Human immunodeficiency virus counseling, testing, referral and partner notification services: a cost-benefit analysis
Holtgrave D R, Valdiserri R O, Gerber A R, Hinman A R

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
Human immunodeficiency virus testing, counselling, referral and partner notification services.

Type of intervention
Primary prevention; Secondary prevention

Economic study type
Cost-benefit analysis and cost-effectiveness analysis

Study population
Individuals who use the CTRPN services.

Setting
Center for Disease Control and Prevention. Primary care. The economic study was carried out in Atlanta, USA.

Dates to which data relate
Resource as well as effectiveness data related to 1990. 1990 prices were used.

Source of effectiveness data
Review of previous studies.

Outcomes assessed in the review
Main outcome was efficacy of learning HIV positive (with a resulting reduction in high risk behaviour).

Study designs and other criteria for inclusion in the review
Not stated.

Sources searched to identify primary studies
Not stated.

Criteria used to ensure the validity of primary studies
Not stated.
Methods used to judge relevance and validity, and for extracting data
Not stated.

Number of primary studies included
Three studies were considered.

Methods of combining primary studies
It was not specified whether the studies were combined.

Investigation of differences between primary studies
Differences were not investigated.

Results of the review
The number of persons who learned through CTRPN that they were true positive was estimated to be 35,994 in 1990. It was assumed that some fraction (E) of these persons will reduce their high-risk behaviour to the degree that they will prevent transmission of HIV infection to at least one other individual. The values used for this parameter E was either 0.2 or 0.5.

Measure of benefits used in the economic analysis
The economic benefit measure used in the cost-benefit analysis is the human capital valuation of lives saved. New HIV infections averted and lives saved were the benefit measures used in cost-effectiveness analysis.

Direct costs
Costs and quantities were not reported separately. A societal perspective was taken in the cost analysis. All data regarding CTRPN services were taken from the 1990 information provided by Centres for disease control and prevention.

The cost formula includes the CTRPN program cost and ancillary costs (AC). AC includes costs of HIV/AIDS surveillance, outreach and national information campaigns. Life-time treatment costs and the cost of falsepositive were also considered, and their estimates were derived from the literature. All costs were adjusted to 1990. The discount rate used was 6%.

Currency
US dollars

Sensitivity analysis
One-way simple sensitivity analyses were performed, varying some parameter values (those of AC and E and some of the structural assumptions) specifically the assumption of a perfect HIV antibody test and assumptions about the level of risk related to behaviour after test results are known.

A threshold analysis was performed to determine the necessary levels of efficacy (E) for the benefit-cost ratio to be at least 1.

Estimated benefits used in the economic analysis
The benefit estimate was $3,781,918,000, discounted at 6%. Moreover, for every 100 HIV seropositive persons identified, at least 20 new HIV infections were averted.
Cost results
Under the base-case assumptions (i.e., AC=0.6 and E=0.2), the costs of the CTRPN program were $188,217,600 (discounted at 6%).

Synthesis of costs and benefits
The base-case benefit-cost ratio is 20.09. In the sub-analysis of cost-effectiveness, the cost per infection averted was $25,780. The cost per discounted and undiscounted year of potential life saved before age 65 years was $1,841 and $955 respectively.

Authors' conclusions
The authors concluded that their cost-benefit analysis strongly suggests that publicly funded CTRPN services result in a net economic gain to society.

CRD Commentary
This was a well conducted study, where an extensive sensitivity analysis was undertaken on the uncertain parameters.

Implications of the study
This is a good study and health care decision makers should consider the relevance of HIV testing and counselling programmes.

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