

WHO analysis of causes of maternal death: a systematic review.

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BACKGROUND: The reduction of maternal deaths is a key international development goal. Evidence-based health policies and programmes aiming to reduce maternal deaths need reliable and valid information. We undertook a systematic review to determine the distribution of causes of maternal deaths.

METHODS: We selected datasets using prespecified criteria, and recorded dataset characteristics, methodological features, and causes of maternal deaths. All analyses were restricted to datasets representative of populations.

We analysed joint causes of maternal deaths from datasets reporting at least four major causes (haemorrhage, hypertensive disorders, sepsis, abortion, obstructed labour, ectopic pregnancy, embolism). We examined datasets reporting individual causes of death to investigate the heterogeneity due to methodological features and geographical region and the contribution of haemorrhage, hypertensive disorders, abortion, and sepsis as causes of maternal death at the country level.

FINDINGS: 34 datasets (35,197 maternal deaths) were included in the primary analysis. We recorded wide regional variation in the causes of maternal deaths. Haemorrhage was the leading cause of death in Africa (point estimate 33.9%, range 13.3-43.6; eight datasets, 4508 deaths) and in Asia (30.8%, 5.9-48.5; 11,16 089). In Latin America and the Caribbean, hypertensive disorders were responsible for the most deaths (25.7%, 7.9-52.4; ten, 11,777). Abortion deaths were the highest in Latin America and the Caribbean (12%), which can be as high as 30% of all deaths in some countries in this region. Deaths due to sepsis were higher in Africa (odds ratio 2.71), Asia (1.91), and Latin America and the Caribbean (2.06) than in developed countries.

INTERPRETATION: Haemorrhage and hypertensive disorders are major contributors to maternal deaths in developing countries. These data should inform evidence-based reproductive health-care policies and programmes at regional and national levels. Capacity-strengthening efforts to improve the quality of burden-of-disease studies will further validate future estimates.

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