Public Health England

# Local authorities improving oral health: commissioning better oral health for children and young people

## An evidence-informed toolkit for local authorities

# About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

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# Foreword

It is well recognised that oral health is an important part of general health and wellbeing. Whilst there have been welcome improvements in the oral health of children in England, significant inequalities remain.

The Health and Social Care Act (2012) conferred the responsibility for health improvement, including oral health improvement to local authorities. This document aims to describe these new responsibilities and to provide support for local authorities in their delivery. It includes information to enable the review and evaluation of current commissions and the integration of evidence-informed programmes within existing programmes for children and young people.

Many general health conditions and oral diseases share common risk factors such as smoking, alcohol misuse and poor diet. Oral diseases are largely preventable; and there is a need to develop interventions to achieve sustained and long-term improvements in oral health and reduce inequalities. To do so, requires partnership action to address the wider determinants of health, ranging from economic and social policy change (creating healthier environments), to the adoption of healthier behaviours by individuals in the population. We recognise that it is fundamentally important to focus also on upstream factors that create inequalities and that cause both poor general and oral health.

Public Health England is pleased to provide this guide, we thank the multidisciplinary steering group and advisers who supported its development.

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Public Health England

# Executive summary

## What responsibilities do local authorities have for improving the oral health of children and young people?

- Local authorities are statutorily required to provide or commission oral health promotion programmes to improve the health of the local population, to an extent that they consider appropriate in their areas. They are also required to provide or commission oral health surveys. The oral health surveys are carried out as part of the Public Health England (PHE) dental public health intelligence programme (formerly known as the national dental epidemiology programme).

## Why is children's and young people's oral health important?

- Tooth decay is the most common oral disease affecting children and young people (CYP) in England, yet it is largely preventable. While children's oral health has improved over the past 20 years, almost a third (27.9%) of five-year-olds still had tooth decay in 2012.

- Poor oral health impacts children and families' health and wellbeing. Children who have toothache or who need treatment may have to be absent from school. Parents may also have to take time off work to take their children to the dentist. Oral health is an integral part of overall health; when children are not healthy, this affects their ability to learn, thrive and develop. Good oral health can contribute to school readiness.

- Tooth decay was the most common reason for hospital admissions in children aged five to nine years old in 2012-13. Dental treatment under general anaesthesia (GA), presents a small but real risk of life-threatening complications for children.

- Dental treatment is a significant cost, with the NHS in England **spending £3.4 billion per year on dental care** (with an estimated additional £2.3 billion on private dental care).

## Are there oral health inequalities?

- People living in deprived communities consistently have poorer oral health than people living in richer communities. Stark regional differences also exist. For example in 2012, 21.2% of five-year-olds had tooth decay in South East England compared to 34.8% in the North West of England, with even greater inequalities within local authority areas.

## What are the policy drivers?

- The government made a commitment to oral health and dentistry with a drive to:
  - improve the oral health of the population, particularly children
  - introduce a new NHS primary dental care contract
  - increase access to primary care dental services

- The public health outcomes framework (2013-16) includes “tooth decay in five-year-old children” as an outcome indicator.

- The NHS outcomes framework (2014-15) includes indicators related to patients’ experiences of NHS dental services and access to NHS dental services.

- The Children and Young People’s Health Outcomes Forum report published in 2012 and its 2014 annual report recommended improved integration and greater action to reduce regional variation in child health outcomes.

## What can we do to improve oral health outcomes for children and young people and reduce oral health inequalities?

- Put children and young people (CYP) and their families at the heart of commissioning.

- Adopt an integrated approach with partners for oral health improvement (see Table 1.1), including NHS England, Public Health England and Clinical Commissioning Groups. Ensuring all local authority services for CYP have oral health improvement embedded at a strategic and operational level.

- Commission for oral health improvement across the life course, giving every child the best start in life and adopting the principle of proportionate universalism.

- Address the underlying causes of health inequalities and the causes of poor general and oral health though upstream evidence informed actions.

- Use, share and develop information and intelligence.

- Sustain and develop the CYP workforce.

- 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.

## What does good commissioning look like?

- Commissioning frameworks should ensure that oral health improvement is integrated within existing programmes such as the healthy child programme for 0 to 19-year olds.

- Commissioning specific oral health programmes based on the evidence base and needs of the population.

- Reviewing commissioned oral health programmes to ensure that programmes:
  - meet local needs
  - involve upstream, midstream and downstream interventions that use both targeted and universal approaches
  - consider the totality of evidence of what works
  - engage with partners integrating commissioning across organisations and across bigger footprints as required

## Financial considerations

- Local authorities currently use a range of approaches to maximise the value of investment and the evidence of return on investment. Some local authorities may not have used these tools in the context of oral health improvement. These methods include using pooled budgets, collaborative commissioning across organisations and geographies and using cost benefit analysis tools. Local authorities can use these methods in oral health improvement commissioning to maximise value in terms of oral health improvement for spend.

## Who is this guidance for?

The document provides guidance to support commissioning of evidence informed oral health improvement programmes for:

- elected members and strategic leaders
- health and wellbeing boards
- directors of public health
- consultants in dental public health and public health
- commissioners in local authorities
- local oral health improvement and oral health promotion teams
- health care providers and children and young people workforce delivering population based oral health improvement programmes

# Section 1: Introduction

## What is the purpose of this document?

This document aims:

- to support local authorities to commission oral health improvement programmes for children and young people aged up to 19 years
- to enable local authorities to review and evaluate existing oral health improvement programmes and consider future commissioning intentions
- to provide an evidence-informed approach with examples of good practice

## What are local authorities' responsibilities for improving the oral health of children and young people?

- The Health and Social Care Act (2012) amended the National Health Service Act (2006) to confer responsibilities on local authorities for health improvement, including oral health improvement, in relation to the people in their areas.
- Local authorities are statutorily required[1] to provide or commission oral health promotion programmes to improve the health of the local population, to the extent that they consider appropriate in their areas.
- They are also required to provide or commission oral health surveys in order to facilitate: the
  - assessment and monitoring of oral health needs,
  - planning and evaluation of oral health promotion programmes
  - planning and evaluation of the arrangements for the provision of dental services, and
  - reporting and monitoring of the effects of any local water fluoridation schemes covering their area
- The oral health surveys are carried out as part of the PHE dental public health intelligence programme.[2] Local authorities are also required to participate in any oral health survey conducted or commissioned by the secretary of state
- Local authorities also have the power to make proposals regarding water fluoridation schemes, a duty to conduct public consultations in relation to such proposals and powers to make decisions about such proposals.[3,4]

- Commissioning arrangements for oral health improvement programmes need to be identified and understood locally because they vary across England. Local authorities still have the lead responsibility for oral health improvement regardless of where the funding may sit since the NHS transition.

## Why is children's and young people's oral health important?

- Tooth decay is the most common oral disease affecting children and young people in England, yet it is largely preventable. The dental public health intelligence programme (formerly known as the national dental epidemiology programme) found that while children's oral health has improved over the past 20 years, almost a third (27.9%) of five-year-olds still had tooth decay in 2012.[5] This equates to approximately 177,423 five-year-olds in England who had some experience of tooth decay with 155,801 of five-year olds having one or more untreated decayed tooth.[5,6] Gum (periodontal) disease, traumatic dental injuries and acid erosion are oral diseases that also contribute to poor oral health in children and young people, but are less common.

- Poor oral health can affect children's and young people's ability to sleep, eat, speak, play and socialise with other children.[7] Other impacts include pain, infections, poor diet, and impaired nutrition and growth.[8,9] According to the Global Burden of Disease Study in 2010, five to nine year-old children in the UK experienced the most disability caused by poor oral health.[10] An average of 2.24 hours of children's healthy life was lost for every child aged five-nine years because of poor oral health, exceeding the level of disability associated with vision loss (1.64 hours), hearing loss (1.77 hours) and diabetes mellitus (1.54 hours).[11]

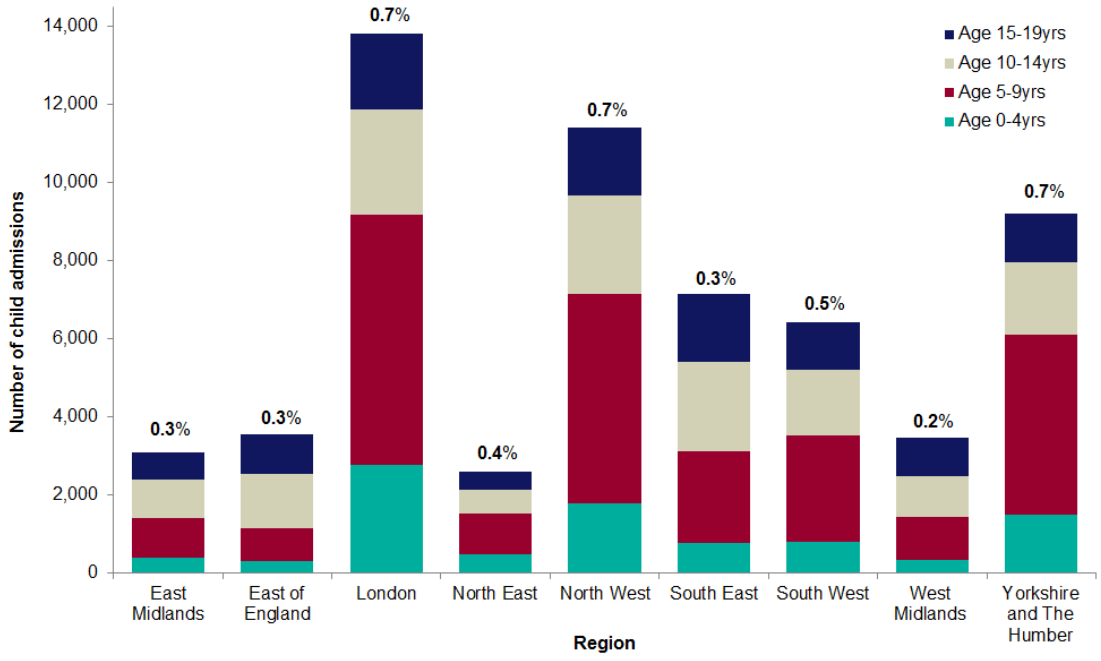
- Poor oral health also has wider impacts at school and for families if a child misses school or when a parent has to take time off work if their child needs dental treatment.[12] Oral health is an integral part of overall health. When children are not healthy, this affects their ability to learn, thrive and develop. Good oral health can contribute to "school readiness". To benefit fully from education, children need to enter school ready to learn, to be healthy and prepared emotionally, behaviourally and socially. School readiness ensures that all children are able to participate fully in all school activities in order to be successful at school. Oral health is therefore an important aspect of overall health status and critical to children's school readiness.

- Poor oral health may be indicative of dental neglect and wider safeguarding issues. Dental neglect is defined as “the persistent failure to meet a child’s basic oral health needs, likely to result in the serious impairment of a child’s oral or general health or development”.[13] Dental teams can contribute to a multi-agency approach to safeguard children and guidance is available to support this role.[14]

- Tooth decay was the most common reason for hospital admissions in children aged five to nine years old in 2012-13.[15] During this period, 60,272 children under 19 years of age were admitted to hospital for tooth extractions with 50% of cases for children nine years or under.[16] Untreated tooth decay can lead to young children needing dental treatment under general anaesthesia (GA), which presents a small but real risk of life-threatening complications for children.[17] Figure 1.1 shows the variation in hospital admissions for dental extractions by region. This variation reflects a combination of differing levels of dental disease, local service provision and data collection but may not capture all dental extractions (eg extractions carried out by community dental services on a sessional basis). This probably means that these figures are an underestimation.

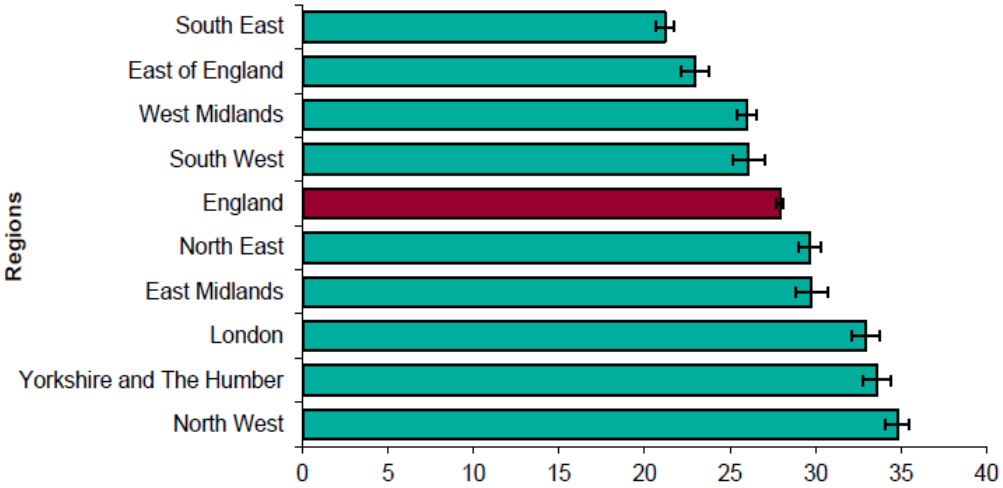
- Tooth extractions under GA are not only potentially avoidable for most children but also costly. The cost of extracting multiple teeth in children in hospitals in 2011-2012 was £673 per child with a total NHS cost of nearly £23 million.[18]

**Figure 1.1. Number of children admitted to hospital for extraction of decayed teeth in 2012-13, by region, including the percentage of 0-19 year old children this represents**



- People living in deprived communities consistently have poorer oral health than people living in richer communities.[19] These inequalities in oral health run from the top to the bottom of the socioeconomic ladder creating a social gradient. Some vulnerable groups have poorer oral health.[20] Stark regional differences also exist. For example, 21.2% of five-year olds had tooth decay in south-east England compared to 34.8% in north-west England with even greater inequalities within local authorities.[5] (Figure 1.2).

**Figure 1.2. Percentage of five-year-old children in England who have had tooth decay in 2012 by region**




Source: Public Health England, National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2012. A report on the prevalence and severity of dental decay. 2013.

- The financial impact of dental disease is significant. Although largely preventable, tooth decay remains the most common oral disease affecting children and young people (CYP). Treating oral diseases within the NHS costs £3.4 billion annually in England (in addition to an estimated £2.3 billion for those treated privately).[21]

## What is the policy context for oral health improvement in children and young people?

- The government[21,22] made a commitment to oral health and dentistry with a drive to:
  - Improve the oral health of the population, particularly children
  - introduce a new NHS primary dental care contract
  - increase access to NHS primary  care dental services

- The public health outcomes framework (2013-16) domain 4 (healthcare public health and preventing premature mortality) includes an indicator related to "tooth decay in five year old children".[23] Local authorities can use this indicator sourced from the Dental Public Health Intelligence Programme to monitor and evaluate children's oral health improvement programmes.

- The Children and Young People's Health Outcomes Forum report published in 2012 and its 2014 annual report recommended improved integration and greater action to reduce regional variation in child health outcomes.[24,25]

- The NHS outcomes framework (2014-15) includes indicators related to patients' experiences of NHS dental services (4aiii) and access to NHS dental services (4.4ii).[26]

## What advice and support can local authorities expect from the dental public health workforce?

- The specialist dental public health workforce is now based within PHE centres. They have a key role to support local authorities to deliver their oral health improvement functions.

- Local authorities can expect the specialist dental public health workforce to:
  - work collaboratively to provide oral health input into joint strategic needs assessments (JSNAs) and joint health and wellbeing strategies
  - advocate and lead oral health needs assessments and oral health policy and strategy development
  - review oral health improvement programmes
  - support the commissioning and integration of such programmes within commissioning arrangements for other programmes for children and young people

## Are other agencies involved in improving children and young people's oral health?

- Other organisations support local authorities in their lead role commissioning oral health improvement programmes. Table 1.1 shows the organisations and key responsibilities of the agencies working alongside local authorities either indirectly or directly to improve children's and young people's oral health. These organisations can provide opportunities for integrated commissioning and delivering oral health improvement programmes.

- The National Institute for Health and Care Excellence (NICE) will publish the following public health guidance “Oral health: local authority strategies to improve oral health particularly among vulnerable groups” in October 2014. Learning from this guidance will inform subsequent reviews of this guide.

## Who are the providers delivering oral health improvement for children and young people?

- A range of providers deliver specific oral health improvement programmes (eg oral health improvement teams, community dental services, general dental practices and third sector providers) and oral health improvement programmes that are integrated within local authority commissioned programmes for children and young people (eg school health and children’s centres). Local authorities have opportunities to integrate oral health improvement within the specification of existing commissions as well as tender for specific oral health improvement programmes.

**Table 1.1. Roles and responsibilities of the key organisations Involved with improving oral health in children and young people**

| | Body | Key Responsibilities |
|---|---|---|
| **National** | NHS England | ▪ planning, securing and monitoring primary care community and secondary dental services within a single operating model<br>▪ developing and negotiating contracts; policies, procedures, guidance and national care pathways<br>▪ commissioning public health services for children aged 0-5 years (including health visiting, family nurse partnerships within the healthy child programme (HCP) 0-5 years until 2015) |
| | Public Health England | ▪ providing health improvement support for local authorities and NHS England<br>▪ informing and developing national oral health policies and clinical guidelines<br>▪ addressing oral health inequalities<br>▪ ensuring patient safety and governance systems |
| | Health Education England | ▪ providing national leadership for planning and developing the whole healthcare and public health workforce |
| | National Institute for Health and Care Excellence (NICE) | ▪ providing independent advice and guidance to the NHS and social care; developing dental public health guidance |
| | Health Watch England | ▪ representing the rights and views of the public and health and social care users to inform commissioning<br>▪ identifying public concerns about health and social care services<br>▪ developing and leading local Health Watch |
| **Regional** | NHS England regional reams | ▪ providing clinical and professional leadership at the regional level<br>▪ coordinating and planning dental services on the basis of regional needs<br>▪ direct commissioning functions and processes<br>▪ regional director of nursing responsible for supporting and providing assurance on safeguarding children |
| | PHE regional teams | ▪ developing guidance for local authorities<br>▪ supporting collaborative commissioning of oral health improvement programmes |
| **Local** | NHS England area teams | ▪ commissioning all NHS dental services - both primary and secondary care<br>▪ supporting CCGs to assess and assure performance<br>▪ direct and specialised commissioning<br>▪ managing and cultivating local partnerships and stakeholder relationships, including representation on local health and wellbeing boards<br>▪ local area team director of nursing responsible for supporting and providing assurance on safeguarding children |
| | PHE centres | ▪ providing dental public health support to NHS England and local authorities<br>▪ contributing to joint strategic needs assessments (JSNA), strategy development, oral health needs assessment<br>▪ supporting local authorities to understand their role in relation to water fluoridation |
| | Local authorities – public health | ▪ jointly statutorily responsible with CCGs for JSNAs assessing local health needs<br>▪ conducting and/or commissioning oral health surveys to assess and monitor oral health needs<br>▪ responsible for reducing health inequalities<br>▪ planning, commissioning and evaluating oral health improvement programmes<br>▪ leading scrutiny of delivery of NHS dental services to local populations<br>▪ commissioning surveys to facilitate PHE to monitor and report on the effect of water fluoridation programmes (if water fluoridation programmes affect the local authority area)<br>▪ lead responsibility for the healthy child programme 5-19 years (and HCP 0-5 years from 2015), the national child measurement programme and the care of vulnerable children and families (ie. looked after children, the troubled families programme)<br>▪ safeguarding children<br>▪ commissioning local healthy schools, school food and healthier lifestyle programmes |
| | Local health watch | ▪ providing information and advice to the public about accessing health and social care services and power to enter and view service provision<br>▪ engaging and collecting public and users' views about access and the quality of services to inform commissioning |
| | Local dental networks (LDNs) | ▪ providing local professional leadership and clinical engagement<br>▪ supporting the specialist dental public health workforce to plan and design local care pathways, dental services and oral health strategies |
| | Clinical commissioning groups (CCGs) | ▪ GP-led commissioning groups accountable to NHS England for commissioning community health services, children's mental and physical health services, emergency care, maternity services |
| | Early year providers schools | ▪ Department of Health and Department for Education integrated health and education reviews for children aged 2 to 2 ½ by 2015 |
| | Schools | ▪ Healthy schools programme<br>▪ delivering non-statutory personal, social, health and economic (PSHE) education in key stage 1 of the national curriculum |

## Who is this guidance for?

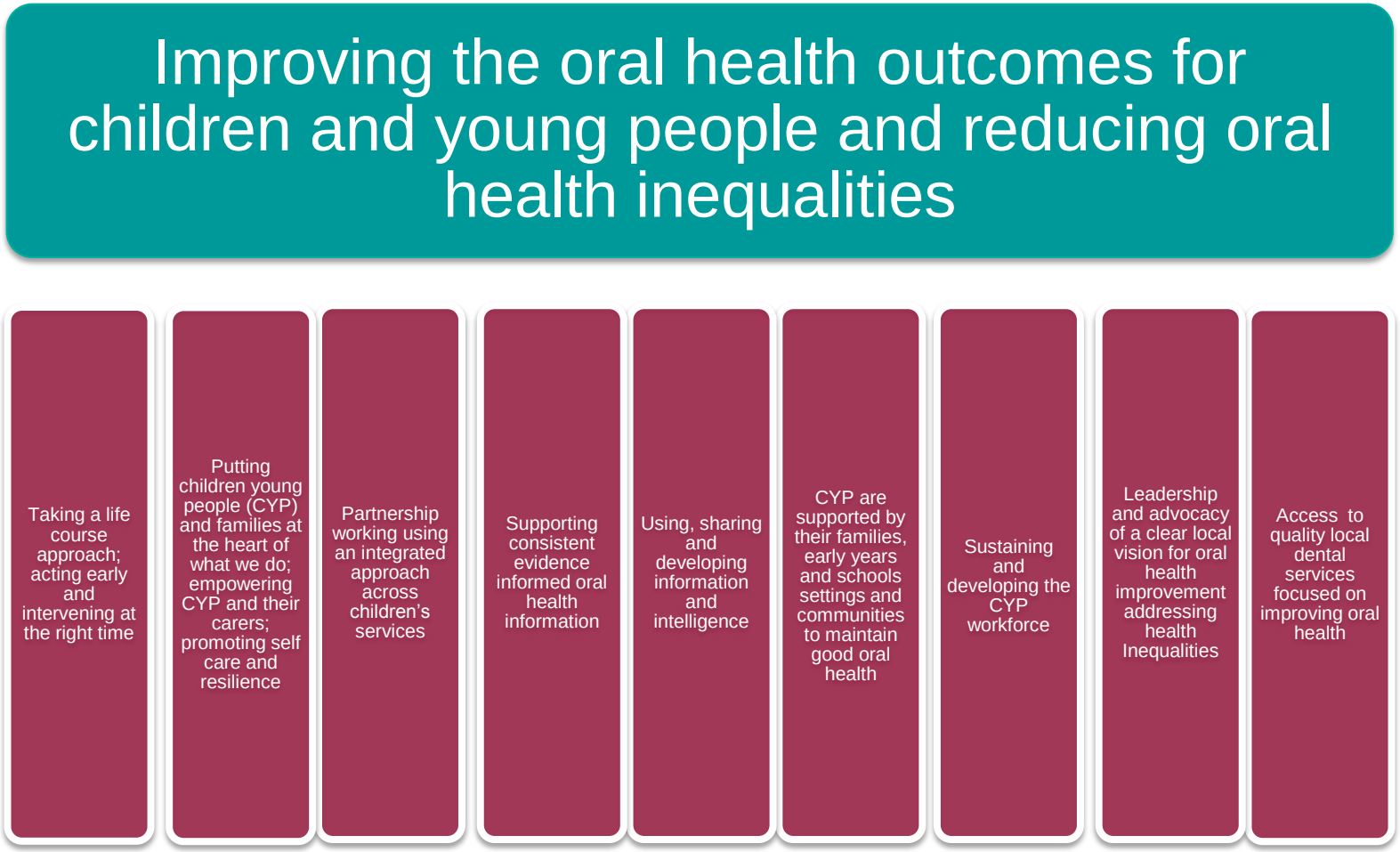
This document provides guidance to support the commissioning of evidence-informed oral health improvement programmes for:

- elected members and strategic leaders
- health and wellbeing boards
- commissioners in local authorities
- directors of public health
- consultants in dental public health and public health
- local oral health improvement and oral health promotion teams
- health care providers and the children's and young people's workforce

## What is the ambition underpinning this guide?

Figure 1.3 shows the overarching ambition and the principles for commissioning oral health improvement developed in this guide and further described in section 2.

**Figure 1.3. The ambition and principles of commissioning better oral health for children and young people**



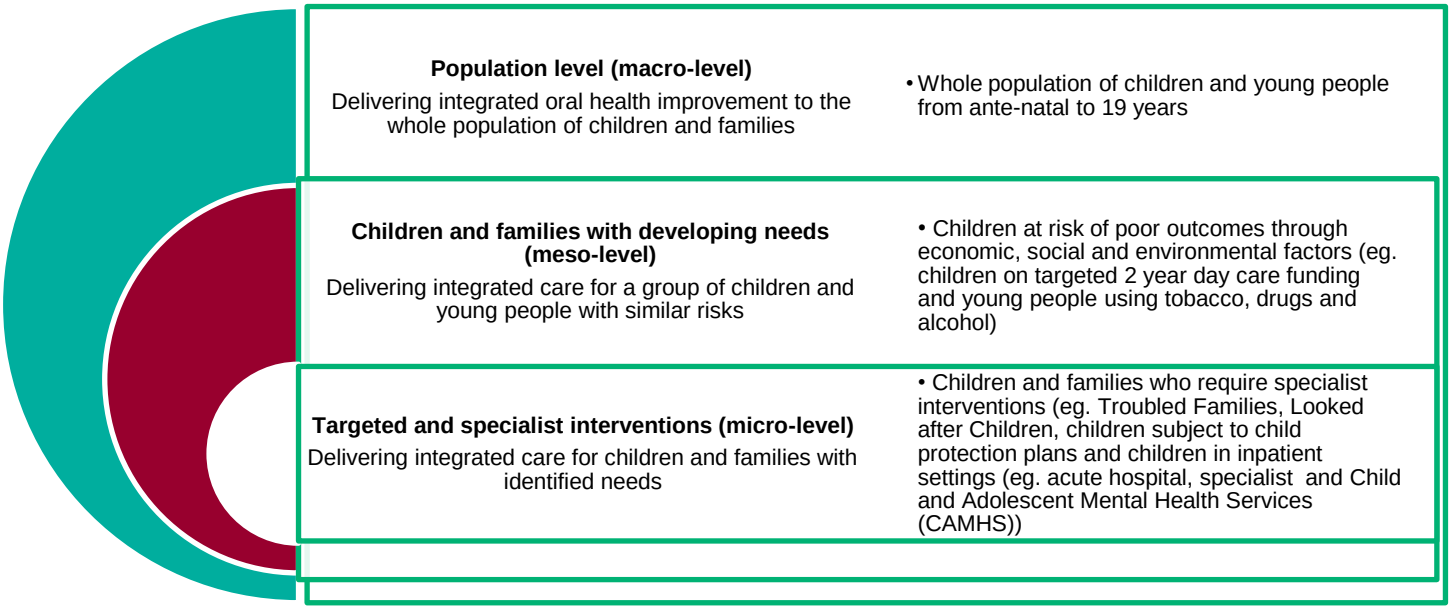
# Section 2. Principles of commissioning better oral health for children and young people

## Improving the oral health outcomes for children and young people and reducing oral health inequalities

The Marmot Review ('Fair Society, Healthy Lives') recommended the adopting proportionate universalism when developing strategies to improve health and reduce inequalities.[27] This approach recommends actions that are universal, but with a scale and intensity that is proportionate to the level of disadvantage. This approach acknowledges that concentrating solely on the most disadvantaged will not sufficiently reduce health inequalities.

Applying the concept of proportionate universalism to oral health improvement for children means that a combination of universal and targeted activities is needed alongside specialist services. Everyone should receive some support through universal interventions, while children that are particularly vulnerable (eg looked-after children and children from families living in poverty), should receive additional interventions and support. Oral health could be integrated into services at different levels through commissioner collaboration shown in figure 2.1.

**Figure 2.1. Service levels at which oral health could be integrated**

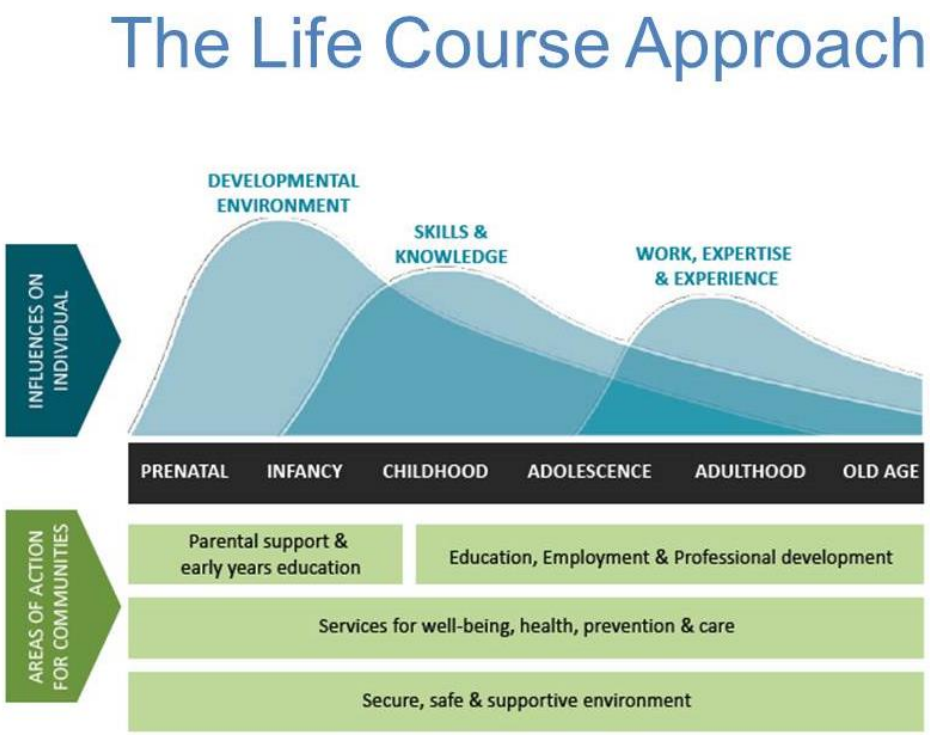



Source: Kings Fund (2011), Integrated Care Summary. Available at URL http://www.kingsfund.org.uk/sites/files/kf/Integrated-care-summary-Sep11.pdf

## Taking a life course approach

The Marmot Review[27] and the public health white paper 'Healthy lives, healthy people'[28] highlighted the importance of early life interventions in improving health and reducing avoidable health inequalities across the life course. This life course approach acknowledges that biological and social experiences throughout life have an impact on long-term health and wellbeing. The early years of a child's life are critical to their future life chances because positive and negative effects accumulate throughout the life course (figure 2.2). Adopting the life course approach allows the close links between early disadvantage and poor outcomes throughout life to be broken.[28]

**Figure 2.2. Life course stages and entry points for impacting health**



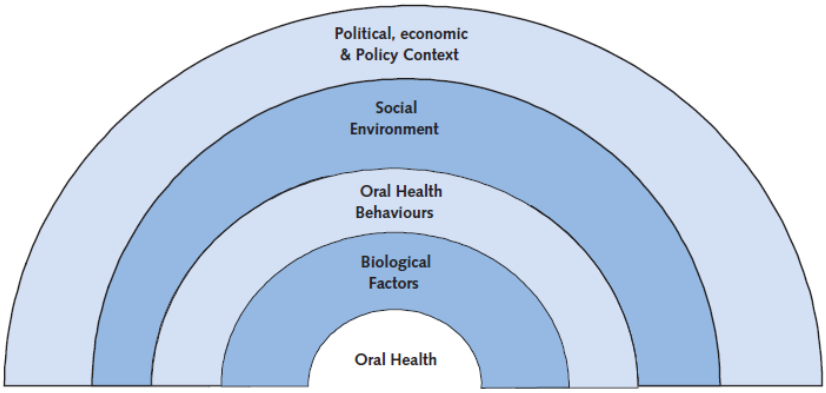

Source: Chief Medical Officer (2011), Annual report: On the state of the public's health. Available at URL https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255237/2901304_CMO_complete_low_res_accessible.pdf

## Tackling the underlying causes of oral diseases in children

The traditional view is that oral diseases are caused by individuals engaging in risky behaviours. The importance of these factors at a population level, however, is limited. It is now accepted that the circumstances in which people live and work have a profound effect on their health and wellbeing – including their oral health. The causes of oral diseases, and related inequalities, are therefore mainly social and environmental.[29]

The underlying causes of oral diseases in children range from decisions taken nationally on economic and social policy, to biological factors in individuals (figure 2.3). These causes are common to all health inequalities.

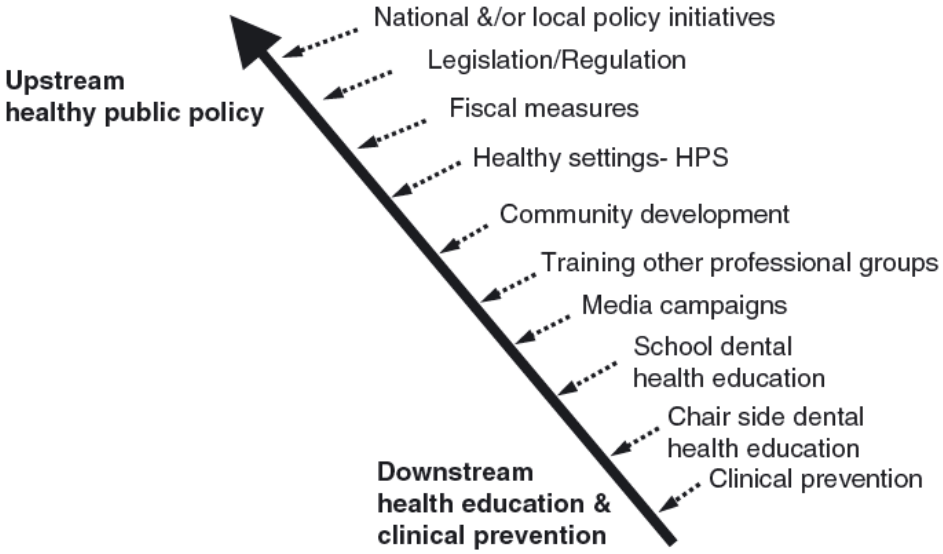
**Figure 2.3. The underlying causes of oral diseases**




Source: Choosing better oral health: an oral health plan for England. Available at URL webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4123253.pdf

Action is needed to tackle these underlying causes of health inequalities. Creating healthier public policies, supportive environments, strengthening community action, developing personal skills and reorienting health services towards prevention will improve children's oral health. These "upstream" actions should be complemented by specific "downstream" interventions (such as the widespread delivery of fluoride) to effectively prevent oral disease (figure 2.4).

**Figure 2.4. Upstream/downstream: options for oral disease prevention**




Source: Watt RG. From victim blaming to upstream action: tackling the social determinants of oral health inequalities. Community Dent Oral Epidemiol 2007; 35: 1–11

The common risk factor approach should be adopted wherever possible.[30] This approach is an integrated way of promoting general health by controlling a small number of common risk factors that can potentially impact a large number of chronic diseases.[31] This is more efficient than disease specific approaches.

## Putting children, young people and families at the heart of commissioning, empowering communities and building resilience

Services that are co-created with professionals, children, young people, families and wider communities are more likely to produce sustainable improved health outcomes. This asset-based approach puts individuals and communities at the heart of decision-making. It creates empowered, confident, resilient communities who are enabled to take ownership and control of their lives and make decisions that are conducive to good health and wellbeing.

## Partnership working using an integrated approach across the commissioning landscape for children and young people

Achieving good oral health for all children needs the support and commitment of a wide range of partners. The shared leadership at local level through health and wellbeing boards and children's trust boards, and the enhanced role for local authorities in health improvement provides multiple opportunities to improve health outcomes using an integrated approach.[28] The most effective way to improve oral health is to embed it in all children's services at strategic and operational levels.

## Supporting consistent evidence informed oral health information

This guide provides oral health improvement and practice guidance driven by the best available evidence (Section 3. Commissioning across the life course: what works?). Where available, the evidence also takes into account the cost-effectiveness of interventions.

## Using, sharing and developing information and intelligence

Previous legislative flexibilities have enabled joint working between NHS bodies and local government in relation to their health and social care functions. These flexibilities still apply under the Health and Social Care Act 2012.[1] This has the advantage of greater cost effectiveness while also supporting improved experiences for services users.

Integrated commissioning requires commissioners to access information and data held by a number of partners. Key oral health data is held by PHE knowledge and intelligence North West (www.nwph.net/dentalhealth). PHE can provide commissioners with interpretation and local analytical support.

## Children and young people are supported by their families, early years, schools settings and communities to maintain good oral health

The inextricable links between people and their environment means that the environments in which children and young people live need to encourage healthier lifestyles if health and wellbeing are to be improved. Actions that could improve oral health through the environment include developing healthier children's centres and preschool settings, safe recreational areas (preventing dental trauma), removing sweets at supermarket checkouts and introducing planning policies that promote healthier food outlets near schools.[31]

Coordinated action to build more healthy public policies would impact a number of public health issues and foster greater equity. Healthy public policy includes legislation, fiscal measures, taxation and organizational change, which in turn promotes safer and healthier goods and services. Examples of healthy public policies that could improve oral health in children include sugar taxation, healthier eating policies in schools and increased access to safe recreational areas for children (which prevent dental trauma). The aim of these upstream activities is to make the healthier choice the easier choice for individuals, organisations and policy makers.

## Sustaining and developing the children's and young people's workforce

Implementing 'Making every contact count'[32] gives child care professionals a responsibility to provide brief advice to improve children's overall health and wellbeing. The children's workforce can be supported through training and development to deliver appropriate evidence informed brief advice across the life course. Figure 4.1 provides examples of where oral health may be integrated within currently commissioned programmes. This training may be commissioned by local authorities from oral health promotion providers locally, or by Health Education England (HEE) through local education and training boards (LETBs). This training can be delivered through continuing professional development programmes (CPD) and as part of induction programmes for new staff.

Working together to safeguard children is everyone's responsibility.[33] Paediatricians now acknowledge that dental neglect is an important child protection issue [34]. NICE guidance recommends that providers suspect neglect "if parents or carers have access to but persistently fail to obtain NHS treatment for their child's dental caries (tooth decay)".[35] Signs include visible tooth decay, untreated trauma and multiple hospital admissions for dental care. Using the concept of 'Making every contact count', all staff across healthcare, social care and education should have sufficient knowledge and understanding to recognise signs of poor oral health and neglect and take appropriate action.[32]

## Leadership and advocacy of a clear local vision for oral health improvement addressing health inequalities

Local authorities have a lead role championing oral health. Local authorities can develop oral health strategies at a local level to deliver a local vision for improving oral health, alongside general health and wellbeing. Shared leadership of the oral health agenda may help to embed oral health into the wider health and wellbeing agenda for children through integrated commissioning. The leadership and advocacy role of local authorities will increase its impact, particularly if it used to promote upstream actions at a regional or national level. Regulation and/or fiscal policies that influence frequent sugar intake could prevent tooth decay as an upstream intervention. Local authorities can also build and support advocacy for children's oral health improvement by partnering with independent advisory providers.[36]

## Access to quality local dental services focused on improving oral health

The scope of health services needs to expand to include a responsibility to improve health outcomes in addition to providing treatment. Improving health by focusing on prevention also improves the cost-effectiveness of services.[37] Intervening early through universal and targeted interventions reduces the need for more specialist services in later years. Local authorities can engage with NHS England in the planning and evaluation of local dental services, influencing the preventive focus of dental services. In particular, local authorities have unique powers around health scrutiny, which enable them to review the planning, provision and operation of health services in their area. This specifically allows local authorities to seek assurance that there is equitable access to dental services for children and young people focused on their needs. Appendix 1 includes ten key questions for the scrutiny of oral health improvement delivery.

The NHS dental contract is currently under review and new models are being piloted. These pilots give dental teams the responsibility for improving the oral health of their practice population. There is also the additional drive to improve the link between dental practices and their communities.

The next section describes how the evidence base for oral health improvement interventions was assessed for a range of interventions targeting different child populations across the life course.

# Section 3. Commissioning across the life course: what works?

## Introduction

Local authorities can commission a range of different oral health improvement interventions. However, no single “magic bullet” exists. One important consideration in deciding what interventions should be delivered is the evidence base for the intervention. Identifying the best available evidence is important for both clinical practice and public health interventions. However, public health requires a more pluralistic approach to assessing the evidence.[38] While the randomised controlled trial is considered the “gold standard” form of evidence to assess the effectiveness of clinical treatments, a broader range of evidence can be used to assess the evidence base for public health interventions.[39] The nature of the intervention should determine the most appropriate evaluation method.[38]

The review of the evidence in this guide followed the methodological approach adopted by the US Centres for Disease Control (CDC), Community Services Task Force[40] and the Department of Health in Victoria, Australia.[41] The evidence was restricted to relevant published oral health and related systematic and narrative reviews.

## Defining the scope of oral health improvement interventions to include in the review

This review focused on children and young people aged 0 to 19 years of age. Evidence was sought for population-based interventions aimed at improving knowledge, behaviour or oral health status. The review considered interventions, which could be implemented within a community-based programme (eg school-based fluoride varnish programmes) but not individual dental clinic-based interventions (eg fluoride varnish applications applied during regular dental appointments). The evidence for individual dental practice based interventions is covered in the publication ‘Delivering better oral health: an evidence-based toolkit’.[42]

## Identifying relevant systematic and narrative reviews

English language data sources were searched for systematic reviews and narrative reviews of interventions that promoted oral health. Sources included MEDLINE, Cochrane Database of Systematic Reviews, Centre for Reviews and Dissemination, peer networks and reference lists of reviewed articles. Systematic reviews describing broader public health outcomes were also included where there was no literature related to specific oral health outcomes (eg social marketing interventions and fiscal policies to promote oral health).

## Using a multifactorial approach to assess the evidence for oral health improvement

Interventions were classified and assessed using a range of key public health criteria to inform the **final recommendation based on the totality of evidence**. Each intervention was first classified as a downstream, midstream or upstream intervention based on figure 2.4 and mapped to a target population or life course stage (ie. preschool, school children and young people). The effectiveness of each intervention was then assessed based on the criteria used by Haby and Bowen[41] and Rogers[43] shown in table 3.1.

**Table 3.1. Effectiveness of Oral Health Improvement Programmes**

| Strength of evaluation and research evidence | Description |
|---|---|
| Strong evidence of effectiveness | One systematic review or meta-analysis of comparative studies; or several good quality randomised controlled trials or comparative studies |
| Sufficient evidence of effectiveness | One randomised controlled trial; one comparative study of high quality; or several comparative studies of lower quality |
| Some evidence of effectiveness | Impact evaluation (internal or external) with pre and post-testing; or indirect, parallel or modelling evidence with sound theoretical rationale and program logic for the intervention |
| Weak evidence of effectiveness | Impact evaluation conducted, but limited by pre or post-testing only; or only indirect, parallel or modelling evidence of effectiveness |
| Inconclusive evidence of effectiveness | No position could be reached because existing research/evaluations give conflicting results; or available studies were of poor quality |
| No evidence of effectiveness | No position could be reached because no evidence of impact/outcome was available at present. (This is not the same as evidence of ineffectiveness – see below) |
| Evidence of ineffectiveness | Good evaluations (high quality comparative studies) show no effect or a negative effect |

The review process also took contextual factors and pragmatic considerations into account alongside the more traditional evidence of effectiveness to provide some indication of the feasibility of implementation rather than just the effectiveness of the intervention. An assessment of the likely impact on reducing oral health inequalities was made, based on public health principles of intervention design and whether the intervention focused on the underlying determinants of inequalities. The impact on inequalities was classified as encouraging, uncertain, or unlikely.

Cost and resource implications were considered as the balance between the costs of the intervention (ie. set up and ongoing costs) versus intervention reach, intervention uptake and retention and the sustainability of outcomes. The cost/resource implications categories were good use of resources, uncertain or costly. Implementation issues included resource and personnel requirements, potential disruption to partners, acceptability of the intervention to key stakeholders, self-sustaining outcomes achieved and political support required. Implementation issues were categorised as deliverable, uncertain or major challenges in delivery. Some interventions that were difficult to categorise fell into two categories. For example, under "implementation issues," an intervention listed as "uncertain/major challenges" indicated that it was difficult to judge the deliverability but that there could be major challenges in delivery.

## Making final recommendations about oral health improvement programmes based on the totality of the evidence

Combining the findings from the four assessment criteria (strength of the evidence, impact on reducing inequalities, cost/resource implications and implementation issues) produced a final overall recommendation for each intervention. The overall recommendations for oral health improvement interventions (shown in table 3.2) were recommended, emerging, limited value or discouraged. Ineffective interventions were not assessed in terms of impact on inequalities, cost or implementation.

**Table 3.2. Summary of the final overall recommendation**

| Overall recommendation | Strength of evaluation and research evidence | Impact on reducing inequalities | Cost/resource considerations | Implementation Issues |
|---|---|---|---|---|
| **Recommended** | Strong/sufficient/some evidence | Encouraging | Good/ uncertain | Deliverable |
| **Emerging** | Weak/inconclusive/ no evidence | Encouraging/uncertain | Good/ uncertain | Deliverable |
| **Limited value** | Strong/some/sufficient/ weak/inconclusive/ no evidence | Uncertain/unlikely | Uncertain/ costly | Uncertain/ major challenges |
| **Discouraged** | Ineffective | Not applicable | Not applicable | Not applicable |

Table 3.3 provides a summary of the interventions and the recommendations made for oral health improvement programmes assessed in this guide. **The overall recommendation for each intervention should be considered in the context of the totality of evidence and the explanatory narrative presented in table 3.4.**

**Table 3.3. Summary of the oral health improvement programme's overall recommendations**

| Nature of intervention | Intervention classification | Target population | Strength of evaluation and research evidence | Impact on inequalities | Cost/resource considerations | Implementation issues | Overall recommendation |
|---|---|---|---|---|---|---|---|
| SUPPORTING CONSISTENT EVIDENCE INFORMED ORAL HEALTH INFORMATION | | | | | | | |
| Oral health training for the wider professional workforce (eg. health, education) | Midstream | Preschool, school children, young people | Some evidence of effectiveness | Encouraging/ uncertain | Good | Deliverable | Recommended |
| Integration of oral health into targeted home visits by health/social care workers | Downstream | Preschool, school children | Sufficient evidence of effectiveness | Encouraging | Good | Deliverable | Recommended |
| Social marketing programmes to promote oral health and uptake of dental services by children | Midstream | Preschool, school children, young people | Inconclusive evidence of effectiveness | Uncertain/ encouraging | Uncertain/costly | Uncertain/major challenges | Limited value |
| Person-centred (one-to-one) counselling based on motivational interviewing outside of dental practice settings | Downstream | Preschool, school children (via parents), young people | Inconclusive evidence of effectiveness | Uncertain | Costly | Uncertain | Limited value |
| One off dental health education by dental workforce targeting the general population | Downstream | Preschool, school children | Evidence of ineffectiveness | Not applicable | Not applicable | Not applicable | Discouraged |

**Table 3.3. Summary of the oral health improvement programme's overall recommendations (continued)**

| Nature of intervention | Intervention classification | Target population | Strength of evaluation and research evidence | Impact on inequalities | Cost/resource considerations | Implementation issues | Overall recommendation |
|---|---|---|---|---|---|---|---|
| COMMUNITY-BASED PREVENTIVE SERVICES | | | | | | | |
| Targeted community-based fluoride varnish programmes | Downstream | Preschool, school children | Strong evidence of effectiveness | Encouraging/ uncertain | Uncertain/costly | Deliverable/ uncertain | Recommended |
| Targeted provision of toothbrushes and tooth paste (ie. postal or through health visitors) | Downstream | Preschool, school children | Some evidence of effectiveness | Encouraging | Good use of resources | Deliverable | Recommended |
| Targeted community-based fissure sealant programmes | Downstream | Preschool, school children | Sufficient evidence of effectiveness | Uncertain | Costly | Uncertain/major challenges | Limited value |
| Targeted community-based fluoride mouth rinse programmes | Downstream | School children | Sufficient evidence of effectiveness | Uncertain | Uncertain | Deliverable/ uncertain | Limited value |
| Facilitating access to dental services | Downstream | Preschool, school children | Weak/inconclusive | Uncertain / unlikely | Uncertain | Uncertain/major challenges | Limited value |
| Using mouth guards in contact sports | Midstream | School children | Some evidence of effectiveness | Uncertain | Uncertain | Uncertain | Limited value |
| SUPPORTIVE ENVIRONMENTS | | | | | | | |
| Supervised tooth brushing in targeted childhood settings | Midstream | Preschool, school children | Strong/sufficient evidence of effectiveness | Encouraging/ uncertain | Good/uncertain | Deliverable/ uncertain | Recommended |
| Healthy food and drink policies in childhood settings | Midstream/ Upstream | Preschool, school children, young people | Some evidence of effectiveness | Encouraging | Good | Deliverable | Recommended |

**Table 3.3. Summary of the oral health improvement programme's overall recommendations**

| Nature of intervention | Intervention classification | Target population | Strength of evaluation and research evidence | Impact on inequalities | Cost/resource considerations | Implementation issues | Overall recommendation |
|---|---|---|---|---|---|---|---|
| SUPPORTIVE ENVIRONMENTS | | | | | | | |
| Fluoridation of public water supplies | Upstream | Preschool, school children, young people (whole population) | Strong evidence of effectiveness | Encouraging/ uncertain | Good/uncertain | Deliverable | Recommended |
| Provision of fluoridated milk in school settings | Midstream/ downstream | Preschool, school children | Inconclusive | Uncertain | Uncertain | Uncertain/ major challenge | Limited value |
| COMMUNITY ACTION | | | | | | | |
| Targeted peer (lay) support groups/peer oral health workers | Midstream | Preschool, children, young people | Sufficient evidence of effectiveness | Encouraging | Good | Deliverable/ uncertain | Recommended |
| School or community food co-operatives | Midstream | Preschool, school children, young people | Weak evidence of effectiveness | Encouraging | Good | Deliverable/ uncertain | Emerging |
| HEALTHY PUBLIC POLICY | | | | | | | |
| Influencing local and national government policies | Upstream | Preschool, school children, young people | Some evidence of effectiveness | Encouraging/ uncertain | Good | Deliverable/ uncertain | Recommended |
| Fiscal policies to promote oral health | Upstream | Preschool, school children, young people | Some evidence of effectiveness | Uncertain | Good | Deliverable/ uncertain | Emerging |
| Infant feeding policies to promote breastfeeding and appropriate complementary feeding practices | Midstream/ upstream | Preschool | No evidence of effectiveness | Encouraging/ uncertain | Good | Deliverable | Emerging |

**Table 3.4. Additional information about oral health improvement programmes**

| Nature of intervention | Publications reviewed | Further information |
|---|---|---|
| SUPPORTING CONSISTENT EVIDENCE INFORMED ORAL HEALTH INFORMATION | | |
| Oral health training for the wider professional workforce (health, education, others) | Rogers, 2011 [43]<br><br>Sprod et al., 1996 [44] | Definition: Oral health training for the wider health, social care and education workforce - based on capacity building (ie. increasing knowledge and skills of others) to support oral health improvement in their daily role. More strategic means of health education - ensuring oral health messages are appropriate and consistent across the board<br>Examples of interventions: training health visitors and teachers to provide oral health education and pharmacists to deliver oral health advice, supporting the wider public health workforce and decision makers (ie. councillors, Directors of Public Health)<br>Key points<br>▪ Evidence is limited to impact evaluation studies. Lack of randomised controlled trials<br>▪ Good in terms of cost as it is building capacity among those already delivering services rather than establishing new services.<br>▪ Could be linked in to an 'accreditation of settings' scheme |
| Integration of oral health into targeted home visits by health/ social care workers | Rogers, 2011 [43] | Definition: Integration of oral health into targeted home visits by health/social care workers based on building the capacity of health /social care workers to provide oral health support during their visits<br>Examples of interventions: Integrating key oral health messages into the family nurse partnership programme which supports new mothers, integrating key oral health messages into support provided as part of the troubled families programme<br>Key points<br>▪ Targeted at vulnerable families at higher risk of oral disease<br>▪ Based on integration of oral health component into existing support programmes, rather than establishing specific oral health home visits<br>▪ Regular update training required for health workers carrying out home visits |
| Social marketing programmes to promote oral health and uptake of dental services among children | Gordon et al., 2006 [45], Stead et al., 2006 [46], Janssen et al., 2013 [47] | Definition: Using commercial marketing techniques to influence target audiences and promote healthier behaviours<br>Examples of interventions: Media campaigns to promote the importance of good oral health and raising awareness of the availability of NHS dental services – based on extensive consumer research (focus groups etc.), segmentation and targeting of specific population groups<br>Key points<br>▪ Evidence weak/inconclusive, particularly on the long term impact. Studies largely based on nutritional interventions, physical activity and substance abuse programmes<br>▪ Costly if extensive consumer research is carried out. Some suggestion that online interventions cost less and have greater reach<br>▪ Sustainability of impact likely to be an issue<br>▪ Intervention has the potential to address inequalities by specific targeting of population groups with accurate segmentation of the population<br>▪ See notes on "facilitated access to dental services" for further information about increasing uptake of services |

## Table 3.4. Additional information about oral health improvement programmes

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| SUPPORTING CONSISTENT EVIDENCE INFORMED ORAL HEALTH INFORMATION | | |
| Person-centred (one-to-one) counselling based on motivational interviewing outside of dental practice settings | Rogers, 2011 [43], Yevlahova and Satur, 2009 [48], Gao et al., 2013 [49] | Definition: One-to-one counselling exploring barriers to change and supporting individual behaviour change. This does not refer to individual 'brief intervention' support provided by dental staff during routine dental appointments<br>Examples of interventions: Motivational interviewing programmes to prevent early childhood caries: new mothers invited to a 30 minute individual session with a trained counsellor with two follow-up phone calls from the counsellor in a six-month period.<br>Key points<br>▪ Very intensive if done thoroughly<br>▪ Requires considerable compliance. Questionable effect on inequalities<br>▪ Can be difficult to deliver. Requires significant specialised training<br>▪ One to one intervention is relatively costly<br>▪ Effectiveness demonstrated for a range of health-related lifestyle issues (eg. substance abuse, poor adherence to medication regimes). Inconclusive evidence in relation to oral health |
| One off dental health education by dental workforce targeting the general population | Rogers, 2011 [43], Watt and Marinho 2005 [50], Sprod et al., 1996 [44], Kay and Locker, 1996 [51] | Definition: One off dental health education by dental workforce targeting the general population<br>Examples of interventions: Annual visits to a school by a dentist (eg. 'puppet show' type sessions demonstrating tooth brushing), direct provision of oral health education to new mothers (by dental workforce), health fairs<br>Key points<br>▪ Only short term changes in health literacy and/or behaviours are likely to be achieved - improvements are unlikely to be sustained in the longer term<br>▪ Limited effects on clinical outcomes – possible short term improvement in plaque levels<br>▪ Costly as reliant on dental workforce to deliver |
| COMMUNITY-BASED PREVENTIVE SERVICES | | |
| Targeted community-based fluoride varnish programme | Marinho et al., 2013 [52], NHMRC, 2007 [53], Rogers, 2011 [43] | Definition: Application of fluoride varnish to children's teeth carried out by dental personnel outside dental practices<br>Examples of interventions: Fluoride varnish programmes in schools/early years' settings<br>Key points<br>▪ Strong evidence of effectiveness of fluoride varnish in preventing tooth decay<br>▪ Studies have evaluated fluoride varnish intervention in community and clinical settings<br>▪ Positive impact on inequalities depends on appropriate targeting of high-risk populations, high rates of consent, compliance and retention. Successful delivery depends on engaging with parents, schools and early years' settings, ensuring the inclusion of wider oral health improvement messages and supportive environments<br>▪ Good links with dental practices are needed to ensure that dental practices are informed if their patients have received fluoride varnish<br>▪ High cost due to need for clinical personnel. Use of skill mix may help to reduce costs (eg. using dental nurses rather than dentists)<br>▪ Must be sustained to be effective. Evidence base relates to children within two year programmes with at least twice yearly applications<br>▪ Clinical governance requirements are considerable and careful planning is needed<br>▪ As fluoride varnish contains alcohol, the religious beliefs of families should be considered for those taking part in the programme |

## Table 3.4. Additional information about oral health improvement programmes

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| COMMUNITY-BASED PREVENTIVE SERVICES | | |
| Targeted provision of toothbrushes and toothpaste (postal, or through health visitors) | Rogers, 2011 [43] | Definition: Targeted and timely provision of free toothbrushes and toothpaste (ie. postal delivery or via health visitors)<br>Examples of interventions: Toothbrushes and toothpaste handed out by health visitors at regular child development checks as part of the Brushing for life programme. Postal provision of toothbrushes and toothpaste to children in targeted areas<br>Key points<br>▪ Timely provision of oral health resources encourages parents to adopt good oral health practices and start tooth brushing as soon as the first teeth erupt<br>▪ Postal delivery is likely to minimize uptake issues making the impact on inequalities more favourable<br>▪ Sustainability important – limited benefit of one off provision. Engaging with health visitors important to ensure support for programme and consistency of messages |
| Targeted community-based fissure sealant programmes | Ahovuo-Saloranta et al., 2013 [54], NHMRC, 2007 [53], Rogers, 2011 [43] | Definition: Application of fissure sealants to children's teeth – carried out by dental personnel, outside the dental setting.<br>Examples of interventions: Fissure sealant programmes in schools /early years' settings<br>Key points<br>▪ Evidence of effectiveness in preventing or controlling tooth decay, particularly in high risk children<br>▪ Most studies evaluate intensive interventions within clinical environments; relatively few studies have evaluated community based programmes<br>▪ Many studies were carried out when disease levels were higher. Relative effectiveness may be less marked now<br>▪ Positive impact on inequalities depends on appropriate targeting of high risk populations, high rates of consent, compliance and retention<br>▪ Successful delivery depends on engaging with parents, schools and early years' settings<br>▪ Good links with dental practices are needed to ensure that dental practices are informed if their patients receive fissure sealants.<br>▪ High cost due to need for clinical personnel<br>▪ More disruptive for settings than a fluoride varnish programme because the application of fissure sealants is more involved, more time-consuming and requires more equipment<br>▪ Fissure sealants can last for several years in contrast to fluoride varnish applications which are most effective if applied at least twice-yearly<br>▪ Must be sustained to be effective<br>▪ Clinical governance requirements are considerable and careful planning is needed |

**Table 3.4. Additional information about oral health improvement programmes**

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| COMMUNITY-BASED PREVENTIVE SERVICES | | |
| Targeted community-based fluoride mouth rinse programmes | Marinho et al., 2003 [55], NHMRC, 2007 [53], Rogers, 2011 [43] | Definition: Regular use of fluoride mouth rinse in community settings (either daily or weekly rinsing depending on concentration of mouth rinses)<br>Examples of interventions: School fluoride mouth rinse programmes<br>Key points:<br>▪ Evidence of effectiveness in preventing tooth decay<br>▪ Effectiveness of mouth rinses more limited compared to other fluoride vehicles, depends on fluoride concentration of mouth rinse and regular use<br>▪ Positive impact on inequalities depends on appropriate targeting of high risk populations, high consent rate and compliance<br>▪ Correct usage of mouth rinse important (children are advised to spit mouth rinse out and not rinse afterwards)<br>▪ Not suitable for children under eight due to risk of swallowing<br>▪ Correct storage of mouth rinse important; mouth rinses containing alcohol need to be stored securely. The religious beliefs of families should be also considered for children taking part in the programme<br>▪ Lower costs than fluoride varnish or fissure sealant programmes as clinical personnel not needed. Teaching staff could supervise regular school mouth rinsing programmes but require training and standard protocols<br>▪ Effect limited because programmes are restricted to term times |
| Facilitating access to dental services | Rogers, 2011 [43] | Definition: Coordinated efforts to identify population groups with low attendance rates, contacting them and arranging dental appointments with appropriate dental services, moves beyond simple signposting to services<br>Examples of interventions: Early years parents contacted, encouraged to attend a dental appointment and appointments arranged at local dental practices<br>Key points:<br>▪ While ensuring good access to dental services is important, access to services alone is not enough to improve oral health. Broader social determinants of health need to be also tackled. Important to ensure that dental services are delivering appropriate and high quality care<br>▪ Ensuring service capacity is vital since ethical issues arise if services are not available to meet the demand. Services must be appropriate for the targeted population group. For example, if a scheme is set up to increase access to services for children with special needs, it is important to consider whether there are any training needs for the dental workforce<br>▪ Requires close collaboration with NHS England who commission NHS dental services. The reformed dental contract currently being piloted aims to encourage dental services to adopt a more preventive approach to care<br>▪ Facilitated access schemes can increase inequalities unless appropriately targeted because uptake may not increase for people who are in need of care<br>▪ Monitoring and evaluation of facilitated access programmes can be difficult and costly<br>▪ Limited value without reorientation of healthcare services towards a more preventive approach |
| Using mouth guards in contact sports | Schiff et al., 2010 [56], Knapik et al., 2007 [57], Rogers, 2011 [43] | Definition: Using mouth guards in contact sports to reduce the risk of injuries<br>Key points<br>▪ Evidence that use of mouth guards during contact sports decreases the risk of mouth and facial injuries. Clear individual benefits but limited value as a population measure. Limited impact if delivered without additional complementary action to create safe environments<br>▪ Requires close collaboration with NHS England who commission NHS dental services<br>▪ Uncertain impact on inequalities since higher uptake more likely in more affluent population groups<br>▪ Relatively costly in the short term but may avoid high costs of complex restorative dental treatment in the longer term |

## Table 3.4. Additional information about oral health improvement programmes

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| SUPPORTIVE ENVIRONMENTS | | |
| Supervised tooth brushing in targeted childhood settings | Marinho et al., 2003[58], NHMRC, 2007[53], Rogers, 2011[43], Sprod et al., 1996[44] | Definition: Supervised tooth brushing programmes established in targeted childhood settings<br>Key points:<br>▪ Effectiveness and benefit of fluoride toothpaste firmly established. Evidence based on two year programmes<br>▪ School/early years' settings-based programmes effective for preventing tooth decay but not improving periodontal (gum) health<br>▪ Targeting is important. programmes are more likely to be effective in areas with high tooth decay rates and less effective when children are already brushing their teeth at least twice a day with fluoridated toothpaste<br>▪ Positive impact on inequalities depends on appropriate targeting of high risk populations, high consent rates, compliance and retention<br>▪ Successful implementation depends on engaging with parents, schools and early years' settings<br>▪ Requires teacher supervision which can be time-consuming; alternative is using older peers or parent supervisors<br>▪ Staff will require ongoing support in terms of training, cross infection control and consent issues<br>▪ Integration of tooth brushing into the daily routine should help to ensure sustainability of the programme. Links to the home environment may increase the chances of sustained impacts |
| Healthy food and drink policies in childhood settings | Rogers, 2011[43] | Definition: Introduction of healthier food and drink policies in childhood settings to create a health promoting environment<br>Examples of interventions: Nutritional standards in school canteens, school policies on snack, celebration and reward foods, providing drinking water in schools and early years' settings<br>Key points<br>▪ Potential for wider public health benefits in addition to oral health<br>▪ Integrated, multi-component, whole school approach (eg. with links to curriculum activities) more likely to be successful than single stranded interventions. Programmes could be linked to an 'accreditation of settings' scheme<br>▪ Active involvement of parents and link with home environment important<br>▪ Encouraging impact on inequalities by creating a more health promoting environment<br>▪ Potentially easy to sustain once established |
| Fluoridation of public water supplies | NHS Centre for Reviews and Dissemination[59], Medical Research Council [60], NHMRC, 2007[53], Truman et al., 2002 [61] | Definition: Fluoride occurs naturally in water at varying concentrations. Fluoridating the water supply increases the level of fluoride to the optimum concentration for dental health<br>Key points<br>▪ Water fluoridation is associated with reductions in levels of dental decay. Evidence of effectiveness based on systematic reviews<br>▪ No randomised controlled trials conducted because of methodological difficulties<br>▪ Universal approach targeted at geographic areas rather than specific population groups. Likely to require collaboration between neighbouring local authorities. Feasibility studies necessary to determine deliverability<br>▪ Uncertain evidence about impact on health inequalities. However ,this intervention is not affected by selective compliance<br>▪ Costs include public consultation costs, initial set-up costs, running costs, capital costs, monitoring costs<br>▪ Cost effectiveness depends on water supply system complexity and baseline levels of disease. Sustainable once established<br>▪ Public and political support fundamental. Requires significant planning and lead-in time |

## Table 3.4. Additional information about oral health improvement programmes

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| SUPPORTIVE ENVIRONMENTS | | |
| Provision of fluoridated milk in school settings | Yeung et al., 2007[62], NHMRC, 2007[53], Cagetti, 2012[63] | Definition: Providing fluoridated milk to children at school<br>Key points:<br>▪ Inconclusive evidence about the effectiveness of fluoridated milk in preventing tooth decay<br>▪ Implementation issues include access difficulties because only a limited number of dairies supply fluoridated milk, (non-fluoridated milk must also be made available), storage issues, consent issues, compliance (and quantity consumed) difficult to monitor, funding difficulties related to funding being devolved from local authorities to schools<br>▪ Positive impact on inequalities depends on appropriate targeting of high risk populations, high rates of consent and compliance<br>▪ Limited effect because implementation restricted to term times<br>▪ Uncertain costs. May not be cost-effective if there are considerable implementation issues and implementation is poor<br>▪ Costs of amending an existing school milk scheme will be considerably lower than the cost required to establish a new scheme<br>▪ Programme success requires strong school support |
| COMMUNITY ACTION | | |
| Targeted peer (lay) support groups/ peer oral health workers | NICE, 2008[64], Ford et al., 2013[65], Rogers, 2011[43] | Definition: Layperson of similar background/culture trained to support a local community group with particular health issues<br>Examples of interventions: Peer-led programmes within an ethnic minority community helping to improve oral health knowledge and supporting individuals to adopt healthier behaviours<br>Key points:<br>▪ Extensive evidence supporting peer (lay) support in wider public health programmes (eg. breastfeeding, infant feeding, smoking cessation); limited evidence for using peer support for oral health programmes<br>▪ Implementation can be difficult if staff/volunteer turnover is high<br>▪ Costs for training staff/volunteers and providing ongoing support<br>▪ Peer-led programmes within ethnic minority groups may help to overcome cultural barriers and tackle health inequalities<br>▪ Interventions which improve social support may be of greater benefit to more disadvantaged groups |
| School or community food co-operatives | Popay et al., 2007[66], McGlone et al., 1999[67] | Definition: Food is purchased by a co-operative to enable the local community to access fresh fruit and vegetables at reduced prices, closer to home<br>Examples of interventions: Communities or schools join together to purchase healthier foods at more affordable prices.<br>Key points<br>▪ Sustainability and success often largely depends on funding and level of community support<br>▪ Potential wider public health benefits in addition to oral health impacts<br>▪ Some suggestions that community engagement initiatives may have a positive impact on social cohesion and community empowerment<br>▪ Support and training needed for those involved |

## Table 3.4. Additional information about oral health improvement programmes

| Nature of intervention | Publications reviewed | Further Information |
|---|---|---|
| HEALTHY PUBLIC POLICY | | |
| Influencing local and national government policy | NICE, 2010[68], Rogers, 2011[43] | Definition: Influencing local and national government policy in order to improve oral and general health<br>Examples of interventions: Local public health input into planning decisions (eg. to restrict food take-away outlets near schools), establishing safe play areas. National policies advocating tighter controls on advertising, promoting and labeling of sugary food and drink, promoting plain packaging for cigarettes, minimum pricing for alcohol<br>Key points<br>▪ Based on the concept of health advocacy<br>▪ Combination of actions to gain political commitment, policy support, social acceptance and structural change in order to improve health<br>▪ Difficult to evaluate using traditional evidence-based methodologies<br>▪ Progress with tobacco control provides an example of best practice |
| Fiscal policy to promote oral health | Jha et al 2014[69]<br>Bellew, 2008[70], NICE 2010[71] | Definition: Introducing fiscal policies which promote oral health<br>Examples of interventions: local policies - affordable healthier food/drinks in public settings (eg. libraries, or leisure centres); national policies - minimum unit pricing for alcohol, increased taxation on tobacco<br>Key points<br>▪ Little evidence on use of fiscal policy specifically for oral health improvement measures but some evidence on the effectiveness of enhancing access to and increasing availability of healthier foods<br>▪ Strong evidence demonstrating effectiveness of increased tobacco taxation/prices in reducing tobacco consumption<br>▪ Uncertain Impact on inequalities. Raising the price of unhealthy foods can increase health inequalities but subsidising healthier choices to make them more affordable could reduce inequalities<br>▪ Successful implementation at a local level requires community engagement and support |
| Infant feeding policies to promote breastfeeding and appropriate complementary feeding practices | NICE, 2008[64], Rogers, 2011[43] | Definition: Wide ranging intervention based on concept of creating environments which support breastfeeding and appropriate infant feeding<br>Examples of interventions: Creating baby-friendly settings, encouraging appropriate weaning practices, Bottle-to-cup programmes to encourage parents to wean babies off bottles from six months<br>Key points<br>▪ Strong evidence on the impact of breastfeeding on general health but not specifically on oral health<br>▪ Should be integrated into wider public health programmes |

# Section 4. Supporting commissioners – what does this mean for commissioning?

## Introduction

This section aims to support local authorities to develop and review local oral health improvement commissioning frameworks for children and young people (CYP), identifying local oral health needs, currently commissioned services and their costs and reviewing these in the light of the totality of the evidence presented in section 3. This will enable local authorities to develop frameworks, which maximise oral health improvement outcomes, while ensuring that financial considerations make the most of the value of the investment. Financial considerations may include using pooled budgets, collaborative commissioning and cost benefit analysis tools.

Whilst acknowledging that local authorities may be starting from different positions and engagement and work may already be in progress within existing frameworks, identifying local needs and population characteristics is an essential first step. NICE are currently developing public health guidance for local authorities, which will include recommendations about oral health needs assessments. They have commissioned a review (as part of this process) of what methods and sources of information would help local authorities to identify oral health needs.[72] PHE is in the process of developing tailored oral health reports for local authorities. These reports could guide their decision-making about designing and targeting oral health improvement programmes. In addition, table 4.1 provides sources of information that could support assessing the oral health needs of local populations.

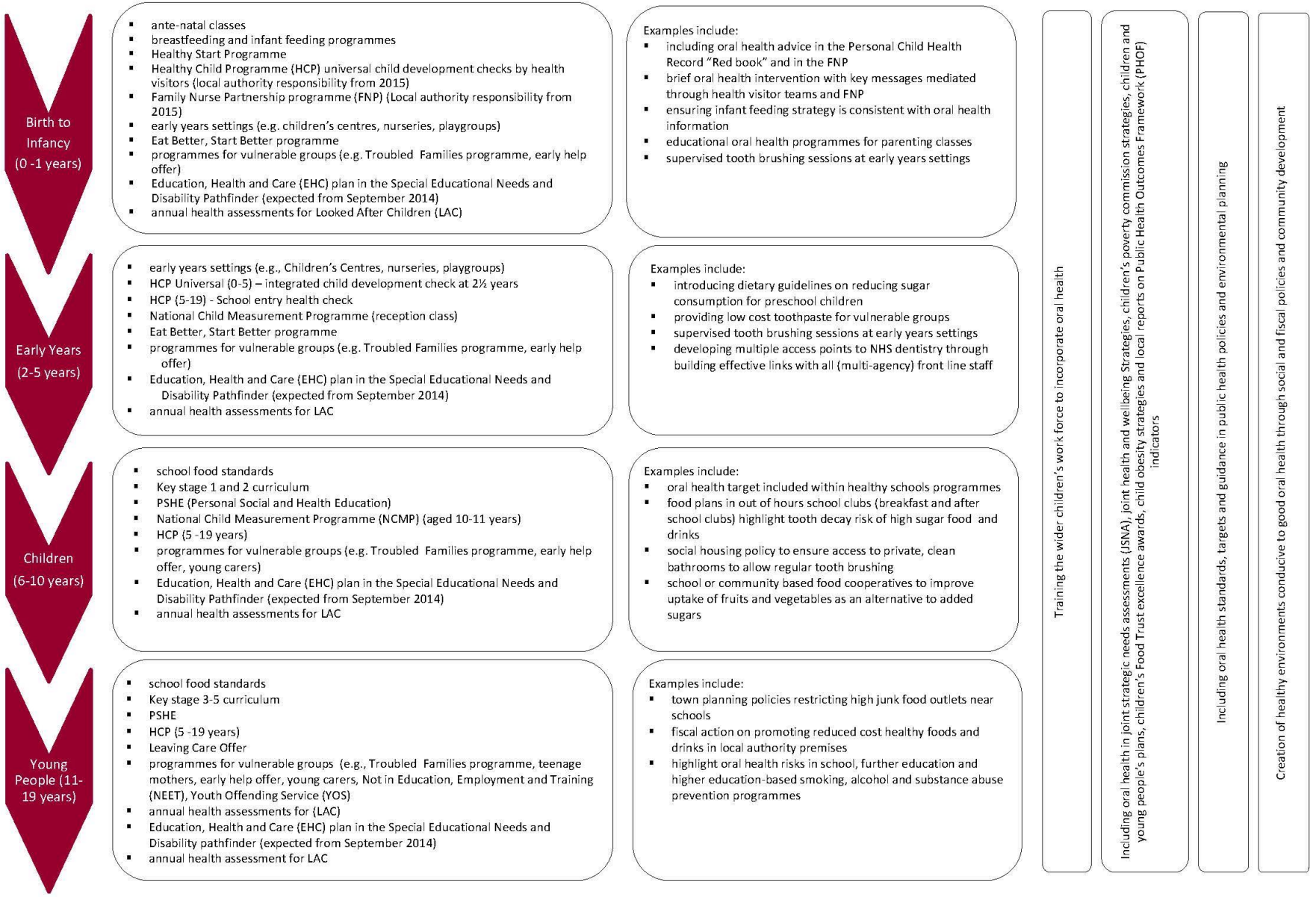
**Table 4.1. Sources of information for assessing local oral health needs**

| Information | Sources | Link to sources |
|---|---|---|
| Local children's oral health survey | Dental Public Health Intelligence Programme | www.nwph.net/dentalhealth |
| National Children's Dental Health Surveys | Health and Social Care Information Centre (HSIC) | www.hscic.gov.uk/article/3740/Dental-Health-Survey-of-Children-and-Young-People |
| Local data on children's dental attendance | Health and Social Care Information Centre | www.hscic.gov.uk/searchcatalogue?topics=0%2f Primary+care+services&sort=Most+recent&size=10&page=1#top |
| Admission of children to hospital for tooth extractions data | Dental Public health Intelligence Programme | www.nwph.net/dentalhealth/extractions.aspx |
| Local joint strategic needs assessments (JSNA) | Local authorities sources | |
| Deprivation statistics (eg., Index or Multiple Deprivation 2010) | Department for Communities and Local Government | data.gov.uk/dataset/index-of-multiple-deprivation |
| Targeted 2 year old take up and reach data | Department for Education | |
| Early Years Foundation Stage Profiles | Department for Education | www.gov.uk/government/publications/early-years-foundation-stage-profile-results-2012-to-2013 |
| Integrated 2 to 2½ year check performance | Implemented from 2015 | |
| Children and Young People's Health Benchmarking Tool | Public Health England | fingertips.phe.org.uk/profile/cyphof/data |

**Figure 4.1 Opportunities to integrate oral health improvement into health programmes and public policies**

**Examples of what local authorities could do to integrate oral health improvement into health programmes and public policies**

**Suggested cross-cutting strategic approaches for integrating oral health improvement**



## Integration and adding value

There are real opportunities for commissioners to add value to their existing programmes with little additional costs by integrating oral health improvement into existing programmes for CYP. Integrated and often cost-neutral or low-cost approaches involve training the CYP workforce to deliver oral health interventions, although some interventions may require local contract variations. Figure 4.1 provides examples of where local authorities could consider integrating oral health improvement activities across the CYP life course.

### Developing frameworks to maximise oral health benefits and outcomes from oral health improvement interventions

In addition to integrating oral health improvement within existing CYP policies and programmes, local authorities could also include specific oral health commissioning detailed in table 3.3 within their frameworks.

A good practice approach would be to commission a range of upstream, midstream and downstream interventions based on the local oral health needs of the population. Some of these programmes may involve a universal approach whilst others may be targeted to areas of identified oral health inequalities following the Marmot principles of “proportionate universalism” (See Section 5. Making commissioning choices – what does good look like?).

Local authorities may want to commission “emerging” oral health improvement interventions, particularly interventions strategically aligned with wider public health and wellbeing strategies (eg. infant feeding and fiscal policies). Interventions classified as “emerging” are often interventions that have inconclusive or little evidence to support their effectiveness, although the intervention looks promising in terms of impacts on inequalities, deliverability and cost. Local authorities who want to commission emerging interventions may also consider establishing research collaborations with dental public health specialists in academic institutions to collate local evidence and pilot programmes to address implementation issues.

In relation to interventions classified as “limited value”, depending upon local circumstances, local authorities may still want to commission these programmes, particularly if the programmes are already operating, have no or low costs and have wider health benefits (ie. the general health benefit of milk). Another example would be integrated commissioning with NHS England related to facilitating access to primary care dental services. These access programmes may be of limited value in terms of improving oral health unless the services have a preventive focus. The Department of Health dental contract reform programme is currently piloting elements of a new dental contract with a preventive focus and the delivery of improved oral health outcomes.

### Monitoring and evaluation

Figure 4.2 shows an outcomes triangle illustrating how local authorities could assess oral health improvement programmes at different outcome levels. Some overarching strategic outcomes (such as reducing tooth decay in five year-olds) are long-term outcomes, which may take two-three years to demonstrate improvements. Intermediate outcomes (ie. improving health visitors' knowledge of oral health) could be evaluated in the short term.

## Financial considerations

There are a range of financial approaches and techniques that could maximise the value of the investment and the evidence of the return on investment. Many local authorities will routinely utilise these tools but may not have applied them in the context of oral health improvement.

These include**:**

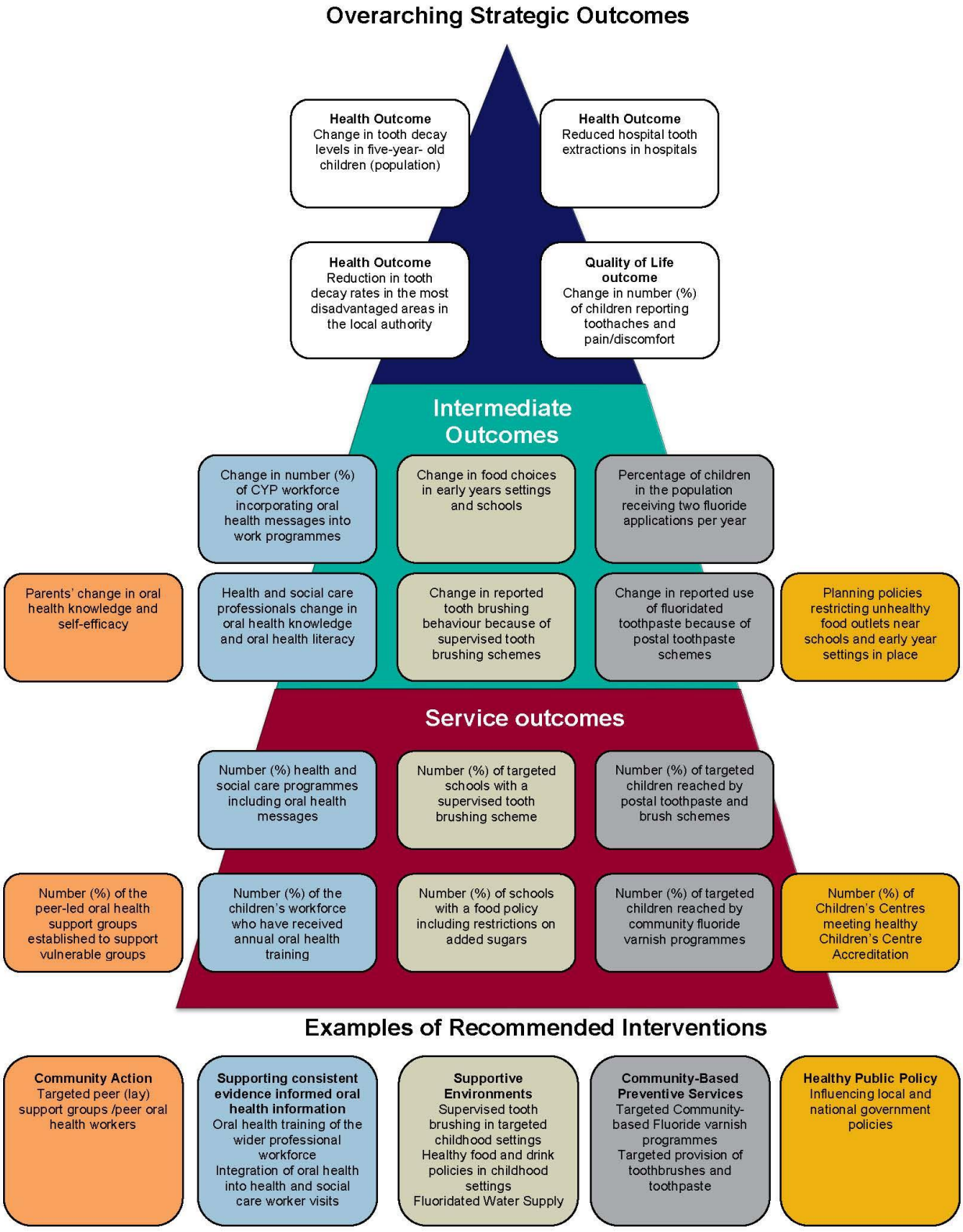
- Pooled budgets

A number of legislations make provision for the pooling of budgets, including the National Health Service Act 2006. Pooled budgets are in place across many local authorities for specialist services where both the cost and the volume of recipients can be high. In some cases, a pool may not be the most efficient process for smaller levels of investment, where the unit costs are lower to administrate. In these situations, a partnership agreement (under Regulations and Section 75 of the 2006 National Health Service Act)[73] can be a vehicle to align resources across the local authority, the NHS, schools and other commissioners.

- Collaborative commissioning

Collaborating across a bigger geographical footprint is increasingly recognised as an efficient way to manage the market of provision. This involves aligning commissioning intentions across local authorities, and agreeing single processes to commission and procure. One example is where a number of local authorities are all commissioning supervised tooth brushing programmes from a single community provider. Commissioning the programme through a single contract model with one co-ordinating commissioner, with a number of associates to the contract, could reduce costs by sharing management costs and utilising economies of scale in purchasing equipment. It could also result in better coverage for children and young people living along local authority borders.

**Figure 4.2: Examples of possible outcomes measures that local authorities could use to evaluate and monitor oral health improvement programmes for Children and Young People (CYP)**



Collaboration can extend between NHS bodies and other organisations. Table 1.1 outlines the range of commissioning responsibilities for children and family services, shared across NHS England, PHE and clinical commissioning groups. A local authority may want to initiate an oral health improvement programme delivered by health visitors (currently commissioned through the healthy child programme by NHS England) through the overarching contract. Similarly, they may want to run an oral health campaign and engage providers through the NHS England dental contract.

There are numerous examples of local authorities commissioning in this way, often using framework contracts to do so. A framework agreement is an agreement with suppliers that sets out the terms and conditions under which specific purchases can be made throughout the life of that agreement. They are used for generic goods and services across the public sector and in children's services; services such as residential children's homes are purchased through them. A framework agreement will generally allow more flexibility around the goods or services contracted for, both in terms of volume and the detail of the relevant services. A "multi-supplier" framework allows commissioners to select from a number of suppliers for its requirements, helping to ensure that each purchase represents best value and targets commissioners' local needs. Public sector organisations such as local authorities and NHS England, can use a framework agreement set up by another partner so long as it is stipulated in advance. A framework agreement particularly lends itself to the purchase of equipment, for example, toothbrushes or fluoride toothpaste.

- Cost benefit analysis tools

The government has set out a challenging public service reform programme, which includes improving the transparency of services and making better use of public money. Using finance models that provide intelligence is increasingly important as local authorities implement wide-ranging austerity measures whilst attempting to evidence effective use of public resources. Cost benefit analysis approaches provide a framework for structuring financial evidence. While it may not be possible to identify a quantifiable outcome for all interventions, the logic proposed can be partially applied with available data.

One example of a cost analysis model used in an oral health improvement programme, compared the cost of providing the national nursery tooth brushing programme in Scotland with the estimated NHS expected cost savings that might be associated with an improvement in the oral health of five-year-old children.[74] The cost benefit analysis of these types of schemes depends on baseline tooth decay levels. Greater expected benefits are associated with a higher baseline decay level. The expected savings in England would be realised within NHS England who commission all dental services. Assuming it is possible to quantify the cost savings from any reduction in the cost of treating tooth decay in children, the identification and redirecting of such funding would

depend on current contractual and commissioning arrangements. This illustrates the importance of aligning priorities, collaborative commissioning and pooled budgets. Improved oral health outcomes are achievable in the long term, but require sustained investment and collaborative working to allow the benefits to be realised.

Local authorities can obtain other examples of cost benefit analysis approaches and toolkits from the following sites:

New Economy: neweconomymanchester.com/stories/1778-cost_benefit_analysis

Early Intervention Foundation: www.eif.org.uk/publications/making-an-early-intervention-business-case-checklist-and-recommendations-for-cost-benefit-analysis/

# Section 5. Making commissioning choices – what does good look like?

## Introduction

This section draws on the information from the previous sections to support the process that local authorities may adopt to review and develop their commissioning framework for oral health improvement. Ensuring the maximum benefit in terms of oral health improvement outcomes, while considering financial issues, makes the most value for the investment.

This section provides exemplars describing two fictitious local authorities with contrasting circumstances. Suggested actions show how local authorities could integrate oral health improvement activities within existing services for children and young people and construct their commissioning frameworks by selecting specific “recommended” or “emerging” oral health improvement interventions from the interventions listed in table 3.3.

The child population in local authority A had generally good oral health. However, there were some socially deprived areas where children were at a higher risk of dental disease. The approach in this circumstance focussed on delivering oral health improvement interventions through universal integrated programmes (with low additional cost) within existing CYP services, supplemented by specific oral health improvement programmes targeting those areas with high levels of dental disease. This illustrates how a local authority could commission services based on the concept of “proportionate universalism” described on page 18. The second local authority (local authority B) had generally poor oral health and in addition, areas where children were at a very high risk of poor oral health. These exemplars are also illustrated using brief ‘real world’ case studies from across England.

Other examples of oral health improvement programmes from across the UK are the Childsmile programme in Scotland (www.child-smile.org.uk/) and the Designed to smile programme in Wales (www.designedtosmile.co.uk/home.html).

## Illustrative example of local authority A with high levels of disease in localised areas

Upper tier local authority A has a large geographical footprint with seven lower tier local authorities. The local authority commissioned and collected oral health data for five-year olds as part of the PHE dental public health intelligence programme in 2012. The director of public health discussed the findings with their named consultant in dental public health in PHE. The findings showed that marked inequalities existed at the lower tier level but the overall percentage of children who had dental decay experience was only marginally higher than the national average. The director of public health and the health and wellbeing board (HWB) were both highly committed to improving outcomes for all children including those from vulnerable groups. A recent, wide-ranging engagement exercise identified children's health issues (including children's oral health and obesity) as key priorities for the borough. This was reflected in all health and wellbeing policies within the district.

Local authority A considered its commissioning intentions for the next year. It chose to commission universal interventions for children in all areas of the borough (integrated within existing CYP services) alongside additional targeted population programmes for children living in lower tier areas with higher levels of tooth decay. Oral health improvement programmes were commissioned to address the need for children from vulnerable groups to receive targeted services. Programmes also utilised every child contact to share important general and dental health related health messages. Oral health messages were integrated into existing programmes (such as the healthy child programme and the family nurse partnership) at very little extra cost. Local authority A made a long-term investment in oral health, and included a range of outcomes, recognising that it could take some time to demonstrate tangible improvements in oral health. It also developed an evaluation plan incorporating interim outcome measures (figure 4.2). The HWB included in its joint health and wellbeing strategy an action point to ensure that council facilities provided environments that promoted good oral health. The local authority also considered commissioning local oral health surveys for specific age groups in the future to monitor the oral health of children over time. The strategy also intended to influence relevant departments to amend their policies and advise on mechanisms by which they might be enacted.

Table 5.1 shows the specific actions taken by local authority A to commission tailored oral health improvement programmes for its population.

## Table 5.1. Actions taken by local authority A to commission oral health improvement interventions for children and young people

| Actions | Description | Level of intervention | Principles |
|---|---|---|---|
| **Universal action: influencing national and local policy** | ▪ Planning department considered general and dental health when presented with applications from shops and food outlets wishing to open near to schools (case study 1)<br>▪ Pricing policies were adopted locally to facilitate healthier food and drink choices with collaboration across several local authorities to influence national implementation (case study 2)<br>▪ Schools and their governors (via healthy schools workers) established policies creating environments that promoted oral health (eg. by making water freely available, offering a selection of foods and drinks that support a healthier diet, including those in vending machines) (case study 3)<br>▪ An accreditation scheme was created in recognised settings that achieved a health promoting environment (case study 4)<br>▪ The local authority, head teachers and school governors identified opportunities in the curriculum to teach children about the importance of and how to maintain good oral health<br>▪ All CYP service specifications included a requirement for services to promote oral health and develop settings that did so | Upstream | Healthy public policy |
| **Universal action: oral health training for the wider professional workforce** | ▪ The local authority commissioned training programmes to ensure that all personnel in the children and young people workforce could access training covering the key oral health messages and how to communicate the key messages to parents at the appropriate developmental stage (case study 5)<br>▪ The training was updated as part of their continuing professional development (CPD) and became integrated into the induction programmes for new starters<br>▪ The local authority and partner commissioners ensured that all service specifications for CYP included a requirement to promote oral health | Midstream | Supporting consistent evidence informed oral health information |
| **Universal action: integration of oral health into the healthy child programme** | ▪ Health visitor service specifications included oral health improvement as part of the healthy child programme<br>▪ Health visitors received training about how to advise parents of young children about starting to brush when the first teeth erupt, also providing a family a pack to support this activity (Programme – Brushing for life) delivered within the healthy child programme (case study 6)<br>▪ Health visitors included advice about healthier feeding and weaning of babies<br>▪ Health and social care workers included tooth brushing advice as part of their supportive care to targeted high risk families as part of the family nurse partnership<br>▪ This action aimed to initiate twice daily tooth brushing with one occasion occurring as part of a bedtime routine, integrating tooth brushing within home activities to also increase parenting skills, self-efficacy and confidence | Midstream | Supporting consistent evidence informed oral health information |
| **Targeted action**: a**pplication of fluoride varnish in community settings** | ▪ Preventive advice given and fluoride varnish applied in targeted children's centres, nurseries and crèches in areas with high tooth decay (case study 7)<br>▪ Clinical teams (including a dental care professional with additional skills in prevention) were commissioned to carry out fluoride varnish applications and provide oral health improvement advice and support for families<br>▪ Specification ensured that the programme ran for a two year cohort with children having two applications per year over two years<br>▪ Performance monitoring incudes number (%) consenting, number of children in the scheme, number of applications and number of children having two applications per year | Downstream | Community-based preventive services |

## Illustrative example of local authority B with high levels of disease in all areas, and very high levels in areas of social deprivation

Local authority B was concerned about the high levels of tooth decay among their five-year-olds, which was significantly higher than the national average for England as reported by the dental public health intelligence programme in 2012. The director of public health consulted their named consultant in dental public health in PHE and requested further analysis of the data. This revealed that there were also inequalities within the district, with a large proportion of the five-year-olds having very high levels of oral disease. The tooth decay experience of five-year-olds was significantly higher than in other parts of the country and there were large inequalities across the district. The health and wellbeing board (HWB) was concerned about this, realising that the high tooth decay level among five-year olds was indicative of poor infant feeding practices. Oral health improvement among young children was prioritised. A named individual from the public health department was assigned to address the issue. A comprehensive oral health needs assessment had been carried out (with relevant sections included in the JSNA). An oral health strategy for the district was developed and highlighted within the HWB strategy. The oral health lead established a group to take forward the strategy action plan and secured funding for the agreed plan.

The action group considered all the interventions that could be applied universally. Oral health should be integrated with general health activities. Many existing services could take action to improve self-care home activities among families and change child care environments to reduce the risk factors for tooth decay. This was facilitated by greater integration and partnership working. There was no public water fluoridation scheme and local research showed that few parents adopted a twice-daily tooth brushing habit using fluoridated toothpaste for their children. The action group considered water fluoridation as a universal option within the action plan but recognised that the process of initiating a new scheme would require a long lead-in time. The group felt that it was also necessary to consider other options to improve oral health in the interim. Local authority B decided to commission several population-based interventions to increase the availability of fluorides in the population in addition to targeted interventions. Actions were adopted across the life course starting in the early years and continued throughout child development.

Table 5.2 shows the specific actions taken by local authority B to commission tailored oral health improvement programmes for their population.

## Table 5.2. Actions taken by local authority B to commission oral health improvement interventions for children and young people

| Action | Description | Level of intervention | Principles |
|---|---|---|---|
| **Universal action: influencing national and local policy** | ▪ Planning department considered general and dental health when presented with applications from shops and food outlets wishing to open near to schools (case study 1)<br>▪ Pricing policies were adopted locally to facilitate healthier food and drink choices with collaboration across several local authorities to influence national implementation (case study 2)<br>▪ Schools and their governors (via healthy schools workers) established policies creating environments that promoted oral health (eg. by making water freely available, offering a selection of foods and drinks that support a healthier diet, including those in vending machines) (case study 3)<br>▪ An accreditation scheme was created in recognised settings that achieved a health promoting environment (case study 4)<br>▪ The local authority, head teachers and school governors identified opportunities in the curriculum to teach children about the importance of and how to maintain good oral health<br>▪ All CYP service specifications included a requirement for services to promote oral health and develop settings that did so | Upstream | Healthy public policy |
| **Universal action: oral health training for the wider professional workforce** | ▪ The local authority commissioned training programmes to ensure that all personnel in the children and young people workforce could access training covering the key oral health messages and how to communicate the key messages to parents at the appropriate developmental stage (case study 5)<br>▪ The training was updated as part of their continuing professional development (CPD) and became integrated into the induction programmes for new starters<br>▪ The local authority and partner commissioners ensured that all service specifications for CYP include a requirement to promote oral health | Midstream | Supporting consistent evidence informed oral health information |
| **Universal action: infant feeding policies to promote breastfeeding and appropriate complementary feeding practices** | ▪ An update of the existing local authority infant feeding policy was required and would be relevant for improving oral health, also as a key resource and influencer for other interventions<br>▪ The extended feeding policy covered all areas relevant to healthier feeding and weaning of babies, serving to improve both general and dental health (case study 8)<br>▪ A wide range of stakeholders helped to deliver the policy covering breastfeeding, baby led weaning onto solid foods, safe bottle use and transfer to drinking from a cup | Mid and upstream | Healthy public policy |
| **Universal action: supervised tooth brushing in all childhood settings** | ▪ The local authority commissioned a universal supervised brushing scheme for all preschool sites rather than a targeted programme (case study 9)<br>▪ The service specification delivered the scheme in reception and year one, with each child cohort group therefore brushing for two years | Midstream | Supportive environments |
| **Universal action**: **re-orientating dental services so that CYP attend primary care dental care services that focus on prevention and oral health improvement** | ▪ Collaborative commissioning with partners in NHS England working to promote general dental practices to adopt a more pro-active preventive approach to care<br>▪ The current flexibility in the dental contract enabling this also aligns with the national contract reform programme which seeks to emphasise preventive activity<br>▪ The local authority established a scheme to encourage attendance by pre-school children to preventively orientated practices by mobilising all relevant services in contact with young children (case study 10)<br>▪ General dental practice teams were given updates on the correct preventive messages and supplied with toothpaste and toothbrush packs, funded by the local authority<br>▪ The programme also reinforced the importance of tooth brushing as the last action before sleep and no eating or drinking in the last hour before bed | Downstream | Community-based preventive services |

## Table 5.2. Actions taken by local authority B to commission oral health improvement interventions for children and young people

| Action | Description | Level of intervention | Principles |
|---|---|---|---|
| **Universal action: water fluoridation** | ▪ The local authority agreed to work with the local water company and PHE colleagues to consider the feasibility of establishing a local water fluoridation scheme<br>▪ The local authority followed the guidance as laid out in the national statutory framework with regard to water fluoridation [3] | Upstream | Supportive environments |
| **Universal action: integration of oral health into the healthy child programme** | ▪ Health visitor service specification included oral health improvement as part of the healthy child programme<br>▪ Health visitors received training about how to advise parents of young children about starting to brush when the first teeth erupt, also providing a family pack to support this activity ('Brushing for life') delivered within the healthy child programme (case study 6)<br>▪ Health visitors included advice about healthier feeding and weaning of babies<br>▪ Health and social care workers included tooth brushing advice as part of their supportive care to high risk targeted families as part of the family nurse partnership<br>▪ This action aimed to initiate a twice-daily tooth brushing habit as part of a bedtime routine, integrating tooth brushing within home activities to increase parenting skills, self-efficacy and confidence | Midstream | Supporting consistent evidence informed oral health information |
| **Targeted action**: **application of fluoride varnish in community settings** | ▪ Preventive advice given and fluoride varnish applied in targeted children's centres, nurseries and crèches in areas with high tooth decay (case study 7)<br>▪ Clinical teams (including a dental care professional with additional skills in prevention) were commissioned to carry out fluoride varnish applications and provide oral health improvement advice and support for families<br>▪ Specification ensured that the programme ran for a two year cohort with children having two applications per year over two years<br>▪ Performance monitoring incudes number (%) consenting, number of children in the scheme, number of applications and number of children having two applications per year | Downstream | Community-based preventive services |

## Case studies

**Case study 1. The role of local planning on the food environment**

Local authorities have recently begun to use the legal and planning systems to regulate the growth of fast food restaurants near schools. Improving the quality of the local school food environment near schools can potentially influence food purchasing habits and children's future diets. However, planning restrictions on hot food takeaways is only part of the solution; it does not limit the sale of high sugar food and drinks that children can still purchase from shops near schools.

A number of local authorities have drawn up supplementary planning documents (SPDs) to restrict new fast food premises from opening near schools including St Helens, Barking and Dagenham, Tower Hamlets, Newham, Hillingdon, Waltham Forest and Sandwell.

St Helens Council implemented a wide-ranging policy restrictions including only granting planning approval "within identified centres, or beyond a 400 metre exclusion zone around any primary or secondary school and sixth form college either within or outside local education authority control".

Birmingham City Council adopted a planning policy to restrict and manage the number of hot food takeaways in the city. The policy stated that no more than 10% of units within a local shopping centre, or parade, should comprise hot food takeaways. Planning applications exceeding this percentage were normally refused. At the time the policy was adopted, 33 of Birmingham's 73 local centres already exceeded that figure, thereby placing an immediate cap on any future growth in those centres. Between March 2012 and December 2013, the city council received 36 applications for hot food takeaways; of these, 21 were approved and 15 refused. Six of the 15 applicants appealed. The city council won all six appeals demonstrating that the policy is robust and has the support of the Planning Inspectorate.

Alongside planning policies, there were other measures available, implemented by environmental health or licensing teams to help local authorities regulate the sale of fast food. For example, Hillingdon Borough Council passed a resolution banning ice cream vans from the vicinity of schools and nurseries. One of the reasons cited for the ban was that ice cream trading near schools contradicted dietary recommendations and the aims of the Healthy Hillingdon Schools scheme.

**What does good look like**

- Joint working between council members and officers to address a public health issue
- Implementation of planning policy as part of a wider obesity or healthier eating strategy
- Widespread public consultation before implementation of the policy especially involvement of schools
- Regular monitoring in place
- Robust process important to ensure the support of the planning inspectorate

**Case study 2. A collaborative approach across local authorities in the North West to influence national policy**

Blackpool's public health department started a debate on policy measures to tackle the obesity epidemic seen in the North West and across the country. It considered government policies to influence the reduction in levels of obesity and improve oral health. It was clear from the evidence base that policies targeted at reducing both sugar and fat consumption were more likely to reduce levels of obesity based on a common risk factor approach. Similarly, a curb on high fat, sugar and salt product advertising to children would also help to reduce childhood obesity levels. Working jointly across the North West, the region's directors of public health decided to commission a collaborative programme to lobby government for:

- A sugar sweetened beverage tax
- A ban on marketing and advertising to children and young people
- The implementation of 20 mph zones in built up areas to provide a safe environment and encourage physical activity

**What does good look like?**

- Collaborative working on key issues to achieve greater influence
- Action based on evidence of outcomes that maximise impact
- Sustained over a long time period to allow impact to be measured

**Case study 3. Healthier eating school policies and schemes in primary schools**

Twenty three primary schools with higher than the national average uptake of free schools meals in eight local authorities in South West England and South Wales introduced a fruit tuck scheme as part of a cluster randomised control trial in 2008. The scheme offered children in participating schools a choice of fruit (priced at 15 pence each); no sweets, crisps or sugary snacks were provided. The scheme was evaluated after one year, comparing 23 participating schools with 20 non-participating schools (control schools). Children in participating fruit schemes schools received an estimated 70,000 pieces of fruit during the school year. Children in participating schools were more likely than children in non-participating schools to report eating fruit as a snack in schools. The research team also assessed children's reported food intake using a computerised 24-hour recall questionnaire. Children attending schools that had both a fruit scheme and a school policy restricting foods brought into school (ie. no food or "fruit only" policy) had higher fruit intakes than children attending schools with just a fruit scheme This emphasised the impact of school food policies, providing supportive environments to supplement low cost healthier food schemes.

**What does good look like?**

- Subsidised fruit schemes reinforced by school food policies restricting the types of food brought into school
- Schools policies should follow national guidelines incorporating healthier eating messages tackling general and dental health (ie. tooth decay and childhood obesity)
- Policies should also support out of school (home) eating practices by involving and engaging parents

Case study drafted from research publications by Moore and Tapper 2008 and Moore et al 2011[75,76]

**Case study 4. Accreditation scheme for early years settings promoting good oral health in Bradford**

The 'First steps to healthy teeth' dental health award was instigated by the Bradford District Care Trust Salaried Dental Service. It aimed to recognise and reward early years settings that demonstrated and promoted the oral health of young children. This award scheme was developed for all early years settings promoting good oral health with preschool children, particularly focussing on healthier eating as recommended by the Caroline Walker Trust Guidelines 'Eating well for under 5's in child care' and for those over one, the national voluntary food and drink guidelines for early years settings in England – a practical guide developed by the Children's Food Trust. The award was supported by principles set out in the early years foundation stage, which required early years practitioners to have a holistic view of each child and to understand that a child's dietary and physical needs underpin their ability to develop. The award schemes had three levels: bronze, silver and gold. Eligible early years settings completed an application. Settings that received a gold level award had an oral health/nutrition policy that included all the award criteria.

The award was supported by the Bradford Early Years Child Care and Play Service, Day Nursery Association, Pre-school Learning Alliance, Child Minding Network, Bradford under Fives Association, and Bradford and Airedale Dietetic Service.

**What does good look like?**

- Award standards developed in line with national children's guidelines and with stakeholder groups
- Integrated approach to oral and general health
- Early establishment of good dietary practices contributing to giving every child the best start in life

**Case study 5. Training the children and young peoples and voluntary sector workforce to support oral health improvement.**

Children in Lancashire and Cumbria have poorer dental health compared to children in other parts of England. The Smile4Life programme was developed in partnership with local authorities to address this problem. The programme aimed to reduce tooth decay in children, laying a solid foundation for their good oral health throughout life. The approach focussed on sustained behaviour change, supported across the health and social care systems in Lancashire and Cumbria, with interventions informed by 'Delivering better oral health'. Smile4Life was designed to support everyone who had a role in the development of children and young people.

Four key areas for action provided the framework for implementing the programme. These related to facilitating healthier diets, regular and appropriate tooth brushing, adopting healthier lifestyles and regular access to dental services. Community staff throughout the programme, developed policies, implemented actions, carried out procedures, and exhibited behaviours, aligned to the four key areas for action. These actions were unique to their setting and sensitive to their local community's needs. Staff submitted evidence to demonstrate their activities in a standardised workbook that included policy documents, photographs of interactive displays or sessions, and reports. This evidence contributed to awards, which recognised the settings' achievements in each of the key areas, and formed part of the programme evaluation. Each council recorded and reported the achievement awards as part of the performance monitoring system.

An important programme enabler was equipping the wider workforce to effectively and consistently support programme delivery. This involved a cascade training approach involving the children and young people', and voluntary sector workforce in children's centres and other early year's settings. Experienced NHS oral health promoters initially trained nominated oral health champions using a standardised training package and web-based resources. The oral health champions then shared and helped to deliver evidence-based oral and general health messages within their workplaces. An e-learning tool is under development to support this process.

Dental nurses have been trained to promote oral health and apply fluoride varnish in Cumbria's substantial number of rural communities. Dental nurses have to complete an assessment of their clinical skills and a verbal examination.

**What does good look like?**

- Training and supporting oral health champions to implement the programme
- Support from commissioners of early years settings
- Demonstrable partnership working across health and social care sectors
- Providing awards recognising successful implementation
- Ongoing monitoring to ensure maintenance of standards

**Case study 6. 'Building brighter smiles' in Bradford – commissioning oral health improvement programmes across the life course.**

The oral health of five-year olds in Bradford and Airedale is poor, with significant inequalities throughout the district. Oral health improvement programmes in this district were focused on the oral health of young children and followed Marmot principles to tackle inequalities reflecting national and local priorities. 'Building brighter smiles' (BBS) incorporated a series of evidence-based programmes, which adopted a life course approach based on the principles of "proportionate universalism". These programmes had population-wide and targeted elements and included breast feeding advice, partnership working with health visitors, community-based fluoride varnish applications, a dental health award programme promoting a healthy diet in pre-school settings and toothpaste and brushing programmes in schools and mosques. Supervised brushing was offered to nursery and reception classes in schools where 25% plus of pupils were eligible for free school meals. Children's teeth were brushed once a day over a two year period. All classes within special schools were included in the programme. Free toothpaste and toothbrushes were provided as part of the programme and during the main school holidays. Training and regular updates in evidence based oral health practice to professionals working with children, young people, elderly and special need clients was embedded within BBS, to communicate consistent oral health and general health messages so ensure widespread impact. Training was integral to the health visitor led 'Brushing for life' programme where health visitors distributed fluoride toothpaste, toothbrushes. They also gave evidence-based oral health advice to support parents of young families. The intervention was incorporated within the healthy child programme service specification.

Dental practices in Bradford were supported to re-orientate their services towards prevention through the Health promoting dental practices award (HPDPA). Thirty-five dental practices participated in the HPDPA programme. Primary care dental practices were encouraged to deliver evidence based prevention and promote regular attendance for fluoride varnish application. BBS was underpinned by embedding oral health improvement into local strategies, policies and guidance. This included incorporation into early years, service specifications; oral health included as a priority in the health and wellbeing action plan and input into 'Every baby matters' infant nutrition policies and guidelines. Work continued and included embedding oral health into integrated child pathways utilising the strength of universal services to deliver oral health prevention and early intervention, developing partnerships with children's centres and engaging with partners.

**What does good look like?**

- Overarching strategy: life course approach and "proportionate universalism"
- Integrate into local health pathways meeting local needs
- Multidisciplinary approach to issues such as consent maximising the success of fluoride varnish programme
- Using different members of the dental team including dentists, dental nurses, dental therapist and hygienists (skill mix)
- Monitoring and reviewing performance and outcomes

**Case study 7. A community-based fluoride varnish programme in Liverpool**

Young children in Picton, Liverpool have high levels of dental disease and poor access to health services. Levels of deprivation are high and there is a significant proportion of the local population from black and minority ethnic (BME) groups, who often face significant barriers to accessing care.

A locally commissioned programme provided evidence based preventive care and promoted increased dental attendance for children at the children's centre. A dental therapist from the local dental practice offered fluoride varnish applications on two afternoons a week to children aged two-four years who were attending groups and activities within the centre. This introduced dental care to children at an early age.

The initial activity was supported by an oral health improvement officer whose role was to raise awareness about the programme among families accessing the centre. They also ensured that wider oral health messages around dental care were delivered to families.

The success of the pilot was assessed based on a number of parameters:

- number of new, early child contacts made at the children's centre
- number of varnish applications undertaken
- number of new child attendances at the local dental practice
- feedback from service users, education centres, dental staff and health promotion officers

The practice reported a high attendance rate for appointments. Feedback from practice and centre staff confirmed that this model reached a high number of families of young children and represented a non-threatening introduction to dental care for local families.

**What does good look like?**

- A broad approach giving families advice about home care, not just limited to the application of varnish. Parents should be present to hear the advice, discuss as required and provide valid consent
- Programmes should be sustained over the long-term supported by the evidence of effectiveness related to children have four applications per year in a two-year programme
- Appropriate range of dental health professionals (skill mix) trained to give oral health advice and to apply fluoride varnish (eg. primary care commissioning guidelines: the use of fluoride varnish by dental nurses to control caries: www.pcc-cic.org.uk/sites/default/files/articles/attachments/the_use_of_fluoride_varnish.pdf)
- Targeting age groups and social groups that are likely to be at greater risk of tooth decay to maximise benefit
- Clinical conditions which optimise successful applications of fluoride varnish in community settings (eg. good light, reclining chair, good infection control procedures)
- Encouragement and assistance to attend a dental practice with good links to practices

**Case study 8. Implementing a healthy baby feeding policy**

A broad stakeholder group in Manchester developed a baby feeding and weaning policy. Prolonged bottle use containing high sugar drinks was of particular concern in this local area, increasing the risk of tooth decay in young children. This concern led to the widespread support and agreement to establish an infant feeding policy. The policy development team consisted of health visitors, paediatricians, speech and language therapists and oral health improvement practitioners. They worked together on a commissioned programme to launch the policy, which alongside the guidance for the healthy feeding and weaning of babies encouraged parents to discard feeding bottles at the appropriate developmental stage.

This programme aimed to tackle the culturally embedded custom of prolonged bottle-feeding particularly at night, by encouraging parents to stop using a baby feeding bottle by the time their child was 12-months old. Parents were also encouraged to change to water or milk as the drink of choice between meals.

The oral health improvement team launched and co-ordinated the programme and purchased and distributed suitable trainer cups to project partners. Health visitors and nursery nurses provided cups to the parents of children aged eight to 12 months onwards at a range of events and venues attended by young children. These staff and other health and social care workers talked to parents about discarding the bottle and the dangers of long-term bottle use, especially at night. A leaflet reinforcing advice about safe drinks and the risks of leaving a baby with a bottle at night was given out with the cups.

The programme was evaluated and showed that parents who had received trainer cups and proactive messages from healthcare workers in the test areas had better knowledge about bottle feeding and better reported home care habits changing from bottles and cups.

**What does good look like?**

- The multidisciplinary development of the policy facilitated the implementation of the commissioned programme
- Consistent evidence-informed advice from all health, education or social care partners
- Provision of free flow trainer cups, not no-spill cups, at no cost to family
- Support given to families to make gradual changes if necessary

**Case study 9. Tees daily supervised tooth brushing programme in schools**

A scheme ran in Teesside aimed at improving the oral health of young children by providing materials for supervised tooth brushing in schools**.** The oral health improvement team (working with the consultant in dental public health) operationalised and coordinated the project. They gained school cooperation, informed parents, ordered, stored, distributed and replenished supplies of toothpaste, toothbrushes and toothbrush holders. They also trained school staff. Schools were targeted based on the results of the nationally co-ordinated dental epidemiology programme (now the PHE dental public health intelligence programme) survey of five-year-old children in 2005-06, which involved a large sample of children. Schools in the two most deprived quintiles (ie. those with the highest disease levels), were targeted for the intervention and invited to take part. Nursery and reception children in 58 schools joined the programme and school staff supervised tooth brushing on a daily basis. The NHS originally funded the programme. Local authority public health departments have provided the funds for resources (ie. toothbrushes, toothpaste and toothbrush racks) to run the school programme since 2013.

PHE dental public health intelligence programme data in 2012 was used to analyse changes in tooth decay levels. The data showed a reduction in tooth decay levels in brushing schools compared to schools not participating in the scheme.

**What does good look like?**

- Endorsement of the project by local authority commissioned and managed services to maximise co-operation
- Dedicated personnel to recruit schools, communicate with parents, train staff, deliver and replenish equipment and troubleshoot
- Provision of correctly designed toothbrush storage and labelling systems and toothpaste of the correct concentration of fluoride
- An effective reminder system to reinforce the message about twice daily brushing at home with the option of providing toothpaste and brushes for holiday periods
- Inbuilt robust evaluation processes to measure improvements in oral health

**Case study 10. Re-orientating dental services to encourage prevention and dental attendance through collaborative commissioning**

The first task of the Greater Manchester local dental network (LDN) focused on improving the oral health of preschool children in the “Baby teeth DO matter” project. General dental practitioners worked with commissioners from NHS England to agree a contract variation that encouraged NHS practices to attract non-attending preschool children to attend for check-ups, pro-active preventive advice and treatment where needed. The LDN programme provided promotional materials, which delivered key dental health messages and emphasised the importance of bedtime brushing before sleep and no eating and drinking in the last hour before bed.

General dental practice teams were given updates about the key preventive messages and supplied participating families with toothpaste and toothbrush packs at no cost to them. These packs were given to families with two to five-year old children, whose parents reported they had not attended a dentist before.

Local clinical leads encouraged practices to participate, working together to identify young children who had no local dentist to encourage attendance. The scheme was facilitated and supported by oral health improvement teams. Libraries, medical practices, children’s centres, nurseries and nursery classes at schools displayed posters and distributed the contact details of participating practices. Whole families who had not previously attended a dental practice visited participating practices and received preventive advice and free toothpaste. Children received fluoride varnish applications when possible.

**What does good look like?**

- Dental practice teams should be trained in the key dental health messages and apply the guidance from the evidence informed toolkit for prevention ‘Delivering better oral health’
- Involvement by oral health improvement teams
- Support from the local authority so that services that are provided or commissioned by them support the publicity drive and promote the scheme
- Collaborative commissioning in partnership between NHS England area teams and local authorities

# Appendix 1. Ten key questions to ask - improving the oral health of children and young people

## Local authorities' public health role

### Key questions to ask when assessing local oral health improvement delivery

1. What are the oral health needs of children and young people (CYP) in your local area?
    - Do you have information and intelligence regarding the oral health of CYP and the services that are available, benchmarking to similar authorities and local neighbours?
    - Does this identify vulnerable groups and those most affected?
    - Does it identify inequalities within the district?

2. Is oral health included in a joint strategic needs assessment (JSNA) and the health and wellbeing (HWB) strategy and is this underpinned by more detailed oral health needs assessments and strategic documents?

3. Do you have a local oral health strategy in place to address oral health issues? Is there an integrated approach to oral health improvement across children's services and the children's workforce?

4. Are commissioned programmes appropriate to local needs and informed by the information and intelligence locally?

5. Are the oral health improvement programmes that you commission supported by the best available evidence?

6. Are your oral health improvement programmes monitored and evaluated and what are the outcomes, outputs and impact? These may be short, medium and long-term outcomes, and include both quantitative and qualitative measures.

7. Do you have an identified lead or established leadership and advocacy for oral health improvement and commissioning? Are there mechanisms in place to oversee accountability, delivery and engagement with partners?

8. Are the children's workforce supported through training and development to deliver for oral health improvement locally?

9. What engagement processes do you have to collect the views of CYP and have their views influence decision-making?

10. Is there reasonable and equitable access to local dental services and are these focused on prevention and the needs of CYP?

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