

Structured intensive educational interventions for type 1 diabetes for children and adolescents

Introduction

The aim of the 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, provide care in or develop policy for the NHS. Topics for research are identified and prioritised to meet the needs of the NHS. Health technology assessment forms the largest portfolio of work in the NHS Research and Development Programme and each year about fifty new studies are commissioned to help answer questions of direct importance to the NHS. The studies include both primary research and evidence synthesis.

Question

Are structured intensive educational interventions for type 1 diabetes effective and cost effective in children and adolescents?

- 1 **Technology:** Structured, intensive, educational programmes leading to flexible and self-adjusted insulin and diet treatment, with curriculum designed specifically for children and adolescents.
- 2 **Patient group:** Children and adolescents with type 1 diabetes and their families. Researchers to specify and justify patient age group.
- 3 **Setting:** Any
- 4 **Control or comparator treatment:** Standard diabetes education. To be defined and justified by researchers.
- 5 **Design:** Multicentre, cluster-randomised approach.
- 6 **Primary outcomes:** Diabetic control as reflected in glycated haemoglobin levels and hypoglycaemic episodes. Secondary outcomes: Quality of life for both parents and children; cost-effectiveness. Applicability to the wider NHS and the organisational impact of supporting an intensive educational programme.
- 7 **Minimum duration of follow-up:** 2 years

Background to commissioning brief

Diabetes is a common health condition. About 1.8 million people in the UK (approximately 3%) are known to have diabetes, and between 10 and 15% of these have type 1 diabetes. The incidence of diabetes in children has been rising. The incidence of type 1 diabetes in children under five doubled between 1985 and 1995, while cases of diabetes in children under 15 years have seen an overall increase of around 4% each year.

There are wide variations in practice in diabetes education. Centres largely develop their own educational material and resources, in terms of staffing levels, also vary greatly.

An example of a structured intensive educational intervention is the DAFNE (dose adjustment for normal eating) system. This a five day structured training programme in intensive insulin treatment producing sustained improvements in glycaemic control without increasing severe hypoglycaemia. Participants are taught to match insulin doses to their food choices, while keeping their blood glucose close to normal, allowing them to have greater dietary freedom.

While such programmes have been shown to be effectiveness in adults, a trial is needed to establish if they have a role to play for children and adolescents.

For many of the questions posed by the HTA programme, a randomised controlled trial is likely to be the most appropriate method of providing an answer. However, there may be practical or ethical reasons why this might not be possible. Applicants proposing other research methods are invited to justify these choices.

Applicants are asked to:

1. Follow the Medical Research Council's Good Clinical Practice guidelines (<http://www.mrc.ac.uk/pdf-ctg.pdf>) when planning how studies, particularly RCTs, will be supervised. Further advice specific to each topic will be given by the HTA programme at full proposal and contract stages.
2. Note that trials involving medicinal products must comply with "The Medicines for Human Use (Clinical Trials) Regulations 2004". In the case of such trials, the DH expects the employing institution of the chief investigator to be nominated as the sponsor. Other institutions may wish to take on this responsibility or agree co-sponsorship with the employing institution. The DH is prepared to accept the nomination of multiple sponsors. Applicants who are asked to submit a full proposal will need to obtain confirmation of a sponsor(s) to complete their application. The DH reserve the right to withdraw from funding the project if they are not satisfied with the arrangements put in place to conduct the trial.

The MHRA (info@mhra.gsi.gov.uk, <http://www.mhra.gov.uk>) can provide guidance as to whether your trial would be covered by the regulations. The DH/MRC website (<http://www.ct-toolkit.ac.uk/>) also contains the latest information about Clinical Trials regulations and a helpful FAQ page.

Making an application

If you wish to submit an outline proposal on this topic, complete the electronic application form and return it to the HTA Commissioning Manager at the National Coordinating Centre for Health Technology Assessment, Mailpoint 728 Boldrewood, University of Southampton, Southampton SO16 7PX by 6 September 2006. Outline applications will be considered by the HTA Commissioning Board at its meeting in **November 2006**. If they are acceptable, investigators will be given a minimum of eight weeks to submit a full proposal.

*Please see **GUIDANCE ON APPLICATIONS**.*

*Applications received after **1300 hours** on the due date will not be considered.*

Guidance on applications

Required expertise

HTA is a multidisciplinary enterprise. It needs to draw on the expertise and knowledge of clinicians and of those trained in health service research methodologies such as health economics, medical statistics, study design and qualitative approaches. HTA expects applicants to engage a qualified Trial Manager for appropriate projects. Applicants will need to show a commitment to team working and may wish to consider a collaborative approach between several institutions. It is expected that the research will be undertaken only following a thorough literature review.

Public involvement in research

The HTA programme recognises the increasing active involvement of members of the public in research and would like to support research projects appropriately. The HTA programme encourages applicants to consider *how* the scientific quality, feasibility or practicality of their proposal *might* be improved by involving members of the public. Research teams wishing to involve members of the public should include in their application: the aims of active involvement in this project; a description of the members of the public (to be) involved; a description of the methods of involvement; and an appropriate budget. Applications that involve members of the public will not, for that reason alone, be favoured over proposals that do not but it is hoped that the involvement of members of the public will improve the quality of the application.

Outcomes

Wherever possible, the results of HTA should provide information about the effectiveness and cost-effectiveness of care provided in its usual clinical setting and for the diverse subjects who would be eligible for the interventions under study. The endpoints of interest will in most cases include disease specific measures, health related quality of life and costs (directly and indirectly related to patient management). Wherever possible, these measurements should be made by individuals who are unaware of the treatment allocation of the subjects they are assessing. We encourage applicants to involve users of health care in the preparation of their proposal, for instance in selecting patient-oriented outcomes. A period of follow up should be undertaken which is sufficient to ensure that a wider range of effects are identified other than those which are evident immediately after treatment. These factors should guide applicants in their choice of subjects, settings and measurements made.

Sample size

A formal estimate should be made of the number of subjects required to show important differences in the chosen primary outcome measure. Justification of this estimate will be expected in the application.

Communication

Communication of the results of research to decision makers in the NHS is central to the HTA Programme. Successful applicants will be required to submit a single final report for publication by the HTA programme. They are also required to seek peer-reviewed publication of their results elsewhere and may also be asked to support the NCCHTA in further efforts to ensure that results are readily available to all relevant parties in the NHS. Where findings demonstrate continuing uncertainty, these should be highlighted as areas for further research.

Timescale

There are no fixed limits on the duration of projects or funding and proposals should be tailored to fully address the problem (including long-term follow-up if necessary). Applicants should consider however that there is a pressing need within the NHS for this research, and so the duration of the research needs to be timely.