Kosteneffectiviteit van influenzavaccinatie in Nederland [Cost-effectiveness of influenza vaccine in The Netherlands]
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Influenza vaccination.

Type of intervention
Primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
People aged 65 or over and young people at risk of influenza in the Netherlands.

Setting
Community and primary care. The study was carried out by the National Institute of Public Health and Environment, Bilthoven, the Netherlands.

Dates to which data relate
The effectiveness and resource data relate to the period 1987 to 1991. The price year was 1995.

Source of effectiveness data
The effectiveness data were derived from a review of previously published sources and official records. Disease rates were estimated by the National Institute of Public Health and Environment. Population size was estimated by the Centraal Bureau voor de Statistiek (CBS), and use of medications by the Nederlands Instituut voor Onderzoek van de Gezondheidszorg (NIVEL).

Modelling
An epidemiological model was used to calculate morbidity and mortality rates due to influenza, and a costs model was used to determine the costs of vaccination and the direct medical costs due to influenza. The authors used 3 scenarios: a non-intervention scenario, in which nobody is vaccinated; the present situation, in which 30% of the target group (people aged 65 or over and risk groups in the Netherlands) are vaccinated; and an alternative scenario, in which 75% of the target group is vaccinated.

Outcomes assessed in the review
The outcomes considered were the effectiveness of vaccination, the incidence rate of non-vaccinated individuals, life years lost and the volume of care in terms of GP consultations, medication utilisation and days in hospital.
Study designs and other criteria for inclusion in the review
Not relevant (official government sources).

Sources searched to identify primary studies
Not relevant.

Criteria used to ensure the validity of primary studies
Not applicable.

Methods used to judge relevance and validity, and for extracting data
Not applicable.

Number of primary studies included
Approximately three.

Methods of combining primary studies
Narrative method.

Investigation of differences between primary studies
Not applicable.

Results of the review
The effectiveness of vaccination was 56% and the incidence rate of non-vaccinated individuals was 10%.

The volume of care in the three scenarios (non-intervention, the present situation, and the alternative scenario) considered was:

- GP consultations: 181, 142 and 105;
- medication utilisation: 325, 256 and 189;
- days in hospital: 26, 20 and 15.

Measure of benefits used in the economic analysis
The benefit measure was the number of life years saved as determined by the output of the model.

Direct costs
Costs of influenza care (number of GP contacts and hospital days) and costs of vaccination were estimated. The costs are likely to be derived from private practice reimbursement figures. The perspective chosen was that of the payer (not clearly specified). Costs and quantities were not reported separately. No discounting was applied. The price year was 1995.

Statistical analysis of costs
Not reported.
**Indirect Costs**
Not reported (but discussed in the paper).

**Currency**
Dutch guilders (Dfl).

**Sensitivity analysis**
Two alternative scenarios were analysed:

1. a high percentage of vaccination: 75% of the target group is vaccinated;
2. a low price vaccination programme: Dfl 18.75 instead of Dfl 42.50.

**Estimated benefits used in the economic analysis**
The number of life years gained in the present situation (30% of the target group vaccinated), compared to non-intervention was 2,663. The number of life years gained in the alternative scenario (75% of the target group vaccinated), compared to non-intervention was 3,778.

**Cost results**
In the case of non-intervention, the total costs of care were Dfl 86 million. In the present situation the costs of care were Dfl 63 million, costs of vaccination were Dfl 47 million, giving a total cost of Dfl 110 million. With the alternative scenario the costs of care were Dfl 50 million, costs of vaccination were Dfl 91 million, and the total cost was Dfl 141 million.

**Synthesis of costs and benefits**
The benefit measure used was cost per life year saved. By investing 24 million guilders in vaccination, 2,663 life years will be gained compared to non-intervention. This means Dfl 9,200 per life year gained. In the alternative scenario (75% of target group vaccinated) 3,778 life years are gained with an investment of Dfl 55 million. This means Dfl 14,600 per life year, and Dfl 1,600 per life year with low costs of vaccination (results of the sensitivity analysis).

**Authors’ conclusions**
Vaccinating all risk groups and all persons aged 65 or older has a favourable cost-effectiveness ratio in comparison with other preventive intervention programmes.

**CRD COMMENTARY - Selection of comparators**
The rationale for the choice of the comparators was clear.

**Validity of estimate of measure of benefit**
The validity of the benefit measure is likely to be high as the authors used official sources to derive input data for the model. The robustness of the result was tested by means of sensitivity analysis on key variables.

**Validity of estimate of costs**
All relevant costs appear to have been included in the analysis. Although indirect costs, would have been relevant to the analysis, the authors stated that they were not included as no methodology currently exists for their valuation. Had these been included the results would have favoured the proposed intervention more than did the present analysis.

**Other issues**
The authors made comparative reference to other similar interventions and programmes in terms of cost-effectiveness. They also addressed the issue of generalisability by comparing prices with the USA and provided sufficient details for estimates of cost-effectiveness in other countries.

**Implications of the study**
The authors suggested that, compared with other similar interventions, the proposed programme of vaccination produces favourable results.

**Source of funding**
None stated.

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**Other publications of related interest**

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