



Partnering to develop a decision tool to reduce childhood overweight and obesity

The project: A dynamic simulation model to test strategies to achieve the Premier's target for reducing childhood overweight and obesity in NSW

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Project start: July 2016 **Project end:** December 2016

Key messages

- Overweight and obesity are one of the highest contributors to the burden of disease in Australia.
- The NSW Ministry of Health commissioned the Prevention Centre to develop a dynamic simulation model to determine what interventions will be required to achieve the NSW Premier's target of a 5% reduction in childhood overweight and obesity by 2025.
- A dynamic simulation model is a 'what if' tool to test the likely impacts over time of a range of policies and programs to address complex issues.
- Initial insights from the model have indicated what combination of interventions is required to meet the Premier's target. Interventions include improving built environment infrastructure, food policy interventions, school interventions and clinical service delivery.
- The participatory nature of the model-building process is pioneering and has engaged stakeholders who will be central to decision-making to address childhood overweight and obesity in NSW.

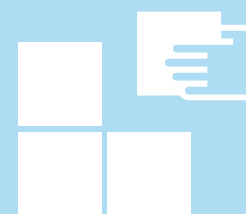
Dynamic simulation modelling is a 'what if' tool to test **approaches to complex issues**



We worked with stakeholders to forecast



what will **reduce childhood overweight and obesity** in NSW



The collaborative process has helped to **build trust and engagement** in the model

Why is this issue important?

Overweight and obesity are leading contributors to the burden of disease in Australia.¹ The rates among children are of concern – childhood overweight and obesity have lasting health effects on individuals, as well as social and economic impacts.² In 2015, 22% of NSW children aged 5 to 16 were overweight or obese.³

In September 2015, the NSW Premier unveiled 12 Premier's Priorities, one of which included a target to reduce overweight and obesity in children (5–16 years) by 5% over 10 years.⁴ Based on current population projections, this would equate to reducing the number of children who are overweight or obese by 62,000 by 2025.⁵

There was uncertainty about whether enhancing the current suite of interventions delivered by NSW Health would be sufficient to achieve the target reduction in childhood overweight and obesity across NSW. It was anticipated that additional strategies, or combinations of strategies, might be required to achieve the Premier's target. There is evidence for the effectiveness of interventions to address overweight and obesity in children,^{6,7} but little is known about how these interventions may interact and potentially reinforce one another to reduce childhood overweight and obesity.

In light of this, the NSW Ministry of Health approached the Prevention Centre to develop a dynamic simulation model to test how different interventions and combinations of interventions might help to achieve the target.

What did we do?

The Prevention Centre, in partnership with the NSW Ministry of Health and in collaboration with the NSW Department of Premier and Cabinet, adopted a participatory system dynamics modelling approach. This meant that stakeholder engagement and input from a diverse range of experts was fostered throughout the project. This approach had previously been applied to modelling projects coordinated by the Prevention Centre, including an investigation of interventions to tackle alcohol-related harm.

The model development process included:

- Expert stakeholders mapping the complex factors relating to childhood overweight and obesity
- Drawing on existing research evidence, program data and expert knowledge from the multidisciplinary stakeholders involved
- Testing, validating and refining the model, in consultation with stakeholders.



You can't get a better demonstration of a project generating interest and relevance than the Centre's simulation modelling. It is showing something that is really useful now for policy makers."

Associate Professor Sarah Thackway
NSW Health

What did we find?



Initial insights from the model indicated what combination of interventions is required to meet the target. Interventions included in the model range from the improvement of built environment infrastructure, to food policy interventions, school interventions and clinical service delivery.



This project attracted a great deal of interest from policy makers, academics and other stakeholders working to address childhood overweight and obesity.



The collaborative process helped to build stakeholder capacity and trust and engagement in the model.

What did we produce?

- A model that can be used as a decision tool to determine the effects of interventions (individually and in combination) to address childhood overweight and obesity
- An accessible online interface, to enable NSW Health stakeholders to 'play' with the model and experiment with different scenarios
- A model user guide for stakeholders.

Why does it matter?

Insights from this model can inform strategic decision-making. It is an ongoing challenge to determine the best policy decisions for complex issues, such as childhood overweight and obesity, and decisions have the potential to be swayed by vested interests.⁸ This project demonstrates how an apolitical, evidence-based decision-support tool can help decision-makers navigate complex public health problems.

The strengthening of partnerships through our participatory modelling approach will provide a sound basis for cross-sectoral efforts to reduce childhood overweight and obesity.

Next steps

- A spin-off from the project is an exercise to estimate costs associated with achieving the Premier's target to reduce childhood overweight and obesity. It will include an investigation of the long-term cost savings of reducing childhood overweight and obesity, such as through reduced adult health care use. This work will be completed in mid-2017.
- The modelling team is working with NSW Health and the NSW Department of Premier and Cabinet to enable continuing use of the model as a way to support evidence-based, strategic decision-making.
- The model can forecast a number of outcome indicators, as well as the number of overweight and obese children. These include estimates of awareness of the benefits of healthy food and active lifestyles; level of consumption of sugar-sweetened beverages; and the effect of limiting promotion of unhealthy foods to children on the consumption of energy-dense, nutrient-poor food. This means the model can be used to investigate a number of policy questions.

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