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.

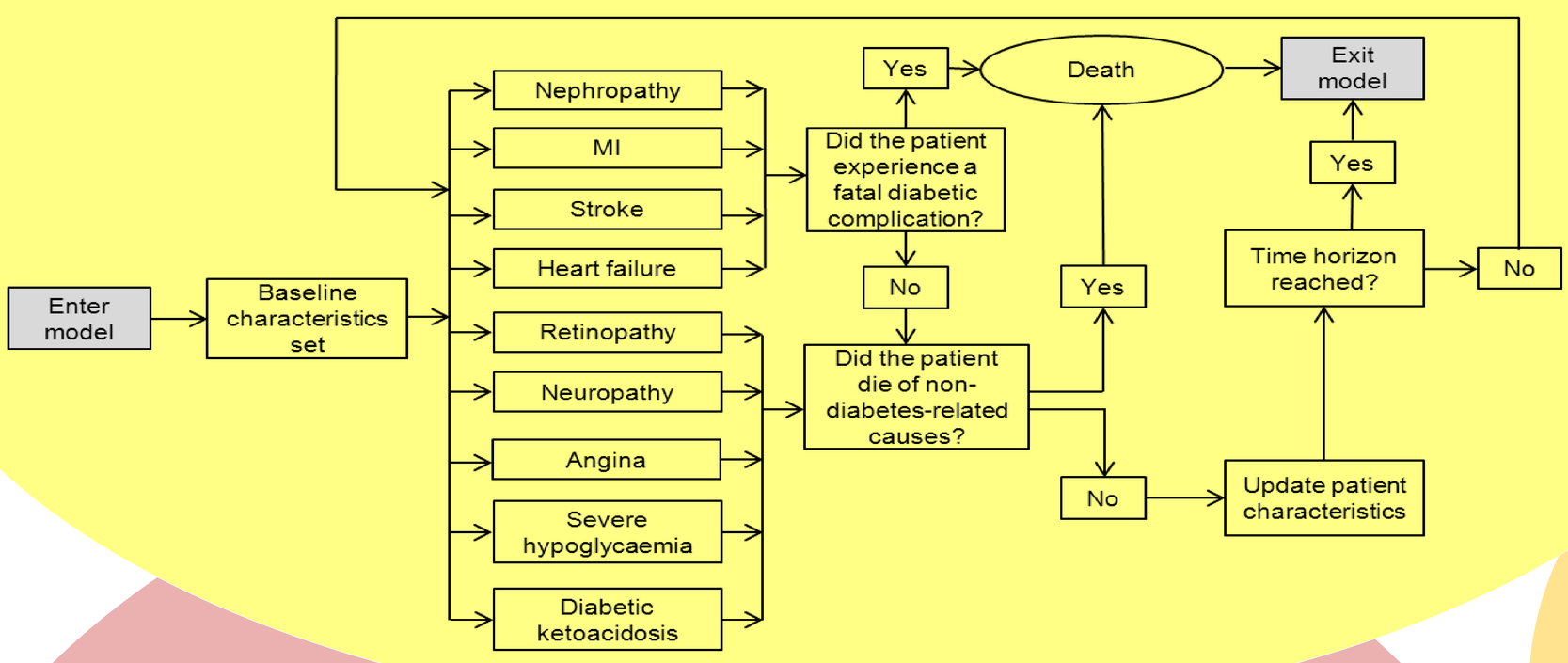
Aim

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.

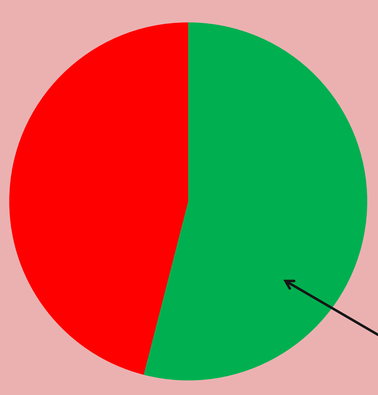
The Sheffield Type 1 Diabetes Policy Model

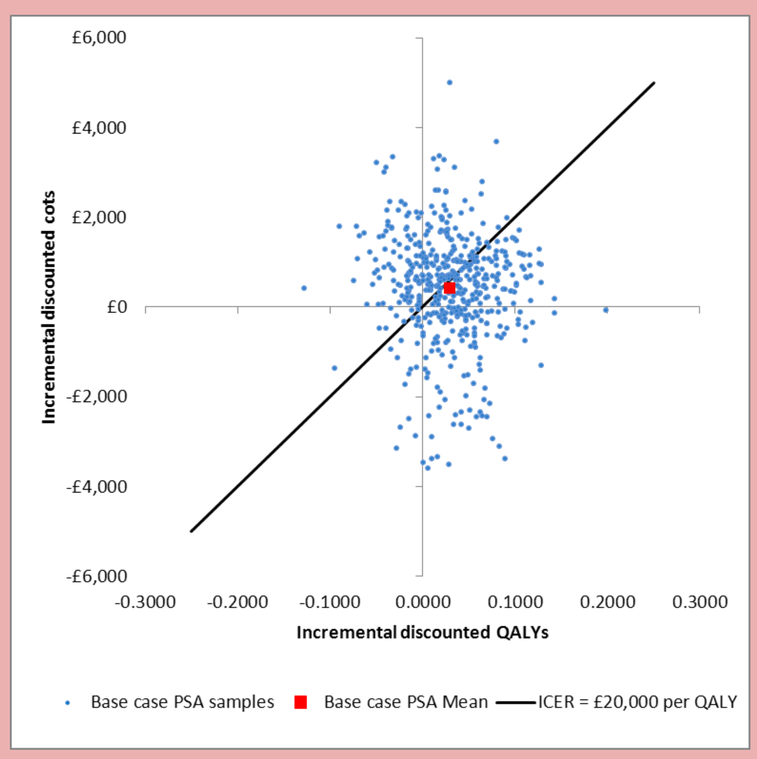


Results

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

(1) Shearer A., Bagust A, Sanderson D, Heller S, Roberts S. Effectiveness of flexible intensive insulin management to enable dietary freedom in people with type1 diabetes in the UK. Diabetic Medicine 2004;21:460–467.

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