Pertussis and pertussis vaccine: further analysis of benefits, risks and costs

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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
Pertussis vaccine.

Type of intervention
Primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
Hypothetical cohort of children.

Setting
The study was carried out in the USA.

Dates to which data relate
Price related to 1983.

Source of effectiveness data
Review of studies and opinions.

Modelling
Epidemiological cohort model (model of survival and disease).

Outcomes assessed in the review
Primary outcomes were mortality and encephalitis rates.

Results of the review
The overall reduction in incidence achieved was 83.5% (90.5% in 1-4 year olds).

Methods used to derive estimates of effectiveness
Authors' assumptions.
Estimates of effectiveness and key assumptions
90% of children are assumed to receive the full series of primary doses and booster. No vaccine protection is assumed to occur before 6 months.

Measure of benefits used in the economic analysis
Lives saved.

Direct costs
Costs were discounted at 5%. Direct costs were to the health service and included: immunisation (no handling fee as vaccine is combined with the DT vaccination already given), clinician visits and hospitalisations due to reactions; hospital and non-hospital care due to pertussis. Price related to 1983.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was carried out.

Estimated benefits used in the economic analysis
The net outcomes were positive (reduced death and encephalitis).

Cost results
The programme is cost saving for a range of values found in the literature. Cost duration was life long. Cost were discounted at 5%.

Synthesis of costs and benefits
Incremental costs were negative and incremental benefits were positive.

CRD Commentary
(This commentary was not written by CRD, but by the authors of the DH Register.) Herd immunity effects were included in the model.

Bibliographic details

PubMedID
3938968

Indexing Status
Subject indexing assigned by NLM

MeSH
Brain Diseases /epidemiology /etiology; Child; Child, Preschool; Cost-Benefit Analysis; Epidemiologic Methods; Great Britain; Humans; Infant; Infant, Newborn; Pertussis Vaccine /adverse effects /therapeutic use; United States; Whooping Cough /economics /prevention & control