Time to level up treatment for less survivable cancers

Dramatic regional variations in outcomes for patients with less survivable cancer (lung, pancreatic, brain, oesophageal and gastric) have been highlighted in a report published by MSD. This editorial examines this report and considers the implications for UK cancer strategy.

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Introduction

Over recent years dramatic improvements in survival have been seen for many patients with cancer. However, a group of 'less survivable cancers', consisting of lung, pancreatic, liver, brain, oesophageal and gastric cancer, continues to have a poor prognosis, with comparatively little improvement (Quaresma et al, 2015). Despite accounting for only 25% of new diagnoses, these cancers are responsible for over 40% of UK cancer deaths, with an average 5-year survival rate of just 16% (Cancer Research UK, 2022). The biopharmaceutical company MSD, with support of the less survivable cancer taskforce, has published a report highlighting substantial regional variations in incidence, speed to diagnosis, treatment and survival for these patients (MSD, 2022). It has been estimated that if the gaps between the best and worst regions were closed, more than 13 000 deaths from less survivable cancer could be prevented each year (Public Health England and Cancer Research UK, 2014). Socioeconomic deprivation appears to be a major driver of these discrepancies and if the UK is to 'level up' cancer care, as outlined in the recent government white paper (Department for levelling Up, Housing and Communities, 2022), patients with less survivable cancer need to become a priority. The MSD report highlights the scale of this problem and is used here as a framework to make suggestions for change.

Incidence and regional variation

The MSD report shows that, with the notable exception of brain tumours, where someone lives in the UK has a dramatic impact on their risk of developing one of the less survivable cancers. For example, between the best and worst regions, there was a six-fold difference in age-standardised incidence of liver cancer. In lung cancer the gap equates to 110.7 people per 100 000. The report compared the data to the index of multiple deprivation and demonstrated a clear association between deprivation and incidence. These cancers all have well-defined preventable risk factors including smoking, alcohol consumption and obesity, which vary regionally and particularly in association with deprivation. This may account for some of the disparity and explain why little variability is seen in brain cancers, which are less driven by these factors. Cancer Research UK (2023) estimate that annually 18 540 cases of less survivable cancers can be attributed to deprivation. The scale of this problem supports the need for further public health intervention, adapted to target the most deprived populations. It is important to ensure that the less common cancers, such as liver, are not overlooked, as the potential for improvement is substantial.

Earlier and faster diagnosis

For most cancers, earlier diagnosis has a significant impact on outcomes. In 2017–19, only 27.9% of the less survivable cancers were diagnosed at stage I or II, which compares poorly to the all-cancer average in the same period of 53.9% (MSD, 2022). The factors underlying this are complex and likely differ by tumour site. However, deprivation plays a major role, with patients living in the most deprived 20% of areas being 7.8% less likely to have their cancer diagnosed at stage I or II than those in the top 20% least deprived areas (NHS Digital,

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2022). Therefore, while it is certainly the case that the biology of some of these tumours drives their late presentation, this variation supports the notion that targeted interventions could improve early detection. The authors estimate that if every clinical commissioning group had matched the top quartile for lung, pancreatic, oesophageal and gastric cancer in 2017–19, an extra 4650 patients would have been diagnosed at an early stage.

The decision of the UK national screening committee to recommend targeted lung cancer screening is welcomed as this may help improve early detection (NHS England, 2022). However, the NHS faces challenges in developing screening for other less survivable cancers because of their lower incidence and the difficulty of defining at-risk populations. Taking pancreatic cancer as an example, early diagnosis is essential to having potentially curative options, but only 23.1% of patients were diagnosed at stages I–II, ranging from 10.5% to 32.8% by clinical commissioning group (MSD, 2022). These comparatively rare tumours often pose different challenges, including reduced public awareness of symptoms. Issues with health awareness tend to be compounded by deprivation, and patients in more deprived areas are overall less likely to access healthcare (Niksic et al, 2015). It is difficult to interrogate the data from the MSD reports further. Liver and brain cancer had no available statistics, and incomplete data were a common issue across the other cancer sites. The NHS Long Term Plan has set a target to diagnose 75% of cancers at stage I or II by 2028; for the less survivable cancers this may be unachievable and a more tailored set of targets may help drive real change.

The Faster Diagnosis Standard was introduced in October 2021, stating that 75% of patients should either have a confirmed diagnosis or cancer excluded within 28 days of referral (NHS England, 2021). A timely diagnosis not only improves the possibility of curative intervention but also reduces the period of anxiety while awaiting diagnosis and opens access to support services. This is a key priority for patients and can be associated with improved quality of life. This is especially important in aggressive malignancies such as pancreatic cancer, where one in four patients die within a month of diagnosis. However, in its current format the Faster Diagnosis Standard data will group oesophageal, gastric, pancreatic and liver cancer together under ‘upper gastrointestinal’, hampering analysis. The diagnostic pathways and networks for these cancers can be very different and uncoupling these tumour sites would help target specific challenges.

Following diagnosis

Once the diagnosis of cancer is made, it is hoped that a similar performance would be observed across the NHS. However, the authors of the MSD report highlighted dramatic variations in performance against the 62-day target from presentation to first treatment in lung cancer. Only 58% of patients met the target overall, with huge regional variation ranging from 14.3% to 95.5%. These data are very limited, with no detail beyond percentage attainment of the 62-day target, and no data at all for the other less survivable cancers. Good quality data are essential to identify potential pathway inefficiencies that could be corrected and allow comparisons between trusts. Some good quality data are available, such as that in the National Oesophago-Gastric Cancer Audit and National Lung Cancer Audit, but similar quality data are not available for the other less survivable cancers. Oesophago-gastric cancer also had poor and varied performance in 2022, with a median time from presentation to first treatment of 69 days (interquartile range 56–91 days) (Healthcare Quality Improvement Partnership, 2023). The advantage of these site-specific audits is they can show more focused information, for example the finding that oesophago-gastric patients going on to receive a curative intent treatment wait longer than those on a palliative pathway. Knowledge such as this is invaluable in targeting pathway development and national audits would be of great benefit to all the less survivable cancers.

A one size fits all cancer strategy is ineffective for these cancers; focusing on specific challenges of a tumour group can begin to illuminate where pathways can improve. For example, the National Optimal Lung Cancer Pathway (NHS England, 2020) has defined specific targets along the pathway, with a reduced overall time from diagnosis to first treatment of 49 vs 62 days. This helps to identify where in a service delays are occurring and gives a clear expected standard to work towards. Ideally this approach could be applied to other less survivable cancers and ensures the targets carry the same mandate. This will help to expose inequalities and failings, and allow more targeted interventions to be introduced.

Treatment rates

The MSD report also commented on rates of treatment with surgery, chemotherapy or radiotherapy split regionally at the level of Cancer Alliance. Once again, there were significant regional differences in uptake of these active treatment approaches which correlated with deprivation. This is another area where targeted auditing would give more insightful data. For example, radiotherapy may be given with curative intent or for palliation, but these data do not discriminate. While it is important to acknowledge limitations and confounding factors, it has become clear that deprivation is significantly influencing the quality of cancer care received across the board. One of the most striking figures highlighted in the report is those in the most deprived areas are 50% less likely to be referred for early stage clinical trials compared to those in the least deprived areas (Mohd Noor et al, 2013). The NHS should have an advantage in providing equitable access to trials and more must be done to ensure that this is achieved.

Overall survival

One of the key ambitions of the NHS Long Term Plan is to improve the number of patients surviving with cancer for 5 years by 55 000. By definition, patients with less-survivable cancers rarely achieve 5-year survival (16% overall across the UK) and consequently these targets do not reflect this population. Twelve-month survival statistics varied by around 10% from best to worst, trending towards inferior survival in deprived areas. Cancer of the brain does not appear to have a clear association between deprivation and survival, but more detailed audit would help determine if there are variations that impact quality of life. The CONCORD programme data allow overall survival to be benchmarked against other countries and makes sobering reading, with the UK ranked 14th for cancer of the oesophagus, 21st for liver, 22nd for brain, 25th for pancreatic, 26th for stomach and 27th for lung. Furthermore, their data demonstrate that gains in survival for the less-survivable cancers are possible, with 5% improvements seen in some countries for lung, pancreas and liver cancer (Allemani et al, 2018).

Conclusions

This report highlighted the significant regional variation at every stage of the patient journey with less survivable cancer. Much of this variation follows patterns of social deprivation and adds to a growing body of evidence for widespread healthcare inequalities. To overcome these inequalities, a dedicated strategy is needed specifically for less survivable cancers that goes beyond the general ambitions in the levelling up the UK white paper. Targeted national level statistics for each of these cancer groups would help to identify areas in most

Key points

- Over 90 000 people a year are diagnosed with less survivable cancers, accounting for 25% of new diagnoses and over 40% of deaths.
- There are dramatic regional variations in incidence, early detection, speed of diagnosis, treatment offered and survival. Deprivation appears to be a major driver of this variation.
- Currently, most national data and targets align poorly with less survivable cancers. Site-specific national audits such as those available in lung and oesophago-gastric cancer could help focus priorities for improvement.
- Patients in the most deprived areas are 50% less likely to be referred for early-stage clinical trials than those in least deprived areas. Research into these cancers should be prioritised, with the aim of providing equitable access to innovative therapies.
- Closing the gap between the best and worst regions could save over 13 000 deaths from less survivable cancer in the UK annually, but to do this a dedicated strategy recognising the specific challenges of these cancers will be required.

urgent need of change. Addressing the variation that appears to be driven by deprivation could save thousands of lives lost to less survivable cancer each year and deserves to be a clear strategic priority.

Even with timely, quality care many patients with less survivable cancers face a poor prognosis with standard therapy. Therefore, research and improved access to innovative treatments is essential. Funding clinical trials in novel therapies should be prioritised, including molecular targeted therapies, immunotherapy and precision radiation therapy, such as stereotactic ablative body radiotherapy and proton beam therapy. Strategies to encourage national programmes for roll out of well-constructed trials may lead to meaningful changes in practice and a brighter future for patients with these cancers. Clinicians have a responsibility to ensure that clinical trials access is equitable and centres in deprived areas may need to do more to prioritise these patient groups.

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