

## Do the relationships between alcohol outlet density and acute alcohol-related harm still hold in an increasingly 'online' world?

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**Introduction:** Alcohol availability is a modifiable factor for governments to legislate to mitigate individual-level and community harms. However, in an increasingly "online" world where people can readily obtain alcohol in an expedited manner (e.g., 30 mins or less), it is unclear whether the traditionally measured relationships between "offline" alcohol licences and acute alcohol harms remain. This study examined relationships between alcohol outlet density in Victoria and acute harms assessed by ambulance attendances using the National Ambulance Surveillance System.

**Method:** Alcohol availability was operationalised using local government area (LGA)-level counts of liquor licences using on-premise and off premise categories from the Victorian Regulator. Density was operationalised as the number of licences present in an LGA. Year, Socioeconomic Status of LGAs, regionality, and population were used as covariates in subsequent regression models.

**Results:** Over the study period, the median number of licences per 10,000 population was 41 (IQR=30-58; Max=472). Across the study period, alcohol-involved ambulance attendance rates increased by 8.4% per year ( $p < 0.001$ ), independent of licences and covariates. A 10% increase in on-premise licence density was associated with a 2.5% increase in alcohol-involved ambulance attendances, hence a doubling of on-premise licenses corresponded to a 19% increase in attendances. Across time a small group of LGAs consistently occupied the upper tail of the distribution, demonstrating substantially higher predicted rates than the remainder of the state.

**Discussions and Conclusions:** Relationships between traditional alcohol licences and harm remain. Alcohol-involved ambulance attendances increased over time, with distinct associations observed across licence types. Higher on-premise density was strongly associated with increased harm, suggesting that outlet concentration amplifies risk. Communities were differentially impacted by alcohol licence type and density. A small number of LGAs exhibited persistently elevated harm, indicating stable geographic inequality. The findings support differentiated regulatory approaches by licence type rather than uniform density controls.

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