POSTER ABSTRACT

# Geospatial Analysis of Family Stress in Sydney Local Health District (SLHD)

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John Eastwood, Katherine Todd

Sydney Local Health District, Australia

**Introduction**: Disadvantage is complex concept that incorporates a range of interrelated financial, social, cultural and political factors. As the number and diversity of indicators of disadvantage increase in specific geographic areas, disadvantage often becomes more entrenched and persists over time. Spatial epidemiology is aimed at identifying patterns in the geographical distribution of health data and may detect irregularities such as spatial clusters of a disease or disadvantage.

This project took a spatial epidemiology approach to identifying the geographical distribution of the "most vulnerable" families with intergenerational cycles of disadvantage and trauma in Sydney LHD by:

Identifying individual indicators of disadvantage and mapping them within SLHD

Identifying clusters of disadvantage

Analysing potential pockets or "hot spots" of extreme or complex disadvantage via layered analysis of individual indicators of disadvantage

**Theory/Methods**: Data was collected at the SA1 level from the multiple sources including the 2011 ABS census and Midwives Dataset Collection. Rates of key indicators were calculated for statistical areas within the Sydney Local Health District and mapped using ArcGIS software; cluster analysis on the distribution of relative rates of these indicators of disadvantage was done and analyses of hotspots carried out using the hotspot analysis tool in ArcGIS. A final score was calculated for individual statistical areas based on the frequency of its occurrence in a hotspot of disadvantage and these scores mapped for the district.

**Results**: A single map encompassing multiple indicators was produced, as well as maps describing the geographical distribution of individual indicators of disadvantage within Sydney Local Health District. This allowed for analysis of pockets-of multi-layer disadvantage.

**Conclusions**: Addressing problems of entrenched disadvantage is a complex issue, however targeting particular locations and designing evidence-based place-based approaches has considerable potential to help improve outcomes for people experiencing multiple and inter-related forms of disadvantage.

**Lessons Learned**: The analysis of indicators of family stress was a powerful tool for describing family needs to community and partner stakeholders. The analysis has been successful in generating interagency support for disadvantaged communities

**Limitations**: The analysis was only able to use family stress data collected from maternity and community health electronic records and the most recent census. The focus was on the experiences of mothers. The experiences of fathers was absent from the data.

**Suggestions for future research**: Spatial latent class analysis will assist in determining if there are other groups with different characteristics.

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