Economic evaluation of a comprehensive teenage pregnancy prevention program: pilot program
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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.

CRD summary
This study evaluated the costs and economic benefits of the Pathways/Senderos Center programme to prevent teenage pregnancies and promote positive adolescent development. The authors concluded that the programme might yield long-term net societal gains. The authors acknowledged and discussed most of the limitations to their study, and they made appropriately cautious conclusions.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study evaluated the costs and economic benefits of the Pathways/Senderos Center programme to prevent teenage pregnancies and promote positive adolescent development.

Interventions
The intervention was a voluntary after-school programme, with six integrated elements. The elements were education on family life, sex, and health; academic support; career and vocational support; artistic expression; recreation; and physical and mental health care referrals. Enrolled teenagers had access to programme staff all hours and all days of the week, in what was described as a parallel family system (see Other Publications of Related Interest). Teenagers generally were enrolled at age 11 years and actively participated until high-school graduation (generally age 18 years). The comparator was no programme.

Location/setting
USA/public health care.

Methods
Analytical approach:
The evaluation was based on retrospective data from a cohort of 50 teenagers (25 girls) enrolled in the after-school programme; most were Latino or Hispanic, the other 5% were Black or African American. The main analysis covered the seven years of the programme. The authors stated that the perspective was societal.

Effectiveness data:
The primary effectiveness measure was births averted, which were derived by comparing the birth rate in the cohort of 50 programme participants, to the birth rate of peer groups from the Connecticut Department of Public Health.

Monetary benefit and utility valuations:
The total costs averted by the reduction in pregnancy, and the positive economic benefits from participation, were used to derive the net savings to society.

Measure of benefit:
The primary measure of benefit was teen pregnancies averted. These were converted to costs averted, using government statistics and data from a published study. The additional economic benefits, for participating teenagers, were calculated.
Cost data:
The operating costs of the programme included staff salaries and benefits; rent and utilities; maintenance, food, fundraising expenses, and costs for a work experience and training programme; and other costs. Fundraising revenue offset some costs. The cost savings from averted pregnancies, with the programme, were calculated using unit costs from a published study. The number of years by which pregnancy was averted was estimated by subtracting the average age of teenage birth, from the average age at high-school graduation. Prices were in 2006 US $. Where necessary, savings were discounted at 3% annually.

Analysis of uncertainty:
A sensitivity analysis was undertaken by extrapolating the time for benefit accrual from age 18 to age 30 years. Threshold analyses were undertaken to assess the point at which the net societal costs (programme costs minus cost savings) were less than the operating costs, by adjusting the operating costs and the number of students enrolled.

Results
One of the 25 girls in the programme had a child in the seven-year study period: corresponding to a birth rate of 40 per 1,000 teenagers. This was a reduction of 54.1 from the estimated 94.1 births per 1,000 teenagers, without the programme.

The cost savings, from averted births, were $15,978 per teenage mother per year. The average number of years by which pregnancy was averted was estimated to be 2.42, for cost savings of $52,297.84 per birth averted. If the number of years by which pregnancy was averted was changed to 3.76, then $81,256.15 were saved.

The total operating costs of the programme were $3,285,128.08, and the economic benefits for participants were estimated to be $2,673,153.11. Combining the costs averted, economic benefits, and programme costs, the net cost of the programme was $559,677.05 over the seven years.

Sensitivity analyses found that if pregnancies were averted up to age 20 years, then the programme costs were neutral, and the programme was cost saving, beyond that. With 60 or more participants on the programme, or costs reduced by 17% or more, the intervention was cost saving.

Authors' conclusions
The authors concluded that the programme might yield long-term net societal gains.

CRD commentary
Interventions:
The Pathways/Senderos Center programme techniques were well reported. Other programmes for preventing teenage pregnancy were discussed, but were not included, given the aim of this study.

Effectiveness/benefits:
The authors indicated that births averted in teenagers was the the primary effectiveness measure, but the birth that occurred in the study cohort was reported to be to a 25-year-old woman; it seems that this was a reporting error. The choice of effectiveness measure seems to have been appropriate, but a quantification of the health benefits from the programme would have added value to the findings. The results indicated a reduction in pregnancy rates with the programme, but the authors were cautious about its effectiveness, due to limitations in the study design and size. All the students participated voluntarily and, as the authors acknowledged, they may not have been representative of their peers, and the results may not be generalisable to other settings.

Costs:
The cost categories were appropriate for the societal perspective. The reporting of the costs was generally good, with some limitations. The authors acknowledged that the estimates they used for averted teenage births were from before the enactment of two important pieces of legislation on childbearing, and the cost data did not evaluate the benefits of delayed fatherhood. Further education beyond high school was not included in calculations, neither were the economic benefits to parents of possible teenage mothers, nor the potential benefits of delayed birth to children of possible teenage mothers.
Analysis and results:
The main results were clearly reported. Few results were given for the sensitivity analyses and the methods for the sensitivity analyses were not reported. It was not clear how the extrapolation for further delay of births to age 30 years was undertaken. It was not clear that the cost savings or benefits from delaying birth from a mother's age of 19 to 30 years were similar those of delaying from age 16 to 19 years. No justification was provided for this implicit assumption. The evaluation had many limitations, but it highlighted some key issues in evaluating this type of programme, and it was suitably cautious in the interpretation of its results. The results and data inputs are not likely to be generalisable to other settings, such as the UK.

Concluding remarks:
The authors acknowledged and discussed most of the limitations to their study, and they made appropriately cautious conclusions.

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Other publications of related interest

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