Cost analysis of point-of-care laboratory testing in a community hospital

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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
Point-of-care laboratory testing (POCT), also known as bedside testing, using a portable glucose meter and an extended electrolyte panel with a hand-held chemistry analyser.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness (cost minimisation) analysis.

Study population
Patients undergoing bedside glucose and chemistry testing.

Setting
Community Hospital, Ithaca, New York, USA

Dates to which data relate
Resources were calculated using 1989, 1993 and 1995 data. 1995 contract prices were used. Opinion about effectiveness was derived from literature published between 1987 and 1990.

Source of effectiveness data
Opinion based estimates.

Methods used to derive estimates of effectiveness
Authors’ assumptions were expressed based on references to published literature.

Estimates of effectiveness and key assumptions
It was mentioned that POCT may minimise turnaround times, provide better quality patient care, but also that it may be misleading and dangerous in critically ill patients. Estimates of effectiveness were not clearly summarised by the authors.

Measure of benefits used in the economic analysis
As benefits were considered to be approximately the same for the two alternatives, only costs were analysed.
Direct costs
Direct health service costs were considered: instrument costs, reagents, labour, quality control, disposables, pneumatic tube and Laboratory Information System costs.

Statistical analysis of costs
Not performed.

Indirect Costs
Indirect health service costs were considered, although not detailed.

Currency
US dollars ($).

Sensitivity analysis
Not performed.

Estimated benefits used in the economic analysis
As benefits were considered to be approximately the same for the two alternatives, only costs were analysed.

Cost results
The increased annual cost for the hospital in question to do one glucose test per shift or 10 glucose tests per shift per day by POCT would be about $653 and $2856 respectively, compared to central laboratory testing. I-stat testing would cost from $12,001 to $387,182 more per year than central laboratory testing.

Authors' conclusions
POCT was a more expensive way to deliver rapid laboratory services than central laboratory testing when the latter was already in place.

CRD Commentary
Overall, the study answers the initial question, although more clarity was needed concerning the resources' and prices' dates. As this was a cost-minimisation analysis, further investigation of the relative effectiveness of the two alternatives is required.

Source of funding
None stated.

Bibliographic details

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