Reviewer's report

Title: Is population screening for abdominal aortic aneurysm cost-effective?

Version: 2 Date: 4 April 2008

Reviewer: Paul Norman

Reviewer's report:

Major Compulsory Revisions

The section on ‘Costs associated with screening for AAA’ (p4-5) outlines the lack of detail provided in most reports but does not convincingly demonstrate the assumptions used were necessarily optimistic. This needs to be clarified with more detail. One important factor that should be mentioned is the increasing use of endovascular aneurysm repair (EVAR). Most, if not all, cost analyses have been based on open repair and not EVAR. Despite lack of evidence of cost-effectiveness (see for example Michaels et al. Br J Surg 2005;92:960-7) this method of treating AAAs is being used increasingly in many countries and although it may reduce early mortality more effectively, it may nevertheless reduce cost-effectiveness of screening substantially. Mention should be made of the cost of graft surveillance and secondary procedures following EVAR in Table 1.

The Discussion concerning the impact of smoking on longevity, quality of life and health service utilisation is relevant but lacks detail. The authors’ argument could be strengthened by estimates of the magnitude of effect that smoking has on the cost analyses of screening. For example: what are the cost-benefit implications of the decision in the USA to only screen smokers? The effect of smoking cessation on reducing the incidence of undiagnosed AAA in the community deserves more emphasis – it is possible that the incidence may fall to levels that render screening ineffective in terms of lives saved, let alone cost.

Discretionary Revision

Another factor that may be an example of ‘optimistic’ modelling is the possibility that ad hoc detection of cases of AAA will gradually increase as imaging (mostly ultrasound) becomes more and more widely utilised for other reasons. This phenomenon was speculated upon in the Western Australian trial (reference 9) and has the potential to reduce the prevalent pool of undiagnosed AAAs and hence the effectiveness of screening.

Minor Essential Revisions

Overall the quality of English is excellent. I noted the following minor errors:
P3, second last line: ‘…seven studies were cost-utility studies…’
P4, line 1: the term is ‘piggyback’, not ‘piggy-bag’ although a more formal
wording would be: ‘...conducted as part of clinical trial.’

P5, middle para, line 1: ‘gold’ not ‘golden’ and line 3 ‘mobile’ not ‘mobil’

P7, last para of Results, line 3: ‘outweighed’ not ‘outweighted’; line 4 delete ‘perspective’; line 5 ‘stocastically’ not ‘stochastic’ and line 6 ‘assess’ or ‘distinguish’ rather than ‘distinct’

P8, middle para, lines 1-2: suggest: ‘...economic evaluations do not incorporate evidence that smokers lives are shorter than the average population....’

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'