The impact of initiating a human immunodeficiency virus screening program in an urban obstetric population

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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
Offering voluntary routine human immunodeficiency virus (HIV) screening (an enzyme-linked immunosorbent assay (ELISA)) to all patients in a general obstetrics clinic.

Type of intervention
Screening and treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Clinic outpatients of child bearing age.

Setting
The setting was a general obstetrics clinic. The economic study was carried out in Memphis, USA.

Dates to which data relate
Effectiveness and resource use data were collected between 1992 and 1993. The incidence of known HIV infection at delivery was established by reviewing the medical records of female outpatients from the years 1988-1993. The fiscal year was not explicitly stated.

Source of effectiveness data
The estimate for final outcomes was derived from a single study.

Link between effectiveness and cost data
The costing for the intervention was retrospectively undertaken on the same patient sample as that used in the effectiveness study. The costing for the comparator was performed on a randomly selected subgroup of the seropositive patient sample used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. A total of 1,033 outpatients out of 5,867 (18%) agreed to participate in the voluntary screening programme in the first year (1992), increasing to 2,031 of 5,892 (34%) in 1993.
Study design
This was a retrospective cohort study, carried out in a single centre. The duration of follow-up was 18 months. No loss to follow-up was reported.

Analysis of effectiveness
The principle (intention to treat or treatment completers only) used in analysis of the clinical outcomes was not explicitly specified. The primary health outcomes assessed were the incidence of HIV infection at delivery (known before or during the pregnancy) and the incidence of HIV infection in the general adult population of Shelby County.

Effectiveness results
Of the 2,031 patients in the general population screened in 1993, 1.2% (n=25) were identified as being HIV seropositive, of whom 24% (6) were aged 16-19 years of age. The incidence of HIV infection at delivery in the general adult population of Shelby County was 0.48%, an increase of 0.22% in year 1 (0.26% in 1992).

Clinical conclusions
A programme of voluntary HIV screening increases the incidence of known infections.

Measure of benefits used in the economic analysis
The benefit measure was the number of HIV-seropositive infants infected as a result of vertical transmission.

Direct costs
Costs were not discounted and quantities and costs were not analysed separately. Cost items were reported separately. The costs of the intervention covered the screening costs (ELISA, Western blot), work-up costs (blood cell count, liver function costs, helper/inducer T-lymphocyte), and treatment costs (zidovudine oral or intravenous, and neonatal therapy), and were compared with an averaged cost for care and follow-up of a random sample of 5 infants infected through vertical transmission. The sources of the cost data were different local or regional organizations. The cost boundary adopted was that of the health care system. The date of the price data was not explicitly specified.

Indirect Costs
Not considered.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
In the case of no screening, it was expected that the number of infected infants would have totalled 6. The intervention would save 4 infants from infection if all of the 25 identified patients accepted zidovudine therapy.

Cost results
The total cost of a universal HIV screening programme was estimated to be $99,985. The total cost of 6 cases of infected infants anticipated in the policy of no screening was $413,226. The cost saving due to 4 cases of infant infection prevented was $275,484, which, after putting aside the cost of screening, left a cost saving of $175,500.
Synthesis of costs and benefits
A synthesis of cost and benefits was not performed since the screening programme was the dominant strategy.

Authors' conclusions
Offering screening and follow-up to all pregnant patients in an urban setting is both cost-effective (especially in areas of high infection) and medically beneficial.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of effectiveness
The internal validity of the estimates of effectiveness may be weakened by the retrospective nature of the study plus the high percentage of patients refusing HIV screening (as acknowledged by the authors).

Validity of estimate of costs
Quantities were not reported separately from costs. However, adequate details of methods of cost estimation were given.

Other issues
The issue of generalisability to other settings or countries was not addressed.

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None stated

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