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20 mins

Challenges in demonstrating the value of oral health interventions

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seek LIGHT

Health expenditure, 2014–15 (\$m)

Area of expenditure	Government					
	Australian Government				State and local	Total
	DVA	Health and other	Premium rebates	Total		
Hospitals	1,670	17,271	3,239	22,180	26,114	48,294
Public hospital services	793	16,946	431	18,170	25,493	43,663
Private hospitals	877	325	2,808	4,010	621	4,631
Primary health care	1,535	21,411	1,017	23,962	8,170	32,133
Unreferred medical services	840	8,376	..	9,216	..	9,216
Dental services	96	788	681	1,565	713	2,279
Other health practitioners	235	1,355	317	1,907	8	1,915
Community health and other	1	1,242	—	1,243	6,419	7,662
Public health	..	1,185	..	1,185	1,030	2,215
Benefit-paid pharmaceuticals	363	7,899	..	8,262	..	8,262
All other medications	..	566	19	585	..	585
Referred medical services	..	12,137	608	12,745	..	12,745
Other services	209	2,055	834	3,098	2,784	5,882
Patient transport services	168	59	80	307	2,430	2,737
Aids and appliances	1	483	254	739	..	739
Administration	40	1,513	500	2,052	354	2,406
Research	2	4,003	..	4,006	773	4,779
— Total recurrent expenditure	3,416	56,877	5,698	65,991	37,842	103,833

2.2%

Area of expenditure	Government	Non-government			Total	Total health expenditure
	Total	HIF Individuals	Other	Total		
Hospitals	48,294	7,974	3,043	3,002	14,019	62,313
Public hospital services	43,663	1,060	1,484	1,886	4,430	48,094
Private hospitals	4,631	6,913	1,558	1,117	9,588	14,220
Primary health care	32,133	2,504	19,853	1,973	24,330	56,462
Unreferred medical services	9,216	..	701	1,113	1,814	11,031
Dental services	2,279	1,676	5,521	88	7,285	9,564
Other health practitioners	1,915	781	2,509	347	3,638	5,552
Community health and other	7,662	1	258	211	469	8,131
Public health	2,215	..	26	124	150	2,365
Benefit-paid pharmaceuticals	8,262	..	1,513	..	1,513	9,775
All other medications	585	46	9,323	90	9,459	10,044
Referred medical services	12,745	1,496	2,699	..	4,196	16,940
Other services	5,882	2,053	3,150	196	5,399	11,281
Patient transport services	2,737	198	412	98	708	3,446
Aids and appliances	739	625	2,733	96	3,455	4,193
Administration	2,406	1,230	5	1	1,236	3,642
Research	4,779	..	3	286	289	5,068
Total recurrent expenditure	103,833	14,028	28,747	5,457	48,232	152,065

24% vs. 71% government funding

Opportunity costs

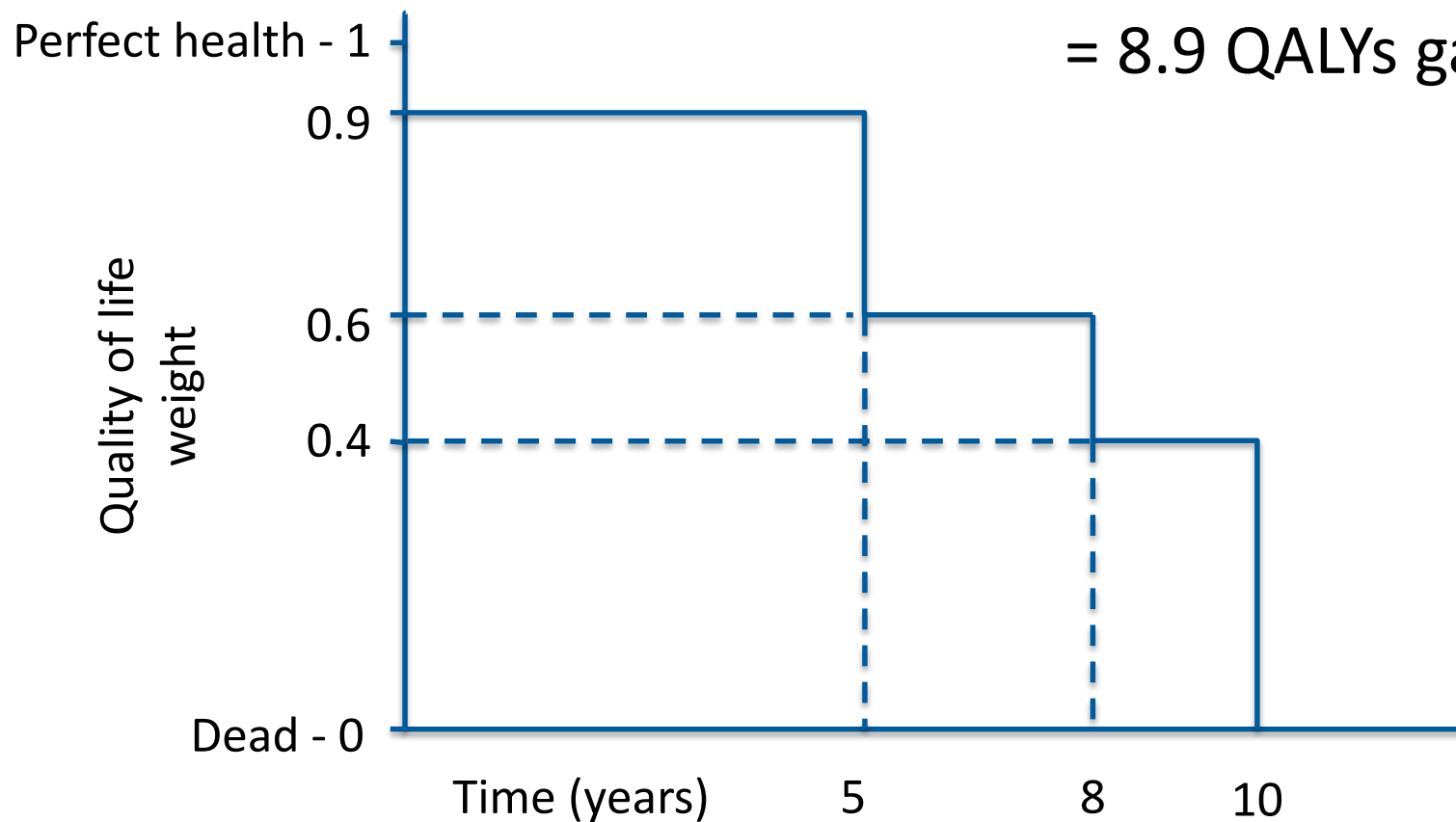
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Need to demonstrate greater value than displaced non-oral health care

Quality Adjusted Life Years (QALYs)

$$(0.9 \times 5) + (3 \times 0.6) + (2 \times 0.4) = 8.9 \text{ QALYs gained}$$



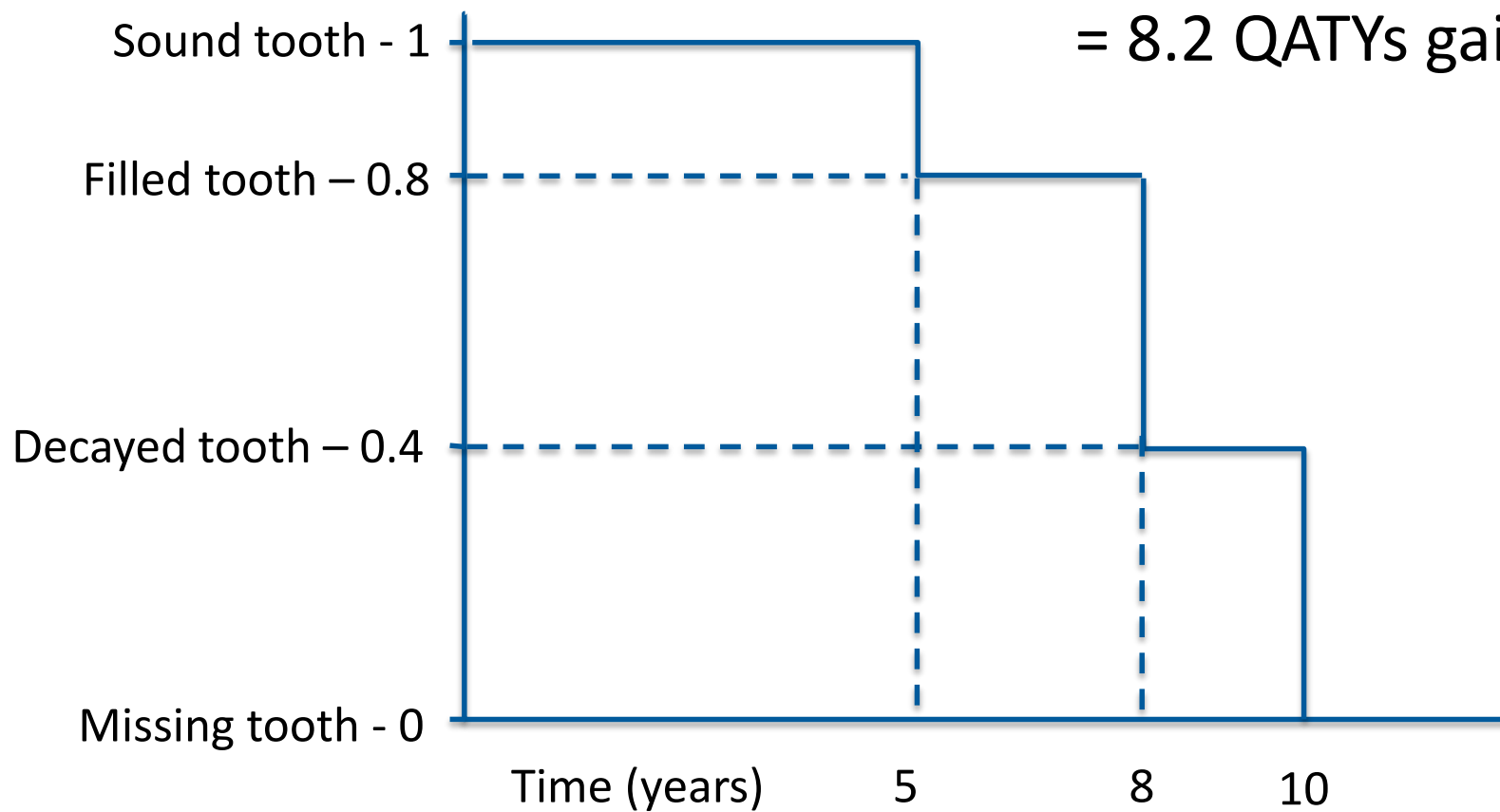
Assessing value in health care

- Incremental costs
 - intervention and downstream costs
 - Incremental QALYs
 - Incremental cost per QALY gained
 - PBAC/MSAC: accept \$40,000 per QALY gained
 - Opportunity cost: \$28,000 per QALY gained
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Quality Adjusted Tooth Years (QATYs)

$$(1 \times 5) + (3 \times 0.8) + (2 \times 0.4)$$

= 8.2 QATYs gained



Economic Evaluations in Dentistry

	Cost Description	Cost-outcome Description	Cost Analysis	CEA	CUA	CBA	Total
Dental caries	6	9	1	33	3	7	59
Gingivitis + periodontal disease		2	1	7			10
Loss of teeth ^a				7	1	1	9
Unerupted + impacted teeth	4	1		2			7
Dentofacial anomalies	1			4	1		6
Trauma + injury	1			1			2
Disease of pulp + periapical tissues				1			1
Others	5	3	1	8	3		20
Total	17	15	3	63	8	8	114

CBA, cost-benefit analysis; CEA, cost-effectiveness analysis; CUA, cost-utility analysis.

^aDue to accident, extraction, or local periodontal disease.

Caries-related cost per QALY studies

- Water fluoridation
 - More QALYs, lower costs – DOMINANT
 - New quality-based dental contract
 - 1.65 points on the Oral Health Impact Profile-14
 - No difference in QALYs
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Where to look for value (1)?

- Dental checks for high-caries-risk, low-income adults?
 - Comparator: no dental checks?
 - Modelling study estimates long-term benefit
 - Funding bodies attach higher value to:
 - meeting unmet needs
 - reducing inequalities
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Where to look for value (2)?

- Oral health education?
 - Evidence of improvement in oral health activities and outcomes
 - How to deliver cost-effectively?
 - At scale, whilst maintaining effect?
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Summary

- Very little comparable evidence on the value of oral- and non-oral health interventions
 - Opportunity for further investigation?
 - Extraction is an inexpensive default option?
 - What are the general quality of life effects of extraction?
 - Compare burden of oral- and non-oral ill health?
 - National Study....
 - Political barriers to expanded public funding too high?
 - Need to demonstrate value from individuals' perspective?
 - Analogous to occupational health from employers' perspective
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