Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Beyond the tip of the iceberg: direct and indirect effects of COVID-19

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As we enter the second year of the COVID-19 pandemic, with more than 2 million confirmed deaths worldwide,[1] it is increasingly apparent that, as tragic and grim as this statistic is, it might be just the tip of the iceberg with respect to the collateral damage inflicted on the social, economic, psychological, and physical wellbeing of people around the world. Furthermore, many of these consequences will not only reverberate for months and years to come, but will also have unequal and profound effects on different societies and specific subgroups within societies.

The study by Kathryn Mansfield and colleagues[2] in *The Lancet Digital Health* is both timely and relevant as many jurisdictions around the world have implemented or are in the process of implementing second and third waves of lockdowns. The authors used electronic primary care health records of a nationally representative sample of nearly 10 million people in the UK (13% of the total population) to describe and quantify the indirect effects of COVID-19 restriction measures on weekly primary care contacts for mental health, acute alcohol-related events, asthma and chronic obstructive pulmonary disease exacerbations, and cardiovascular and diabetic emergencies up to July, 2020. The results showed that weekly primary care contacts for these physical and mental health conditions fell significantly after the introduction of lockdowns in March, 2020, and—with the exception of unstable angina and acute alcohol-related contacts—remained below pre-lockdown levels. The authors concluded that these reductions were likely to represent a substantial burden of unmet need (particularly for mental health conditions), with potential implications for subsequent morbidity and premature mortality.

The findings around mental health contacts are particularly disturbing. Although the historical averages based on pre-lockdown levels are quite appropriate for other conditions included in the analysis, the possible burden of unmet mental health problems might have been even greater than reported as a result of the stressors induced by the pandemic and related restrictions.[3,4] Other collateral damage of the lockdowns has been to patients with a range of non-acute conditions routinely managed in primary care, whose diagnoses and initiation of treatment were delayed, thus affecting their long-term prognosis. However, it is difficult to estimate the magnitude of this problem because Mansfield and colleagues' study focused on conditions with more immediate health consequences.

All-cause mortality can be used to estimate excess mortality and thereby gauge the true impact of the pandemic on the number of deaths, including those formally attributed to COVID-19 as well as to those that were never formally diagnosed, or those caused by disruptions associated with delays to elective or non-urgent procedures, people not accessing health services, and psychological and economic consequences of the pandemic.[5] However, the issue of accurately measuring the collateral damage on morbidity or other aspects of our lives, in both the short term and long term, is much more challenging and might never be fully appraised.

Mansfield and colleagues' study also emphasises the importance of sustaining equitable access to primary care in future pandemic planning. Some of the trends that emerged during this pandemic might dissipate, but others could endure much longer and possibly become permanent. The accelerated shift to remote consultations is real, and much of it will stay. However, we must get it right this time. Doing so includes not only successfully addressing the digital divide and digital literacy issues, but also identifying for which patients, what conditions, and what types of visits remote consultations are optimal, and how they can be further enhanced with remote monitoring. We can hypothesise that, because of a disproportionate clustering of underlying medical conditions among older adults, many such individuals might have been reluctant to initiate in-person contacts while also lacking the required technology or digital skills to participate in remote consultations. At the same time, these individuals are more likely to become seriously ill if their chronic conditions are not properly managed and monitored.

The second and third waves of lockdowns and curfews implemented across many jurisdictions are an acknowledgment that our evidence-based public health

strategies, such as testing and tracing, mask wearing, handwashing, and physical distancing, as well as our sense of civic duty, might have been thus far largely insufficient to suppress and control transmission. Just as the earlier lockdowns, they are intended to buy us time—time to vaccinate as many at-risk people as possible with a potential side-effect of attenuating the direct effects of COVID-19 while amplifying the indirect ones.

The vaccines announced over the past few months are certainly welcome news; however, even assuming that the efficacy shown in clinical trials will be replicated in real-world conditions,[6] many challenges remain. These challenges include logistics around how to safely and efficiently distribute and administer vaccines, the emergence of new variants,[7] optimal timing of booster doses,[8] vaccine hesitancy in some groups or individuals, and answering questions surrounding the long-term immunity conferred by the vaccines as well as their potential side-effect profiles. We are not out of the woods yet.

We declare no competing interests.

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1 Johns Hopkins University of Medicine. COVID-19 dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) https://coronavirus.jhu.edu/map.html (accessed Jan 25, 2021).
2 Mansfield KE, Mathur R, Tazare J, et al. Indirect acute effects of the COVID-19 pandemic on physical and mental health in the UK: a population-based study. *Lancet Digit Health* 2021; published online Feb 18. https://doi.org/10.1016/S2589-7500(21)00017-0.
3 Torales J, O'Higgins M, Castaldelli-Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. *Int J Soc Psychiatry* 2020; **66:** 317–20.
4 Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet* 2020; **395:** 912–20.
5 Woolf SH, Chapman DA, Sabo RT, Weinberger DM, Hill L. Excess deaths from COVID-19 and other causes, March-April 2020. *JAMA* 2020; **324:** 510–13.
6 Mahase E. Covid-19: Reports from Israel suggest one dose of Pfizer vaccine could be less effective than expected. *BMJ* 2021; **372:** n217.
7 Callaway E. Could new COVID variants undermine vaccines? Labs scramble to find out. *Nature* 2021; **589:** 177–78.
8 Robertson JFR, Sewell HF, Stewart M, Kendrick D, Agius RM. COVID-19 vaccines: to delay or not to delay second doses. Jan 5, 2021. https://blogs.bmj.com/bmj/2021/01/05/covid-19-vaccines-to-delay-or-not-to-delay-second-doses/ (accessed Jan 25, 2021).