Written evidence submitted by the Less Survivable Cancers Taskforce (FCR0051)

1. Key points

1.1. The six less survivable cancers (LSCs) are the **cancers of the brain, liver, lungs, oesophagus, pancreas and stomach** – cancers that have an average five-year survival rate of just 16%. Whilst some cancers have seen huge breakthroughs and improvements in outcomes in recent years, survival rates for these six cancers have barely improved in decades.

1.2. The less survivable cancers need long-term focus and investment to develop much-needed breakthroughs in diagnostic tests and treatments that will transform outcomes and experiences.

1.3. There are exciting innovations that have the potential to enable earlier and faster diagnosis for people with a less survivable cancer, and more effective and targeted treatments. These need investment and support so that new technologies can be swiftly embedded into NHS systems.

1.4. We urgently need the promised NHS Workforce Plan to be published and fully funded, to address current staff shortages and to plan for the future cancer workforce to be able to make use of the innovations being developed in order to improve outcomes and save lives.

2. Background and context

About the Less Survivable Cancers

2.1 The six less survivable cancers (LSCs) are the cancers of the brain, liver, lungs, oesophagus, pancreas and stomach – cancers that have an average five-year survival rate of just 16%. Whilst some cancers have seen huge breakthroughs and improvements in outcomes in recent years, survival rates for these six cancers have barely improved in decades.

2.2 Over 90,000 people will be diagnosed with one of these cancers in the UK each year and **these six cancers account for more than 67,000 deaths a year (almost half of all cancer deaths)**[1]. Without a specific focus on improving outcomes, these numbers are only going to increase.

2.3 We know that with targeted action we can improve survival rates and other countries are doing better – the UK ranks one of the lowest globally – between 14th and 27th out of 29 countries for five-year survival for the less survivable cancers.[2]

2.4 The Less Survivable Cancers Taskforce believes that pan-cancer commitments, ambitions and targets have led to less survivable cancers being overlooked and under-resourced for too long.

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[1] CRUK statistics: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type

[2] Data adapted from Allemani et al., 2018, the Lancet https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33326-3/fulltext. Note that only countries with age–standardised data were taken into account. Comparison tables here and in notes to editors. Out of the 29 selected countries the UK survival estimate ranks 14th for oesophagus, 21st for liver, 22nd for brain, 25th for pancreas, 26th for stomach, and 27th for lung

These cancers need a targeted and specific approach, alongside long-term investment to enable research breakthroughs to improve their low survival rates.

About the Less Survivable Cancers Taskforce

2.5 The Less Survivable Cancers Taskforce (LSCT) is a coalition of charities representing each of the six most common less survivable cancers. Our founding member charities are The Brain Tumour Charity, British Liver Trust, Roy Castle Lung Cancer Foundation, Action Against Heartburn, Pancreatic Cancer UK and Guts UK. We are supported by an additional 9 charity registered supporters: Barrett's Oesophagus UK, Brains Trust, Brain Tumour Research, Heartburn Cancer UK, Hepatocellular Carcinoma UK, Oesophago-Gastric Cancer Northern Ireland, Ochre, Pancreatic Cancer Action and Tenovus Cancer Care. We are supported by grants from Astellas, BMS and MSD.

2.6 The LSCT welcomes this inquiry into the future of cancer as our cancer types need long-term focus and investment to develop much-needed breakthroughs in diagnostic tests and treatments to transform outcomes and experiences.

3. What are the innovations with the greatest potential to transform cancer diagnosis and treatment in the short, medium and long term?

Diagnosis

3.1 Currently around 1 in 3 patients with a less survivable cancer will only be diagnosed after an emergency admission to hospital. Diagnosing these cancers earlier is key to improving outcomes and survival. There are several exciting innovations, e.g. new triage tests and screening interventions, that have the potential to enable earlier and faster diagnosis for the less survivable cancers. Investment is needed to develop these innovations further and to embed them into primary care once developed.

Examples of potential triage and diagnostic tools:

3.1.1 Non-invasive tools to detect potential cases of upper GI cancers are needed, particularly because these cancers often have vague, non-specific symptoms. There is currently promising research into breath and saliva tests that can indicate markers for pancreatic, oesophageal and stomach cancers.[3] [4]

3.1.2 For brain cancer patients, the only way to get a diagnosis is through an MRI or a CT scan, therefore the potential use of triage tools for detecting brain cancer could be huge. One promising triage test in development is Dxcover, which is a low-cost blood test. Recent trials have found that the blood test was able to detect 96% of patients with brain tumours, and identified all patients with Glioblastoma Multiforme - the most aggressive type of brain cancer. This liquid biopsy test may help improve the diagnostic pathway for patients with suspected brain tumours in the future as it will help GPs understand which

[3] Cancer Research UK, A study looking at breath samples to detect cancer early (PAN Cancer Early Detection Study)

[4] Pancreatic Cancer UK, Developing a breath test for pancreatic cancer

patients should be prioritised for an MRI scan which could also help with capacity and staffing in radiology.

3.1.3 Cytosponge, the 'sponge on a string' test, has proven to diagnose Barrett's Oesophagus early, which can be a precursor to oesophageal cancer. However, we have yet to see the full roll out of this simple intervention in primary care.

3.1.4 The UK has potential to be a world leading global hub for innovation in biomarkers (present in blood and urine) that are reliable signs of early-stage liver cancer. Research priorities on biomarkers for liver cancer spans diagnosis and monitoring, innovative treatments, and the identification of predictors of treatment response.

Examples of promising targeted screening programmes:

3.1.5 Targeted lung cancer screening has proven to help diagnose many people with lung cancer earlier and is recommended by the UK National Screening Committee. This needs to be rolled out in parallel with service capacity reconfiguration to meet the needs of additional people diagnosed at an earlier stage.

3.1.6 Liver cancer is the fastest rising cause of cancer death in the UK and 70% of cases are diagnosed at a late stage (stage 3 or 4). NHS England are pioneering global good practice in liver cancer surveillance to improve survival and outcomes. Good practice fibrosis assessments are a vital diagnostic tool to identify people with cirrhosis who are at high-risk of developing liver cancer to ensure they access surveillance pathways. Cirrhosis is present in about 80-90% of people with the most common type of primary liver cancer, hepatocellular carcinoma (HCC). Liver fibrosis assessments that can be delivered in primary and community care include effective blood tests (e.g. Intelligent Liver Function tests,) and non-invasive liver scans (e.g. FibroScans) which are highly cost effective and reliable in diagnosing liver disease and improving access to surveillance. NHS England have launched the Community Liver Health Check pilot programme which is on track to reach 22,000 people within its first year. In March 2023, the Government pledged to roll out FibroScans in 100 Community Diagnostic Centres by March 2025.

3.1.7 Genomics and genetics offer potential opportunities to develop risk-based screening strategies that can be applied to the whole population. Collaboration between different disciplines (e.g. molecular cell biology, genetics, biotechnology, data and artificial intelligence) is needed to ensure opportunities in this area are explored most effectively.

3.1.8 Artificial intelligence-based risk profiling can help screen for cancers and lead to early diagnosis. It can also be used to analyse images and identify cancers where imaging experts may not be available.

Treatments

3.2 We need a more effective and faster process to adopt new treatments in the NHS, especially for people with poor prognosis and/or less common conditions such as the less survivable cancers. We

also need provision to test new treatments that are approved for specific conditions as this will allow more people to benefit from new innovative treatments.

3.3 Some of the key innovations in treatment techniques which have the greatest potential to transform diagnosis and treatment for many of the less survivable cancers are:

3.3.1 Immunotherapy: using the patient's own immune system to fight cancer cells (e.g. CAR-T cell therapy – genetically engineering the patient's own T-cells to target a specific cancer antigen). Other examples include monoclonal antibodies (mAbs), immune checkpoint blockers, and personalised cancer vaccines.

3.3.2 Targeted therapy: acting on target molecules that are cancer cell-specific.

3.3.3 Gene therapy: treatment to change genes in cancer cells or prevent healthy cells becoming cancerous.

3.3.4 Proton therapy: this uses high energy proton beams to destroy cancer cells, causing more damage to cancer cells than to healthy cells.

3.3.5 Robotic surgery: this uses robotic technology to surgically remove cancerous tissues. This method can lessen the risk of complications and speed up the patient's recovery.

3.3.6 Stem cell therapy: regenerating and repairing diseased or damaged tissues.

3.3.7 Ablation therapy: minimally invasive procedure that burns or freezes cancers without the need for open surgery

3.3.8 Nanotechnology: targeting a tumour with nanosized therapeutic agents - for new diagnostics and therapies.

3.3.9 Precision oncology: studying the genetic make-up and molecular characteristic of cancers in individual patients and developing personalised treatments.

3.3.10 Selective Internal Radiation Therapy (SIRT) is a type of internal radiotherapy to control primary and secondary liver tumours that can't be removed with surgery.

4. How best can innovations in diagnosing and treating cancer be transitioned into frontline clinical settings?

4.1 Transitioning innovations into frontline clinical settings will be key and we have seen how some simple technologies, such as Cytosponge, have been slow to roll out. Clear timelines and roll-out plans should be developed to embed new innovations that can help diagnose and treat cancers.

4.2 MHRA, NHS England and NICE should engage the research community at a development stage for promising technologies so that researchers can ensure that there is a 'landing zone' for the project on which they are working.

4.3 NHS England and NICE must make clear to researchers what research evidence is required and what regulatory approvals are required. There also needs to be more transparency around the health economics of the situation and the costs of adoption need to be carefully and openly considered.

5. What can be learnt about innovative cancer diagnosis and treatment from international examples of best practice?

5.1 We know that with targeted action we can improve survival rates and other countries are doing better – the UK ranks one of the lowest globally – between 14th and 27th out of 29 countries for five-year survival for the less survivable cancers.[5]

5.2 We recommend that the Government takes into account international examples of good practice in detail to inform future cancer care planning.

5.3 For example, Australia has the lowest pancreatic cancer mortality rate of all countries for which data are available, which is due in part to their healthcare policy and planning infrastructure. Australia also has in place an Optimal Care Pathway for pancreatic cancer, which outlines the standard of care that all patients should receive, which was funded by the Australian government. This reduces variation in diagnosis, treatment and care, and corresponding outcomes. We would recommend that the pathway which Pancreatic Cancer UK are currently developing is implemented as quickly as possible on its completion.

5.4 The Sheri Sobrato Brisson Brain Cancer Survivorship Program in the United States is an example of international best practice when it comes to the treatment and care of those affected by brain tumours. The programme offers those affected by brain tumours neurocognitive consultation and rehabilitation, exercise and wellness classes, education, support groups and peer support. The programme's aims are to enhance the wellness and quality of life of patients with brain tumours through a collaborative, multidimensional approach focusing on emotional, physical and cognitive health. By taking some examples of the approach the programme has created in the United States, it could lead to better, more supportive care here in the UK.

5.5 Some of the largest gains can be made through greater investment in research. Finland is a leading country in cancer care and diagnostics due to their innovative research work, which is the most cited in the world. Conversely, in the UK, there are looming gaps in research spending. In March 2021, for example, UK Research and Innovation identified a funding gap of £120 million in projects to which the UK is already committed, which if left unfilled would mean reneging on promises made to universities and research organisations in this country and overseas. If the UK wants to improve the health of its population, it needs to set ambitious spending targets for healthcare, including R&D. The alternative is to risk lower innovation in

[5] Data adapted from Allemani et al., 2018, the Lancet https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)33326-3/fulltext. Note that only countries with age–standardised data were taken into account. Comparison tables here and in notes to editors. Out of the 29 selected countries the UK survival estimate ranks 14th for oesophagus, 21st for liver, 22nd for brain, 25th for pancreas, 26th for stomach, and 27th for lung

medicines discovery, poorer health outcomes for citizens, and reduced economic productivity for the country as a whole.[6]

6. To what extent is workforce planning keeping up with innovations in the diagnosis and treatment of cancer?

6.1 Significant investment and planning to support and grow the cancer workforce will be critical to improving access to and experiences of cancer treatment, in particular clinical nurse specialist access for all patients and addressing shortfalls in endoscopy, radiology and gastroenterology workforce capacity. The NHS Workforce Plan will be an opportunity to plan and invest in this vital workforce.

6.2 Currently, large numbers of staff vacancies mean this is not currently being achieved. The benefits of national initiatives and health improvement programmes, such as the NHS England Best Practice Timed Pathway (BPTP) for HPB cancers and the Pancreatic Cancer UK Optimal Care Pathway will not be realised if there is insufficient workforce to deliver them. For example, we see particular shortages in radiologists with the current shortage in consultant radiologists standing at 29%.

6.3 We urgently need an NHS workforce plan to be published, funded and implemented.

7. Is the impact of innovations in cancer diagnosis and treatment on health inequalities being sufficiently taken into account?

7.1 Not yet. Most less survivable cancers are associated with deprivation, with incidence and mortality higher within lower socioeconomic groups. Investing in innovations for these cancer types, such as the roll-out of lung cancer screening, would help address health inequalities and therefore should be prioritised in the future.

7.2 There is widespread geographical variation in diagnosis, treatment and outcomes for people with a less survivable cancer in England, and a growing body of evidence to suggest that, in some cases, deprivation is a driver of this variation. For example, at a national level, between January and March 2022, 57.9% of lung cancer patients started treatment within 62 days of referral. Across providers, the percentage of lung cancer patients starting treatment within 62 days of referral ranged from 14.3% to 95.5% (a difference of 81.2 percentage points).[7]

7.3 More data is needed on health inequalities on a national level to provide a baseline and to measure the impact of innovations in the future.

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[6] https://www.bms.com/assets/bms/gb/en_gb/images/Bristol%20Myers%20Squibb_PwC_Life%20Sciences%202030_vFinal%20March%202022.pdf

[7] https://www.msd-uk.com/wp-content/uploads/sites/43/2022/10/Levelling-up_What-does-it-mean-for-the-less-survivable-cancers-in-England.pdf