Emergency department-based HIV screening and counseling: experience with rapid and standard serologic testing  
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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
Emergency department-based HIV screening and counseling.

Type of intervention
Screening.

Economic study type
Cost-effectiveness analysis.

Study population
Patients attending an emergency department.

Setting
Hospital setting. This study was carried out at an inner-city university teaching hospital (Johns Hopkins Hospital), Baltimore, USA

Dates to which data relate
Effectiveness data were collected between the summer of 1993 and the summer of 1995. The price year was not stated.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken on the same patient sample as that used in the effectiveness study and was carried out prospectively alongside the effectiveness study.

Study sample
3,048 mentally competent patients between 18 and 55 years of age who were not known to have HIV infection were approached. 1,448 patients (48%) consented, 981 to standard and 467 to rapid testing. In phase 2, the rapid test was offered to 146 of 267 enrolled patients. 78 patients consented to rapid testing. In phase 3, 389 of 409 enrolled patients were tested with the use of the rapid test. Patients were excluded if they were not capable of providing informed consent, in medical extremis, unable to return for follow-up after completion of laboratory analyses, or if they had previously been enrolled during the same phase. Patients for whom the decision to admit was made by the time a study counsellor approached were excluded. Ethnic background played a significant role in the likelihood of consent. Patients with established sex-related or IDU risks participated at higher rates (p<0.01). Patients with private physicians were less
likely to participate. Those patients who had a provider or clinic where care could be obtained were slightly less likely to participate compared with those who considered the ED as their primary source of care. No power calculations were reported.

**Study design**
Prospective cohort study carried out at a single centre.

**Analysis of effectiveness**
The analysis of the clinical study was based on intention to treat. The primary health outcomes studied included the percentage HIV positive by patient characteristics, the time elapsed between the procurement of a serum sample and the giving of results to the patient, and the percentage of patients keeping at least their first prearranged HIV clinic appointment.

**Effectiveness results**
78 out of 1,448 patients (5.4%) were HIV seropositive. The highest seroprevalence rates were among males (7.6%), blacks (5.5%), those aged 35 to 46 years (8.6%), those who engaged in IDU (17%), those who were admitted (10.2%), and those without insurance (7.6%). The number of HIV-positive patients among those admitted and those discharged from the ED was 21 and 55, respectively. In phase 2, 2 patients (2.6%) were confirmed to be positive. The seroprevalence testing only was 8.5% (p=0.13). In phase 3, 13 patients (3.3%) were confirmed as seropositive. Among the 467 patients who underwent rapid testing, 15 (3.2%) were confirmed to be HIV seropositive. The time elapsed between the procurement of a serum sample and the giving of results to the patient was 107 (+/- 52) minutes during phase 2 and 48 (+/- 37) minutes during phase 3. Of the patients who had undergone the standard and rapid test, 25 (64%) and 11 (73%) patients respectively kept at least their first prearranged HIV clinic appointment.

**Clinical conclusions**
ED-based HIV testing was well accepted and detected a significant number of new HIV infections earlier than might have otherwise been the case, particularly among patients sent home. The rapid test is best performed on-site and is very sensitive.

**Modelling**
No modelling was undertaken.

**Measure of benefits used in the economic analysis**
The measure of benefit was the number of patients who were confirmed as HIV-positive.

**Direct costs**
Discounting was not applied due to the short period of the study (< 1 year). Quantities and costs were reported separately. The direct costs included the costs related to effort and laboratory testing. Costs were calculated on a per-approached patient, per-enrolled and counselled, and per-identified positive patient basis. The quantity/cost boundary adopted was that of the hospital. The estimation of quantities and costs was based on actual data. The price year was not stated.

**Statistical analysis of costs**
Not reported.

**Indirect Costs**
Estimated benefits used in the economic analysis
78 out of 1,448 patients (5.4%) were HIV seropositive. The number of HIV-positive patients among those admitted and those discharged from the ED was 21 and 55, respectively. In phase 2, 2 patients (2.6%) were confirmed to be positive. In phase 3, 13 patients (3.3%) were confirmed as seropositive. Among the 467 patients who underwent rapid testing, 15 (3.2%) were confirmed to be HIV seropositive.

Cost results
Costs for the standard test per subject approached, per subject counselled, and per positive patient were $18, $39, and $601, respectively. Similar costs for the rapid test were $18, $36, and $1,124, respectively. The annualised direct cost of a programme running 8 hours per day for 365 days per year was an estimated $141,975, including testing and administrative costs.

Synthesis of costs and benefits
The cost and effectiveness results were not combined into a cost-effectiveness ratio.

Authors’ conclusions
The authors believe that this study demonstrates the potential utility of offering voluntary HIV screening in the ED at a cost similar or better than that in other settings.

CRD COMMENTARY - Selection of comparators
The rationale for the selection of the comparator was clear.

Validity of estimate of measure of benefit
The measure of benefit would appear to be valid, however it would have been useful had the authors examined the robustness of the effectiveness results to the sensitivity and specificity of the two tests.

Validity of estimate of costs
Only direct costs were included in the cost estimate. No sensitivity or statistical analysis was carried out. The generalisability of the results to other settings or countries was not examined. The cost implications of carrying out the rapid test in the hospital laboratory or in the ED satellite laboratory were not examined.

Other issues
A monetary incentive to encourage follow-up was offered ($5). HIV screening was offered only to those patients who were admitted and the study protocol, therefore, differs from standard practice and, in consequence, the results may not be generalisable.

Implications of the study
These results should be confirmed by a study that examines standard practice and that targets screening at certain patient groups to increase cost-effectiveness.
Source of funding
None stated.

Bibliographic details

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Other publications of related interest


Indexing Status
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