

Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University

Student:	Martina Lušková
Advisor:	Mgr. Lenka Šlegerová
Title of the thesis:	Is women's vaccination against HPV in the Czech Republic cost-effective?

OVERALL ASSESSMENT:

Short summary

This bachelor thesis focuses on the cost-effectiveness of women's vaccination against HPV and the effect of increased vaccination coverage. It employs a Markov model to determine the average time to death and the corresponding quality of life for each considered strategy. There are two strategies proposed in the thesis, both compared with the current settings. First, increasing the current vaccination coverage of the cohort of thirteen-year-olds by approx. 15 p.p. to 80%. The other proposes the extension of vaccination reimbursement to women aged thirteen to fifteen and the same coverage increase as in strategy 1.

According to the thesis's results, the increase in costs (vaccination costs and costs for the necessary promotional campaign) is outweighed by the benefits leading to the cost-efficiency of these strategies in comparison to the current situation.

Contribution

This thesis broadens the limited literature available on HPV vaccination in the Czech Republic. Moreover, studying the costs of cancer is always relevant as the treatment is very costly. The contribution of this thesis is slightly lessened due to the characteristics of the used data. As these are primarily reimbursement data (not clinical data) averaged over the whole Czech women population (not age specific), the interpretation of the results should be taken with caution.

The compared strategies focus mainly on increasing the vaccination coverage. More time could have been invested in creating additional strategies that address the design of reimbursement mechanisms (not only considering full vaccination reimbursement for older girls).

Methods

The thesis employs a multistate Markov model. The methodology is well described by the author who apparently understands it sufficiently well. The theory is then put into praxis by developing a model with four states (health, precancerous, cancerous, death) which is suitable for estimating average patients' survival. However, the implementation of the model could have been described and reasoned in more detail (including the limitations).

The author uses publically unavailable data that had to be acquired from the Institute of Health Information and Statistics upon a request. This was indeed a valuable experience for the potential future works in healthcare economics as the author gained some knowledge about the structure of healthcare registers and databases. Alas, the thesis' submission had to be postponed primarily due to the extensive waiting period for receiving the data.

Literature

The author presents the existing relevant literature, which is relatively scarce in the Czech conditions. Regarding cervical cancer and its treatment, the author uses, to a larger extent, non-academic sources, but that is quite understandable. The author displays a clear understanding of the treatment process needed for building the model and computing treatment costs (this is shown especially in the appendices).

In the discussion part, the thesis could compare its results with previous studies and elaborate on whether/why the results differ.

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Manuscript form

The author uses appropriate language and style, including the academic format for graphs and tables. The text effectively refers to graphs and tables and disposes of a complete bibliography. References to the bibliography are mostly correctly formed. The text is written in proper English. The thesis might benefit from a partial change in the structure of chapters that would make them approximately equally long.

Overall evaluation and suggested questions for the discussion during the defense

This thesis considers an interesting, policy-oriented topic. The author demonstrates a sufficient understanding of the topic. The tools used are relevant and adequate to the author's level of studies. The thesis would benefit from additional work on the strategies that could be further developed.

Suggestions for the discussion during the defence:

1. Explain why Markov models are more appropriate for this analysis than decision trees (frequently used for cost-effectiveness analyses of treatment strategies).
2. Elaborate on data limitations and describe what data would be more useful and effective for this analysis.
3. What other changes in the reimbursement mechanism could be considered?

The results of the Urkund analysis indicate a slightly higher share of text similarity than is common; however, basically all the similar parts occur in the appendices consisting of additional information on cancer stages and other specialized medical information.

In my view, the thesis fulfils the requirements for a bachelor thesis at IES, Faculty of Social Sciences, Charles University, **I recommend it for the defence and suggest a grade B.**

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
<i>Contribution</i> (max. 30 points)	23
<i>Methods</i> (max. 30 points)	25
<i>Literature</i> (max. 20 points)	18
<i>Manuscript Form</i> (max. 20 points)	17
TOTAL POINTS (max. 100 points)	83
GRADE (A – B – C – D – E – F)	B

NAME OF THE REFEREE: Mgr. Lenka Šlegerová

DATE OF EVALUATION: 29. 8. 2021

Digitally signed (29. 8. 2021)
Lenka Šlegerová

Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Overall grading:

TOTAL	GRADE
91 – 100	A
81 - 90	B
71 - 80	C
61 – 70	D
51 – 60	E
0 – 50	F