

Executive summary

Screening for speech and language delay: a systematic review of the literature

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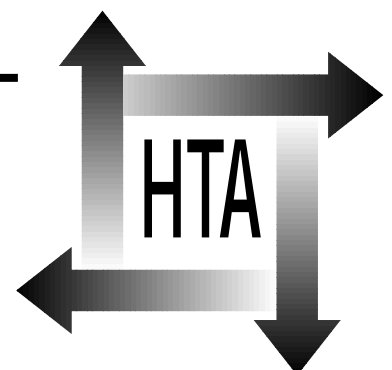
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Executive summary

Background

This report concerns the identification and treatment of children with primary speech and language delays, that is delays which cannot be attributed to other conditions such as hearing loss or other more general developmental disabilities. Such delays are important because they cause concern to parents, because they are commonly associated with behavioural and other difficulties in the pre-school period and because they constitute a risk factor for subsequent poor school performance, and for a wide range of personal and social difficulties for the individuals concerned. It is unclear, given the current state of knowledge, whether such delays represent varying levels of a single condition or a number of different conditions with diverse aetiologies.

Currently the identification and treatment of speech and language delays fall within the remit of the health services in the early years of life and most health trusts have in place informal procedures for identifying such delays. The educational services and those responsible for providing nursery and child-care services also have a considerable role to play in the process of identification and management of these children. This review aims to provide the information needed to help decide whether universal screening for speech and language delays should be implemented within the NHS.

Objectives

Four domains (prevalence, natural history, intervention and screening) were identified as being key to a review of screening issues, with the following objectives being stated:

- to undertake a systematic review of research into the value of screening and intervention for speech and language delays in children up to the age of 7 years
- to identify priority areas in need of further investigation
- to provide evidence-based direction for the future provision of services.

Methods

The review was carried out using structured guidelines for systematic reviews. These are described in detail in the full report.

Results

Prevalence

The number of potential cases of primary speech and language delay is high, with a median figure of 5.95% reported for delays in either speech or language. There has been little attempt to tie this evidence into prediction of subsequent case status, and there is little published evidence to support the perception that either the total number of children with language delay declines in real terms across the age range, or that prevalence has been rising over recent years.

Natural history

The natural history data indicate that a substantial proportion of children identified on the basis of expressive delay alone are likely to have difficulties which resolve spontaneously in the pre-school period. However, the data do not, at this stage, make it possible to predict **at the time of identification**, which of the children with **expressive** delay are likely to have persistent problems. A poorer prognosis has been consistently identified for children with expressive/receptive delays. The picture for older children is clouded by the lack of evidence from samples that have received no additional educational or therapeutic support. Nonetheless it is clear from follow-up studies of treated samples that children identified as having language difficulties in the first year of primary school are likely to have difficulties which persist through to secondary school.

Intervention

Results from randomised controlled trials (RCTs) and quasi-experimental designs reveal positive and statistically significant effects of intervention relative to untreated controls in all areas of speech and language skills. Comparable results for direct (clinician-administered) and indirect treatment were observed in the case of **expressive language**. In contrast, direct intervention was more effective in the case of **speech**, whereas indirect intervention

was more effective in the case of **receptive language**. Data from the single-subject experimental designs were synthesised and provide confirmatory evidence for the positive effects of intervention. The data in particular provide evidence for the generalisation of treatment effects. However, the data reviewed do not provide information about long-term outcomes of intervention, nor of the likelihood of intervention reducing prevalence in a given population. Similarly, it is not possible to draw conclusions about the effects of subject variables such as socio-economic status or age upon the relative value of interventions.

Screening

The screening evidence indicates that, although a considerable number of assessments have been shown to perform adequately in terms of their productivity, few studies compare the performance of two or more screening tests when applied to one population, nor do they compare single screening measures across different populations. It is difficult, therefore, to make judgements about the relative value of different procedures. In general, specificity is higher than sensitivity, suggesting that it is easier to determine who is not a case than to establish who is. Parent-focused measures appear to be as useful as specific tests of child behaviour. Interpretation is further complicated by the considerable variation in the cut-offs adopted on the range of reference 'gold-standard' measures, suggesting that there remains considerable disagreement as to what proportion of the population should be considered cases. There have been no explicit attempts to benchmark the target population in terms of prevalence estimates, the prediction of case status or the impact of the intervention.

Conclusions

It is clear that early speech and language delay should be a cause for concern to those involved with child health surveillance because of the problems for the individual child, because it may indicate other co-morbid conditions such as hearing loss, developmental and behavioural difficulties, and because of the implications it may have for literacy and socialisation in school. The fact that there is not sufficient evidence to merit the introduction of universal screening does not imply that speech and language delay should not be identified, for example, by less formal methods.

Implications for policy

The review suggests that more attention might be shown to the role of parents in identifying

children with speech and language delay. Primary-care workers (health visitors, general practitioners, school nurses and nursery staff) should be involved in eliciting parental concerns and in making appropriate observations of children's communication behaviours. This would require formal training in delayed speech and language development and risk factors pertaining to it. Appropriate information would also have to be made available to parents to allow them to play an active role in judging need.

Given the reported value of indirect approaches to intervention there is a case for widening the range of professionals able to promote good interactive practice in parents of young children. Speech and language therapists as a professional group are in a good position to play an active role in disseminating this information and coordinating such services. Children who do not respond to such primary prevention could then be given access to speech and language therapy services and appropriately structured nursery input.

Recommendations for research

There are many gaps in the literature, and the review identified a number of research priorities.

- The impact of speech and language delay needs to be examined, both as an explanatory and a response variable across time in prospective cohort studies.
- RCTs need to be designed to examine the medium- and long-term effects of well described models of intervention. These should include an appropriate range of outcome measures including, where possible, economic analysis.
- There is a need for the development of a screening measure that combines data on risk factors with parental report and professional observation, and for the examination of its value in different sections of the population.
- The predictive ability of different models of early identification and intervention needs to be examined.

Further details of conclusions and recommendations are given in the full report.

Publication

Law J, Boyle J, Harris F, Harkness A, Nye C. Screening for speech and language delay: a systematic review of the literature. *Health Technol Assessment* 1998;2(9).

NHS R&D HTA Programme

The overall aim of the NHS R&D Health Technology Assessment (HTA) programme is to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and work in the NHS. Research is undertaken in those areas where the evidence will lead to the greatest benefits to patients, either through improved patient outcomes or the most efficient use of NHS resources.

The Standing Group on Health Technology advises on national priorities for health technology assessment. Six advisory panels assist the Standing Group in identifying and prioritising projects. These priorities are then considered by the HTA Commissioning Board supported by the National Coordinating Centre for HTA (NCCHTA).

This report is one of a series covering acute care, diagnostics and imaging, methodology, pharmaceuticals, population screening, and primary and community care. It was identified as a priority by the Population Screening Panel.

The views expressed in this publication are those of the authors and not necessarily those of the Standing Group, the Commissioning Board, the Panel members or the Department of Health. The editors wish to emphasise that funding and publication of this research by the NHS should not be taken as implicit support for the recommendations for policy contained herein. In particular, policy options in the area of screening will, in England, be considered by the National Screening Committee. This Committee, chaired by the Chief Medical Officer, will take into account the views expressed here, further available evidence and other relevant considerations.

Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

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The editors have tried to ensure the accuracy of this report but cannot accept responsibility for any errors or omissions. They would like to thank the referees for their constructive comments on the draft document.

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