The Cost-Effectiveness of Dose Adjustment For Normal Eating (DAFNE) Structured Education in Type 1 Diabetes: An Update using the Sheffield Type 1 Diabetes Policy Model

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Background
A published economic evaluation suggested that DAFNE structured education for adults with Type 1 diabetes was cost-effective in comparison with no DAFNE over a 10-year time horizon (1). However, this study had several limitations including the exclusion of macrovascular diabetic complications.

Aim
To provide an up-to-date estimate of the cost-effectiveness of DAFNE using the Sheffield Type 1 Diabetes Policy Model.

Methods
A patient-level simulation model of Type 1 diabetes was developed to estimate lifetime costs and quality-adjusted life years (QALYs) from an NHS perspective. The model updated the published estimate in several ways, including modelling of cardiovascular diabetes-related complications, use of updated evidence on the trajectory of patients’ HbA1c after DAFNE, and extrapolation of the results to a lifetime horizon. Probabilistic sensitivity analysis (PSA) was used to account for parameter uncertainty.

Results
Over a lifetime horizon DAFNE resulted in:
- Increased life expectancy of 29 days per patient
- Lower incidence of nephropathy and neuropathy
- An additional cost of £426 per patient
- An additional 0.0294 QALYs per patient
- An incremental cost-effectiveness ratio of £14,475 per QALY

At a threshold of £20,000 per QALY there was a 54% probability that DAFNE would be cost-effective.

Conclusions
The results of the current study confirm that DAFNE is a cost-effective intervention and support its provision by the NHS to people with Type 1 diabetes in the UK. The results are relevant to other structured education programmes for people with Type 1 diabetes that demonstrate similar improvements in HbA1c for similar costs.

References

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