Children's Oral Health Improvement Programme Board: Evaluation Report Year 2

April 2020

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1. Executive summary

Oral health is an important element of health and well-being. Despite being largely preventable, tooth decay remains a significant public health problem in England especially amongst deprived and socially disadvantaged populations. In 2016 the Children's Oral Health Improvement Programme Board (COHIPB) was established with the aim of improving oral health for all children and young people, and reducing oral health inequalities across England. The COHIPB brings together an array of professional partners and stakeholders, with a shared goal of improving child oral health and reducing the oral health gap for disadvantaged children through strategic collaborative system leadership and joint working.

An Evaluation Working Group has been tasked with monitoring and assessing the activities, outputs and outcomes achieved by the Board. This is the Year 2 Evaluation Report, which will highlight the achievements made over the last year and the existing challenges facing the Board.

Key achievements of the COHIPB in 2018-2019:

- Interim analysis of epidemiological data on the oral health of five-year-olds shows overall continued improvements in levels of dental decay across England between 2008-2017.
- COHIPB partner organisations have been engaged in a wide variety of activities linked to the Board's five high-level objectives. Of particular note has been the success of Board partners in raising the strategic profile of oral health in a variety of national policy documents.
- The wider recognition of child oral health provides strategic opportunities for integrated future action.

Remaining challenges facing the Board:

- Despite the very welcome overall improvements in tooth decay levels in England, major regional variations in disease levels remain largely unchanged. For example, 33.9% of five-year-olds in the North West of

England have decay in comparison to only 16.4% in the South East of the country.

- In addition, stark socioeconomic inequalities in decay levels also stubbornly remain with a three fold difference in decay levels between the most deprived (36.2%) versus the least deprived (12.5%) five-year-old children.
- Whilst on-going upstream actions such as sugar reformulation, support for water fluoridation and targeted toothbrushing programmes will likely have an impact on inequalities, are COHIPB partners sufficiently embedding specific action to reduce oral health inequalities in their work plans?
- Although steady overall improvements in decay levels across England are welcomed, more needs to be done to address the stark and persistent socioeconomic and regional inequalities in disease levels.

2. Introduction

In 2016 the Children's Oral Health Improvement Programme Board (COHIPB) was established to provide strategic leadership in oral health improvement across children's and young people's organisations in England. The Board comprises of a diverse range of organisations including NHS England, Health Education England, Public Health England, various Royal Colleges, specialist societies, charities, professional bodies and cross-government departments (see appendix A for full list of partner organisations). COHIPB is accountable to Public Health England's Children, Young People and Families Partnership Board.

The overall aim of COHIPB is to improve the oral health of English children and reduce the oral health gap for disadvantaged children. The shared ambition of the Board is that **every child grows up free from tooth decay as part of every child having the best start in life**. The 5 high-level objectives of the Board are:

- Child oral health is on everyone's agenda
- The workforce has access to evidence-based oral health training
- Oral health data and information is used to the best effect by all key stakeholders
- Stakeholders use the best evidence for oral health improvement
- Child oral health information is communicated effectively

In recognition of the importance of evaluation in the delivery and planning of health improvement interventions, COHIPB established an Evaluation Working Group chaired by Professor Richard Watt (see Appendix B for full membership) to oversee the monitoring and evaluation of the Board's wide ranging activities, and in particular to assess progress in achieving its core objectives. A pragmatic and realist evaluation approach has been adopted to assess and document the strategic achievements and implementation processes of the COHIPB partner organisations. To provide an over-arching theoretical framework to link the Board's activities to the agreed evaluation approach and outcomes, a logic model has been developed and agreed (See appendix C). An independent External Reference Group provides oversight of the evaluation processes (See appendix B).

In 2018 the first COHIPB Evaluation Report was published to provide an initial overview of the achievements of the Board and potential areas where greater attention was needed.[1] Key achievements highlighted in the Year 1 Evaluation Report included:

- The successful formation of the Board with the evident commitment and enthusiasm of partner organisations to work collectively together to promote child oral health
- The strategic profile of oral health had been raised as a result of the Board's collective activities
- Through their initial work, the Board was clearly having a positive influence in shaping both national and local policy

Remaining challenges identified in the initial evaluation report included:

- The need to agree and focus more on the higher level strategic priorities and not become distracted by 'finer' details
- The importance of focusing attention on action to reduce oral health inequalities – ensuring ways of promoting oral health equity were embedded in the Board's agenda
- Ensuring that the Board supported and encouraged local level oral health improvement in addition to driving strategic change.

Following the publication of the Year 1 Evaluation Report, a one-day workshop was organised to review and reflect on the progress being made by the Board partners and to highlight local action being implemented across the country. The very successful workshop agreed a new strategic focus on addressing oral health inequality through:

- sugar reduction
- increasing access to fluoride
- engaging with and training the workforce
- developing and promoting health literacy

[1] University College London. Children's Oral Health Improvement Programme Board: Evaluation Report Year 1. 2018. Available from: https://www.ucl.ac.uk/epidemiology-health-care/sites/epidemiology-health-care/files/COHIPBR.pdf

In this second evaluation report, attention will now focus on highlighting initial changes that have occurred in the clinical oral health outcomes for 5-year old children in England (a key outcome in the agreed logic model) and achievements made by partner organisations over the last year.

3. Overview of children's oral health in England in 2019

Although it is recognised that it takes several years to achieve change in clinical oral health outcomes, the Evaluation Working Group agreed that it would be useful to have an interim examination of changes in key clinical oral health outcomes highlighted in the logic model. Epidemiological data will now be presented on tooth decay in five-year old children in England and data on hospital admissions for tooth extractions.

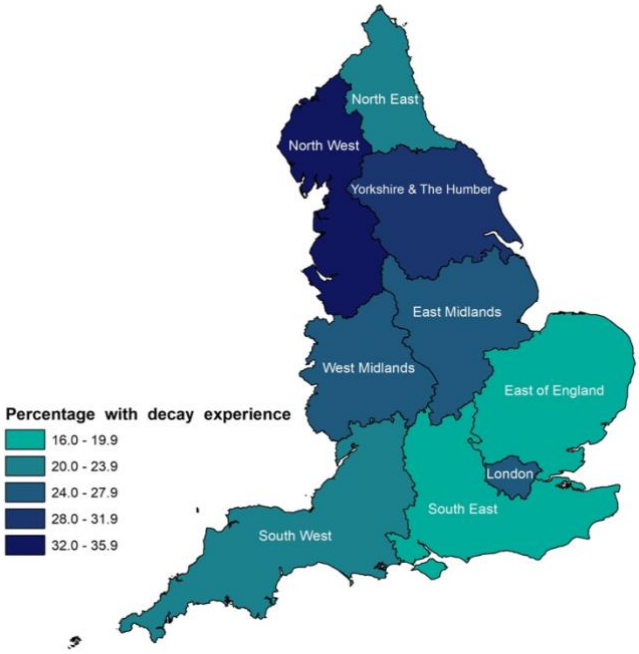
3.1 Epidemiology of children's oral health in England

3.1.1 National level trends

The national dental epidemiology programme allows monitoring of children's oral health in England. Data are available on both the prevalence of tooth decay, that is, the proportion of children who had one or more teeth with decay experience, and the severity of tooth decay, that is the average number of teeth per child with decay experience. Data are available for surveys undertaken in 2008, 2012, 2015 and 2017 of five-year-old children.

In 2017, 23.3% of five-year-old children living in England had experienced tooth decay. This ranged from 16.4% in the South East to 33.9% in the North West of England (Figure 1). The average number of teeth with tooth decay experience was 0.8.

Figure 1: Prevalence of tooth decay in five-year-old children in England in 2017, by region.



Source: PHE, 2019

Nationally there have been improvements in the prevalence of tooth decay experience in five-year-old children from 2008 to 2017. Improvements were also seen between each of the surveys at the national level. Similar improvements have also been seen in the severity of tooth decay, although the improvement between each of the surveys was small (Table 1).

Table 1: Trends in the prevalence and severity of tooth decay in five-year-old schoolchildren, 2008 to 2017.

Year	Prevalence of tooth decay (%)	Severity of tooth decay (number of teeth)
2008	30.9	1.11
2012	27.9	0.94
2015	24.7	0.84
2018	23.3	0.78

Source: PHE, 2019

3.1.2 Regional level trends

The prevalence of tooth decay in five-year-old children in all regions in England reduced significantly between 2008 and 2017. However, not all regions experienced significant reductions between the individual surveys (Table 2).

Table 2: Trends in the prevalence of tooth decay in five-year-old schoolchildren by region, 2008 to 2017.

Region	Prevalence of tooth decay (%)			
	2008	2012	2015	2018
East Midlands	30.8	29.8*	27.5	25.1
East of England	24.8	23.0*	20.2*	18.0*
London	32.7	32.9	27.2*	25.7
North East	39.8	29.7*	28.0	23.9*
North West	38.1	34.8*	33.4	33.9
South East	26.2	21.2*	20.0	16.4*
South West	30.6	26.1*	21.5*	20.2
West Midlands	28.9	26.0*	23.4*	25.7
Yorkshire and The Humber	38.7	33.6*	28.5*	30.4

Source: PHE, 2019

Key: * statistically significant improvement from previous survey

The severity of tooth decay reduced in five-year-old children in all regions between 2008 and 2017 although the reductions were relatively small. Again not all regions in England saw significant reductions between the individual surveys (Table 3).

Table 3: Trends in the severity of tooth decay in five-year-old schoolchildren by region, 2008 to 2017.

Region	Severity of tooth decay (mean number of decayed teeth)			
	2008	2012	2015	2018
East Midlands	1.02	0.92*	0.90	0.84*
East of England	0.83	0.75*	0.66*	0.60*
London	1.31	1.23	1.00*	0.95
North East	1.45	1.02*	0.95	0.75*
North West	1.52	1.29*	1.28	1.26
South East	0.90	0.67*	0.63	0.53*
South West	1.04	0.79*	0.66*	0.62
West Midlands	0.97	0.82*	0.72*	0.82
Yorkshire and The Humber	1.51	1.23*	1.01*	1.13

Source: PHE, 2019

Key: *statistically significant improvement from previous survey

3.1.3 Upper tier local authority level trends

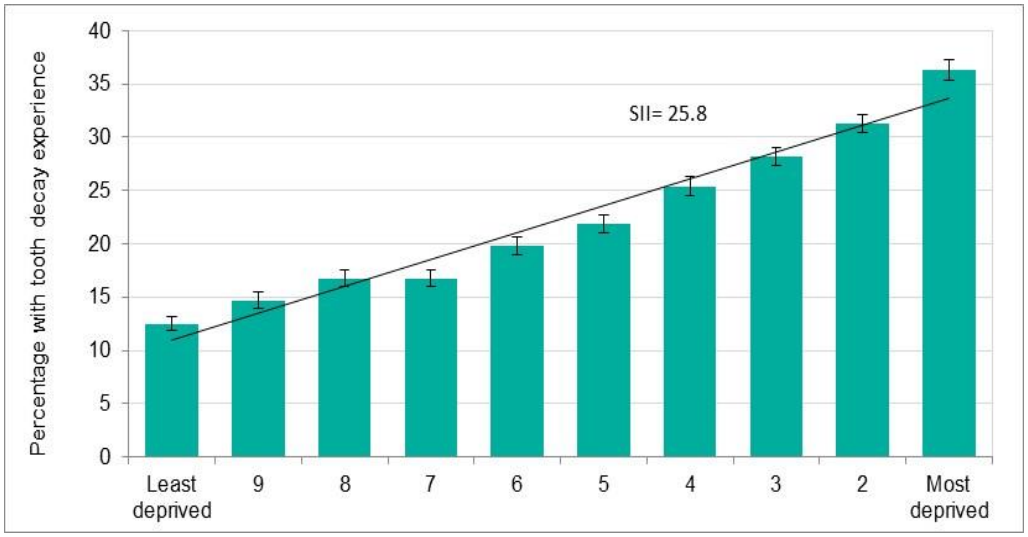
At upper tier lower authority level, there was variation in trends in tooth decay in five-year-old children across the country. From a total of 150 local authorities, only one showed an increase in both the prevalence and severity of tooth decay from 2008 to 2015. Over the same period 64 local authorities saw a reduction in the severity and 63 showed a decrease in the prevalence of tooth decay. Data were not available for 22 local authorities.

3.1.4 Oral health inequalities

There is a close link between deprivation and levels of tooth decay in a population. As levels of deprivation increase, so do prevalence and severity of tooth decay. In 2017 despite continuing improvements in oral health in five-year-old children, stark inequalities remain. This inequality can be summarised by examining tooth decay prevalence across the five-year-old population of England divided into ten groups defined according to their level of deprivation. Five-year-old children living in the most deprived areas in the country were three times more likely (36.3%) to have experienced tooth decay that children living in the least deprived areas (12.5%).

The slope index of inequality (SII), is a measure of the difference in tooth decay experience between the most advantaged and least disadvantaged, while taking into account all other deprivation groups. If there are no inequalities, the SII is zero whereas greater SII values indicate higher levels of inequality. In 2017 the slope index of inequality for the prevalence of tooth decay in five-year-old children was 25.8 percentage points (Figure 2).

Figure 2: Slope index of inequality in prevalence of tooth decay in five-year-old children in England, 2017.



Source: PHE 2019

The trend in inequalities in five-year-old children is due to be described in a forthcoming PHE publication.

3.1.5 Hospital episodes of care for tooth extractions

In 2017/18, there were 59,314 episodes of tooth extraction in hospital for children aged 0 to 19 years in England. This was a decrease of 1,987 from the previous year. Of all episodes, 64.7% were recorded as being due to tooth decay. In children aged 5-9 years extractions due to tooth decay were particularly high (87.8%). The proportion of children aged 0 to 19 years having tooth extraction in hospital has remained at approximately 0.5% of the population since 2014/15. There is a small fluctuation in the number of episodes of care year on year (Table 4).

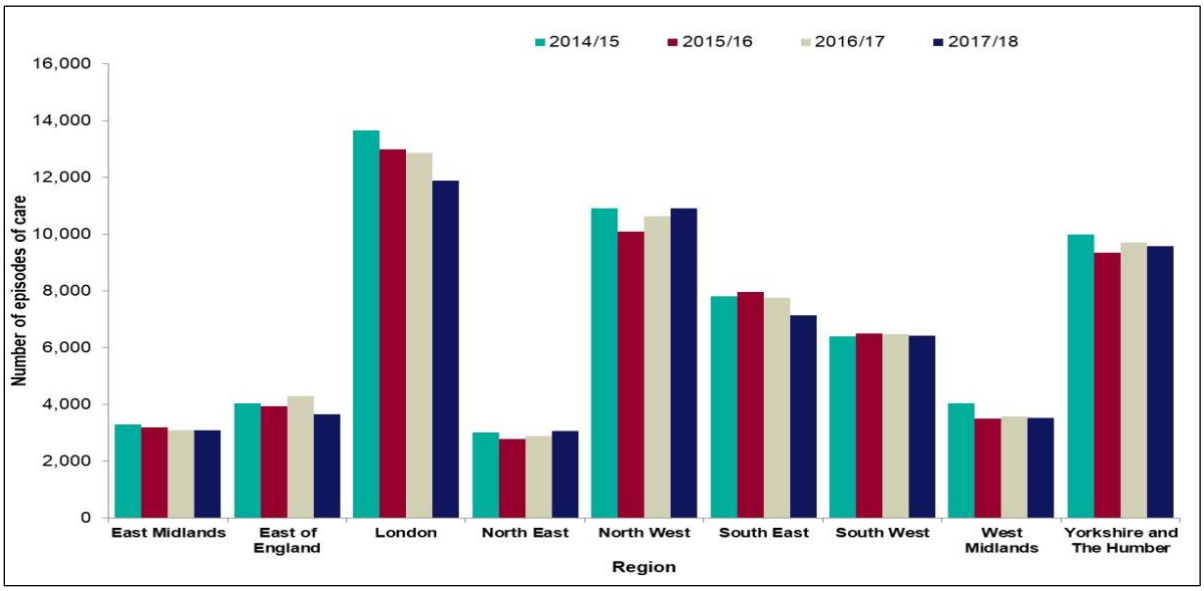
Table 4: Number and proportion of the child population in England undergoing tooth extraction in hospital by age group and year.

Age (years)	All extractions n (%)				Extractions due to tooth decay n (%)			
	2014/15	2015/16	2016/17	2017/18	2014/15	2015/16	2016/17	2017/18
0-4	10,001 (0.3)	9,306 (0.3)	9,001 (0.3)	8,272 (0.2)	8,701 (0.3)	7,926 (0.2)	7,530 (0.2)	7,006 (0.2)
5-9	26,956 (0.8)	25,906 (0.8)	26,514 (0.8)	26,347 (0.8)	23,819 (0.7)	22,523 (0.7)	22,708 (0.7)	23,141 (0.7)
10-19	26,239 (0.4)	25,149 (0.4)	25,786 (0.4)	24,695 (0.4)	9,517 (0.2)	8,829 (0.1)	8,772 (0.1)	8,238 (0.1)
Total	63,196 (0.5)	60,361 (0.5)	61,301 (0.5)	59,314 (0.5)	42,037 (0.3)	39,278 (0.3)	39,010 (0.3)	38,385 (0.3)

Source: PHE, 2019

The trend in number of hospital extractions varies by region. The East Midlands, London, East of England and South East regions appear to have a trend of reducing hospital extractions (Figure 3).

Figure 3: Numbers of children aged 0 to 19 years with hospital episodes for extraction of teeth by region and year.



Source: PHE 2019

The cost of tooth extractions in hospital has remained steady at approximately £51 to £52 million pounds a year since 2014/15. The cost of tooth extractions due to tooth decay has fallen slightly from £35 million in 2014/15 to £33 million in 2017/18 (Table 5).

Table 5: Cost of hospital episodes of care for tooth extractions by age group and year.

Age (years)	All extractions £millions				Extractions due to tooth decay £millions			
	2014/15	2015/16	2016/17	2017/18	2014/15	2015/16	2016/17	2017/18
0-4	8.36	7.88	7.58	7.16	7.27	6.71	6.3	6.06
5-9	22.54	21.94	22.35	22.79	19.91	19.08	19.12	20.02
10-19	21.94	21.22	21.71	21.36	7.96	7.48	7.39	7.13
Total	52.83	51.13	51.62	51.31	35.14	33.27	32.85	33.20

Source: PHE, 2019; NHS England, 2019

4. Overview of activities and achievements by COHIPB partners in 2018-2019

The following section has been structured around the five high-level objectives that were outlined in the COHIPB Logic Model and Delivery Plan with short- and medium-term outputs for the 2018-2019 period. These are:

1. Strategic development
2. Training and capacity building
3. Oral health data and information systems
4. Supporting commissioning & local delivery
5. Dissemination and communication

Each high-level objective is presented in conjunction with examples of activities associated with that objective. The examples have been selected to highlight the breadth of various activities as well as to showcase examples of good practice in terms of collaboration between different COHIPB members through system leadership.

4.1 Strategic development

4.1.1 Child oral health included in key national strategies

Board members were actively committed to delivering actions focused on including children's oral health in relevant strategic documents. This year has been notable not only because of the actions of individual organisations but also through the various collaborative projects between Board Members.

Four key strategic system-wide documents have been published this year with implications for child oral health (Table 6).

- The NHS Long Term Plan
- The Prevention Green Paper
- Statutory guidance for Personal, Social, Health and Economic (PSHE) curriculum for primary and secondary schools (Department for Education).

- Early years practitioner (level 2): qualifications criteria
    - The criteria for the minimum qualification content of level 2 early years practitioners qualifications includes oral health.

COHIPB members have been instrumental in including oral health in the development of these documents.

Table 6: National strategic documents with COHIPB input.

Key strategic documents supported by COHIP Board Members	
NHS Long Term Plan	
The NHS Long Term Plan Sections 2.31 and 3.32 mention the importance of dental checks for children and young people with a learning disability, autism or both in special residential schools. Section 3.40, from September 2019, all boys aged 12 and 13 will be offered vaccination against HPV-related diseases, such as oral, throat and anal cancer. Section 3.44 states the importance of reducing the number of A&E appointments for children and young people. Focus on prevention may reduce these numbers with programmes such as Starting Well.	
Cabinet Office, Department of Health and Social Care	
Advancing our health: prevention in the 2020s – consultation document The Green Paper highlights the importance of prevention through joined up approaches throughout the wider system: the NHS, employers, schools, local authorities and individuals. Child oral health is included in the paper. The UK Government commits itself to consultations on rolling out school toothbrushing schemes in pre-school settings and primary schools in England and exploring ways of removing the funding barriers for new water fluoridation schemes.	

Key strategic documents supported by COHIP Board Members	
Department for Education	
An illustration of the high-level objective that *child oral health is on everyone's agend*a is the cross-organisational work with the Department for Education. Regular quarterly meetings have been established which has enabled several *Early Years* work streams to be pursued. COHIPB partners have had input into the consultation documents including the Statutory Guidance on Relationships Education, Relationships and Sex Education (RSE) consultation for mandatory guidance. Oral health is now included in the published document. Early years practitioner (level 2): qualifications criteria This sets out the minimum knowledge, understanding and skills that a level 2 early years practitioner needs to support young children from birth to 5 years old and meet the standards that early years providers must have to ensure that children learn and develop well and are kept healthy and safe. Other work streams are currently being explored including engaging with early years provider organisations. Collaborating in this way across organisational boundaries has helped to better understand early years users and gain access to people and organisations that are our key stakeholders. .	Department for Education

4.1.2 Sugar Reduction

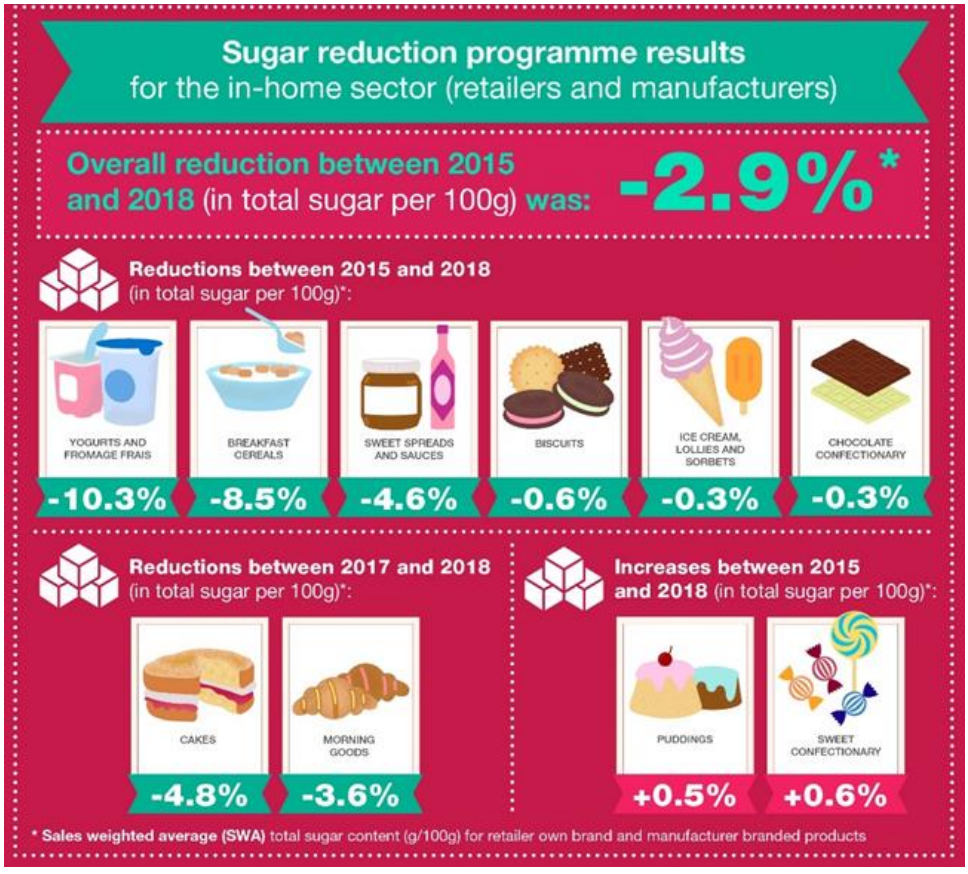
Public Health England (PHE) published its second progress report [2] for the sugar reduction programme in September 2019. The programme challenges all sectors of the food industry to reduce, by 20% by 2020, sugar in the foods that contribute most to children's intakes. The second-year report details progress made by retailers and manufacturers, the out of home sector and through the soft drinks industry levy

[2] Sugar reduction: report on progress between 2015 and 2018
https://www.gov.uk/government/publications/sugar-reduction-progress-between-2015-and-2018

(SDIL), demonstrating mixed progress across the different sectors of the food industry, with different results seen for categories, businesses and brands.

For retailers and manufacturers, overall a 2.9% reduction in sales weighted average total sugar per 100g has been achieved between 2015 (baseline) and 2018 (year two) – illustrated in figure 4. Some categories have achieved greater progress, for example, yogurts and breakfast cereals achieved 10.3% and 8.5% reductions respectively, whilst others have achieved less or no progress. For out of home businesses, the simple average total sugar per 100g has reduced by 4.9% between the 2017 baseline and 2018 (data for out of home businesses is not comparable to retailers and manufacturers). There have been continued reductions in sugar levels in drinks that are subject to the SDIL. The data shows a 28.8% reduction in sugar for retailer own brand and manufacturer branded drinks between 2015 and 2018 (measured in sales weighted average grams per 100ml). Results for drinks consumed out of the home are similar.

Figure 4: Sugar reduction programme results



4.1.3 System leadership

In June 2019, ***The Department for Health and Social Care (DHSC)*** organised a dental stakeholder roundtable event. This was attended by the Parliamentary Under-Secretary of State for Public Health and Primary Care and several COHIPB Members. The roundtable provided an opportunity to discuss priorities around children's oral health and feed these into the Department for Health and Social Care's ongoing work around the Prevention Green Paper subsequently published as Advancing our health: prevention in the 2020s

The Institute of Health Visiting (iHV) organised a Leadership Conference in December 2018 and invited the chair of COHIPB to deliver a presentation on system leadership using the COHIPB as an example of good practice. This event was attended by 160 delegates from various areas covering the health and social care sector (Figure 5).

HENRY and First Steps Nutrition held a very successful conference in November 2018 with over 200 health and early years practitioners attending the event. Presentations included breastfeeding and oral health policy and Jenny Godson was one of the keynote speakers.

Further examples of system leadership for child oral health include events such as the Oral Health Insights Conference organised by the ***Royal College of Paediatric and Child Health (RCPCH)*** (Figure 6) and the ***British Dental Association (BDA)*** Sugar Summit. Both of these events were attended by various COHIPB members.

Figures 5 - 6: Examples of systems leadership

The ***iHV***, through further collaboration with the ***Office of the Chief Dental Officer (OCDO)***, facilitated the dissemination of Starting Well Core documents and other national policy documents for child oral health via a designated area of the iHV website and via social media streams. This allowed good reach to the health visiting workforce, with evidence based oral health messages reaching 5,000 members and visitors. (1,000 hits/day) and through social media (approx.7,500/day)[3]

The British Dental Association organised an Interdisciplinary Sugar Summit to synthesise BDA policy and develop an action plan on sugar and oral health, ensuring consistency of messages. The Sugar Summit was held on 13th of November 2018 in London. The consensus report including an action plan is expected to be published in 2019.

At the meeting more than 50 participants from over 30 different organisations including the International Dental Federation, British Dietetic Association, British Medical Association, British Society of Paediatric Dentistry, Cancer Research UK, Faculty of Public Health and Local Government Association discussed the importance of sugar reduction strategies.

[3] Source photo : The British Dental Association official Twitter page: @TheBDA
https://twitter.com/i/moments/1062285436775743493

4.1.4 Advocacy

COHIPB members actively advocated for child oral health through responding to recent consultations on sugar and less formally through lobbying.

The British Society for Paediatric Dentistry (BSPD) in collaboration with the ***Royal College of Paediatric and Child Health*** has launched a campaign for oral health improvement including the BSPD Outstanding Innovation Award (OIA) and liaising with RCPCH to reach their members with key oral health messages. RCPCH has published a blog to mark World Oral Health Day in support of water fluoridation as a simple and safe way to protect children from tooth decay[4]. Furthermore, the RCPCH has welcomed the government's intention to develop a Green Paper on Prevention by publishing its Vision for Prevention for child health. The RCPCH vision looks in particular at smoking during pregnancy, maternal health, oral health, breastfeeding, infant feeding and marketing, immunisation and health visiting[5]. The RCPCH has responded to PHE figures on children's tooth extractions[6] whilst the LGA has responded to the RCPCH report on child health[7].

The Faculty of Dental Surgery of the Royal College of Surgeons (FDS RCS) has submitted responses to two public consultations from the Department of Health and Social Care. The first of these was on restricting price and location promotions for products high in fat, sugar and salt (HFSS)[8]. The FDS recommended that volume-based price promotions should only be offered on healthy products, and that retailers should not be allowed to sell HFSS products at store entrances, the end of aisles or at checkouts. The second response was to PHE's consultation on introducing further restrictions for HFSS advertising on TV and online. The FDS supported the introduction of a ban on TV advertising for HFSS products before the 9pm watershed, and also called for a complete ban on online HFSS advertising as the most

[4] Royal College of Paediatrics and Child Health. The case for fluoridation to protect children's oral health 2019 [Available from: https://www.rcpch.ac.uk/news-events/news/case-fluoridation-protect-childrens-oral-health.
[5] Royal College of Paediatrics and Child Health. RCPCH Prevention vision for child health 2019 [Available from: https://www.rcpch.ac.uk/sites/default/files/generated-pdf/document/RCPCH-Prevention-vision-for-child-health.pdf.
[6] Royal College of Paediatrics and Child Health. RCPCH responds to PHE figures on children's tooth extractions 2019 [Available from: https://www.rcpch.ac.uk/news-events/news/rcpch-responds-phe-figures-childrens-tooth-extractions.
[7] Local Government Association. LGA responds to RCPCH report on child health 2019 [Available from: https://www.local.gov.uk/about/news/lga-responds-rcpch-report-child-health.
[8] Consultation: https://www.gov.uk/government/consultations/ending-the-sale-of-energy-drinks-to-children

straightforward way of reducing children's exposure on the internet. The FDS has very recently published a new position statement on oral health which again highlights a range of actions (both clinical and public health) to promote child oral health and to reduce oral health inequalities.[9]

HENRY also submitted responses to three public consultations from the Department of Health and Social Care. These called for a total ban on the sale of energy drinks to children aged under 16 years, restrictions to price and location based promotions of high fat, salt and sugar (HFSS) foods, and stricter restrictions to television and online advertising of HFSS foods before the 9pm watershed.

4.2 Training and capacity building

COHIPB partners ***The Faculty of Dental Surgery, Royal College of Surgeons of England (FDS RCS), Health Education England (HEE), UCL Eastman Dental Institute and*** the national dental public health team from ***Public Health England (PHE)*** have been working with the ***Centre for Post Graduate Pharmacy Education (CPPE)*** on a set of activities intended to raise awareness and increase capacity of pharmacy teams with regards to child oral health. Some of these activities are highlighted below.

- The production of a free, open access e-learning platform on children's oral health aimed at pharmacists; The Children's oral health (2018/2019) Programme uses Health Matters child dental health infographics and links to oral health resources. These activities aim to improve the oral health knowledge and attitudes of pharmacy workforce by providing evidence-based oral health advice. Figures for 2018/2019 showed that 76,829 pharmacy staff accessed the e-learning platform and successfully passed the oral health assessment. A diverse range of staff completed the assessment including pharmacists, pharmacy technicians, pre-registration trainees and non-registered pharmacy staff. Across the country over 21,000 pharmacists passed the oral health assessment.

[9] Faculty of Dental Surgery, Royal College of Surgeons. Position Statement : Children's Oral Health. 2019. Available from: https://www.rcseng.ac.uk/-/media/files/rcs/news-and-events/media-centre/2019-press-release-documents/fds-position-statement-on-childrens-oral-health-2019.pdf

- PHE reviewed oral health leaflets and posters developed by CPPE and the British Pharmaceutical Students' Association for students. The resources are to raise awareness of child oral health and signpost to resources which can be used by students to run public health campaigns;

- The production of an article on key messages for oral health for the Healthy Living Pharmacy (HLP) publication.

- PHE has reviewed CPPE Children's oral health assessment. This forms part of the quality criteria for the new Quality Payments Scheme for community pharmacists (which is linked to community pharmacy remuneration) "80% of staff working at the pharmacy that provide healthcare advice to the public have successfully completed the CPPE children's oral health training assessment."

Another online learning programme, The Children's Oral Health e-learning tool designed to support good oral health in children, was developed as a result of the cooperation between the ***Royal College of Surgeons*** and ***UCLH Eastman Dental Hospital*** and with support from ***Health Education England*** e-Learning for Healthcare (HEE e-LfH), the ***British Dental Association***, ***The British Society of Paediatric Dentistry***, and ***Public Health England.*** Between January and July 2019 there were 782 unique users registered on the platform.

The orthodontic team at Royal Stoke University Hospital via their #keepstokesmiling campaign has already successfully adopted this. The e-learning package has been disseminated to primary schools as well and it has been adopted by 99 primary schools in Stoke on Trent (Figure 7).

Figure 7: Keepstokesmilling campaign, year 5 at Knutton St Mary's Primary School, Staffordshire, England[10]

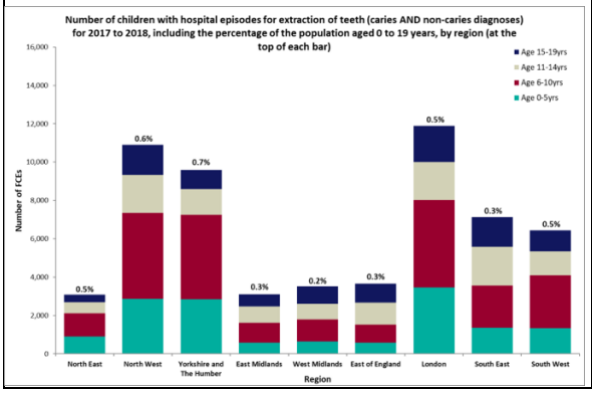
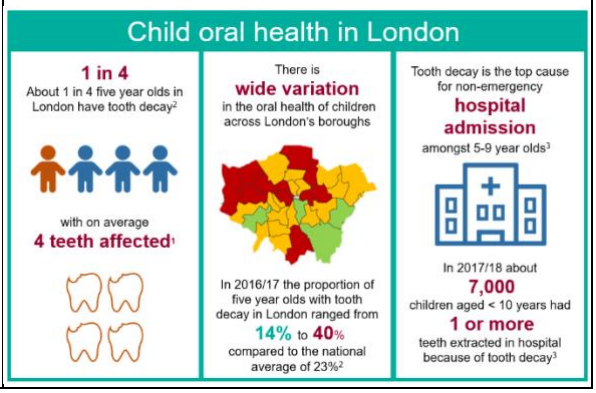
[10] Source https://www.instagram.com/keepstokesmiling/

4.3 Oral health data and information systems

NHS England and The Office of the Chief Dental Officer (OCDO) have been working with partners to improve data quality and the utility of data on the number of children having tooth extractions under general anaesthesia (GA) (see table 7). This work has enabled local commissioners to review and redesign these services in London and resulted in a reduction in hospital admissions for dental extractions.

National oral health data has been linked to the national child measurement programme (NCMP) data. The consumption of foods and drinks containing free sugars affect both body mass index (BMI) and dental caries and are therefore common risks for NCDs. Therefore, it might reasonably be expected that an association would exist between BMI and dental caries. Previous efforts to establish the strength, direction and nature of such an association have usually analysed data on groups of children and have produced conflicting results. This has meant that any association was found to be weak and probably moderated by a range of other factors. PHE dental public health intelligence team worked with NHS digital to link data from 2 national epidemiological programmes - the national dental epidemiology programme providing data on dental caries in 5 year olds and the national child measurement programme providing height and weight data at year 1. Data for over 67,000 children were linked at an individual child level. This is the first time such population data sets have been linked at a child level and have provided a unique insight into the relationship between dental caries and obesity. One of the key findings of this work was to show a clear association between children's BMI and caries prevalence and severity, even when other potential influences such as deprivation were taken into account.

Table 7: Example of oral health data and information systems

Oral health data and information systems	
Public Health England (PHE) and NHSE	PHE London and NHSE London
NHS England, the Office of the CDO and PHE have been working with partners to improve the quality and utility of the dental general anaesthetic (GA) admission data indicator. This indicator is part of the NHS Outcomes Framework 2016/17 and the Child Health Profile. Further work has led to mutually recognised indicators between NHSE Analytics team and PHE regarding dental GA data. This was approved by the Indicator Governance Board in January 2019. This work has then enabled and informed the review and commissioning of services such as those in London.	In 2014 NHS England conducted a review of Community Dental Services (CDS) in London. The review highlighted that there was no consistent clinical pathway for child extractions under general anaesthesia across London, all services having different sets of criteria for accepting children for treatment. This pathway was redesigned with the Community Dental Service as the gatekeeper for all child hospital referrals. With help from the national PHE team, the trends in hospital admission which allowed analysis at borough level for all 32 London boroughs and for the Greater London Authority, has enabled monitoring of the pathway and demonstrated a reduction in hospital admissions since its introduction[11].
	

[11] - National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2017 A report on the inequalities found in prevalence and severity of dental decay. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/768368/NDEP_for_England_OH_Survey_5yr_2017_Report.pdf

- Public Health Profiles, Public Health England: Proportion of five year old children free from dental decay 2016-2017. Available at https://fingertips.phe.org.uk/search/tooth%20decay#page/3/gid/1/pat/6/par/E12000007/ati/201/are/E09000002/iid/92441/age/34/sex/4

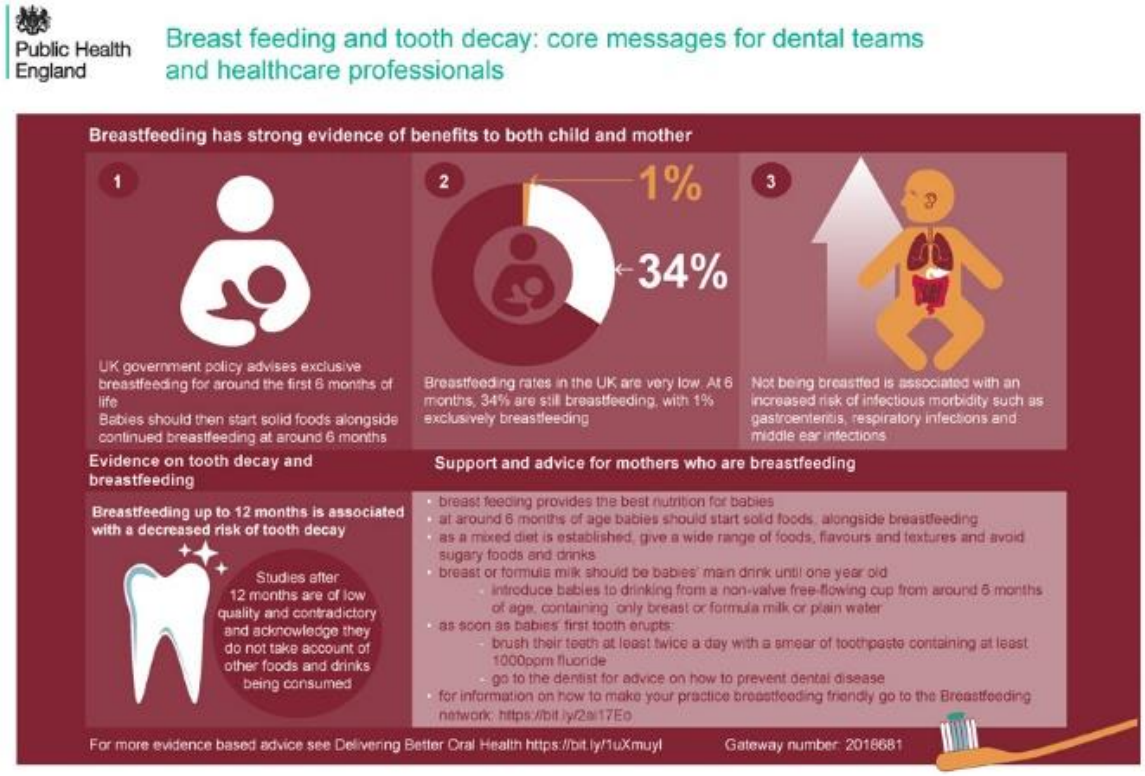
NHS Digital: Hospital Admitted Patient Care Activity, 2017-18. Available at: https://digital.nhs.uk/data-and-information/publications/statistical/hospital-admitted-patient-care-activity/2017-18

Picture credits: Child by Musmellow, tooth decay by Akshar Pathak, Hospital by Andrew Caliber, all from the noun project available at: https://thenounproject.com/ . **Produced by:** Sally Weston-Price and Ryan Grocock (June 2017) (updated June 2019)

4.4 Supporting commissioning and local delivery using the best evidence

The Scientific Advisory Committee on Nutrition (SACN) has published a review of the evidence relating to infant feeding in the first year of life[12]. It included a chapter on oral health from which PHE developed an infographic on breastfeeding and oral health for dental teams and the wider health and social care workforce (Figure 8).

Figure 8: PHE Guidance on breastfeeding and dental health [13]



HENRY (Health, Exercise, Nutrition for the Really Young) has been working with the University of Leeds School of Dentistry to develop a video for the parents of young children to encourage good oral health behaviours (including evidence-based recommendations around healthy eating and drinking, tooth brushing and regular

[12] Source: https://www.gov.uk/government/publications/feeding-in-the-first-year-of-life-sacn-report
[13] Source Public Health England, https://www.gov.uk/government/publications/breastfeeding-and-dental-health/breastfeeding-and-dental-health

dentist visits). The video was developed in November 2018 and a social media dissemination programme was launched in 2019 (Table 8).

Table 8: HENRY oral health video and 'Healthy Start' handbook.

Growing up with healthy teeth is a 2-part video that has been developed by the Leeds School of Dentistry to support parents with easy-to-understand information to protect children's teeth and avoid decay. Part 1 covers: • why it's important to develop good oral health routines right from the start with young children • how diet and particularly sugar consumption can affect children's oral health with helpful tips to reduce sugar • information about breast and bottle feeding  Part 2 focuses on tooth brushing and the importance of visiting a dentist regularly The video has have 1390 views since its launch in November 2018. This video is free to view to anyone with internet access.
HENRY 'Healthy Start' best practice handbook for health and early years practitioners working with parents - updated with new *Growing up with healthy teeth chapter* *https://www.HENRY.org.uk/*

The Office of the Chief Dental Officer (NHS England) has established and led a steering group to develop and implement Starting Well and Starting Well Core. They have also commissioned the evaluation of Starting Well Core (universal) and Starting Well 13 (target one on 13 areas of high need).

Starting Well Core (SWC) is offered to all local NHS England dental commissioning teams and is focused on increasing dental access and delivery of evidence based preventive care for children aged 0-2 years. The implementation approach and timelines are determined by local commissioning teams, therefore, different areas in England are at different stages of planning and implementation. The Chief Dental Officer (CDO) had clarified in a letter to GDPs[14] that evidence based messages should

[14] Source: https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2015/09/letter-chief-dental-officer-visitsfor-children-under-3.pdf

be delivered in line with recommendations from Delivering Better Oral Health (DBOH) third edition.

Approximately 2000 practices are participating across London, West Midlands, Shropshire & Staffordshire, Greater Manchester (as part of Baby Teeth Do Matter) and Cheshire & Merseyside. The campaign was facilitated by support and engagement of a wide range of stakeholders, in particular NHS England local dental commissioners, HEE, PHE and LGA. Further help was provided by developing and maintaining links between early-years' workforce (e.g. Health Visitors, children's centres) and participating practices.

Starting Well works with close collaboration and support from Dental Check by One[15] (Dcby1) ensuring that very young children are signposted to preventive dental services.

The Dental Check by One campaign was established by the ***British Society of Paediatric Dentistry (BSPD)*** in partnership with the ***Office of the Chief Dental Officer for England*** to ensure all children see a dentist as their teeth come through, or by their first birthday, at the latest. The campaign benefits from the support of over 20 partner organizations including several COHIPB members

- Local Government Association
- Faculty of Dental Surgery at The Royal College of Surgeons of England
- The British Dental Association
- Royal College of Paediatrics and Child Health
- Institute of Health Visiting
- Centre for Pharmacy Postgraduate Education

[15] Source: https://dentalcheckbyone.co.uk/

4.5 Dissemination and communication

All COHIPB partners were actively involved in dissemination and communication of messages about child oral health. The PHE communications team are drafting a consistent messaging document to support partners to do this. The type and method of communication has varied, based on the aims of the message and the target audience: from policy documents and briefing papers to social media (Twitter, Instagram).

The Local Government Association (LGA) briefed Lord Porter (LGA Chairman) who took part in the House of Lords Debate on Children's Oral Health, on Thurs 18 January 2019. Oral health has also featured in LGA submissions to the Health and Social Care Select Committee and Ministerial Review on the First 1001 Days. Children's oral health is a focus for elected members and officers and included in health and wellbeing board strategies within the children's health agenda. The LGA reports that councillors need access to high-quality and up to date information and best practice in order to raise the issue with central government and evidence the impact of reduction in public health grants and cost to the NHS.

The Local Government Association (LGA) has produced several other briefings and case studies for elected members covering 0-19 commissioning. Children's Oral health has been referenced in the following LGA publications, amongst others:

Improving the public's health: Local Government delivers (p.23)

Fit for and during pregnancy: a key role for local government (p.8)

A Better Start: supporting child development in the early years (p.6, p.19)

Table 9: Top tips for teeth campaign

Dissemination and communication	
Public Health England (PHE)	
PHE has produced the Top Tips for Teeth dental toolkit to support dental professionals in communicating good dental practise to parents in bite size chunks. The toolkit was initially aimed for dental practices but in response to demand it was then made available to children's centres, NHSE, and local authority partners https://campaignresources.phe.gov.uk/resources/campaigns/69-top-tips-for-teeth/resources	

The toolkit includes digital resources that can be downloaded as well as posters and other resources (table 9). Since the launch the toolkit presented the following outcomes:

- 486,150 wallet card leaflets containing key dental messages distributed
- 16,216 posters (3 types each with one of the key dental messages) distributed
- 2,992 toolkits to NHS dental practices (brief sheet, posters, wallet cards, badge and dispenser included)
- 859 toolkits to local authority and NHS partners (brief sheet, posters, wallet cards and dispenser included)

The top tips resources have also been adapted for use in local areas such as Greater Manchester Health and Social Care Partnership.

4.5.1 Hansard

The Hansard[16] (also known as the Official Report) is the report of the proceedings of the British Parliament. A search using the terms "Child Oral Health Improvement Programme Board" and "Children's Oral Health Improvement Programme Board" has produced a number of results as shown below:

Written Answers — Department of Health and Social Care: Dental Health

Date: 27 Jun 2019

Seema Kennedy: "…Improving the oral health of children is a priority for Public Health England (PHE). PHE has established a Child Oral Health Improvement Programme Board, which brings together key stakeholder organisations. The board has a shared ambition that every child grows up free of tooth decay as part of getting the best start in life….".

Written Answers — Department of Health and Social Care: Dental Services: Children

Date: 30 Jan 2019

Baroness Manzoor: "The Government is committed to improving oral health and particularly of deprived children. This goal was set out in the 2017 manifesto and reflected in the recently published NHS Long Term Plan. Over 70 practices are currently trialling a new way of delivering primary care dentistry which focusses on prevention and helping patients to reduce their risk of future disease. Alongside this the..."

Written Answers — Department of Health and Social Care: Dental Health: Children

Date: 30 Jan 2019

Baroness Manzoor: "The Government is committed to improving oral health, particularly of deprived children. NHS England (Yorkshire and the Humber) have finalised plans to improve access to National Health Service dental services across the region. Over £4 million is being invested in the areas with the greatest need to

[16] Source: https://hansard.parliament.uk/

increase the number of available dental appointments. NHS England ‘Starting Well’...”

Dentistry: Children - *Question*

Date: 15 Jan 2019

Baroness Manzoor: “My Lords, improving oral health outcomes, particularly for deprived children, is a Public Health England priority. PHE has established the Child Oral Health Improvement Programme Board to improve the oral health of children, with a substantial programme of work involving a wide range of partners. In addition, as the noble Lord will know, government measures to reduce sugar consumption, along...”

Written Answers — Department of Health and Social Care: Dental Health: Children

Date: 28 Mar 2018

Steve Brine: “In England local authorities are responsible for assessing oral health needs and improving the oral health of their local populations rather than the centralised approach in Scotland. Many local authorities have programmes in place that contain elements similar to those within the Childsmile programme, for example tooth brushing programmes and community fluoride varnish schemes. Improving...”

Written Answers — Department of Health and Social Care: Dental Health: Children

Date: 14 Mar 2018

Steve Brine: “Improving the oral health of children is a priority for this Government. Alongside local authorities’ duties to improve health, including oral health, Public Health England is leading a wide ranging multi agency programme focussing on improving children’s oral health. They have established a Child Health Improvement Programme Board which supports evidenced based actions that will...”

Written Answers — Department for Education: Pre-school Education: Dental Health

Date: 16 Nov 2017

Robert Goodwill: “We recognise the importance of healthy teeth - poor oral health can affect a child's ability to sleep, eat, speak, play and socialise with other children. Early Years Educator qualifications must cover the promotion of the health, safety

and welfare of children. All early years' providers have a responsibility to promote the health of children in their setting, set out in the Early Years..."

Written Answers — Department of Health: Dental Health: Children

Date: 29 Mar 2017

Lord O'Shaughnessy: "Improving the oral health of young children is a Public Health England (PHE) priority. PHE's Child Oral Health Improvement Programme Board provides national system leadership for the delivery of the shared ambition that every child grows up free of tooth decay as part of getting the best start in life. The two key actions to prevent tooth decay are reducing sugar consumption and getting...".

Children's Health: Access to Milk

Date: 28 Mar 2017

Edward Timpson: "As I have said, I will look carefully at what the hon. Lady has said, but there are a number of routes that I have described whereby children over the age of five in a nursery setting are able to access free milk, whether that is through free school meals or universal infant free school meals. There will be a continuation of the policy in the deliberations by different Government Departments...".

Written Answers — Department of Health: Dental Services: Children

Date: 14 Dec 2016

David Mowat: "NHS England has a duty to commission primary dental services to meet need throughout England. NHS England is introducing a programme of dental practice-based initiatives that will assist parents/guardians to improve the oral health of under five year olds. The programme will focus on all children, particularly those who are not currently visiting the dentist, for evidence based preventive...".

Written Answers — Department of Health: Dental Health: Young People

Date: 17 Oct 2016

David Mowat: "We are committed to improving the oral health of school children. As part of every child having the Best Start in Life, Public Health England (PHE) has established a Child Oral Health Improvement Programme Board with a substantial programme of work, working with others to improve children's oral health. As part of this programme of work, PHE has produced a toolkit to support local...".

5. Reflections on progress achieved and next steps

Over the past year the COHIPB has achieved a great deal. The interim analysis of epidemiological data on the oral health of 5 year-olds shows overall continued improvements across England between 2008-2017. The COHIPB partner organisations have been active in a wide variety of activities linked to the Boards five high-level objectives. Of particular note has been the success of Board partners in raising the strategic profile of oral health in variety of national policy documents including the Prevention Green Paper. The wider recognition of oral health as being an important public health concern is greatly welcomed as this provides opportunities for strategic joint action to tackle oral diseases in children, linked to other health priorities such as getting the best start in life and obesity prevention. It is also apparent that Board partner organisations are increasingly collaborating together to advocate for policy change. Figure 9 visually maps out the inter-connections between COHIPB partner organisations and clearly demonstrates the increasingly collaborative working approach that is being adopted.

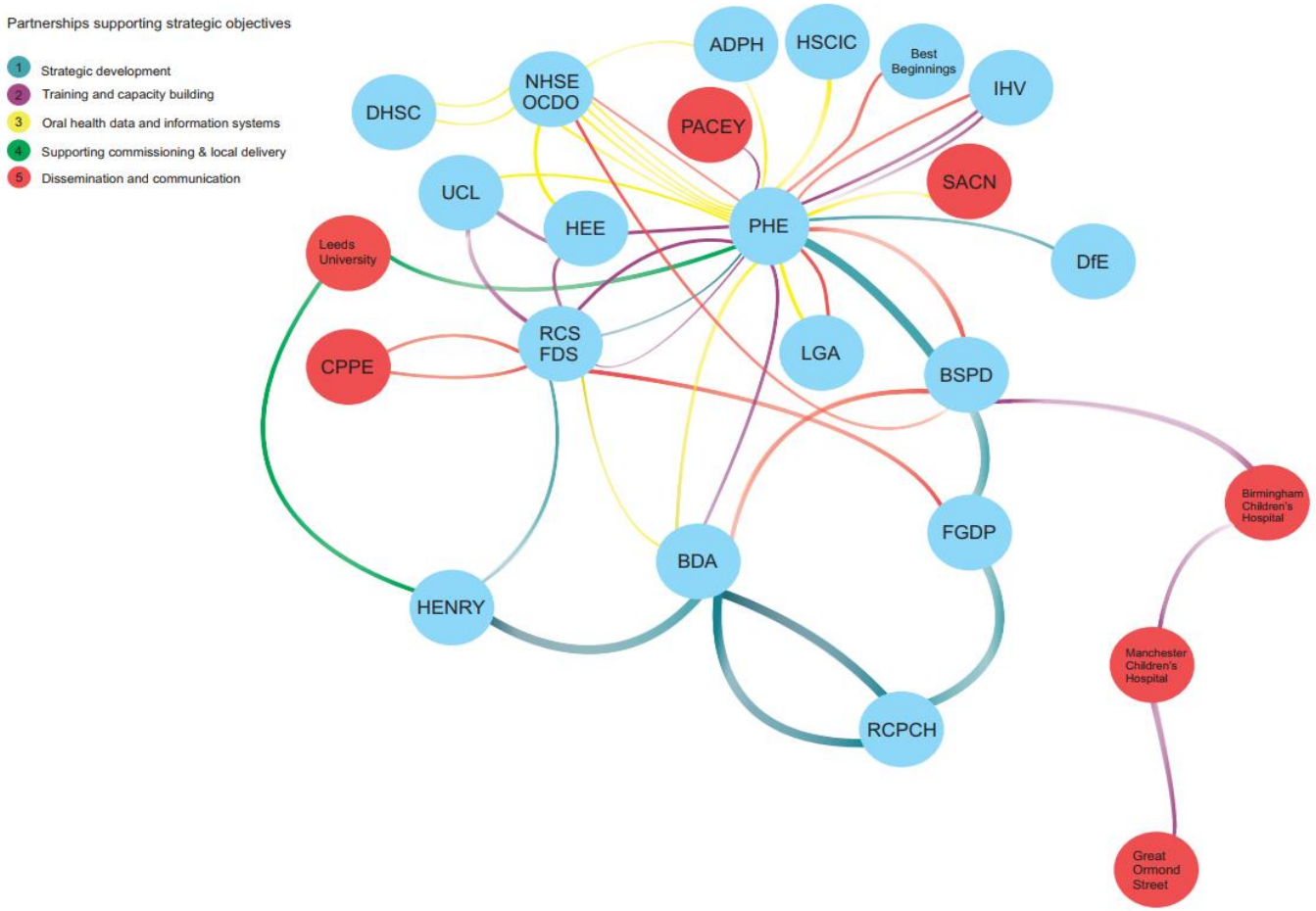
It is important to also reflect on issues where less progress has been achieved. Although the overall level of tooth decay in England is decreasing, major regional variations in disease levels remain largely unchanged – it is a concern that 33.9% of five-year olds in the North West of England have decay in comparison to only 16.4% in the South East of the country. In addition, stark socioeconomic inequalities in decay levels also stubbornly remain with a three fold difference in decay levels between the most deprived (36.2%) versus the least deprived (12.5%) five-year old children.

Various on-going upstream actions such as sugar reformulation, support for water fluoridation and targeted toothbrushing programmes will likely have an impact on inequalities, but are COHIPB partners embedding action to specifically reduce oral health inequalities sufficiently in their work plans? A recent publication has analysed area-based English data (clinical and service use) and shown widening inequality in child dental decay, despite equal access to dental care.[17] Public Health England will be publishing a more detailed review and analysis of oral health inequalities which

[17] Ravaghi V, Hargreaves DS, Morris AJ. Persistent Socioeconomic Inequality in Child Dental Caries in England despite Equal Attendance. JDR Clinical & Translational Research. 2019 Sep 5:2380084419872136.

will include an assessment of trends in inequalities at an individual level over time. Tackling these unjust, unfair and unacceptable inequalities in child oral health must remain a top priority for the Board. This coming year Board members will be asked to report on how their activities are addressing inequalities.

Figure 9: Collaborative work of COHIPB Partners



In this figure, each blue circle represents a Board Member and each line represents an action conducted in partnership with another Board Member. Actions directed by individuals are not shown. Red circles represent partner organisations but not Board Members. Each line has a different colour corresponding to the five high level objectives.

6. Conclusion

Tooth decay in children and young people, despite being largely preventable remains a significant public health problem in England. Over the past year the COHIPB has achieved a great deal through their advocacy and strategic joint working. Although steady overall improvements in decay levels across England are welcomed, more needs to be done to address the stark and persistent socioeconomic and regional inequalities in disease levels. The Evaluation Working Group will continue to monitor the Board's diverse activities, outputs and impact on disease levels and inequalities.

7. Acknowledgments

Many thanks to the Evaluation Working Group but particularly Dr Stefan Serban and Dr Rebecca Craven for collating activity information from Board partners and Kate Jones for her analysis of the epidemiological data. Thank you to Tom Archer, Department of Dental Illustration, Leeds Teaching Hospital NHS Trust for his help in creating figure 9. Thanks also to the External Reference Group and partner organisations for their helpful comments on earlier drafts of this report.

8. Table of Appendices

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Appendix A

	Acronym	Board Member	Logo
1.	BB	Best Beginnings	
2.	BDA	British Dental Association	
3.	BSPD	British Society of Paediatric Dentistry	
4.	DfE	Department for Education	
5.	DHSC	Department of Health and Social Care	
6.	FGDP	Faculty of General Dental Practice (UK)	
7.	HEE	Health Education England	
8.	HENRY	Healthy Start Brighter Future	
9.	iHV	Institute of Health Visiting	

10.	LGA	Local Government Association	
11.	NHSE	NHS England	
12.	OCDO	Office of the Chief Dental Officer	
13.	PHE	Public Health England	
14.	RCPCH	Royal College of Paediatric and Child Health	
15.	RCS FDS	Royal College of Surgeons Faculty of Dental Surgery	
16.	UCL	University College London	

Appendix B

Public Health England

CHILDREN'S ORAL HEALTH IMPROVEMENT PROGRAMME BOARD

Terms of Reference: Evaluation Working Group

Purpose

Public Health England (PHE) Children's Oral Health Improvement Programme Board (COHIPB) has formed an Evaluation Working Group to oversee the evaluation and monitoring of the wide and diverse spectrum of activities being undertaken by the COHIPB and in particular to assess progress in achieving its core objectives:

- We will ensure that child oral health is on everyone's agenda.
- The early years and dental workforce have access to evidence-based oral health training.
- We use oral health data and information to best effect
- We all use the best evidence for oral health improvement.
- Child oral health improvement information is communicated effectively.

In summary the Evaluation Working Group will adopt a pragmatic/realist approach to evaluation and will focus in particular on the implementation processes linked to the various COHIPB work streams. Achievements, barriers and any specific outcomes will be reviewed and assessed to understand the implementation processes. A logic model will be produced to provide an overview of the COHIPB inputs, activities, outputs and short, medium and longer-term outcomes.

Working Group membership

The Evaluation Working Group will be chaired by Professor Richard Watt (UCL) and the membership will include Jenny Godson, Diane Seymour, Kate Jones, Dr Julia Csikar, Semina Makhani, Dr Rebecca Craven, Renato Venturelli, Dr Stefan Serban and Matt Gill. The Working Group will meet on a quarterly basis before each COHIPB meeting.

External Reference Group

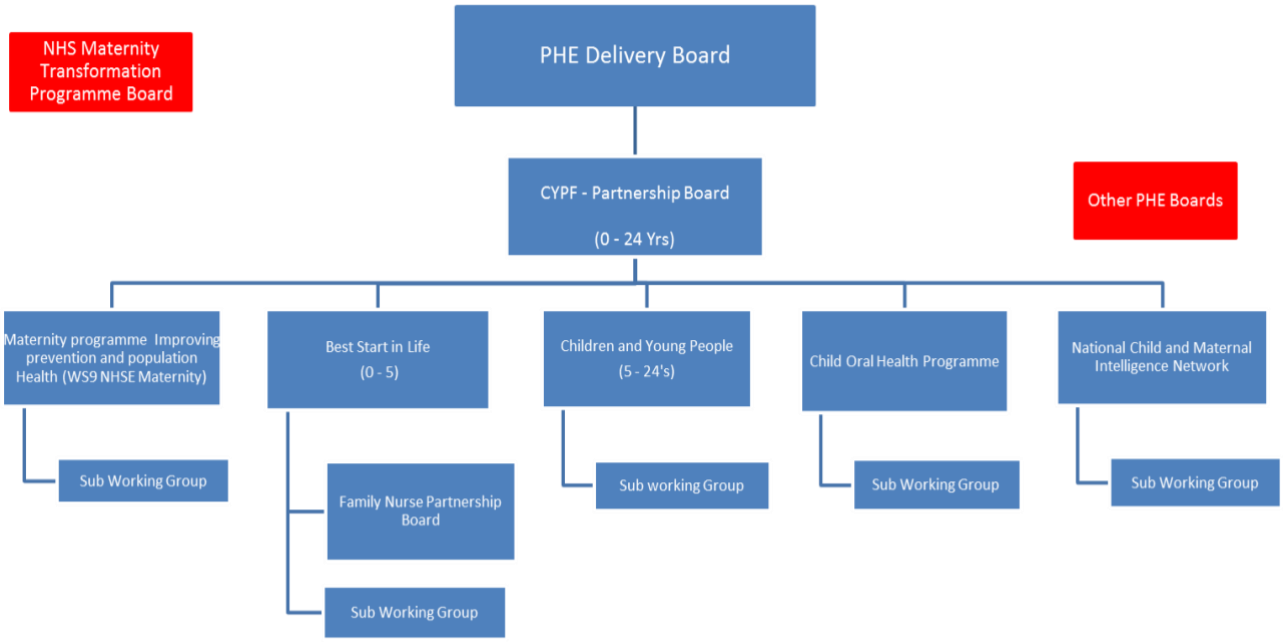
In addition to the Evaluation Working Group, a small External Reference Group will also be formed to provide external and independent advice and support on evaluation issues. This External Reference Group will comprise of Professor Lorna MacPherson (University of Glasgow), Professor Tim Newton (Kings College London), Professor Blanaid Daly (Trinity College Dublin) and Professor Zoe Marshman (University of Sheffield).

The External Reference Group will provide expert advice and guidance on the evaluation approach being adopted by the Evaluation Working Group and perform the role of independent 'critical friend' on the overall activities of the COHIPB.

Outputs and Reporting

The Evaluation Working Group will report on a quarterly basis to the COHIPB and produce an annual evaluation report. It will also report to PHE Children, Young People and Families Partnership Board 0-24 Years which provides governance for the Children's Oral Health Improvement Board and then ultimately to the PHE Delivery Board (Figure 1).

Figure 1: PHE CHILDREN, YOUNG PEOPLE AND FAMILIES LIFECOURSE GOVERNANCE



Appendix C

Logic Model - Action Plan 2016 – 2020 *'every child grows up free from tooth decay as part of having the best start in life'*