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Economic business case for salt reduction action in Victoria

Executive Summary

In 2013, Australia agreed to the global targets to reduce population salt intake by 30% by 2025 to achieve an overarching goal of 25% reduction in premature mortality caused by non-communicable diseases by 2025. The objective of this report is to estimate the potential health and economic benefits of achieving a 3 gram/day reduction in mean salt intake in Victoria. This was undertaken by reviewing existing studies on the associations between salt reduction and blood pressure and then the link between blood pressure and cardiovascular mortality. Recent data on cardiovascular deaths and health system costs for coronary heart disease and stroke were obtained for Australia, and where possible, for Victoria. It is estimated that a 3 gram/day reduction in salt intake will prevent 787 deaths in Victoria, which will save approximately 47 million dollars in the health system each year. Therefore it is vital that VicHealth and the Salt Reduction Taskforce drive efforts to reduce population salt intakes to gain the benefits of this cost-effective public health initiative.

This modelling does not include other conditions associated with high salt intakes, particularly chronic kidney disease nor the savings that can be gained from indirect costs such as productivity losses from disability. Hence, these estimates for potential savings from salt reduction in Victoria are very conservative figures, and actual savings if a 3gram/day reduction is achieved is likely to be far greater.

Background

In 2013, the Member States of the World Health Organization (WHO), including the Federal Government of Australia, adopted nine global non-communicable disease (NCD) targets to be achieved by 2025 (World Health Organization 2013). The only nutrition-related target was to achieve a 30% relative reduction in mean population salt intake, towards the WHO guideline of 5 grams per day, by 2025 (World Health Organization 2013). Population salt reduction has been recommended by WHO as an intervention that is a cost-effective, low cost and highly feasible way of tackling NCDs (World Health Organization 2010). Excess salt intake causes raised blood pressure,(He and MacGregor 2002) which increases the risk of cardiovascular diseases (CVD), particularly stroke and coronary heart disease (CHD).

In July 2014, VicHealth (Victorian Health Promotion Foundation) convened a Salt Reduction Taskforce, comprising of key experts and stakeholders, to promote and support the reduction of salt intake in Victoria. A set of collaborative actions were outlined in an Action Plan for Salt Reduction 2014-17, with the aim of achieving consensus and commitment on salt reduction action from governments, industry and the general public. The overall goal is to reduce average salt intake for adults and children by 1 gram by June 2018.

Several studies and reviews have shown that salt reduction is one of the most cost-effective interventions for the prevention of NCDs in countries around the world (Murray, Lauer et al. 2003; Joffres, Campbell et al. 2007; Bibbins-Domingo, Chertow et al. 2010; Smith-Spangler, Juusola et al. 2010; Ha and Chisholm 2011; Martikainen, Soini et al. 2011; Wang and Bowman 2013; Mason, Shoaibi et al. 2014) and this is also the case in Australia (Neal B 2007; Cobiac, Vos et al. 2010; Cobiac, Magnus et al. 2012). The studies consistently found that voluntary and mandatory reductions in the salt levels of processed foods in Australia are cost effective and save money for the health sector in modelled scenarios (Cobiac, Vos et al. 2010; Cobiac, Magnus et al. 2012). Below we outline the economic business case for salt reduction action in Victoria.

Objective

To determine the costs, lives saved and potential cost savings as a result of implementing a salt reduction strategy in Victoria. In particular to:

1. estimate the lives saved in Victoria based on existing reviews
2. estimate the cost of implementing a state-led salt reduction initiative
3. estimate health care costs saved as a result of stroke and CHD deaths prevented.

1. Lives saved as a result of reductions in blood pressure

According to He and MacGregor, a conservative estimate indicates that a reduction in salt intake of 3g/day would reduce strokes by 13% and CHD by 10%, through a fall in systolic blood pressure by 2.5mmHg and diastolic blood pressure in 1.4mmHg (Lewington, Clarke et al. 2002) (He and MacGregor 2003) (He, Li et al. 2013). This was estimated from a meta-analysis of longer-term trials, which looked at the dose-response between salt reduction and decreases in blood pressure (He and MacGregor 2002). An updated review and meta-analysis of longer-term modest salt reduction trials in 2013 found a similar dose-response relationship between salt reduction and falls in blood pressure (He, Li et al. 2013).

In Victoria, the number of stroke deaths in 2012 is 2471 and the number of CHD deaths is 4656 according to Heart Foundation statistics (Nichols M, Peterson K et al. 2014). Therefore a 3g/day reduction in salt intake leading to a 13% and 10% decrease in stroke and CHD respectively, would prevent a total of 787 deaths each year.

Table 1. Estimation of lives saved in Victoria

Average salt reduced	Reduction in stroke death %	Stroke deaths in Victoria 2012	Stroke deaths prevented each year	Reduction in CHD deaths %	CHD deaths in Victoria 2012	CHD deaths prevented each year	Total lives saved each year
3g/day	13%	2471	321	10%	4656	466	787

2. Estimated cost of implementing a state-led salt reduction initiative.

Costs of national salt reduction strategies were collated from previous reviews (Neal B 2007; Cobiac, Vos et al. 2010) and used to inform an estimation of state level intervention costs based on the VicHealth planned program of work. This resulted in an estimation of approximately \$1.3 million per year for a state-wide salt reduction strategy, including governance and project management,

stakeholder engagement, public awareness campaign, support for food industry innovation, state wide policy interventions and monitoring. This estimation does not include partner organization time and salaries.

3. Health care costs saved based on stroke and CHD deaths prevented.

Stroke

The total stroke health system expenditure in Australia was estimated at \$771 million in 2012 (Deloitte Access Economics 2013). As 23% of total strokes deaths in Australia occurred in Victorians, (Nichols M, Peterson K et al. 2014) we can estimate the annual stroke health system expenditure in Victoria as about \$177 million. So based on the evidence that a 3gram reduction in salt intake leads to a 13% reduction in strokes, (He and MacGregor 2003) implementation of a salt reduction program in Victoria would translate to cost savings of approximately \$23 million in Victoria each year (and \$100 million in the whole of Australia) (Table 2).

Coronary Heart Disease

Similarly, Australia's total health care expenditure related to coronary heart disease was about \$1.05 billion in 2005 (excludes non-hospital related costs) (Australian Institute of Health and Welfare 2005). As 23% of CHD deaths in Australia occurred in Victorians (Nichols M, Peterson K et al. 2014), we estimated that health care expenditure in Victoria is approximately \$242 million each year. So assuming an average reduction in salt intake by 3g/day decreased CHD by 10%, this would translate to savings of approximately \$24 million in Victoria each year (and \$105 million in the whole in Australia) (Table 2).

This results in an estimated total saving of around \$47 million a year due to CHD and stroke deaths prevented. However, about the same number of cases of CHD and stroke are non-fatal but still result in considerable cost to the health care system, particularly as a high proportion of non-fatal strokes result in disability. Hence the cost savings figure above is a very conservative estimate and the actual savings are likely to be far greater if indirect costs are considered such as loss of productivity due to disability.

Table 2. Savings to health system in Victoria

Priority Investment area	Lives saved per year	Disease prevented	Savings to stroke health system expenditure	Savings to CHD health system expenditure	Total savings to health system
Salt Reduction strategy in Victoria achieving 3g/day reduction in average salt intake	787 (321 stroke deaths and 466) in 2012	13% reduction in stroke and 10% reduction in CHD (He and MacGregor 2003)	\$23 million per year for stroke	\$24 million per year for CHD	\$47 million per year

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