

Clinical quality registries: Are they cost-effective?

Dr Ella Zomer, Monash University

Prof Danny Liew, University of Adelaide

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Acknowledgement of Traditional Custodians



We acknowledge the traditional custodians of the land and waterways on which our Australian partners stand. We pay our respects to these cultures, their Elders past, present and future, and continue to uphold their ongoing relationship to the land.

Clinical quality registries



ACSQHC prioritised domains	Existing clinical registries in Australia
Ischaemic heart disease	Australian Cardiac Outcomes Registry Victorian Cardiac Outcomes Registry and other state-based cardiac registries (e.g. Coronary Angiogram Database of South Australia) The Australian and New Zealand Society of Cardiac and Thoracic Surgeons National Cardiac Surgery Database Program Victorian Cardiac Arrest Registry
Musculoskeletal disorders	Australian Orthopaedic Association National Joint Replacement Registry Australian Rheumatology Association Database Australian Spine Registry
Trauma	Australian Trauma Registry Victorian State Trauma Registry Victorian Orthopaedic Trauma Registry
Adult critical care	Australian and New Zealand Intensive Care Unit Society Adult Patient Database Massive Transfusion Registry
High burden cancers	Prostate Cancer Outcomes Registry Victorian Lung Cancer Registry Breast Cancer ANZ Quality Audit Bi-national Colorectal Cancer Audit South Australian Metastatic Colorectal Cancer Registry Victorian Upper GI Cancer Registry Australian and New Zealand Thyroid Cancer Registry
Stroke	Australian Stroke Clinical Registry
Renal disease	Registry of Kidney Diseases
Neonatal critical care	Australian and New Zealand Intensive Care Unit Society Neonatal/Paediatric Patient Database
Mental health	N/A
Maternity	National perinatal data collection
Dementia	Dementia Registry Pilot, announced August 2017
Major burns	Bi-national Burns Registry
Diabetes	N/A

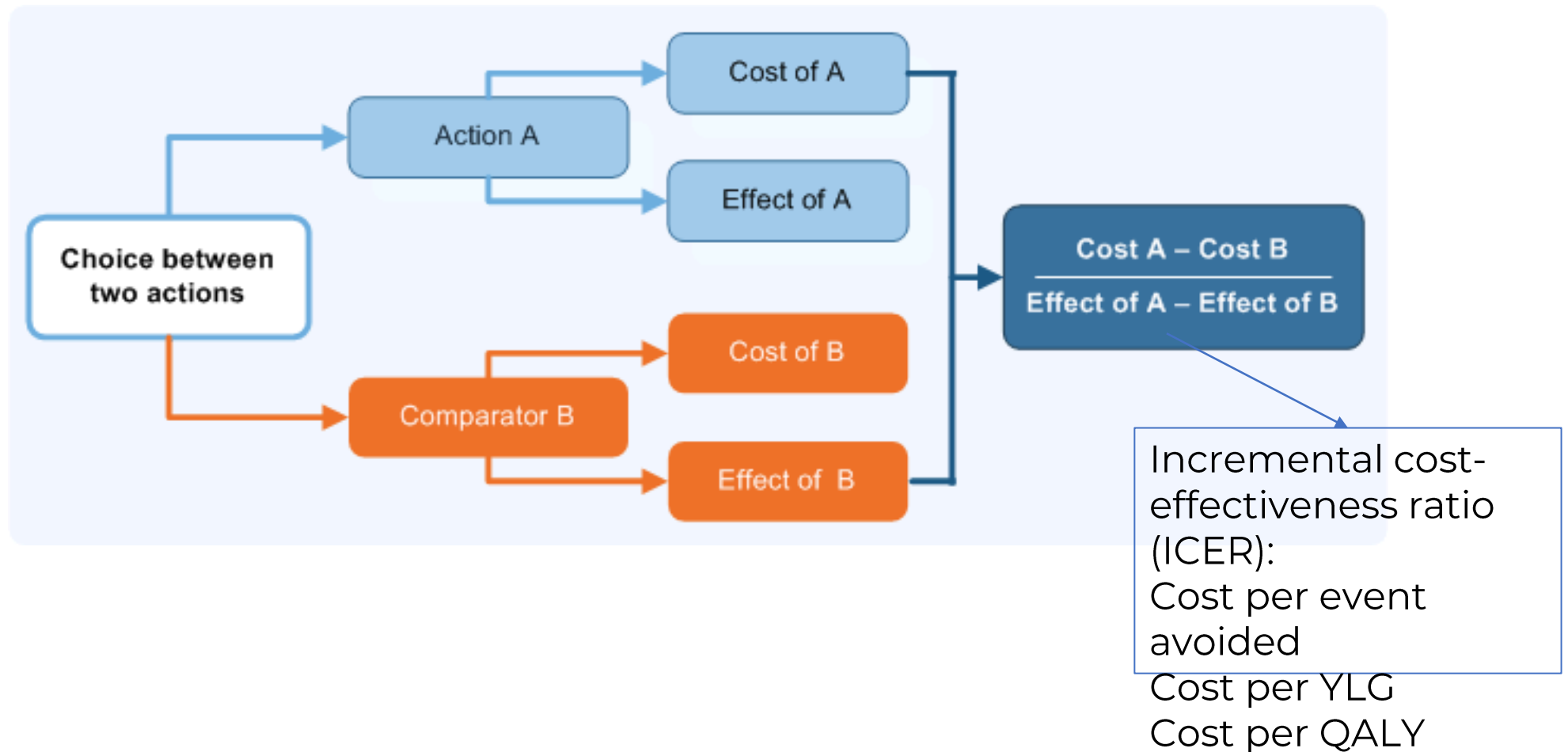
CQRs are effective,
but are they worth the cost?



Types of economic evaluations

Type	Outcomes measures	Results
Cost-effectiveness analysis (CEA)	Outcomes expressed as events prevented, life years gained	Cost per event avoided or cost per life year gained (LYG)
Cost-utility analysis (CUA)	Outcomes expressed as quality-adjusted life years (QALYs)	Cost per QALY gained
Cost-benefit analysis (CBA)	Outcomes measured in monetary terms, eg. value of statistical life year (VSLY)	Net benefit or return-on-investment (ROI) ratio

Cost effectiveness analysis



Using ICERs to decide value for money

- Have a threshold that decides “value for money”
- Willingness-to-pay threshold of \$50,000 per QALY gained
- Considerations
 - Perspective
 - Time horizon
 - Discounting rate

Economic evaluation of clinical quality registries: a systematic review

P Lee, K Chin, D Liew, AL Brennan, J Lefkovits, E Zomer. *BMJ Open* 2019;9:e030984

Characteristic	Hollenbeak (2011)	Thanh (2018)	Woolley (2006)	ACSQHC (2016)
Registry	National Surgical Quality Improvement Program (NSQIP)	National Surgical Quality Improvement Program (NSQIP)	Victorian Spleen Registry	VIC PCR, VSTR, ANZICS APD, ANZDATA, AOANJRR
Condition of interest	Surgical outcomes	Surgical outcomes	Sepsis	Prostate cancer, trauma, intensive care, renal transplant, joint replacement
Country	USA	Canada	Australia	Australia
Perspective	Hospital (private)	Alberta health service	Healthcare system	Societal
Impact of registry	Before and after study	Before and after study	Hypothetical experimental study – assumed benefit	Hypothetical experimental study – assumed benefit
Time horizon	2007-2009 Analysis 1: 6 mth implementation vs 6 mth (1 year later) Analysis 2: 1 yr implementation vs 2 yr	2015-2016, projected to 2017	Hypothetical 2 year period from implementation of registry	VIC PCR: 2009-2013 VSTR: 2005-2013 ANZICS: 2000-2013 ANZDATA: 2004-2013 AOANJRR: 1999-2014

Results

Characteristic	Hollenbeak (2011)	Thanh (2018)	Woolley (2006)	ACSQHC (2016)
Cost-effectiveness/ Return on Investment	Analysis 1 ICER: US\$28,927 per post-op event avoided Analysis 2 ICER: US\$8312	Benefit-to-cost ratio: 4.3 Probability of being cost-saving: 95%	Analysis 1 (2 yrs): US\$234,329 per YLG Analysis 2 (lifetime): US\$18,358 per YLG	Benefit-to-cost ratio: Current coverage: 2-7 Full coverage: 4-12