

ASSESSING COST-EFFECTIVENESS ON ORAL HEALTH PREVENTIVE INTERVENTIONS (ACE-ORAL HEALTH PREVENTION)

TM Nguyen,^{1-3*} H Calache,² LK-D Le,¹ and C Mihalopoulos¹

1. Health Economics Group, School of Public Health & Preventive Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, Australia

2. Deakin Health Economics, Institute for Health Transformation, School of Health and Social Development, Faculty of Health, Deakin University, Australia

3. Oral Health Victoria, Australia



BACKGROUND

This Australian study used the Assessing Cost-Effectiveness (ACE) priority-setting framework to evaluate the relative cost-effectiveness of preventive interventions for dental caries and periodontitis.

METHODS

A Project Steering Group (PSG) consisting of broad interest-holders was established. The PSG selected six preventive interventions for economic modelling: anticipatory guidance provided by oral health therapists, implementing a sugar-sweetened beverage (SSB) tax, targeted school-based fissure sealant/fluoride varnish programs, applying the Caries Management System protocol (a Minimally Invasive Dentistry approach), and tobacco cessation services. The primary outcome was measured in disability-adjusted life years (DALYs). The explicit willingness-to-pay (WTP) threshold of AUD\$50,000 per DALY averted was applied. Secondary outcome measures used decayed teeth prevented (DT-prevented) and quality-adjusted life years (QALYs), where appropriate. Costs and outcomes had a 3% discount rate applied.

RESULTS

The results are reported in Table 1. A valoric 20% SSB tax intervention emerged as the only cost-effective intervention with modelled projected net cost-savings of AUD\$64 million from a societal perspective and 98 DALYs averted over 10 years.

Preventive Intervention	ICER AUD\$ per DALY Averted	Strength of evidence	Safety	Acceptability				Equity	Feasibility	Sustainability	Environmental impacts	Other considerations
				Government	Industry	Other Stakeholders	General Public					
20% SSB Tax	Dominant											
One session of behavioural support	216,279*											
One session of behavioural support with nicotine replacement therapy	311,484*											
Two sessions of behavioural support	470,459*											
Fluoride varnish (non-dental health professionals)	6.9 million*											
Caries Management System (Minimally Invasive Dentistry)	7.6 million*											
Dental screening and fluoride varnish	11.4 million*											
Telehealth	37.2 million*											
Home Visits	54.5 million*											
Dental screening and fissure sealant	82.2 million*											

Table 1 The cost-effectiveness results and other implementation considerations in a league table using DALYs averted as the primary outcome. ICER = incremental cost-effectiveness ratio; AUD\$ = 2020 Australian dollars; DALY = disability-adjusted life year; *preventive intervention not cost-effective.

CONCLUSIONS

A universal preventive intervention such as a valoric 20% SSB tax can promote oral health equity and can generate cost-savings. Utilising non-dental health professionals can enhance the cost-effectiveness of interventions. Most clinical preventive interventions were not cost-effective under the pre-determined WTP threshold, highlighting the need for thoughtful oral healthcare funding policy design for government resource allocation.