

Place and health in Australia: Future possibilities

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Three approaches to multilevel studies of place and health have been employed in Australia. First, large scale government-sponsored surveys have been utilized and summary area-level variables have been developed from the surveys or external sources such as census data. Second, spatially-aggregated mortality and census data have been combined to create multilevel databases that have been used to assess the impact of area-level characteristics on cause-specific and all-cause mortality. Third, multilevel studies have been developed to address specific hypotheses and primary environmental data have been collected in addition to individual level data. In the first two approaches sample sizes are often large but the delineation of area-level units is limited by official systems of spatial classification. In addition, area-level variables tend to be limited to census-based summary measures, such as the Index of Relative Socio-Economic Disadvantage making it impossible to postulate about potential causal pathways. The third approach is potentially the most fruitful because environmental variables (and potentially area-unit boundaries) can be defined with greater specificity. However because this approach requires extensive primary data collection the sample sizes of both areas and individuals have been limited due to cost and resource constraints and it is likely that existing studies are underpowered.

In recent years there have been a number of developments in the collection of spatial data which have vastly improved the breadth and quality of area-level data. Additionally there is increased potential for the linking of spatial datasets and proposals for the introduction of new standardised spatial micro-level units which will provide flexibility in the delineation of spatial units (eg according to boundaries of major roads or rivers). With these developing technologies there now is considerable potential to build on existing and newly developing high-quality large scale cross-sectional and longitudinal Australian studies which have extensive social, clinical and biological data, to address cutting edge questions in social epidemiology. Realisation of these possibilities requires respectful collaboration across the breadth of epidemiology from social to molecular as well as engagement with disciplines that have traditionally been peripheral to public health such as geography, urban planning and environmental science.

In the presentation current approaches to multilevel studies of health and place in Australia will be described and the potential for new, innovative approaches will be explored.