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**ASSESSING CHILDHOOD HEALTH OUTCOME INEQUALITIES WITH AREA BASED SOCIOECONOMIC MEASURES: A RETROSPECTIVE CROSS-SECTIONAL STUDY USING MANITOBA POPULATION DATA**

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**Background:**

Socioeconomic status (SES) gradients in health exist in Canada, with many health outcomes improving with increased SES. For many reasons, policy-makers typically rely on area-based socioeconomic measures (ABSM) derived from neighbourhood census data. Although multiple Canadian ABSMs exist, none have been specifically validated in children.

**Objective:**

Our objective was to compare the strength of association between key pediatric health outcomes and various ABSMs, including income quintile.

**Methods:**

This was a retrospective cross-sectional assessment of the association between SES measured by 12 different ABSM and 20 specific pediatric health outcomes. Data from the Manitoba Population Research Data Repository was used for residents aged 0-19y from 2010-2015. The ABSMs included continuous and categorical indices from the Institut National de Santé Publique du Québec (INSPQ), Manitoba's Socio-Economic Factor Index-2 (SEFI<sub>2</sub>), the Canadian Marginalization Indices (CAN-Marg), and income quintile. Outcomes included birth-related events (e.g. mortality), vaccination uptake, hospitalizations, and teen pregnancy.

**Results:**

Overall, 19/20 outcomes had socioeconomic gradients identified by both the slope (SII) and relative (RII) index of inequality. Income quintile was the best single measure, identifying 16/19 confirmed inequalities (e.g. teen pregnancies were 10.8 times more likely in the lowest vs highest quintile). CAN-Marg material deprivation detected 10/19 inequalities, ethnic concentration (immigrants and visible minorities) detected 6/19, and their combination identified 16/19 inequalities. In general, CAN-Marg indices had greater explanatory power as measured by the Akaike Information Criterion (AIC), with up to 25% lower AIC compared to income quintile. Although continuous and categorical ABSM were generally comparable, sex:ABSM interactions were noted for 10/18 outcomes (excluding teen pregnancies and teen live births).

**Conclusion:**

Significant SES gradients were found for 19/20 pediatric health outcomes in Manitoba. While income quintile detected most (16/19), CAN-Marg composite indices had better explanatory power. As in adults, sex:ABSM interactions speak to sex-specific differences in the impact of SES.