Malaria control and elimination in sub-Saharan Africa: data from antenatal care centres

Although the burden of malaria is progressively declining in most of sub-Saharan Africa, it remains a huge public health issue with complex challenges, such as the rise of drug and insecticide resistance, low coverage of existing preventive strategies, scarcity of safe and effective vaccines, and weakness of public health systems.[1] Malaria prevalence surveillance is one of the key cornerstones for achieving malaria control and elimination. WHO's Global Technical Strategy for malaria has highlighted the importance of malaria surveillance as the third pillar for moving closer to malaria elimination.[2] Effective malaria surveillance should be able to identify and target high-risk areas and the most affected population and to assess the effects of intervention measures and progress in reducing the malaria burden.[3] However, to date, more than 50% of global estimates of malaria burden come from population-based household surveys,[4] which are almost all cross-sectional, leading to insufficient power to capture trends in malaria progression. New tools for monitoring malaria control and elimination are urgently needed.

In *The Lancet Global Health*, Chonge Kitojo and colleagues[5] present the results of a well-designed, population-based study of this timely topic and have proposed a new approach for malaria surveillance using routine data from antenatal care centres. Their research, done in Tanzania between 2014 and 2017, aimed to compare data from nationwide malaria screening for pregnant women within their first antenatal care visit with data from two population-based prevalence surveys in children younger than 5 years and to assess their ability to capture malaria trends and progress towards elimination. It is an interesting approach to malaria surveillance because, in malaria endemic-areas, the probability of malaria detection is higher among pregnant women in antenatal care than among the non-pregnant population.[6] Additionally, such women have not yet received their first dose of intermittent preventive treatment so they could represent an ad-hoc sentinel group to monitor the intensity of malaria transmission.[7]

Kitojo and colleagues show a positive correlation between the prevalence at antenatal care and among children younger than 5 years, even though declines in prevalence at antenatal care were globally smaller than among children. By contrast, the decline in antenatal care prevalence was more pronounced in regions with high transmission than in low transmission areas, where antenatal care prevalence was more closely related to prevalence in children younger than 5 years. A proportional reduction of 34·2% between 2014 and 2017 was seen in women testing positive for malaria, when adjusting for higher-endemicity settings. This decline might be attributable to the time of data collection, as highlighted by Kitojo and colleagues, but could also be explained by the socioeconomic development in the past few decades and the improvement of different preventive strategies against malaria in pregnancy, such as the increase in the number of doses of intermittent preventive treatment in pregnancy and the high coverage of long-lasting insecticide-treated nets. Kitojo and colleagues also suggest that monthly prevalence assessed within data from antenatal care clinics at the district level across Tanzania revealed consistent subregional spatial heterogeneity.

This study fills an important knowledge gap by providing additional and interesting data on the burden of malaria during pregnancy, particularly spatial and temporal trends of antenatal care prevalence in low transmission settings, where population-based surveys are logistically demanding, expensive, and often miss some instancves of infection. Use of antenatal care data for malaria surveillance also allows for the monitoring of malaria exposure among pregnant women, which are a more susceptible population. Moreover, antenatal care data would be able to measure the seasonal variation and intensity of transmission, enabling better capture between prevalence surveys and routine case reporting systems.

These findings are consistent with the sparse literature on this topic[6–9] and suggest that malaria prevalence at the first antenatal care visit could be a suitable metric for malaria surveillance in countries with low-income resources. However, there is now increasing evidence on the burden of malaria in the first trimester of

pregnancy,[10] a period in which malaria is not regularly assessed, mainly because pregnant women generally do not attend maternity clinics until the second trimester. Therefore, using data from the first antenatal care visit could underestimate the burden of malaria during pregnancy and skew assessments of malaria elimination progress.

Strengthening malaria surveillance is a crucial determinant for accelerating process towards elimination. Because antenatal clinic populations are an appropriate and easy-to-access group for real-time malaria infection,[6] further evaluations should be done to assess this measure as a sustainable malaria surveillance tool.

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