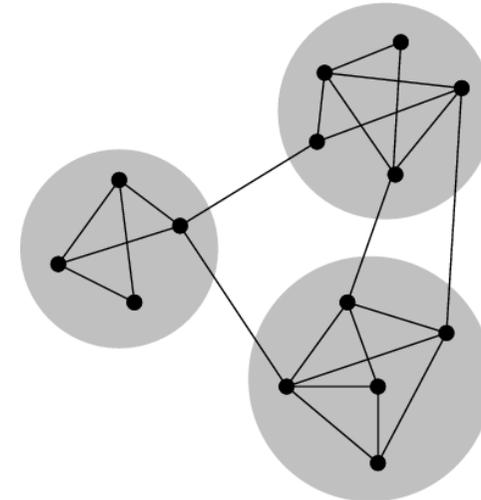


# A Systems Thinking Approach to Reducing Alcohol Related Harm in Tasmania

Gabriela Willis, Kate Garvey, Jacqui Davison, & Mark Heffernan,  
on behalf of the Tasmanian Alcohol Modelling Consortium

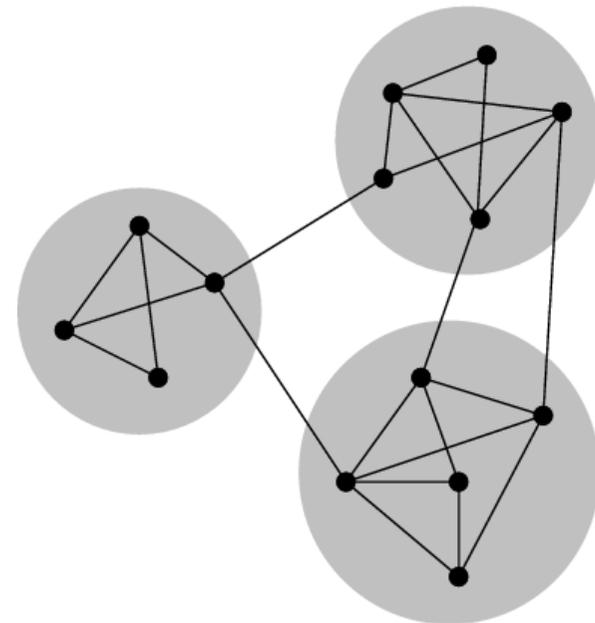
**Gerry Murphy Prize Tasmanian representative**  
RACP Congress, 14<sup>th</sup> May 2018



# Overview

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- Background
  - Why did we undertake the project- a dynamic model of alcohol-related harm in Tasmania?
- Methods
  - What is a dynamic model?
  - How did we build the model?
- Results
  - Model interface and preliminary insights
- Implications
  - How is the model being used?



# Alcohol-related harm in Tasmania

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- Tasmania has significant levels of alcohol-related harm
  - Alcohol consumption rates above the national average
  - Some indicators of harm increasing

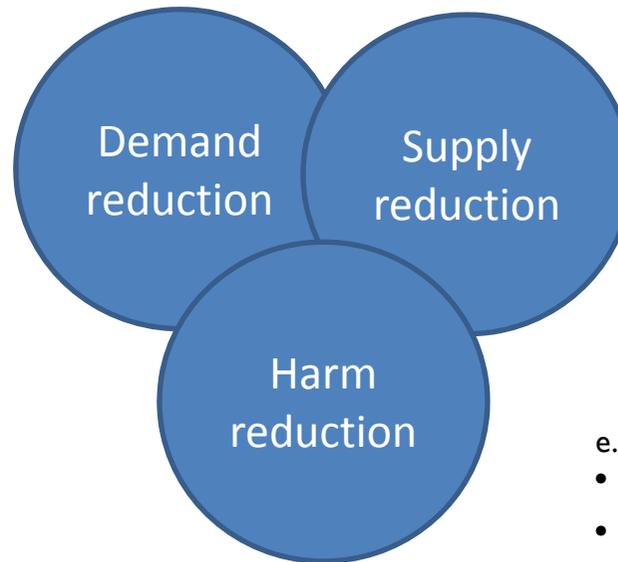


# Strategies to reduce harms

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e.g.

- alcohol treatment programs
- increasing alcohol taxes



e.g.

- increasing minimum drinking age
- trading hour restrictions

e.g.

- drink driving intervention
- sobering up shelters

But what are the right strategies in Tasmania?

# Systems thinking can help

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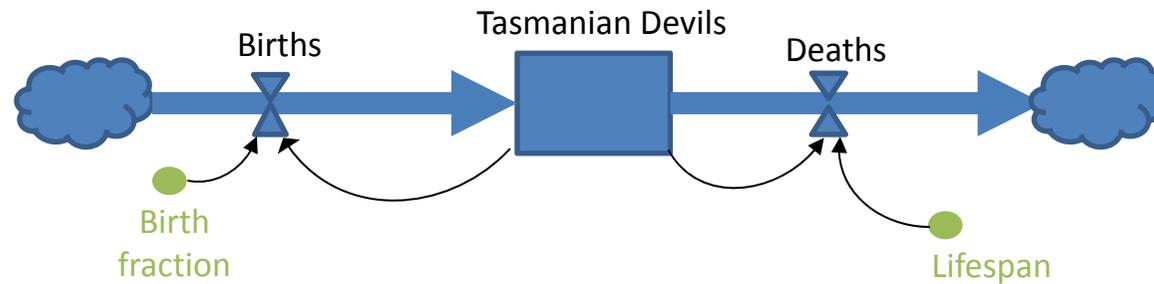
- Makes sense of complex problems
- A 'big picture' perspective
- Looking at complex multiple inter-relationships
- Tools to understand and analyse a system

## Project objectives

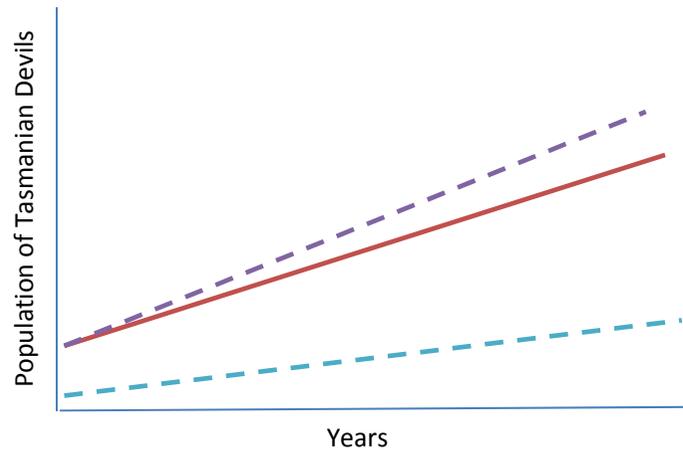
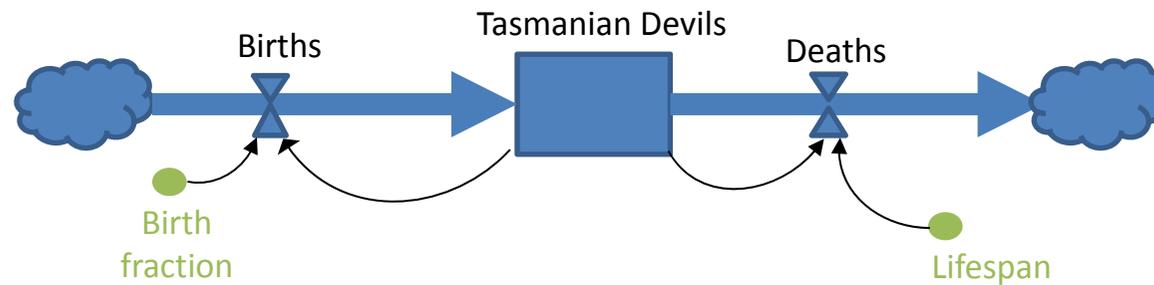
- 1) To develop, test and validate a dynamic simulation model of alcohol-related harm in Tasmania- a **'what if?' tool**
- 2) To use the model to explore the likely impacts of different strategy options

# What is a dynamic model?

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# What is a dynamic model?

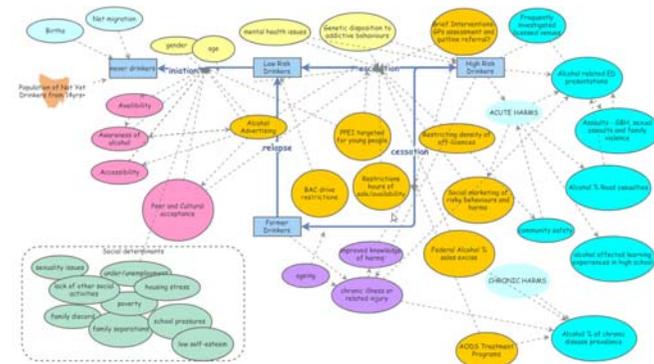
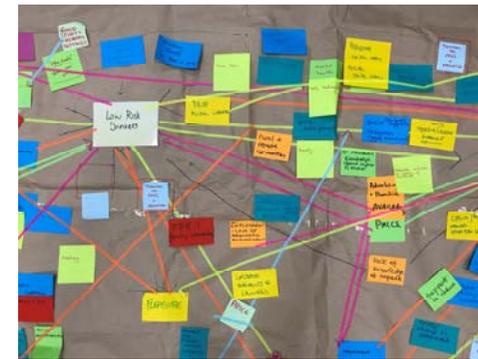


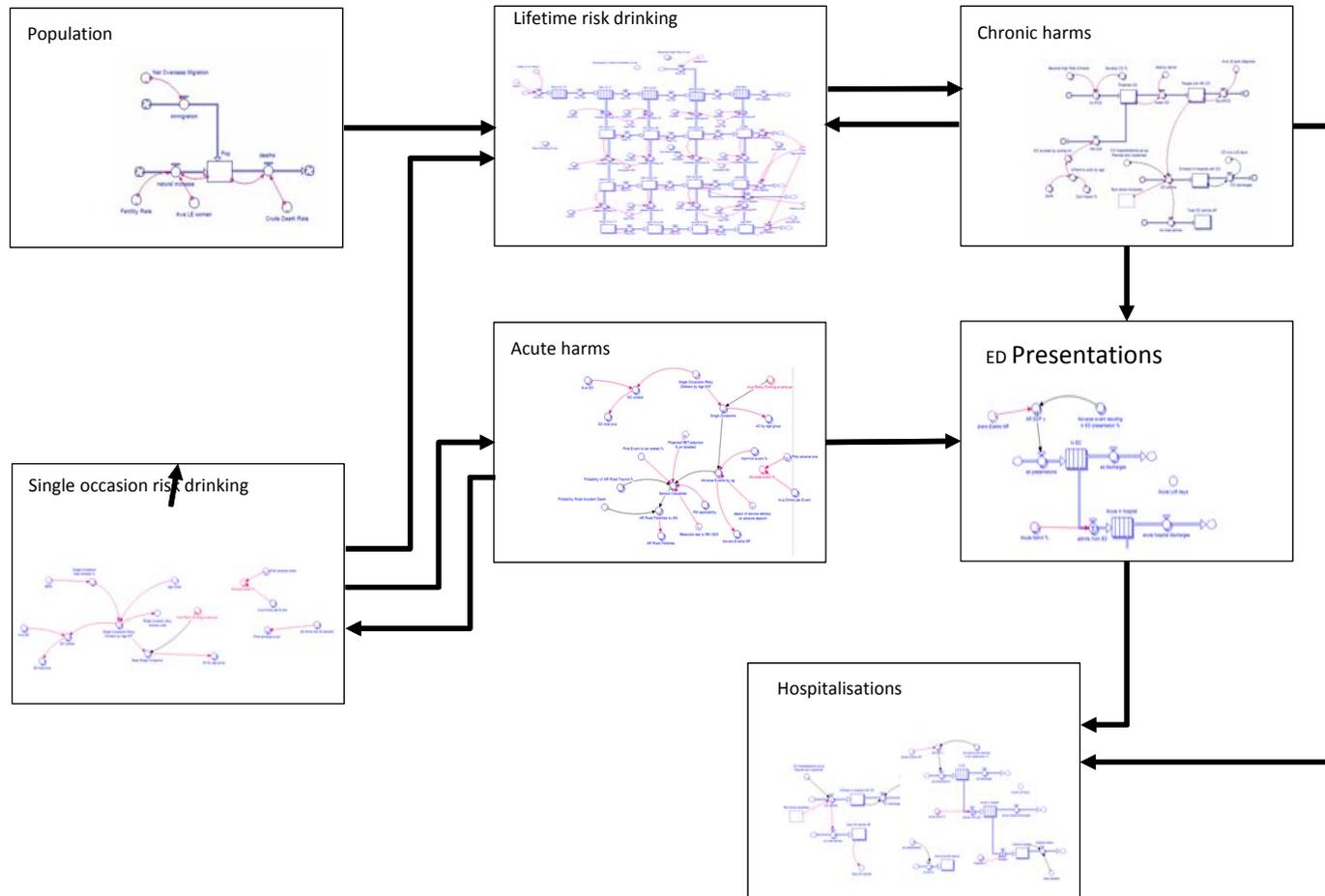
Adapted from *Introduction to System Dynamics Models*, CLEExchange. Available from <https://www.youtube.com/watch?v=IenySRdkRu8>

# Collaboratively building the model



Workshop 1, May 2017, Hobart



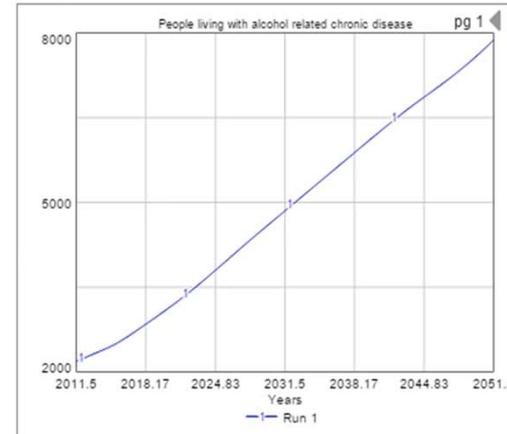
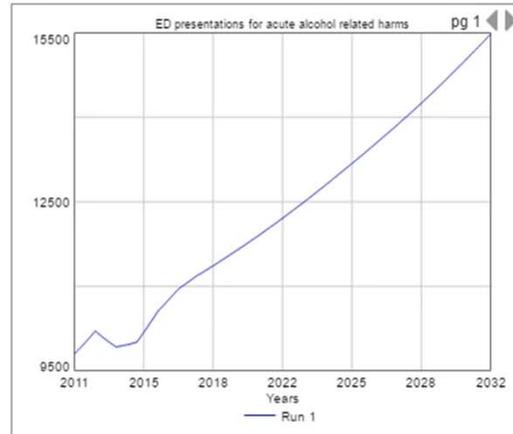


# Selecting the interventions

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1. Community –based Good Sports Program
  2. Alcohol dependent treatment programs
  3. Liquor license density restriction
  4. Early closing of licensed venues
  5. Brief interventions delivered by GPs
  6. Zero blood alcohol content for young drivers
  7. Increase minimum price of alcohol
- } Existing strategies

Background | Key Population and Harms Structures in the Model | Key Assumptions and definition of outputs | Explore Interventions | Unfurl model structure of alcohol consumption



**Random Breath Testing**

- RBTs reduced 50%
- RBTs current levels
- RBTs increased 20%
- RBTs increased 50%

Real Mates  
Off/On

Density Restrictions  
Off/On

4.4

Baseline annual Licence Growth Rate

**Intervention levers**

Uniform Minimum Pricing  
Off/On

Good sports Level 3 mandatory  
Off/On

Early Closing  
Off/On

3

New Closing Time (a.m.)

Scale up treatments for dependent drinkers  
Off/On

2.6k

Services target (from current capacity of 1400)

Brief Interventions  
Off/On

80

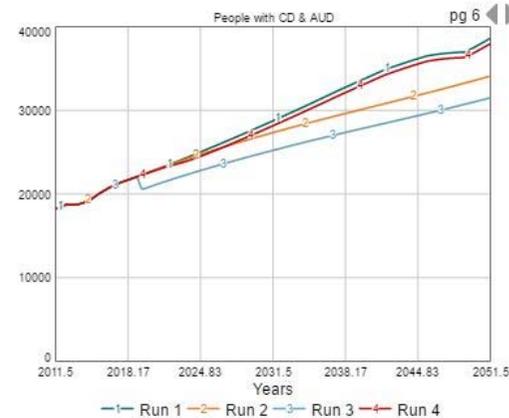
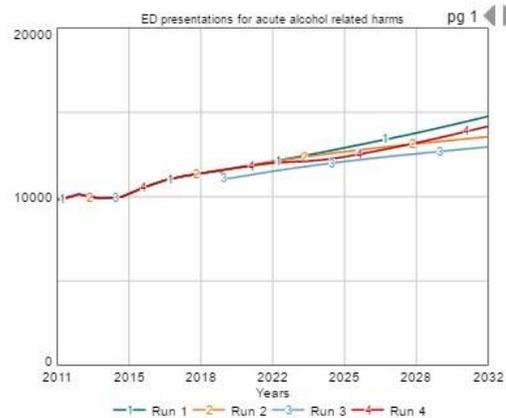
Target % reach of BI

Release Notes

Tas Alc model V770 27 Oct 2017



Background	Key Population and Harms Structures in the Model	Key Assumptions and definition of outputs	Explore Interventions	Unfurl model structure of alcohol consumption	Export Data
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**Random Breath Testing**

- RBTs reduced 50%
- RBTs current levels
- RBTs increased 20%
- RBTs increased 50%

**Real Mates**  
Off/On

**Zero BAC to 25yrs**

**Density Restrictions**  
Off/On

**Include Restaurants**  
Off/On

**Intervention levers**

**Minimum Pricing** Off/On

**Good sports Level 3 mandatory** Off/On

**Early Closing** Off/On

**New Closing Time (a.m.)**

3

**Scale up treatments for dependent drinkers**

2.6k

Services target (from current capacity of 1400)

**Brief Interventions** Off/On

80

Target % reach of BI

Tas Alc model V779 15th Dec 2017

Release Notes



# Summary of preliminary findings

- Density restrictions, with Minimum Unit Pricing (MUP) and/or early closing (3am) have significant impact on **acute and chronic harms**
- The impact on chronic harms won't be seen until **approximately 2028**
- Far greater impact can be achieved with a **cross-sectoral response** rather than health sector response alone.



# How are we using the model?

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- Limitations
  - It's a model, not the real world
  - Reliant on a number of assumptions
- Model building process itself has brought together diverse stakeholders
- A window of opportunity- the new *Tasmanian Alcohol Action Framework*
- Potential to further develop the model e.g. new data, cost-benefit



# Conclusions

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- The causes of alcohol-related harm are complex and varied.
- Systems thinking can offer tools to make sense of complex systems and insight into how best to tackle harms
- This dynamic model is allowing stakeholders to 'test' intervention strategies
- Controlling the availability and price of alcohol in Tasmania is by far the most effective way of reducing alcohol-related harms

# Thank you to the Tasmanian Alcohol Modelling Consortium



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Raimondo Bruno



Tasmanian Health Service

Adrian Reynolds



Tasmanian Health Service  
Department of Education  
Department of Premier and Cabinet

Department of State Growth  
Department of Treasury and Finance

