Managing wound care outcomes

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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 summarised the development and implementation of the Nova Scotia wound care protocol, and evaluated the evidence of effectiveness and costs, before and after its implementation. The author made no cost-effectiveness conclusions. The protocol appears to have transformed the healing outcomes for patients with chronic wounds, in Nova Scotia. The cost and effectiveness data were observational, with minimal detail, and lacked a well-described comparator. It is not clear if these results could be generalised to other settings.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study summarised the development and implementation of the Nova Scotia wound care protocol, and evaluated the evidence of effectiveness and costs of wound care, before and after its implementation.

Interventions
Chronic wound management was compared before and after the implementation of the Nova Scotia wound care protocol. The protocol included risk assessment and prevention, client history and wound assessment, debridement, identification and elimination of infection, elimination of dead space, absorption of excess exudate, provision of an environment for moist wound healing, provision of thermal insulation, and protection of wound healing.

Location/setting
Canada/community.

Methods
Analytical approach:
The economic evaluation was based on observational data gathered before and after the implementation of the protocol. The protocol was implemented in the year 2000, and the data were collected between 1999 and 2003. The study perspective was not explicitly stated.

Effectiveness data:
The effectiveness was measured by the average wound healing time, defined as the time from admission to discharge from hospital after sufficient wound healing, before and after implementation. The averages were calculated on an annual basis, from 1999 to 2003. The protocol was implemented in 2000, in Nova Scotia home care services. The weekly wound variables were recorded using the standardised Wound Assessment Progress (WAP) report. Quality of care was assessed using the frequency of wound dressing as a proxy. Less frequent changes were considered to be better, as this was assumed to indicate greater use of moist wound healing techniques.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The measure of benefit was the time to wound healing.

Cost data:
The main cost data were from a parallel-group pilot study, in which one group fully implemented the new protocol, and
the other partly implemented it. The study lasted four months and the costs included labour and materials for wound care. These costs were also assessed before and after implementation, in two groups of 50 patients, over 10 months for each group. Labour costs were based on Nova Scotia average costs for a Licensed Practical Nurse or Registered Nurse visit. All costs were reported in Canadian dollars (CAD).

Analysis of uncertainty:
There was no analysis of uncertainty.

Results
The protocol was implemented in 2000. In 1999, diabetic foot ulcers took an average of 174 weeks to heal; this reduced to 10 weeks on average in 2003. The reduction was roughly linear from 1999 to 2003. In 2000, venous ulcers averaged 105 weeks to heal; this reduced to six weeks in 2003.

Wound healing time improved for all wound types. After implementation of the protocol, nurse visits for wound management and dressing changes were less frequent, indicating an improvement in the quality of care.

In the group that implemented the protocol fully, the average cost per patient was $383 per month. In the group that partly implemented the protocol, the average cost per patient was $2,422 per month.

The results from the before-and-after cost analysis confirmed these parallel study results, with the cost per patient per month decreasing from $1,487.02 before implementation to $540.38 after implementation.

Authors' conclusions
The author made no cost-effectiveness conclusions.

CRD commentary
Interventions:
The standardised protocol was reasonably well described, but standard practice was not well described, so the benefits of implementing this protocol in other settings were unclear. Assuming the results reflect the real benefits from the new protocol, treatment was transformed.

Effectiveness/benefits:
The effectiveness evidence was based on a before-and-after study, introducing the possibility that other factors confounded the results. The author did not discuss the reasons for the continued improvement in outcomes over the three years after implementation; this might have been due to a gradual uptake of the new protocol, across the services.

Costs:
The costs were consistent with a health service perspective. Two sources of costs were used. The first compared full implementation of the protocol, with partial implementation. The second compared implementation, with no implementation, although it was unclear if implementation was complete, by all nurses, all of the time. The before and after costs, with no implementation as the comparator, were more aligned with the effectiveness evidence and population. It would have been useful to calculate the total cost per patient, rather than the total cost per patient per month as that would have provided the important cost difference. Few cost details were provided, and it was not clear why the monthly costs, as opposed to the total patient costs, were reduced so much.

Analysis and results:
The analysis and results were adequately reported. No uncertainty analysis was performed. The author stated that there were other research findings that supported the results of this study.

Concluding remarks:
The wound care protocol appears to have transformed the healing outcomes for chronic wound patients in Nova Scotia. The cost and effectiveness data were observational, with minimal detail, and lacked a well-described comparator. It is not clear if the results of this study could be generalised to other settings.
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