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Supporting Information

Supplementary methods

Appendix to: Patel B, Peiris DP, Patel A, et al. A computer-guided quality improvement tool for primary health care: cost-effectiveness analysis based on TORPEDO trial data. *Med J Aust* 2020; doi: 10.5694/mja2.50667.

1. Definition of high cardiovascular disease (CVD) risk

Based on Australian guidelines, high CVD risk is defined as (1) history of CVD (diagnosis of coronary heart disease, cerebrovascular disease, or peripheral vascular disease); (2) the presence of any guideline-stipulated clinically high risk conditions such as diabetes mellitus and age >60 years, diabetes mellitus and albuminuria, stage 3B chronic kidney disease, or extreme individual risk factor elevations: systolic blood pressure (SBP) ≥ 180 mm Hg, diastolic blood pressure (DBP) ≥ 110 mm Hg, total cholesterol > 7.5 mmol [290 mg/dL]); or (3) a calculated 5-year CVD risk of >15% based on the Framingham equation.[1]

2. Calculation of number of people at high risk of CVD per New South Wales primary health network (PHN)

In 2015, there were 10 PHNs in NSW. The number of general practices and Aboriginal Medical Services (AMSs) (referred to as health services; now known as ACCHSs. per PHN were derived from published annual PHN reports. For two PHNs we made estimates based on population. We estimated the number of health services per PHN from the PHN annual reports. There were about 283 health services per NSW PHN.

Steps for calculating the mean number of people at high CVD risk:

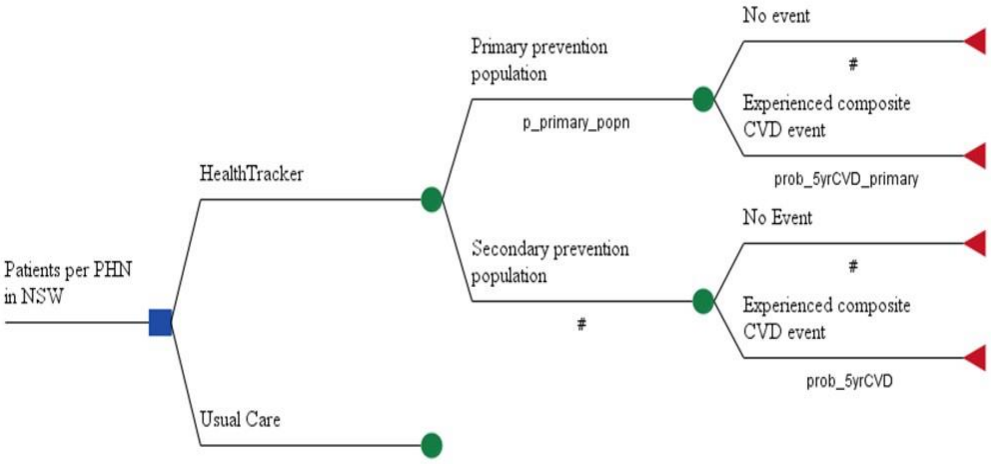
1. Total number of people ≥ 35 years for each NSW PHN
2. Total number of people ≥ 45 years for each NSW PHN
3. Indigenous population proportion by PHN area based on annual reports
4. Estimated number of Indigenous people by PHN:
   #1 * #3
5. Calculation of number of non-Indigenous people at high risk, by PHN:
   #2 * 20.3% (proportion based on TORPEDO population)
6. Calculation of number of Indigenous people at high risk, by PHN:
   #4 * 6.3% (proportion based on TORPEDO population)
7. Total number of people at high risk, by PHN:
   #5 + #6
8. Estimated number of people at high risk per general practice/AMS:
   #7 divided by (number of general practice/AMS in PHN)
9. Total of people at high risk per general practice/AMS in all NSW PHNs:
   Sum (#8)

Final calculation:

10. Mean number of people at high risk per PHN in NSW:
    Sum of #7 divided by 10 = 62 723

3. Decision analytic model

Decision-analytic modelling is a structured approach used to inform clinical or health policy decisions of innovations with limited available evidence. The strength of the model is that data from different sources can be combined under conditions of uncertainty,[2] and predict events beyond the time horizon of the primary study.



4. Baseline CVD risk assumptions

Blood pressure-lowering treatment effects

We used a recent meta-analysis of trials assessing blood pressure-lowering treatment effects on reduction of total major CVD events or death based on individual's absolute risk.[3] For each 5 mmHg reduction in SBP, an expected risk reduction of 15% was assumed.

Lipid-lowering treatment effects

A meta-analysis of randomised trials assessed statin effects on reduction of major vascular events. For each 1.0 mmol/L low-density lipoprotein cholesterol (LDL-C) reduction, a 22% reduction in major CVD events was assumed.[4]

Antiplatelet therapy effects

A meta-analysis of aspirin in primary and secondary prevention found a 19% risk reduction (risk ratio, 0.81) in secondary prevention of vascular events. This effect size was assumed for our evaluation.[5] As aspirin is not routinely recommended in Australian guidelines, we took a conservative approach and did not include it in the modelled effects for primary prevention.

5. Absolute risk reduction input variables for the intervention arm: primary prevention

Intermediate risk factors	Absolute reduction	Expected risk reduction*	Trial risk reduction (intervention)	Calculated risk reduction over 5 years	Absolute CVD risk over 5 years
SBP[3] (mmHg)	5.0	15%	4.0	87.8%	
LDL-C[4] (mmol/L)	1.0	22%	0.18	95.6%	
Aspirin (if applicable)	Newly commenced treatment	19%	0	100%	
5-year absolute CVD risk†					
Baseline					20.0%
New					16.8%

LDL-C = low-density lipoprotein; SBP = systolic blood pressure.

* Based on the cited literature.

† A multiplicative effect of calculated risk reduction over 5 years, based on change in intermediate risk factors, was assumed to calculate the new 5-year absolute CVD risk.

6. References

1. National Vascular Disease Prevention Alliance. Guidelines for the management of absolute cardiovascular disease risk. 2012. http://cvdcheck.org.au/pdf/Absolute_CVD_Risk_Full_Guidelines.pdf (viewed Nov 2012).

2. Sun X, Faunce T. Decision-analytical modelling in health-care economic evaluations. *Eur J Health Econ* 2008; 9: 313-323.

3 Blood Pressure Lowering Treatment Trialists' Collaboration. Blood pressure-lowering treatment based on cardiovascular risk: a meta-analysis of individual patient data. *Lancet* 2014; 384: 591-598.

4. Cholesterol Treatment Trialists' Collaboration; Baigent C, Blackwell L, Emberson J, et al. Efficacy and safety of more intensive lowering of LDL cholesterol: a meta-analysis of data from 170 000 participants in 26 randomised trials. *Lancet* 2010; 376: 1670-1681.

5. Antithrombotic Trialists' Collaboration; Baigent C, Blackwell L, Collins R, et al. Aspirin in the primary and secondary prevention of vascular disease: collaborative meta-analysis of individual participant data from randomised trials. *Lancet* 2009; 373: 1849-1860.