



Public Health
England

Delivering Supervised Toothbrushing for Two, Three and Four Year Olds in Early Years Settings “SMILES 4CHILDREN”

4Children

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FOUNDATION YEARS
Great early years & childcare

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1. EXECUTIVE SUMMARY

Introduction

Public Health England commissioned this feasibility study of a facilitated toothbrushing and oral health programme. The aim was to support sustained awareness of oral health in 2, 3 and 4 year olds in early years settings as part of the aspiration to achieve a generation free from tooth decay, improve children's school readiness and give every child the Best Start in Life.¹

This study, undertaken by 4Children, looked into the feasibility of running a supervised toothbrushing programme for 2, 3 and 4 year olds in private and voluntary early years settings as well as with childminders.

Resources were compiled centrally by 4Children and shared with all participating settings to ensure a common understanding and knowledge. This summary looks at how the programme was delivered, acceptability of the programme, cost implications and recommendations for future delivery/development.

Deliverability

The programme was rolled out in all 42 of 4Children's own nurseries, 10 nurseries in the Bright Horizons chain, 16 nurseries in the Toad Hall chain and 20 childminders through the Leap Ahead Childminder Agency (CMA). This provided a mix of socioeconomic groups and different types of early years settings. The ages of the children participating in the programme ranged from 2 to 4 years.

All participating nurseries and childminder settings were invited to two training days. The first of these training days took those attending through the supervised toothbrushing programme, implementation ideas and included a workshop editing and agreeing the final guidance for staff and parents. Infection Control was of the highest priority and nurseries found creative ways of storing, cleaning and labelling toothbrushes to reduce the risk of cross-infection.

Most nurseries nominated a 'programme champion' to cascade the training to colleagues and be a parental contact point.

Acceptability

All participating settings found ways to incorporate toothbrushing into their daily routines or adapt to new methods where they were already implementing an existing toothbrushing programme that did not fit the standards of this programme. Settings established their own toothbrushing routines within their settings. Engagement was therefore high across all socioeconomic groups and across different early years settings.

¹ PHE. October 2014. *From evidence into action: opportunities to protect and improve the nation's health.* <https://www.gov.uk/government/publications/from-evidence-into-action-opportunities-to-protect-and-improve-the-nations-health> P.18

Few parents withheld consent for their child to participate in the programme, with 88% giving consent for their child to participate. The main reason for withholding consent was that parents were worried about 'overdoing' toothbrushing as their children were already brushing twice at home, and they felt that brushing again at the setting was too much. Uptake was measured midway in to the programme when the settings were explaining the project to the parents. We would anticipate that uptake would be even higher towards the end of the project when parents were fully understanding of the programme.

Parents welcomed the programme and fully engaged in the survey collections. Parents were generally happy for their children to participate with toothbrushing routines in the setting.

Cost

The annual costs of delivering the supervised toothbrushing programme in the study were £204.06 per year or £4.09 per child. These costs only included purchasing tooth brushes and paste, paper towels and for printing the information booklet.

This is based on a full day care setting with 50 children operating 51 weeks per year. Staff costs are not indicated as there is only a small additional impact on staff time as toothbrushing can be incorporated into daily routines.

Ways Forward

The publication of PHE's evidence based toolkit will support commissioning and delivery of supervised toothbrushing in early years settings and provide quality assurance on effectiveness, infection prevention control and governance processes for both commissioners and providers.

DfE statement:

"Early Years providers have a responsibility to promote the health of children in their setting, set out in the EYFS. Good oral health can form a part of this."

1. Information for parents should be produced to ensure parents do not view any supervised toothbrushing scheme in an early years setting as a substitute for toothbrushing at home, rather an addition
2. Partnership working between early years settings and dental surgeries can stimulate attendance visits to dentists of the children in the early years settings
3. A footnote added to the Early Years Foundation Stage Framework, welfare requirements making reference to the importance of dental health and PHE's evidence based toolkit
4. That quality assurance schemes at a local provider level include observing how the setting is addressing oral health issues through a supervised toothbrushing programme
5. To disseminate the findings of this report across the early years sector through a strategic communications plan

Conclusions

The Smiles4Children programme draws the following conclusions:

1. The delivery of this programme is easily manageable within settings
2. Cost implications for settings are low
3. The roll-out of the programme increased practitioners' knowledge in toothbrushing technique, appropriate types and amounts of toothpaste and appropriate storage of brushes
4. The roll-out of the programme increased parental knowledge in toothbrushing technique, appropriate types and amounts of toothpaste and the appropriate brushes to use
5. The supervised toothbrushing programme has facilitated an increase in numbers of parents either attending or planning to attend a dentist with their child
6. The supervised toothbrushing programme has had an impact on claimed behaviour change, whereby most children were less reluctant to brush their teeth at home at the end of the programme.

2. CONTEXT

Tackling poor oral health is a priority for Public Health England (PHE) under the national priority of ensuring that every child has the Best Start in Life and will contribute towards the ambitions of every child ready to learn at 2 and ready for school at 5². Recent evidence reviews published by PHE³ and NICE⁴ inform us of what works for oral health improvement both for individual children and at a population level. Following a roundtable event (July 2015) hosted by PHE which enabled key stakeholders and leaders across the system to meet, discuss and agree on the next steps, PHE have agreed that child oral health should be a priority under the Evidence in Action priority Best Start in Life 2015 – 2020

Partners have agreed the ambition *that every child grows up free from tooth decay as part of the ambition for every child having the best start in life*. PHE have established a Child Oral Health Improvement Programme Board <https://www.gov.uk/government/news/launch-of-the-childrens-oral-health-improvement-programme-board> which brings together stakeholder organisations that all have key leadership roles for children and young people. It co-ordinates and supports action by partners that will improve the oral health of young children and work to achieve this.

Oral health also links to PHE's national priority on child obesity, to nutrition including breastfeeding, weaning, and cross-government themes such as inequalities and life chances. Oral health is a sentinel marker of wider health and social care issues.

Tooth decay is the most common oral disease in children and is almost entirely preventable. Recently released statistics have identified that one in eight three-year-olds⁵ and one in four five-year-olds⁶ suffer from visible tooth decay. The most common reason for young children (5-9-year-olds) undergoing general anaesthetic is dental related. This is a traumatic procedure for both children and their parents and almost entirely avoidable. Poor dental health impacts on children's confidence, language and personal, social and emotional development.

By reaching children and parents through early years settings there is an opportunity to positively change outcomes for children by reducing or even eliminating tooth decay.

² PHE. 2014. *From evidence into action: opportunities to protect and improve the nation's health*. <https://www.gov.uk/government/publications/from-evidence-into-action-opportunities-to-protect-and-improve-the-nations-health> P.18

³ PHE. 2013. Local authorities improving oral health: commissioning better oral health for children and young people: An evidence-informed toolkit for local authorities https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321503/CBOHMaindocumentJUNE2014.pdf

⁴ NICE public health guidance 55. (2014). Oral health: approaches for local authorities and their partners to improve the oral health of their communities.

⁵ Public Health England. Dental public health epidemiology programme: Oral health survey of three-year-old children 2013. A report on the prevalence and severity of dental decay (2014)

⁶ Public Health England. National dental epidemiology programme for England: Oral health survey of five-year-old children 2015. A report on the prevalence and severity of dental decay (2016)

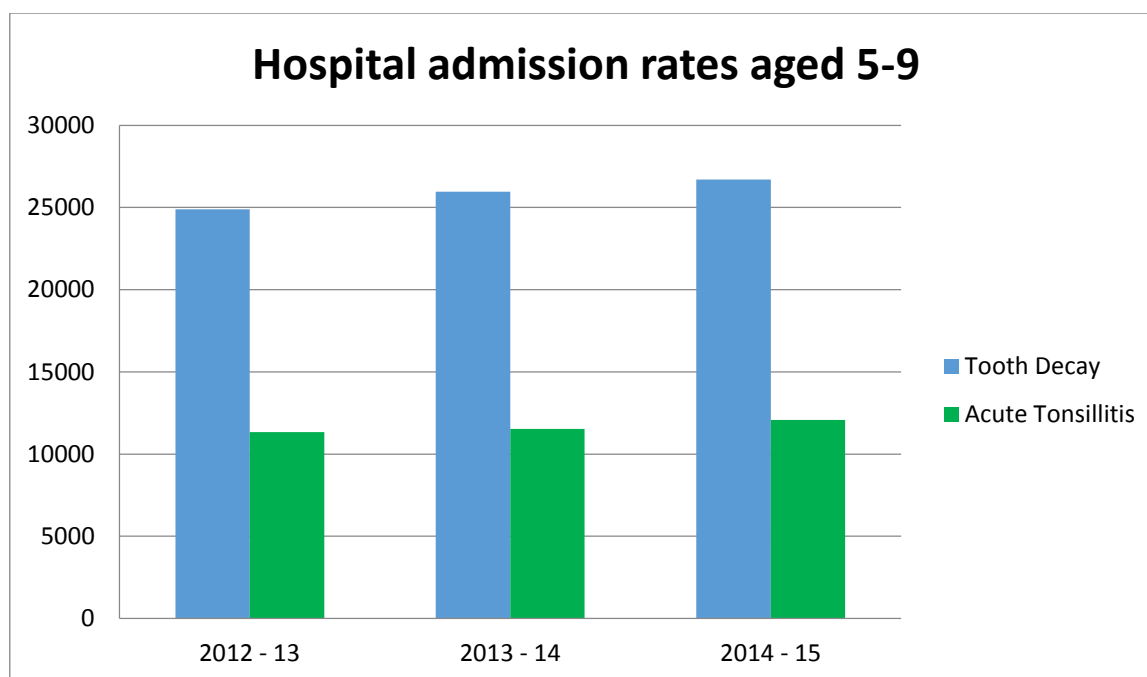


Figure 1 Comparison of hospital admission rates for children aged 5-9 due to tooth decay and acute tonsillitis from 2012-13 to 2014-15⁷

3. BACKGROUND

The efficacy of a supervised tooth brushing programme in early years settings (and schools) in reducing tooth decay has been established and such programmes are recommended by NICE (PH55) and Commissioning Better Oral Health for Children and Young People (PHE 2014). A national nursery tooth brushing programme (Childsmile) has been operating in Scotland since 2011, while Designed to Smile was launched in Wales in 2009. In England improving the oral health of the population is a local authority responsibility under the Health and Social Care Act⁸, and across England there are LAs commissioning supervised toothbrushing programmes as part of their strategies to improve child oral health. With the new entitlement for 2-year-olds, this feasibility study was focused on testing the feasibility of running such programmes when including younger children and also in childminding settings.

As the Department for Education's strategic partner for early years and childcare, 4Children worked with government officials and the sector to raise awareness of oral health of children under five.

Public Health England issued a tender to establish the feasibility of a facilitated toothbrushing and oral health programme to support sustained awareness of oral health in 2-, 3- and 4-year-olds in

⁷ Health and Social Care information Centre. Hospital Episode Statistics, Admitted Patient Care - England, 2012-13 (2013),
Health and Social Care information Centre. Hospital Episode Statistics, Admitted Patient Care - England, 2013-14 (2014),
Health and Social Care information Centre. Hospital Episode Statistics, Admitted Patient Care - England, 2014-15 (2015)

⁸ Local Government Association. Tackling poor oral health in children: Local government's public health role (2016)

early years settings as part of the aspiration to achieve a generation free from dental disease, improve children's school readiness and give every child the Best Start in Life.

The report covers the following key areas:

A) Processes

- The ability to deliver and maintain a toothbrushing programme in different settings including youngest age groups (2-year-olds) and in areas of varying levels of deprivation
- Appropriate training and resources for staff, children and parents
- appropriate quality assurance delivered within the programme
- processes that worked well and challenges faced

B) Financial implications:

- costs per child per year for resources
- funding approaches
- local variations across settings and demographic area
- materials and resources for training, delivery and quality assurance of the intervention

C) Delivery, including:

- differences in engagement and effectiveness of the programme across socioeconomic groups and different early years settings and consent rates for settings and children
- training and support available and provided for all staff delivering programme including infection prevention and control
- robust quality assurance ensuring safe and effective delivery independently assessed and monitored against standards
- challenges identified

D) Impact:

- Early indications of potential of toothbrushing scheme to reduce health inequalities
- Impact on behaviour change - feedback from children, staff and parents
- Delivering improved oral health without generating unnecessary burdens on LAs or Early Years settings
- Best practice examples

4. PROCESSES

a) Ability to deliver and maintain a toothbrushing programme in different settings and in areas of varying deprivation

For the purposes of this study, 4Children rolled out the programme in 42 of its own nurseries, 10 Bright Horizon nurseries, 16 Toad Hall nurseries and 20 childminders through a Childminder Agency (CMA).

Selected nurseries were chosen from various geographical locations serving families of different demographics e.g. many of the 4Children nurseries operate in disadvantaged areas including 20% most disadvantaged areas of Stockton, Plymouth and Greenwich, London. The 4Children settings also included 9 nurseries based on RAF bases serving children and families who lead extremely transient lives and as such find it difficult to access dental care.

The Bright Horizons Nurseries are all private provision and offer places to both funded and fee paying parents. A number of the Toad Hall nurseries are located in affluent areas in the South East of England. The childminders in the study live in Richmond and Kingston, two of London's more affluent boroughs. This selection ensured that we met the remit to test out the programme in areas of varying deprivation across the country.

The children attending these settings included funded 2-year-olds as well as children whose parents paid for their childcare.

It was decided that all children in the nurseries would participate in the programme and so the ages of the children ranged from 2 to 4 years.

b) Training and resources appropriate for staff, children and parents

A start-up event for all nurseries and the CMA participating in the programme was provided by 4Children and in addition a training/networking session was held halfway through the programme. These events were attended by representatives from the Toad Hall and Bright Horizons groups, managers of the 4Children nurseries and the lead officer from Leap Ahead CMA. These attendees cascaded the information from these events within their settings and in the case of the Childminder Agency, via a network meeting for the childminders.

The start-up event had the following aims:

- inform the participants about the programme
- ensure consistency by demonstrating toothbrushing techniques
- capture their thoughts on the guidance materials and baseline surveys
- reflect on participants' needs and address any concerns
- look at ways to effectively communicate with parents

As a result of the start-up event, staff representatives who attended trained their own staff locally, ensuring that they understood the importance of using the correct amount and concentration of fluoride in the toothpaste. Key persons then supported their children in teaching them the tooth brushing technique. Information packs for parents were provided, including the information booklet and consent slips. These were given to parents by the nursery staff/childminder. Most nurseries participating in the programme also put up a dental health display for parents to learn more about the programme.

The training session included:

- A presentation on the programme and its roll-out
- Resources and materials for participants to explore
- Run through of a toothbrushing session and the organisation of it within daily activities and routines
- Opportunities for participants to discuss resources and materials and ask any questions

The training/networking session was focused on sharing good practice, looking at what was working well, assessing areas that needed refining, as well as input on the design and content of the end of programme surveys.

Staff informed us that the two essential aspects of the training were the materials which gave guidance on the correct amounts of fluoride, toothbrushing techniques and infection prevention and control as well as practical demonstration on how to implement the supervised toothbrushing. To be more economical practitioners suggested that the techniques of toothbrushing could be demonstrated through a video.

Whilst it was felt that the events were helpful for the programme in order to produce the guidance, resources and gather feedback, it was agreed that the information pack produced as a result of these events made any more events redundant. Any resources that have been produced will be made available in the public domain for others to adapt and use.

Nursery managers could train staff on the toothbrushing programme on an 'in-house' basis, meaning that larger scale training events were not necessarily essential. Systems to ensure the programme is being implemented properly could include cross nursery moderation of the programme and/or visits from the local dental health team.

At this point the Toad Hall Nurseries temporarily put the programme on hold in order to update their policies to incorporate toothbrushing practice in their settings. They had initial concerns about dry brushing, spitting instead of rinsing and potential risk of cross infection this might pose. We followed this up with 'Childsmile' who reported they had faced similar issues when rolling out supervised toothbrushing in settings in Scotland. However, once these techniques had been firmly embedded in the national standards, practitioners realised that these techniques had been verified by medical experts and there was no further resistance from them.

c) Appropriate quality assurance delivered within the programme

The resource materials included a detailed section on good practice including how to brush, infection control, and procedures. Incorporated into their existing quality assurance processes, nurseries were observed delivering the programme with the children and checks were made on storage and infection prevention control. This was deemed a sensible approach to ensuring quality assurance and not an additional burden.

All staff carrying out the quality assurance visits had participated in the 2 training days. The most common area for discussion at these visits was around cleaning teeth as part of circle time rather

than in the toilet areas. This was particularly apparent where nurseries had previously implemented toothbrushing programmes which included cleaning teeth at the sinks. Dry brushing teeth at circle time was found to be less time consuming, ensured children’s dignity in the toilet areas and prevented the possibility of unintended wet brushing.

d) Processes that worked well and challenges faced

As detailed in section b, one nursery provider temporarily put the programme on hold in order to update their policies to incorporate toothbrushing practice in their settings. All other aspects worked well with no other negative feedback.

5. FINANCIAL IMPLICATIONS

a) Costs per child per year for resources

The annual costs of delivering the supervised toothbrushing programme are detailed in the table below. This is based on a full day care setting with 50 children operating 51 weeks per year. Staff costs are not indicated as there is only a small additional impact on staff time as toothbrushing can be incorporated into daily routines. Our findings show that toothbrushing became part of the daily routines at the settings quickly and staff did not feel it was an extra burden.

Costs associated with staff training events, writing-up the resources, and other associated activities are not included here, as it is not envisaged that these activities need to be carried out again.

Resources from this programme will be made publically available to be used. Similarly, the staff training/networking events were useful in gathering feedback and producing the resources, but it was felt that beyond this programme any training could be carried out through online webinars and videos. Training videos would only need to be produced once, be relatively cheap to produce and could be paid for by a central fund rather than being paid for by individual settings. These training videos should be made publically available for staff training purposes, minimising costs associated with training.

Item of Expenditure	Unit Cost	Notes	Total Cost Per Setting pa.	Indicative Total Cost Per Child pa.
Age-appropriate toothbrushes	£0.30	Toothbrushes replaced every 3 months	£60.00	£1.20
Age-appropriate fluoride toothpaste (50ml.)	£1.00	2 x tubes of toothpaste per month	£24.00	£0.48
Paper Towels	£1.00 (per pack)	2 packs used per week	£102.00	£2.04
Printing cost of ‘Smiles 4Children Toothbrushing for two, three and four-year-olds’ booklet	£0.31	Copies for 50 children + 10 for the setting	£18.06	£0.37
TOTAL COST			£204.06	£4.09

*Note: Setting staff provide their own toothbrushes for the purpose of demonstration etc.

Toothbrush holders are also required but for this pilot, the settings created their own toothbrush holders, using Tupperware for example. If toothbrush holders are purchased, this would incur an

additional cost of £55.00 per setting (£1.10 per child), bringing the total cost to £259.06 per setting (£5.19 per child). This could be compared to a very small cost implication in ensuring that children's brushes had identifiers in the home-made version.

Paper towels were found to be the biggest expenditure as they are used individually by each child every time brushing takes place. As the brushing takes place during circle time away from sinks, children use the paper towels to spit out toothpaste at the end. Cheaper paper rolls could be sourced but due to the concern over spitting rather than rinsing we did not wish to put restriction on paper towels.

b) Funding approaches

The majority of the resources and materials were funded centrally through this programme. In terms of toothpaste and storage solutions different providers took different approaches to funding this, e.g. Leap Ahead CMA made the decision to purchase toothpaste for all their providers. Similarly, the Toad Hall nursery chain centrally purchased the toothpastes and storage for all their nurseries. 4Children nurseries purchased their toothpaste through their individual setting budgets, and fashioned their own storage units (See Appendix 3). When purchasing toothpastes it was ensured that it contained the correct level of fluoride and did not contain any animal products.

c) Local variations across settings and demographic area

There was no local variation in costs due to toothbrushes and resources being sourced centrally. The price of toothpaste varies between retail sources but not by demographic area. If you look at the NHS supply chain the cost is between 54 and 67 pence per pack of toothbrush and toothpaste.

d) Materials and resources for training, delivery and quality assurance of the intervention

The programme covered the costs of writing the materials, carrying out surveys, training days and collecting feedback from staff and parents. Indicative costs around reproducing these materials is low as the materials have been written and are ready to use, therefore the additional costs incurred would only be for printing and copying these materials. Quality assurance was not an additional cost due to this being incorporated into established generic quality assurance visits that were already being carried out across the settings by the nursery chains (4Children, Toad Hall and Bright Horizons) and the CMA taking part in this programme.

Media coverage of the programme in the sector press was covered centrally by 4Children through the programme costs.

6. DELIVERY

a) **Delivery of the programme including differences in engagement and effectiveness of the programme across: a) socioeconomic groups; b) different early years settings; and c) consent rates for settings and children**

All participating settings embraced the programme and found ways to incorporate toothbrushing into their daily routines and adapt to new methods where they were already implementing an existing toothbrushing programme.

Participating nurseries crossed all socioeconomic groups due to 4Children nurseries targeting families in the most disadvantaged areas in the country, and armed services families through our RAF nurseries; Toad Hall and Bright Horizons' main customers are the more affluent socioeconomic groups as these are private day nurseries. The CMA involved ensured that there were a cross-section of families of socioeconomic means in their pilot group.

The best practice examples included in this report demonstrate how settings established routines within their settings. Engagement was therefore high across all socioeconomic groups and across different early years settings and we found no differences in engagement levels across these groups. This was measured by uptake of the programme in nurseries and childminding settings.

Dry brushing teeth at circle time was recommended as it was found to be less time consuming, ensured children's dignity in the toilet areas and prevented the possibility of unintended wet brushing. For the purposes of this report dry brushing refers to the method of using toothpaste only as opposed to wet brushing where water is used to rinse after brushing. Recommended toothbrushing technique for children can be found here:

<http://www.nhs.uk/Livewell/dentalhealth/Pages/Careofkidsteeth.aspx>

It is interesting to note the Bright Horizons private nursery chain overcame the spitting rather than rinsing issue by working closely with staff to explain the reasoning and embraced the suggested quality assurance systems of observing and monitoring toothbrushing procedure to ensure parental satisfaction.

Childminders from the Leap Ahead Childminder Agency engaged well with the programme and reported that they found it easy to incorporate in to their settings.

It is to be noted that very few parents withheld consent for their child to participate in the programme with 88% of parents giving consent for their child to participate. The main reason for withholding consent was that parents were worried about 'overdoing' toothbrushing as their children were already brushing twice at home, and they felt that brushing again at the setting was too much. Uptake was measured midway in to the project when the settings were explaining the project to the parents. We would anticipate that uptake would be even higher towards the end of the project when parents were fully understanding of the project.

We found that parents welcomed the programme and fully engaged in the survey collections with 695 parents completing the baseline survey and 401 parents completing the follow-up survey out of approximately 4,500 parents whose children were taking part in the programme. One childminder found it difficult to engage a parent with the programme, but even in this case parents were still happy for the child to participate with toothbrushing routines in the setting.

b) Training and support available and provided for all staff delivering the programme including infection prevention control processes

All participating nurseries and the Childminder Agency were invited to two training days taking them through the techniques and implementation ideas for the programme

Nurseries were recommended to have a programme champion to cascade the training to colleagues and be a parental contact point. Materials based on the 'Childsmile' programme were used to explain the techniques to staff and the need to be diligent to the highest of hygiene practices.

Infection Control was of the highest priority and nurseries found creative ways of storing, cleaning and labelling toothbrushes to reduce the risk of cross-infection. (Storage solutions can be found in Appendix 3)

Childminders had no concerns regarding cross-infection mainly due to the small number of children in their settings. The quality assurance visits were helpful in reassuring nurseries that the systems they had put into place were sufficiently robust to meet a high standard of infection control.

c) Robust quality assurance ensuring safe and effective delivery independently assessed and monitored against standards

We recommend that an evidence based toolkit which includes effectiveness, infection prevention control and quality assurance for programmes in England is established which settings can adhere to. For the purposes of this programme we used the 'Childsmile' National Standards for Nursery and School Toothbrushing Programmes⁹.

d) Challenges Identified

Whilst training of staff was included in the programme, if the programme is scaled up thought needs to be given to a simple cascade training roll-out. From a nursery perspective the biggest challenge in the start-up of the programme was storage. Commercially sourced systems are expensive (see costs analysis), however nurseries embraced the challenge by creating their own storage systems.

Practitioner and parental knowledge was based on their toothbrushing techniques and routines which were often not based on best practice e.g. 27% of both parents and practitioners did not know the suggested amount of time for toothbrushing, often underestimating the amount of time while 37% of parents and 30% of practitioners did not know that they should not rinse their mouth after toothbrushing. The guidance booklets were found to be successful in improving practitioner and parental knowledge on toothbrushing techniques and routines. A significant added value of the programme was the upskilling of practitioners and parents in toothbrushing techniques.

The brand of tooth paste used presented another challenge in that many of the brands popular with children do not contain the appropriate concentration of fluoride, i.e. for maximum prevention of tooth decay use toothpastes containing 1350-1500 parts per million fluoride (ppmF) with 0-3 year olds using a smear and 3-6 year olds a pea sized amount. This was overcome by listing recommended brands in the guidance.

⁹ <http://www.child-smile.org.uk/uploads/documents/5040-Toothbrushing%20Standards.pdf>

7. IMPACT

a) Early indications of potential of toothbrushing scheme to reduce health inequalities

As noted in Section 6 a. the programme was rolled out across a variety of settings covering a wide demographic across different socio-economic groups. Engagement levels were equally high across all settings and groups, indicating that health inequalities could potentially be reduced. For example, the programme has found that more families from lower socio-economic groups and military families have attended a dentist with their children as a direct result of this programme (see figure 4). Proportions of those consenting and taking part were generally equal.

b) Impact on behaviour change

The programme was able to monitor claimed change in behaviour through the baseline survey carried out at the start of the programme and follow-up surveys carried out towards the end of the programme. There was high engagement from both practitioners and parents in completing the surveys, with 248, 36% of practitioners completing the baseline survey and 162, 23% of practitioners completing the follow-up survey. 695 parents completed the baseline survey and 401 completed the follow-up survey. The claimed behaviour change that was noted has been compiled in the graphs below.

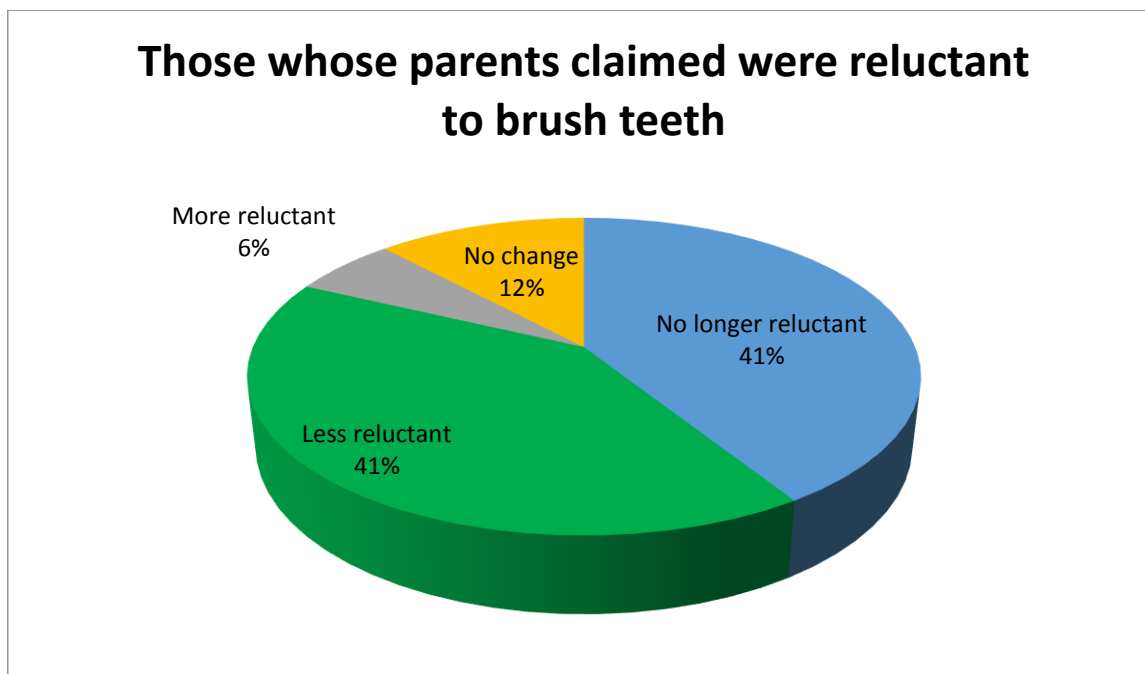


Figure 2 Reported change in behaviour in children who parents claimed to be reluctant to brush their teeth at the beginning of the programme (24% of all children N=96)

Those whose parents claimed found toothbrushing difficult

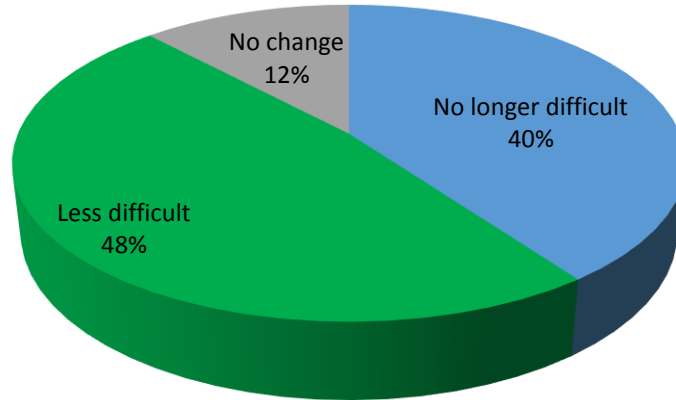


Figure 3 Reported change in behaviour in children who were reported by parents to find it difficult to brush their teeth at the beginning of the programme (23% of all children N=92)

Those not attending a dentist

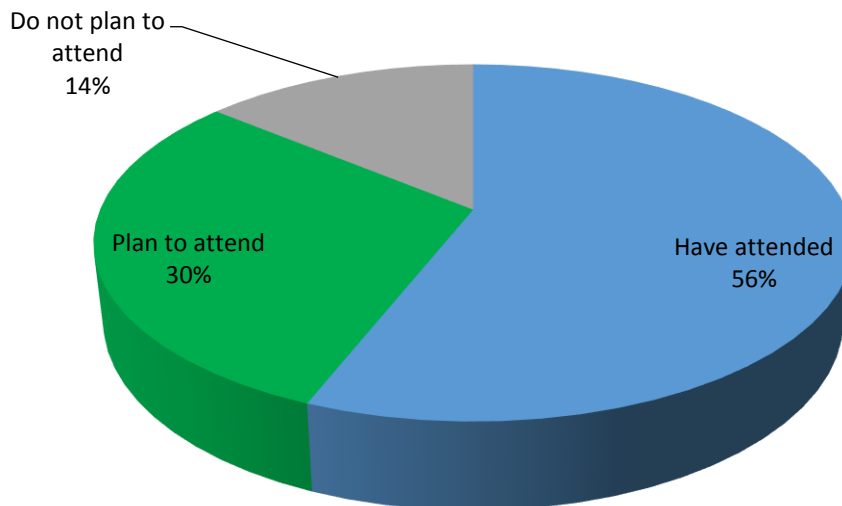


Figure 4 Percentage of parents whose child has attended or plan to attend a dentist directly as a result of the programme (27% of all children N=108)

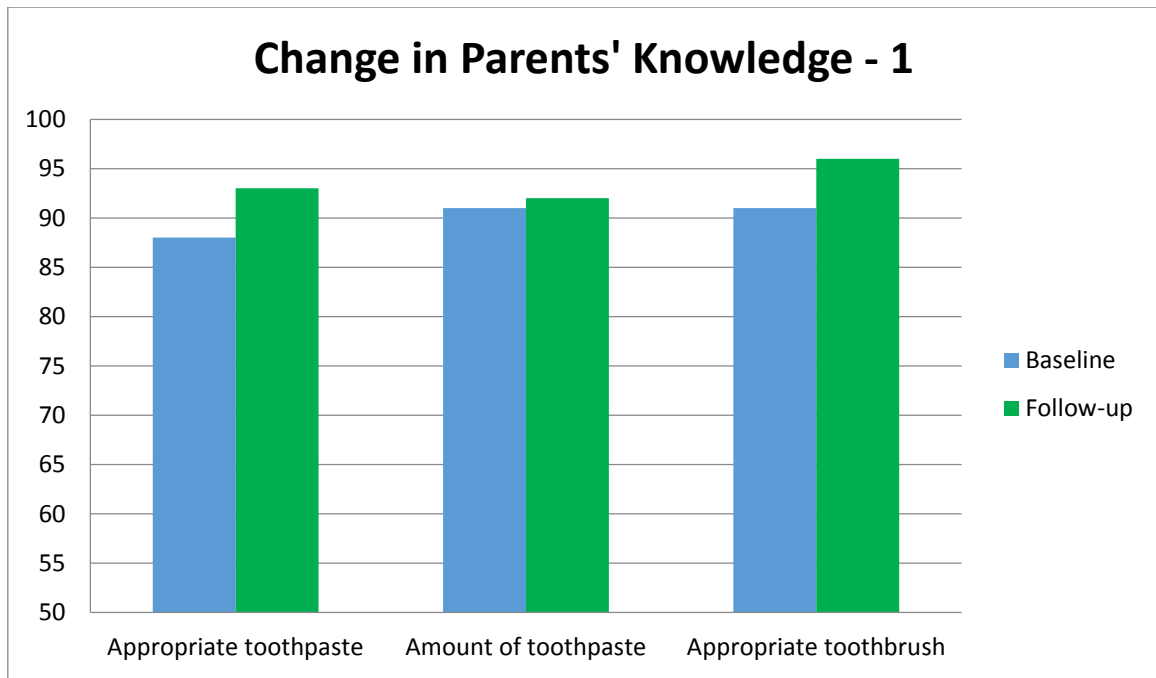


Figure 5 Difference in parental knowledge about appropriate toothbrushing resources from the beginning to the end of the programme

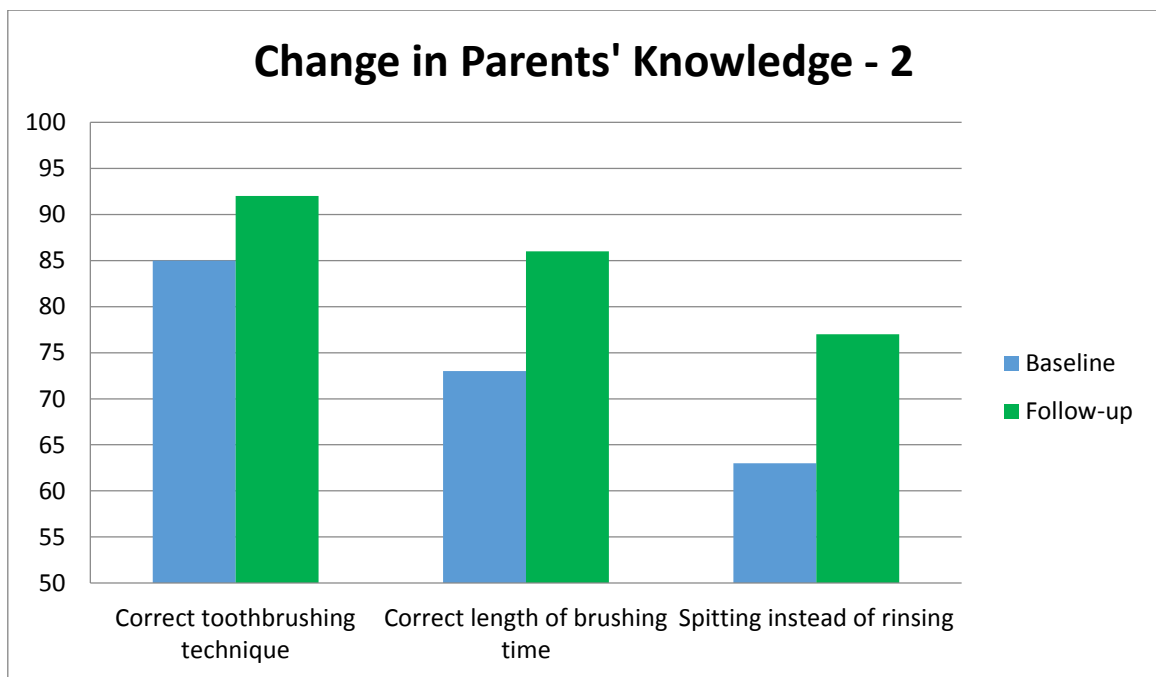


Figure 6 Difference in parental knowledge about appropriate toothbrushing technique from the beginning to the end of the programme

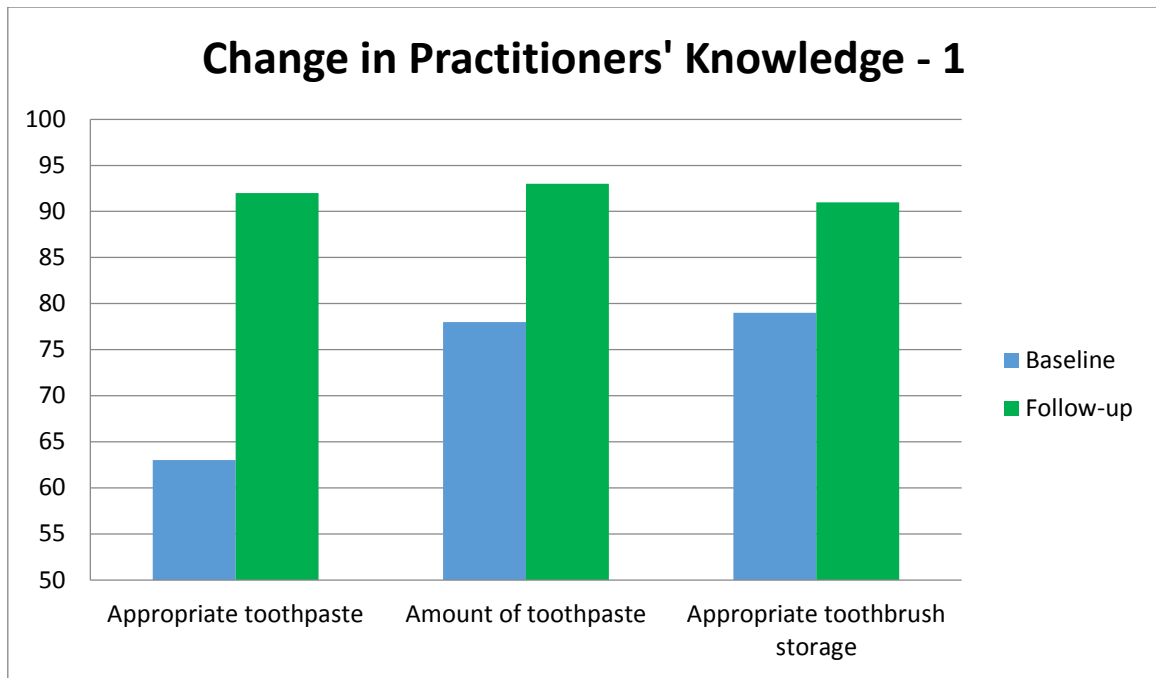


Figure 7 Difference in practitioner knowledge about appropriate toothbrushing resources from the beginning to the end of the programme

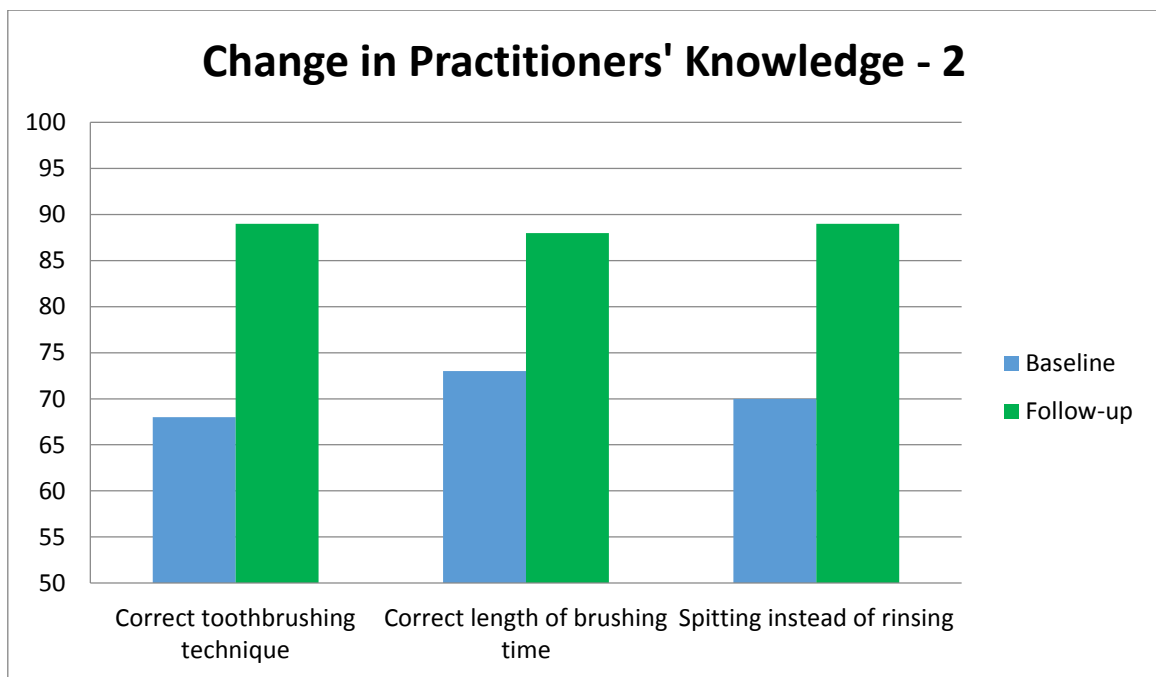


Figure 8 Difference in practitioner knowledge about appropriate toothbrushing technique from the beginning to the end of the programme

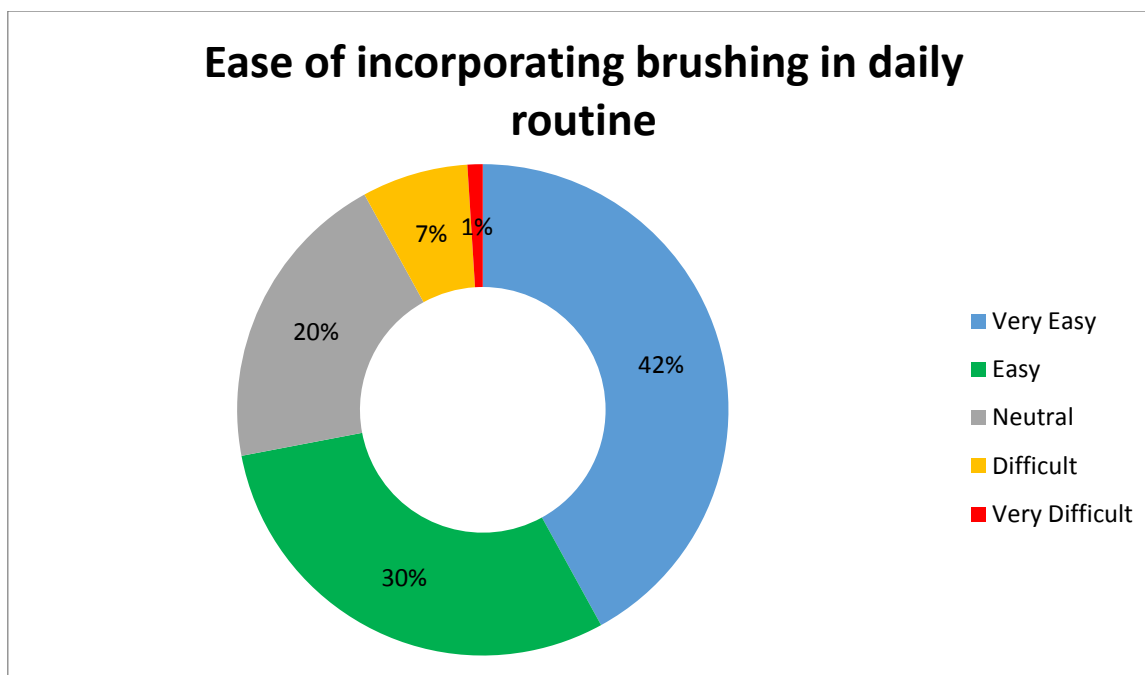


Figure 9 Ease of incorporating toothbrushing into daily routine in the settings

c) Delivering improved oral health without generating unnecessary burdens on LAs or Early Years settings

Nursery managers and practitioners stated that daily toothbrushing was not seen as an additional burden, either financially or practically. As shown in Figure 9 above, the majority of the settings found it easy to incorporate brushing into their daily routines. Feedback from practitioners indicated that toothbrushing has now become part of the daily routine of the settings.

In this programme no burden or expectation was placed on LAs as the programme was implemented directly through settings, and quality assurance was maintained by the nursery chains/CMA. Governance of such programmes is important to ensure safety and effectiveness in England where such programmes are currently commissioned. This role often is carried out by Local Authorities or training providers who are commissioned to do so. There may therefore be some expectations placed on LAs in relation to quality assurance, particularly around their statutory duty to support settings that are graded less than good.

d) Best practice examples

First Steps, RAF Honington

Toddler room staff built on the success of existing home learning bags and developed a bag which could be sent home to support parents, interest children and make toothbrushing fun. The bag included:

- A toothbrushing egg timer and giant set of clockwork teeth, alongside a copy of the Smiles 4Children guide, so that parents and children could practise the toothbrushing method together.

- A collection of “healthy snack” props to support a discussion about what children and families like to eat between meals, with a challenge to identify any other snacks that they enjoy.
- A collection of tooth themed books for parents to read with their children.
- A contact sheet of local dental surgeries was provided for any families who had not already attended a dentist.

Parents were encouraged to complete the feedback sheet provided in the bag, to show how they had used the resources. After borrowing the bag, one parent commented “He disliked brushing his teeth before, now he loves it. I’m a very happy mummy now”.

First Steps, RAF Honington

As part of activities to promote and support children’s health and self-care, preschool staff set up the water tray with a collection of dolls, toothbrushes, toothpaste tubes, flannels, sponges, shower gel and towels. The children were encouraged to talk about what they used at home and nursery to help them choose what they needed to clean the doll. As the children played with the toothbrushes and toothpaste they were heard to tell their doll “open wide so we can clean the ones at the back” and “remember you need to go round and round” showing that they were confident and familiar with the toothbrushing techniques.

Acorn, RAF Cosford

Toothbrushing takes place in key groups after lunch time. Children and their key person sit together and everyone, including each key person, cleans their teeth using the dry brushing technique. Staff play a toothbrushing song during this time to help the children know how long they need to brush their teeth for.

Plumstead Day Nursery

As groups of children finish their lunch, they go into the bathroom where they are encouraged to wash their faces with a flannel and then find their toothbrush to clean their teeth. The member of staff supporting this encourages them to look at the photo prompts to help them remember the routine. The decision to brush teeth in front of the mirrors has helped children to concentrate on cleaning their teeth and check for themselves that they are using the correct cleaning method. They eagerly show their “sparkly smiles” to staff and their friends, often commenting “your teeth look really clean” and “your teeth smell all minty”.

Waddington Family Services

The nursery has involved members of the local community to support the roll-out of toothbrushing. One of the parents, who is also a dentist, helped staff to demonstrate how to brush their teeth to children at the start of the project. This was followed up by a visit from the RAF dental nurses who talked to the children about healthy eating and the importance of toothbrushing through a range of interactive games such as sorting the pictures of “healthy” foods and “treat” foods

Staff feel that the daily toothbrushing is beneficial to the children and that it complements what is done at home, rather than taking this responsibility away from parents. One parent commented “toothbrushing at home is a lot easier than it used to be”.

Plaistow Day Nursery

Toddler room and preschool staff developed a toothbrushing display, linked to the setting’s involvement in the Smiles 4Children project. Photos show children using toothbrushes to practise the motion needed when cleaning their teeth to help them paint tooth pictures. Children’s comments, included in the display, demonstrate their understanding of the importance of brushing their teeth and what will happen to them if they don’t brush.

Little Flyers, RAF Boulmer

The nursery manager established a link with the local oral health team. Following this, the staff received training from the team leader and nursery manager around oral health, sugar intake in drinks and food, the recommended toothbrushing technique and the Smiles 4Children programme. The nursery team developed an information display for parents around how to encourage their children to brush their teeth, sugar content of drinks and snacks and “dumping the dummy”.

Little Flyers, RAF Boulmer

To support children’s understanding of the toothbrushing routine, staff laminated A4 pictures of teeth. Children were encouraged to use a pen to make the teeth “dirty” and then use foam and a toothbrush to practise the cleaning technique. The children were able to self-regulate as they could see whether the foam had cleaned the “dirt” or whether they needed to continue cleaning.

Homelands

Staff find the dry brushing approach more effective than the previous approach of taking groups of children into a small bathroom space. Children and staff sit in two circles to brush their teeth. They are joined by the “friendly dinosaur” who was given to the nursery by their community nursery nurse and is used to remind the children about how they brush their teeth. Staff have found that they are able to demonstrate the correct brushing technique to children more effectively and have the opportunity to talk about why it is important to clean their teeth and how teeth feel when they are clean.

Leap Ahead Childminder Agency

The childminders were very keen to take part in the project and learnt a lot from the initial training session, particularly on the correct toothpaste to use and how long the children should be brushing for. None of the childminders felt that it would be difficult to incorporate a session of toothbrushing into their day, and as they work from their own home storage and the practicalities of doing this were minimal.

At the end of the project the feedback was very positive, only one childminder found it difficult to engage the parents. However, even these parents were happy for her to encourage the children to take part. With regard to the child's enthusiasm or not for toothbrushing there was a moderate improvement seen by the parents. At least 3 parents have registered their child with a dentist as a direct result of the project and several said they felt more confident and knowledgeable.

The childminders are planning to continue with the toothbrushing as it has been so easy to do and the early results are positive.

This analysis and evaluation section was validated by 4Children's external national programmes evaluator, OPM, Office of Public Management.

8. CONCLUSIONS

The Smiles 4Children programme draws the following conclusions

1. The delivery of this programme is easily manageable within settings
2. Cost implications for settings are low
3. The roll-out of the programme increased practitioners' knowledge of toothbrushing technique, appropriate types and amounts of toothpaste and appropriate storage of brushes
4. The roll-out of the programme increased parental knowledge in toothbrushing technique, appropriate types and amounts of toothpaste and the appropriate brushes to use
5. The supervised toothbrushing programme has facilitated an increase in numbers of parents either attending or planning to attend a dentist with their child
6. The supervised toothbrushing programme has had an impact on claimed behaviour change, whereby most children were less reluctant to brush their teeth at home at the end of the programme.

APPENDIX 1

List of nurseries taking part

Setting Name	Local Authority
RAF Cherry Tree Halton Day Nursery	Buckinghamshire
RAF Flying Start Wittering Day Nursery	Cambridgeshire
RAF Wyton 'Brambles' Day Nursery	Cambridgeshire
First Steps Early Years Centre	Derby
Homelands Early Years Centre	Derby
Rosehill Early Years Centre	Derby
Carousel Day Nursery	Essex
Harlequin Day Nursery	Essex
Seesaw Day Nursery	Essex
The Warren Childcare Day Nursery	Essex
Bensham Grove Day Care Centre	Gateshead
Blaydon Day Care Centre	Gateshead
Deckham Day Care	Gateshead
Highfield Day Care Centre	Gateshead
Leam Lane Day Care	Gateshead
Finlay Early Education Centre	Gloucestershire
Hatherley Early Years Centre	Gloucestershire
Kaleidoscope Early Years Centre	Gloucestershire
Springboard Early Education Centre	Gloucestershire
Tredworth Early Years Centre	Gloucestershire
Widden Early Years Centre	Gloucestershire

Discovery Day Nursery	Greenwich
Plumstead Day Nursery	Greenwich
Little Rays Day Nursery	Kent
Northumberland Heath Day Nursery	Kent
Big Cherry Tree Nursery	Knowsley
Oaktree Nursery	Knowsley
City & Holbeck Nursery	Leeds
RAF Waddington Day Nursery	Lincolnshire
Plaistow Day Nursery	Newham
RAF Boulmer Little Flyers Day Nursery	Northumberland
Howdon Nursery	North Tyneside
RAF Benson Day Nursery	Oxfordshire
Four Woods Nursery	Plymouth
Nomony Nursery	Plymouth
Fairfield Day Care Centre	Stockton-on-Tees
Layfield Day Care Centre	Stockton-on-Tees
Riverbank Nursery	Stockton-on-Tees
Star Day Care Centre	Stockton-on-Tees
RAF First Steps Honington Day Nursery	Suffolk
RAF Cosford Acorn Childcare Centre	Wolverhampton
RAF Linton-on-Ouse Day Nursery	North Yorkshire

There were also 16 Toad Hall nurseries, 10 Bright Horizons nurseries, and 20 Childminders across Richmond and Kingston who took part in the programme

Smiles 4Children

Toothbrushing for two, three and four-year-olds



APPENDIX 3

Storage Solution Photos

Toothbrushes were individually identifiable by having children's names written on them with a permanent pen.



Figure A – An empty carton fashioned into a ‘toothbrushing bus’



Figure B – An empty carton fashioned into a ‘Shark toothbrush holder’



Figure C – A toothbrush holder fashioned out of Tupperware

APPENDIX 4

Story Pack

Book

Brush, Brush, Brush – Alicia Padron

ISBN: 978-0-531-25236-9

Resources

- Collection of different toothbrushes – green, blue, stripy, spotty, wiggly, ones for grown up, baby sized, animal shaped, character shaped
- Play soap/shaving foam (check for allergies)
- Paint
- Toothbrush mug/cup
- Mirror

Possible activities

- Talk about the collection of toothbrushes. Use colour names, size, patterns and pictures to describe the toothbrushes.
- Talk about how to brush your teeth – what do you need to do first, next?
- Talk about the action words for brushing your teeth (up, down, left, right, swish) – use a toothbrush to show what the actions look like.
- Use toothbrushes and play soap/shaving foam or paint to make the movements of the action words (up, down, left, right, swish).

Book

Dentist Trip – Peppa Pig

ISBN: 97-1-4093-0193-6

Resources

- Soft toys – pigs, teddy, crocodile
- Collection of different toothbrushes – green, blue, stripy, spotty, wiggly, ones for grown up, baby sized, animal shaped, character shaped
- Play soap/shaving foam (check for allergies)
- Dentist props – outfit, mirrors

Possible activities

- Talk about how to brush your teeth – what do you need to do first, next?
- Pretend to be a dentist and check the toys teeth. Use phrases and instructions like “Open wide, please!”, “Lovely clean teeth”, “Strong, clean teeth”, “special pink drink”.
- Use the toothbrush and “toothpaste” (play soap/shaving foam) to help the soft toy brush their teeth.

Book

How To Brush Your Teeth With Snappy Croc – Jane Clarke and Georgie Birkett

ISBN 978-1-782-95395-1

Resources

- Collection of soft toys or puppets (crocodile, bear)
- Collection of different toothbrushes – green, blue, stripy, spotty, wiggly, ones for grown up, baby sized, animal shaped, character shaped
- Play soap/shaving foam (check for allergies)
- Mirror

Possible activities

- Talk about the collection of toothbrushes. Use colour names, size, patterns and pictures to describe the toothbrushes.
- Talk about the different body parts where the toy/puppet wants to “squidge” the toothpaste. Where would be the best place? What else could the toy/puppet use to help them wash themselves?
- Use the toothbrush and “toothpaste” (play soap/shaving foam) to help the soft toy brush their teeth.
- Explore making different faces in the mirror – smiling, happy, sad, frown, angry, stick your tongue out!

Book

The Boy Who Hated Toothbrushes – Zehra Hicks

ISBN: 978-0-230-74841-5

Resources

- Collection of different types of toothbrushes – green, blue, stripy, spotty, wiggly, ones for grown up, baby sized, animal shaped, character shaped
- Envelopes and paper
- Letter from the tooth fairy
- Tooth sparkler (red sparkly toothbrush)
- Glitter
- Hat
- Small plastic ball
- Paint
- Washing up liquid
- Mirror

Possible activities

- Talk about the collection of toothbrushes. Use colour names, size, patterns and pictures to describe the toothbrushes.
- Make marks in a tray of glitter, paint or shaving foam. Talk about the shapes and patterns you can make – straight, up, down, circles, line, wavy, zig zag.
- Make up magic spells. Use rhyming words such as “dog, frog, log” or “cat, hat, mat”, words that begin with the same sound “cat, car, cow” or made up words like “zog, mig, lit”. Write down or draw you spell.
- Paint with toothbrushes. Talk about the patterns and pictures you have made.
- Play “finger” golf with a toothbrush.
- Make a drum kit from pots, pans and use your toothbrushes as drum sticks.
- Use boxes and tubes to make a musical instrument – like Billy used his toothbrush to make a guitar or flute.
- Use your toothbrush to mix up water and washing up liquid to make bubbles.
- Write a letter to the tooth fairy and tell her what you’ve done with her tooth sparkler.
- Explore making different faces in the mirror – smiling, happy, sad, frown, angry, stick your tongue out!

Toothbrushing books

Bear's Loose Tooth – Karma Wilson

Brush, Brush, Brush – Alicia Padron

Brush Your Teeth Please – Leslie McGuire

Dentist Trip (Peppa Pig)

Going To The Dentist – Anne Civardi

Give Us A Smile Cinderella – Steve Smallman

How To Brush Your Teeth With Snappy Croc – Jane Clarke and Georgie Birkett

Open Wide: Tooth School Inside – Laurie Keller

Open Wide.....What's Inside? – Alex Rushworth

Peppa And The Tooth Fairy

Smile Crocodile Smile – An Vrombaut

The Boy Who Hated Toothbrushes – Zehra Hicks

Tooth Fairy – Audrey Wood

Why Do I Brush My Teeth? – Angela Royston

APPENDIX 5

Baseline Practitioners Survey

How confident are you that you know the correct technique in cleaning the children's teeth?
(1 being 'Not Confident at all' and 5 being 'Very Confident')

- 1 2 3 4 5

Do you know the appropriate toothpaste to use according to the children's age i.e. correct amount of fluoride according to age group?

- No Yes

Do you know the appropriate amount of toothpaste to use according to the children's age group?

- No Yes

Do you think the children should rinse their mouth after brushing, or spit the toothpaste without rinsing after brushing?

- Rinse with water Spit out toothpaste and not rinse

Do you know how long the child should brush their teeth for?

- 1minute 2minutes 3minutes 4minutes

Do you know how the toothbrushes should be stored?

- No Yes

How confident do you feel confident in supervising the children's toothbrushing?
(1 being 'Not Confident at all' and 5 being 'Very Confident')

- 1 2 3 4 5

If a parent asked you for advice about their children's dental health where would you sign-post them for information? (Please tick all that apply)

- We provide own advice
 Website (please specify website).....
 Local Dentist

Baseline Parents Survey

Is your child reluctant to brush their teeth?

- No Yes Sometimes

Does your child find toothbrushing difficult?

- No Yes Sometimes

Has your child had any dental problems/procedures? Tick all that apply

- Cavities Tooth Decay Gum Disease Tooth Removal
 Abscess Complained of toothache

Other:.....

Have you succeeded in registering your child with a dentist?

- No Yes

If yes, is your dentist helpful in giving you advice about your child’s dental health?

- No Yes

Would you like support from your child’s nursery on toothbrushing?

- No Yes

Do you know the appropriate toothpaste for your child’s age group i.e. correct amount of fluoride in the toothpaste?

- No Yes

Do you know the appropriate amount of toothpaste to use for your child’s age group?

- No Yes

How confident are you that you know the correct toothbrushing method?
(1 being ‘Not Confident at all’ and 5 being ‘Very Confident’)

- 1 2 3 4 5

Do you know how long your child should brush their teeth for?

- 1minute 2minutes 3minutes 4minutes

Do you know the correct toothbrush for your child's age group?

- No Yes

Do you think the children should rinse their mouth after brushing, or spit the toothpaste without rinsing after brushing?

- Rinse with water Spit out toothpaste and not rinse

Practitioners Follow Up Survey

Do you feel more confident in supervising the children's toothbrushing because of this programme?

- Yes No No Change

Do you feel you are more knowledgeable about toothbrushing because of this programme?

- Yes No No Change

How easy was it to incorporate toothbrushing in your daily routine? (1 being 'very easy' and 5 being 'very difficult')

- 1 2 3 4 5

Do you know the appropriate toothpaste to use according to the children's age i.e. correct amount of fluoride according to age group?

- No Yes

Do you know the appropriate amount of toothpaste to use according to the children's age group?

- No Yes

Do you think the children should rinse their mouth after brushing, or spit the toothpaste without rinsing after brushing?

- Rinse with water Spit out toothpaste and not rinse

Do you know how long the child should brush their teeth for?

- 1minute 2minutes 3minutes 4minutes

How confident are you that you know the correct technique in cleaning the children's teeth? (1 being 'Not Confident at all' and 5 being 'Very Confident')

- 1 2 3 4 5

If a parent asked you for advice about their children's dental health where would you sign-post them for information? (Please tick all that apply)

- We provide own advice
- Website (please specify website).....
- Local Dentist

Parents Follow Up Survey

Was your child reluctant to brush their teeth before the nursery programme?

- No Yes Sometimes

Is your child still reluctant to brush their teeth?

- No Less than before More than before No change

Did your child find toothbrushing difficult before the nursery programme?

- No Yes Sometimes

Does your child still find toothbrushing difficult?

- No Less than before More than before No change

Have you tried registering your child with a dentist as a result of the nursery programme?

- No Yes Plan to register

Do you feel you are more knowledgeable about toothbrushing because of the nursery programme?

- Yes No No Change

Do you know the appropriate toothpaste for your child's age group i.e. correct amount of fluoride in the toothpaste?

- No Yes

Do you know the appropriate amount of toothpaste to use for your child's age group?

- No Yes

How confident are you that you know the correct toothbrushing method?
(1 being 'Not Confident at all' and 5 being 'Very Confident')

- 1 2 3 4 5

Do you know how long your child should brush their teeth for?

1minute

2minutes

3minutes

4minutes

Do you know the correct toothbrush for your child's age group?

No

Yes

Do you think the children should rinse their mouth after brushing, or spit the toothpaste without rinsing after brushing?

Rinse with water

Spit out toothpaste and not rinse