



**Title** Cost-Effectiveness Analysis of Rotavirus Vaccination of Belgian Infants

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**Reference** Report no 54C, 2007.

[http://kce.fgov.be/index\\_en.aspx?ID=0&SGREF=9152&CREF=9409](http://kce.fgov.be/index_en.aspx?ID=0&SGREF=9152&CREF=9409)

## Aim

To estimate the cost effectiveness of universal rotavirus (RV) vaccination in Belgium.

## Conclusions and results

### Healthcare Payer Perspective

- The incremental cost-effectiveness ratio is influenced by the number of caregivers assumed to impact on health-related quality of life (HRQOL) and the valuation of care for which no healthcare resources are used.
- Based on the most plausible scenario, fully funded universal RV vaccination would cost EUR 50 024 per QALY gained with Rotarix<sup>®</sup>, and EUR 68 321 per QALY gained with RotaTeq<sup>®</sup>.
- At an average of EUR 80 709 per QALY gained, the current situation (private RV vaccination with Rotarix or Rotateq at intermediate levels of uptake, partially reimbursed by the National Health Insurance) is less cost effective than a fully funded universal vaccination program.
- Considering all information for both vaccines, fully funded universal vaccination (and probably private vaccination) is more cost effective with Rotarix than with RotaTeq.

### Societal Perspective

- On average, a fully funded universal RV vaccination program is more cost effective for society than for the healthcare payer, but the impact of parameter uncertainty on the results is also greater for society than for the healthcare payer. Fully funded universal RV vaccination would be slightly cost-saving with Rotarix, and would cost EUR 29 618 per QALY gained with RotaTeq.
- Multivariate sensitivity analysis showed the cost effectiveness of universal vaccination vs no vaccination depends mainly on the uncertainty about the number of days away from work to care for a child with clinical symptoms of RV infection.

- In line with the healthcare payer perspective, fully funded universal vaccination is more cost effective with Rotarix than with RotaTeq, and universal vaccination is more cost effective than private vaccination.

## Recommendations

The current situation in Belgium whereby parents and their insurers pay private market prices for the 2-dose Rotarix vaccine (and recently the 3-dose RotaTeq vaccine) is clearly less preferable than a fully funded universal vaccination program, because it is more expensive and (at best) equally efficacious per vaccinated person, less effective, and less equitable.

## Methods

The study includes a review of the international published and unpublished literature, the collection and analysis of a wide range of Belgian epidemiological and cost data, the development of a simulation model, parameterized and fitted by using scientifically validated data.

## Further research/reviews required

Sub-analyses of data from recent clinical trials indicated that the instantaneous efficacy of a reduced schedule (ie, one dose of Rotarix or two doses of RotaTeq) would be high. None of these trials were designed to study the long-term efficacy of using fewer doses than currently recommended for either vaccine or the immediate comparison with the schedules currently recommended. Hence, there is insufficient basis for a model-based analysis of reduced schedule options. Clinical efficacy trials should be set up to compare the current schedules of RV vaccines with reduced ones.