



Health Economic Evaluation of Clinical Quality Registries

Danny Liew



THE UNIVERSITY
of ADELAIDE

Acknowledgement of Country

I acknowledge and pay our respects to the Kurna people, the traditional custodians whose ancestral lands we gather on.

I acknowledge the deep feelings of attachment and relationship of the Kurna people to country and I respect and value their past, present and ongoing connection to the land and cultural beliefs.



Approach

- decision analysis: CQR vs no CQR
- compare differences in health outcomes and costs
- modelling of longer-term outcomes and costs
- challenge: data inputs and assumptions (not methods)

Data Inputs and Assumptions

- outcomes: events, deaths, demographic and epi data
- costs: direct, indirect
- temporal trends
- benefit conferred by CQR, incl duration



Heart, Lung and Circulation (2020) 29, 1046–1053
1443-9506/04/\$36.00
<https://doi.org/10.1016/j.hlc.2019.08.012>

ORIGINAL ARTICLE

An Economic Evaluation of the All New Zealand Acute Coronary Syndrome Quality Improvement Registry Program (ANZACS-QI 28)



Peter Lee, MPH, Ella Zomer, PhD, Danny Liew, MBBS, PhD *

Centre of Cardiovascular Research and Education in Therapeutics, School of Public Health and Preventive Medicine, Monash University, Melbourne, Vic, Australia

Outcomes

- post-ACS MI and death
- national data available
- 2013 to 2016 (4-year span)
- reflected presence of ANZACS-QI

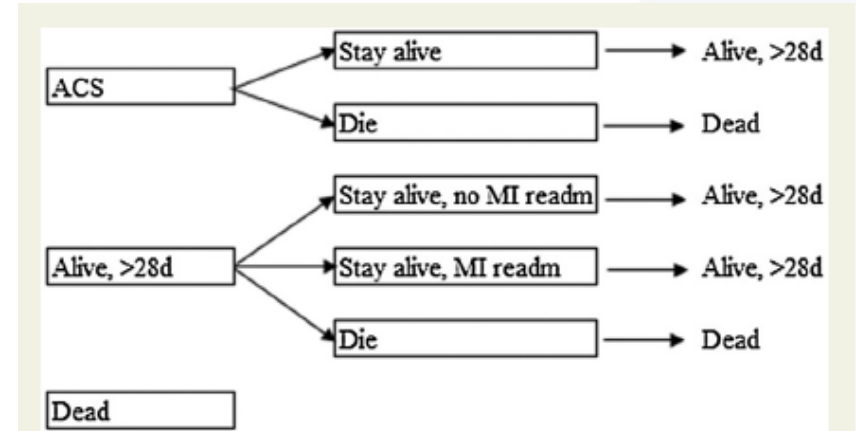


Figure 1 Structure of the ACS Markov models. Abbreviations: ACS, acute coronary syndrome; 28d, 28 days; MI, myocardial infarction; readm, readmission.

Costs, 2017 NZD

Direct

- ANZACS-QI registry: \$781K per year
- MI: \$4992 (DRGs)
- death: \$4992 (assumption)

Indirect

- value of statistical life year (VoSLY): \$180K



Australian Government

Department of the Prime Minister and Cabinet
Office of Best Practice Regulation

Best Practice Regulation Guidance Note Value of statistical life

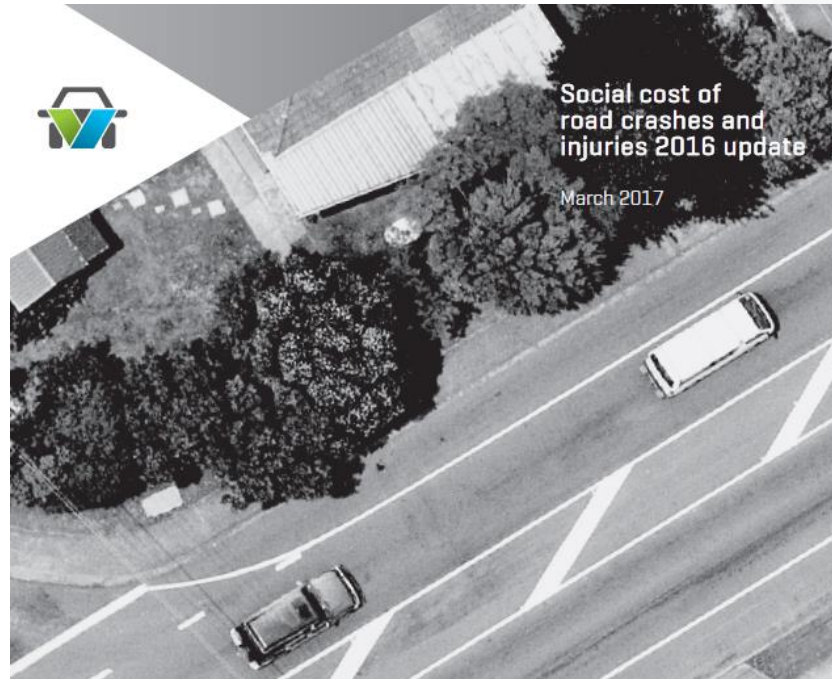
December 2014

Key Points:

- Willingness to pay is the appropriate way to estimate the value of reductions in the risk of physical harm – known as the value of statistical life.
- Based on international and Australian research a credible estimate of the value of statistical life is \$4.2m and the value of statistical life year is \$182 000 in 2014 dollars.



THE UNIVERSITY
of ADELAIDE



1.3 Average social cost per injury and per crash

The updated value of statistical life is \$4.14 million per fatality, at June 2016 prices.

Benefit of ANZACS-QI - Assumption

- contributed to **15%** of the observed temporal trends in MI and death
- based on observed trends in KPIs for ACS care
- conservative

- eg, if 2% annual reduction in risk observed, then 1.7% applied to 'no ANZACS-QI' scenario



Results

Table 1 Results of the base-case analysis - clinical and burden of disease and cost outputs.

	Parameter	Overall (N = 59,280)		
		ANZACS-QI	No ANZACS-QI	Difference
Clinical outcomes	MI readmissions (n, %N)	3,264 (5.5%)	3,293 (5.6%)	29 (0.0%)
	Deaths (n, %N)	11,253 (19.0%)	11,289 (19.0%)	36 (0.1%)
	Years lived	51,369	51,344	-25
Cost outcomes	ANZACS-QI*	\$3,124,255	\$0	-\$3,124,255
	MI readmissions	\$16,294,995	\$16,441,473	\$146,478
	Deaths	\$56,175,872	\$56,357,678	\$181,806
	Total costs (direct)	\$75,595,123	\$72,799,151	-\$2,795,972
	V _o SLY	\$9,246,365,066	\$9,241,924,146	-\$4,440,920

- ICER: \$113K per year of life saved
(ICER over 5 years: \$20K per year of life saved)
- broader costs: net saving of \$1.64M

Journal of Health Economics

Estimating the Cost-Effectiveness and Return on Investment of the Victorian Cardiac Outcomes Registry --Manuscript Draft--

Manuscript Number:	
Article Type:	Full Length Article
Keywords:	Cost-effectiveness; acute coronary syndrome; cardiovascular disease; clinical quality registries; quality improvement
Corresponding Author:	Peter Lee AUSTRALIA
First Author:	Peter Lee
Order of Authors:	Peter Lee Angela Brennan Dion Stub Diem Dinh Jeffrey Lefkovits Christopher M Reid Ella Zomer Danny Liew

