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COVID-19 and cancer in the UK: which will prove to be the lesser of two evils?

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We write this editorial some 2.5 years after the first national COVID-19 lockdown was announced in the UK on 17 March 2020. We reflect on the reality of how the pandemic and the national response to the pandemic affected a cancer care system that was already under severe strain.[1] In their recent report on National Health Service (NHS) Cancer Services in April 2022,[2] the House of Commons Health and Social Care Select Committee acknowledged gravely that the COVID-19 pandemic had a significant negative impact on cancer care, which is likely to result in a substantial loss of life-years.[3 4]

At the time of writing over 28 000 patients have been waiting more than 62 days on a suspected cancer pathway compared with 14 000 on average pre pandemic.[5] All this means worsening survival outcomes as patients present with more advanced disease and are more deconditioned at presentation.[6 7] The cost of this to the healthcare system is also expected to be huge; patients presenting with later stage cancer are far more costly to manage than those with stages I and II disease.[8]

The NHS has not managed to fully recover to pre-pandemic levels of NHS activity and worryingly there is no evidence that the 'missing cancer patients' (the shortfall in cancer diagnoses during the pandemic based on annual incidence rates) will ever come forward. For example, nearly 14 000 men with prostate cancer remain unaccounted for.[9] Conversely, the use of private sector care is increasing as the more affluent exit the public system to receive quicker access, particularly diagnostics, further widening existing inequalities.[10–12]

HOW DID THIS CRISIS IN THE UK UNFOLD?

At the start of the first lockdown the public health messaging was clear. Stay at home, save lives, protect the NHS. Cancer screening was suspended, routine referrals for diagnostic investigation deferred or cancelled and large declines in the 2-week wait (ww) urgent referrals for diagnostic workup of suspected cancers were almost immediately evident.[13] For example, in England, between March and November 2020, there were 18 000 fewer referrals for suspected lung cancer (down to 35% of prelockdown referrals).[7 14] Fewer diagnostic investigations were also seen across all types of cancer.[7 9 15 16]

The impact of such profound changes to patterns of patient presentation as well as delays in the diagnostic and treatment pathway, was considered in four major modelling studies published within 3 months of the first lockdown.[4 17–19] It was estimated that 60 000 years of life would be lost for only four cancers assuming disruption of diagnostic services for 3 months with no further pandemic waves and complete recovery of diagnostic services.[4] These figures are conservative as the complete recovery of diagnostic and treatment services has not materialised, they do not consider the effect of any treatment delay, nor specifically the impact of delay in stage IV disease, which resulted in some patients not receiving any treatment. However, there is an urgent need to deliver these analyses based on observed data in order to be in a position to understand exactly how different the situation is from that predicted, and to also learn from the pandemic experience.

Once diagnosed, treatment delays became a major concern as surgical activity nearly ground to a halt in many centres for the first few weeks,[20] despite attempts to establish COVID-19-free or 'cold' sites.[21 22] Part of the reluctance to perform surgery was based on data suggesting that rates of peri-operative mortality were significantly higher[23]—claims that were disproven when considering elective care.[20] In addition, there were concerns that patients with cancer in general were likely to be more vulnerable. However, the initial evidence was flawed with limited evaluation of other case mix criteria.[24 25]

In the early stages of the pandemic, national guidance was also being released by professional bodies in an attempt to support safe delay of some cancer surgeries including colorectal and oesophageal cancer for up to 12 weeks.[26] In response to this, Hanna *et al*[3] rapidly published a systematic review and meta-analysis in September 2020, which showed there was no evidence for assuming that there was any 'safe' period of delay for cancer care. They found that across all three major treatment modalities that a treatment delay of 4 weeks is associated with an increase in the risk of death. For example for breast surgery there is a 6%–8% increase in death for every 4-week delay and a 12-week delay would increase the risk by 26%. While the included studies are likely to be at risk of unobserved confounding, these findings do question who was responsible for rapid appraisal and evidence reviews during the pandemic that were necessary to support and implement best practice.

Conversely the radiotherapy community aided by randomised control trial evidence were able to adopt guidelines supporting shorter and equally effective radiotherapy regimens.[27] This made a significant difference to preserving capacity and minimising hospital attendances for breast cancer and a range of other tumour types.[28] Radiotherapy was also used as a substitute for bladder and oesophageal cancer surgery.[29] The omission of systemic agents with some radiation regimens, instituted to improve safety is, however, expected to diminish their efficacy.[30]

With respect to systemic therapy, strategies tended to be built around the precautionary principle, with first-line treatment in metastatic disease and curative/adjuvant treatments taking priority.[31] Interim guidance and funding also supported utilisation of regimens associated with lower toxicity and reduced frequency of administration, although it is not clear for some regimens whether there is likely to be a reduction in treatment efficacy overall.[32] Broadly though the NHS was able to maintain systemic therapy services[33] during this period with no evidence for increased mortality for those undergoing chemotherapy or immunotherapy infected with COVID-19.[34]

By December 2020, NHS England had set out their recovery plan for cancer services, which prioritised the NHS long-term plan commitments such as the use of rapid diagnostic centres, targeted lung health checks and bowel screening.[35] Engagement work with charities sought to encourage patients to come forward and specific guidance was provided to NHS Trusts to ensure patients with particularly long waits were tracked particularly those from low socioeconomic groups. The increased use of faecal immunochemical testing for colorectal screening was strongly supported.

The NHS in the early stages of the pandemic ring-fenced private sector capacity including staff and theatre space to be used for the most urgent NHS cases. However, utilisation of private sector capacity was inefficient,[36] with a 43% reduction in NHS activity within the private sector compared with the year before, despite the government contributing up to 100% of the operating costs as part of the partnership. The deal ended in August 2020; the point at which this additional capacity could have been used to start to address the backlog.

After August 2020, negotiations with the private sector for use of their capacity was expected to be undertaken at a regional level but was inequitably implemented. For example in London, patients had NHS cancer pathway operations cancelled yet the same NHS surgeons were able to operate in the private sector for those who could afford to pay.[37] The two tier system the NHS has fought so hard to avoid, developed at pace during the pandemic and continues even during the present recovery period as the backlogs lengthen.

As predicted earlier on in the pandemic, excess deaths from non communicable disease are on the rise. Since April 2022, there have been 22 500 more deaths than expected, the majority unrelated to COVID-19.[38 39] We must reflect whether we could have done anything different and whether cancer services—the single largest cause of death in the UK[40]—were adequately prioritised?

At the start of the pandemic, the focus was on managing and prioritising patients under conditions of great uncertainty, which meant deployment of services towards acute care. However, there was a failure to provide public health messaging that conveyed accurately the magnitude of risks of severe illness from SARS-CoV-2 infection compared with the risks of not seeking healthcare-advice if symptomatic from cancer or other conditions. In addition, clinicians needed information to support and manage the risks of undertaking diagnostic and surgical procedures during the pandemic and which patients were at higher risks of COVID-19-related death or indeed which procedures conferred greater risks to themselves. Any undue risk aversion could result in considerable delays for patients and it was not until December 2020 when the first models were available.[41]

In July 2020, the UK Office for National Statistics (ONS) published their estimates of the indirect impacts of the pandemic on other health conditions.[42] They estimated that the indirect effects of the pandemic and non-pharmaceutical interventions, during the first 6 months, would result in the loss of 1400 lives and 3500 quality-adjusted life-years (QALYs) across eighteen cancers over 5 years. The ONS figures were a woeful underestimate and likely to have been used to justify prioritisation of resources (including staff) and the framing of public health messaging. Of concern is that the methods used, particularly the conceptual framework lacks the requisite detail to enable robust review. Furthermore, the relationship between excess deaths and years of life lost do not align with other studies[4] with the ONS analysis weighting years of life lost per COVID-19 death considerably higher than for cancer, the basis for which is uncertain. For example, a study by Gheorghe *et al*[43] conservatively estimated the loss of QALYs to be 10-fold higher at 33 000 QALYs over 5 years, when considering the impact of

diagnostic delay alone in the first twelve months of the pandemic for just four cancers.

COULD THINGS HAVE BEEN DONE DIFFERENTLY AND LOOKING TO THE FUTURE?

The pervading rhetoric is that hospitals and the NHS had no choice and that cancer care could not have got back on track without managing COVID-19 first. This, however, ignores, despite available evidence, the need for mitigation strategies specific to non-communicable life-threatening diseases such as cancer that are sensitive to system level and behavioural changes. Better public health messaging that encouraged patients with red flag symptoms to come forward were necessary even early on during the pandemic. Beyond this, research is needed to recognise and better understand clinical uncertainties through rapid evidence appraisal (eg, to determine the risk to patients and clinicians from diagnostic and treatment procedures, balanced against the risks of a novel infectious disease) as well as inform behavioural interventions. This is needed both to inform individual clinical decisions but crucially, also to feed into public health messaging and wider system level decision making.

Clearly a good part of the problem is that the NHS had chronic staff and bed shortages even before the pandemic. Consequently, the service was always running 'hot' and needed to prioritise acute emergency cases, redeploying staff to achieve this, but at the cost of providing life-saving care for other diseases. Going forward, greater investment is clearly necessary to ensure resilience in the health system over the next few years, given clear evidence of the impact of previous economic downturns on rising mortality rates from diseases such as cancer.[44] This is not just for diagnostic and treatment services but palliative care services as well which were stretched during the pandemic and needs greater investment.[45] In addition, centralised control of NHS and private sector capacity is necessary to ensure cancer diagnostics and treatments can continue without delays and avoid the inequalities in management that have been observed nationally.

At present the NHS is prioritising 2ww suspected cancer referral pathways, despite approximately 40% of patients with cancer being picked up through routine referral pathways where other pathology is suspected.[46 47] Patients diagnosed through routine referral pathways have a better prognosis than those diagnosed via 2ww referral pathways which account for 30% of all cancer patients diagnosed. Within finite diagnostic capacity a focus on delivery of the 2ww pathway may deprive those referred routinely of timely diagnosis. As such, we risk failure to reverse the expected increase in later stage presentations.

During the pandemic, there was evidence of substitution of surgery for radiotherapy, particularly for bladder and oesophageal cancer due to limited availability of surgical services in some centres but the impact on outcomes remain unclear.[29] We would recommend that resources are provided for trials or observational research to compare the efficacy and cost-effectiveness of these treatment options to inform future decision making for patients and clinicians.

The steepest fall off in referrals for suspected cancers occurred in the most deprived areas[13] and ongoing analyses must, therefore, be used to inform decision-makers at all levels to guard against inequalities. The recent Health and Social Care Committee report acknowledged the profound impact of the pandemic on cancer outcomes but concluded more innovation is required. We would argue that instead what is required is a greater focus on health system strengthening—governance, financing, workforce, performance and effective implementation of evidence-based therapies[16 48 49]

One of the immediate challenges is to ascertain where the additional capacity is going to come from to manage the backlog and who coordinates this. There is variation in waiting lists regionally, suggesting that better mapping of supply to demand is required. Rather than bridging this gap by encouraging greater patient choice using the 'My planned Care' App, which is due to be rolled out in December, specialist multidisciplinary teams could support what treatments patients should receive but also coordinate where this is delivered on the basis of need and available capacity regionally.[50]

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