Long-term cost-effectiveness of weight management in primary care


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 examined the long-term cost-effectiveness of an obesity-reduction programme within a primary-care setting. The authors concluded that the Counterweight programme was a highly cost-effective intervention for obesity management, from the perspective of the health care system, compared with no intervention. The methods were valid and generally well described and the authors’ conclusions appear to be valid and robust.

Type of economic evaluation
Cost-utility analysis

Study objective
This study examined the long-term cost-effectiveness of a programme aimed at reducing obesity within a primary-care setting.

Interventions
The Counterweight programme was compared with no intervention. The programme consisted of evidence- and theory-based intervention for weight management, delivered in family practice and other settings, by practice nurses or other health care workers, with initial guidance and facilitation by weight-management advisers, who were registered dieticians or registered nutritionists with training in specialist obesity management.

Location/setting
UK/primary care.

Methods
Analytical approach:
The analysis was based on a published individual-level simulation model, with a lifetime horizon. The model considered three main obesity-related conditions, which were diabetes, coronary heart disease, and colon cancer. The authors stated that a health care payer perspective was selected.

Effectiveness data:
The baseline characteristics of the eligible patient population were derived from official UK statistics. The assumptions on average weight gain in obese individuals were from obesity guidelines by the National Institute for Health and Clinical Excellence (NICE) and these were based on long-term Danish and US observational studies. A key conservative assumption was that obesity had no impact on mortality. The key input was the efficacy of the intervention, which was measured by the reduction in body mass index (BMI). This was derived from a study of the Counterweight programme, in 65 UK family practices, with a 12-month follow-up.

Monetary benefit and utility valuations:
The utility values were derived from published sources.

Measure of benefit:
Quality-adjusted life-years (QALYs) were the summary benefit measure and they were discounted at an annual rate of 3.5%.

Cost data:
The economic analysis included the costs of the three main obesity-related conditions and the implementation of the
programme. The former costs were from published sources and the latter were adapted from a detailed costing exercise that used data from the Counterweight programme study. All costs were in UK pounds sterling (£) and the price year was 2005. A 3.5% annual discount rate was applied.

Analysis of uncertainty:
A series of one-way sensitivity analyses was carried out on selected inputs, such as the amount and duration of weight loss.

Results
The base-case assumptions were 3kg of weight loss after one year among programme attendees; weight was regained over the next two years; no benefits in non-attendees; and 1kg of annual weight increase without the intervention. In the base case, the expected costs were £1,884 in the control group and £1,857 in the intervention group. The QALYs were 28.32 in the control group and 28.38 in the intervention group.

The Counterweight programme was dominant as it was more effective and less expensive than no intervention.

When unfavourable assumptions on weight gain were made, such as 0.3kg annual increase without the intervention, the incremental cost per QALY gained with the programme was £2,651. Otherwise, the programme remained dominant.

Authors’ conclusions
The authors concluded that the Counterweight programme was a highly cost-effective intervention for obesity management in primary care.

CRD commentary
Interventions:
The selection of the interventions was appropriate for the comparison between the current pattern of care and the proposed obesity-reduction programme.

Effectiveness/benefits:
A selective approach was used to identify the relevant sources of data, which were only partly described. The programme efficacy was from an observational study, in several UK family practices. The authors stated that a randomised controlled trial should have a higher internal validity, but was not feasible in this context. The data on background weight increase were from large studies conducted in other countries, but were likely to be valid for the UK context. All the assumptions made were conservative against the programme, so the clinical results can be considered to be valid. QALYs were an appropriate benefit measure for obesity, but the instruments used to elicit the utility values were not described.

Costs:
The cost categories and data sources were not presented extensively. The costs were reported as total categories and the unit costs and resource quantities were generally not reported. This limits the transparency of the study. A detailed costing exercise supplied the costs for the programme and was appropriate, but was not fully described. The cost estimates were treated deterministically and the impact of changes in them was not considered. The price year and the use of discounting were reported.

Analysis and results:
The results of the study were clearly reported. The costs and benefits were appropriately synthesised in an incremental approach, which showed the superior profile of the intervention. The authors stated that, apart from diabetes, coronary heart disease, and colon cancer, other obesity-related conditions were not modelled due to a lack of data in the published literature. The exclusion of other conditions made the model’s results conservative. The issue of uncertainty was investigated, using a deterministic approach, on selected inputs, and it was implicitly accounted for in the individual-simulation model.

Concluding remarks:
The methods were valid and generally well described. The authors’ conclusions appear to be valid and robust.
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