

The costs and cost-effectiveness of BCG vaccination in Estonia

Summary

Objectives: The aim of this health technology assessment was to analyse the costs and potential health effects of selective and no vaccination strategies compared to the current universal Bacillus Calmette-Guérin (BCG) vaccination programme.

Methodology: Literature reviews on the effectiveness and safety of the BCG vaccine for preventing tuberculosis (TB) and on the health effects and cost-effectiveness of changing vaccination policies were conducted using relevant databases. A budget impact analysis for different vaccination scenarios was carried out in the Estonian health-care context for the period 2018-2032.

Results: BCG vaccination policies have changed considerably over recent decades with a majority of Western European countries switching from universal vaccination of infants and children to selective vaccination, or they have discontinued with vaccination. On average, 1.4 TB cases are registered annually in 0-14 year olds in Estonia. If the current universal vaccination programme were replaced with a selective vaccination targeting children at high risk of TB, in 2032 an additional 1.5 TB cases would be registered; for the non-vaccination strategy an additional 1.64 TB cases would be registered. The cost per one TB case averted for the universal strategy compared to the non-vaccination strategy was €9,884 and compared to selective vaccination €4,856. In this, universal vaccination could save €3,900–4,300 annually in TB treatment costs compared to alternative scenarios, but the total costs of the universal programme are larger than for the selective or non-vaccination scenarios.

Conclusions: Although the universal BCG vaccination programme is more costly than its alternatives, its overall budget impact is modest. Several organizational challenges need to be addressed if the universal programme is replaced with selective BCG vaccination.

Citation: Reile R, Võrno T, Närska M, Pehme L. Väikelaste tuberkuloosivastase vaktsineerimise efektiivsus ja kulud Eestis. Tartu: Tartu Ülikooli premeditsiini ja rahvatervishoiu instituut; 2016.