Recognising the burden of maternal infection worldwide

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Maternal mortality is unacceptably high worldwide, with an estimated 300 000 women dying in 2017, of which around 200 000 deaths were in sub-Saharan Africa.[1] Maternal infection, leading to sepsis, is a leading contributor to these deaths. Yet data for the incidence and cause of maternal infection are scarce.[2]

In *The Lancet Global Health*, Mercedes Bonet and colleagues[3] report findings from a study of maternal infection in 52 countries. They report the frequency of maternal clinical infections in health facilities, and relate them to severe outcomes in 2850 pregnant or recently pregnant women worldwide.[3] They found that 70·4 (95% CI 67·7–73·1) hospitalised women per 1000 livebirths were managed with maternal infection and 10·9 (9·8–12·0) women per 1000 livebirths had an infection-related severe maternal outcome. The study is an important step forward in showing how common and how serious maternal infections are.[3]

The study investigated the difference in frequency of suspected or confirmed maternal infection in women delivering in health facilities in low-income and middle-income countries and high-income countries. The highest risk was observed in upper-middle-income countries (106·4 [95% CI 98·1–114·7] per 1000 livebirths), and the lowest was observed in high-income countries (38·6 [34·1–43·1] per 1000 livebirths), reflecting the differential burden of infectious diseases between these contexts. However, the difference in incidence of maternal infection between the least and most well-resourced settings is likely to be greater than that reported by Bonet and colleagues.[3] The least well-resourced settings almost always have the highest burden of infection, but capability is also most limited. Infrequent assessment by frontline workers with limited or no access to specialist support leads to systematic underreporting of the frequency of infections. Data are also poor for causes, as there is frequently no access to quality microbiological investigation.

This study defined those managed with maternal infection as women in whom there was clinical suspicion or diagnosis of infection, a request for culture of any bodily fluid, or women who were receiving antimicrobial treatment. That these criteria were used illustrates a fundamental and important issue, which is that as yet there are no standardised criteria for maternal possible serious bacterial infection or maternal sepsis, applicable worldwide.[4] Standard clinical criteria that are systematically applied are important, particularly in low-resource settings, to support identification and treatment of infections. They are also essential for comparisons between health facilities and studies, in terms of overall or specific incidence of particular infectious (or non-infectious) causes. In infants, simple algorithms for possible serious bacterial infection have been used to guide systematic assessment and treatment by frontline health-care workers. They have also enabled estimates of the number of cases needing treatment,[5] studies of causes,[6] and facilitated pragmatic approaches to clinical trials.[7]

Overall, the evidence base for interventions for maternal infection is limited in quantity and quality,[8] even when compared with other very underserved groups in low-resource settings, such as neonates. As well as the need for randomised controlled trials to test specific strategies, working across the continuum of reproductive health can be used to increase opportunities. Maternal vaccines, such as that for group B streptococcus, are expected to be trialled primarily against fetal and infant outcomes. Trials such as these, or subsequent maternal vaccine probe studies, will provide an important opportunity to also assess benefit to maternal outcomes, which should not be missed.[9]

Bonet and colleagues make a substantial contribution to the field of maternal infection.[3] There remains, however, much to be done, particularly for the most disadvantaged populations. We need systematic and standardised approaches, and to maximise opportunities for collaboration across research, policy, and practice in reproductive health. Through this, we will be able to deliver improvements in the least-resourced settings for mothers, and the babies with whom they are inextricably linked.

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