

# **Evaluation Report Executive Summary**

## **Oral Health Fluoride Toothbrushing Project with Batley Sure Start**

Client: Batley Sure Start

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Date: December 2005



## Executive Summary

The purpose of this report is to set out the findings of an evaluation of toothbrushing in nursery schools in the Batley Sure Start area delivered by North Kirklees PCT / Calderdale & Kirklees Community Dental Care.

### Background and rationale

The epidemiological studies of five year olds for local primary schools in the area indicate that children attending schools in the North Kirklees Area, which includes the Batley Sure Start area, suffer from disproportionately high levels of dental decay.<sup>1</sup> Dental decay experience in deciduous teeth is measured by the dmft index. This measures the total number of teeth that are decayed, missing, due to decay or are filled. For North Kirklees the value of the index in 2001-2 was 2.87 per child, and had shown no overall improvement since 1987 and compares to a national target that has been set by the Department of Health of 1 by the year 2003. The figures for 2003-4 suggest the problem is worsening, as the value of the index for North Kirklees is now 3.69 and is the worst district in England. There is a clear need within the area to address this particular problem. Not least because of the cost to the NHS of treating children with tooth decay, but also because of the effects that it has on the children concerned.<sup>2</sup>

A number of factors have been identified as responsible for tooth decay including care of teeth, diet, feeding habits and application of fluoride<sup>3</sup>. North Kirklees does not have a fluoridated water supply. Given the reduced access that children in the Batley area have to fluoride generally compared to other areas of the country, consideration was given as to how this particular factor could be addressed.

### Evidence base for approach

The oral health project was based on the evidence base arising out of a study conducted in Tayside in Scotland<sup>4</sup>. As part of the evaluation this evidence was critically appraised and a broader literature search was made in order to assess whether the project was being developed from a reliable evidence base initially. The appraisal found that the randomized control trial (RCT) it was based on was sound and the results of this have been used to make estimates as to the cost effectiveness of the approach.

### Focus and scope of evaluation

The focus of the evaluation is about assessing whether this particular approach of delivering oral health messages and practice within a nursery setting has value in improving access to fluoride. The evaluation also considers the resources that are

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<sup>1</sup> BASCD biannual dental survey.

<sup>2</sup> Ottley C. Baby tooth care a forgotten priority? Nursing Standard 2002; 16 January; 18 40-44

<sup>3</sup> Fuller SS; Oral Health Promotion, a practical guide for health visitors and school nurses. London: Health Education Authority, 1988

<sup>4</sup> Curnow M; Pine CM; BurnsideG; Nicholson JA; Chesters RK; Huntington;E. A randomized control trial of the efficacy of supervised tooth brushing in high caries-risk children. Caries Research 2002; 36:294-300

required to deliver this and whether this is cost effective against the benefits that may be expected longer term based on the available research evidence. Improvements in dental health will happen over long period of time. In the short run we need to identify if there is any indicative qualitative evidence to suggest that the project is contributing to the attitude and behaviour changes needed within the target population that will be born out in quantitative surveys longer term. In order to indicate whether this change is taking place we set some measures of success that the evaluation would seek to compare the evidence collected against. These were:

1. Nurseries understand the role they have to play in encouraging good oral health and include it in their day to day activities and policies
2. Children view tooth brushing positively and engage in this in nursery and at home
3. Parents understand the importance of tooth brushing for children
4. Parents actively promote good oral health habits to their children and understand that they can influence their child's oral health

### Methodology

This included analysis of the number of children taking up nursery places. Qualitative research was conducted with both heads and class teachers to explore the operational aspects of the project and how it was influencing schools thinking at a more strategic level. Qualitative research was also undertaken with parents and children around their understanding of oral health issues and of the project.

### **Findings**

#### Project Reach

The principal purpose of the tooth brushing project is to improve the access that 3 and 4 year old children in the Batley area have to fluoride. However in order to assess the value of this method of targeting children, we needed to consider how many three and four year olds attend LEA (school based) nurseries in Batley. Estimates showed that only 30% of 3 year olds take up their nursery place, rising to 62% of four year olds. This suggests that this means of reaching children is limited and that either alternative means need to be identified and or an increase in nursery place take up is needed. Children's Centres may present an opportunity to reach more children through greater take up of daycare and access to children through other services.

#### Cost effectiveness

The cost of running the project is estimated at £50 per child per year for materials, rising to £133 per child per year, if the nursery has to be supported by Sure Start health workers. This needs to be offset against the estimated saving of treating all incidences of dental decay for a cohort of children of around 122 at age 5 of £142 per child. However not all incidences of dental decay are treated and taking account of current treatment rates this saving falls to £31 per child, using the estimates from one RCT that have been applied to the children taking part in the BASCD survey in Batley in 2004.

On balance it would seem that where schools are able to run the toothbrushing themselves without support, then it is cost effective, particularly if children were to have all of their decayed teeth treated. Given that many of these teeth are going untreated, whether treatment is required or not, it would seem sensible to offer a preventative measure to avoid the decay in the first place. However to ensure that

children receive the preventative measure, there is a need for the intervention to reach a greater number of children as suggested by the reach analysis. Targeted support at those nurseries that require additional support is barely cost effective, but alternative means of delivery through the use of volunteers could improve the cost effectiveness of this support.

In making a judgement around cost effectiveness we should also take account of the non monetary costs to children of having poor teeth. In addition to the pain and suffering caused by decayed teeth, dental decay in children too young to cope with extensive dental treatment often results in general anaesthesia for multiple tooth extraction. Dental decay can also have effect on children's self esteem and confidence as they grow up, contribute to impaired speech development and lead to time away from school to attend dental appointments. These are all factors which can contribute to costs elsewhere in the NHS and Education System.

#### The value of Sure Start support

There is a value of having dedicated staff, such as the Sure Start Health workers. Targeting this support at schools where there are difficulties in operationalising the tooth brushing due to staffing is a critical factor in its success. However this is an expensive resource and needs to be set against the cost effectiveness of the project. Schools find it difficult to engage parents to help. However an alternative to using Sure Start staff may be use Sure Start connections with employment initiatives to offer training to parents to help with the tooth brushing and thus later enable parents to access the labour market. This would mean that schools could have a dedicated group of people to rely on locally rather than Sure Start staff who may cover a number of schools.

#### Continuing the activity

There does appear to be support from schools for continuing the activity. The tooth brushing project needs to be seen in the context of the extended schools agenda. In encouraging schools to participate in the tooth brushing there is a need to link its value to the broader role of schools through the extended schools agenda. This advises:

*'Schools will want to work closely with parents to shape these activities around the needs of their community and may choose to provide extra services in response to parental demand'.<sup>5</sup>* This project enables schools to demonstrate their integration with a local area plan to improve quality of life by addressing a key health need.

It was clear that some head teachers were keen to see the project as a means of embracing partnership working and as part of their broader role in promoting all aspects of a child's wellbeing. There are concerns however that there are competing demands for curriculum and staff time. Some schools are more adept at seeing the value of this activity. A number of conditions for success were identified that may help encourage involvement by schools These include schools recognizing:

- the poor dental health of their pupils and its effects on attendance
- their role as an agent of change in improving children's health

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<sup>5</sup> Extended Schools, Access to services and opportunities for all, Extended Schools Prospectus DFES, 2005

- toothbrushing as an educational activity and a means of delivering the curriculum
- the importance of partnership working to engage in the broader agenda related to Every Child Matters.

In addition staffing ratios need to be sufficient to make it practical. In large nurseries where there are few support staff then schools may struggle and additional help may be necessary to turn willingness into a practical reality. If measures are taken to increase take up of nursery places, then this need would increase. The cost of this support is roughly £2,000 per class, per year. An alternative is to use volunteer support. Schools have found this difficult, but again there may be scope for partnership work with Sure Start to identify volunteers wishing to access the first rungs of the labour market.

From the perspective of children there were few issues arising from the evaluation and it appears relatively easy for schools to get children to engage in the activity. This of course may contribute to the school's willingness to participate. Schools have had no difficulty in gaining parent's consent for their children to take part and from this respect it would suggest that parents do see tooth brushing as important. The evidence of whether tooth brushing has changed attitudes to oral health however is weak, given we have only been able to speak to a self selecting group of concerned parents. It was clear that for these parents dental health is an important issue. However it is also clear that even parents who make efforts to inform themselves about how to keep their children's teeth healthy are subject to conflicting information sources, some such as the media can be beyond the role of health agencies. Even following the best advice the children of concerned parents are still suffering dental decay.

From the parents' perspective the tooth brushing in nursery is valued as a means of reinforcing what is done at home. Parents wish to be kept informed of what is happening and to have the opportunity for greater involvement. The nursery seems to offer a useful route to getting messages across to parents. The brushing itself offers opportunity for practical demonstration and welcome advice. This route also offers an opportunity to ensure that inconsistencies in messages parents may have received can be addressed and consideration needs to be given as to whether this should extend beyond tooth brushing into diet.

Involving parents in nursery is something that nurseries have expressed they are keen to do. Teachers spoke of doing shared activities with parents and children. Some nurseries have also expressed the role they have to play in 'helping parents develop their parenting skills'. There may be scope then for using tooth brushing in this capacity.

A number of operational issues were raised and in response to this it is recommended that schools may benefit from some joint training that addresses these concerns, particularly around inconsistencies in information and cross infection. Such training may also present an opportunity for schools to share ideas around the practicalities of implementing the brushing in their schools, so they do not feel isolated. It may be possible to seek advice on how best to deliver such training through consultation with the School Effectiveness Service in Kirklees Council. It has been suggested that oral health messages need to be targeted at parents of children before they reach the age of

three. The Brushing For Life project suggests that this may start at the weaning age, but also can be reinforced through baby and toddler groups. The project should be seen perhaps as one of a number of means of targeting families with good oral health practice and information as their child grows up. In this respect a family will pass through a series of messages and practices that are mutually reinforcing and age appropriate.