Weekly Checkup

Maternal Deaths: A Study in Misclassification

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Two weeks ago, the American Journal of Obstetrics & Gynecology (AJOG) published a study that could change how maternal mortality is understood in the United States. The study found that the country may not be suffering from an excessive and rising rate of maternal mortality but could be suffering from an excessive misclassification of maternal deaths. Let's explore the study to consider the challenges and the limitations to its findings as well as the broader policy implications a new approach to classifying maternal death could have on public health.

First, some background. **The Centers for Disease Control and Prevention (CDC) reported a more than tripling of the U.S. maternal mortality rate, from 9.65 per 100,000 live births at the turn of the century to 32.9 per 100,000 in 2021.** Of course, this statistic produced ceaseless press coverage over what has been widely regarded as an alarming spike in pregnancy-related deaths. **But is this picture of maternal mortality in the United States accurate? The AJOG study provides an alternative view.**

Another Look at the Data: The study's authors reviewed all death records in the United States from 1999 to 2021 and grouped the data findings into two buckets: 1999 to 2002 and 2018 to 2021. These intervals were chosen to correct for a recommendation by the National Center for Health Statistics between 2003 and 2017 for providers to tick a pregnancy checkbox on a death certificate if the patient was pregnant. This checkbox selection, according to AJOG, overrode and replaced all –cause-of-death codes with pregnancy chapter codes – essentially defining maternal mortality as a death while pregnant – and thus the data between these years "cannot be taken at face value." After 2018, a positive checkbox assigned pregnancy chapter codes as the underlying cause of death without converting multiple causes of death to pregnancy chapter codes only for women aged 15 to 44. In other words, **the study compared two sets of data with more similar sourcing – one from the recent past and one from the distant past, while skipping over the less precise records – to determine whether maternal mortality has, in fact, risen over the past two decades.**

Study Findings: **The study found that there hasn't been as substantial an increase in U.S. maternal mortality as the CDC has reported for the past several years.** Notably, deaths from pre-eclampsia, eclampsia, postpartum hemorrhage, puerperal sepsis, venous complications, and embolism decreased during the period covered by the study, while deaths due to adherent placenta, renal and unspecified causes increased. But overall, as the study concludes, "The high and rising rates of maternal mortality in the United States are a consequence of changes in maternal mortality surveillance, with reliance on the pregnancy checkbox leading to an increase in misclassified maternal deaths. Identifying maternal deaths by requiring mention of pregnancy among the multiple causes of death shows lower, stable maternal mortality rates and declines in maternal deaths from direct obstetrical causes." It is important to note that non-Hispanic Black women remain at highest risk of maternal death, far exceeding other race or ethnicities, especially in terms of specific causes of death such as cardiomyopathy.

Policy Implications: **If the use of the pregnancy checkbox has inflated the maternal mortality rate, further research is needed to truly understand the risks associated with medical conditions aggravated by pregnancy and its management.**

The study's authors highlight the need to improve the accuracy of death certificates as different surveillance systems record different mortality rates. For example, the authors note that the Pregnancy Mortality Surveillance System (which defines a pregnancy-related death as a death while pregnant or within one year of the end of pregnancy from any cause related to or aggravated by the pregnancy) has estimated a much lower maternal mortality rate of 12.1 per 100,000 births in 2018 and 12.3 in 2019. The National Vital Statistics System , by contrast, shows a rate of 17.4 per 100,000 live births in 2018 and 20.1 in 2019.

Improving maternal health outcomes is a bipartisan priority, and appropriate policy solutions require precise data. The results of this study could be a significant call to action to improve the ways in which deaths are classified. Relatedly, recent reports of an increase in infant mortality relied on a broad and not terribly precise code used to classify infant death. In such cases, it's vital to determine whether there are specific clinical issues, diagnoses, interventions, or oversights that are driving these troublesome statistics. **If the AJOG study is the harbinger of future research on maternal mortality, policymakers may be better informed to take more targeted action to improve the lives of expectant mothers and their babies.**