Significant investment is needed to provide more equipment in the coming years. Government should develop a centralised investment strategy for the maintenance and upgrading of vital equipment in diagnostic and treatment services, with protected capital funding to ensure that all kit is replaced or upgraded when it reaches the end of its lifespan.**

30. **The roll out of innovative approaches to diagnostic services – including proposed models for diagnostic hubs (such as the CRUK supported Multidisciplinary Diagnostic Centres[xxi]) - will require investment in new kit and infrastructure, as well as workforce, to ensure these centres do not unintentionally draw capacity out of other settings. It is important to note that whilst investing in diagnostic equipment would see improvement for cancer patients, it would also benefit patients with other conditions and the health system as a whole by facilitating more timely diagnosis and therefore access to appropriate treatments.**

Making the UK a scientific superpower and strengthening the UK's place in the world

Investing in charity research through a Life Sciences-Charity Partnership Fund

31. For the UK to build on its strengths and cement itself as a world-leader in cancer research over the next decade, the contributions of medical research charities need to be preserved. This will support the UK's post-COVID-19 economic and social recovery and ensure the UK remains a science superpower. Since charities play an important role in supporting early career researchers and develop a pipeline of research talent in the UK, this will also make a valuable contribution to the Government's spending review objective to prioritise jobs and skills to strengthen the UK's economic recovery from COVID-19.

32. To strengthen the UK's standing as a science superpower, the spending review must recognise all elements of the nation's vibrant research ecosystem and support them to thrive. One of the key strengths of UK life sciences is the diverse research base – a combination of public, private and charitable funding sources supports innovation by fostering a network of expertise and enabling a wide range of projects with diverse risk profiles. This creates a high-quality, globally competitive medical research environment and serves as a magnet for international talent.

33. Charities channel money into UK research that may otherwise go elsewhere – leveraging donations from the public, corporations and philanthropists. This in turn attracts further funding from other sources, boosting the economy and accelerating progress for patients. Charitable life sciences research brings an added benefit to the economy – every pound invested in medical research delivers a return equivalent to around 25p in perpetuity.[xxiixxiii] Charities are also experienced at brokering meaningful partnerships with industry that bring both patient and economic benefit. CRUK has brought 10 drugs to market through commercial partnerships with industry which have treated hundreds of thousands of patients around the world.[xxiv]

34. For example, CRUK commercial partnerships are an important contributor to UK PLC by catalysing entrepreneurship, translating ideas from UK labs to industry, and generating wealth within the UK economy. As of April 2020, CRUK's commercial partnerships had created 43 start ups which collectively have leveraged more than £1.5bn.[xxv] In oncology, we are also the second biggest licensor in the world, fuelling the pipelines of companies such Astra Zeneca, Novartis, and mid-sized biotechs.[xxvi] It's these elements that help make the UK a world leader in life sciences research.

35. Unfortunately, COVID-19 has had a devastating impact on the income of many medical research charities, including CRUK. We have already cut £44m from our research this financial year, and we are now planning to reduce our baseline funding from £400m per year to £250m per year – a potentially devastating loss of funding for the UK's cancer research environment. The Association of Medical Research Charities (AMRC) estimate between a £252 - £368 million shortfall in medical research charity sector investment in UK R&D in FY20/21 alone.[xxvii]

36. We need to minimise the damage to infrastructure that has taken decades to build, and needless cuts to thousands of scientific jobs that will be essential for our future pipeline of research talent.

37. **The spending review should create a time-limited Government-charity co-investment scheme that provides a level of match funding from Government for future charity research over the**

next three years *via* a Life Sciences-Charity Partnership Fund. This would provide at least £310m in year 1 and we anticipate would taper in years 2 (e.g. 75%) and 3 (e.g. 50%) to reflect expected recovery in fundraising. This is in line with the Government commitment to raise public investment in R&D to £22 billion per year by 2024/25 and will support Government to achieve the ambition of 2.4% of GDP invested in research by 2027.

Invest in sustainable research funding for our world-leading universities in the NHS and through the NIHR

38. Charities work in partnership with universities to deliver high-quality research; 87% of medical research charity grants go to university research[xxviii] and around 15% of university research income comes from UK charities.[xxix] UK university income has been severely hit by COVID-19 and whilst existing support packages will provide some more stability to the sector, more needs to be done to support the long-term stability of university research. A vital part of this is the quality-related (QR) research funding component of the dual support system, including its charity support element.

39. QR funding is crucial to sustain the excellence of our science base through un-hypothecated funding that enhances the stability and autonomy of institutions. This science base is crucial to enhance the UK's innovation landscape and support the commercialisation of research. By investing in science through the dual support system, Government leverages additional investment from charities and industry, generating further scientific and economic growth. For every £1 spent by the Government on R&D, private sector R&D output rises by 20p per year in perpetuity.[xxx]

40. Modest uplifts through Research England to underpinning QR funding in recent years are a positive first step. However, these modest uplifts come after many years of decline in real terms value.

41. **To ensure the long-term sustainability of university research it is vital Government commit to significant uplifts to mainstream QR funding.**

42. The National Institute of Health Research (NIHR) underpins the UK as an attractive destination for clinical research. It funds high quality research, provides world-class research infrastructure, and plays a key role in developing the skills of health researchers and building capacity across disciplines. The NIHR Clinical Research Network (CRN) supported 6,106 studies last year, recruiting 870,250 patients.[xxxi]

43. With a key aim of encouraging applied health research activity to follow patient need, NIHR attracts the nation's leading researchers and actively includes patients to help design and shape research, as well as participate. This in turn benefits patients, as it has been shown extensively that research-active NHS Trusts have better patient outcomes. For example, NHS Trusts with greater levels of NIHR clinical trial activity had reduced levels of mortality and better overall CQC outcomes.[xxxii] Research also provides benefits beyond those taking part, as the findings can improve the future standard of care for all patients.

44. NIHR's budget has been flat for the last three years whilst there have been increases to Government R&D funding through UK Research and Innovation (UKRI). Investing in the whole

medical research pipeline, from basic to applied clinical research, is vital to reach the Government ambition to boost R&D to 2.4% of GDP by 2027.

45. Sufficient support for health research is needed to keep the NHS at the cutting edge of medical treatment and to support the implementation of NHS Long Term Plan ambitions for research and innovation. Recent MHRA data for clinical trial applications suggest that clinical trial activity in the UK is declining:[xxxiii] NIHR investment is particularly important to provide stability and attract further investment as the UK leaves the EU. Investing in the NIHR will also help the UK learn from the pandemic and support the health and care system to recover.

46. As well as benefitting patients, there are commercial gains for the health and care system to be made from investing in clinical research. In 2014/15, the NIHR CRN supported clinical research activity that generated £2.4 billion in added value and almost 39,500 jobs in the UK.[xxxiv] Spill-over benefits are also seen since the NIHR research infrastructure actively supports collaboration with the life sciences sector and the commercialisation of new research and related technologies to help grow new companies. For every £1 of NIHR spend in 2016–18 the infrastructure leveraged £1.05 from industry. In 2018/19 the NIHR Biomedical Research Centres and Facilities leveraged £245.7 million from industry (a 7-fold increase from £33M in 2009/10).[xxxv]

47. **If the Government is to achieve its manifesto commitment to make the UK the leading global hub for life sciences, it must increase investment in health research through the NIHR, as recommended in the Life Sciences Industrial Strategy. This will enable the NIHR to refresh equipment, technology and infrastructure that attracts industry partnerships, support research in primary care and community settings, reflect changes in the patient treatment pathway, reverse the declining number of clinical academics and deliver research in areas of the country where the public health challenges and health inequalities are greatest.**

A visionary decade for cancer research that prioritises early detection and diagnosis

48. One of the greatest health challenges facing our society is the early detection of disease, when it is more treatable or manageable. In cancer, early detection and diagnosis dramatically improves survival prospects. The importance of this challenge is recognised by Government and the NHS Long Term Plan, which commits to detect 75% of cancer at an early stage by 2028. As well as the survival benefit, there is a globally rising tide of industrial and private finance interest in this space. However, the field is beset by a lack of research funding and infrastructure, and a market failure/lack of industry investment due to excessive R&D costs, high regulatory barriers and an undervaluing of early detection technologies by the health system.

49. Progress in the early detection and diagnosis of cancer will only be possible through collegiate action from many sectors and stakeholders which is why CRUK will shortly be publishing an Early Detection and Diagnosis of Cancer Roadmap. This shared vision for the community will lay out a series of actions needed to accelerate the UK towards this goal; Government support for these recommendations will be essential if we are to secure the full health and economic benefits.

50. The production of the Roadmap is an example of the value that charities bring to the UK research ecosystem – brokering collaborations between different parts of the system to unite under a shared vision. The actions we propose will also have the potential to feed into solutions for other diseases and lead to a future where there is the maintenance of health, rather than firefighting symptomatic disease.

51. Genomics will also play a key role in transforming the prevention, early detection and treatment of diseases including cancer. It is important that the Government continues to invest in the genomics infrastructure in the UK, to fulfil existing commitments in areas like cancer, and further advance research and innovation in areas like early detection.

52. **The UK has the potential to be the global leader in R&D and commercialisation in early detection and diagnosis which will save lives and create a thriving sector in the UK economy. Government should identify early detection and diagnosis as a key priority and commit to work with CRUK to develop appropriate funding initiatives to meet the recommendations in the Early Detection and Diagnosis of Cancer Roadmap.**

Building and leading global partnerships – a role for Government

53. Tackling the biggest challenges in cancer requires a global approach – nearly 50% of all UK cancer research involves international collaboration and evidence shows working with colleagues from overseas makes research more impactful.[xxxvi] CRUK recognises this through our international research programmes which facilitate the creation of teams based in multiple countries working towards a shared goal.

54. CRUK's Cancer Grand Challenge (CGC) is a series of £20m awards seeking international, multi-disciplinary teams willing to take on the toughest challenges in cancer. Awards provide the freedom to try novel approaches, at scale, in the pursuit of life changing discoveries. Like the intentions behind ARPA, CGC seeks to fund high-risk, high-payoff research in emerging fields of research and technology.

55. So far, over £130m has been invested, funding 7 teams featuring 73 research groups and spanning 9 countries. In August 2020 we stepped our ambition up even further through a partnership deal with the National Cancer Institute in the US, where the US Government will provide $225M in match funding.

56. **The UK Government should also consider partnering with CRUK's CGC initiative through match funding as a powerful, high profile example of a post-EU exit global scientific partnership. UK Government investment would accelerate and amplify the impact of CGC and further cement the UK on the global stage as a leader in cancer research.**

Remaining competitive - attracting, recruiting and retaining global scientific talent

57. A mix of domestic and international talent underpins the UK's world leading research environment, and the international movement of talent is a vital characteristic of medical research. 50% of the PhD students CRUK funds, for example, are not originally from UK.

58. As the Government seeks to cement the UK's position as a science superpower, it is essential that the immigration system enables the recruitment of global scientific talent at all levels. The research and innovation sector has welcomed a series of measures, not least the Global Talent Visa, which streamlines scientific migration and signals the UK's openness to international research talent.

59. However, there is more to be done to ensure that the opportunity of a once-in-a-generation reform of the immigration system is maximised. In particular, high costs associated with current proposals risk deterring international talent and undermining Government ambitions to attract talented research and innovation staff.

60. Analysis suggests that, under proposals for the Global Talent Visa, researchers moving to the UK would still face considerably higher costs than for comparable scientific nations.[xxxvii] And many research staff, particularly early career researchers and technicians, will not qualify for the Global Talent Visa, but instead will enter under the skilled worker route. This route is extremely expensive for employers and employees, with average upfront costs of £8,419 - around 540% the cost of those in other comparable countries.[xxxviii]

61. Generally, research organisations cover some of these upfront costs, particularly the Health Surcharge. With EEA workers now moving to these immigration routes, we risk hitting the research and innovation sector with large administrative costs at a time when funding is under significant pressure as a result of the COVID-19 pandemic. Our analysis suggests that a typical CRUK institute could face additional costs of between £315,000 to £800,000 as a result of the new system. The Francis Crick Institute, Europe's largest biomedical research facility under one roof, could accrue new costs as high as £600,000 a year.

62. These potential costs place additional pressure on a sector already under strain, and risk undermining the Government's ambition to make the UK a go-to destination for scientific talent.

63. **With visa costs not yet finalised, the Government should revisit fees structures to ensure the UK is in line with other scientific powers. The announcement of a lower-cost Health and Care Visa route was positive, and consideration should be given to expanding this route to include medical researchers.**

Levelling up research infrastructure and investment

64. In 2018/19, CRUK spent £442 million for research in institutes, hospitals and universities in over 40 UK towns and cities. Unfortunately, due to the impact that COVID-19 has had on our income, we could be forced to cut £150m research funding per year, approximately 35% of our total research spend last year.

65. Without support from Government, we will be forced to significantly scale back the research and infrastructure we fund in some UK locations, reducing the regional spread of our research investment. Due to the critical mass of high-quality research capacity in the South East, our investment is likely to become even more weighted here, countering Government efforts to rebalance research investment across the UK.

66. In our experience, if a critical mass of high-quality research capacity is built in a location this has the potential to leverage additional research funding to expand and strengthen this capacity. To be effective, this will require clear UK-wide and local strategies that set out research strengths and priorities for each location with a strong focus on research excellence.

67. For example, it is likely that each location could benefit from focusing on a limited number of scientific and clinical areas that are core strengths rather than each area attempting to develop research capacity in a broad range of disciplines. Support and incentives for collaborations between research teams in multiple locations could also support successful collaborative grant applications that would enable research capacity to be built. Any local strategy would benefit from being in line with the strategic objectives of major public, private and charity funders as this could increase the ability to attract inward investment.

68. **The Francis Crick Institute model is a great example of multi-partner collaboration across the public, university, charity and industry sector. We are looking to strengthen national infrastructure for biomedical and cancer research across the UK, and we would be keen to explore other multi-partner research models akin to the Francis Crick Institute with Government.**

Levelling up health inequalities and economic opportunity across all nations and regions of the country

69. The levelling up ambition across the UK is hugely important, not just for the wealth of the nation but also for the health of the nation. The NHS England cancer plan of 2000 aimed to reduce inequalities in cancer survival between rich and poor[xxxix], with similar strategies for tackling health inequalities in all UK countries[xl,xli,xlii] Unfortunately, inequalities are still evident right across the cancer pathway.

70. People from poorer areas have higher risk of cancer, worse experiences in the health service and poorer survival from cancer, meaning they are disadvantaged at every step of the cancer pathway.[xliii]

71. In England, there are more than 27,000 extra cases of cancer each year due to socioeconomic deprivation from cancer where the rates are high for the most deprived.[xliv] This is more than 76 extra new diagnoses per day that could be avoided. The mortality rate from cancer is 50% higher if they're from a poorer area than a wealthy one. [xlv]

72. People experiencing higher deprivation are more likely to smoke or to be obese, are less aware of symptoms of cancer and say there are more barriers to seeking help than people from wealthier areas. Barriers include difficulty getting an appointment at a suitable time or with a doctor, being worried about going for tests, or fear of wasting the doctor's time, leading to people from poorer communities being less likely to go to the GP when they have symptoms.

73. People from poorer areas in England are 50% more likely to be diagnosed through A&E and are more likely to be diagnosed at a later stage for certain cancer types including breast, melanoma and prostate cancer, which is likely to contributes to poorer survival.[xlvi]

74. People from less affluent communities are also less likely to take part in screening. This is evident even with the introduction of FIT for bowel cancer screening, and is likely to lead to more cancers and later stage disease for more deprived communities with contributes to poorer survival.

75. It is therefore essential to focus energy and investment on tackling the root causes of health inequality. 1 in 4 cancers in the UK are preventable through lifestyle changes.[xlvii] The sections below focus on how the Government can intervene to ensure all people can make healthier lifestyle choices and reduce their risk of cancer. Actions to help level up in science and in within the NHS are covered in the preceding sections.

Investing in local public health services

76. Preventable disease and mortality continue to have a massive impact on our nation's health, health services and economy, and this has only come into sharper focus since the emergence of COVID-19. The burden of preventable risk factors like tobacco, obesity and alcohol meant the UK didn't go into the pandemic fighting fit. Many of the underlying health conditions frequently

caused by these risk factors have now been shown to exacerbate the negative impacts of COVID-19, placing further pressure on our health and social care system and threatening economic productivity.

77. Now more than ever, investment in disease prevention must be a priority for Government. But this is not just about preventing disease. Investing in prevention will also help to level up unfair health inequalities, bolster our health and social care system and the economy, so we can rebuild, recover, and eventually, thrive in the wake of COVID-19.

78. Since assuming responsibility for public health and prevention services, councils have had to operate within an increasingly challenging environment. Since 2015/16 local authorities have experienced a sustained programme of cuts which is severely compromising their ability to provide the vital functions and services that prevent ill health: in 2019, the public health grant was more than a fifth (22%) lower in real terms than allocations in 2015/16.[xlviii]

79. Last year's 2.6% real terms uplift announced by the then Chancellor of the Exchequer, while welcome, was insufficient to fill the £0.9 billion funding gap needed to simply restore cuts since 2015/16[xlviii], and is far less than the over £2 billion a year extra required to allow additional investment in the most deprived areas where there is greatest need.[xlviii]

80. However, these estimates don't consider the impact of COVID-19 on local government public health budgets, and the funding required will undoubtedly be greater now local authorities have had to respond to the unprecedented challenge of the pandemic. As well as working hard to safely deliver normal public health functions, council-led public health teams have also had to respond to the pandemic by supporting national efforts to prevent the spread of COVID-19, protect vulnerable members of the community and support local businesses and communities.

81. These funding cuts have directly impacted the delivery of local functions and services that prevent ill-health, despite them being among the most cost-effective interventions available:

    a. Local stop smoking services, which offer the best chance of successfully quitting[xlix] are increasingly threatened by significant cuts to local authority public health funding. In 2019, only 59% of local authorities were able to commission a universal specialist service open to all those who smoke and almost three quarters (74%) said pressure on budgets was their biggest threat to delivering tobacco control functions.[l] These funding pressures mean local authorities are not only unable to deliver treatment services as they should, but this also threatens the delivery of local stop smoking campaigns and enforcement activity aimed at preventing underage tobacco sales and tackling illicit tobacco.

    b. The best evidence for weight loss outside of surgery comes from clinical interventions, such as weight management programmes.[li, lii] However, these programmes are currently not universally available across the country. In the newly published obesity strategy, the Government committed to expanding weight management services so more people can get the support they need to lose weight. This is a positive step, but to be effective local authorities will need to be provided with sustainable public health funding to ensure they can deliver these and other vital services.

82. In a recent speech on the future of public health, the Secretary of State for Health and Social Care, outlined plans to review how health improvement functions are delivered nationally and regionally, and confirmed that the Government is "passionately committed to… the prevention

agenda". For this to succeed, it must be supported by investment in prevention activities that have been proven to work but seen sustained cuts in recent years. For example, despite public education campaigns being an effective and cost-efficient intervention[liii, liv] to encourage existing smokers to quit, national spending in England on public education campaigns has dropped from a peak of £23.38 million in 2008/9 to just £1.99 million in 2017/18. [lv,lvi]

83. **Government should provide sustainable investment for local public health functions to level up health inequalities, channel funding directly into local communities that need it most, contribute to the long-term sustainability of the NHS by reducing the burden of preventable disease, and put the UK on the front foot when it comes disease prevention. At a minimum, this means restoring £0.9 billion per year to bring local government public health funding to 2015/16 levels, though ideally at least £2 billion per year is needed to allow additional investment in the most deprived areas where there is greatest need.**

84. **Investment in local public health services must, in turn, be supported by investment in national and regional prevention and health improvement functions in order to drive meaningful and strategic change across the country.**

Cancer Prevention - Tobacco Control

85. Smoking rates have continued to decline thanks to decades of successful action on tobacco control. In 2019, 13.9% of adults in England, or 1 in 7, smoked.[lvii] Yet despite these gains, smoking continues to be the leading cause of premature death and preventable disease across the nation, and places an enormous burden on our economy, costing society around £12.5 billion every year.[lviii]

86. In addition, while evidence suggests that many people have used the COVID-19 pandemic as a reason to stop smoking[lix,lx], alarming increases in young adult smoking rates[lix] could undermine much of the progress made to date and shows there is no room for complacency when it comes to tackling tobacco.

87. Recent analysis by CRUK has found that, based on 2018 data, England is not on track to deliver the Government's "extremely challenging"[lxi] smokefree ambition by 2030.[lxii] In fact, the modelling predicts adult smoking prevalence in England will not reach 5% until 2037, and the pace of change needs to be around 40% faster than projected to deliver this ambitious target.

88. Smoking accounts for approximately half of the difference in life expectancy between the lowest and highest income groups in England,[lxiii] making it among the most important drivers of health inequalities. Based on 2018 data, only the least deprived quintile in England will be smokefree by 2030, while the most deprived quintile won't achieve this target until well into the 2040s.lxii Because of the unequal rates of smoking, our research predicts that the poorest in society will increasingly bear the disease burden caused by smoking over the next twenty years.[lxiv]

89. As outlined in last year's green paper "Advancing our health: prevention in the 2020s",[lix] the Government is exploring options for raising funds from the tobacco industry via a 'polluter pays' principle. Tobacco is the only product that is lethal when used as intended, killing at least half of all users in the long term.[lx] As the producers of such a harmful product, the tobacco industry should be required to pay a fixed annual charge for the costs of the damage it causes. Tobacco manufacturers are also highly profitable, making over £1.5bn of profits a year in the UK alone.[lxi]

90. **A 'Polluter Pays' approach, underpinned by legislation, would help us to achieve Smokefree 2030 with industry funds, without industry interference. According to calculations by the Action on Smoking and Health (ASH),[lxii] fixing the fund to raise £270m per year (uprated to £320m to include the populations of the devolved nations) would cover funding for the important components of a comprehensive tobacco control strategy in England:[lxiii, lxiv] These funds would help pay for evidence-based measures at a local and national level to help people quit smoking, with funding prioritising the groups who need it the most. Any funds raised should be in addition to increased public health funding for local authorities.**

91. CRUK fully endorses the recommendations provided by ASH, including their recommendations on tobacco taxation. It is widely recognised that raising tobacco taxes is one of the most effective mechanisms for reducing tobacco consumption.[lxv] Because youth and low-income groups are most price sensitive, raising tobacco taxes is an important means of reducing the health inequalities caused by smoking.[lxvi]

92. Modelling by CRUK and the UK Health Forum in 2015 showed that, based on the population data available at the time, increasing the tobacco tax escalator to 5% above inflation would accelerate the decline in smoking prevalence among both men and women.[lxvii] This modelling showed that if the tobacco tax escalator was increased to 5% above inflation, adult smoking prevalence would decline to 6% in men and 6.5% in women by 2035, compared to smoking prevalence estimates being 10% for both men and women if the tobacco tax escalator remained 2.5%, as was the case at the time of modelling. For this reason, increasing the tobacco tax escalator from 2% to 5% above inflation should be an important part of the Government's plan to deliver 2030 smokefree ambitions.

93. Tobacco companies claim that higher taxes will force smokers into buying illicit tobacco; however, evidence suggests that the industry continues to increase prices beyond that required by tax changes.[lxviii] This suggests that the industry is not concerned by the threat of illicit tobacco and that there remains scope for further tax increases.[lxix]

94. The proportion of smokers mainly using hand rolled tobacco (HRT) has increased from 25% of men and 8% of women in 1998, to 44.4% of men and 27.9% of women in 2017.[lxx] The effectiveness of tobacco taxation can only be fully realised if it narrows the gap between the highest and lowest priced tobacco products. The tax on HRT is significantly lower than the tax on manufactured cigarettes. In addition, industry pricing strategies have led to the proliferation of cheap cigarette and HRT brands, with the industry absorbing tax increases on the cheapest cigarettes to keep them cheap.[lxxi] This has led to smokers downtrading to HRT rather than quitting in the face of tobacco tax increases.

95. Furthermore, increasing tobacco taxes and combatting illicit trade are complementary strategies, both working together to make tobacco less affordable, reduce smoking prevalence and increase Government revenues. The Government should do more to tackle the trade of illicit tobacco products, to ensure that the impact of tobacco taxation is not diluted by smuggled tobacco products being sold at a cheaper price because they evaded taxation.

96. **The Government should increase the tobacco tax escalator from 2% above inflation to 5% above inflation. Furthermore, the annual escalator for HRT should be increased to 15% above inflation, sustained until it is taxed equivalently to manufactured cigarettes.**

Cancer Prevention - Overweight and Obesity

97. Obesity has recently been labelled a "time bomb" by the Government.[lxv] Nearly two-thirds of the adult population in England are overweight or obese[lxvi] and 1 in 3 children leave primary school overweight or obese.[lxvii] Overweight and obesity is the second biggest preventable cause of cancer in the UK[lxviii] and costs UK society at least £27 billion a year.[lxix] Evidence also suggests that people who are obese (BMI 30+)[lxx,lxxi] are at greater risk of infection and worse outcomes from COVID-19.

98. Obesity prevalence is more than twice as high among children living in the most deprived areas (aged 4-5 years and 10-11 years) in England compared to the least deprived. This gap in obesity prevalence between children living in the most and least deprived groups has increased over the last 12 years for children in both age groups.[lxxii]

99. In addition, a higher proportion of cancer cases are attributable to overweight and obesity in the most deprived areas of the UK compared with the least.[lxxiii] For women in England, the proportion of cancer cases attributable to overweight and obesity is almost a fifth (18%) higher in the most deprived quintile compared with the least. Tackling overweight and obesity would therefore play a key role in helping to level up health inequalities across England.

100. Sugary drinks – According to the Treasury's own analysis and the PHE sugar reduction progress report, the Soft Drinks Industry Levy (SDIL) has been hugely successful in removing sugar from our shelves and our diets.[lxxiv,lxxv] PHE's report also showed that in addition to removing 30,100 tons of sugar from soft drinks a year in Great Britain, there is no evidence that the SDIL had a negative impact on industry. In fact, it said that the overall sales (in litres) of soft drinks have actually increased by 10.2% in 2018, after the levy's introduction, compared to before it was introduced in 2015.

101. **When the SDIL is reviewed shortly, the Government should commit to extending the levy to sugar-sweetened milk-based drinks and consider tightening current sugar thresholds (including aligning with the Nutrient Profile Model) to encourage further reformulation. The Government should also continue to build the evidence on fiscal measures and VAT reform, and explore how these policies can aid reformulation and change business and consumer behaviour.**

Cancer Prevention - Alcohol

102. Drinking alcohol causes 11,900 cases of cancer a year in the UK.[lxxvi] Alcohol causes seven types of cancer; mouth, upper throat (pharynx), larynx, oesophageal, breast, bowel, and liver.[lxxvii,lxxviii] Alcohol is also a significant burden on the NHS in England, with estimated direct costs of £3.5 billion each year.[lxxix] There are over one million alcohol-related hospital admissions in England each year,[lxxx] with 70% of A&E attendances at weekends related to alcohol.[lxxxi]Alcohol is also implicated in a wide range of social problems, particularly crime and workplace absences. The Government estimates that the total cost of alcohol-related harm in England is £21 billion per year.[lxxxii]

103. Alcohol duty has been cut or frozen for seven out of the last eight years. In real terms, beer duty is 19% lower than in 2012, cider and spirits duty are 12% lower, and wine duty is 3% lower[lxxxiii]. Lower taxes on alcohol in every Budget since 2013 mean that in 2018/19 £1.3 billion less was raised than if the duty had not been frozen.

104. Evidence suggests that duty cuts have not slowed the closure of pubs. When the duty escalator increased alcohol duty by 2% above inflation every year (between 2008 and 2013), the net decline in the number of pubs was 1.9% a year. When beer duty was cut and frozen (between 2013 and 2018), it continued around the same rate of 1.9% per year.[lxxxiv]

105. Evidence shows that less well-off households are less likely to drink alcohol: 28% of individuals earning under £10,000 a year are teetotal, compared to 6% of earners over £40,000.[lxxxv] Yet, though poorer households are less likely to drink alcohol, they are disproportionately more likely to suffer the harms and more likely to benefit from alcohol pricing policies.[lxxxvi] The Institute for Fiscal Studies found that a 5% increase in alcohol is "if anything, broadly progressive",[lxxxvii] while the Institute for Alcohol Studies identified that any regressive effect would be easily off-set should revenue gained from the duty be invested in public services.[lxxxviii]

106. **The Government should introduce a 2% increase in alcohol duty above the retail price index, and re-invest this in public health and prevention services. This would bring additional revenue for the Treasury and reduce and prevent alcohol related harm, ultimately reducing strain on public services.**

Empowering charities to deliver for public good

107. The UK charity sector is made up of organisations that vary greatly in size and cause – but all work for public benefit and are a core part of our vibrant civil society. Recent months have seen many across the sector, from small community enterprises to major national charities, step up to play a vital part of our country's response to COVID-19, alleviating pressure on health services and providing support to people suffering from the economic and social impact of COVID-19.

108. As we now look toward building back from COVID-19, charities are well placed to play a decisive role, levelling up health inequalities and allowing people to access opportunities to engage with the causes they care about most. Now is the time for Government to empower them to do so, by fostering a robust charitable environment.

109. Action to support charities is particularly vital considering the devastating impact of COVID-19 on the sector. While Government support to date has been welcome, longer-term sustainability is challenged by the massive and ongoing disruption to fundraising. Mass events remain impossible due to social distancing rules, trading operations in charity shops were closed for three months and the sector continues to see subdued retail activity.

110. CRUK has not escaped the impact of COVID-19, with the forecast £300 million reduction in income across the next three years unfortunately guaranteeing there will be a significant impact to our lifesaving research. Even before COVID-19, 83% of charities had seen increased demand for their services over the last 12 months, whilst 92% of charities were delivering services that would otherwise have to be provided by public services.[lxxxix]

111. Modelled on the earlier Gift Aid Transitional Relief Scheme, Gift Aid Emergency Relief is based on a workable model and could be delivered through pre-existing systems, effectively delivering an estimated additional £450 million in support to the sector for the duration of the scheme. Notably, this is less than the amount of potential Gift Aid that goes unclaimed each year. Further, research by the Charities Aid Foundation has found that four in ten people who

donate to charity would be more likely to give more if Government incentives such as top-ups are applied. This means Gift Aid Transitional Relief would be a vote of confidence by Government in the charity sector, effectively serving as a 'match funding' model to encouraging greater public giving to allow the sector to recover.

112. **We are supporting calls for Gift Aid Emergency Relief, which would see the amount of Gift Aid paid on a donation increase from 25% to 33% for a two-year period. Gift Aid is an invaluable income stream for the sector, with charities claiming £1.35 billion in Gift Aid in 2018/19 to support their respective causes. With the impact on fundraising through the current crisis, this proposal would be a decisive and efficient model for Government to support the charity sector.**

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