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
The study examined a voluntary primary-care human immunodeficiency virus (HIV) screening programme for pregnant women in India. The programme consisted of education, testing (by enzyme-linked immunosorbent assay), and counselling and drug treatment (i.e. nevirapine) for those pregnant women with a confirmed HIV infection. Two alternative screening programmes were assessed. One was a programme of universal screening nationwide, while the other was a programme of screening restricted to high prevalence states.

Type of intervention
Screening and primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised pregnant women in India.

Setting
The setting was primary care. The economic study was carried out in India.

Dates to which data relate
The effectiveness evidence came from papers published between 1994 and 2004. The resource use data came from papers published between 1993 and 2003. The dates to which the web resources related were not specified. The price year was not stated.

Source of effectiveness data
The effectiveness data were derived from a review of the literature.

Modelling
A decision analytic model was developed to assess the number of maternal-to-child transmission (MTCT) HIV cases prevented, the reduction in the potential years of life lost (PYLL), and the costs related to the screening programmes. A lifetime horizon for the newborns appears to have been considered.

Outcomes assessed in the review
The following outcomes were assessed in the review:
the efficacy of the intervention (in terms of the relative risk reduction),
the MTCT rate without antiretroviral treatment,
the seroprevalence rate of HIV in pregnant women,
the percentage of pregnant women attending antenatal clinics,
the percentage of women accepting HIV screening,
the average life expectancy of individuals uninfected with HIV, and
the average life expectancy of an infected child.

Study designs and other criteria for inclusion in the review
The authors stated that studies reporting local data were searched and, where local data were not available, the best estimates from other developing countries were used. No other inclusion criteria were reported.

Sources searched to identify primary studies
Not reported.

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

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

Number of primary studies included
Approximately 10 studies were included in the review.

Methods of combining primary studies
The primary studies do not appear to have been combined.

Investigation of differences between primary studies
Differences between the primary studies were not reported, nor were they investigated.

Results of the review
The efficacy of the intervention (i.e. antiretrovirals) was 41%.
MTCT without antiretroviral treatment was 30%.
The seroprevalence of HIV in pregnant women was 0.7%.
The percentage of pregnant women attending antenatal clinics was 60%.
The average life expectancy of an individual uninfected with HIV was 64 years.
The average life expectancy of an infected child was 7 years.
Measure of benefits used in the economic analysis
The benefits used in the economic analysis were the number of cases of perinatal HIV prevented and the reduction in the PYLL.

Direct costs
The additional cost to the government was INR 254.78 million per year for nationwide screening. A programme limited to high prevalence areas would cost INR 53.235 million. Discounting was carried out, which was appropriate as the costs were incurred during more than 2 years.

Statistical analysis of costs
Point estimates were used for the costs. No stochastic analysis was performed. A one-way sensitivity analysis was conducted. The 95% confidence intervals of the point estimates were included for sensitivity testing where these were known. Authors’ assumptions were used to select the ranges for sensitivity testing in other cases. The parameters examined included MTCT rate (18 to 48%), efficacy of the intervention (16 to 59%), treatment compliance (70 to 90%), attendance at antenatal clinic (30 to 95%), HIV prevalence (0.004 to 0.010) and acceptance of screening (60 to 95%). Also investigated were the costs of an HIV test (INR 10 to INR 50), counselling session (INR 50 to INR 200) and nevirapine (INR 10 to INR 50), the lifetime cost of treating HIV (INR 2,000 to above INR 30,900) and the life expectancy of an HIV-infected child (5 to 9 years).

Indirect Costs
No indirect costs were included.

Currency
Indian rupees (INR).

Estimated benefits used in the economic analysis
The number of perinatal HIV cases prevented and the reduction in PYLL were the health benefits estimated.

Cost results
Nationwide screening would cost the government INR 254.78 million. Implementing the programme in only the high prevalence states would cost INR 53.235 million (INR 44 = US$1).

Synthesis of costs and benefits
With nationwide screening, the average cost per HIV infection prevented was INR 25,787 and the average cost per year reduction in PYLL was INR 1,935.

With a programme of screening in only high prevalence states, the average cost per HIV infection prevented was INR 1,2091 and the average cost per year reduction in PYLL was INR 907.

The cost of the programme was influenced mainly by antenatal coverage, the cost of the HIV test, the lifetime costs of treating an HIV-infected child and overhead costs.

Authors’ conclusions
The average rate of return on investment of the programme represents good value for money using World Bank criteria. Decision-makers would have to demonstrate that the resources used for its implementation would result in more health benefits than would alternative uses of these resources.
CRD COMMENTARY - Selection of comparators
The rationale for the choice of the comparator was clear. It represented standard practice in the authors' setting. You should decide if it represents a valid comparator in your own setting.

Validity of estimate of measure of effectiveness
The authors did not report their search strategy and the search did not appear to have been systematic. It is therefore possible that data from the available studies were used selectively. There was also little commentary on the quality of the retrieved studies, making it difficult to comment on the quality of the efficiency estimates. However, the authors carried out several sensitivity analyses around the efficiency estimates and they indicated where the reliability of their estimates might have been affected. This approach improved the internal validity and generalisability of the study by demonstrating the robustness of the results to changes in the base-case parameter estimates.

Validity of estimate of measure of benefit
The measures of benefit used were HIV cases prevented and reduction in PYLL. The authors compared the reduction in PYLL to disability-adjusted life-years saved by other interventions. While there are not strictly the same, this was a reasonable comparison to make.

Validity of estimate of costs
The costs and the quantities were not reported separately, but discounting was performed appropriately. In addition, the costs were subjected to an extensive sensitivity analysis.

Other issues
The authors made appropriate comparisons of their findings with those for other interventions. The study was specific to the situation in India and the issue of generalisability to other developing countries was not addressed.

Implications of the study
Benefits from HIV testing among asymptomatic pregnant women in India represent good value for money using World Bank criteria. However, decision-makers will still need to demonstrate that the benefits are more than those obtained from alternative uses of these resources.

Source of funding
None stated.

Bibliographic details
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