A randomised controlled trial and economic evaluation of direct versus indirect and individual versus group modes of speech and language therapy for children with primary language impairment
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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 examined the cost-effectiveness of a speech and language therapist, or a speech and language therapy assistant, working either individually with a child, or in a small group of children, with language impairment. Assistants could be effective surrogates for therapists, for children who did not require their specialist skills, but the patterns of resource use depended on the intensity and other features of the service. The methods were valid and followed the recommendations of the Health Technology Assessment programme.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This health technology assessment (HTA) examined the clinical and economic impact of a speech and language therapist (SLT) and a speech and language therapy assistant (SLTA) working individually with a child, or working in a small group of children, for primary school-age children with persistent primary receptive and/or expressive language impairment.

Interventions
The four interventions were a therapist working individually with a child, a therapist working with a small group of children, an assistant working individually with a child, and an assistant working with a small group of children. A therapy manual was produced and provided a range of procedures. These were compared with the usual community-based speech and language therapy, observed in the authors’ setting.

Location/setting
UK/community (school).

Methods
Analytical approach:
The analysis was based on a single study with a one-year horizon. The authors did not state the economic perspective.

Effectiveness data:
The clinical data came from a randomised controlled trial (RCT) with a two-by-two factorial design (therapist or assistant versus individual or group therapy) and a control group that received the existing levels of community-based speech and language therapy. A total of 163 eligible children attending mainstream primary schools in either Glasgow or Edinburgh were included, with 32 receiving control therapy (28 analysed), 34 receiving individual therapy with a SLT, 31 receiving group therapy with a SLT (28 analysed), 33 receiving individual therapy with a SLTA, and 33 receiving group therapy with a SLTA (29 analysed). The primary endpoint was the standardised score on tests of expressive and receptive language, from the Clinical Evaluation of Language Fundamentals (CELF-3UK). The assessors of all language outcomes were blind to therapy allocation. Both a per-protocol analysis and an intention-to-treat analysis were carried out. The impact of confounding factors, such as the pre-test severity of language impairment, was considered. The length of follow-up was one year.

Monetary benefit and utility valuations:
Measure of benefit:
The summary benefit measure was the change in the standardised CELF-3UK score, which was derived directly from the clinical trial.

Cost data:
The economic analysis involved the 124 children who provided data for each of the four interventions, compared with the 28 control children. There were two main categories of costs: salaries for the therapist and the assistant, and travel costs for therapists, assistants, and children. The salaries were based on those of the National Health Service (NHS) for the fiscal year 2004 to 2005. The travel costs were from taxi tariffs published by the City of Edinburgh Council in 2004. Salary costs included both the time required for preparation and the actual delivery of the intervention. All costs were in UK pounds sterling (£).

Analysis of uncertainty:
Not investigated.

Results
The mean total cost was £181 (95% CI 56 to 307) with control therapy, £1,144 (95% CI 1,057 to 1,232) with individual SLT, £519 (95% CI 461 to 578) with group SLT, £900 (95% CI 837 to 963) with individual SLTA, and £493 (95% CI 445 to 542) with group SLTA.

The change in the CELF-3UK score from baseline to post-intervention assessment was 0.75 with control, 3.32 with individual SLT, 4.50 with group SLT, 2.45 with individual SLTA, and 1.59 with group SLTA. None of these changes was statistically significant.

The incremental analysis showed that group therapy with a therapist was the dominant strategy, as it was less expensive and more effective than the other therapy options, except group therapy with an assistant. The incremental cost per additional point change in the CELF-3UK score with group therapy with a therapist over group therapy with an assistant was just under £9.

In general, group therapy dominated individual therapy, regardless of who was delivering it.

Authors' conclusions
The authors concluded that well-trained, well-supported, and well-motivated speech and language therapy assistants could be effective surrogates for therapists, for children who did not require their specialist skills, but the patterns of resource use depended on the programme intensity and other features of the service.

CRD commentary
Interventions:
The comparators were appropriately selected, as they were the available therapies for children with primary language impairment. They were clearly described, as was the control option.

Effectiveness/benefits:
The clinical analysis was based on a well-conducted RCT, which is considered to be a valid source of evidence. Extensive details on the sample selection, randomisation procedures, blinded assessment, and the use of clinical endpoints were reported. Power calculations were performed to determine the appropriate sample size. Statistical analyses were appropriately used to test the significance of differences in clinical endpoints between groups. Subgroup analyses were also carried out. The length of follow-up appears to have been appropriate. The benefit measure was specific to language difficulties and was not comparable with the benefits of other health care interventions.

Costs:
The economic viewpoint was not explicitly stated. The costs associated with therapy delivery and travel were considered. The unit costs of personnel time were reported and the resource use reflected that of the RCT, which might
not be representative of other settings. The price year was only implicitly reported, as all the costs related to the year 2004 to 2005. This will allow reflation exercises in other time periods. Statistical analyses of the cost data were performed.

Analysis and results:
The analytic approach used to synthesise the costs and benefits was appropriate and both average and incremental cost-effectiveness ratios were calculated. The results were clearly presented. The issue of uncertainty was not investigated, but statistical tests highlighted the uncertainty in the data. An analysis of alternative scenarios would have been useful, given the assumptions made, such as the 100% compliance of children. The results of this study do not appear to be generalisable to other settings.

Concluding remarks:
The study was well presented and the methods were valid and followed HTA programme recommendations.

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