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Supporting Information

Supplementary methods and results

This appendix was part of the submitted manuscript and has been peer reviewed.
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Appendix to: Venkataraman P, Neil AL, Mitchell GK, et al. The cost-effectiveness of coronary calcium score-guided statin therapy initiation for Australians with family histories of premature coronary artery disease. *Med J Aust* 2023; doi: 10.5694/mja2.51860.

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Table 1. CAUGHT-CAD inclusion and exclusion criteria[1]

Inclusion criteria:

1. Asymptomatic subjects age 40-70 years with a family history of coronary artery disease (CAD) involving an index patient <60 years (1st degree) or <50 years (2nd degree)
2. Statin naïve
3. Total cholesterol (TC) ≤ 6.5 mmol/L and low-density lipoprotein cholesterol (LDL-C) <5 mmol/L, and
4. 5 year Australian risk ≥2-15%.

Exclusion criteria:

1. Symptomatic coronary, cerebrovascular, or peripheral vascular disease
2. Intolerance of statins or currently on statins for any length of time
3. Pre-existing muscle disease (eg polymyositis, fibromyalgia) - this may be confused with myalgia from statins
4. Patients on drugs that increase the risk of myopathy/rhabdomyolysis such as cyclosporine and strong CYP3A4 inhibitors (e.g., clarithromycin, itraconazole, and human immunodeficiency virus/hepatitis C protease inhibitors)
5. Atrial fibrillation (interferes with CT coronary angiography)
6. Chronic kidney disease on haemodialysis (because of vascular calcification) or glomerular filtration rate <50mL/min/1.73m^2 using the Modification of Diet in Renal Disease (MDRD) formula[2]
7. Inability to provide informed consent
8. Major systemic illness eg, malignancy; rheumatoid arthritis
9. Women of childbearing potential (because of computed tomography)
10. Poorly controlled hypertension: systolic blood pressure > 200 mmHg and or diastolic blood pressure > 100 mmHg
11. Severe psychiatric disorder (eg, bipolar depression; psychosis)
12. Patients eligible for treatment based on current Australian guidelines (5 year risk >15%)
13. Patients eligible for treatment based on current Pharmaceutical Benefits Scheme thresholds TC >7.5 mmol/L and other criteria (Table 2).

PBS-eligible patients excluded from the study

Diabetes mellitus	≥60 years old Aboriginal or Torres Strait Islander patients microalbuminuria (urinary albumin excretion rate of >20μg/min or urinary albumin to creatinine ratio of > 2.5 for men, > 3.5 for women) TC >5.5 mmol/L
Hypertension	TC >6.5 mmol/L TC >5.5 mmol/L and high-density lipoprotein cholesterol (HDL-C) <1 mmol/L
Aboriginal or Torres Strait Islander	TC > 6.5 mmol/L TC > 5.5 mmol/L and HDL-C <1 mmol/L
Family history of symptomatic coronary heart disease (CHD); • <50 years in >1 2nd degree OR, • <60 years in >1st degree relatives	LDL-C >5mmol/L TC >6.5mmol/L TC > 5.5 mmol/L with HDL-C < 1 mmol/L

Table 2. Model parameters, including deterministic and probabilistic sensitivity parameters

Whenever possible, these were derived from the literature and referenced accordingly. However, some parameters are unpublished, and the source of these is marker "assumption". For example, the percentage of patients who undergo cardiovascular disease (CVD) risk estimation who are referred to specialist consultation, or the proportion of patients referred for subsequent testing are undefined in Australia. This and similar input parameters was based on survey of five clinical and research cardiologists working at the Baker Heart and Diabetes Institute.

a. Transition probabilities

Variable	Base value	One-way sensitivity analysis		Probabilistic sensitivity analysis	Source
		Min	Max		
Coronary heart disease	10-year predicted Multi-Ethnic Study of Atherosclerosis risk (MESA)	*	*		CAUGHT-CAD: McLelland et al. (2015) (3)
Proportion of predicted coronary heart disease events which are fatal	0.16	0.06	0.25	Beta, SD, 0.03	McClelland et al. (2015) (3) Paixao et al. (2014) (4)
Annual rate of stroke event	10-year Predicted revised Framingham Stroke Risk	*	*		Dufouil et al. (2017) (5)
Proportion of predicted stroke events which are fatal	0.14	0.08	0.2	Beta, SD, 0.03	Kilkenny et al. (2017) (6) Greving et al. (2011) (7)
Coronary artery calcium (CAC) -guided strategy					
Proportion of eligible participants who commenced statin therapy	90%	80%	100%	Triangular	Assumption Venkataraman et al. (2021) (8) Gupta et al. (2017) (9)
Statin discontinuation over four years (CT-guided group)	35%	0%	35%	Triangular	Roberts et al. (2015) (10)
Australian[11] and American guidelines[12]					
Proportion of statin-eligible patients who commence statin therapy	70%	50%	100%	Triangular	Denissen (2019) (13) Naslund et al. (2018) (14)
Statin discontinuation over 4 years – those in the usual care group (both US and Australia)	45%	0%	60%	Triangular	Roberts et al. (2015) (10) Ofori-Asenso et al. (2018) (15)
Annual probability of major adverse effect from statin therapy					
Hepatitis	0.00675	0.0054	0.0081	Beta, SD, 0.0007	Galper et al. (2015) (16)
Myopathy	0.00010994	1/100,000 incidence	33/100,000 incidence	Beta, SD, 10/100000 incidence	Law et al. (2006) (17) Collins et al. (2016) (18)
Rhabdomyolysis	0.00003399943.4/100,0000 incidence	1.4/100,000 incidence	6/100,000 incidence	Beta, SD, 1/100,000 incidence	Law et al. (2006) (17)
Intracerebral haemorrhage	7.5/50,000 person-years of follow-up	5/50,000 0 person-years of follow-up	10/10,000 0 person-years of follow-up	Beta, SD, 1.5/10,000 person-years of follow-up	Collins et al. (2016) (18)
Rhabdomyolysis case fatality rate	0.10	0.08	0.12	Beta, SD, 0.01	Law et al. (2016) (17)
Intracerebral haemorrhage case fatality rate	0.4	0.13	0.61	Beta, SD, 0.1	van Asch et al. (2010) (19)

SD = standard deviation.

* Based on individual MESA calculated risk for coronary event rate and Framingham Stroke Risk for stroke event rate. Individual patient predicted risk was used to determine transition probabilities as we adopted a microsimulation study using individual participant data per trial.

Statin treatment effect	Base value	One-way sensitivity analysis		Probabilistic sensitivity analysis	Source
		Min	Max		
RR for fatal and non-fatal CHD – CAC-guided strategy	0.76	0.55	0.82	Log normal, SD, 0.015	CTTC et al. (2012) (20) Greving et al. (2011) (7) Hong et al. (2017) (21) Naslund et al. (2018) (14)
RR for fatal and non-fatal CHD – control group	0.88	0.80	0.95	Log normal, SD, 0.015	Naslund et al. (2018) (14) CTTC et al. (2012) (20)
RR for fatal and non-fatal stroke – CAC-guided strategy	0.85	0.75	0.95	Log normal, SD, 0.025	Naslund et al. (2018) (14) CTTC et al. (2012) (20)
RR for fatal and non-fatal stroke – control group	0.93	0.87	0.97	Log normal, SD, 0.025	Naslund et al. (2018) (14) CTTC et al. (2012) (20)
Post-stroke					
Post-CHD 5-yr all-cause mortality	0.16	0.12	0.30	Beta, SD, 0.02	Nedkoff et al. (2016) (22)
Post-stroke, 5-yr all-cause mortality	0.45	0.27	0.55	Beta, SD, 0.025	Phan, et al. (2017) (23) Paul et al. (2005) (24) Rutten-Jacobs et al. (2013) (25)

b. Utility

Utility	Base value	One-way sensitivity analysis		Probabilistic sensitivity analysis	Source
		Min	Max		
Statin disutility	-0.003146	0	-0.00648	Beta, SD, 0.0015	Hong et al. (2017) (21) Pletcher et al. (2014) (26)
Well without statin	0.84	0.8	0.85	Beta, SD, 0.005	Hong et al. (2017) (21) Cadilhac et al. (2010) (27)
Post-CHD	0.76	0.70	0.82	Beta, SD, 0.03	Roberts et al. (2015) (10) Pletcher et al. (2014) (26) Matza et al. (2015) (28) Weighted mean of stable and non-stable CHD presentations, assuming 50% of people experienced non-fatal AMI
Post stroke	0.52	0.345	0.695	Beta, SD, 0.08	Roberts et al. (2015) (10) Pletcher et al. (2014) (26) Matza et al. (2015) (28) Tan Tanny et al. (2013) (29) Ademi et al. (2018) (30)
Died	0				
One time utility decrements					
CHD, non-fatal and fatal	-0.14	-0.1	-0.17	Beta, SD, 0.02	Pletcher et al. (2014) (26) Matza et al. (2015) (29) van Kempen et al. (2016) (31)
Stroke, fatal and non-fatal	-0.25	-0.1	-0.6	Beta, SD, 0.05	Matza et al. (2015) (28) van Kempen et al. (2016) (31) Cadilhac et al. (2010) (27)
Statin intolerance (causing discontinuation)	-0.00028	0	-0.001	Beta, SD, 0.0001	Galper et al. (2015) (16)
Statin complications					
Total – weighted mean of individual complications	0.013	0.001	0.06	Triangular	Galper et al. (2015) (16) Roberts et al. (2015) (10)
Rhabdomyolysis	0.0852				Galper et al. (2015) (16)
Myopathy	0.0164			-	Galper et al. (2015) (16)
Hepatitis	0.000035			-	Galper et al. (2015) (16)
Intracerebral haemorrhage	0.6	0.8	0.3	Triangular	Tan Tanny et al. (2013) (29)

c. Costs

Costs	Base value	One-way sensitivity analysis		Probabilistic sensitivity analysis	Source
		Min	Max		
CAC scoring (and downstream) costs					
Cost of CAC imaging – high risk	198	100	250	-	Survey of radiology providers
Heart health review	59.15	59.15	59.15	-	Dept of Health (2020) Item No 177 (32)
Lipid testing	19.35	19.35	19.35	-	Dept of Health (2020) MBS item 66503 & 66536 (32)
GP appointment results	38.2	38.2	38.2	-	Dept of Health (2020); MBS item 23 (32)
GP follow-up to review results	38.2	38.2	38.2	High Risk: gamma, 100; SD, 15 Low risk: 52; SD, 10	MBS item 23 (32)
Cost of specialist visit: 10% referred for cardio consult – high risk only	13.28	6.64	33.2		Opinion
Cost of exercise stress test: 10% referred – high risk only	35.1	17.59	52.77		Opinion
Lipid testing (follow-up)	19.35	19.35	19.35		MBS item 66503, 66536 (32)
Radiation induced cancer treatment Assuming cost of 500000 for total cancer treatment Lifetime risk of 0.00014	7	2	17	Gamma, 86; SD, 15	Goldsbury et al. (2018) (33) van Kempen et al. (2016) (31)
Costs of incidental findings and further investigations Surveillance of incidental nodules Investigation of other non-cardiac findings Cost of additional referrals and investigations	79	11	88		MBS reimbursement Williams et al. (2018) (34) Robertson et al. (2019) (35)
Total cost of CAC-guided, high risk	456	252	556	Individual components	**Individual components**
Total cost of CAC-guided, low risk	408	228	533	Individual components	**Individual components**
Australian guideline assessment					
Heart health check + GP review + lipid test	116.7	116.7	116.7	-	As above
Referral to physician (25% of high risk referred to physician)	66.4	13.28	132.8	-	Opinion
Referral for stress testing (25% of high risk)	87.95	35.1	175.5	-	Opinion
Follow-up GP review and lipid test in high risk patients	57	57	57	-	MBS item 66503 & 66536 (32) MBS item 23 (32)
Total cost for high risk	278.80	163.18	423.8	Gamma, SD, 50	**Individual components**
Total cost for low risk	124.80	78.5	128.78	Gamma, SD, 15	**Individual components**
American guideline assessment					
Heart health check + GP review + lipid test	72.8	72.8	72.8	-	
Referral to physician (25% of high risk referred to physician)	19.92	6.64	66.4	-	Opinion
Referral for stress testing (10% of high risk)	35.1	17.55	87.75	-	Opinion
Follow-up GP review and lipid test in high risk patients	57	57	57	-	MBS item 66503 & 66536 (32) MBS item 23 (32)
Total cost for high risk:	**179.8**	**139.69**	**236.45**	**Gamma, SD, 25**	**Individual components**
Total cost for low score weighted between high and low risk	**124.8**	**78.5**	**122.14**	**Gamma, SD, 15**	**Individual components**
Statin complications					
Rhabdomyolysis	13755	2196	30000	Triangular	National hospital cost data 2016-17, inflammatory musculoskeletal condition
Myopathy	120	40	2196	Gamma, SD, 40	Cost of review and repeat CK, urea and electrolytes
Hepatitis	120	40	400	Gamma, SD, 40	Cost of review and repeat CK
Intracranial haemorrhage	24097	6,651	35,000	Gamma, SD, 5000	National Hospital Cost data – Stroke, major complexity
Cost of statin complications	695	-25%	+25%	Through individual components	Weighted mean number of individual complications
Cost of statin discontinuation	20	0	40	uniform	Assumption: 50% of people will see a GP to discontinue statin
One-time annual cost of CHD (non-fatal)	22425	10000	30000	Gamma, SD, 2000	National Heart Foundation (2018); weighted mean of ACS subtypes and heart failure (36) Ademi et al. (2018) (30)

One-time cost of stroke (non-fatal)	40763	24845	50000	Gamma, SD, 5000	Tan Tanny et al. (2013) (base case) (29) AIHW (2006) & ABS Consumer Price Index for health goods (37)
One-time cost of fatal CHD/stroke	17440	12000	23000	Gamma, SD, 900	Zomer et al. (2013) (38)
Annual cost					
Annual cost of statin – CAC-guided	246	227	263	Gamma, SD, 10	PBS cost data for Atorvastatin 40mg Assumed 90% adherence for base case + yearly lipid and liver function tests+CK+GP review
Annual cost of statins – Australian and American strategies (reduced adherence)	174	156	192	Gamma, SD, 10	PBS cost data for Atorvastatin 40mg Assumed 50% mean adherence for base case + lipid+ liver function tests+CK+GP review
Annual cost in healthy participants not on statins (low risk)	30	20	40	Triangular	Low risk: consultation every two years to assess lipid status
Annual cost in healthy participants not on statins (high risk)	60	40	100	Triangular	High risk: consultation every year to assess lipid status Opinion
Annual cost of post-CHD care	4557	2533	5800	Gamma, SD, 500	NHF (2018), (36); adjusted for expected rates of CHD complications (with AMI with and without heart failure, stable CAD), Zomer et al. (2013) – lower bound(38)
Annual cost of post-stroke care	7392	3812	8000	Gamma, SD, 500	Zomer et al. (2013) – lower bound; adjusted to 2019 dollars (38) Cobiac et al.(2012);lower bound sensitivity analysis (39)

Others	Base case	1-way sensitivity - min	1-way sensitivity - max	Probabilistic sensitivity analysis	Source
Discounting of costs, utilities	3%	0	5%		

ACS=acute coronary syndrome; AMI=acute myocardial infarction; BP=blood pressure, CAC=coronary artery calcium score; CAD=coronary artery disease, CHD=coronary heart disease; CK=creatine kinase; CKD=chronic kidney disease, CT=computed tomography; GP=general practitioner; HDL=high-density lipoprotein; ICH: intracerebral haemorrhage; LDL=low-density lipoprotein, MBS=Medical Benefits Scheme; PBS=Pharmaceutical Benefits Scheme; UEC=urea and electrolyte concentration; RR=relative risk; SD=standard deviation; TC=total cholesterol.

Table 3. Deaths in Australia, yearly transition probabilities for non-cardiovascular deaths based on 2017 general record of incidence of mortality (GRIM) mortality statistics, by age and sex[40]

Age	Yearly transition probability	
	Male	Female
42	0.001404	0.000818
47	0.001944	0.001215
52	0.002657	0.001874
57	0.004043	0.002653
62	0.006313	0.003921
67	0.00973	0.006136
72	0.015505	0.010104
77	0.026425	0.017622
82	0.046626	0.033059
≥87	0.106079	0.094381

For ages between those tabled (eg, 45 years), annual mortality was based on expected mortality assuming a linear increase (eg, from age 40 to 47 years).

Table 4. Multi-Ethnic Study of Atherosclerosis (MESA) risk of participants, by statin eligibility criteria and treatment strategy

	ACVDR 5-year risk ≥ 2%/CAC score > 0		ACVDR 5-year risk ≥ 2%/CAC score ≥ 100		Australian guidelines[11]		US guidelines[12]	
	Eligible	Not eligible	Eligible	Not eligible	Eligible	Not eligible	Eligible	Not eligible
Participants	496 (46%)	587 (54%)	155 (14%)	928 (86%)	77 (7%)	1006 (93%)	266 (25%)	817 (75%)
10-year MESA CVD risk, median (IQR)	6.8% (4.1–10.8%)	2.1% (1.7–2.7%)	12.8% (9.0-16.8%)	2.65% (1.9-4.2%)	13.6% (6.8–17.6%)	2.8% (1.9–5.3%)	7.8% (4.2–12.3%)	2.5% (1.8–3.7%)

ACVDR = absolute cardiovascular risk; CVD = cardiovascular disease; IQR = interquartile range; MESA = Multi-Ethnic Study of Atherosclerosis.[3]

Table 5. Comparison of outcomes for a coronary artery calcium-guided eligibility selection strategy (CAC score > 0) relative to outcomes for selection using the Australian guidelines, by baseline 5-year absolute cardiovascular disease risk (ACVDR)

ACVDR risk	Incremental cost-effectiveness ratio (per QALY gained)	Absolute risk reduction for all-cause death	Number needed to scan to prevent one death	Absolute risk reduction for symptomatic CVD event	Number needed to scan to prevent one CVD event
<2%	$120,802	0.0019	538	0.0034	291
≥2 to <4%	$225,432	0.0020	502	0.0054	184
≥4 to <6%	$132,035	0.0018	553	0.0082	122
≥6 to <8%	$138,257	0.0022	619	0.0133	75
≥8 to <10%	$14,755	0.0097	456	0.0151	66
≥10%	–$6,843	0.0054	185	0.0172	58

ACVDR = absolute cardiovascular risk; CVD = cardiovascular disease; QALY = quality-adjusted life years.

Table 6. Comparison of outcomes for a coronary artery calcium-guided eligibility selection strategy (CAC score > 0) relative to outcomes for selection using the American guidelines, by baseline 10-year pooled cohort equation (PCE) cardiovascular disease risk

PCE risk	Incremental cost-effectiveness ratio (per QALY gained)	Absolute risk reduction for all-cause death	Number needed to scan to prevent one death	Absolute risk reduction for symptomatic CVD event	Number needed to scan to prevent one CVD event
<4%	$190,464	0.0018	571	0.0041	241
≥4 to <6%	$194,888	0.0016	607	0.0063	159
≥6 to <8%	$53,976	0.0024	408	0.0098	102
≥8 to <10%	–$5,597	0.0020	491	0.0090	112
≥10 to <12%	$4,927	0.0060	166	0.0099	101
≥12 to <14%	$7,435	0.0058	174	0.0128	78
≥14 to <16%	–$1,680	0.0049	203	0.0158	63
≥16 to <18%	–$1,462	0.0072	138	0.0163	61
≥18 to <20%	$4,218	0.0026	379	0.0145	69
≥20%	–$15,290	0.0048	210	0.0253	40

CVD = cardiovascular disease; PCE = pooled cohort equation; QALY = quality-adjusted life years.

Table 7. Incremental cost-effectiveness for a coronary artery calcium-guided eligibility selection strategy (CAC score ≥ 100) relative to selection using the Australian guidelines, by 5-year absolute cardiovascular disease risk (ACVDR)

ACVDR risk	Incremental health care costs per person	Incremental Utility per person (QALY)	Incremental cost-effectiveness ratio (per QALY gained)	Absolute risk reduction for all-cause death	Number needed to scan to prevent one death	Absolute risk reduction for symptomatic CVD event	Number needed to scan to prevent one CVD event
<2.5%	$338	0.0030	$112,534	0.0001	1294	0.0012	797
≥2.5 to <5%	$324	0.0015	$213,194	0.0005	1993	0.0024	411
≥5 to <7.5%	$287	0.0080	$35,719	0.0021	480	0.0042	240
≥7.5 to <10%	$457	0.0443	$10,330	0.0066	151	0.0097	102
≥10%	-$285	0.0338	-$8,428	0.0047	210	0.0070	141

ACVDR = absolute cardiovascular risk; CVD = cardiovascular disease; QALY = quality-adjusted life years.

Table 8. Cost-effectiveness of American College of Cardiology/American Heart Association guidelines compared to current Australian guidelines by patient characteristics

	Number of model iterations	Incremental cost effectiveness ratio (per QALY gained)
Age (years)		
40 to less than 50	23,061 (23%)	Dominated
50 to less than 60	43,439 (43%)	Dominated
60 or older	33,609 (34%)	416,757
Sex		
Men	48,551 (49%)	138,953
Women	51,449 (52%)	Dominated
Low-density lipoprotein cholesterol (mmol/L)		
≥ 4.1 mmol/L	17,515 (17%)	33,772
< 4.1 mmol/L	82,485 (83%)	Dominated
Socio-economic status: IRSAD score		
Low*	26,921 (27%)	Dominated
High	73,079 (73%)	$38,425

IRSAD = Index of Relative Social Advantage and Disadvantage;[41] QALY = Quality-adjusted life year.
* Below the median Australian IRSAD score.

Table 9. Sensitivity analysis: cost-effectiveness of coronary artery calcium (CAC) score-guided eligibility criteria for statin therapy (CAC score > 0) compared with Australian guidelines

	Incremental change in cost	Incremental change in mean QALYs gained	ICER compared with Australian guidelines	Change in ICER compared with CAC >0 in base case (per QALY gained)
Yearly statin cost: change of +$25	$59.92	—	$59961	$5933
Direct or indirect CAC screening costs (computed tomography, incidental findings): change of +$1	$1	—	$52929	$99
Probability of coronary heart disease resulting in death				
16%	Reference	Reference	$53028	Reference
6%	–$41	–0.0061	$162918	+$109,890
11%	–$8.8	–0.0022	$70919	+$17,891
20%	+58	+0.0084	$28545	–$24,483
Statin disutility				
2 weeks	Reference	Reference	$53028	Reference
No disutility	0	+0.0084	$28196	–$24,832
4 weeks	0	-0.0089	$359223	+$412,251

ICER = incremental cost-effectiveness ratio; QALY = quality-adjusted life year.

Table 10. One-way sensitivity analyses of cost-effectiveness of coronary artery calcium (CAC)-guided eligibility (CAC score > 0), with respect to Australian guidelines (microsimulation, 50 000 trials)*

Parameter	Value in base case analysis	Variable low	ICER with low variable	Variable high	ICER with high variable
Annual cost of care after CHD event	4557	2533	48917	5800	60811
Cost of non-fatal coronary event	22425	10000	49338	30000	60174
Annual cost of well, not requiring statin therapy	30	20	48509	40	58376
Utility decrement for non-fatal stroke	–0.25	–0.6	51205	–0.15	54118
Cost of non-fatal stroke	40763	24845	52456	50000	55142
Utility decrement for non-fatal coronary event	–0.14	–0.17	52330	–0.1	55001
CHD risk reduction from statins (CAC-guided)	0.76011	0.65	17550	0.85	128140
Annual cost of care, including statin treatment (CAC guided)	221	100	10109	250	63828
Baseline utility for asymptomatic people	0.84	0.8	50366	0.85	70723
Initial cost of risk assessment					
Above statin treatment thresholds (CAC-guided)	370	260	47181	570	64827
Below statin treatment thresholds (CAC-guided)	320	220	46631	440	61617
Above statin treatment thresholds (Australian guidelines)	280	150	51909	450	54615

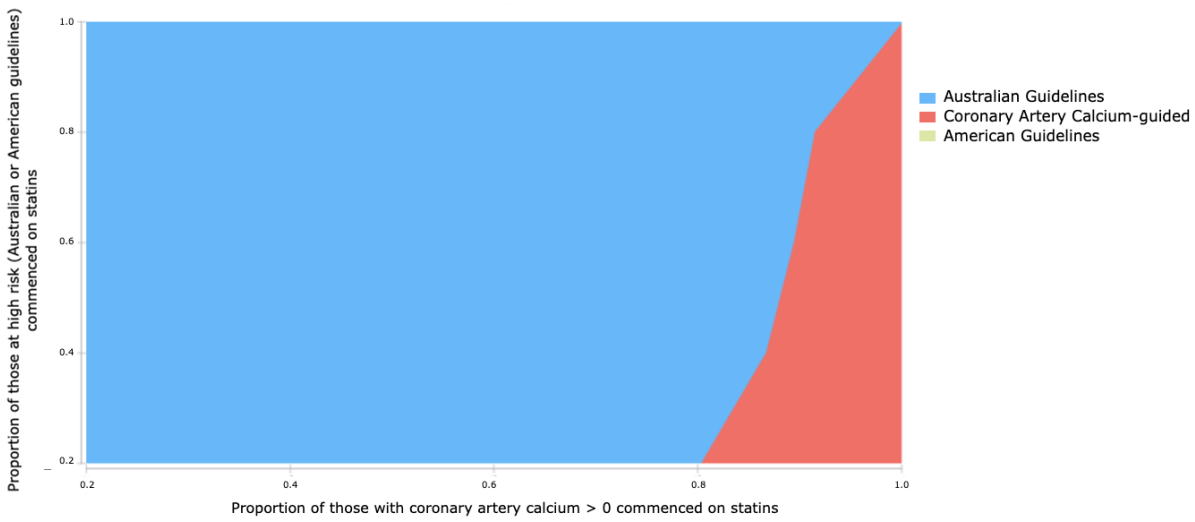
CAC = coronary artery calcium; CHD = coronary heart disease. ICER = incremental cost-effectiveness ratio; QALY = quality-adjusted life year.

Table 11. One-way sensitivity analyses of cost-effectiveness of coronary artery calcium (CAC)-guided eligibility (CAC score > 0), with respect to Australian guidelines (microsimulation, 50 000 trials)

Parameter	ICER compared with Australian guidelines	Change in incremental cost-effectiveness ratio (per QALY gained)
Statin-attributable reduction in relative risk (Australian guidelines)		
0.88	53028	Reference
0.75	61383	+8,355
0.95	44764	–$8,264
Statin-attributable reduction in relative risk (CAC-guided eligibility)		
0.76	53028	Reference
0.65	18190	–$34,838
0.85	122680	+$69,652
Annual probability of statin discontinuation after initiation (CAC-guided eligibility)		
9.3%	53028	Reference
0	39590	–$13,438
11.7%	69293	+$16,265
Costs of non-cardiovascular deaths		
0	53028	Reference
$2500	63208	+$10,180
$5000	73390	+$20,362
Time horizon (years)		
15	53028	Reference
10	186395	+$133,367
20	18091	–$34,937
Global discount rate		
3%	53028	Reference
0%	35585	–$17,443
5%	68438	+$15,410

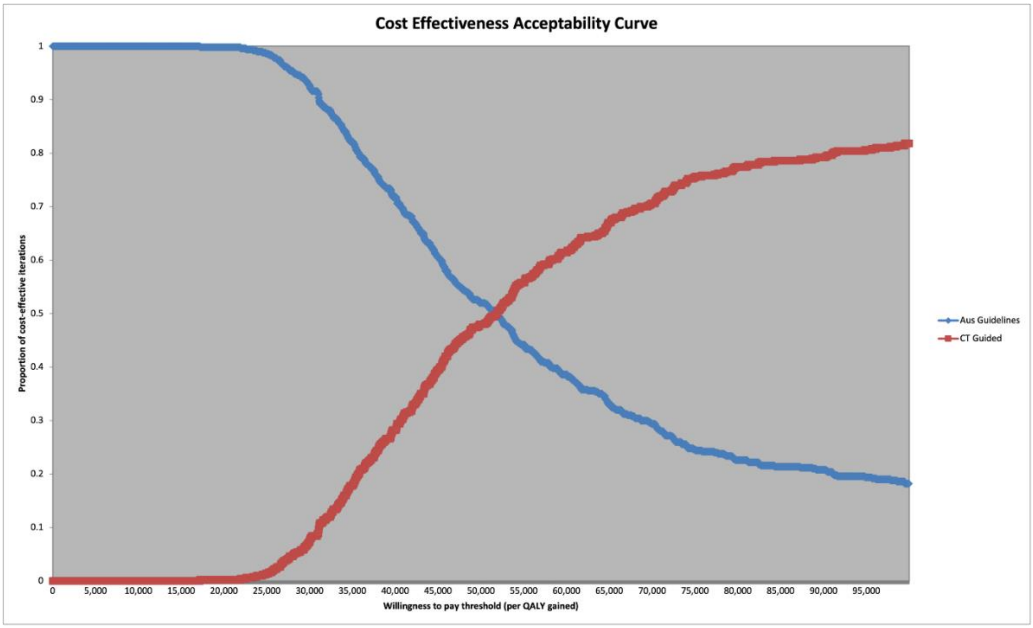
QALY = quality-adjusted life year.

Figure 1. Two-way sensitivity analysis comparing statin initiation rates by eligibility criteria (coronary artery calcium [CAC]-guided eligibility (CAC score > 0, Australian guidelines), at willingness-to-pay threshold of $35,000/QALY gained*



* The figure illustrates which strategy is cost-effective at a willingness-to-pay threshold (ICER < $35,000) or dominates the other strategies, according to statin initiation rate for CAC and non-CAC guided strategies with all other model parameters unchanged from the base model. In blue areas (initiation rate of 60% for Australian guidelines and CAC strategy), the CAC ICER is either greater than $35 000/QALY gained or the Australian strategy dominates the CAC strategy. In contrast, for low statin initiation rates (< 40%) with the non-CAC-guided approach, the statin initiation rate with the CAC-guided approach would need to exceed 80% to achieve an ICER below $35,000/QALY gained; at a statin initiation rate in the non-CAC-guided approach of 50%, the initiation rate with the CAC-guided approach would need to exceed 90%. The American guidelines were not cost-effective at any statin initiation rate.

Figure 2. Probabilistic sensitivity analysis and cost effective analysis acceptability curve comparing coronary artery calcium (CAC)-guided with Australian strategies



Aus – Australian Guidelines; CT – computed tomography (coronary artery calcium-guided strategy)

Table 12. Multi-Ethnic Study of Atherosclerosis (MESA) coronary heart disease risk and combined coronary and stroke risk in 1083 people with or without subclinical disease (coronary artery calcium), by age group

Age (years)	Coronary artery calcium	Number	5-year ACVDR ≥ 10%	Median MESA (IQR)	Mean MESA/stroke risk (SD)
≥40 to <50	Negative	176	0	2.22% (1.74–2.79%)	3.48% (1.2)
	Positive	68	2	4.49% (3.07–8.63%)	8.37% (7.1)
≥50 to <60	Negative	267	4	2.04% (1.62–2.70%)	4.01% (1.7)
	Positive	192	16	6.83% (3.83–10.5%)	9.97% (5.8)
≥60 to ≤70	Negative	139	10	2.09% (1.75–2.50%)	5.81% (2.8)
	Positive	217	43	7.28% (4.79–11.2%)	12.7% (7.1)

ACVDR = Australian Absolute Cardiovascular Risk;[11] MESA Multi-Ethnic Study of Atherosclerosis.[3]

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