Is women's vaccination against HPV in the Czech Republic cost-effective?

Bachelor's Thesis

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Abstract

This thesis approaches the cost-effectiveness of women's vaccination against human papillomaviruses (HPV) in the Czech Republic. HPV is a pathogen responsible for the majority of diagnosed cervical carcinomas. The aim is to assess the current reimbursement setting of HPV vaccination compared to the designed change. In order to increase the vaccination coverage and subsequently decrease the future treatment costs, two strategies were proposed. A homogenous multistate Markov model is developed to model the transition among states representing the stages of progression of the cervical carcinoma. Transition analysis is performed based on the data collected for the purpose of healthcare reimbursement under public health insurance. The incremental cost-effectiveness ratio suggests that increased immunization coverage (from 65.8% to 80%) fuelled by the campaign promoting vaccination seems to be cost-effective assuming the threshold of 1.2 million CZK per one quality-adjusted life year. The strategy promoting the vaccination together with extending the age (from thirteen-year-olds by cohorts of fourteen- and fifteen-year-olds) at which vaccination is reimbursed delivers analogous outcome. The main setback of the thesis is that the data for the purpose of reimbursement and not data from the clinical register were used. Thus, the epidemiological situation in the Czech Republic was not reflected precisely. Despite the limitations, the increased immunization coverage of women's vaccination against HPV appears to be cost-effective and therefore, the corresponding policy change should be implemented.