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Estimating spatial inequalities of urban child mortality

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Abstract

Background: Recent studies indicate that the traditional rural-urban dichotomy pointing to cities as places of better health in the developing world can be complicated by poverty differentials. Knowledge of spatial patterns is essential to understanding the processes that link individual demographic outcomes to characteristics of a place. A significant limitation, however, is the lack of spatial data and methods that offer flexibility in data inputs.

Objective: This paper tackles some of the issues in calculating intra-urban child mortality by combining multiple data sets in Accra, Ghana and applying a new method developed by Rajaratnam et al. (2010) that efficiently uses summary birth histories for creating local-level measures of under-five child mortality (5q0). Intra-urban 5q0 rates are then compared with characteristics of the environment that may be linked to child mortality.

Methods: Rates of child mortality are calculated for 16 urban zones within Accra for birth cohorts from 1987 to 2006. Estimates are compared to calculated 5q0 rates from full birth histories. 5q0 estimates are then related to zone measures of slum characteristics, housing quality, health facilities, and vegetation using a simple trendline R2 analysis.

Results: Results suggest the potential value of the Rajaratnam et al. method at the micro-spatial scale. Estimated rates indicate that there is variability in child mortality between zones, with a spread of up to 50 deaths per 1,000 births. Furthermore, there is evidence that child mortality is connected to environmental factors such as housing quality, slum-like conditions, and neighborhood levels of vegetation.

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