Supermarket shelf tags on healthier products

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The intervention

- A voluntary intervention supported by state governments, that encourages and assists supermarket chains to identify healthier products to customers by installing and maintaining shelf tags on healthier products.
- The modelled intervention is based on a 12-week controlled trial (CT) where shelf tags were prominently placed on all packaged products eligible for 4.5 or 5 stars using the Health Star Rating (HSR) system. The study was undertaken in seven supermarkets in regional Victoria.

What we already know

- Front of pack (FOP) labelling systems aim to promote healthier food choices. The HSR system was endorsed by the Australian government in 2014 for voluntary implementation.
- A small number of international on-shelf nutrition labelling systems have been evaluated for their impact on customer purchases, demonstrating small but positive shifts toward the purchasing of more healthy products.

Key elements of the modelled intervention

- Based on the CT, the percentage change in the energy density of all packaged foods purchased in the intervention (compared to the control) stores was used to estimate changes in average population energy intake from packaged foods.
- It was assumed that the top four supermarket chains (incorporating over 80% of the market share) implemented the intervention on a voluntary basis.
- Costs accrued by each supermarket chain was based on the CT. The cost for state governments to advise and support the supermarket chains was also included.
- Scenarios included variations in the length of intervention implementation and effect.

Key findings

- The shelf tag intervention resulted in a 9% reduction in the energy density of packaged foods purchased. Assuming volume consumed remains static, 3 years of implementation and effect translated to an estimated mean reduction in population body weight of 1.32kg.
- The intervention was estimated to be dominant (i.e., cost-saving and health promoting) resulting in 72,532 HALYs gained and healthcare cost savings of approximately $647 million.
- Implementation costs accrued by the participating supermarkets was approximately $8.1M.

Conclusion

This intervention is likely to be highly cost-effective, acceptable to most stakeholders and feasible to implement. Longer term real-world evidence is required to better inform intervention effect, acceptability to the supermarket industry, sustainability and equity impacts.

Scenarios description and cost-effectiveness results

Table 1 *Description of selected scenarios*

	Base case 3 year implementation	Scenario 1 1 year implementation
Risk factor(s) addressed by intervention	BMI	
Population targeted	Australian population 2010, aged 2-100 years	
Weighted average reduction in body weight (95% UI)	1.33kg (0.60 to 2.18)	
Weighted average reduction in BMI (95% UI)	0.49kg/m^2 (0.22 to 0.80)	
Effect decay	100% maintenance of effect for 3 years	100% maintenance of effect for 1 year
Costs included	Cost of support and monitoring (state government); shelf tag matching, design, installation, and replacement (industry)	
Type of model used	Population model with quality of life in children	

Notes: BMI: Body mass index; kg: kilogram; m: metre; UI: uncertainty interval

Table 2 *Cost-effectiveness results, mean (95% UI)*

	Base case	**Scenario 1**
Total HALYs gained	72,532 (31,857 to 116,010)	26,704 (12,177 to 43,017)
Total intervention costs	$8.5M ($6.5M to $11.6M)	$3.5M ($1.9M to $6.0M)
Total healthcare cost savings	$647M ($290M to $1,045M)	$222M ($102M to $359M)
Total net cost *	-$638M (-$1,038M to -$282M)	-$218M (-$356M to -$99M)
Mean ICER	Dominant (Dominant to Dominant)	Dominant (Dominant to Dominant)
Probability of being cost-effective #	99.9%	100%
Overall result	**Dominant**	**Dominant**

Notes: Dominant: the intervention is both cost-saving and improves health; HALY: health adjusted life year; ICER: incremental cost effectiveness ratio; M: million; $: 2010 Australian dollars; * Negative total net costs equate to cost savings; # The willingness-to-pay threshold for this analysis is $50,000 per HALY.
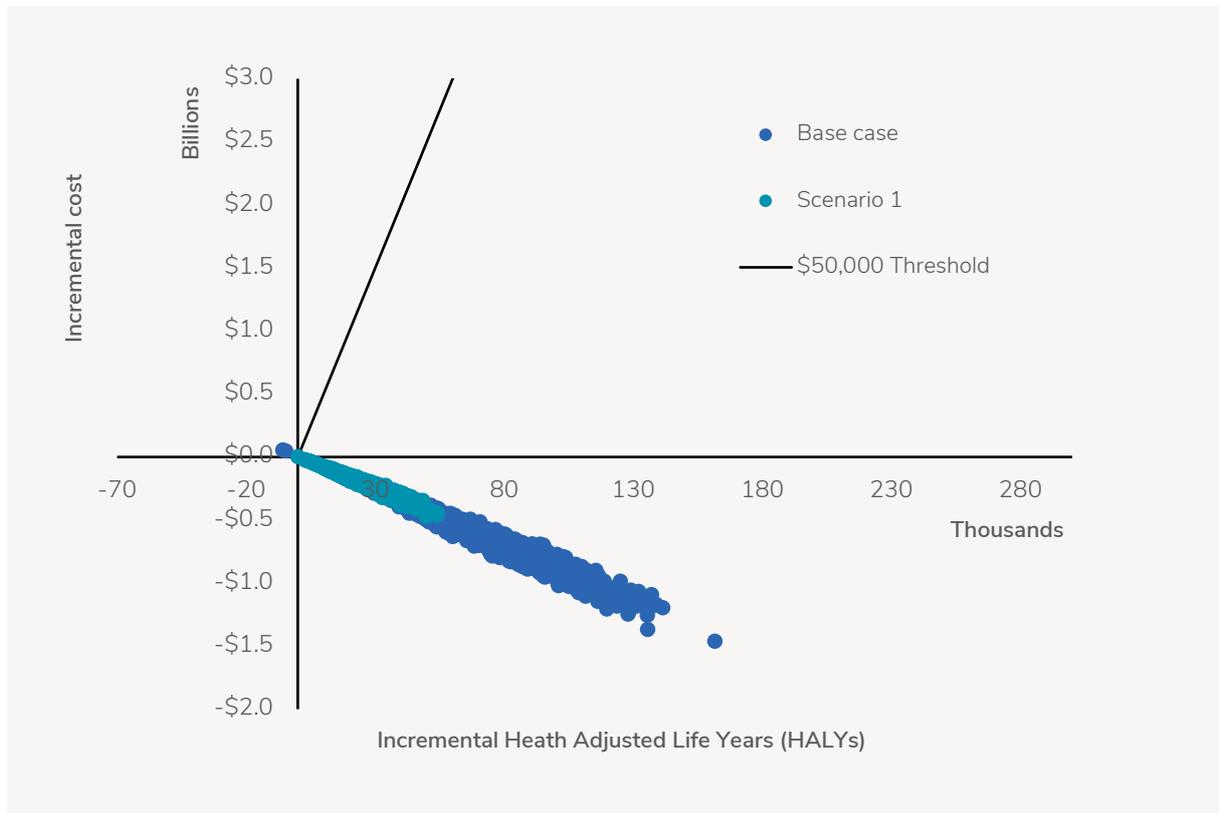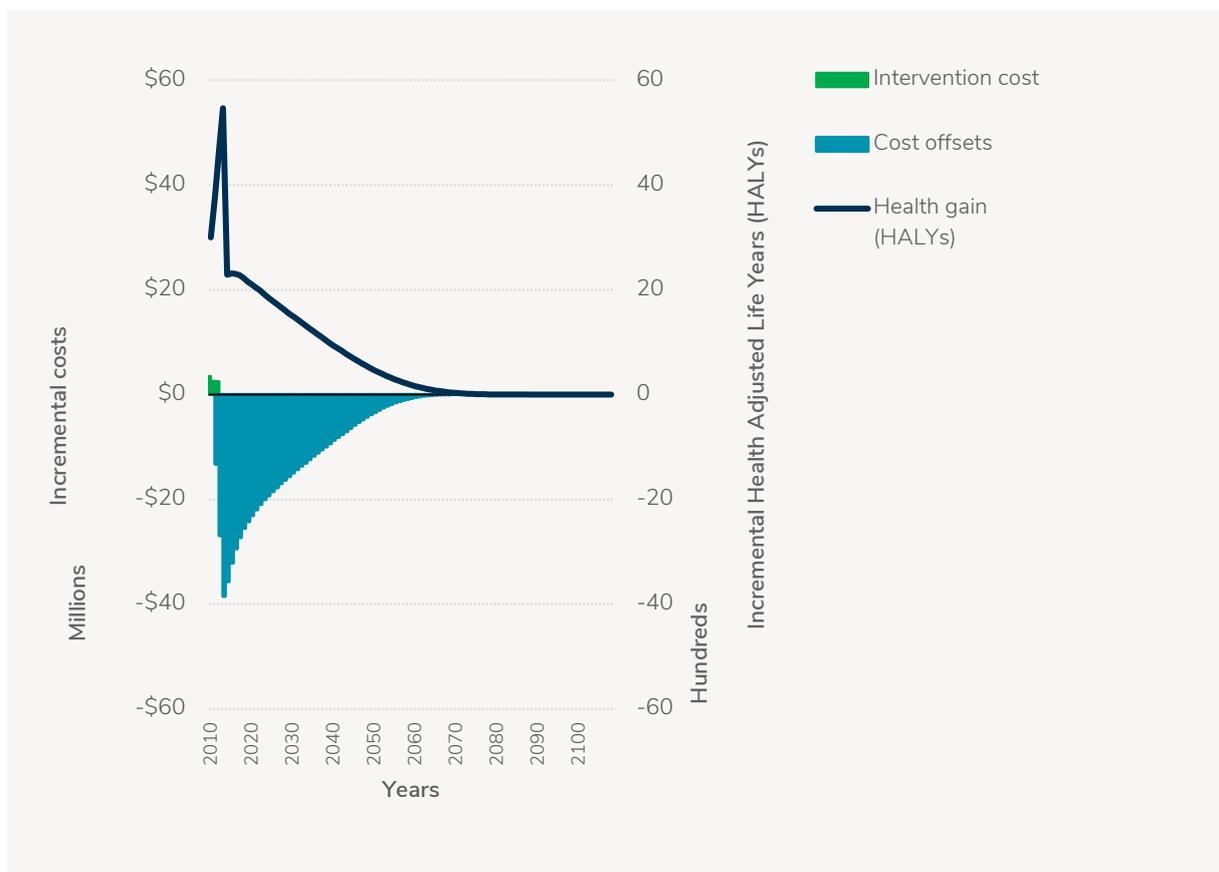
Figure 1 *Cost−effectiveness plane*

Figure 2 *Costs, cost offsets and health gains over time (base case)*

Implementation considerations

		Overall rating
Strength of evidence	Low certainty of the effect on weight/BMI outcomes due to absence of relevant studies.	Low
	Medium certainty of effect on diet based on consistent evidence from an Australian controlled trial and several international quasi-experimental studies demonstrating that shelf tags resulted in the purchasing of healthier products. The effect size was based on a short-term (12 week) Australian study, with no long term follow-up post-intervention.	Medium
Equity	There is a lack of empirical evidence on the equity impact of shelf tags. However, interpretive labelling like the HSR system is likely to be better understood than traditional back-of-pack labelling across all levels of socio-economic position. The trial that the intervention was based on was conducted in disadvantaged areas and therefore the effect size is applicable to those from lower socioeconomic backgrounds.	Neutral
Acceptability	**Government:** Given that this intervention was based on the government-endorsed HSR system, it is likely to be acceptable to government stakeholders. The costs borne by state governments to support this intervention are relatively low.	High
	Industry: The main supermarket chains have been the leaders in the implementation of the HSR system. Given that this intervention was based on the HSR system, it is possible it will also be embraced by the industry. The relatively high costs borne by supermarkets may decrease acceptability, however there may be efficiencies that could be achieved such as incorporating the HSR into price tags (that are already in place).	Medium
	Public: Evidence from customer feedback from the 12-week CT and other shelf tag labelling studies suggests strong public support for this intervention.	High
Feasibility	The feasibility of the shelf tag intervention is enhanced by its use of the government-endorsed HSR system. International experience suggests that shelf tag labelling systems can be implemented across chain supermarkets[1].	High
Sustainability	Sustainability of the intervention is dependent on the installation and replacement of shelf tags becoming a routine task in each of the supermarket stores. This is dependent on the commitment each supermarket chain makes to implement and sustain this intervention.	Medium
Other considerations	**Negative side effects:** Highlighting the healthier packaged food products may encourage purchasing of packaged products at the expense of fresh food (fruits, vegetables and meats) items that aren't designed for the HSR system. Methods to highlight the relative healthiness of non-packed foods in supermarkets should be considered.	

Note: BMI: Body Mass Index; CT: controlled trial; HSR: Health Star Rating

1 Hobin et al. *The Milbank Quarterly* 2017; 95(3): 494-534