

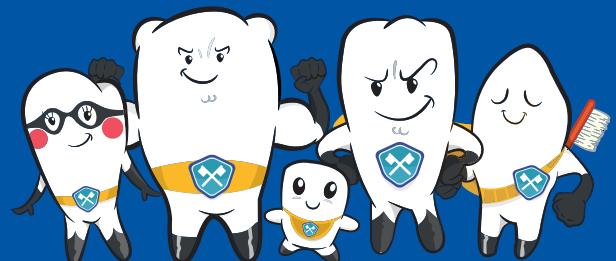


THE TEETH TEAM PROGRAMME

An update of a collaborative working partnership on a school-based supervised tooth brushing programme, incorporating clinical dental assessments, applications of fluoride varnish and the subsequent signposting for accessing primary and secondary dental care.

*Produced by Teeth Team Limited
543 Anlaby Road, Hull*

TEETH TEAM LIMITED
Progress Update June 2015



EXECUTIVE SUMMARY

The Teeth Team programme is now a well-established and nationally recognised child oral health improvement initiative which is facilitated within the City of Hull and the East Riding of Yorkshire.

The programme has been in existence since 2010, when three local dental practices, the salaried dental service and a dental supply company, shared concerns relating to the extremely high incidence of dental decay (caries) in local children.

They decided to join forces to create a partnership where, by working together, they hoped they could make a difference to the oral health of young children living in their area.

The partnership continued successfully until the autumn of 2013 when at that point the salaried dental services felt they could no longer continue to support the programme at its current level of commitment due to service constraints and therefore, they decided to leave the partnership.

The remaining partners continued to facilitate and develop the initiative and are delighted to report the programme has grown significantly over time and has gained further support from additional partners and individuals who have given their endorsement.

Those of you who are familiar with the Teeth Team will recall the initiative was initially known as the “Brush Bus Partnership”, but it was felt rebranding the programme was a positive way forward.

All of the schools involved in the initiative were invited to take part in a competition to rename the programme, hence our new name, “Teeth Team!”

Since the conception of the partnership, additional partners have come on board and now consist of:

- 543 Dental Centre Ltd
- East Hull Dental Centre
- AyerDental
- Carestream Dental
- Henry Schein Dental
- Genix Health Care Ltd

Together the partners support over 8,780 local children at nursery, primary and secondary schools in the Hull and East Riding of Yorkshire area.

BP Chemicals was originally a partner in the programme as they supported a large primary school in the east of the city. Unfortunately, in 2014 a change in their management team meant they could no longer continue with their support.

East Hull Dental Centre has since taken over the responsibility for this school from BP Chemicals. We would however, wish to express our sincere gratitude to BP Chemicals for their valuable contribution and generosity over the years.

Teeth Team are pleased to welcome Genix Health Care Limited, who joined the partnership in January 2015. The Chief Executive Officer now has a seat on our Board of Trustees.

Teeth Team aims to reduce the inequalities in oral health among children. When you consider the determinants of oral health inequalities, the Teeth Team initiative addresses many of the issues and also



targets those who are in greatest need, i.e. the most socially deprived electoral wards, where you will find the highest proportion of disparities in health.

Dental caries is a common chronic disease affecting the teeth and has global distribution. Caries in children is specifically a major public health issue.

In 2012 Public Health England commissioned a survey, Department of Health (2012) into the dental health of five-year-old children. This survey indicated 27.9% of 5-year-olds in England have tooth decay.

The survey also revealed:

- Children with decay have on average between 3 and 4 teeth affected by decay, treated or untreated.
- 24.5% of children have untreated decay.
- 1.7% of children have sepsis (infection) in their mouths.

Unfortunately, this national survey also confirmed that 43.4% of five-year-olds in Hull have tooth decay, compared with the national average of 27.9%. The same survey also revealed 39.2% in Hull and 20.1% for the East Riding suffered from untreated decay. Figures for the Yorkshire and Humber region show 29.3% of children were not undergoing treatment to tackle the decay, which may suggest there is an issue of dental neglect.

These statistics highlight the fact that there clearly is a local problem which most certainly needs to be addressed, if we want to break the cycle of poor oral health amongst generations of families in Hull and the East Riding.

A further recent survey, Department of Health (2013) again commissioned by Public Health England, found nationally 12% of three-year-olds had experienced dental decay with 3.07 teeth affected. The survey

also revealed that Yorkshire and Humber was one of the four regions with the highest decay rates of between 12-14% of three-year-old children experiencing dental decay.

Undoubtedly, encouraging parents to access dental treatment for their children should be high on the agenda, as should raising the awareness of the importance of regular tooth brushing with a fluoride toothpaste and the provision of dietary advice.

The Children's Dental Health Survey carried out in 2013 stated that 21-35% of parents with children aged 5, 8, 12 & 15 years, had reported the oral health problems of their child had a negative impact on family life. The most commonly reported impact on family related to parents taking time off work. This also negatively impacted on attendance rates for schools and the child losing valuable education time by being absent, which in turn could lead to low attainment levels.

In the time period from January 2014 to December 2014, 579 children were referred for a General Anaesthetic (GA) for dental extractions in the Hull and East Riding area, with the highest cohort (112 children) being 5 years old. Although this is a significant number, we are pleased to report there has been a decrease in the number of children experiencing a GA. In 2013 the number of children who experienced a GA for dental extractions was 693 showing a reduction of 16.5%.

Unfortunately, there was still a considerable number (15 children) who were aged only two years old who had multiple extractions under GA due to dental decay over the past year.

When you consider that a child is not expected to have a full complement of primary dentition until they reach the age of three, it is clearly evident there is a necessity



for the programme to be expanded citywide and to include children who attend nursery and primary education i.e. 3-11 years.

Greater emphasis on educating parents and carers on the dangers of baby fruit juices/drinks given in feeding bottles over prolonged periods of time should also be considered if we are to address the “bottle culture” we have in our city. Improved partnership working with midwifery and health visiting teams is paramount if we are to have any chance of preventing nursing/ bottle caries in such young children.

Increasing the number of day nurseries involved in the programme, will ensure good oral health care starts as early as possible and will hopefully reduce the prevalence of general anaesthetic experience in infants and young children.

Even high income industrialised countries where 5-10% of public health spending is used for oral health care, find treating dental diseases as an economic burden. Petersen et al (2005). Moreover, decay levels are highest in the more deprived local authorities.

As detailed in the previous Teeth Team report produced in 2014, the cost of providing dental treatment is considerable. Treatment of dental caries in children, particularly at the younger cohort, often results in general anaesthesia for multiple dental extractions. This is an expensive treatment, (estimate £719 per secondary care episode) NICE (2010), with high levels of emotional and physical distress for the children and the parents, and is not without risk to life.

Based on NICE (2010) guidelines, a general anaesthetic session provided for a child costs in the region of £719, we can assume the expense of providing these sessions locally would undoubtedly exceed the annual running costs of the programme.

Even in the older cohort, management in

primary care can be difficult, especially in an irregular attender who may present late in the caries process. They may require extraction or endodontic treatment, with local anaesthetic or sedation, or even general anaesthesia where anxiety or treatment complexity indicates.

We know from experience many children who reside in the most socially deprived areas have an increased tendency to be “symptomatic attenders” meaning they only access dental care when they are in pain or have experienced dental trauma. This is also often the case with their parents too.

Within this population group undoubtedly a strategy for prevention is paramount to reduce the caries risk and the inequalities in oral health.

The aim of the Teeth Team programme is to reduce the inequalities in oral health among children. This is addressed by facilitating a supervised daily tooth brushing programme, with the addition of dental assessments and bi-annual applications of fluoride varnish. Parent and child oral health education sessions play an important role in increasing knowledge of the risk factors of dental disease and how it can be prevented.

Unfortunately we can confirm that for many of the children who are supported by the programme, the only time they do actually brush their teeth is when they are at school. Often tooth brushing does not take place in the home environment at any other time i.e. at bedtime, weekends or during school holidays which demonstrates a clear need for the initiative to be expanded to include more children, particularly targeting those who are considered at high risk of dental neglect between the ages of 3-11 years.

The children with positive parental consent for the programme are assessed by one of our General Dental Practitioners. Those



children who are identified as requiring further dental intervention are offered an appointment at one of our participating practices or asked to contact their own General Dental Practitioner if they have one, for further investigation.

6,699 (76.3%) of parents consented to the dental assessments. 5,523 (63%) children in the programme received dental assessments between June 2014- May 2015. In addition, 491 of these same children received bi-annual dental assessments as one of our General Dental Practitioners provides dental assessments within the individual schools he supports at six-monthly intervals.

The differential between the consent rate and the actual assessments carried out is a result of 435 children being absent from school at the time of the assessments and also 741 children have changed schools, with the vast majority moving on to secondary education between the two academic school years.

Our records indicate there has been an increase in the number of children now accessing dental care in order to have the necessary dental treatment carried out, which is encouraging.

From our pilot study group containing children from the eleven original schools, we are pleased to confirm 285 children (84.3%) of 338 identified as requiring dental treatment in January 2014 have now accessed dental care.

Fluoride varnish applications were first introduced into the programme in November 2012, when a pilot study was implemented at Francis Askew Primary School. The positive data collated resulted in a phased programme of implementing fluoride varnish into the dental assessment process at all schools in the programme. Those children whose parents have

provided positive written consent have fluoride varnish applied to their teeth, if the examining dentist feels it is clinically necessary, following the guidelines set out in the Delivering Better Oral Health Toolkit, PHE (2014).

4,111 (59.2%) parents consented to their children receiving applications of fluoride varnish. In total 4,573 applications were administered over the past year to children in the programme who are considered to be at increased risk of dental caries. 2,168 were administered in June 2014 and 2,405 in January-May 2015.

The vast majority of supported schools receive fluoride varnish applications bi-annually. It is expected the five schools still outstanding, will have this element of the programme introduced within the next twelve months.

Numerous trials have been conducted on the effectiveness of fluoride varnish. Cochrane recently conducted a review of data available relating to fluoride varnish applications, Marinho VCC, Worthington HV, Walsh T, Clarkson JE. (2013).

In the thirteen trials that looked at children and adolescents with permanent dentition, the review found that the young people treated with fluoride varnish experienced on average a 43% reduction in decayed, missing and filled tooth surfaces.

In the ten trials looking at the effect of fluoride varnish on deciduous dentition, the evidence suggests a 37% reduction in decayed, missing and filled tooth surfaces.

The Department of Health (2014) also recommends the application of fluoride varnish bi-annually and up to four times per year for those children giving concern in their "Delivering Better Oral Health Toolkit".

Teeth Team considers the application of fluoride varnish is an essential element of



the programme as those children who do not access routine primary dental care for whatever reason, will at least benefit from the preventative action of the topical fluoride.

The cost implications of implementing the applications of fluoride varnish into the programme need to be considered. Limited or inconsistent evidence is available regarding monetary benefits of fluoride varnish preventative programmes.

Klock (1980) states reviews by Davies and Horowitz & Heifetz showed fluoride prevention programmes have more favourable CEA, reduced treatment cost and dentist hours.

A systematic review by Kallista et al (2003) showed limited evidence of cost effectiveness of fluoride varnish programmes, but Lindhe (1973) reported the cost of varnish as half that of treatment, though details of CEA were not given.

Many studies on cost benefit and cost effectiveness were short term, but prevention programmes using fluoride varnish might be cost effective in the long run (Weintraub, 2003). Long term studies are needed to validate this.

As stated by Cochrane (2013), **“the prevention of dental caries in children and adolescents is regarded as a priority for dental services and considered more cost effective than its treatment.”**

Since the conception of the partnership, Teeth Team has maintained concise records of the clinical data collated at each of the dental assessments. The data collated details the level of treatment need, be it primary or secondary care, dmft levels and the number of children who have accessed dental care.

On analysis, our findings support Weintraub's theory. The cost effectiveness of fluoride varnish applications within a

prevention programme, compared to the cost of providing dental treatment is undoubtedly more favourable.

Additionally, consideration should also be given to the reduction of the emotional and physical distress experienced by the children themselves when undergoing dental treatment, especially a general anaesthetic for dental extractions.

The Child Smile in Scotland released data in 2013 which illustrates the cost effectiveness of their programme which is not dissimilar to the Teeth Team programme. Macpherson, L.M., et al (2013).

Teeth Team has undertaken a cost effective analysis, using the baseline data and current data from a sample section of children in the programme.

We are delighted to confirm yet again, there has been significant cost saving when comparing the original level of treatment need in these children in relation to primary dental care and the present level of treatment need. Further details can be found later in this report, but we are delighted to report that the overall level of treatment need for all of the children in the study has yet again decreased. In January 2014, 25% of children in the programme required dental treatment. That figure now stands at 19%, showing a significant reduction of 6%.

Over the past four and a half years, the programme has gained national recognition and support from a number of organisations and individuals.

In 2012 the programme was awarded the Patron's Prize for Innovation from the National Oral Health Promotion Group.

In 2013, Dr Nigel Carter, OBE BDS LDS (RCS), Chief Executive of the British Dental Health Foundation, fully endorsed the programme whilst visiting a local primary school.



In 2013 and 2014, the Rt. Honourable Alan Johnson MP, Graham Stuart MP, Karl Turner MP and Diana Johnson MP, all pledged their support and offered to assist in the expansion of the programme to enable more children to participate.

On 24th January 2014, the programme was awarded the national prize for the “Best Child Dental Health Initiative” at the Dental Hygiene & Therapy Awards at the Barbican Centre, London.

Furthermore, in July 2014 Teeth Team received a letter of thanks from Jane Ellison MP, Minister for Public Health. Her letter acknowledges the work Teeth Team undertakes in local communities, helping to improve their health and wellbeing.

Teeth Team Limited currently supports 29 nursery, primary and secondary schools in the Hull and East Riding area. This equates to approximately 8,880 children taking part in the programme.

Every partner in the programme is fully committed to ensuring Teeth Team remains sustainable. The partners have formed a limited company which has been registered at Companies House. In addition to this Teeth Team’s application for charity status was approved in June 2014 by HMRC.

Teeth Team Limited has two Directors and a Company Secretary. The Board of Trustees consists of:

- Four dental practice owners
- The Chief Officer of Hull Clinical Commissioning Group (CGG)
- Four Head Teachers from local schools participating in the programme
- Two Dental Care Professionals
- The owner of a Public Relations company

Every one of the trustees plays a vital role in the success of the programme and they are all valuable stakeholders in the company.

It is hoped in the near future, Teeth Team will be successful in securing additional external funding to allow the programme to expand citywide where there will be the potential to positively impact on the oral health of all local children.

Simon Stevens, Head of NHS England stated on 18th May 2015, “We’ve got a big national choice – pull out all the stops on prevention or face the music.”



SUPERVISED TOOTH BRUSHING PROGRAMME WITH CLINICAL DENTAL ASSESSMENTS & APPLICATIONS OF FLUORIDE VARNISH

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INTRODUCTION

Despite some improvement in the dental health of children in England during the past few decades, inequalities continue to exist between and within different regions of the country.

The Royal College of Surgeons: The state of children's oral health in England (2014), stated in its overview: ***“Almost a third of five-year-olds are suffering from tooth decay, there are significant regional inequalities, and it is the most common single reason why five- to nine-year-olds are admitted to hospital. In some cases children are admitted for multiple tooth extractions under general anaesthetic, despite tooth decay being almost entirely preventable.”***

The oral health inequalities found in dental

caries levels are pronounced amongst school children. The greatest inequalities are predominantly in areas of severe social deprivation where the highest disparities in health inequalities exist.

The oral health of children in Hull and the East Riding is similar to England and Wales as a whole, however within the area there are significant inequalities.

The document, Local Authorities Improving Oral Health: Commissioning Better Oral Health for Children and Young People (PHE 2013) states on page 11, second paragraph:

“60,272 children under the age of 19 were admitted to hospital for tooth extraction, 50% of these children were under the age of 9 years.”



Figure 1 below details the findings from the above mentioned document in relation to dental extractions under general anaesthetic for decayed teeth in 2012-13.

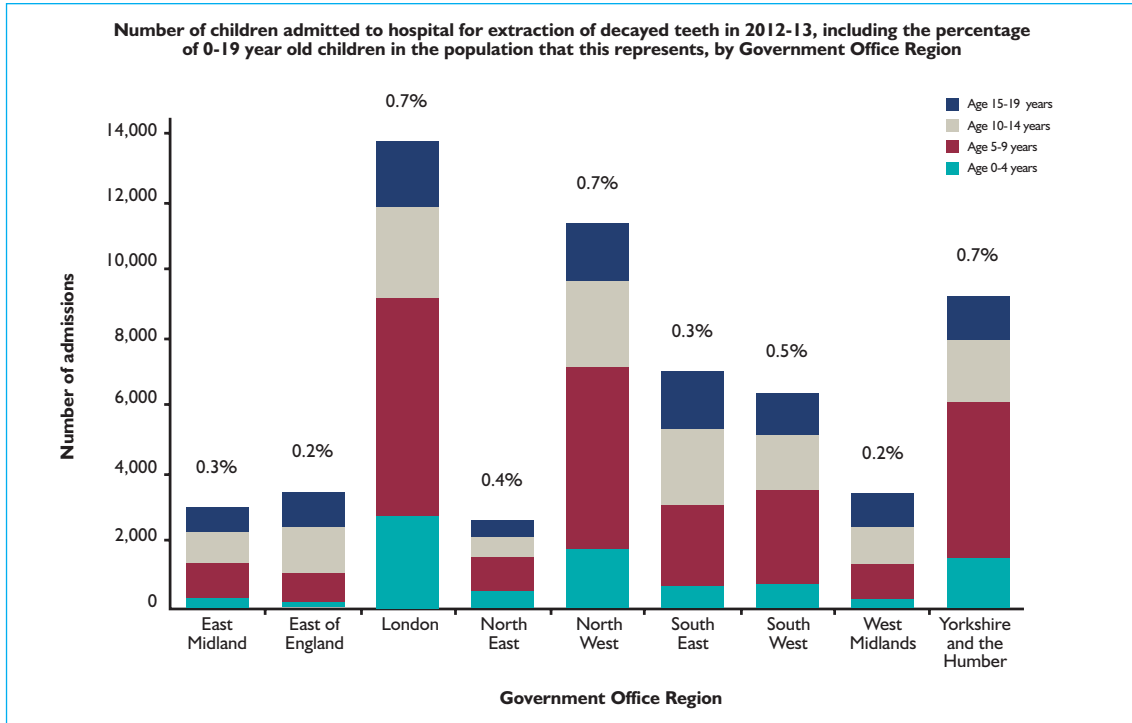


Figure 1

The prevalence of dental caries in England is still a specific cause for concern and remains a significant public health problem.

According to the document for local authorities, 35% of 5-year-olds in the Yorkshire and Humber region have experienced tooth decay. We have provided local statistics relating to GA experience in children from January-December 2014 further in this report.

The Teeth Team programme, now entering its fifth year, has seen the programme develop from a small community based project to a nationally recognised, award-winning programme.

The annual dental assessments in particular continue to be very popular with 6,699 parents giving positive consent for their

children to be included.

Parents of those children who were identified as requiring dental treatment were notified and information was given on where and how to access dental treatment for their child.

This element of the programme was intended to encourage children and their parents to bring about a positive attitude to oral health, the subsequent establishment of good oral hygiene habits and regular dental attendance.

Although more children who are involved in the programme are now accessing primary dental care than at the beginning, there still remains a high proportion of children not accessing dental services and some of these children now require urgent dental care.



BACKGROUND INFORMATION

Almost sixteen years ago the Oral Health Strategy (DoH 1999) stated by the year 2003, 70% of 5-year-old children should have no decay experience. Furthermore, on average 5-year-old children should have no more than 1.0 decayed, missing or filled primary teeth.

The most recent epidemiological survey confirms these objectives were not achieved locally. Department of Health (2012).

Tooth decay among 5-year-old children in Hull still continues to be a health problem. There is very little evidence to suggest there has been any improvement in the situation over the last two decades although, the dental health of 12-year-olds has improved slightly, but Hull is still behind the national average.

43.4% of five-year-olds in Hull have tooth decay, compared with the national average of 27.9%. This not only impacts significantly on the individual child, but also the costs to society are high in terms of days lost at work for parents, the actual monetary cost of carrying out the treatment required and of course the impact on the general health of the nation as a whole.

The incidence of tooth decay in the primary dentition is measured using the dmft(t) index (decayed, missing, filled teeth). A five year old child normally has 20 teeth therefore, the dmft(t) value can range from 0 to 20.

Within Hull in 2012/13, the average dmft for five-year-old school children was 1.54. This places Hull sixth in the Yorkshire and Humber region of 15 cities for tooth decay among its five year olds. Department of Health (2012).

Data from the Oral Health Needs Assessment (OHNA) for North Yorkshire and Humber, PHE (2015) stated children in Hull aged from 6 to 11 years are being neglected, which raises questions as to the appropriateness of currently commissioned oral health improvement programmes within the area for this population group.

543 Dental Centre currently holds the contract for dental extractions under General Anaesthesia (GA) in the city of Hull. For auditing purposes, 543 Dental Centre has collated specific data from the GA sessions for analysis and evaluation of the service provided and has kindly shared this information with the Trustees of Teeth Team so that it can be included in this report.

In the time period from January 2014 until December 2014, 579 children between the ages of 2 and 16 years experienced a GA for dental extractions in the Hull and East Riding area, with the highest cohort (112 children) being just 5 years old.

52.3% (303 children) who experienced a GA within this same time period were between the ages of five and seven years old.

Alarming, there are on average 46 children who attend the Day Care Unit at Hull Royal Infirmary for dental extractions each month under GA.

After analysis, we can confirm that the highest proportion of children who experienced a GA reside in the HU6, HU7, HU8 and HU9 postcode areas of the city, with DN14 being the postcode with the highest incidence of GA experience in the East Riding area. These locations are situated within some of the most socially deprived electoral wards.



Sadly, many of these extractions potentially could have been prevented if the children had accessed routine primary dental care when the early decay could have been treated, rather than emergency dental care at a later stage when the only option available is extraction. Dental caries is largely a preventable disease, but is often considered insignificant in comparison to other diseases.

The oral health of 5 year old children in Hull and the East Riding of Yorkshire does not show any significant improvement when compared to the previous 1999 survey. In the Hull area there has been no improvement since the survey began in 1985.

It is well documented that the main cause of dental caries is sugar in the diet. Fluoride is the only factor that has been proven beyond doubt to decrease susceptibility to decay and that the single most important oral hygiene measure is tooth brushing (Scottish Health Education Group 1986).

Teeth Team fully supports water fluoridation. This systemic means of access to fluoride has been proved to reduce the incidence of dental decay in all ages, but has been shown to be particularly effective in children.

We will continue to work with the Local Authority, Local Dental Network and Public Health England in an attempt to reach a successful outcome for the campaign to fluoridate the local water supply. PHE (2014) Commissioning Better Oral Health clearly recommends water fluoridation on page 29, table 3.3 Summary of the Oral Health Improvement Programmes Overall Recommendations.

We are mindful the implementation of water fluoridation will not come to fruition within a short timescale due to consultation processes etc. and it could take up to three years for it to happen if there was an agreement to proceed. Therefore, we

consider as an interim solution to tackle the high decay rates amongst children in the city, a targeted approach of fluoride varnish applications for children aged 3-11 years in areas of severe social deprivation, would be an appropriate measure in this case.

The Public Health Outcomes Framework (2013-16), and the Children and Young People's Health Outcomes Framework and Strategy(2014) recommend an integrated and partnership approach to improve health outcomes for children and young people they both include "tooth decay in five year old children" as an outcome indicator.

Previous studies involving teacher supervised tooth brushing programmes, using fluoridated toothpaste aimed at primary school children, have shown a significant reduction in dental caries especially among caries-susceptible children (Jackson Rj and Newman HN et al 2005).

(NICE 2014) provided guidance for local authorities and their partners on how to improve the oral health of their communities. Recommendations 15 & 16 on pages 20 & 21 of the document refer to the implementation of tooth brushing schemes and fluoride varnish applications in nurseries and early years' settings in areas where children are at risk of poor oral health.

However, Recommendations 18 & 19 on pages 23 & 24 suggest tooth brushing schemes and fluoride varnish applications are facilitated in primary schools for children up to at least the age of 7 years in areas where children are at risk of poor oral health.

The evidence we have relating to the prevalence of GA experience in the area shows 223 out of 579 children (38.5%) were between the ages of 7 and 11 years, clearly illustrating the need to ensure the programme includes children up to the age of 11 years.



Over the years, Teeth Team has been recognised for its work and has gained support from a number of organisations and individuals. We have detailed some of them below.



In June 2012 the programme was awarded the Patron's Prize for Innovation by the National Oral Health Promotion Group.



In March 2013, Dr Nigel Carter OBE BDS LDS (RCS), Chief Executive endorsed the programme.

Below are endorsements from local Members of Parliament who have all given their support to the programme.



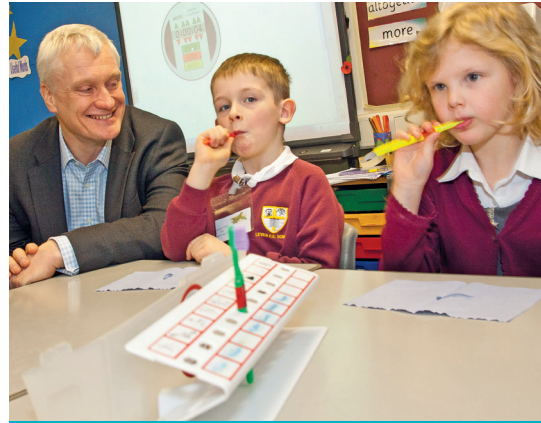
Rt. Hon. Alan Johnson MP, "This is a superb, marvellous programme. Fluoride is key for children and their teeth, so this programme added with water fluoridation will give poor kids' rich kids' teeth. I fully support the programme and will help in whatever way I can to expand."

Karl Turner MP, "I was delighted to visit Griffin Primary School today to see the excellent work that the Teeth Team does in educating local children in dental health and hygiene. This is an essential programme sponsored by local dental practices which I am keen to help promote. We suffer poor dental health in East Hull and this initiative will help prevent poor dental health in the future."





Diana Johnson MP, "The one thing that really struck me was how enthusiastic the children were about brushing their teeth. The whole programme is so well put together and it seemed perfectly natural to all the children to brush their teeth. I think the Teeth Team programme is excellent and is instilling good habits at such a young age. This will have a cost benefit for their teeth for later in life. Teeth Team is a 'win-win' programme."



Graham Stuart MP, "The Teeth Team programme is creating good habits at an early age. By instilling the right techniques of brushing your teeth, including dry brushing, at an early age it's going to make a difference for the future and these children's teeth. It's great; all the children looked to be really enjoying brushing their teeth in school. Teeth Team is a no brainer, not only do I fully support this programme. I want it to go out further and wider and certainly I would like to get this programme into every nursery and primary school in my constituency."

On 28th July 2014, Teeth Team received a letter from Jane Ellison MP, Minister for Public Health, expressing her support of our work. She wrote, "I would like to offer my personal thanks for the excellent work you have achieved while running programmes to encourage better dental hygiene in children in Hull. Your work highlights the opportunities to make real improvements to the health and wellbeing of local communities. I wish your team all the very best in your future endeavours and, once again, thank you for all that you are doing to improve the public's health."

We are delighted to announce that Genix Health Care Limited also joined the Teeth Team in January 2015. Genix Health Care Limited has generously offered to fund part of the programme and we have welcomed Mustafa Mohammed, CEO on to our Board of Trustees.

As previously mentioned, the application of fluoride varnish was piloted at Francis Askew Primary school in November 2012

and gradually a phased programme of implementing fluoride varnish into the dental assessment process at other schools in the programme over the past two and a half years has taken place.

The protocol for educating parents on the benefits of having fluoride varnish applied to their children's teeth was repeated, as detailed in a previous report published in July 2013. Teeth Team colleagues have continued to attend numerous parents' evenings and other social events such as school fairs and open days where parents are expected to be present.

Our team provide information on the risks and benefits of the application of the varnish and demonstrate how the applications are carried out using tooth models.

This ensures that parents are able to make an informed choice as to whether or not to provide consent for their child to take part. It also reassures the children that there is nothing to worry about and that it is simply a case of painting their teeth!



Information leaflets, consent forms and medical and dental history forms are also given to the parents for completion.

Information training is regularly provided to members of the schools administration teams so that they are equipped to answer parents' concerns at a later date should the need arise.

All completed forms are carefully screened, ensuring only those children who are suitable to receive an application of fluoride varnish, are in fact the only recipients.

Any child with contra-indications will not receive an application of fluoride varnish and the child's parents are informed of the reasons why their child is unable to be included on this occasion.

4,573 applications of fluoride varnish were applied to children carried over the time period of June 2014 and May 2015.

Aftercare instructions were provided for the children to take home to their parents which included the contact details of the Teeth Team should any parent feel it necessary to contact us in the event of a query or a concern.

Additionally, if during the dental assessments it was felt there was a need to contact the parent of a particular child to discuss any concerns we had regarding their child, the schools proved to be extremely efficient

and acted as a facilitator, ensuring vital communication with parents took place.

Occasionally, fluoride varnish applications were not carried out on some of the very young children in Foundation Stage 1 (3-4 years). The examining dentist considered that if this was likely to be the first time these children had been seen by a dentist, it was in the best interest of the children to only have an assessment on this occasion and to apply the fluoride varnish at the next dental assessment in a year's time.

The remaining children whose parents had provided positive consent, but did not receive applications of fluoride varnish were either absent on the day of assessments or there were contra-indications relating to the child's general health or recent dental history. 420 children were considered to be unsuitable to receive the fluoride varnish due to their medical history. In the main it was because they had previously been hospitalised for an asthma attack or a severe allergic reaction in the past.

In order to remain compliant with current guidelines, the Teeth Team programme will continue to re-issue consent forms annually to all schools to ensure that we have access to current medical and personal contact information relating to each child taking part, should the need arise.



AIMS AND OBJECTIVES

Aim.

To evaluate the programme in order to highlight successful areas and improve current resources.

Objectives.

- To confirm whether the Teeth Team programme is having a positive effect on the oral health of the children.
- To identify children requiring dental treatment and to assist parents in accessing necessary treatment for their child.
- To provide applications of Fluoride Varnish for those children where it is deemed clinically necessary as a preventative measure, in line with guidance from the Delivering Better Oral Health Toolkit, 3rd Edition, PHE (2014).

METHODOLOGY

The relationship between the schools and partners within the Teeth Team continue to strengthen as the years pass by. This excellent working partnership is fundamental in attempting to reach 100% of the target group. Teeth Team has a Board of Trustees, all of whom are stakeholders in the programme. They include four Head Teachers representing the primary schools, four dental practice owners, the Chief Officer of NHS Hull Clinical Commissioning Group, two Dental Care Professionals and a Public Relations Consultant.

In January 2015 we welcomed the CEO of Genix Health Care Limited to the Board of Trustees. Mustafa Mohammed is one of the four dental practice owners supporting the programme.

Regular updates are given to all partners who support the programme including the

Head of Henry Schein Dental in the United Kingdom (UK) and the Chief Executive of Carestream, ensuring all parties are kept abreast of any developments.

The initial sample group was made up of 12 schools; all supported by 543 Dental Centre Ltd and Henry Schein Dental. As the programme progressed, additional schools have since joined the programme, some of which have been included in the pilot study however, one of the 12 original schools has since withdrawn from the programme.

543 Dental Centre Limited currently supports 21 nursery, primary and secondary schools within the programme, one of the schools is supported jointly with Carestream UK and six are supported jointly with Henry Schein Dental.

East Hull Dental Centre currently supports six primary schools within the programme,



two of these schools are new to the programme and AyerDental currently supports two primary schools.

Written parental consent was obtained for all children within the programme. In order to reduce administration time for the schools, the vast majority of schools involved in the programme now include the Teeth Team consent documents into their “new starters admission pack.”

These packs usually contain consents forms for photographs, field trips and medical checks etc. It makes complete sense to include Teeth Team consents in this pack as it enables each school to obtain the majority of consents required for each child from the onset of their time at the school.

Once the consents have been returned to the school, the child’s UPN (unique pupil number) or their name is entered onto a school database to enable the school to cross reference which children have parental consent to take part in the different elements of the programme.

DATA COLLECTION

As is now standard procedure with the dental assessments, each child would present wearing a sticker displaying their UPN/name if they are new to the programme, or if they had previously been assessed, the child would be holding their dental record card.

The dental assessments were carried out by a General Dental Practitioner from one of the dental practices and the clinical data detailing the dmft was recorded on the dental record card by a Dental Nurse, which was later transferred to a database. Those children, for whom parental consent had been obtained for the application of

fluoride varnish, had Duraphat Varnish applied by a Dental Nurse who had undertaken specific training in the application of fluoride varnish, only if the examining dentist considered it to be clinically necessary and if there were no contra-indications.

Verbal and written post-operative instructions were given to the child to take home. The teaching staff who accompanied the children were advised the children should refrain from eating and drinking for one hour after the application of the varnish.

After completion of the dental assessments, reference details i.e. UPN/name, of any child who was identified as requiring dental treatment was entered on to a letter for parents and the school administration staff completed the remainder of the child’s details.

The letter informed parents their child required a further dental assessment and/or dental treatment. Contact details were included of where dental treatment could be accessed locally for their child, if they did not already have a family dentist.

The letter also has a tear off section which is to be completed and returned to school to acknowledge they had received the letter.

TARGET POPULATION AND SAMPLE SIZE

The target population was identified as 8784 primary school children from Foundation Stage (aged 3) up to Year 6 children (aged 11) attending 26 Primary schools in Hull and the East Riding of Yorkshire.

The sample size is 6,699 (76.3%) children whose parents consented for their child/ children to take part in the dental assessments.



The actual number of children who received dental assessments during the period of June 2014 – May 2015 was 5,523, with 491 of these children having bi-annual dental assessments. The difference in the sample size and the target size was due to some children being absent from school and some children had also left the school in the interim period between the two academic school years.

RESULTS

Clinical Data.

A total of 6,014 dental assessments were undertaken during the past year. A record of all decayed, missing, filled and sound teeth were collated for each child.

The data collated from the dental assessments has been entered on to a data base to enable comparisons between results year on year.

Due to the fact there are now three partners providing dental assessments, we have detailed the results separately for each partner.

543 DENTAL CENTRE SUPPORTED SCHOOLS

Data was collated from 16 of the 19 schools that 543 Dental Centre supports in the programme. Unfortunately, two schools were unable to accommodate the dental assessments due to SAT'S taking

place in Key Stage 2 and the day nurseries we support in the programme cares for children too young to take part in the dental assessments (under 3's).

The support we offer to these particular educational establishments is in the way of staff training, parent information sessions, oral health education/play sessions for the children and the provision of toothbrushes and toothpaste for the children to take part in assisted tooth brushing after lunch.

As mentioned earlier in the executive summary, the purpose of data collation is to evaluate the efficacy of the programme.

Some may question the validity of this data as the examining dentist has not been calibrated to BASCD specifications. Previous Teeth Team reports have detailed a control test undertaken in 2013, whereby dual dental assessments were carried out by a calibrated dentist and one of our dentists.

After collating the results from both sets of assessments, there was a difference of opinion in 18% of the prescriptions for treatment. This exercise concluded that the criteria for treatment need were consistent in 82% of the cases and it was agreed that the standard of criteria used to identify treatment need was acceptable.

Eleven of these supported schools were in the original pilot study. Since the beginning of the programme the mean dmft has been recorded.



School	January 2014	January - May 2015	Change in dmft
Bude Park	2.24	1.66	-0.58
Francis Askew	2.11	2.21	+0.1
Griffin	1.31	1.24	-0.07
Highlands	1.68	1.93	+0.3
Longhill	1.43	1.45	+0.02
Maybury	2.07	2.07	0.0
St Georges	1.66	1.63	-0.03
St Mary Queen of Martyrs	1.17	0.91	-0.26
Stockwell	1.89	2.6	+0.71
Thoresby	1.18	1.48	+0.3
The Green Way	2.82	1.71	-1.11

Figure 2

Figure 2 details the mean dmft from each of the original pilot schools who receive dental assessments.

We can see there has been a reduction of the dmft in five of the eleven original pilot schools. Encouragingly, the school with the highest dmft last year has seen the most improvement with a huge reduction of 1.11. In addition to this, data relating to the type of treatment need i.e. primary or secondary care has also been recorded.

In January 2014, 338 children from this study group required primary dental care in the way of restorations and prevention treatment. Under the current dental contract, each episode of care would attract three units of dental activity (UDA).

Taking into consideration the average UDA value in the UK is £24.00, we can assume the cost of providing treatment for these children will be in the region of £24,336.00

$$3 \times \text{UDA} = \text{£}72.00$$

$$\text{£}72.00 \times 338 = \text{£}24,336.00$$

The most recent set of data shows the current position in relation to children from this study group requiring primary dental care is 105.

We can again assume the cost of providing treatment for these children will be in the region of £7,560.00

$$3 \times \text{UDA} = \text{£}72.00$$

$$\text{£}72.00 \times 105 = \text{£}7,560.00$$

This equates to a cost reduction of £16,776.00

The differential in cost saving is considered to be significant.

53 (15%) children from the most recent set of assessments who were previously identified as requiring dental treatment have not accessed dental care. Many of these originally small lesions may over time



have increased in size and are now further down the line in the decay process and will possibly now require extraction.

We have seen a slight increase in children requiring secondary dental care. 59 children required urgent dental care in January 2014. That figure has now risen to 67.

The potential cost implication for this treatment is significant, in comparison to providing primary care at the appropriate time.

Based on NICE guidelines (2010), where the suggested fee for undertaking dental extractions under GA is £719, we can assume the cost of providing secondary care for the previous 59 children would be £42,421.00

59 x £719 = £42,421.00

However the cost of providing secondary care to the 67 children who now require a GA for dental extractions will be £48,173.00

67 x £719 = £48,173.00

Our data also confirms the schools with the

greatest need for urgent care are situated in the postcode areas of HU5, HU6 and HU9.

Taking into consideration the data collated by 543 Dental Centre for GA in Hull, we can clearly identify where the highest area of need exists.

579 children experienced a GA for dental extractions between January 2014 and December 2014.

Figure 3 highlights the postcode areas where these children live in proportion to the incidence of GA experience.

We can also identify the ages of the children who have experienced a GA in this time period

This data further supports the evidence previously submitted in the business proposal to the Hull City Council and NHS CCG. The provision of self-drive mobile dental units sited on school premises will ensure equal access for all children.

One has to acknowledge there is an issue of child dental neglect locally and this is predominantly present in areas of severe social deprivation where you will find the most vulnerable children.

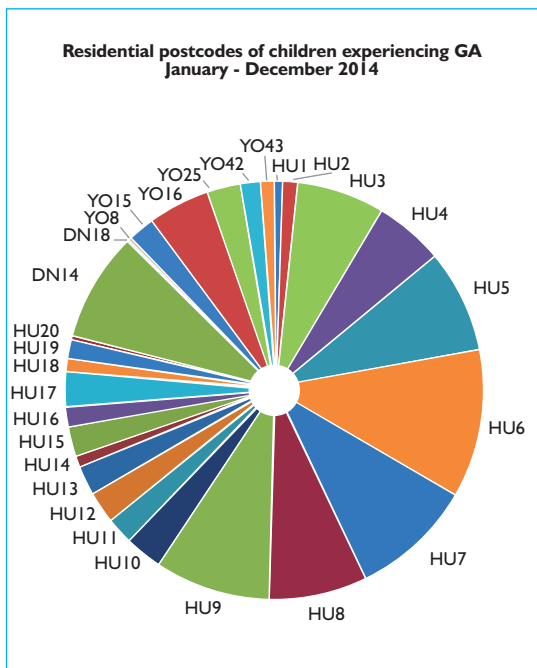


Figure 3

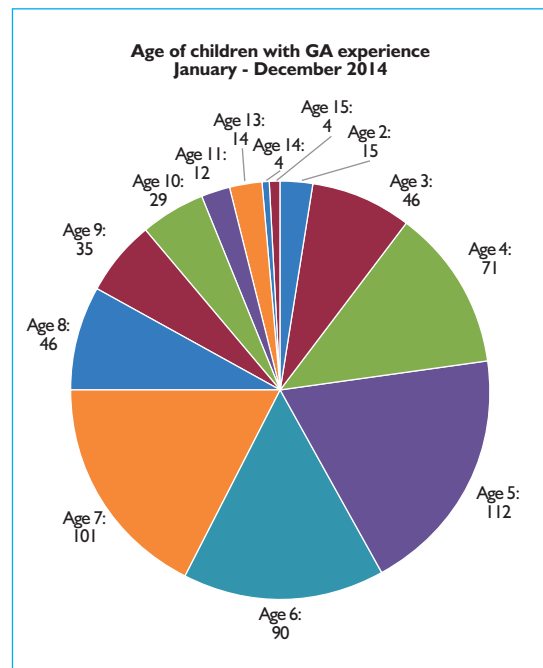


Figure 4



Simons, D., Pearson, N., and Evans, P. (2013) recently carried out a pilot study on the effectiveness of using mobile dental units at schools in order to address dental neglect.

The pilot aimed to demonstrate that:

- The use of a community – based mobile dental unit has the potential to remove barriers to dental care access.
- A mobile dental unit can be a cost effective means of providing dental care compared to alternatives.
- If all vulnerable children are to be reached local community networks and target populations’ cultural and language issues must be considered.

The introduction of fluoride varnish applications means we have seen an increase in the number of children assessed at each school.

The schools in the programme have

worked extremely hard to increase the level of positive parental consent for both the dental assessments and the application of fluoride varnish.

They now have procedures in place to ensure all children new to the school are signed up to the programme.

At the previous set of dental assessments carried out in December 2013, 5,110 children were seen. This figure has now risen to 5736 over the time period of June 2014 – May 2015. This means an additional 626 children have benefitted from the programme, with a high proportion of these children receiving a dental assessment and applications of fluoride varnish for the first time in their lives. Below are the tables detailing the data from all of the schools who have been included in this set of dental assessments.

Schools supported by 543 Dental Centre.

Name of school	Number of children assessed	No treatment required	Treatment required	Urgent treatment required	Percentage requiring treatment
Bude Park	157	112	45	17	28.7
Francis Askew	205	162	43	13	21
Griffin	246	210	36	8	14.6
Highlands	310	242	68	28	21.9
Hedon Inmans	336	310	26	1	7.7
Longhill	335	292	43	16	12.8
Maybury	165	122	43	13	26
Sidmouth	285	236	49	19	17.2
St Georges	157	128	29	12	18.5
St Mary Queen of Martyrs	227	208	19	6	8.4
Stockwell	182	143	39	6	21.4
Thoresby	243	208	35	9	14.4
The Green Way	313	252	61	16	19.5
Wheeler	205	169	36	5	17.6

Figure 5



Schools supported by AyerDental.

Name of school	Number of children assessed	No treatment required	Routine treatment required	Urgent treatment required	Percentage requiring treatment
Newington	210	123	87	0	41.4
Paisley	281	186	95	1	33.8

Figure 6. Assessment date: June 2014.

Newington	217	146	71	0	32.7
Paisley	286	197	89	1	31.1

Figure 7. Assessment date: November 2014.

Schools supported by East Hull Dental Centre Ltd.

Name of school	Number of children assessed	No treatment required	Routine treatment required	Urgent treatment required	Percentage requiring treatment
Alderman Cogan	365	286	79	0	21.6
Craven	136	92	44	1	32.3
Gillshill	315	264	51	0	16.2
Mersey	100	75	25	3	25
Neasden	157	111	46	0	29.3

Figure 8.

Schools supported by Carestream UK.

Name of school	Number of children assessed	No treatment required	Routine treatment required	Urgent treatment required	Percentage requiring treatment
Christopher Pickering	303	264	39	6	12.9

Figure 9.

From the most recent assessments carried out at all the schools in the programme from June 2014 – May 2015, there is evidence to suggest that 368 children who required treatment 6-12 months ago have not accessed treatment.

However, it was also evident some children had accessed treatment, but had not completed treatment.

The information leads one to assume some children are accessing care, but a great many are not.



CURRENT POSITION

Since the introduction of fluoride varnish into the programme and the addition of new partners, the number of children now included in the study has increased.

The implementation of fluoride varnish applications has enabled more children to benefit from the programme, not only from the preventative action of the fluoride itself, but also the opportunity to identify more children who may be in need of dental treatment.

We must however, take into consideration the cost of applying fluoride varnish bi-annually.

118 tubes of Duraphat Varnish have been

used since January 2014 therefore, we can conclude the applications of fluoride varnish will cost in the region of £997.10 per annum.

$$118 \times £8.45 = £997.10$$

Although more children have joined the study, many of these have not accessed any dental treatment previously and therefore, have untreated decay.

Figure 10 illustrates the treatment need for the total number of children in the study in January 2014. A comparison can be made with Figure 11 which illustrates the position in May 2015.

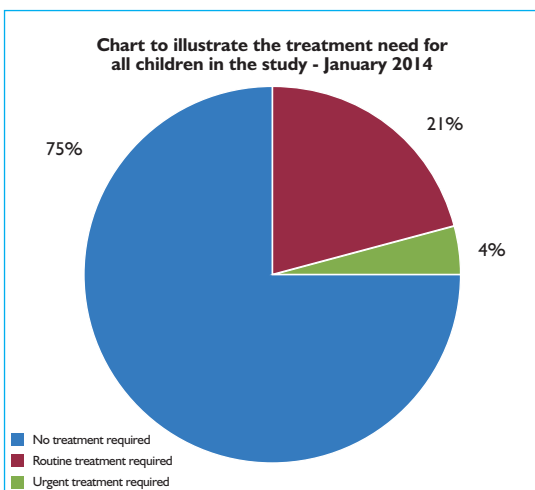


Figure 10

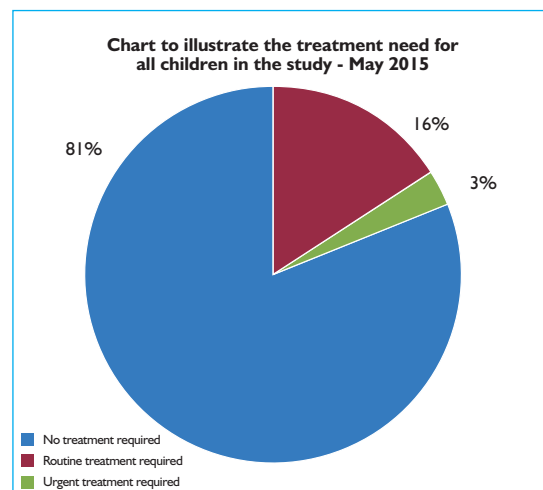


Figure 11

We can confirm there has been a reduction in the overall percentage of treatment need from 25% in January 2014 to 19% in May 2015.

By looking at the comparison we can only be encouraged that the programme is beneficial and fewer children are now requiring treatment.

One encouraging factor is that more children are actually accessing primary

dental care and parents are becoming more educated in the importance of good oral health and the benefits this has on their child's overall well-being.

Teeth Teams' continued commitment to these children is to make sure they keep their permanent teeth healthy and caries free, reducing the need for restorative dental treatment.



ACTIONS FROM PREVIOUS RECOMMENDATIONS

Broaden the range of dental professionals involved in the programme.

We have received written confirmation from the General Dental Council (GDC) stating the Teeth Team programme can utilise the skills of dental therapists to carry out dental assessments on school premises.

We currently have five dental therapists at our disposal, whose scope of practice will allow them to be involved.

It is Teeth Teams' intention that with the next round of inspections we will use a combination of dentists, therapists and appropriately trained dental nurses to complete the inspections and fluoride varnish applications.

Further support for the schools.

All partners continue to support the schools they are responsible for in the programme. The Teeth Team are happy to provide oral health education sessions within the school environment to coincide with specific aspects of the national curriculum.

We will continue to attend parent/carer sessions as this gives rise to the opportunity to discuss any oral health issues or concerns they may have.

Members of the team over the last year have also delivered oral health talks and presentations to some of the local youth groups. This enables the oral health messages to be delivered to a wider audience, benefitting

both children and young adults.

To streamline the documentation required for the programme in relation to consent forms.

Requests were made by a number of schools currently involved in the programme if there was any possibility the three individual consent forms could be condensed into one.

We can confirm we have amalgamated the three original consent forms into one and have created a much improved, user-friendly form to be used in the schools. There is an option for parents/carers to opt out of certain aspects of the programme if they so wish.

In the previous report produced in February 2014, it was stated discussions were due to take place with Hull City Council and NHS Hull Clinical Commissioning Group with a view at securing additional funding to ensure that the programme can be delivered to all primary schools. We are pleased to report a number of discussions have since taken place and consultation is still ongoing.

Teeth Team were invited to join the Oral Health Advisory Group (OHAG) Committee for Hull. We are working with our colleagues on the OHAG to help to create a draft oral health plan for the city. This plan will be submitted to the Health and Well-being Board for further discussion and possible approval in the very near future.



RECOMMENDATIONS FOR THE COMING YEAR

Many of the children from the original study group will soon be due to leave primary school and move on to secondary education. With this in mind we propose to conduct a new study which will include all schools in the programme, but will focus purely on children from the Foundation Stage i.e. 3 and 4 year olds for a period of two years.

Given the high incidence of dental decay

in five year olds in Hull (43.4%) we aim to demonstrate how the Teeth Team programme can reduce the dmft in this cohort, which has seen little improvement since surveys began.

We will continue to monitor the level of treatment need in the remaining children in the programme, but will not record the dmft.

RECOMMENDATIONS FROM EXTERNAL SOURCES

Public Health England published “Local authorities improving oral health: commissioning better oral health for children and young people” in June 2014. This document stated the Government has made a commitment to oral health and dentistry with a drive to improve the oral health of the population, particularly children and increase access to primary dental care services.

In relation to improving oral health outcomes for children and young people and reduce oral health inequalities, recommendations were listed as:

- Put children and young people (CYP) at the heart of commissioning.
- Adopt an integrated approach with partners for oral health improvement, including NHS England, Public Health England and Clinical Commissioning Groups. Ensuring all local authority services for CYP have oral health embedded at a strategic and operational level.
- Use, share and develop information and intelligence.
- Support CYP through their families, early

years, schools and community settings to maintain good oral health, adopting a place based approach.

- Lead and advocate a clear local vision for oral health improvement and addressing oral health inequalities.
- Provide access to quality local dental services focused on improving oral health.
- Also to commission specific oral health programmes based on the evidence base and needs of the population.

A further report published by NICE in October 2014 “Oral Health: approaches for local authorities and their partners to improve the oral health of their communities”, states:



Recommendation 4 - Develop an Oral Health Strategy.

- Address the oral health needs of the local population as a whole (universal approaches).
- Address the oral health needs of groups “high risk” of poor oral health (targeted approach).
- Address any oral health inequalities within the local population and between the local population and the rest of England.
- Identify and work in partnership with people who are in a position to improve oral health in their communities. This includes those working in adult, children and young people’s services, education and health services and community groups.

Recommendation 15 - Consider supervised tooth brushing schemes for nurseries in areas where children are at high risk of poor oral health.

Consider commissioning a supervised tooth brushing scheme for early year’s settings (including children’s centres) in these areas. The scheme should include:

- Arrangements for getting informed consents from parents/carers.
- Supervised daily tooth brushing with fluoride tooth paste on the premises.
- Collaborative working with parents and carers to encourage tooth brushing both at home and at the nursery.
- Provide free toothbrushes and fluoride toothpaste.
- A designated lead person for the scheme at all establishments.
- Access to a dental professional for advice if needed.
- Support and training for staff to deliver the scheme.

Recommendation 16 - Consider fluoride varnish programmes for nurseries in areas where children are at high risk of poor oral health.

- Consider commissioning a community-based fluoride varnish programme for nurseries as part of early year’s services for children aged 3 years and older. The programme should provide at least 2 applications of fluoride varnish a year.
- Ensure early years services work in collaboration with parents and carers to gain parental consent for as many children as possible to take part in the fluoride varnish programme.
- Ensure families of children who do not visit the dentist regularly are encouraged and helped to use dental services.
- Monitor up take and seek parental feedback on the fluoride varnish scheme.
- If resources are available, consider commissioning both a supervised tooth brushing scheme and a fluoride varnish programme.

Recommendation 19 - Consider supervised tooth brushing schemes for primary schools in areas where children are at high risk of poor oral health.

- Consider commissioning a supervised tooth brushing scheme for primary schools in these areas.



Recommendation 20 - Consider fluoride varnish programmes for primary schools in areas where children are at high risk of poor oral health.

- If a supervised tooth brushing scheme is not feasible consider commissioning a community based fluoride varnish programme for primary schools. This should provide at least 2 applications of fluoride varnish a year.
- Consider commissioning both a supervised tooth brushing scheme and a fluoride varnish programme, if resources are available.
- Parents and children should be educated about the risks of tooth decay and the importance of good oral health and prevention. We urge the government to invest in a national oral health programme to drive improvements in children's oral health in England, as these have proved successful in Scotland and Wales.
- Efforts should be made to raise awareness of the impact of sugar on tooth decay and explore ways to reduce sugar consumption.

In January 2015, The Royal College of Surgeons Faculty of Dental Surgery published a report which states:

- Children's access to NHS dental services must be improved so that they can visit a dentist regularly for preventative advice and receive early diagnosis for any problems so that appropriate treatment can be instigated promptly.
- It is vital that NHS England and the profession work together to ensure that preventive care in primary care dentistry is adequately resourced and delivered.

Teeth Team are already implementing a high proportion of these recommendations and are striving towards implementing the remaining recommendations where practically possible.

Our ultimate aim is to work in a collaborative partnership with Public Health England, Hull City Council and the Clinical Commissioning Group to deliver a comprehensive and consistent programme which will reduce the child oral health inequalities that exist within our city.

CONCLUSION

This study has yet again proved beyond any doubt that partnership working is most definitely the only way forward.

By continuing to work closely with schools we have further succeeded in breaking down some of the barriers to accessing routine dental care and in the process improving oral health.

The further reduction of the mean dmft in many of the pilot study schools clearly demonstrates the effectiveness of this programme and the potential cost saving for the future.

The increased requirement for secondary dental care is cause for concern, not only the cost implications, but also the psychological effects on the children in question.

The department of Health published a report by Professor Jimmy Steele (2014) on the NHS dental contract pilots- "Learning after first two years of piloting". This is the second report from the dental contract pilot's evidence and learning reference group.

The report stated: "The data shows that large numbers of "red" adults are returning



for their reviews later than expected recall intervals whilst large numbers of “green” adults are returning earlier than expected. Many “red” children are also returning for reviews later than expected”.

This only provides further evidence that those who have the greatest need are usually the ones who actually access care less.

The applications of fluoride varnish only enhance the programme to make it one which provides prevention, early intervention and equal access.

It is imperative we all continue to work together in order to ensure parents are involved and for relationships and trust to be built between local providers of primary dental care and the families who are supported by the schools.

Teeth Team aims to follow some of Marmot’s principles – giving every child a healthy start. By working closely with parents, providers of education and wrap around care providers we can help the most vulnerable children in our society.

The trustees of Teeth Team Limited are very

proud of the achievements the programme has gained. These include:

- Over 5,500 children are now having regular dental assessments.
- 4,573 applications of fluoride varnish have been administered, with more children to benefit from this simple, non – invasive procedure in the months to come.
- Over 8,700 children are now participating in the programme.
- The Teeth Team programme has the endorsement of the British Dental Health Foundation.
- All of the local Members of Parliament fully support the programme and have pledged to assist in its expansion.
- Teeth Team has won two national awards “Best Child Dental Health Initiative” from DH&T Awards and the “Patron’s Prize for Innovation” from the National Oral Health Promotion Group.

Only by continuing along this path with our evidence based programme will we see the inequalities in oral health amongst the children of Hull and East Yorkshire reduce.

ACKNOWLEDGEMENTS

The Trustees of Teeth Team Limited wish to personally thank all of the partners for their continued support of the programme.

These include:

- Henry Schein Dental Supplies
- Carestream UK
- Genix Health Care Limited.

We would very much wish to also acknowledge the support of our local MP’s, Jane Ellison MP, Minister for Public Health

has formally acknowledged the work Teeth Team undertakes in local communities.

And finally... as always, we would like to say a very big thank you to all of the schools and pupils who continue to take part in the study, also to the parents who have provided consent for their child to be involved.



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