

EXAM – HEVAL5200 – topics in economic evaluation

Guidelines - examination

The grading is weighted - 40% structure and 60% content + the oral exam.

The report 40%

Following the given structure

Tables and figures should be self-explanatory.

Evaluation of legends, table itself, footnote

No results in discussion

The report should have the following sections (Introduction and background could be merged in one)

- Title (name of author)
- Introduction (with background)
 - a. Objective
 - b. Short introduction to the topic
- Methods
 - a. PICO
 - i. Population
 - ii. Intervention
 - iii. Comparator
 - iv. outcomes
 - b. Time horizon
 - c. Describe HRQoL, QALYs, other health measures, Costs (resources and unit costs)
 - d. Describe other data
- Statistical analysis
 - e. Testing for differences in background characteristics
 - f. Imputation – how it was conducted
 - g. Area under the curve – QALYs
 - h. Costs and regression, testing for optimal choice (specification, homoscedasticity and adj R squared)
 - i. Cost-effectiveness analysis – definitions of
 - i. ICER, NMB
 - ii. Bootstrap
 - iii. CEAC
 - iv. CEAF

v. Alternative methods (without imputation and Manca)

- Results
 - a. Answering all the sub-questions
 - b. Baseline characteristics
 - c. Table with HRQoL according to intervention
 - d. AUC – graph
 - e. Manca method
 - f. Regression – costs and predictions
 - g. CEA (results with uncertainty)
- Discussion
 - a. Main findings
 - b. Limitations
 - c. Conclusion
- References
- Appendix including R-code

Content: 60%

QUESTIONS:

Main objective:

1. Would you recommend to introduce surgery for this patient group instead of conservative treatment? For all main results include both mean values and with uncertainty estimated by means of the bootstrap method. **This should be answered clearly in the report**
 - a. Show the relevant results from two different perspectives: Healthcare and society
 - b. Show the results both with and without adjustment for baseline HRQoL (15D) – use imputed results
 - c. Present ICER, CEAC and CEAF
2. Sub-questions:
 - a. Test for differences in background characteristics: Age and gender and include a test for differences in 15D at baseline

Presentation of a nice table with the categories. Important to see if the candidates have reasonable grouping of continuous variables.

- b. Present both the descriptive 15D data (each dimension) and the HRQoL data according to intervention group. Discuss which of the dimensions that seems to be most relevant for this patient group

Important if the candidates have discussed this topic. Choice of method not very important.

- c. Use imputation to replace missing information on 15D HRQoL (use age, gender and HRQoL score in the previous period in the regression)
- d. Estimate AUC and present the findings in a figure.

Here the students should estimate HRQoL at each timepoint and test for differences (here it is OK if the students have done this with and/or without imputation. If students have both, that is great.
The AUC should be with imputation

- e. Adjust for differences in 15D measures at baseline (use the method presented in Manca), when estimating health gain

Important for the analysis. Include results and interpretation of the findings.

- f. Cost estimates:
 - i. Differences in resource use between the two intervention groups
 - ii. Define relevant cost groups (Healthcare and society)
 - iii. Test whether total costs (health care perspective and/or societal perspective) are significantly different between intervention groups and do the costs depend on age, gender and baseline 15D measures? Would you recommend applying an OLS, log-linear or GLM specification of the cost function? Discuss which, if any that could be recommended.

Choice of specification should be addressed. Different tests and regression outcomes. GLM and Log linear the optimal choice, but depend on type of cost and definition of age (continuous versus categorical). Interpret findings.

The exam should include a written report and the R-code (as appendix).

Important that the candidate has defined all the concepts (HRQoL, QALYs, ICER, CEAC, CEAF, bootstrapping ++)

Understand the interpretation of the results important.

Discuss under which condition surgery is cost-effective strategy.

Show the manca method or refer to results

Include the health dimension in 15D – not very important for the evaluation.

Interpretation of the ICER (incremental NMB), CEAC and CEAF should be reported

Oral exam (part of the content evaluation)

Purpose to explore ability to describe and interpret the analyses and results presented in the report.

Organization of the oral exam:

1. 2 minutes pitch of the exam
2. Questions related to AUC and the Manca method (adjusting for baseline)
3. Discussion of the choice of specification of the regression of costs
4. Questions related to the CEA and interpretation of the scatterplots, CEAC and CEAF

Evaluation of the oral exam was related to discussion and interpretation of the candidates own finding in the report and to align the written report with the candidates understanding and ability to understand the executed analyses.