



Title	Effects and Costs of Pneumococcal Conjugate Vaccination of Belgian Children
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Aim

To determine the cost effectiveness of universal vaccination in young children (under 2 years of age) with the currently available 7-valent conjugated pneumococcal vaccine (PCV7), taking into account direct benefits for the immunized children and indirect benefits (herd immunity effects) for the population at large; and to determine the optimal vaccination schedule to achieve those benefits cost-effectively.

Conclusions and results

We conclude the following from our baseline calculations:

- At 9869 euros (EUR) per quality-adjusted life-year (QALY) gained in the baseline, PCV7 vaccination using a 2+1 schedule with injections at 2, 3, and 15 months of age is cost effective compared to other widely accepted interventions in Belgian health care.
- At EUR 155 619 per QALY gained in the baseline (using already more pessimistic assumptions for the 2+1 than the 3+1 schedule), the incremental cost effectiveness of a 3+1 schedule (2, 3, 4, and 15 months) versus a 2+1 schedule (2, 3, and 15 months) compares unfavorably to other widely accepted interventions in Belgian health care.

Recommendations

Based on those results, the KCE recommends the introduction of universal childhood vaccination in Belgium with the 7-valent conjugated pneumococcal vaccine using a 2+1 vaccination schedule with injections at 2, 3, and 15 months.

Methods

We have reviewed the international published and unpublished literature, and collected and analyzed a wide range of Belgian epidemiological and cost data. A simulation model was developed, parameterized, and fitted by using scientifically validated data, as much as possible

from Belgian sources. Simulations were performed to estimate how effective, and cost effective, universal PCV7 vaccination of Belgian children would be.

Further research/reviews required

Not explicitly stated/future evaluation of vaccination program.