

A scoping review of geographic information systems in maternal health

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Abstract

Background: Geographic information systems (GIS) are increasingly recognized tools in maternal health.

Objectives: To evaluate the use of GIS in maternal health and to identify knowledge gaps and opportunities.

Search strategy: Keywords broadly related to maternal health and GIS were used to search for academic articles and gray literature.

Selection criteria: Reviewed articles focused on maternal health, with GIS used as part of the methods.

Data collection and analysis: Peer reviewed articles (n=40) and gray literature sources (n=30) were reviewed.

Main results: Two main themes emerged: modeling access to maternal services and identifying risks associated with maternal outcomes. Knowledge gaps included a need to rethink spatial access to maternal care in low- and middle-income settings, and a need for more explicit use of GIS to account for the geographical variation in the effect of risk factors on adverse maternal outcomes. Limited evidence existed to suggest that use of GIS had influenced maternal health policy. Instead, application of GIS to maternal health was largely influenced by policy priorities in global maternal health.

Conclusions: Investigation of the role of GIS in contributing to future policy directions is warranted, particularly for elucidating determinants of global maternal health.