

Lockdown ease could lead to tens of thousands of excess deaths unless vulnerable are protected

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The risk of death among people with health conditions, such as heart disease or diabetes, is five times higher than in people without underlying conditions and easing the lockdown must take into account

this clinical vulnerability, according to new UCL-led research.

The study, published today in *The Lancet*, analyzed 3.8 million health records and found that between 37,000 and 73,000 excess deaths could occur from direct and indirect effects of the COVID-19 pandemic within one year depending on how the lockdown is eased.

The team of researchers from UCL, UCLH, University of Cambridge and Health Data Research UK (HDR UK) based their estimates of excess deaths on the population in England having a 10% infection rate and 20% having at least one of the high-risk underlying conditions as listed by Public Health England.

Lead author, Dr. Amitava Banerjee (UCL Institute of Health Informatics) said: "Older people, those with one or more underlying conditions and their carers are asking what easing the lockdown might mean for their health. Using data modeling on a number of different scenarios, our findings show the mortality risk for these vulnerable groups increases significantly, and could lead to thousands of avoidable deaths."

As part of this study, the authors developed a publicly accessible online 'risk calculator,' showing how age, sex and underlying [health conditions](#) (including [chronic obstructive pulmonary disease](#), [heart disease](#), kidney disease, diabetes, and severe obesity) can affect mortality rates in different scenarios of the COVID-19 emergency.

Pre-COVID-19 the one year mortality risk in adults with no underlying health conditions was 0.6%, compared to 3.5% in those with one underlying condition (fivefold increase) and 7.5% in those with two underlying conditions. The researchers modeled the additional effect of the pandemic on top of these background risks, which allows the calculator's user to explore changes in the infection rate in the population

and the relative impact of the COVID-19 emergency. The relative risk captures both the direct effects of viral infection (e.g. how deadly it is) as well as indirect effects (e.g. health system strain).

Dr. Banerjee explained, "Our calculator provides one year mortality risks for common conditions by age and sex. Before the pandemic neither doctors, nor patients have been used to seeing such information, but in the current emergency there is an urgent need to develop better understanding of who is at risk based on reliable health data. What we offer is a prototype, a beta version that we and others can develop further.

"For example, we show how a 66-year-old man with chronic obstructive pulmonary disease (COPD) has a 6% risk of dying over the next year and there are 25 000 "patients like me" (i.e. men of the same age with the same condition) in England. The calculator estimates 164 excess COVID-related deaths on top of the expected 1639 deaths over a year in patients in a similar situation."

Senior author, Professor Harry Hemingway, (UCL Institute of Health Informatics and Research Director of Health Data Research UK), said: "This research is relevant for the NHS policy on "vulnerable" patients based on their underlying conditions.

"Our findings emphasize the importance of delivering consistent preventive interventions to people with a wide range of diseases, who are cared for by a wide range of clinical specialties. This policy is only possible because we have an NHS able to use system-wide data for patient benefit"

Early work from the UCL research group in March highlighted the potential for excess deaths in those who are not infected with coronavirus. This has subsequently been confirmed with weekly reports

on [death](#) registrations from the Office of National Statistics.

Health Data Research UK (HRR UK) Chief Executive Officer, Caroline Cake, said: "The Health Data Research Hubs focusing on cardiovascular disease, respiratory disease, cancer, acute medicine and real world evidence are analyzing data at scale across the UK to understand and mitigate the direct and indirect causes of excess mortality in the current emergency."

Professor Hemingway (UCL Institute of Health Informatics) concluded: "Vaccines and drugs will take time to develop and evaluate.

"What works right now is two things. Firstly keeping the population infection rate as low as possible, and avoiding infection in the people at highest risk (direct effects of infection). Secondly we need to continue to deliver high quality medical care to vulnerable people to prevent excess deaths in those who are not infected with corona virus (indirect effects of the emergency)."

More information: Amitava Banerjee et al. Estimating excess 1-year mortality associated with the COVID-19 pandemic according to underlying conditions and age: a population-based cohort study, *The Lancet* (2020). [DOI: 10.1016/S0140-6736\(20\)30854-0](https://doi.org/10.1016/S0140-6736(20)30854-0)

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