

## USING SYSTEMS SCIENCE TO SUPPORT DECISION MAKING TO REDUCE ALCOHOL RELATED HARMS

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Alcohol Modelling Consortium

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**Introduction and Aims:** The design of effective responses to the complex problem of alcohol misuse and harms is challenged by differing views of experts, political considerations, community advocacy, and industry lobbying. This contributes to a hotly contested debate on what is the best course of action. In collaboration with NSW Ministry of Health, the Australian Prevention Partnership Centre aimed to take advantage of the advances in systems science computer modelling to develop a 'what if' tool to test policy scenarios.

**Design and Methods:** A participatory approach was used to engage leading academic and policy experts, program planners, clinicians and health economists in model development, which drew on best research evidence, survey and administrative data and expert knowledge. An agent-based computer model has been developed that captures the heterogeneity of drinking behaviours across NSW, the dynamics of those behaviours over the lifecourse, the acute and chronic harms that arise, and the differential effects of interventions across subgroups in the population.

**Results:** The model is able to predict past data trends accurately, and provides a tool that can forecast the comparative impacts (and cost-benefits) of different combinations of policy, clinical and community-based interventions over time. Interventions include early closing times, lockouts, minimum pricing, and limiting outlet density to name a few. Results of model simulations will be presented.

**Discussion:** Models can be updated to remain current, they can help local, state and national stakeholders understand the quantitative trade-offs between policy scenarios and can help build consensus for a course of action.