

More cancer deaths in England predicted due to COVID-19-related healthcare delays

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Credit: National Cancer Institute/Unsplash

Disruption to cancer diagnosis services (referrals and routine screening) and people avoiding healthcare because of the COVID-19 pandemic could result in around 3,500 potentially avoidable deaths from the four main cancers in England by 2025, according to new modeling research published today in *The Lancet Oncology* journal.

The study highlights the need for urgent policy interventions to deal with the backlog of patients awaiting routine diagnostic services and to reduce the [cancer death](#) toll attributable to the COVID-19 pandemic.

The authors call for policy makers to focus on three key areas: providing public health messaging that puts the risk of severe illness from COVID-19 into perspective compared with not seeking health-care advice for symptoms of cancer; providing evidence-based information to help health-care workers manage the risks for patients with suspected cancer; and increasing both routine and urgent diagnostic capacity through increased working hours and referrals to any NHS hospital.

"Our findings demonstrate the impact of the national COVID-19 response, which may cut short the lives of thousands of people with cancer in England over the next five years," says Dr. Ajay Aggarwal from the London School of Hygiene & Tropical Medicine in the UK who led the research. "Whilst currently attention is being focused on diagnostic pathways where cancer is suspected, the issue is that a significant number of cancers are diagnosed in patients awaiting investigation for symptoms not considered related to be cancer. Therefore we need a whole system approach to avoid the predicted excess deaths."

During the UK-wide lockdown to combat the COVID-19 pandemic, cancer screening and routine outpatient referral pathways (through which 30-40% of patients are diagnosed) were suspended. The only route to diagnosis for suspected cancer cases was via an urgent two-week general practitioner (GP) referral or presenting to an emergency department. Since physical distancing measures were introduced on March 16, 2020, urgent referrals have fallen by as much as 80%. With some form of physical distancing expected to continue for up to a year, further negative impact on the lives of cancer patients is likely.

In this study, researchers analyzed existing English National Health Service (NHS) cancer registration and hospital administrative data on more than 93,000 cancer patients (aged 15-84 years) diagnosed in 2010-2012, to estimate the effect of delays in diagnosis on cancer survival for four main cancer types—breast, colorectal, oesophageal, and lung. They modeled the impact of reallocating patients from usual screening and non-urgent routine referral pathways (i.e., GPs and secondary care) to urgent and emergency pathways (which are associated with more advanced stage of disease at diagnosis), for a year after physical distancing measures were introduced on March 16, 2020, to reflect the expected duration of disruption to diagnostic services.

The authors considered three reallocation scenarios which reflect what is being seen in the NHS during the COVID-19 crisis, providing best and worst case estimates to calculate the impact on net survival, additional deaths, and years of life lost (the number of years of life a person would have been expected to live had they not died of cancer) compared to pre-pandemic figures.

The analyses suggest that delays in cancer diagnosis and changes in health-seeking behavior could result in breast cancer deaths increasing by an estimated 8–10% (equivalent to between 281 and 344 additional deaths by 2025) colorectal (bowel) cancer deaths by 15–17% (1445–1563), a 5% (1235–1372) rise in lung cancer deaths, and a 6% (330–342) rise in deaths from oesophageal cancer over the next five years.

"Our findings estimate a nearly 20% increase in avoidable bowel cancer deaths due to diagnostic delays. To prevent this becoming a reality, it is vital that more resources are made urgently available for endoscopy and colonoscopy services which are managing significant backlogs currently, and that patients present promptly to their GP if they have any concerning gastrointestinal symptoms," says Aggarwal.

These avoidable cancer deaths are projected to translate into 59,204 to 63,229 total years of life lost.

"On average, for each avoidable cancer death due to diagnostic delay, 20 years of life will be lost," says co-author Professor Richard Sullivan from King's College London, UK. "These estimates paint a sobering picture and reflect the many young people who are affected by cancer in the prime of life during their most productive years."

The frontline of the cancer diagnostic system is GPs surgeries, and even as lockdown measures are being relaxed, presentation to primary care continues to be much lower than pre-pandemic levels.

"As we slowly begin to resume normal life, we need accurate and measured [public health](#) messaging via a range of media channels tailored towards

patients, GPs, and secondary care, that puts into perspective the risk of death from COVID-19 compared with that of delaying cancer diagnosis," says co-author Dr. Camille Maringe from the London School of Hygiene & Tropical Medicine, UK. "Similarly, the healthcare community needs evidence-based information to adequately manage the risks of patients to the risks and benefits of contracting COVID-19 through different diagnostic procedures."

According to co-author Professor Bernard Rchet from the London School of Hygiene & Tropical Medicine, UK. "To absorb the cancer patient backlog, the healthcare community also needs to establish clear criteria to prioritize patients on clinical grounds, in order to maintain equitability in care delivery."

The authors note that excess deaths across all cancer care is likely to be much higher. They emphasize that they only look at four cancer types and focus on delayed diagnoses. Therefore, it doesn't account for delayed or canceled cancer treatments for those already diagnosed with cancer.

The authors note several limitations including that they modeled the NHS as a whole despite variation across the country in terms of GP access, the burden of COVID-19, and the disruption to diagnostic services. They also note that the predicted survival of patients in 2020 will have slightly improved, whilst the proportions of patients presenting through different referral pathways has changed over time, which might affect the results.

In a second paper published in *The Lancet Oncology* journal, researchers examine the impact of backlog in cancer referrals during the UK lockdown on cancer survival. Modeling different possible volumes of backlog, based on 10-year cancer survival estimates for patients (aged 30 years and older) in England for 20 common cancers diagnosed in 2008-17, they estimate deaths due to delays in diagnosis via the urgent 2-week referral pathway during the COVID-19 crisis.

The model predicts 181 to 542 additional cancer

deaths due to delay in patient presentation and referral during the 3-month lockdown, and a further 401 to 1,231 deaths due to delayed diagnostic investigation dealing with this backlog of patients. The findings also suggest that COVID-19-related delays in presentation, diagnosis, and subsequent treatment will result in additional deaths and years of life lost that vary widely according to patient age and type of cancer.

delays in the 2-week-wait cancer referral pathway during the COVID-19 pandemic on cancer survival in the UK: a modeling study, *The Lancet Oncology* (2020). [DOI: 10.1016/S1470-2045\(20\)30392-2](https://doi.org/10.1016/S1470-2045(20)30392-2)

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"Our estimates suggest that, for many cancers types, delays in diagnosis and treatment as short as two months will lead to a substantial proportion of patients with early-stage tumors progressing from having curable to incurable disease," says Professor Clare Turnbull from the Institute of Cancer Research in the UK who led the research. "Substantial additional deaths from diagnostic delays on top of those expected from delays in presentation—because many people are simply too afraid to visit their GP or hospital because they are worried about catching COVID-19—are likely, especially if rapid provision of additional capacity, including technical provision and increased staffing, is not forthcoming."

She continues, "Prioritizing patients for whom delay would result in most life-years lost may be considered a reasonable option for reducing the overall burden of mortality."

Writing in a linked Comment, Professor William Hamilton (who was not involved in the studies) from the University of Exeter, UK, discusses how the NHS might address the backlog of diagnostic care. He says, "Imaging departments might not be able to meet increased demand: many were working at full capacity before the COVID-19 pandemic, and the need to keep patients separate and to clean equipment has reduced their efficiency. There are encouraging reports that the Nightingale hospitals—which were rapidly built to offer care for patients with COVID-19, but are now less needed—will be reconfigured into cancer diagnostic hubs. The UK has had a long-term shortage of diagnostic capacity, although this shortage is not simply of equipment, but also of personnel, which is not so easily improved."

More information: Amit Sud et al. Effect of

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