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## COVID-19 and maternal and perinatal outcomes

We echo the call made by Barbara Chmielewska and colleagues<sup>1</sup> for better data to capture the effects of COVID-19 on maternal outcomes. Our own systematic review (PROSPERO CRD42020219889, in progress) specifically focuses on the amount of maternal mortality as measured by the maternal mortality ratio, and our findings so far concur with their conclusion of an increase, but we advise caution in the interpretation of this trend.

In our review, we have been struck by the absence of specificity on population coverage in published papers, which has implications for understanding and responding to COVID-19. This fact is illustrated by Chmielewska and colleagues<sup>1</sup> who use two studies to conclude an increase, but do not comment on the sources for identifying the numbers of maternal deaths. One study uses Mexican National Registry data and should, in theory, capture all maternal deaths in Mexico.<sup>2</sup> The second study relies on data from four tertiary hospitals in India.<sup>3</sup> In this second study, the authors document a substantial decrease in pregnant women attending for delivery in their study facilities in the period after the emergence of COVID-19.<sup>3</sup> This reduction suggests that women are seeking care at different facilities or delivering at home, and such a shift in service use will probably distort the comparison of the maternal mortality ratio before and during COVID-19. Indeed, the India study provides evidence that the COVID-19 pandemic has had a differential effect on women according to their obstetric risk, with a substantial 66·4% fall in emergency referrals.<sup>3</sup> The observed change in institutional maternal mortality is reflecting this shifting casemix, but such a trend should not be extrapolated to the wider population where other factors affecting risk

are at play, such as socioeconomic determinants.

Only one part of the picture is being looked at when examining institutional data, which subsequently distorts actions to achieve a future of “radically inclusive and equitable maternity care”.<sup>1</sup> Crucially, and as noted in the Comment<sup>4</sup> accompanying the paper by Chmielewska and colleagues, community-based reporting of maternal deaths and births should be the ultimate goal if there is to be a full understanding of the societal effect and trends. Lessons from the rapid set-up of reporting systems for COVID-19 mortality in the community should inform progress on maternal death surveillance. In the immediate term, we call for the improved reporting of data used to calculate the maternal mortality ratio. Standardised reporting formats, such as the Strengthening the Reporting of Observational Studies in Epidemiology,<sup>5</sup> would not only enhance the assessment of bias but also the value of these data in any action taken to reduce maternal deaths.

We declare no competing interests.

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- 1 Chmielewska B, Barratt I, Townsend R, et al. Effects of the COVID-19 pandemic on maternal and perinatal outcomes: a systematic review and meta-analysis. *Lancet Glob Health* 2021; **9**: e759–72.
- 2 Lumbreras-Marquez MI, Campos-Zamora M, Seifert SM, et al. Excess maternal deaths associated with coronavirus disease 2019 (COVID-19) in Mexico. *Obstet Gynecol* 2020; **136**: 1114–16.
- 3 Kumari V, Mehta K, Choudhary R. COVID-19 outbreak and decreased hospitalisation of pregnant women in labour. *Lancet Glob Health* 2020; **8**: e1116–17.
- 4 Kumar J, Kumar P. COVID-19 pandemic and health-care disruptions: count the most vulnerable. *Lancet Glob Health* 2021; **9**: e722–23.

- 5 von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Int J Surg* 2014; **12**: 1495–99.