Appendix E2: Quality and applicability checklists for economic evaluations

MSAC 2003

STUDY QUALITY – the extent to which the study fulfils its stated objectives (adapted from CHEC5)	**Yes/No/ Unclear/NA**	**Comments**
1. Is the study population clearly described?	Yes	
2. Are the competing alternatives clearly described?	Yes	
3. Is a well-defined research question posed in answerable form?	Yes	
4. Is the economic study design appropriate to the stated objective?	Yes	
5. Is the chosen time horizon appropriate in order to include relevant costs and consequences?	Yes	Extension to 5 years considered in sensitivity analysis
6. Was the perspective of the analysis (societal, third-party payer, etc.) clearly stated?	Yes	Australian Medicare (health-care system perspective with societal costs considered separately if significant)
7. Were the parameter estimates used in the analysis from the best available source?	Yes	Diagnostic effectiveness data was best available at the time. Its not clear where the estimates of probability of successful treatment following diagnosis came from.
8. Are all important and relevant costs for each alternative identified?	No	Weren't able to quantify resource use associated with further diagnostic investigations following recurrence
9. Are all costs measured appropriately in physical units?	Yes	
10. Are costs valued appropriately?	Yes	But not directly applicable to UK
11. Are all important and relevant outcomes for each alternative identified ?	Yes	
12. Are all outcomes measured appropriately?		Outcome is successful treatment and this is linked to a health state with no further syncopal episodes whereas non diagnosed and unsuccessfully treated patients are assumed to have further episodes. However, evidence on rates of successful treatment have not been described.
13. Are outcomes valued appropriately?	Yes	EQ-VAS used not EQ-5D index score based on TTO valuation of EQ-5D states
14. Is an incremental analysis of costs and outcomes of alternatives performed?	Yes	Cost per diagnosis, cost per successful treatment and cost per QALY

15. Are all future costs and outcomes discounted appropriately?	Yes	5% for both, appropriate for AUS but not for UK
16. Are all important variables, whose values are uncertain, appropriately subjected to sensitivity analysis?	Yes	
17. Was the modelling strategy appropriate given the research question?	Yes	But design of decision tree has been restricted due to data available. Authors state that an alternative structure would be preferable in which the probability of no recurrence (spontaneous remission) is considered separately from the probability that a diagnosis is made during a recurrent episode.
18. Does the article indicate that there is no potential conflict of interest of the study researcher(s) and funder(s)?	Yes	Model adapted from manufacturer submission by independent reviewer
19. Overall assessment: Very serious limitations/Potentially serious limitations/Minor limitations	Potentially serious	It is not clear what evidence has been used to estimate the proportion of patients successfully treated and the model is sensitive to this outcome
Other comments:		

APPLICABILITY – relevance to the specific clinical question for the guideline and NICE Reference Case6	**Yes/No/ Unclear/NA**	**Comments**
20. Is the patient population fully in line with the population in the clinical question?	Yes	Relevant to questions of whether ILR should be used at the end of the diagnostic sequence
21. Is the intervention considered by the economic study the same as that specified in the guideline question?	Yes	
22. Are the comparators in this study entirely relevant for the clinical question under consideration?	Yes	
23. Are all important health effects appropriately considered by the study?	Yes	
24. In the base-case analysis, has a UK NHS and personal social services perspective been taken?	No	Australian Medicare
25. Are both costs and benefits discounted at	No	

3.5%?		
26. Are QALYs used and presented?	Yes	
27. If QALYs are used, have health states been described using a standardised generic instrument?	Yes	EQ-VAS
28. If QALYs are used, has a choice-based method been used to elicit health state valuations?	Not clear	States that EQ-VAS has been used which is not validated based on a trade-off between duration and quality of life
29. If QALYs are used, have health state valuations been elicited from a representative sample of the public?	Not clear	See above
30. Overall judgement: Directly applicable/Partially applicable/Not applicable	Partially applicable	Costs are not applicable to UK. Could be adapted to UK perspective
Other comments:		

Simpson 1999 and Krahn 1999

STUDY QUALITY – the extent to which the study fulfils its stated objectives (adapted from CHEC5)	**Yes/No/ Unclear/NA**	**Comments**
1. Is the study population clearly described?	Unclear	First episode of unexplained syncope. Does not state what is done to investigate the syncope before it is classified as unexplained.
2. Are the competing alternatives clearly described?	Yes	
3. Is a well-defined research question posed in answerable form?	Yes	
4. Is the economic study design appropriate to the stated objective?	Yes	
5. Is the chosen time horizon appropriate in order to include relevant costs and consequences?	Unclear	Time horizon is not clearly stated but it is implied that it covers the diagnostic period only and dose not capture patient outcomes following diagnosis.
6. Was the perspective of the analysis (societal, third-party payer, etc.) clearly stated?	Yes	Societal perspective in Krahn and third-party payer perspective in Simpson
7. Were the parameter estimates used in the analysis from the best available source?	Unclear	Published estimates of diagnostic yield are used but it is not clear if these have been systematically identified or whether they have been reviewed to determine their appropriateness.

8. Are all important and relevant costs for each alternative identified?	Yes	
9. Are all costs measured appropriately in physical units?	Yes	
10. Are costs valued appropriately?	Yes	
11. Are all important and relevant outcomes for each alternative identified ?	No	Patient outcomes following diagnosis have not been considered
12. Are all outcomes measured appropriately?	Unclear	Definition of diagnosis is not given for each test
13. Are outcomes valued appropriately?	NA	
14. Is an incremental analysis of costs and outcomes of alternatives performed?	Krahn: Yes Simpson: No	Krahn presents the incremental cost per additional diagnosis associated with the addition of IER to the end of each diagnostic strategy. However, the ICERs given do not follow from the data presented.
15. Are all future costs and outcomes discounted appropriately?	NA	Due to long-term outcomes not been considered
16. Are all important variables, whose values are uncertain, appropriately subjected to sensitivity analysis?	Yes	Sensitivity analyses are used to estimate high end and low end estimate based on the uncertainty in diagnostic costs (Krahn and Simpson) and diagnostic yield (Krahn not Simpson)
17. Was the modelling strategy appropriate given the research question?	Yes	
18. Does the article indicate that there is no potential conflict of interest of the study researcher(s) and funder(s)?	Yes	One author is employee of IER manufacturer
19. Overall assessment: Very serious limitations/Potentially serious limitations/Minor limitations		Potentially serious limitations due to lack of information regarding the cohorts from which the estimates of diagnostic yield have been derived and whether the tests are being used in similar populations within the model
Other comments:		

APPLICABILITY – relevance to the specific clinical question for the guideline and NICE Reference Case6	**Yes/No/ Unclear/NA**	**Comments**
20. Is the patient population fully in line with the	Unclear	Unclear how unexplained syncope has been defined.

population in the clinical question?		
21. Is the intervention considered by the economic study the same as that specified in the guideline question?	Yes	Relevant to questions on ordering of diagnostic tests
22. Are the comparators in this study entirely relevant for the clinical question under consideration?	Yes	Relevant to questions on ordering of diagnostic tests
23. Are all important health effects appropriately considered by the study?	No	Outcomes following diagnosis not considered
24. In the base-case analysis, has a UK NHS and personal social services perspective been taken?	No	Australian third party or US societal perspective
25. Are both costs and benefits discounted at 3.5%?	NA	Future costs and benefits not considered
26. Are QALYs used and presented?	No	
27. If QALYs are used, have health states been described using a standardised generic instrument?	NA	
28. If QALYs are used, has a choice-based method been used to elicit health state valuations?	NA	
29. If QALYs are used, have health state valuations been elicited from a representative sample of the public?	NA	
30. Overall judgement: Directly applicable/Partially applicable/Not applicable	Partially applicable	Costs not applicable but could be adapted to UK setting. Benefits not measured using QALYs
Other comments:		

Farwell 2004 & 2006

As this is a trial based economic evaluation, the methodological quality of the study has been assessed within the clinical review using the appropriate criteria for an RCT

APPLICABILITY – relevance to the specific clinical question for the guideline and NICE Reference Case6	**Yes/No/ Unclear/NA**	**Comments**
20. Is the patient population fully in line with the	Yes	Considered to be representative of the population with unexplained syncope after

population in the clinical question?		secondary tests
21. Is the intervention considered by the economic study the same as that specified in the guideline question?	Yes	
22. Are the comparators in this study entirely relevant for the clinical question under consideration?	Yes	Although patients in both groups had access to Holter and external event recorder monitoring after randomisation and the GDG felt these would not be appropriate investigations in patients with infrequent TLoC episodes
23. Are all important health effects appropriately considered by the study?	Yes	Includes measures of recurrence and quality of life although quality of life measures do not provide preference based utility scores
24. In the base-case analysis, has a UK NHS and personal social services perspective been taken?	Yes	But treatment costs after diagnosis not included and costs of implantable event recorder monitoring not included
25. Are both costs and benefits discounted at 3.5%?	No	Study follow-up in <2 years
26. Are QALYs used and presented?	No	
27. If QALYs are used, have health states been described using a standardised generic instrument?	NA	
28. If QALYs are used, has a choice-based method been used to elicit health state valuations?	NA	
29. If QALYs are used, have health state valuations been elicited from a representative sample of the public?	NA	
30. Overall judgement: Directly applicable/Partially applicable/Not applicable	Partially applicable	Benefits have not been measured using QALYs
Other comments:		

Krahn 2003
As this is a trial based economic evaluation, the methodological quality of the study has been assessed within the clinical review using the appropriate criteria for an RCT (Krahn 2001 reports the RCT and Krahn 2003 reports the economic outcomes)

APPLICABILITY – relevance to the specific clinical question for the guideline and NICE Reference Case6	**Yes/No/ Unclear/NA**	**Comments**

20. Is the patient population fully in line with the population in the clinical question?	Yes	Considered to be representative of the population with unexplained syncope after secondary tests
21. Is the intervention considered by the economic study the same as that specified in the guideline question?	Yes	
22. Are the comparators in this study entirely relevant for the clinical question under consideration?	Unclear	The conventional monitoring strategy combined EER with tilt-testing and EPS. It is unclear whether this would be representative of conventional monitoring in a UK setting.
23. Are all important health effects appropriately considered by the study?	No	Quality of life is not reported. Recurrence during 1 year follow-up is reported but cross-over means that this reflects effectiveness of diagnostic testing including tests after cross-over
24. In the base-case analysis, has a UK NHS and personal social services perspective been taken?	No	
25. Are both costs and benefits discounted at 3.5%?	No	Only 1 year follow-up
26. Are QALYs used and presented?	No	
27. If QALYs are used, have health states been described using a standardised generic instrument?	NA	
28. If QALYs are used, has a choice-based method been used to elicit health state valuations?	NA	
29. If QALYs are used, have health state valuations been elicited from a representative sample of the public?	NA	
30. Overall judgement: Directly applicable/Partially applicable/Not applicable	Partially applicable	Costs are not UK NHS and benefits have not been estimated using QALYs
Other comments:		

Rockx 2005
As this is a trial based economic evaluation, the methodological quality of the study has been assessed within the clinical review using the appropriate criteria for an RCT

APPLICABILITY – relevance to the specific	**Yes/No/**	**Comments**

clinical question for the guideline and NICE Reference Case6	**Unclear/NA**	
20. Is the patient population fully in line with the population in the clinical question?	Yes	Considered to be representative of the population with unexplained syncope after secondary tests
21. Is the intervention considered by the economic study the same as that specified in the guideline question?	Yes	
22. Are the comparators in this study entirely relevant for the clinical question under consideration?	No	The GDG felt that 48 hr Holter monitoring would be used in patients with very frequent (e.g daily) events whilst external event recorders would be used in patients with less frequent events so these are not realistic comparators in the same population.
23. Are all important health effects appropriately considered by the study?	No	Outcomes after diagnosis such as quality of life or recurrences are not reported
24. In the base-case analysis, has a UK NHS and personal social services perspective been taken?	No	
25. Are both costs and benefits discounted at 3.5%?	NA	Follow-up was <1 year
26. Are QALYs used and presented?	No	
27. If QALYs are used, have health states been described using a standardised generic instrument?	NA	
28. If QALYs are used, has a choice-based method been used to elicit health state valuations?	NA	
29. If QALYs are used, have health state valuations been elicited from a representative sample of the public?	NA	
30. Overall judgement: Directly applicable/Partially applicable/Not applicable	Partially applicable	Costs are not UK NHS and benefits have not been estimated using QALYs
Other comments:		