

Geospatial aspects of alcohol-related harm in New Zealand

Kyp Kypri,¹ John Langley,¹ Peter Whigham² and John Wiggers³

¹Injury Prevention Research Unit, Department of Preventive and Social Medicine

²Spatial Information Research Centre, Department of Information Science

³University of Newcastle, Australia

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The leading cause of mortality in 15-24 year-olds in New Zealand is injury, accounting for three quarters of deaths. Road traffic crashes account for over half of all injury deaths and a third of hospitalisations, and hazardous alcohol consumption is the primary contributor to these events. The public health goal of this project is the prevention of alcohol-related injury.

In the past 15 years, NZ has liberalised access to alcohol via changes to the Sale of Liquor Act (1989), changes in land use laws (1991), and the reduction in the minimum purchase age (1999). In the same period, government controls on advertising and promotion of alcohol have been relaxed. By way of illustration, in 1989 NZ had 6000 liquor outlets while in 2004 the figure was 14800. In comparison, with five times NZ's population, Australia has 12000 outlets.

There is compelling evidence that environmental variables (physical, social, and legislative) are powerful determinants of drinking behaviour. Drinking occurs within the context of local authority policies, business practices, and law enforcement. Many of these have a spatial dimension (e.g. liquor outlet density) and casual observation suggests that there is considerable variation in the levels of these variables across NZ. For example:

1. *Demography*: the age, gender, and ethnic mix of communities.
2. *Geography*: factors such as proximity to licensed premises, density of liquor outlets, transport patterns, housing density;
3. *Commercial activity*: the intensity of competition among liquor outlets reflected in advertising and promotion of alcohol;
4. *Local politics*: the local authority stance on alcohol, reflected in policy statements and by-laws (e.g., liquor bans);
5. *Institutional factors*: institutional policies, availability and promotion of alcohol on tertiary education campuses, traditions, civic events relevant to alcohol, availability and quality of support services;
6. *Law enforcement*: the extent to which the intoxication provisions of the Sale of Liquor Act are enforced by police and licensing authorities in the community.
7. *Healthcare*: the availability and quality of screening, brief intervention, and treatment services.

The aims of this project are (1) to develop measures for formally characterising these potential influences; and (2) to examine the relations between policy-relevant (i.e. modifiable) spatial elements and drinking behaviour. As a starting point IPRU, in collaboration with SIRC, are seeking to determine the most appropriate way to determine the nature of relationships which exist between distribution of alcohol outlets and alcohol-related harm.

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