Updated Draft Oral Health Needs Assessment for East Anglia Area Team

Updated 13th October 2014

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EXECUTIVE SUMMARY

Oral health in adults and children in East Anglia is generally good. It is better than England averages and in many cases is among some of the best in the country. Recent oral health surveys have shown that the dental health of both adults and children has improved significantly in recent years. Across most of East Anglia, except in Peterborough, more than seventy per cent of five years olds are free from dental decay.

However, population averages mask oral health inequalities. A well- recognised association exists between socioeconomic status and oral health and information suggests that oral diseases are increasingly concentrated in the lower income and more excluded groups. In some parts of the area, for example Cambridge, Norwich, Great Yarmouth and Huntingdon, five year old children have four or more decayed primary teeth and most of this decay remains untreated. Nearly 1400 children in the area a year attend hospital to have dental extractions under general anaesthesia and this is still the most common reason for children's admissions to hospital. This is likely to be an under estimate as it does not include some children treated under salaried dental services. Severe, untreated dental decay may not only cause pain, discomfort and disruption to sleeping and eating habits, but may also adversely affect child growth and school performance.

East Anglia has an ageing population. People are living longer and keeping more of their teeth for longer. This will have implications for the provision of dental services in the future as more people will be maintaining teeth that have already been heavily restored. The Independent review of dentistry in England carried out by Professor Jimmy Steele in 2009 refers to this group as the "heavy metal generation". In future there may be greater need and demand for more specialist services such as complex restorative care, domiciliary services, minor oral surgery services and anxiety management pathways.

Oral diseases are important public health issues as they are among the most commonly found chronic diseases and are almost entirely preventable. The causal relationships between sugar and dental decay and gum disease and poor oral hygiene, for example are well understood. Although we have seen considerable reductions in dental disease since the 1970s there are still improvements to be made. The most effective and efficient method of promoting oral health is to integrate oral health with generic health promotion using the common risk factor approach. Common risk factors include poor diet, tobacco use, poor hygiene, injuries and high alcohol consumption, factors associated with obesity, cancer, heart disease, diabetes and strokes.

In addition to this common risk factor approach targeted oral health improvement interventions such as community fluoride varnish schemes and tooth brushing programmes must also be considered for children in areas of high need. Local dental practices also have an important role to play in improving oral health for their patients by implementing the Department of Health document "Delivering Better Oral Health- a guide to practice based prevention"

In April 2013 responsibility for commissioning dental services transferred to the newly created NHS England Area Teams and dental public health functions including

oral health improvement programmes, epidemiological surveys and water fluoridation schemes became the responsibility of Local Authorities. These changes also saw the inception of Local Professional Networks who, as part of NHSE Area Teams, have responsibility for providing strong clinical leadership in improving oral health locally. Clinical engagement via the LPN, Local Dental Committees and any managed clinical networks is important for the success of any commissioning arrangements and service provision if oral health is to improve.

The priorities for East Anglia Area Team and its stakeholders are:

- Improving oral health of the population throughout the life course ensuring that every child gets the best start in life
- Reducing oral health inequalities
- Improving access to NHS dentistry
- Maintaining good patient experience and patient safety
- Driving quality, innovation, productivity and prevention forward

Across East Anglia access to dental services is generally good although uptake is not always high. Most patients in East Anglia report that they are able to find an NHS dentist when they want one and the vast majority are satisfied with the service they receive. Historically most dental services have been provided in more affluent areas and there are limited opportunities to re-commission services within the same budget in underserved areas because of the nature of the non- time limited GDS contracts. However when these opportunities do present new services should be commissioned in areas of deprivation and high need.

The rural nature of much of East Anglia may affect people's ability to access dental services. In addition not everyone wishes to visit a dentist on a regular basis and some may only require care when they have a problem. Different models of service provision such as Dental Access Centres, out of hours services, urgent care services and mobile dental units should be maintained to allow flexibility and patient choice and the public voice should help inform these arrangements.

A reformed dental contract, with a focus on prevention and patient registration is expected to be delivered in 2016. The introduction of the last new dental contract in 2006 saw marked changes in NHS general dental service delivery. This in turn led to increasing demand for the provision of more specialised services such as minor oral surgery and restorative dentistry. Future commissioning of local dental services must be flexible enough to accommodate any changes in GDS delivery that these reforms may bring.

Until recently dental services were commissioned by PCTs and arrangements for the provision of these services showed local variation. With one organisation there is now the opportunity to achieve a consistency of services across the area using a single operating model. This single operating model has the potential to achieve an equitable provision of services which are delivered to a high standard and which demonstrate excellent quality.

Although there is a wealth of information available, the way it has been collated and reported in the past varied. There is now the opportunity for consistent data capture as well as monitoring and evaluation of all services against an agreed set of

outcomes which will provide valuable information for future commissioning of dental services in East Anglia.

1. Introduction

Good oral health is integral to general health as it 'contributes to general well being' and allows people to 'eat, speak, and socialise without active disease, discomfort or embarrassment'.

Oral diseases are important public health issues as they are among the most commonly found chronic diseases. Although we have seen considerable reductions in dental disease since the 1970s, there are still substantial reductions to be made. Dental decay, for example, is commonly found despite being almost entirely preventable.

While dental decay has reduced overall, population averages mask oral health inequalities. Oral disease varies according to gender, age, ethnicity, geographic location and socio-economic group. Trends suggest that dental disease is increasingly concentrated in areas of social deprivation.

From April 2013 Local Authorities (LA) were given the responsibility for improving the oral health of their populations. Part of the planning for this involves an assessment of the local oral health needs of the population, followed by the development of an oral health strategy. The local oral health strategy must incorporate the national priorities detailed in *Choosing Better Oral Health – an Oral Health Plan for England* as well as other key policy drivers.

At the same time NHS England (NHSE) was given the responsibility for commissioning primary care dental services through the local Area Teams. Specialist dental public health advice is provided by Public Health England to NHSE and LAs.

This Oral Health Needs Assessment is designed to inform NHSE East Anglia Area team commissioning or primary care dental services as well as facilitate the development of long-term strategies aimed at improving oral health and reducing health inequalities.

2. Broader Context

2.1 Call to action

In launching the 'Call to Action' in February 2014 (http://www.england.nhs.uk/wp-content/uploads/2014/04/imprv-oral-health-info.pdf) NHS England's Chief Dental Officer made the case for change by quoting from *An Independent Review of NHS Dental Services in England*, 2009:

Oral health should be for life. The two common dental disease – dental decay and gum disease – are chronic and the damage they cause is cumulative and costly. The NHS is still dealing with, and paying for, the consequences of disease that developed more than 50 years ago. The trends in disease prevalence and the way it has been managed are visible in the oral health of different generations. We still need to deal with this burden of the past and manage the demands of the present, but keep a very clear focus on the future so that we can minimise the risk, discomfort and costs for future generations"

He identified the key challenges as:

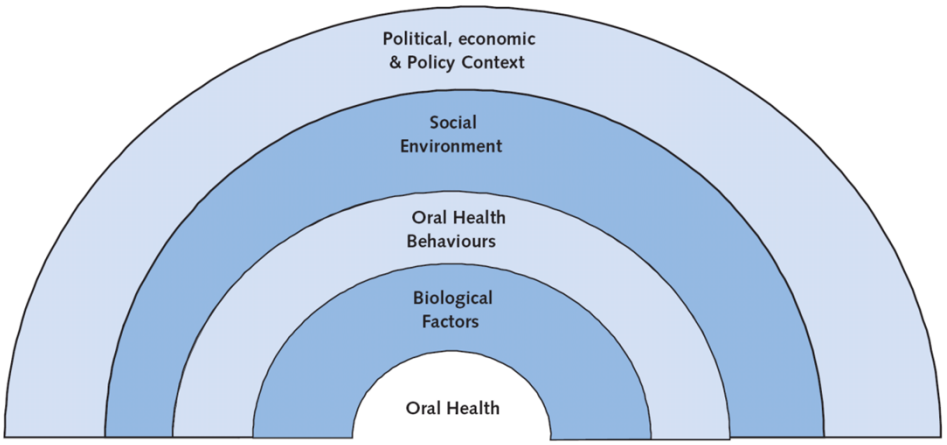
- Improving oral health: quality and prevention
- Improving oral health: reducing health inequalities
- Access
- Information for patients
- The pathway approach and integrated care
- Patient and public engagement
- Workforce

The structure of this document is briefly to review the determinants of oral health and impact of oral disease, and to outline local strategic options to meet the key challenges identified in *A Call to Action*. A detailed report *Oral Health Needs and Determinants in East Anglia* has been produced to support local organisations understanding of appropropriate evidence-informed actions to maintain and improve oral health.

2.2 The determinants of Oral Health and Impact of Oral Disease

Oral diseases are important public health issues as they are among the most commonly found chronic diseases and are almost entirely preventable.
A person's oral health is shaped by complex set of determinants, some closely related to that individuals' choices and behaviour, others more distanly determined:

Figure 1: Determininants of oral health



Source: Modified from Watt, 2005 in *Choosing Better Oral Health. An Oral Health Plan for England. 2005*
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4123251

When applying this model, strategies for oral health improvement need to be balanced to operate at each level:

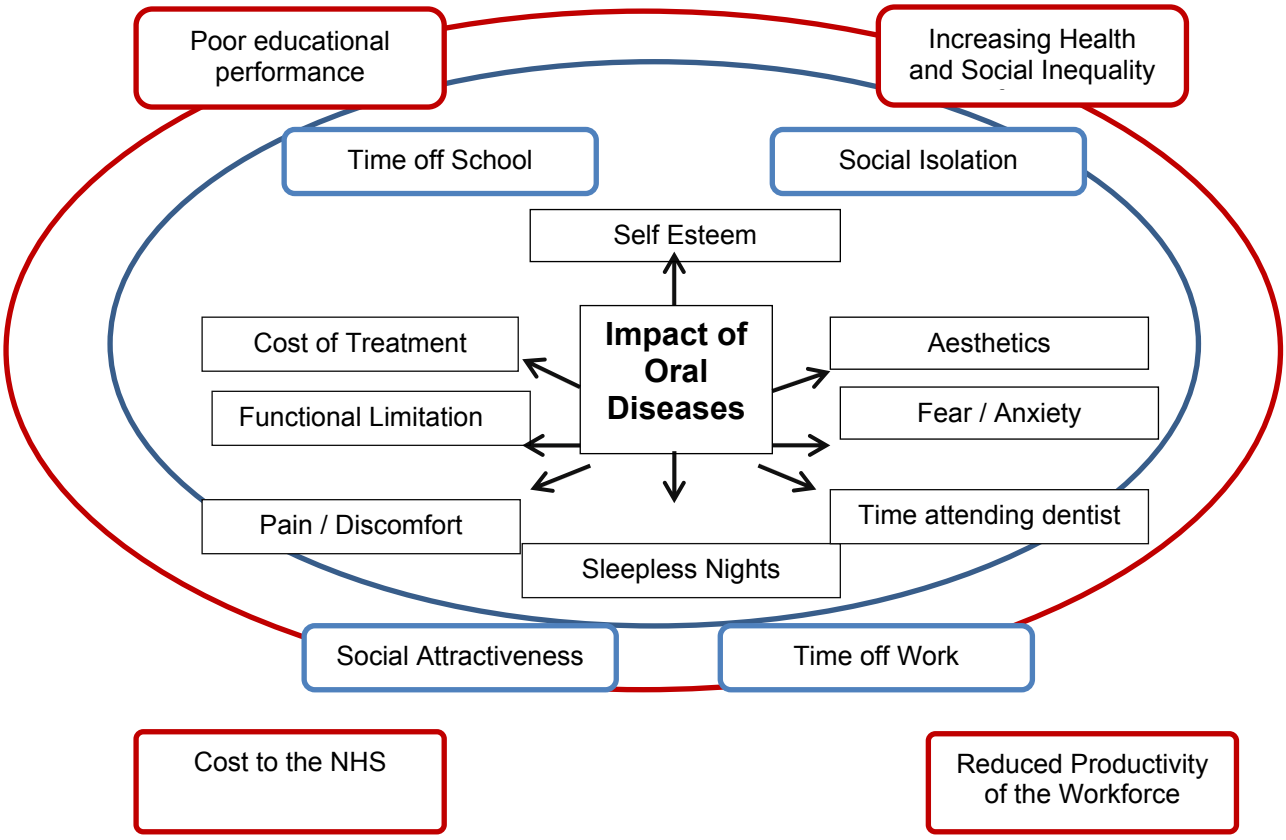
Table 1: Strategies for Health improvement

Levels		***Example of how they can be applied – Reducing the use of tobacco***
Biological – immunisation, vaccinations, treatments		Nicotine replacement therapy and cognitive tools for cravings
Individual Behavioural – helping individuals to stop smoking		Individual and group behavioural change and support
Environmental – encouraging green transport, reducing pollution, changing the public realm		Environmental cues, display legislation Smokefree playgrounds
Social – changing social norms about health, e.g. acceptability of binge drinking, acceptability of taking smoking breaks		Behavioural economics, social marketing Young people
Structural – policy changes such as workplace health, school health policies		Workplace policies Tobacco control partnerships
Legislative – the smoking ban, legislation on alcohol sales		The ban on smoking Legislation on displays

Source: The Six Levels of Public Health Strategy (from the Hertfordshire Public Health Strategy.)
Adapted from Dettels et al, 2009)

Similarly, the national burden of oral disease extends beyond the cost of NHS treament services, through a wide range of broader impacts both on the individual and society as a whole (reference nnnnnn):

Figure 2: Impact of oral disease



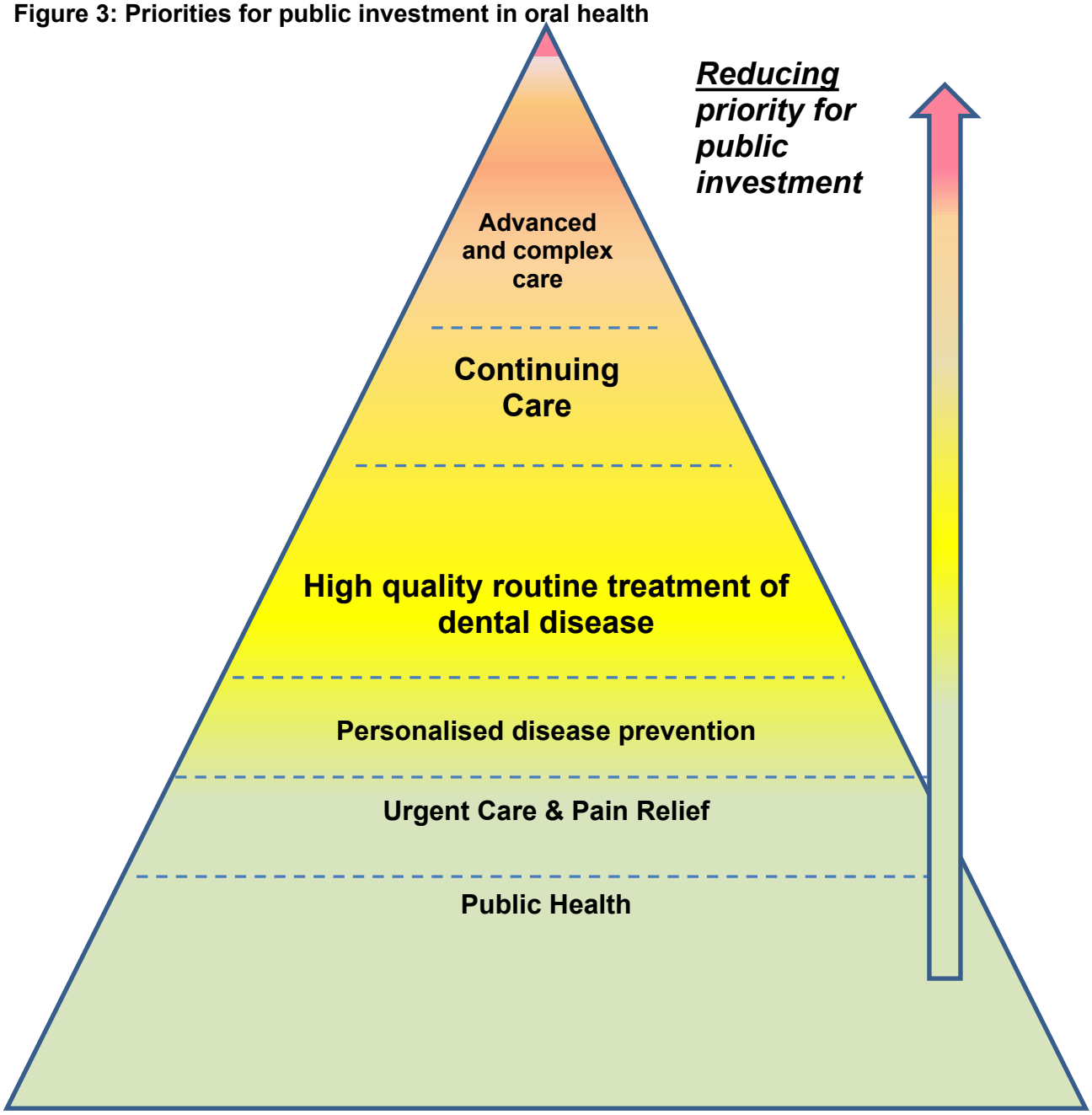
2.3 The Steele Review

NHS Dental Services in England- An independent review led by Professor Jimmy Steele June 2009 said that the overall ambition of the NHS dentistry service should be to be a lifetime-focused, evidence-based oral health service, which aims:

- to prevent oral disease and the damage it causes
- to minimise the impact of oral disease on your health, when it occurs
- to maintain and restore quality of life when this is affected by the condition of your mouth

It is this set of priorities, in this order, that should aim to be achieved through the system of professional obligations, contracts, charges and regulation we create.

Figure 3: Priorities for public investment in oral health



Source: NHS Dental Services in England. An independent review led by Professor Jimmy Steele, June 2009

The priorities are as follows, in order:

There needs to be a strong, co-ordinated public health system, recognising the common risks to oral health and health overall and providing support to the profession and information to patients about how to minimise these risks.

Any dental service should then be able to provide quick and definitive pain relief to anyone who needs it. This should not be a large or expensive part of a service, but it must be there.

Preventing the damage caused by disease at an individual level is a high priority for investment. Every cavity or periodontal pocket represents irreversible damage, with lifetime consequences and costs.

Treating disease is still inevitable where prevention fails, but treatment can be damaging, so minimising damage through quality restoration is an essential step.

Oral health is a lifetime concept, so continuing care arrangements should be facilitated to allow long-term relationships to be established between dentists and patients.

2.4 The NHS Outcomes Framework (2013-2014) and the Public Health Outcomes Framework (2013-2016)- oral health indicators

Both the NHS Outcomes Framework and the Public Health Outcomes Framework (PHOF) have indicators relating to oral health improvement and dental services.

The NHS Outcomes Framework (2013-14) describes overarching indicators to ensure that people have a positive experience of care from NHS Dental Services (4aiii), and improved access to NHS dental services (4.4ii)[1].

Within the Public Health Outcomes Framework (2013-16) tooth decay in five-year old children is the oral health outcome indicator. The data to monitor this indicator is sourced from the National Dental Epidemiology Programme and provides a measure for local authorities to monitor and evaluate children's oral health improvement programmes[2].

2.5 Securing excellence in commissioning primary care -Single Operating Model

NHS England is responsible for the direct commissioning of services beyond the remit of clinical commissioning groups, namely primary care including primary dental care, offender health, military health and specialised commissioning. A suite of documents detailing policies and procedures to support the commissioning of primary care are in production and are intended to achieve a "do once approach" intended to ensure consistency and eliminate duplication. The development process for the suite of documents reflects the principles set out in Securing excellence in commissioning primary care.
http://www.commissioningboard.nhs.uk/2012/06/22/ssom-comm-pc/

3. Broad Context: Local Responsibilites for East Anglia

3.1 Local Authorities

From April 2013 Local Authorities (LAs) became responsible for improving oral health in their population. Section 29 of the 2012 act amended the NHS Act 2006 to transfer primary care trust existing functions around Oral Public health to Local

Authorities including responsibility for water fluoridation.[3] There are four LAs in East Anglia, Cambridgeshire, Suffolk, Norfolk and Peterborough and their priorities for improving the health and wellbeing of their populations are detailed in the respective Health and Wellbeing Strategies
Suffolk Health and Wellbeing Strategy: A ten year strategy 2012-2022
http://www.waveney.gov.uk/egov_downloads/item_5_21_.pdf
Norfolk Joint Health and Wellbeing Strategy 2014-2017
http://www.norfolk.gov.uk/view/NCC122775
Cambridgeshire Health and Wellbeing Strategy 2012-17 www.cambridgeshire.gov.uk
Peterborough Health and Wellbeing Strategy 2012-15
http://www.peterborough.gov.uk/health_and_social_care/health_and_wellbeing_strategy.aspx

3.2 NHS England East Anglia Area Team

Since April 2013 NHS England East Anglia Area team has had responsibility for commissioning primary care dental services and some secondary care dental services. http://www.england.nhs.uk/about/our-vision-and-purpose/
These changes also saw the inception of Local Professional Networks who, as part of NHSE Area Teams, have responsibility for providing strong clinical leadership in improving oral health locally. Clinical engagement via the LPN, Local Dental Committees and any managed clinical networks is important for the success of any commissioning arrangements and service provision if oral health is to improve.

3.3 Public Health England

Public Health England is the expert public health agency and it has a statutory duty to protect health and reduce inequalities and to promote the health and well- being of the population https://www.gov.uk/government/organisations/public-health-england

3.4 Clinical Commissioning Groups

Clinical Commissioning Groups (CCG) replaced Primary Care Trusts and commission most services funded by the NHS in England. They now control around two thirds of the NHS budget and have a legal duty to support quality improvement in general practice. There are eight CCGs across East Anglia and their priorities are set out in the NHS Outcomes Framework and CCG Outcomes Indicator Set 2013/2014
http://www.england.nhs.uk/wp-content/uploads/2013/12/ccg-ois-1415-at-a-glance.pdf
https://www.gov.uk/government/publications/nhs-outcomes-framework-2013-to-2014

3.5 Summary, Local Priorities

In terms of oral health improvement and reducing oral health inequalities there are common themes running between the priorities for all the local organisations that have a stake in improving the health and wellbeing of the local population.

Tackling the common risk factors such as smoking, alcohol and drug use, poor diet, stress poor hygiene and injury that contribute to ill health will also help to tackle poor oral health.

Common themes are:

- Reduce the prevalence of smoking.
- Prevent and address childhood and adult obesity.
- Explore the potential for preventative work to reduce high rates of alcohol related hospital admissions
- Joint planning to meet the needs of the growing older population.
- Implementation of the Child Health Programme (CHPP) to enable early intervention and prevention of poor outcomes.
- Improve outcomes for children and young people living in areas of higher socioeconomic deprivation and for specific population groups such as children in care, traveller children and children with disabilities

3.6 Priorities for Investment in oral health

Table 2 summarises the priorities for oral health, NHS Dental Services in England- An independent review led by Professor Jimmy Steele June 2009.

Table 2: Priorities for Investment in oral health

Priorities for public investment	Steele rationale	Comments
Public Health	Strong, co coordinated system, recognising common risks and providing support to profession and info to patients on how to minimise risks	Strong evidence of association between prevalence of oral cancers (expensive to treat in secondary care) and smoking and alcohol use. Traumatic facial injury can result from violence/accidents related to alcohol misuse. Smoking exacerbates periodontal disease hence risk of tooth loss. Links between sugars in diet and tooth decay.
Urgent care	Quick, definitive pain relief to anyone who needs it; relatively inexpensive	Delaying seeking help for dental pain can result in severe dental infections that may need admission. This happens quite rarely, but is reported to be on the increase. Population groups who do not use current services regularly, with poorer dental health are more likely to need services for urgent care and ultimately secondary care for complex oral surgery that might arise.
Personalised disease prevention	High priority for investment at individual level as failure results in cavity or periodontal pockets that are irreversible damage, with lifetime consequences and costs	A large population group will benefit; rectifying where prevention fails, and where restorations don't last is currently the majority of work in primary care. The current impact on secondary care is where need arises for difficult oral surgery or more complex restorative work although the latter is not routinely provided at specialist level or in secondary care.
Routine treatment and continuing care	Quality primary care and continuing card as oral health is a lifetime concept	A large population group already benefits and there would be high demand for specialist care if it was available. Currently there is an advice only service re complex restorative care provided in secondary care setting in Norfolk, mainly to support dentists' treatment planning.
Advanced, complex and expensive treatments	Offered for quality of life rather than disease management; not an automatic right for everyone but targeted to where risks are managed and where need and benefits greatest.	For secondary care this includes dental implants for e.g. severe facial deformity or facial reconstruction after a major accident or following cancer surgery. Implant surgery is becoming more available in primary care, but it is not funded by the NHS.

4. Population and Demography of East Anglia

4.1 East Anglia Area Team population

East Anglia Area team overlaps four upper tier local authorities, Norfolk, Suffolk, Peterborough and Cambridgeshire. There are eight CCGs with a registered population of 2,457,100 and an indicative running cost of £60 million. 330 out of East Anglia Area Team's 1445 Local super output areas (LSOA) are in the 20% most deprived LSOAs in the country.

East Anglia AT has a lower proportion of 0-39 year olds in its population than the England average, and a higher proportion of residents aged 60+.

Graph 1

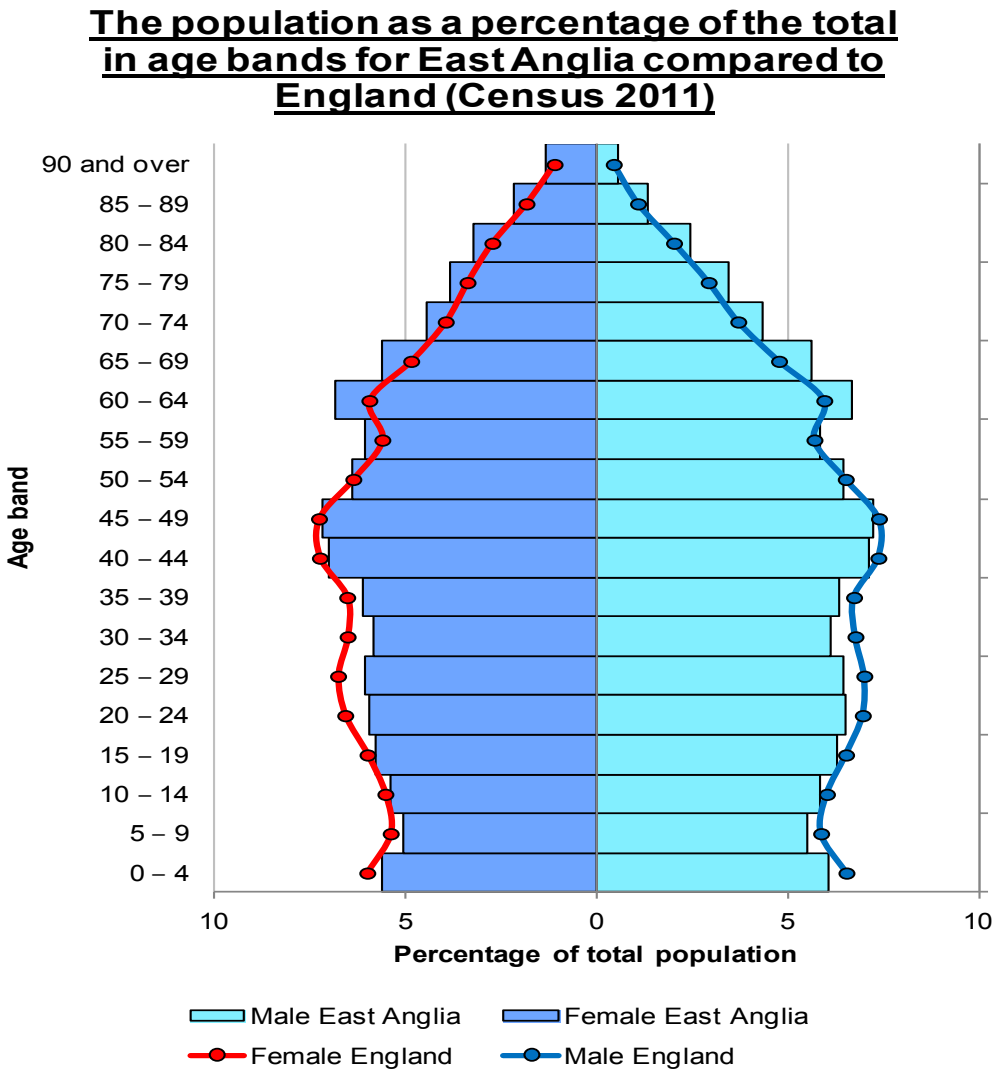


Table 3: Population for East Anglia

East Anglia	Census 2011
Total Registered	2,457,100
Total Resident	2,396,328
Male Resident	1,184,032
Female Resident	1,212,296
0-4 Resident	139,941
65+ Resident	459,694
85+ Resident	64,406

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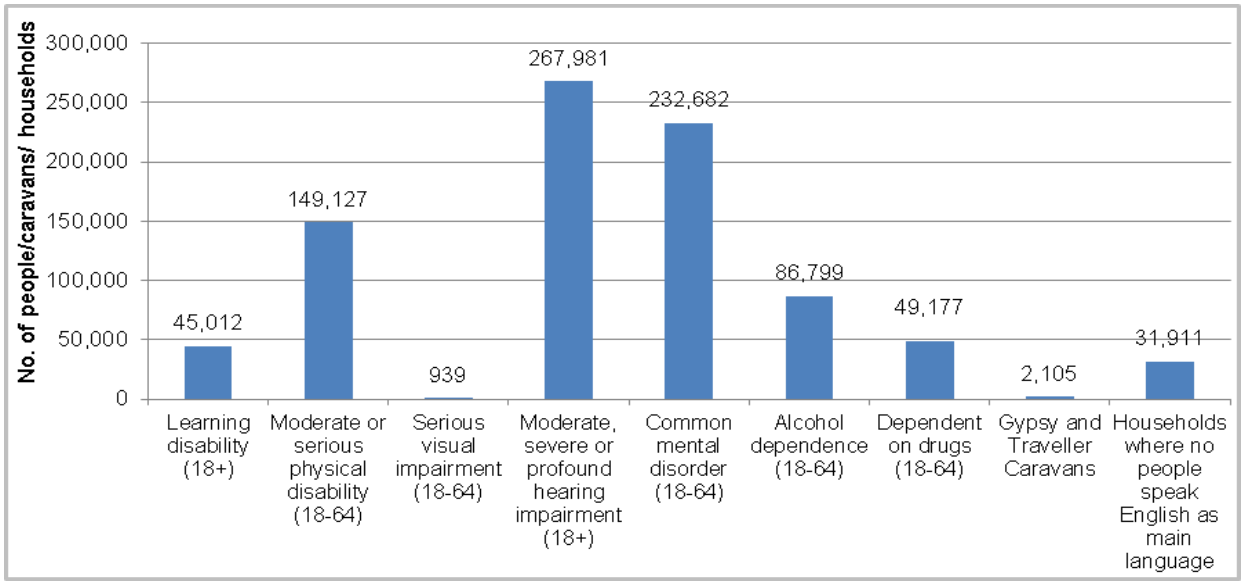
Graph 2: The number of people in a variety of 'hard to reach groups' is shown in the graph



The numbers are sourced from the **P**rojected **A**dult **N**eeds & **S**ervice Information system which applies prevalence rates from national research to resident populations, the Office of National Statistics and the Department for Communities & Local Government

Across the LAs that make East Anglia AT life expectancy at birth for men is better than the England average of 78.58 years in all authorities other than Peterborough where it is significantly worse.

For women born in East Anglia life expectancy at birth is better than the England average of 82.57 years, except in Peterborough where it is significantly worse.

Table 4: Life expectancy at birth in East Anglia

AREA: LA	Life expectancy at birth		Gap in life expectancy between most & least deprived	
	Male	Female	Male	Female
Cambridgeshire	80.1	83.9	7.2	5.3
Norfolk	79.5	83.3	5.8	1.9
Peterborough	77.5	81.9	9.4	5.6
Suffolk	79.9	83.6	5.7	4.4

Worse than England Average

Similar to England Average

Better than England Average

The slope index of inequality measures the gap in life expectancy between the most and least deprived communities in an upper tier authority:

- For women across all four LAs the gap in life expectancy varies between 1.9 to 5.6 years. The gap is statistically better than the England average of 5.9 years in Suffolk and Norfolk but statistically similar in the other two areas.
- For men across all four LA's the gap in life expectancy varies between 5.7 to 9.4 years. Two LA's are statistically similar to the average across England of 8.9 years and two LA's are statistically better.
- Across the LAs that make East Anglia AT there is some variation in the rate of premature deaths per 100,000 population.
- Peterborough has a significantly worse death rate compared to the England average, ranked 87th out of the 150 LA's.
- The remaining three LAs by contrast are amongst the best performing LAs in England.
- Common causes of high levels of premature death in England include smoking, poor diet, alcohol & blood pressure.

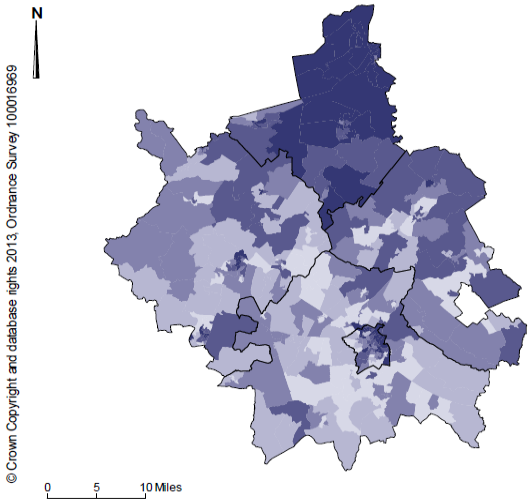
4.2 Health Profiles in East Anglia

4.2. 1 Cambridgeshire

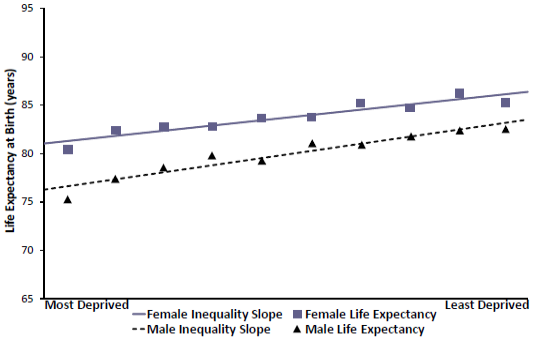
- The health of people in Cambridgeshire is generally better than the England average. Deprivation is lower than average, however about 14,400 children live in poverty. Life expectancy for both men and women is higher than the England average.
- Life expectancy is 7.2 years lower for men and 5.3 years lower for women in the most deprived areas of Cambridgeshire than in the least deprived areas. Over the last 10 years, all-cause mortality rates have fallen. Early death rates from cancer and from heart disease and stroke have fallen and are better than the England average.
- In Year 6, 16.3% of children are classified as obese, better than the average for England. The level of GCSE of teenage pregnancy, alcohol-specific hospital stays attainment is worse than the England average. Levels among those under 18 and breast feeding are better than the England average.
- Estimated levels of adult 'healthy eating', physical activity and obesity are better than the England average. The rate of road injuries and deaths is worse than the England average. Rates of sexually transmitted infections and smoking related deaths are better than the England average. The rates of incidence of malignant melanoma and hospital stays for self-harm are worse than average.
- Priorities include focussing on health inequalities, the ageing population and long term prevention of ill health across all ages. www.cambridgeshirejsna.org.uk

Health inequalities: a local view

This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 7.2 years for males and 5.3 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.



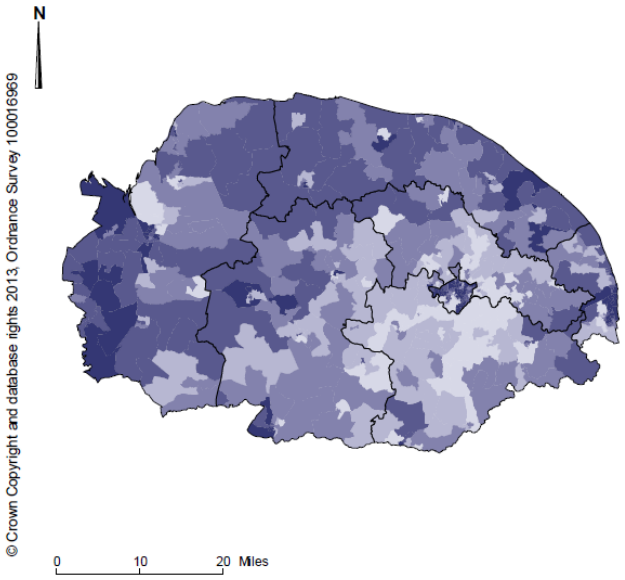
1 - most deprived quintile | 2 | 3 | 4 | 5 - least deprived quintile

4.2.2 Norfolk

- The health of people in Norfolk is generally better than the England average. Deprivation is lower than average, however about 26,200 children live in poverty. Life expectancy for both men and women is higher than the England average.
- Life expectancy is 5.8 years lower for men in the most deprived areas of Norfolk than in the least deprived areas.
- Over the last 10 years, all-cause mortality rates have fallen. Early death rates from cancer and from heart disease and stroke have fallen and are better than the England average.
- In Year 6, 19.2% of children are classified as obese. Levels of GCSE attainment and smoking in pregnancy specific hospital stays among those under 18 and are worse than the England average. Levels of alcohol breast feeding are better than the England average.
- An estimated 20.3% of adults smoke and 24.8% are obese. Rates of sexually transmitted infections, smoking related deaths and hospital stays for alcohol related harm are better than the England average. The rate of hospital stays for self-harm is worse than average.
- Priorities in Norfolk include stopping smoking, particularly in pregnancy, monitoring and preventing early deaths from cancer (targeting risk factors) and reducing diabetes by promoting healthy lifestyles. For more information see www.norfolkinsight.org.uk and www.norfolk.gov.uk/

Health inequalities: a local view

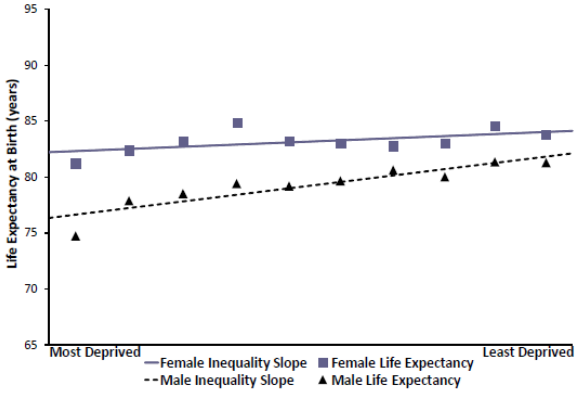
This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



Legend as above

1 - most deprived quintile | 2 | 3 | 4 | 5 - least deprived quintile

The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 5.8 years for males and 1.9 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.

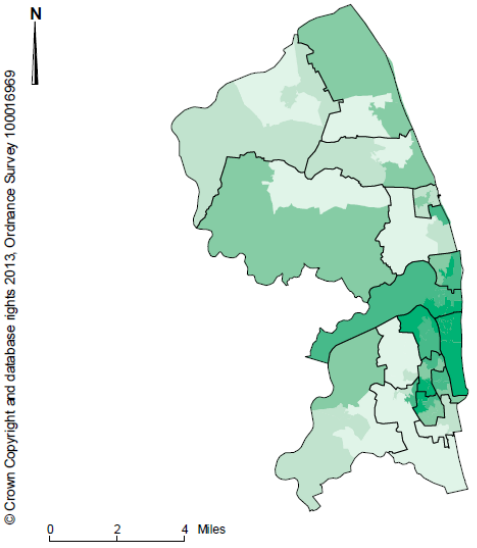


4.2.3 Great Yarmouth

- The health of people in Great Yarmouth is generally worse than the England average. Deprivation is higher than average and about 4,400 children live in poverty.
- Life expectancy for both men and women is lower than the England average. Life expectancy is 9.5 years lower for men and 5.3 years lower for women in the most deprived areas of Great Yarmouth than in the least deprived areas.
- Over the last 10 years, all cause mortality rates have fallen. The early death rate from heart disease and stroke has fallen and is similar to the England average. In Year 6, 22.1% of children are classified as obese, worse than the average for England. Levels of teenage pregnancy, GCSE attainment, breast feeding and average. smoking in pregnancy are worse than the England
- Estimated levels of adult physical activity and obesity are worse than the England average. Rates of smoking related deaths and hospital stays for alcohol related harm are worse than the England average. Rates of sexually transmitted infections and road injuries and deaths are better than the England average.
- Priorities in Great Yarmouth include the reduction of smoking levels, especially in pregnancy, and reducing obesity, diabetes and alcohol related harm. For more information see www.norfolkinsight.org.uk

Health inequalities: a local view

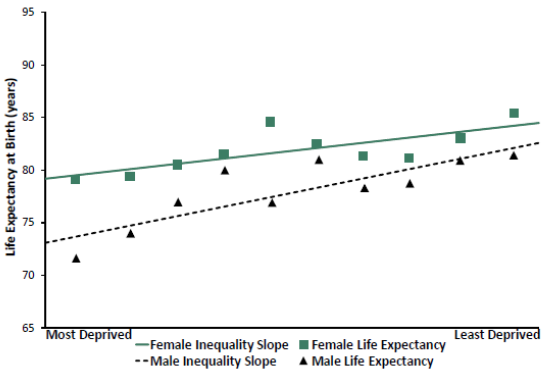
This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



Legend as above

1 - most deprived quintile | 2 | 3 | 4 | 5 - least deprived quintile

The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 9.5 years for males and 5.3 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.

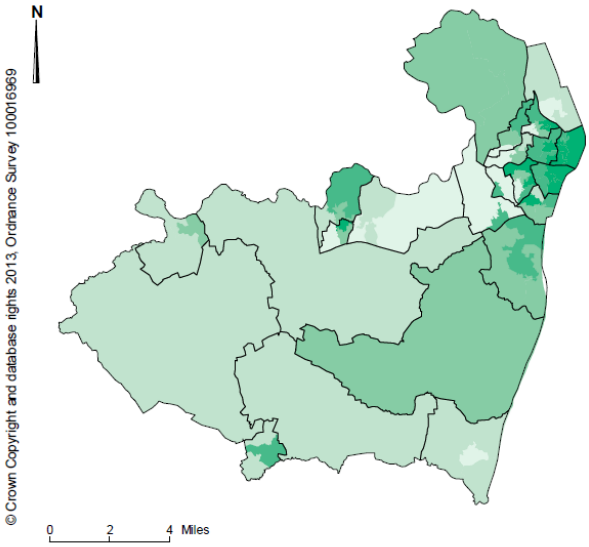


4.2.4 Waveney

- The health of people in Waveney is varied compared with the England average. Deprivation is lower than average, however about 4,400 children live in poverty. Life expectancy for women is higher than the England average.
- Life expectancy is 5.9 years lower for men and 5.3 years lower for women in the most deprived areas of Waveney than in the least deprived areas.
- Over the last 10 years, all cause mortality rates have fallen. Early death rates from cancer and from heart disease and stroke have fallen.
- In Year 6, 18.3% of children are classified as obese. Levels of teenage pregnancy, GCSE attainment, breast feeding and smoking in pregnancy are worse than the England average.
- The estimated level of adult obesity is worse than the England average. England average. The rate of road injuries and deaths is worse than the England average. Rates of sexually transmitted infections and smoking related deaths are better than the England average. The rates of violent crime and long term unemployment are worse than average. The rates of statutory homelessness and drug misuse are better than average.
- Priorities in Waveney are to ensure that every child has the best start in life; residents have access to a healthy environment and take responsibility for their own health and wellbeing; older people have a good quality of life; people have the opportunity to improve their mental health and wellbeing. See www.suffolk.gov.uk

Health inequalities: a local view

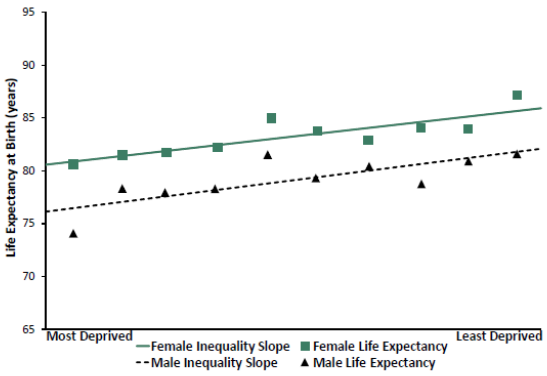
This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



Legend as above

1 - most deprived quintile | 2 | 3 | 4 | 5 - least deprived quintile

The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 5.9 years for males and 5.3 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.

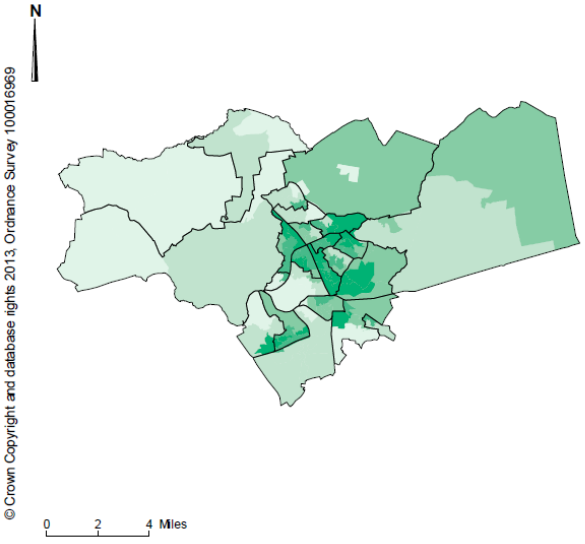


4.2.5 Peterborough

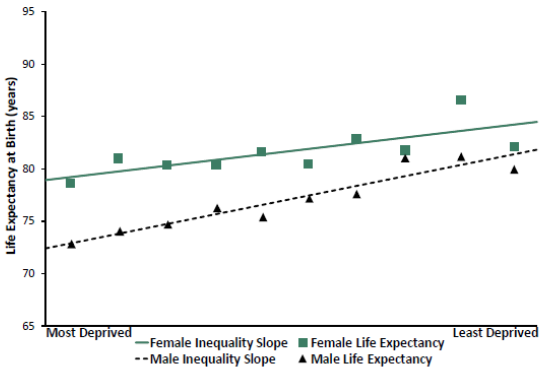
- The health of people in Peterborough is generally worse than the England average. Deprivation is higher than average and about 9,500 children live in poverty. Life expectancy for men is lower than the England average.
- Life expectancy is 9.4 years lower for men and 5.6 years lower for women in the most deprived areas of Peterborough than in the least deprived areas.
- Over the last 10 years, all-cause mortality rates have fallen. The early death rate from heart disease and stroke has fallen but is worse than the England average.
- In Year 6, 19.2% of children are classified as obese. Levels of teenage pregnancy, GCSE attainment and average. The level of alcohol-specific hospital stays smoking in pregnancy are worse than the England among those under 18 is better than the England average.
- The estimated level of adult smoking is worse than the England average. Rates of road injuries and deaths and hospital stays for alcohol related harm are worse than the England average.
- Priorities in Peterborough include reducing premature mortality, reducing inequalities in coronary heart disease and promoting healthy lifestyles. For more information see www.peterborough.gov.uk and www.cambridgeshireandpeterboroughccg.nhs.uk

Health inequalities: a local view

This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 9.4 years for males and 5.6 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.



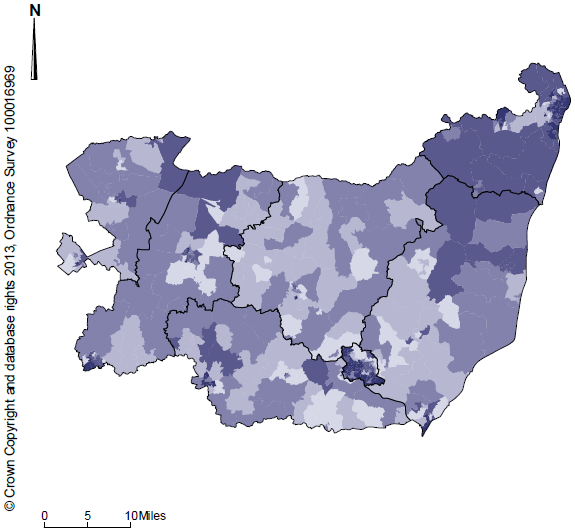
1 - most deprived quintile | 2 | 3 | 4 | 5 - least deprived quintile

4.2.6 Suffolk

- The health of people in Suffolk is varied compared with the England average. Deprivation is lower than average, however about 20,000 children live in poverty. Life expectancy for both men and women is higher than the England average.
- Life expectancy is 5.7 years lower for men and 4.4 years lower for women in the most deprived areas of Suffolk than in the least deprived areas.
- Over the last 10 years, all cause mortality rates have fallen. Early death rates from cancer and from heart disease and stroke have fallen and are better than the England average.
- In Year 6, 15.9% of children are classified as obese, better than the average for England. Levels of GCSE the England average. Levels of teenage pregnancy, attainment and smoking in pregnancy are worse than alcohol-specific hospital stays among those under 18 and breast feeding are better than the England average.
- An estimated 20.4% of adults smoke and 24.3% are obese. The rate of road injuries and deaths is worse than the England average. Rates of sexually transmitted infections, smoking related deaths and hospital stays for alcohol related harm are better than the England average. The rate of incidence of malignant melanoma is worse than average.
- Local priorities include lowering alcohol admissions and smoking rates (particularly in pregnancy) and improving breast feeding rates. See www.suffolk.gov.uk

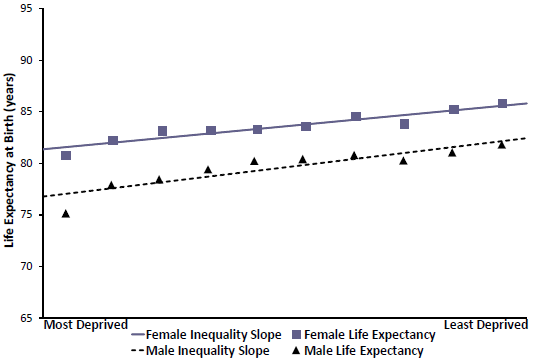
Health inequalities: a local view

This map shows differences in deprivation levels in this area based on local quintiles (of the Index of Multiple Deprivation 2010 by Lower Super Output Area). The darkest coloured areas are the most deprived in this area.



Legend as above

The lines on this chart represent the Slope Index of Inequality, which is a modelled estimate of the range in life expectancy at birth across the whole population of this area from most to least deprived. Based on death rates in 2006-2010, this range is 5.7 years for males and 4.4 years for females. The points on this chart show the average life expectancy in each tenth of the population of this area.



A link for all the above health profiles can be found below:
http://www.apho.org.uk/default.aspx?QN=P_HEALTH_PROFILES

4.3 Population projections for East Anglia

Population projections for East Anglia show that the population is likely to grow between 2011 and 2016 with further growth expected between 2011 and 2021. By 2021 the population in Cambridgeshire is expected to grow by 11 per cent, in Norfolk by nine per cent, Peterborough 13 per cent and Suffolk by seven per cent. The table below shows the interim 2011-based subnational population projections by the Office for National Statistics (ONS) 2011 to 2021 by population age cohorts for all persons by upper tier and unitary authorities in East Anglia. The largest growth in population is predicted to be in the 55 years and over group and within this group there is likely to be a greater increase in the 85+ age group.

Table 5: Interim 2011-based subnational population projections, 2011 to 2021 by population age cohorts for all person

Local authority area	Age group (years)	Year						
		2011	2016			2021		
		Num	Num	Change 2011-2016		Num	Change 2011-2021	
				Num (+/-)	%		Num (+/-)	%
Cambridgeshire	0-18	135,522	145,169	9,647	7%	154,303	18,781	14%
	19-54	311,660	316,610	4,950	2%	314,414	2,754	1%
	55-74	127,581	140,521	12,940	10%	153,615	26,034	20%
	75-84	33,489	36,730	3,241	10%	44,658	11,169	33%
	85+	14,060	17,251	3,191	23%	20,721	6,661	47%
	Total	622,312	656,280	33,968	5%	687,712	65,400	11%
Norfolk	0-18	175,119	180,251	5,132	3%	189,594	14,475	8%
	19-54	381,585	390,248	8,663	2%	386,165	4,580	1%
	55-74	213,053	227,257	14,204	7%	241,055	28,002	13%
	75-84	63,636	68,785	5,149	8%	80,634	16,998	27%
	85+	26,033	30,813	4,780	18%	36,558	10,525	40%
	Total	859,426	897,353	37,927	4%	934,007	74,581	9%
Peterborough	0-18	46,445	49,899	3,454	7%	53,328	53,328	15%
	19-54	93,860	99,128	5,268	6%	101,706	101,706	8%
	55-74	31,864	34,912	3,048	10%	38,467	38,467	21%
	75-84	8,923	9,092	169	2%	9,998	9,998	12%
	85+	3,365	3,804	439	13%	4,405	4,405	31%
	Total	184,457	196,834	12,377	7%	207,904	23,447	13%
Suffolk	0-18	160,044	164,406	4,362	3%	171,369	11,325	7%
	19-54	327,979	327,076	-903	0%	319,586	-8,393	-3%
	55-74	171,850	186,656	14,806	9%	200,646	28,796	17%
	75-84	49,312	53,762	4,450	9%	64,041	14,729	30%
	85+	20,948	24,614	3,666	17%	29,213	8,265	39%
	Total	730,133	756,513	26,380	4%	784,855	54,722	7%

Source:http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Subnational+Population+Projections#tab-data-tables - downloaded 10/04/14

5. Common Oral Diseases and their Causes

5.1 Definitions of Common Dental Diseases

5.1.1 Dental Decay (Caries)

Dental decay is one of the most common chronic diseases. It occurs when tooth tissue is demineralised by the acids formed by dental plaque in response to dietary sugars.

A wealth of evidence has consistently shown that sugars are the most important factor in caries development.[4] 'Free sugars' include all monosaccharides and disaccharides as well as those naturally present in honey, fruit juices and syrups.[4] The annual consumption of free sugars has increased since the 1970s.[5] The sugars naturally present in whole fruits, vegetables and milk are not thought to be harmful to dental or general health.

5.1.2 Gum (Periodontal) Disease

Gum or periodontal disease is caused by inflammation of the gums and bone that support and anchor teeth. When severe, the bony support for teeth is extensively compromised causing otherwise healthy teeth to be lost.

There are a number of gum (or periodontal) diseases, however the disease with public health implications is chronic periodontitis. Chronic periodontitis can cause bleeding gums, loss of periodontal attachment, recession of gums, periodontal abscesses, drifting of teeth, tooth mobility and ultimately tooth loss. These symptoms can have a significant impact on the individual ranging from halitosis and discomfort to changes in appearance and loss of function.[6] Prevalence tends to increase with age.

Risk factors for chronic periodontitis include poor plaque control, smoking, certain systematic diseases (such as Diabetes), genetic factors, stress and social deprivation.[6]

5.1.3 Oral Cancer

Oral cancer is a generic term that is used to describe all malignancies of the oral cavity, oropharynx and hypo pharynx (such as squamous cell carcinoma of the lip and tongue).

Almost all oral cancers are thought to be preventable. An estimated 80% are caused by tobacco (smoking or chewing), alcohol or a combination of the two. Although tobacco and alcohol are independent risk factors, their combined effect is greater than the sum of the risks from exposure to either on its own.[7] An estimated 10–15% of oral cancers may be caused by unhealthy diets.[8]

Mouth Cancer is the largest group of head and neck cancers. [9]

It is more common in men than women and the vast majority of cases are in people over the age of 50, however more than one in ten cases is diagnosed in people below this age. Although most lesions are related to the risk factors listed above, some especially at the back of the mouth in the oropharynx are related to exposure to human papillomavirus (HPV). Although patients' quality of life during and after treatment has steadily improved, survival rates from the disease have barely increased. Cancer Research UK (CRUK)

5.1.4 Malocclusion and Orthodontics

Malocclusion is not a disease but the collective term given to natural variations from the 'ideal' in the relationships of the teeth and jaws. Its presence is not synonymous with a need for treatment.[10] There is a lack of evidence to suggest that malocclusions have a detrimental effect on oral health, although by affecting facial appearance malocclusions can have an impact on psychological well-being and quality of life.[11] Because malocclusion is not a disease and orthodontic treatment carries risks (eg root resorption, decalcification and non-improvement)[10] it is particularly important to evaluate the risk-benefit balance of any possible treatment.

In the UK, need for orthodontic treatment in the NHS is assessed using the 'Index of Orthodontic Need' (IOTN). The IOTN incorporates both an aesthetic and dental health component. Both of these aspects of a malocclusion are clinically assessed to determine whether a patient is likely to benefit from treatment. The clinician assigns a dental health component grade of treatment need between 1 and 5 (with 5 representing greatest need) and an aesthetic component grade of treatment need between 1 and 10. Under the current regulations, a patient is entitled to NHS orthodontics if their malocclusion has been graded as follows:[12].

- Grade 4 or 5 of the Dental Health Component of the Index of Orthodontic Treatment Need.
  Or
- Grade 3 of the Dental Health Component of that Index with an Aesthetic Component of 6 or above.

In England approximately a fifth of all twelve year olds fit into each dental health component grade and approximately half the twelve year old population are likely to have an IOTN score of 3 (Dental Health Component) and an aesthetic component of 6 or above.

When this need is combined with demand approximately a third of twelve year olds are likely to undertake orthodontic treatment.

5.1.5 Cleft Lip and Palate

Cleft lip and palate is a phrase used to describe a group of congenital facial malformations that occur when the upper lip and/or palatal shelves fail to fuse during embryonic development. There are a range of conditions within this definition from a simple notch of the upper lip to a full bilateral cleft of the lip and hard and soft palate.

Successful management of patients requires multidisciplinary, highly specialised treatment from birth to early adulthood including multiple surgeries, genetic and psychological counselling, speech and language therapy, orthodontics and long-term preventive and restorative dental care.[13]

Orofacial clefts occur in around 1 in 500 live Caucasian births.[10] Clefts occur more frequently in oriental people and less frequently in black people.

Patients with orofacial clefts have a high need for care from an experienced multidisciplinary team co-ordinated from a single regional centre.

Local data on the prevalence of cleft lip and palate are not routinely collected.

5.1 6 Facial Injury and dental trauma

Facial injury and dental trauma are associated with alcohol use, road traffic accidents sports injuries, domestic violence and accidental and non- accidental injury There is risk of increased facial injury associated with alcohol consumption. There are nearly 1 million violent incidents each year in the UK where the victim believed the offender to be under the influence of alcohol (The Home Office Statistical Bulletin, Crime in in England and Wales 2008/09. The British Crime Survey and police recorded crime http//www.homwoffice.gov.uk/rds/pdfs09/hosb1109vol1.pdf) The cost to the NHS for alcohol related harm, including assault injuries is an estimated £ 2.7bn a year. 9 DH (2008) The Cost of Alcohol Harm to the NHS in England)

Glass inflicted injuries to the eyes and face often require stitches or surgery and can result in heavy blood loss and even loss of sight. Assault and alcohol consumption are the two major factors responsible for serious facial injuries in young adults[14].

Four times more men than women sustained facial injuries in assaults, but in the home the reverse was true. Nearly half of all facial injuries sustained in assaults on women occurred in the home and one half of these incidents were associated with alcohol.

From 1977 to 1987 the proportion of patients with facial injuries sustained in road traffic accidents fell by 34 per cent. Road traffic accidents accounted for only five per cent of facial injuries and, 15 per cent of road accident victims had consumed alcohol within four hours of their injury. Public policies and national legislation such as the compulsory wearing of seat belts have also contributed to the reduction in the number of facial injuries sustained as a result of road traffic accidents. However facial trauma has been consistently shown to be the single most common injury to the occupants of vehicles involved in crashes.[15]

It has long been known that participation in sports carries a considerable risk of sustaining dental injury[16]. In a 10 year review of over 21,000 cranio-maxillofacial injuries seen at an Austrian OMFS clinic 31% were sports-related.[17]

Mouth guards offer considerable protection against sports-related dental injuries.

Recent national epidemiological surveys of children identified levels of accidental injury to children. Eleven per cent of twelve year olds and 13 per cent of fifteen year olds were found to have fractures into dentine of their permanent central incisors. NHS Epidemiology Programme for England. Dental Health 2013

One fifth of the injuries involving children were related to assault, underlining the need for anti-bullying policies in schools.

5.2 Biological Determinants (Risk Factors) of Oral Disease

The factors that are concerned with the development of poor oral health are generally well known to the public and the underlying science is well researched and understood.

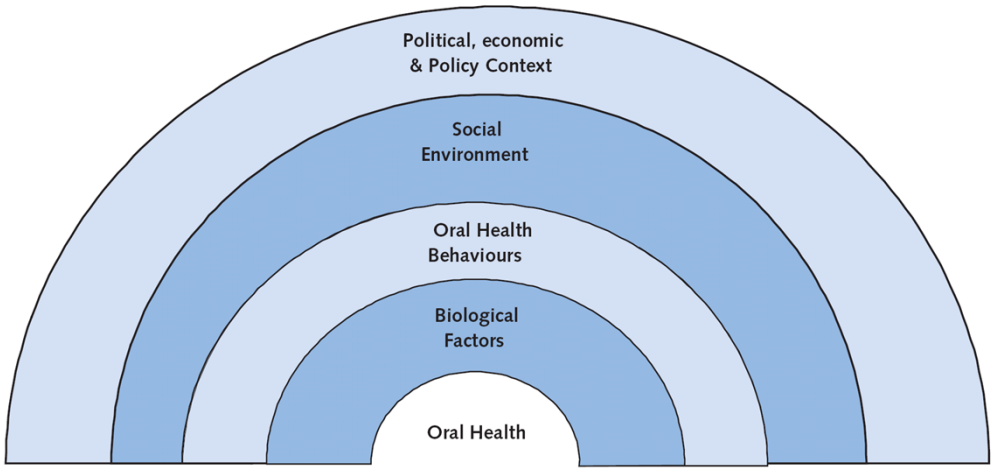
The main risk factors include:

1. Poor diet and nutrition:
   - High consumption of free sugars leads to dental caries.
   - Poor nutrition can increase risk of oral cancer.
2. Poor oral hygiene:
   - Poor plaque control will increase risk of dental caries and gum disease
3. Lack of exposure to Fluoride:
   - Regular exposure to fluoride has a protective, anti-caries effect
4. Tobacco and alcohol:
   - Smoking increases the severity of gum disease and is one of the main risk factors for mouth cancer. Smoking combined with excessive alcohol consumption leads to a much greater risk of cancer than either in isolation.
5. Injury:
   - Injury to teeth can occur through accidental injury or violence or contact sports.

5.3 Social Determinants of Oral Disease

For sustainable reductions in oral health inequalities, it is important to tackle the underlying causes of oral diseases. It is now well recognised that oral health is determined by a wide range of factors, from individual lifestyle choices (eg amount of sugar in diet), to national policy (eg smoke-free environments) (see Figure 2). A successful public health approach must focus on these wider determinants, as focusing on behaviour or lifestyle change has been shown to have a limited long-term effect.

Figure 4: The Underlying Causes of Oral Health



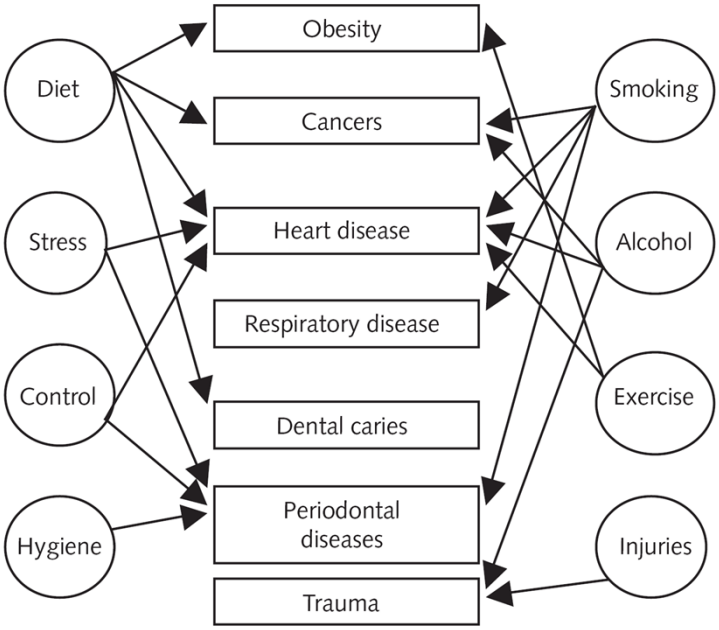
Source: Modified from Watt, 2005 in Department of Health Choosing Better Oral Health. An Oral Health Plan for England. 2005 Available at URL: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4123251

5.4 Common Risk Factor Approach

The provision of high quality dental services is only one aspect of the public health action needed to reduce oral health inequalities. Dental services are, by necessity, treatment focused and cannot eliminate oral health inequalities alone, no matter how accessible or effective they may be.

Evidence suggests that tackling the causes of oral diseases and promoting oral health will reduce the oral health inequalities. The most effective and efficient method of promoting oral health is to integrate oral health promotion with generic health promotion. The Common Risk Factor Approach emphasises the need to tackle the common risk factors and conditions that are shared by common chronic non-communicable diseases.[18] See Figure 3.

Figure 5: The Common Risk Factor Approach



Source: Sheiham and Watt, 2000 in Department of Health Choosing Better Oral Health. An Oral Health Plan for England. 2005 Available at URL: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4123251

These common risk factors include tobacco use, poor diet, stress, high alcohol consumption, poor hygiene, injuries and a sedentary lifestyle. Targeting these risk factors at a population level would simultaneously reduce the incidence of obesity, health disease, stroke, cancers, diabetes and mental illness, in addition to oral diseases. If the Common Risk Factor Approach is broadly adopted, it has the added advantage that all health professionals will communicate consistent health messages to the public. Strategic approaches to improving oral health will therefore be linked to other, more general, health promotion initiatives.

5.5 Common Risk Factors

5.5.1 Obesity

There appears to be an association between dental caries and obesity, although there is limited supporting evidence at this time.[19] Dental teams should apply the Common Risk Factor Approach to health promotion and play an active role in promoting healthy food choices. It is important that all health care workers give consistent nutritional messages.

Improving diets in this group and the promotion of consistent nutritional messages about making healthy choices has the potential to improve oral health by reducing the amount and frequency of sugar consumption as well as reduce obesity.

In the UK 24% of men and 25 % of women are obese, BMI> 30 a rise from 13 and 16 % respectively from 1998. By 2015 this is expected to rise to 36 and 28% respectively. Obesity is linked to a number of oral health problems. A meta analysis of 70 studies found a link between obesity and periodontal disease. Obese adults experience more dental trauma and generally dental problems are probably higher in the obese.

Accessing dental care can be more difficult in this group. The practice environment, narrow stairs and doorways, cramped toilets and the safe working limit of dental chairs, 140Kg (22 stone), limits access. Patient factors such as excess soft tissues and saliva, the preference for being treated sitting up, the anaesthetic and sedation risk as well as possible patient embarrassment of being too heavy for the chair may all make patients more reluctant and less able to access care. Obese patients may well not be attending for dental care with the consequent loss of opportunity to deliver preventative care and oral health messages.

Other diseases and public health concerns share risks and contributory factors, for example childhood obesity. The 2012-13 report of the national Child Measurement Programme (Department of Health: Health and Social Care Information Centre (2013). National Child Measurement Programme: England, 2012/13 school year. www.hscic.gov.uk/catalogue/PUB13115 identifies a similar relationship between childhood obesity and deprivation. This is understandable given the common factors that lead to dental decay and obesity, and consideration should be given to this when preventive strategies and local interventions are being developed.

The impact of sugar on health has recently been reviewed by the Scientific Advisory Committee on Nutrition (SACN) and their position statement is currently open for scientific consultation;
http://www.sacn.gov.uk/reports_position_statements/reports/scientific_consultation_draft_sacn_carbohydrates_and_health_report_-_june_2014.html

There are a variety of sugars found in the daily diet, some occurring naturally in foods, some added during food and drink manufacturing, or at the table. SACN reports that the outcome of a number of studies, conducted in childhood and adolescence and looking forward to assess later health problems, indicate that higher consumption (i.e. the amount) of sugars, sugars-containing foods and sugars containing beverages is associated with a greater risk of dental decay in the deciduous ('milk teeth') and permanent dentitions. A higher frequency of consumption of sugars-containing foods and beverages, but not total sugars, is also associated with greater risk of dental caries in the deciduous and permanent dentitions. Sugars contained within the whole foods were not as damaging as 'free' sugars, such as those used in food manufacture.

5.5.2 Smoking

Smoking or chewing tobacco can affect oral health in a number of significant ways. These include increased risk of oral cancers and pre-cancers, increased severity of gum disease, premature tooth loss and poor wound healing. In May 2007, the Department of Health published *Smokefree and Smiling*: *helping dental patients to quit tobacco'* as part of their ongoing campaign to involve dental teams in supporting people to stop using tobacco.[20] This guidance had been updated 12th March 2014.

5.5.3 Alcohol

There is a well-recognised relationship between alcohol misuse and oral disease. Research suggests that patients suffering from alcohol use disorders experience poor oral health (including significant levels of dental caries, gingival inflammation, soft tissue abnormalities, tooth erosion and an increased risk of developing periodontal disease).[21] Excessive alcohol use is also a significant risk factor for oral cancer. Of particular concern is the synergistic action of excessive alcohol consumption with tobacco (smoked and chewed), which when used together, will substantially increase the risk of developing oral cancer.[22] Joint Strategic Needs Assessments (JSNA) have been undertaken by PHE across Norfolk, Suffolk, Cambridgeshire, Peterborough and Great Yarmouth and Waveney detailing the local issues around alcohol use. Joint Strategic needs assessments around alcohol use have been undertaken for East Anglia by Public Health England.

As well as this is the risk of increased facial injury associated with alcohol consumption. There are nearly 1 million violent incidents each year in the UK where the victim believed the offender to be under the influence of alcohol.[23]

The British Crime Survey and police recorded crime

http//www.homwoffice.gov.uk/rds/pdfs09/hosb1109vol1.pdf) The cost to the NHS for alcohol related harm, including assault injuries is an estimated £ 2.7bn a year. 9 DH (2008) The Cost of Alcohol Harm to the NHS in England)

One half of the facial injuries in the 15 - 25 year age group are sustained in assaults, usually in bars or streets, and were associated with alcohol consumption by the victim or the assailant. There was also an increase in vulnerability of those who have been drinking heavily and this may be more important than the effect of alcohol on aggression.

The proportion of injuries sustained in assaults increased from 40 per cent in 1977 to 50 per cent in 1987 and since then has continued to rise. It is estimated that around 500,000 people suffer facial injuries annually, 125,000 of them in assaults. The psychological legacy of facial injury can persist long after the injury has occurred, as facial scars serve as a constant reminder of the assault.

Oral health promotion strategies should include joint working with other partners such as local authorities, the police and owners of licensed premises in known flashpoints. Since the 2003 Licensing Act consideration can now be given to the awarding of alcohol licences and this responsibility now rests with the local authority. Other preventive measures such as replacing glass bottles and glasses with safe non glass materials such as plastic or polycarbonate material should be encouraged and this can now be a condition of the licence.(Warburton A, Shepherd J. P. Effectiveness of toughened glass in terms of reducing injury in bars: a randomised controlled trial, Injury prevention Vol 6, pp36-40 2000) (Rickinson, B and Preston, S Materials for Drinking Glasses, A short test programme with one pint glasses, Executive Summary London IOM3 March 2009) Local data from hospitals and the police should continue to be collated to help identify problem areas.

As well as local policies brief interventions around alcohol use following NICE guidance have also been demonstrated to be effective in modifying future behaviour. These can be delivered by hospital staff, both with the victim and the assailant, at the time of treatment and from other health care professionals in different settings. http://pathways.nice.org.uk/pathways/alcohol-use-disorders/brief-interventions-for-alcohol-use-disorders)

5.5.4 Drug Abuse

Intravenous drug use is associated with poor oral health, in particular dental decay and periodontal disease. This is thought to be due to a complex relationship between a number of factors, which include poverty, self-neglect, consumption of high sugar foodstuffs, poor oral hygiene and the intake of methadone syrup.[24,25] Prolonged drug use is often associated with self-neglect and a cariogenic (decay promoting) diet.[26] There are indications that drug addicts experience severe dental and periodontal tissue destruction.[27]

In comparison with the general population, drug users tend to have poorer oral health and display lower utilisation of dental services[28]. Nationally there are 9.9 adult drug misusers per 1,000 population.[19] Joint Strategic Needs Assessments around drug use have been undertaken for East Anglia by Public Health England.

5.5.6 Vulnerable Groups

It is clear that despite substantial improvements in oral health, marked inequalities remain. Socially deprived and/or vulnerable groups in society tend to have poorer oral health and poorer access to oral health care services.

Groups of people particularly at risk from oral diseases include the following:

People living in areas of material and social deprivation

East Anglia has relatively low levels of deprivation. In Cambridgeshire, however, Fenland, northeast Cambridgeshire and areas of Huntingdonshire have the highest levels of relative deprivation. For example 1 child in 9 in Cambridgeshire lives in a household dependent on means-tested benefits. Areas of Norwich have 28 LSOAs in the most deprived twenty per cent and Kings Lynn and West Norfolk. Great Yarmouth has 17 LSOAs in the most deprived twenty per cent. Although large parts of Suffolk are fairly affluent some of the most deprived communities live in the towns around Ipswich, Lowestoft, Felixstowe and Haverhill. Peterborough also has LSOAS in the most deprived twenty per cent in the county, particularly Breton and Dogsthorpe. In Norfolk an estimated 26,200 children are living in poverty and the figures for Suffolk, Cambridgeshire and Peterborough are 20,000, 14,400 and 9,500 respectively.

People who have a learning disability

Individuals with disabilities experience more oral disease and have fewer teeth than the general population. They also have greater unmet dental needs[29] as they have more difficulty in accessing dental care.[30] Access to oral health care is affected by where people with learning disabilities live: evidence suggests that adults with learning disabilities living in the community have greater unmet oral health needs

than their residential counterparts and are less likely to have regular contact with dental services[31]

People with mental illness

It is estimated that one in four people in the population will suffer from a mental health problem at some time. While there is no direct link between mental health issues and poor oral health suffers may find it more difficult to access services for a variety of reasons to obtain the care that they need.

People in long term institutional care (including residential homes, psychiatric hospitals, prisons)

The standard of oral health in prison populations, is significantly worse that of the general population.[32]

There are three prisons in Norfolk, HMP Norwich, HMP Wayland and HMP Bure and four prisons in Suffolk, HMP High Point, HMP Warren Hill, HMP Hollesley Bay and HMP Blundeston. HMP High Point is the largest prison in the country.

Cambridgeshire has two prisons: HMP Whitemoor and HMP Littlehey as well as YOI Littlehey. Peterborough has one privately run prison Prisoners tend to have more decayed teeth, fewer filled teeth and less natural teeth than the general population, even when social class is taken into account (adults in social classes IV and V have been shown to have fewer decayed or unsound teeth than the prison population).[33] Evidence suggests that there is a substantial amount of unmet need in British prisons.[34] A survey of prison dental services is currently being undertaken nationally and the results were expected in January 2014. To date this has not been published.

Homeless people

Homeless people tend to have poorer health than the rest of the population. The level of statutorily homeless households nationally is 7.8 per cent. Data on the oral health status of homeless individuals is limited; however studies consistently report a high clinical and perceived need for oral health care within this population[35]. They have a higher dmft (decayed, missing and filled teeth) than the general population and there is a greater prevalence of dental pain and periodontal (gum) disease.[36] Homeless people tend to have fewer remaining teeth and heavy plaque accumulation.[37] Despite these high levels of need however, homeless people experience difficulty in accessing dental services[38]

Some ethnic minority groups (where they are socially disadvantaged)

There are oral health inequalities with certain Asian groups experiencing more dental disease. This may be linked more to deprivation than ethnic group but as data on the oral health of ethnic minorities are not routinely collected in the UK knowledge of the oral health status of different groups is limited. Other black and minority ethnic groups (BME) who habitually chew tobacco may have increased risk of developing oral cancer. The two main ethnic groups likely to have significant oral health needs in East Anglia are Asian groups and Travellers.

In Suffolk, for example, the proportion of those in the non-white British ethnic group is 10.2% (2009) and the largest ethnic group in Ipswich is Asians which accounts for a third of the BME population. In Norfolk the proportion of ethnic groups has changed

significantly since the Census in 2001 and has doubled to approximately 3.1% of the general population.

East Anglia is also seeing an increase in the numbers of settlers coming from Poland, Lithuania, Portugal and Latvia who may have complex needs both in terms of accessing dental services and communication.

Asian Community

Evidence suggests that the oral health of this group is poorer than that of their indigenous white peers and those subsequent, British born generations, tend to have even higher caries experience.[39] Caries levels are high in children, while older Asians of Pakistani origin tend to suffer from periodontal disease.[40]

There is further evidence to suggest that, despite high levels of dental need, minority ethnic groups experience barriers to accessing oral health care. These include language, a mistrust of dentists, cost, anxiety, cultural misunderstanding and concern about standards of hygiene, although perceived barriers differ across ethnic groups.[41] It is important to consider the cultural characteristics of each subgroup when designing oral health promotion activities for diverse ethnic groups.

Travelling community

There is very little published literature on the oral health of travellers. While there are no robust data on the prevalence of oral disease in this population, it seems reasonable to assume that disease levels will be relatively high, as this is a socially deprived group. A small study in the early 1990s found that 70% of traveller children had dental caries.[42] The limited data available supports this supposition. Access to health services appears to be minimal and evidence suggests that a dedicated dental service may be required to remedy this. This group make little use of preventive services with the majority of travellers neglecting to visit a dentist regularly. Those who do are more likely to be settled and literate. Travellers report going to the dentist mainly when they are in pain.[42] Primary care dental services are in place in the East Anglia to meet the needs of this community but access may vary across the whole area.

Elderly people and those living in residential care

Older people have specific oral health needs as oral health problems increase with age. In particular, age related changes can lead to xerostomia (often drug related), root caries, recurrent decay and decreased manual dexterity can lead to reduced plaque control. Systemic problems can also have an effect on oral health, for example, many older people suffer from progressive neurocognitive impairing illnesses (eg Parkinson's disease and Alzheimer's disease) and this may cause difficulties in controlling and retaining dentures.[43] In older people, the retention of natural teeth into old age makes a major positive contribution to the maintenance of good oral health related quality of life and there is a clear and consistent relationship between retention of natural teeth and a healthy diet and good nutrition.[44] People in East Anglia are living longer and the number of people over the age of 65 is set to grow by approximately 20 per cent in the next four years. This ageing population is also likely to retain their natural teeth for longer and may present an increased burden on NHS dental services.

The proportion of people retaining a useful number of natural teeth into retirement age has increased dramatically during the past forty years. This improvement has been tracked by the ten yearly Adult Dental Health Surveys carried out by the Office for National Statistics.[45] As the number of older people rises and their complexity of care increases there will be an associated rise in demands on the service and a change in the nature of care required.

There are a number of specific dental problems and complications that occur in later life. Older people for example, will generally have a reduced salivary flow and this effect may be worsened by the side effects of medication. Saliva both lubricates the mouth during eating and speaking but it also has an important protective role in combating the decay-producing plaque acid.

Gums recede as a result of the natural process of ageing or through the cumulative effect of chronic gum disease. This, together with the reduction of the protective benefits of saliva, can bring about the onset of new decay, including attack on the newly-exposed soft root surface. A healthy, sugar-controlled diet and the continuing use of fluoride toothpaste are needed to help contain this problem.

If manual dexterity becomes reduced with age, for example because of rheumatoid arthritis, then effective oral hygiene including tooth brushing with a fluoride toothpaste can be compromised.

Dietary habits may also change, for a variety of reasons, as people become older and this may impact on oral health. If access to shops becomes harder because of mobility problems then fresh fruit and vegetables may not be readily available and there may be increased dependency on processed foods with longer shelf lives. Many of these products have a high sugar content. Tooth loss can reduce the ability to chew effectively and diet choices may become more restricted as a result.

A lack of mobility in later life may also make accessing dental services more difficult and if incomes are reduced paying for dental care may not be seen as a priority. People may only visit the dentist when they have a problem which can result in treatment becoming more complex or in late diagnosis of, for example, oral cancer.

At the time of the first survey of adult dental health in 1968, a legacy of disease and extraction were clearly visible. Nearly half the adult population had no teeth at all and, even among the relatively young, there were many who wore complete dentures. However, by 1978, and the second national survey of adult oral health, the pattern was beginning to change. Generations who had lost all their teeth were gradually being replaced by generations who had their natural teeth filled rather than extracted. A group between 30 and 65 could be identified who had experienced high levels of disease which had been treated by fillings and other restorations (the “heavy metal generation”) and who will have high maintenance needs as they age further.

Many older patients suffer from long-term conditions such as diabetes, which increases the risk of developing periodontal disease.[46] Rheumatoid arthritis, which influences the ability of patients to adequately control oral hygiene, also increases the risk.[47]

Children at risk of neglect and abuse

Working Together to Safeguard Children HM Government, Working Together to Safeguard Children: A guide to interagency working to safeguard and promote the welfare of 2013 children is everyone's responsibility.[48] Paediatricians now acknowledge dental neglect as being important in child protection[49] . Markers include visible dental decay, untreated trauma and multiple hospital admissions for dental care. Using the concept of M*aking Every Contact Count* staff across healthcare, social care and education should have the skills and responsibility to recognise signs of poor oral health and neglect and be able to take appropriate action. [50]

Looked after children

There is a requirement that looked after children have an annual health assessment and that this should include a dental check-up. Currently this requirement is not being met and figures for Norfolk and Suffolk are low, 65.2% and 58.1 % respectively completed. This group of children is likely to have poorer oral health and, if they are moved between different carers, more erratic and irregular access to dental care.

6. Epidemiology of Oral Disease

In the UK data on dental caries is regularly collected to allow trends in dental disease to be monitored. The key surveys that provide information on trends in oral disease at a national level are the decennial Adult Dental Health Survey and Children's Dental Health Survey. The most recent Adult Dental Health Survey was conducted in 2009 and for children this was 2003. The 2013 Child Dental Health Survey is currently been undertaken concurrently with a survey of children attending special schools.

At a local level, the British Association for the Study of Community Dentistry (BASCD) co-ordinates regular surveys of children's teeth. This regular programme is now known as the NHS Dental Epidemiology Programme. Surveys of five year olds have been undertaken most recently in 2007/08 and 2011/12

Dental caries is commonly measured using the dmft index, which is a record of the number of decayed, missing and filled deciduous teeth (dmft). By convention, upper case DMFT is used to denote permanent teeth while lower case dmft is used to denote primary teeth.

The dental health of adults and children has improved significantly in recent years however population averages mask oral health inequalities. A well-recognised association exists between socio-economic status and oral health, and trends suggest that disease is increasingly concentrated in the lower income groups.

7. Oral Health in Adults

7.1 Adult Dental Health Survey 2009- Summary of main findings

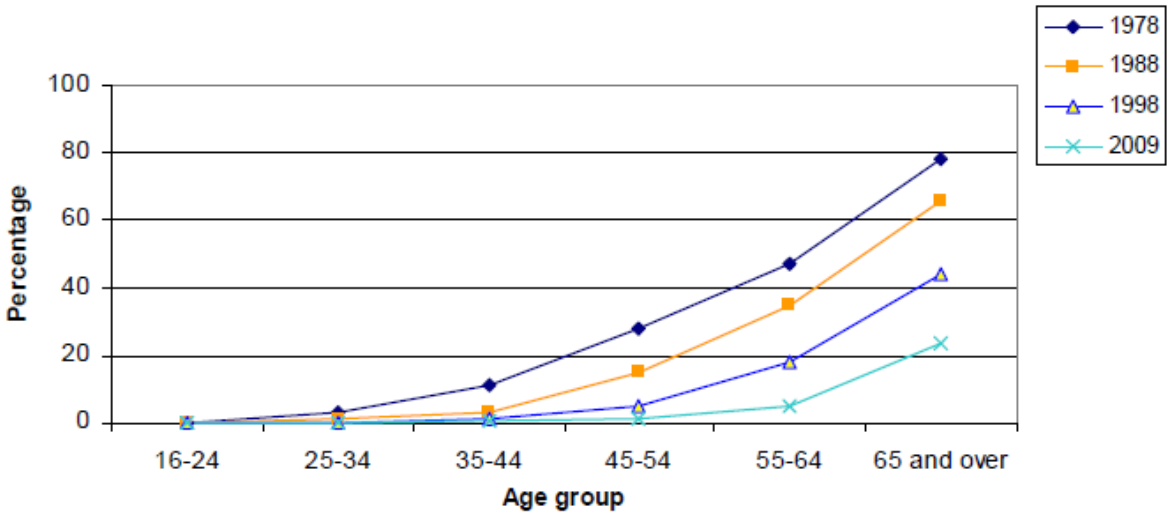
There is a lack of local information on adult oral health. Most information on adult dental health is provided by the Office of National Statistics decennial Adult Dental Health Survey which began in 1968. The main purpose of these surveys has been to gain a picture of the dental health of the adult population and how this has changed over time. The most recent survey was undertaken in 2009[51].
The Adult Dental Health Survey 2009 shows that adults' dental health continues to improve over time and that accessing NHS dental services only remains difficult for a small minority.

- The proportion of adults in England who are edentate (no teeth) has fallen by 31% from 37% in 1968 to 6% in 2009
- The prevalence of tooth decay in England has also fallen in all age groups from 46% in 1998 to 28% in 2009
- 86% of dentate adults nationally had 21 or more natural teeth
- Adults under the age of 45 years were less likely to have fillings or crowns
- 9% of all adults reported suffering from dental pain
- 7% of all adults were observed to have any PUFA symptoms (open pulp involvement, ulceration, fistula, abscess)
- 12% of all adults (who had ever been to the dentist) were classified as having extreme dental anxiety.
- A quarter of young adults (aged 16-24 years) had no fillings
- The prevalence of periodontal disease was 45% although for the majority of these the disease was moderate
- Over three-fifths (61%) of dentate adults said they attended the dentist for regular check-ups
- There is an increased need for complex dental treatment for those aged 45 years and over

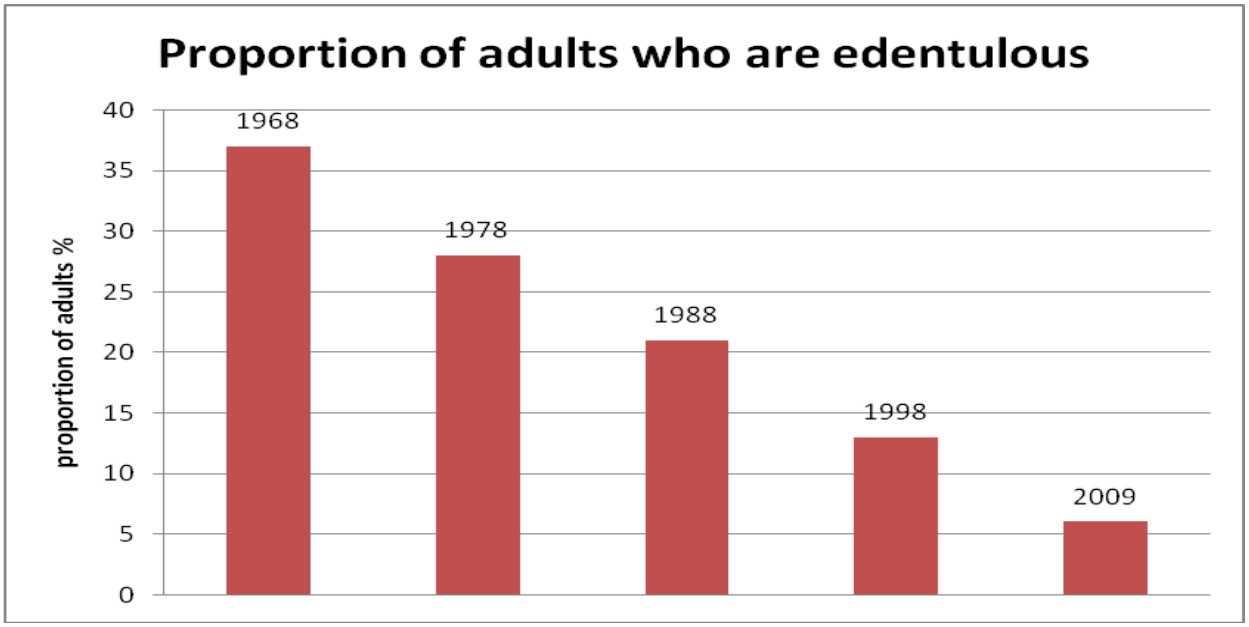
The dental health of most people in the UK has improved dramatically during the past 50 years due largely to the widespread use of fluoride toothpaste.[52]. During the post-war years, the nation's oral health was poor and dental disease was rife[53] and there was little expectation that teeth would last a lifetime. This expectation has now changed, with the proportion of adults with no teeth dropping from 37% in 1968 to 6% in 2009 (see Figure 4 and 1.5.1).

The percentage of adults over 65 years with no natural teeth has fallen since 1978.More people retaining their natural teeth into later life has implications for the provision of health services and may place a burden of more complex restorative care with an ageing population.

Figure 1.5.1 Trends in percentage edentate by age, England: 1978-2009



Graph 3: The Proportion of Adults with No Natural Teeth in England, 1968–2009

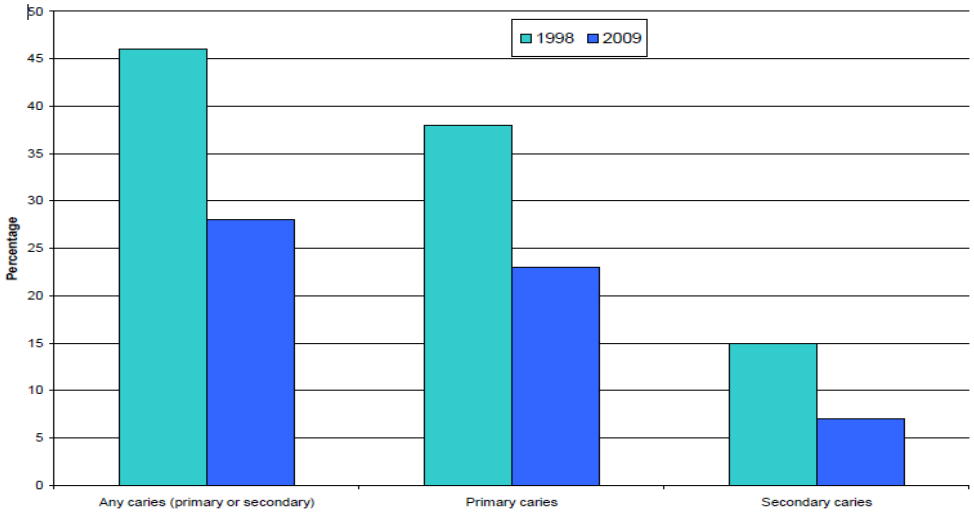


Source: National Adult Dental Health Surveys, 1968 to 2009. Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E and White D (2000).

National surveys, conducted decennially, show that adult dental health is improving.

It is predicted that by 2028, around 96% of the population will have their natural teeth. The proportion of younger adults who have a sound dentition (ie without any restorations or caries) has also improved dramatically, rising from 9% in 1978 to 30% in 1998.[54]

Graph 4: Trends in percentage of dentate adults with dental caries: England 1998 to 2009



NHS Information Centre (2011): Adult Dental Health Survey 2011 available at: http://www.ic.nhs.uk/statistics-and-data-collections/primary-care/dentistry/adult-dental-health-survey-2009--summary-report-and-thematic-series

PUFA: Open pulp involvement, Ulceration, Fistula, Abscess

The average number of decayed teeth has dropped substantially from 1.9 teeth in 1978 to 1.1 teeth in 1998[55] and the proportion of younger adults, with a sound dentition (i.e. without any dental restorations or decay) has risen dramatically from 9% in 1978 to 30% in 1998[56].

Trends by age in adults

At the time of the first survey of adult dental health in 1968, a legacy of disease and extraction were clearly visible. Nearly half the adult population had no teeth at all and, even among the relatively young, there were many who wore complete dentures. However, by 1978, and the second national survey of adult oral health, the pattern was beginning to change. Generation who had their natural teeth filled rather than extracted.

National surveys of children's oral health were also undertaken at 10-year internals and in 1983 the first signs of a sustained reduction in dental decay in children were observed. This was probably largely the result of the widespread introduction and marketing of fluoride tooth paste in the early 1970s. By 1988 (the next adult dental health survey) this reduction was visible in young adults.

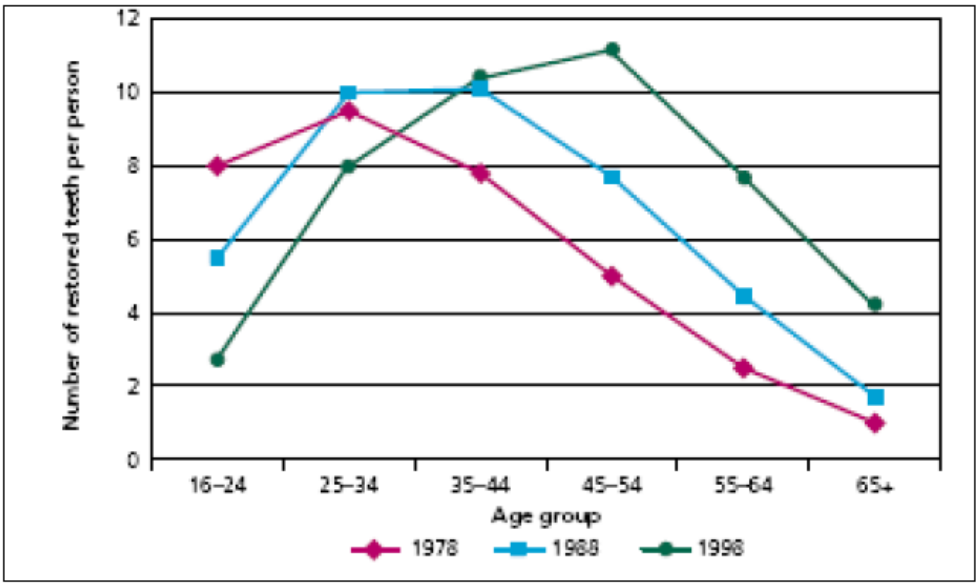
The younger generation of 1978 (16-34 year- olds) had high levels of decay and many fillings, mostly of dental amalgam. The wave of restoration can be traced as the cohort ages, so by 1998 three groups moving through the population could be clearly identified, each with very different needs:

- Older age groups (those past the age of retirement) were dominated by those with no natural teeth at all and a need for complete dentures.
- A young generation (under the age of about 30) had lower levels of decay than their parents. They had low restorative needs and will benefit from maintaining this state throughout adult life.

- Finally, and importantly, a group between 30 and 65 could be identified who had experienced high levels of disease which had been treated by fillings and other restorations (the “heavy metal generation”) and who will have high maintenance needs as they age further.

The independent review of NHS dental services in England (Steele 2009) uses trends from successive adult national dental surveys to illustrate this “heavy metal wave” (Figure 6) where the younger adult generation of 1978 had high levels of decay and many fillings, and by 1998, they were in middle age and still exhibited the highest treatment need and rates.

Graph 5: The heavy metal wave (Steele 2009)



Source: NHS dental services in England-An independent review led by Professor Jimmy Steele 2009

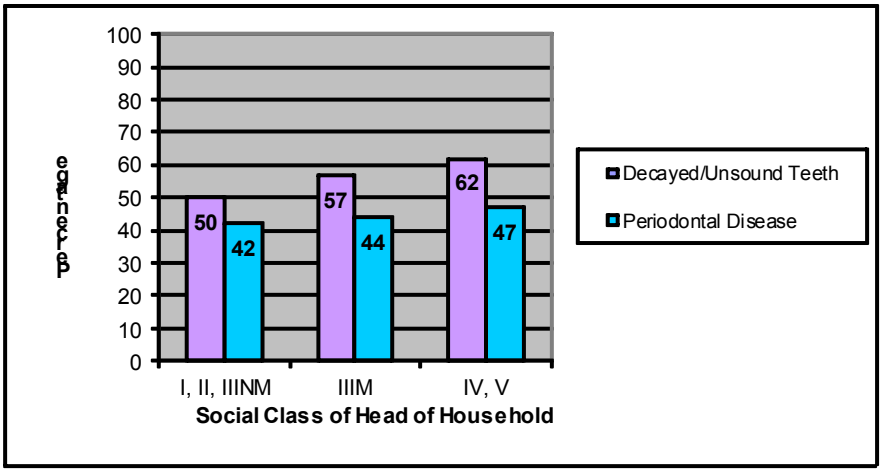
This improvement means more people are able to eat a healthy diet and talk and smile without embarrassment, however populations with high proportions of older people in the future will require significant resource to maintain past restorations. As people age their ability to maintain good oral health through regular brushing may diminish particularly if manual dexterity reduces. This will impact negatively on their oral health which in turn will impact on general health as diet may be influenced by ability to chew certain foods.

There will be an increased demand on dental services to maintain this high level of treatment as restorations inevitably fail. An ageing population will add an extra burden to dental services.

7.1.1 Inequalities in Dental Caries in Adults

While oral health has improved generally, it is not all good news. Population averages hide oral health inequalities, as seen in Figure 7. This highlights that the prevalence of oral disease is highest in areas of social deprivation

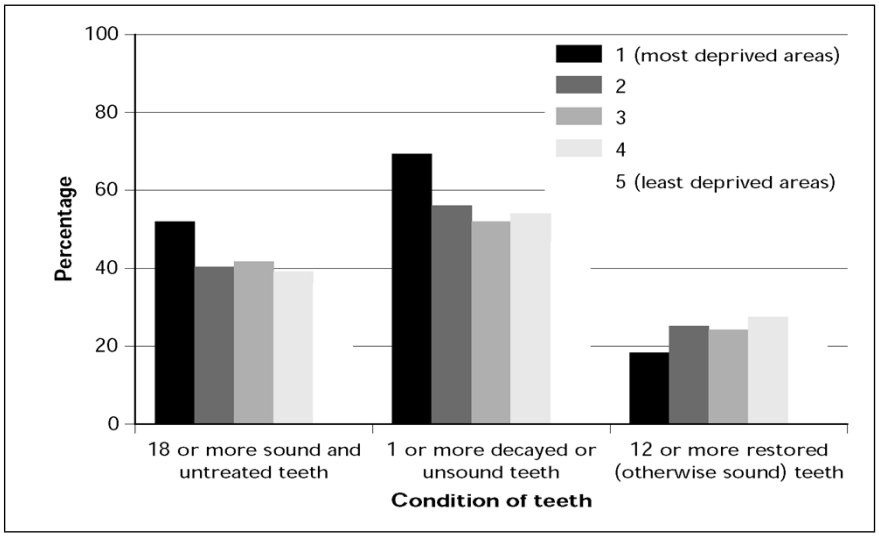
Graph 6: Proportion of Adults with Decayed/Unsound Teeth or Periodontal (Gum) Disease by Social Class



Source: Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E, White D. Adult Dental Health Survey. Oral Health in the United Kingdom 1998.

Adults from the most deprived areas are more likely to have one or more decayed or unsound teeth than those from less deprived areas, as seen in Figure 8

Graph 7: The Condition of Teeth among Dentate Adults in England by Jarman Area



Source: Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E, White D. Adult Dental Health Survey. Oral Health in the United Kingdom 1998. Available at URL: http://www.statistics.gov.uk/downloads/theme_health/AdltDentlHlth98_v3.pdf

Although oral health has improved, the 2009 ADHS still reported differences in dental status by socioeconomic status. Table 1 still describes a gradient between managerial and professional occupations, intermediate occupations and routine and manual occupations.

Table 6: Dental status by characteristics of adults- ADHS 2009

Socio-economic classification of	% Dentate	% Edentate

household		
Managerial and professional occupations	98	2
Intermediate occupations	96	4
Routine and manual occupations	90	10

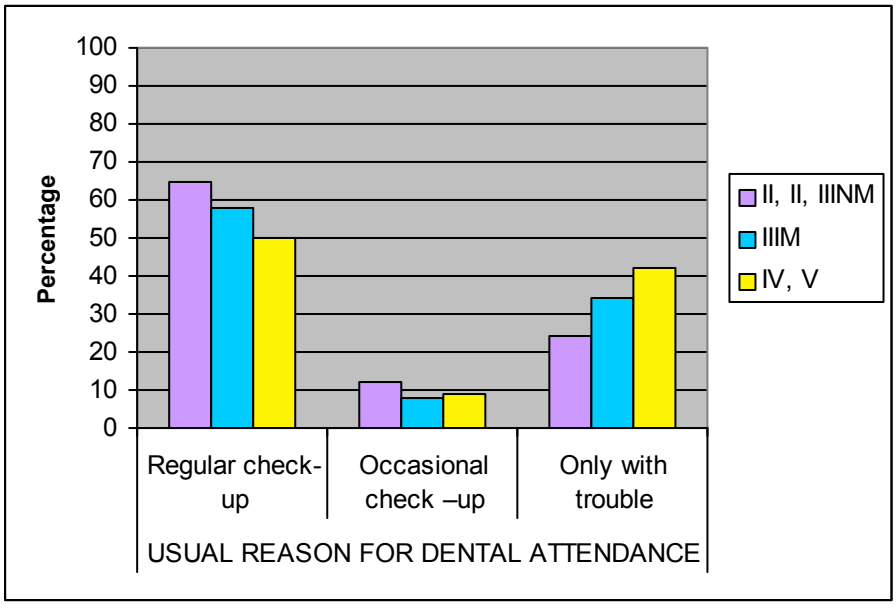
Source: The Information Centre 11: Adult Dental Health Survey 2009-Key Findings. Chenery, V. March 2011

Attendance for Treatment

Despite the higher level of need in adults from deprived areas, it is adults from the least deprived areas that are more likely to have restored teeth. This suggests that those from higher socio-economic groups are more likely to seek dental treatment. Similarly, individuals from socially deprived groups report that they are more likely to attend irregularly and only when they have a problem (see Figure 9).

Figure 9 shows that much decay goes untreated (even in the least deprived socio-economic groups the proportion of untreated decay is as high as 50%).

Graph 8: Reported Usual Reason for Dental Attendance of Dentate Adults by Social Class



Source: Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E, White D. Adult Dental Health Survey. Oral Health in the United Kingdom 1998.

7.1.2 Dental Health of Adults in East Anglia

Local data on adult oral health are not routinely collected in the UK. In many areas there is a paucity of local information on adult oral health so measures of child dental health are the most commonly used indicators of dental disease. The decennial national surveys do however collect data to regional level.

Overall, in the most recent Adult Dental Health Survey 2009, twenty per cent of dentate adults in the East of England were found to have excellent oral health. That

is they had twenty one or more natural teeth, 18 or more sound and untreated teeth, no active decay at any site, no periodontal pocketing or loss of attachment above 4mm and no plaque or calculus. This is the highest percentage in England and compares with an England average of ten per cent.

Table 7: Proportion of adults with excellent oral health by English Strategic Health Authority- England 2009

Dentate Adults	Percentage with excellent oral health
All	10
North East	10
North West	7
Yorkshire and Humber	8
East Midlands	7
West Midlands	4
East of England	20
London	11
South East Coast	17
South Central	7
South West	6

Source: The Information Centre Adult Dental Health Survey 2009- England Key Findings. Chenery, V. published March 2011

The findings of the ADHS survey (2009) suggests that oral health inequalities continue to be geographically clustered however as tables 2 and 3 show, adults in the South of England tend to have better oral health than adults in the North. More adults are retaining more of their natural teeth and East of England compares favourably to the rest of England and has improved between 1998 and 2009. The percentage of adults who are edentulous has more than halved in the same time period from eleven to four per cent.

Table 8: Dental status by characteristics of adults- ADHS 2009

English Strategic Health Authority	Dental Status	
	% dentate	% edentate
North East	**92**	**8**
North West	**93**	**7**
Yorkshire and The Humber	**93**	**7**
East Midlands	**94**	**6**
West Midlands	**91**	**9**
East of England	**96**	**4**
London	**96**	**4**
South East Coast	**95**	**5**
South Central	**98**	**2**
South West	**94**	**6**

Source: The Information Centre Adult Dental Health Survey 2009- England Key Findings. V Chenery published March 2011

Dental Caries in Adults in East Anglia

- Adults in the East of England had on average 0.5 carious teeth compared with 1.1 carious teeth for dentate adults in the North East and South West.
- Adults in the East of England with at least one carious tooth had on average 2.2 carious teeth compared with 3.2 among adults in the North East and South West.
- Fifteen per cent of dentate adults had primary caries in the East of England compared with 28 per cent of dentate adults in the West Midlands.

7.2 Gum (Periodontal) Disease in Adults in East Anglia

It is difficult to collect robust data on periodontal disease, however national surveys suggest that the incidence of severe periodontal disease is declining.[56] Nevertheless, chronic periodontitis still affects a significant proportion of the population. The most recent Adult Dental Health Survey, in 2009, found that 54 % experience bleeding in the mouth, 45 per cent had pocketing of 6mm or more and 1 per cent had pocketing of 9mm or more . Prevalence increases with age as 14% of 16-24 year olds and 85% of people aged 85 years and over have signs of the disease. Approximately 5% of the population suffer from severe disease[57] and are, therefore, at significant risk of tooth loss.

Thirty two per cent of dentate adults in the East of England had bleeding in the mouth compared with 64% of dentate adults in South Central. Thirty two per cent of dentate adults in the East of England had pocketing of 4mm or more compared with 59% of adults in the South West.

Findings of national surveys suggest that the pattern of oral health inequalities in gum disease mirrors that of dental decay; adults who have the most severe disease tend to come from the more socio-economically deprived groups. Figure 7 and 8 shows that groups with the highest need, both in terms of dental decay and periodontal (gum) disease, come from the most deprived socio-economic classes.

7.3 Tooth Wear in Adults in East Anglia

In an ageing population, more of whom are retaining more of their natural teeth in later life, tooth wear is likely to become a more significant problem. It can present restorative challenges to general dental practitioners (GDPs) and may present more of a financial burden on dental commissioning services.

Seventy seven per cent of dentate adults in England had some wear in their anterior teeth; 15% had some moderate wear, and 2% had some severe wear on their anterior teeth. In the East of England 70% had any wear, 9% some moderate wear and 1% some severe wear on their anterior teeth.

7.4 Urgent dental conditions and dental pain in adults in East Anglia

Urgent conditions including dental pain, dental pulpitis and oral sepsis, and untreated teeth with extensive decay, are an important and sometimes dominant factor in dental behaviour and the prevalence and distribution of these conditions need to be considered alongside estimates of the current state of adult dental health. Ten per

cent of all dentate adults in the East of England reported current pain compared with an England average of 9%. Seventy three per cent reported that they had never had any dental pain in the last 12 months, 20% reported occasional pain and 7% reported dental pain fairly or very often. This compares with England averages of 70%, 22% and 8% respectively.

Seven per cent of all dentate adults in the East of England had PUFA symptoms (pain, ulceration, fistula, abscess) the same percentage as England, 7% had un-restorable caries, compared with 8% for England and 21% had one or more urgent dental conditions compared with 22% for England.

7.5 Preventive Behaviour and risks to oral health in adults in East Anglia

Good oral hygiene helps prevent dental problems such as the accumulation of plaque and calculus which contribute to the development of gum disease and tooth decay. Daily preventive care including brushing with a fluoride toothpaste is essential and will help stop dental problems before they develop.

7.6 Oral Hygiene

Seventy seven per cent of dentate adults in the East of England reported tooth cleaning twice a day or more often and 21% once a day. The vast majority of these reported using fluoride toothpaste. Eighty two per cent said they had been given advice on brushing.

Table 8: Reported preventive behaviour by dentate adults ADHA 2009

Reported behaviour	East of England % dentate adults	England % dentate adults
Frequency of tooth cleaning- twice a day or more often	77	75
Frequency of tooth cleaning- once a day	21	22
Frequency of tooth cleaning-less than once a day	2	2
Frequency of tooth cleaning- never	1	1
The use of a fluoride toothpaste 1350-1500ppm (excluding those who reported that the never cleaned their teeth)	78	76
The use of a fluoride toothpaste 1000-1350ppm (excluding those who reported that the never cleaned their teeth)	17	19
Had been given advice on brushing	82	78

Source: The Information Centre Adult Dental Health Survey 2009- England Key Findings. V Chenery published March 2011

7.7 Risks to dental health in adults in East Anglia

Smoking, poor oral hygiene and diets high in both sugar content and frequency of intake all present risks to oral health for dental decay, periodontal disease and oral cancer.

Twenty one per cent of dentate adults in the East of England reported smoking compared with 21% for England.

Fifty five per cent in the East of England reported having a high sugar intake, (cakes, biscuits, puddings or pastries, sweets or chocolate or fizzy drinks 6 or more times a week) compared with an England average of 50%.

Forty two per cent of dentate adults in the East of England had visible plaque compared with an England average of 66%.

7.8 Dental attendance patterns of adults in East Anglia

Regular attendance at the dentist allows the early detection and treatment of conditions that may become more serious with time. For example, the early detection of oral cancer improves five-year survival rates dramatically, to just below 90%.[58] Often the dentist, because of the painless nature of the condition, is the first person to identify the condition. A dental visit is also a good opportunity to reinforce preventive messages. Gingivitis, the first stages of periodontal disease is reversible with good oral hygiene practices and the dentist is well placed to give advice about oral cleaning and brushing techniques as well as dietary advice.

Sixty two per cent of all dentate adults in the East of England report that their usual reason for attending a dentist is that they like to go regularly. This compares with 61% in England. Eleven per cent attend only occasionally and 26% only when they have trouble. Fifty per cent report that they go every six months, 23% once a year, seven per cent once every two years, 10 per cent less than every two years and 10 per cent only when they have a problem.

Seventy nine per cent of dentate adults in the East of England reported that they had attended a dentist at least every last two years compared with 76 % for England. The 21% who reported that they did not visit a dentist at least every two years gave various reasons outlined in table 9.

Table 9: Reported reason for not attending the dentist in the last two years, England and East of England. ADHS 2009. (Dentate adults who have not been to the dentist in the last two years)

Reason for not attending the dentist in the last two years	East of England % who said	England % who said
No need to go to the dentist/nothing wrong with my teeth	46	40
I can't find an NHS dentist/dentist changed to private	16	25
I am afraid of going to the dentist	22	23
I can't afford the NHS charges	18	20
Keep forgetting/haven't got round to it	18	18
I've had a bad experience with a dentist	15	17
I don't see the point in going to the dentist	14	15
I haven't got time to go	10	9

It's difficult to get to/from the dentist	5	6
I'm embarrassed to go to the dentist	4	5

Source: The Information Centre Adult Dental Health Survey 2009- England Key Findings. Chenery, V. published March 2011

NICE guidance issues in October 2004 makes recommendations about intervals between routine dental examinations[59]. CG19 Dental recall: Recall interval between routine dental examinations. The guideline recommends that the largest interval between oral health reviews for patients aged 18 years and older should be 24 months.

Although 62 % of all dentate adults in the East of England report that their usual reason for attending a dentist is that they like to go regularly on average only 50% of the population attend within a 24 month period.

Dentists have an important role to play in improving oral health both in the early detection of disease and the opportunity of a dental visit offers to promote preventative behaviour.

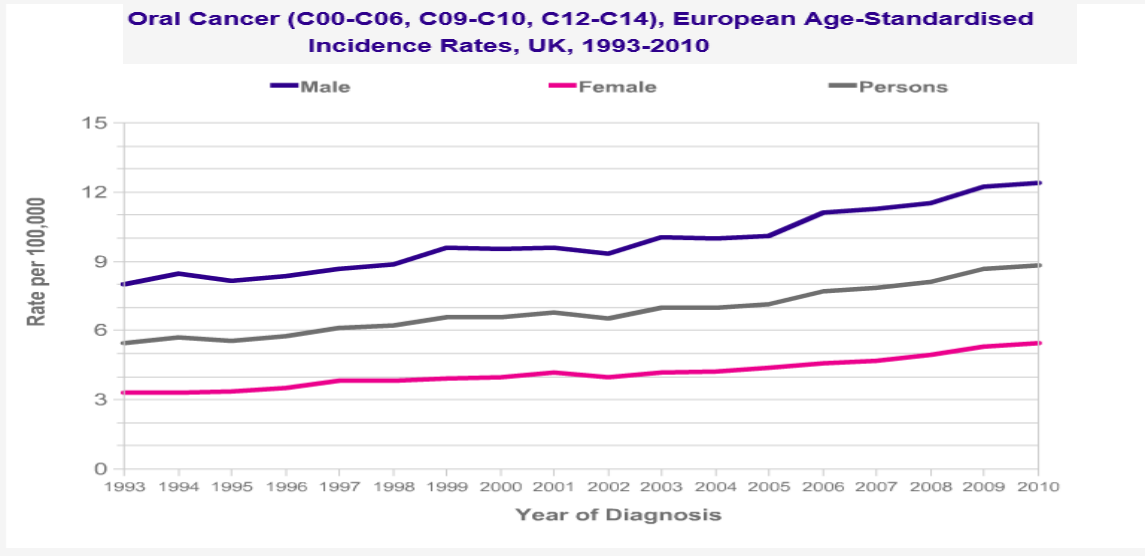
7.9 Oral Cancer in Adults

Cancers of the head and neck are a set of serious diseases. Improved outcomes result from early detection and treatment. The prevalence of oral cancer had been declining steadily over the past few decades, but it has recently begun to rise[60]. In 2001, national survey data estimated that there were 4400 new cases in the UK, making up 2% of all cancers. In 2003, approximately 1600 deaths were attributed to oral cancer. While mouth cancers account for only around 1% of all new UK cancers per year, the incidence is rising and now accounts for approximately 800 deaths annually.

The five-year survival rate in England is around 50% if the patient presents at an advanced stage. However, early detection improves five-year survival rates dramatically, to just below 90%.[61] Unfortunately, the low awareness of oral cancer among the public, and the painless nature of oral cancer in its early stages, mean that early presentation is rare. People tend to only seek treatment when the cancer is more advanced and difficult to treat. The risk factors include tobacco and alcohol use and in the case of lip cancer sun exposure. Smokeless tobacco such as areca nuts betel quid and oral snuff has been found to independently increase the risk of oesophageal cancer.[62]

Incidence of oral cancer increases with age from 30 years, although prevalence is beginning to increase in younger adults.[63] It is twice as common in men as in women however, the gender difference is becoming less pronounced over time. There are wide geographic variations in prevalence and those in lower socio-economic groups are more susceptible.[64]

Graph 9



Source: Office for National Statistics, Cancer statistics registrations series MB1 http://www.statistics.gov.uk/statbase/product.asp?vlnk=8843

Oropharyngeal cancer incidence has more than doubled in recent years, representing the biggest rise in any head and neck cancer. Recent research suggests a change in patterns of causation, with human papilloma virus (rather than smoking and alcohol) being the primary risk factor in a younger subpopulation. The incidence of palate cancer has also increased by 66% nationally. The reasons for this are unclear. National Cancer Intelligence Network (2010): Oral Cavity Cancer – Survival Trends in England available at http://www.ncin.org.uk/publications/data_briefings/oralcancer.aspx

Ethnicity and oral cancer

A link has been demonstrated between ethnicity and oral cancer. Oropharangeal cancer was more common in Bangladeshi, Indian and Pakistani females than in white females even with lower smoking levels (Donaldson 2102). Moles in 2008 also demonstrated a higher incidence in South Asians versus non-South Asians that was associated with deprivation. The health Survey for England in 2004 found a higher incidence of oral cancer in South Asian women associated with betel quid use. [65] [66] [67]

7.10 Prevalence of Oral Cancer in East Anglia

Oral cancer is on the increase in Anglia with a 50% increase in age-standardised oral cancer incidence over the last 20 years. Table 10 shows the new registrations for oral cancer ICD-10 code C00-C14

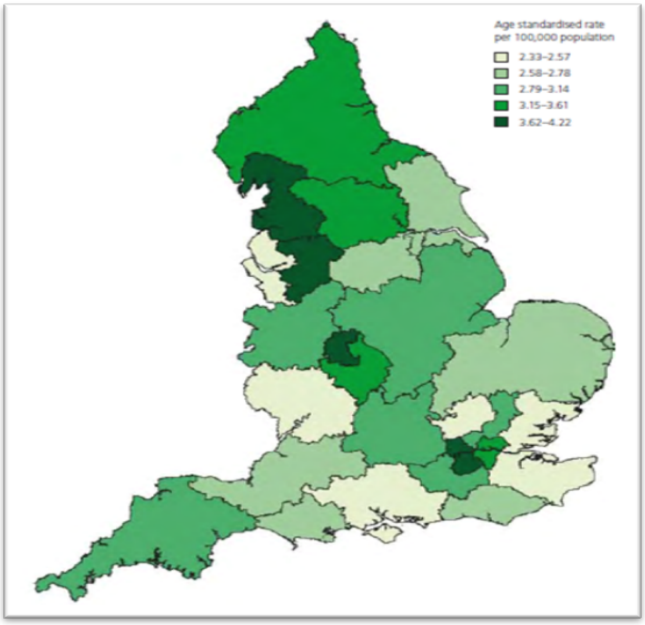
Table 10: Registrations of newly diagnosed cases of cancer (3rd digit) site, sex and region of residence. England 2011. Registered by February 2013

site		England	North East	North West	Y and H	East Midlands	West Midlands	East	London	South East	South West
Malignant neoplasm of lip oral cavity	M	4,071	244	636	444	370	435	383	464	629	466
	F	2,137	100	326	212	177	242	217	277	334	252

and pharynx ICD-10 code C00-C14											

The map below shows the incidence of oral cavity cancer by network 2002-2006

Map 1: To show incidence of oral cavity cancer by network 2002-2006



8. Oral Health in Children

8.1 Dental caries In Children

Introduction

For the past 20 years nationally coordinated surveys of child dental health have been undertaken across the UK which produced robust, comparable information which could be used at local level and compared regionally, nationally and internationally. These surveys have been jointly run by the NHS and the British Association for the Study of Community Dentistry (BASCD). This is now known as the National Epidemiology Programme for England.

The information produced from the nationally coordinated surveys of child dental health is used by Primary Care Trusts (PCTs) and now Local Authorities and NHS England when conducting oral health needs assessments at local level.

In recent years concern was expressed by all parties about compliance with the programme and the quality of the data. New arrangements were established in England during 2006/07 which embedded the programme within the governance of the NHS and maintained the important advisory role of BASCD in ensuring quality standards. The NHS Dental Epidemiology Programme for England was established (NHS DEP) and is delivered in accordance with Directions (DH, 2008) made under

the Functions of Primary Care Trusts (Dental Public Health) (England) Regulations 2006 (OPSI, 2006).

The North West Public Health Observatory (NWPHO) and The Dental Observatory (TDO) worked with the Department of Health (DH), BASCD and other stakeholders to develop the NHS DEP.

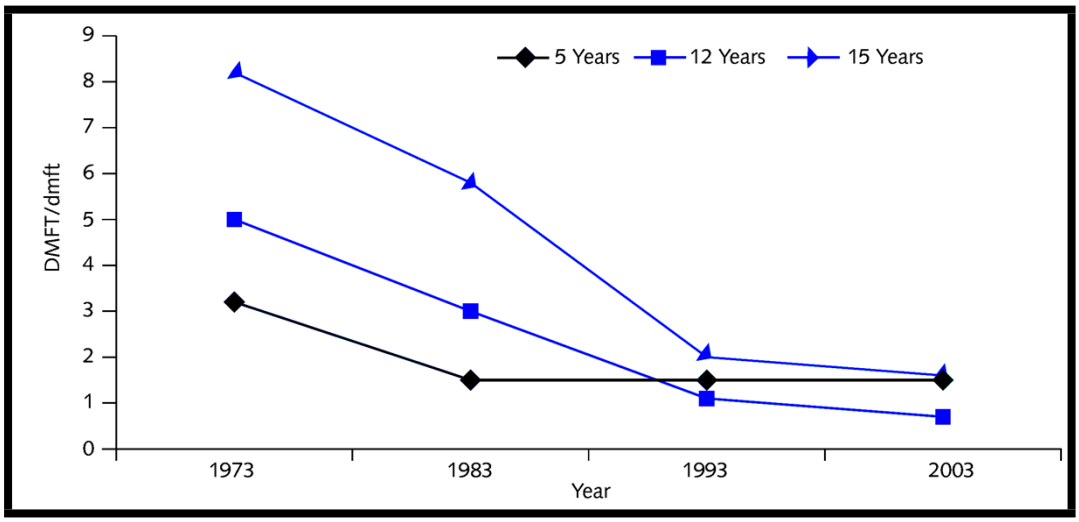
Following guidance from the Deputy Chief Dental Officer in 2005, the protocol also required that positive consent was obtained prior to the survey from the child's parent or from someone with the competence to give consent on behalf of the child. In previous surveys, parents were informed about the survey and unless the parents objected, children were examined.

The prevalence of dental caries in young children has decreased substantially over the past 40 years (see Figure 13). The greatest improvement in the decay experience of five-year-olds was seen between 1973 and 1983, during which time the mean number of decayed, missing and filled teeth (dmft) per child halved and the percentage of children without any caries (caries free) doubled. This is associated with the widespread use of fluoride toothpaste.
Other diseases and public health concerns share risks and contributory factors with dental decay, for example childhood obesity. The 2012-13 report of the national Child Measurement Programme (Department of Health: Health and Social Care Information Centre (2013). National Child Measurement Programme: England, 2012/13 school year.

www.hscic.gov.uk/catalogue/PUB13115 identifies a similar relationship between childhood obesity and deprivation. This is understandable given the common factors that lead to dental decay and obesity, and consideration should be given to this when preventive strategies and local interventions are being developed.

The impact of sugar on health has recently been reviewed by the Scientific Advisory Committee on Nutrition (SACN) and their position statement is currently open for scientific consultation;
http://www.sacn.gov.uk/reports_position_statements/reports/scientific_consultation_draft_sacn_carbohydrates_and_health_report_-_june_2014.html

Graph 10 : Changes in Mean dmft/dmft Over Time for Children in UK

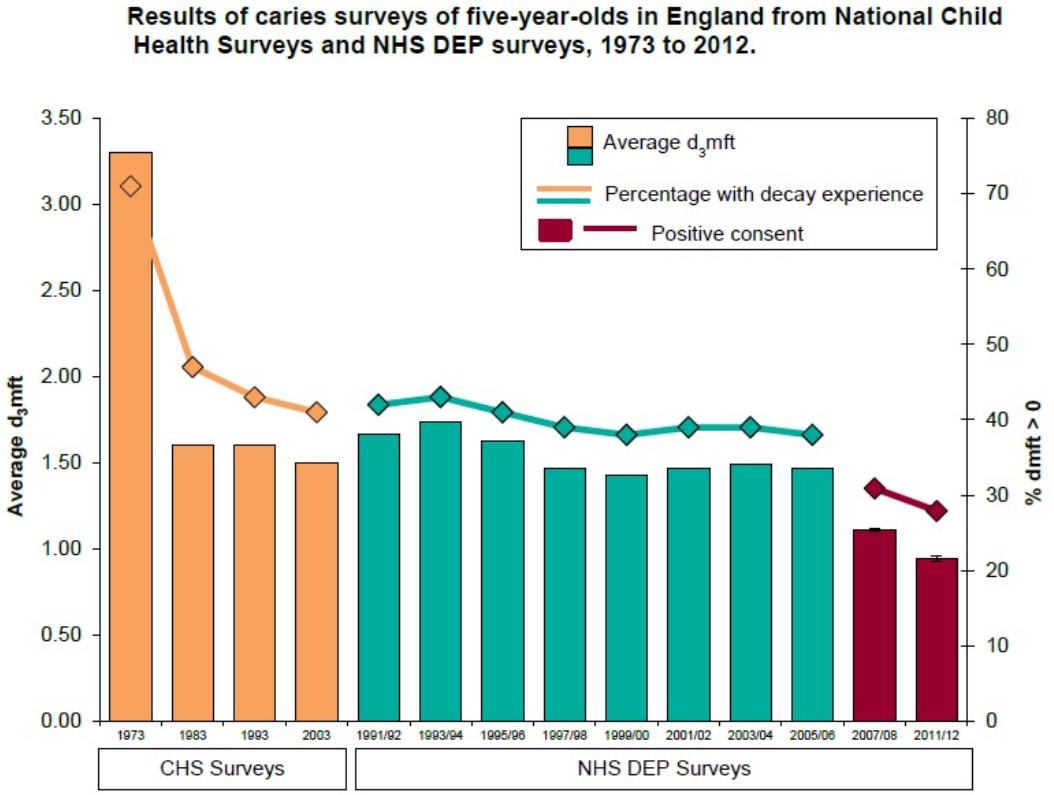


Source: National Children's Dental Health Surveys 1973 to 2003. Harker R and Morris J (2005). Office for National Statistics, London. In Choosing Better Oral Health, Department of Health (2005): http://www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf

Trends suggest however, that disease levels are now static. Between 1983 and 1993, the decline was less marked. Since 1993, the overall trend in the oral health of five-year-olds seems to be one of modest worsening following a long plateau. Therefore, there continues to be a burden of disease in small children, which is difficult to address. The most recent Child Dental Health Survey 2013 is currently underway.

Graph 11 shows the results of caries surveys of five year olds in England from National Child Health Surveys and NHS DEP surveys 1973-2012. BASCD national epidemiological data reflects what was found in the national decennial surveys with a plateau both in percentage of children with decay and dmft levels.

Graph 11: Results of Caries surveys of five year-olds in England



Source: National Child Dental Health Surveys 1973-2003. The dental caries experience of 5-year-old children in Great Britain1991-2012). Surveys co-ordinated by the British Association for the Study of Community Dentistry.. NB. Pitts, J Boyles, Z.J. Nugent, N. Thomas, and C.M. Pine . Available at URL: http://www.bascd.org/viewdoc.php?doc_id=45&offset=0&keyword=

The methodology used for the 2012 oral health survey of children was the same as that used in the 2008 survey and therefore it is possible to make comparisons between the two. The issue of positive consent makes comparisons with earlier data less reliable.

Overall 27.9% of five year old children in England whose parents gave consent for participation in the survey had experienced dental decay. There was wide variation in prevalence and severity of dental decay with poorer oral health in the north and

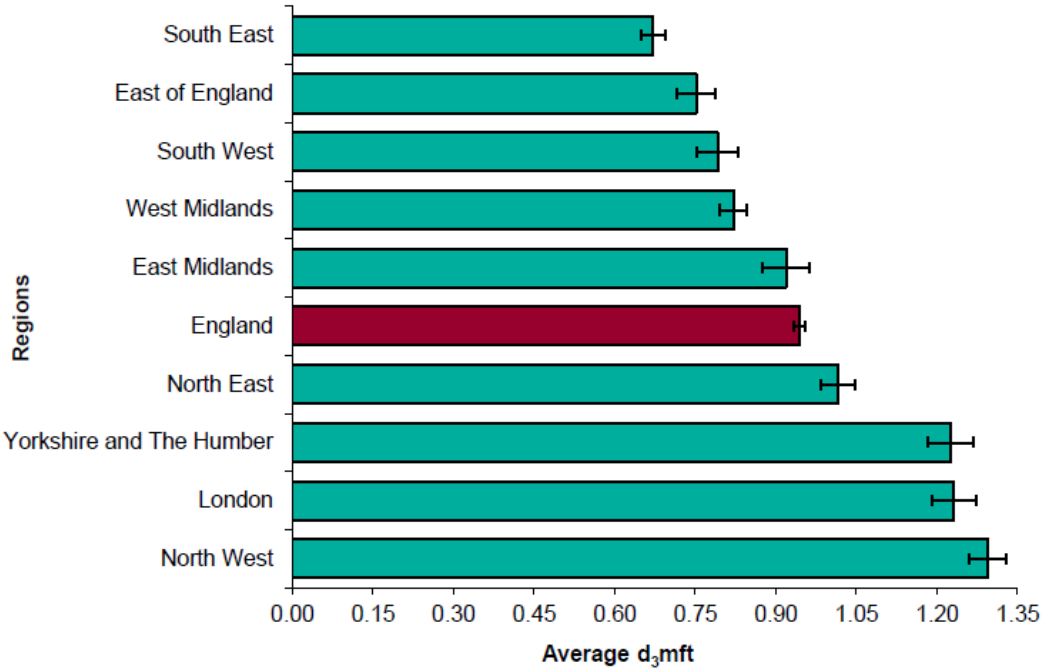
the more deprived local authorities. The results show a reduction in the proportion of children with dental decay from 30.9% in 2008 to 27.9% in 2012 equating to a percentage change of 9.7%. Reductions in severity were also evident, with the number of decayed missing or filled teeth falling from 1.11 in 2008 to 0.94 in 2012 a reduction of 15%.

8.1.1 Inequalities in Dental Caries in Children

These averages fail to present the full picture of dental disease by masking oral health inequalities. In reality, a small proportion of the population experiences a high proportion of the disease. Disease experience is polarised, therefore the distribution of caries prevalence is skewed. As Figures 15 and 16 shows, the mean dmft for 5-year-olds who have decay experience is substantially higher than the overall mean dmft. This means that children who have decayed teeth will have, on average, between 3 and 4 decayed teeth therefore most of the decay is found in a small number of children. The same pattern is found at both regional and national levels (see Figure 6 and 7).

Figure 6: Average number of dentinally decayed, missing (due to decay) and filled teeth (d3mft) among five year old children in England by region 2012

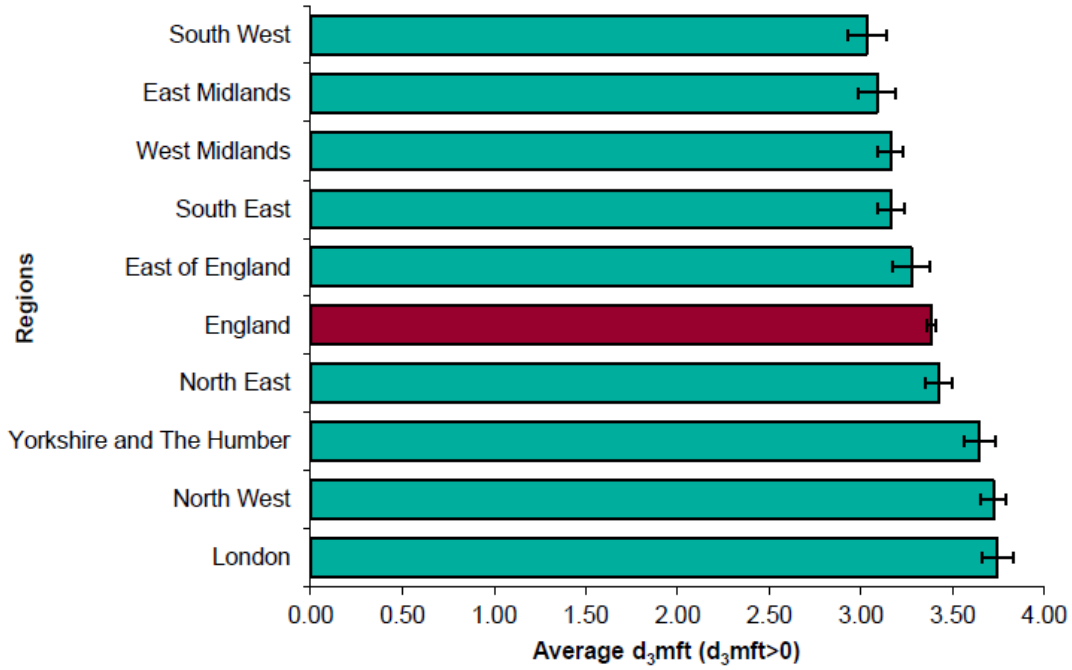
Error bars represent 95% confidence limits



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public Health Team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West)

The average dmft for five year old children living in the East of England, is lower than the England average of 1.0 and is among the best in the country, second lowest by region however when children who are free from decay are excluded the average dmft for the East of England rises to 3.3 only slightly better than the England average of 3.4.

Figure 7: Average number of dentinally decayed, missing (due to decay) and filled teeth (d3mft) among five year old children with decay experienece (d3mft>0) England by region 2012

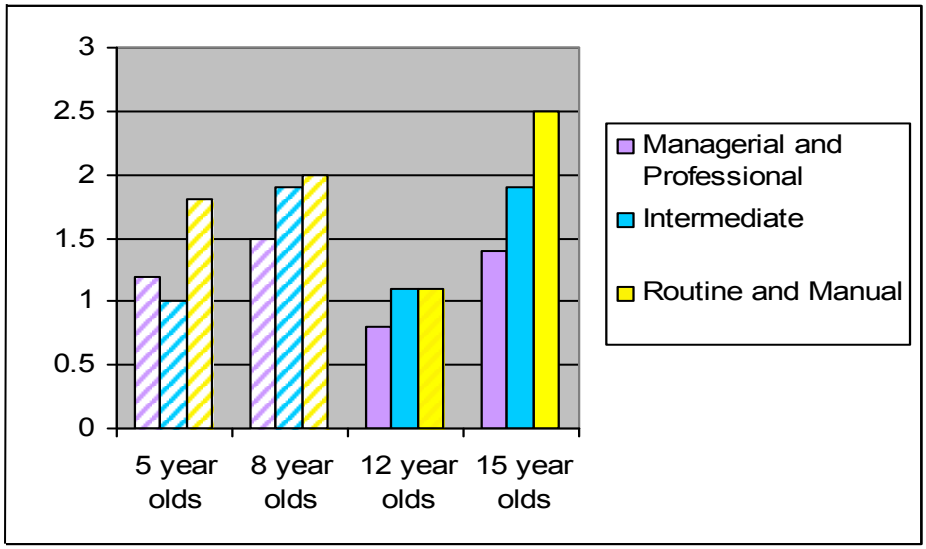


Source: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012, A report on the prevalence and severity of dental decay. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team (North West)

Looking at the average dmft for the whole sample population does not give a clear indication of the disease burden in those children that have decay. In 2012, 72.1% of the children included in this average have no decay and therefore all of the decay identified must be in the remaining 27.9% surveyed. Among the children with decay experience the average number of decayed, missing (due to decay) or filled was 3.38. A child at this age normally has 20 primary teeth. Figure 7 shows the England average and variation across the regions.

Dental caries, like many other diseases, is increasingly associated with social deprivation.[68] Children from socially disadvantaged groups experience disproportionately high levels of dental disease.[69] The 2003 National Children's Dental Health Survey found that children from manual classes are more likely to experience caries than those from non-manual classes (see Graph 12).[70]

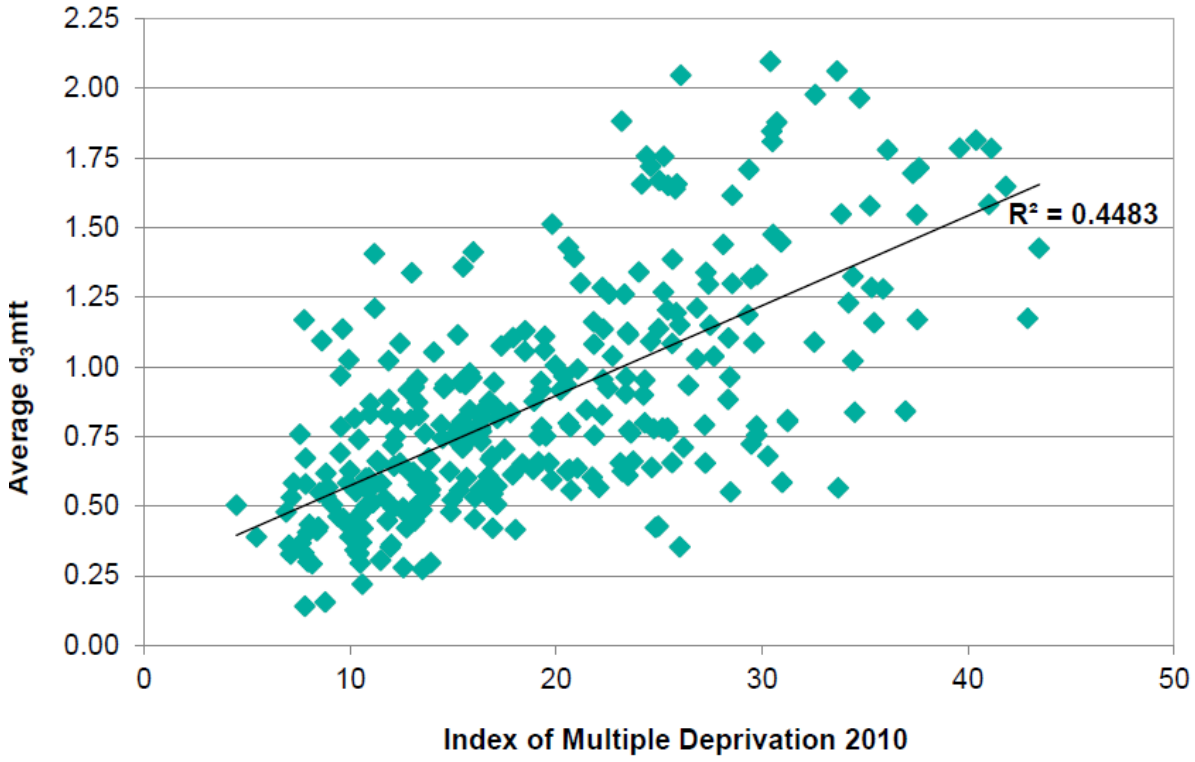
Graph 12: Mean Number of Teeth with Obvious Decay Experience by Socio-Economic Status of Household in the UK 2003*



Source: The dental caries experience of 5-year-old children in Great Britain (2005/2006). Surveys co-ordinated by the British Association for the Study of Community Dentistry.. NB. Pitts, J Boyles, Z.J. Nugent, N. Thomas, and C.M. Pine . Available at URL: http://www.bascd.org/viewdoc.php?doc_id=45&offset=0&keyword=
*Hashed columns indicate primary teeth, solid columns indicate permanent teeth

Similarly, there is a correlation between the percentage of children with decay experience (% of children caries free) and deprivation. This means that deprived groups are more likely to have decay experience. Graph 12 from the 2003 survey shows that this pattern is seen in both the primary and secondary teeth. This variation persists and is also evident in the 2012 survey at the lower tier local authority level and the severity of decay is well correlated with deprivation.

Graph 13: Correlation between number of dentinally decayed, missing (due to decay) and filled teeth (d3mft) among five-year-old children and Index of Multiple Deprivation (IMD 2010) score. Lower tier local authorities in England, 2012



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team (North West)

The Care Index

The care index is the proportion of teeth with caries that have been filled. ft/d3mft expressed as a percentage. Opinions differ regarding the appropriateness and benefit of filling decayed deciduous teeth and there is a lack of definitve evidence based guidance on this. It is difficult thefore to make assumptions about the extent or the quality of clinical care available. How ever it appears that althought children visit the dentist their deciduous teeth, for whatever reason, are not be routinely filled or extracted.

The care index was 11.2% across England as a whole showing that just over a tenth of decayed teeth are treated by filling them. This compares with the care index for the East of England of 14.2%.

Oral disease can have a significant negative impact on the quality of life of pre school children.[71]

For example, severe untreated caries may not only cause pain, discomfort and disruption to sleeping and eating habits, but may also adversley affect child growth and school performance.[72] It is therfore of paramount importance for dental professional to provide appropriate prevention and high quality treatment for children.

Dental teams may need more training and support to develop their clinical mangement skills needed for the effectove care of preshool and young children. Establishing effective links between local dental practices, chilrens centres and primary schools may facilitate across to dental services and to provide oral health support and advice.

8.2 Oral Health in Children in East Anglia

8.2.1 Dental Caries

The dental health of children in East Anglia is relatively good. Local data on the oral health of children are regularly collected through the National Dental Public Health Epidemiology Programme (DEP) for England co-ordinated surveys.
On 30th September 2014 the DEP published an " Oral health survey of three year old children 2013". Of the 5,259 three year old children examined in Anglia and Essex and 92.9% had no visible tooth decay or evidence of past dental treatment. For the remaining 7.1% who had some obvious decay experience, the average number of decayed teeth and teeth treated for decay was 2.99 per child. The average number of decayed, missing and filled teeth, per child, across the whole sample was 0.2. Table 11 shows the results across Anglia and Essex

Table 11:Local Results to upper tier LA level; 3 year old population as sampled: average number of teeth with decay experience and proportion of total sample with any obvious decay experience

	Total number of children examined		**Average number of teeth with decay experience ($d_3$mft)**	$d_3$mft *Lower 95% confidence limit*	$d_3$mft *Upper 95% confidence limit*		**Proportion with any visible decay experience ($d_3$mft>0)**	$d_3$mft>0 *Lower 95% confidence limit*	$d_3$mft>0 *Upper 95% confidence limit*
England	53,640		**0.36**	*0.35*	*0.37*		**11.7**	11.5	12.0
Anglia and Essex	5,259		**0.21**	*0.18*	*0.24*		**7.1**	6.38	7.8
Cambridgeshire	1,103		**0.16**	*0.11*	*0.22*		**4.8**	3.5	6.0
Essex (data for Basildon, Braintree, Brentwood, Castle Point, Chelmsford, Colchester, Epping Forest, Harlow, Maldon, Rochford and Uttlesford only)	1,290		**0.17**	*0.12*	*0.21*		**6.3**	4.9	7.6
Norfolk	1,173		**0.27**	*0.20*	*0.35*		**9.9**	8.2	11.6
Peterborough	134		**0.46**	*0.11*	*0.8*		**10.7**	5.1	16.4
Southend-on-Sea	229		**0.22**	*0.07*	*0.38*		**5.6**	2.6	8.5
Suffolk	1,267		**0.20**	*0.14*	*0.26*		**6.8**	5.4	8.3
Thurrock	63		**0.15**	*0.01*	*0.29*		**7.3**	1.3	13.4

The report provides further information relating only to children who did have evidence of decay experience. Average number of teeth affected by decay (and 95% confidence limits) within this group is:

Table 12: dmft for three year olds in East Anglia where dmft > 0 2013

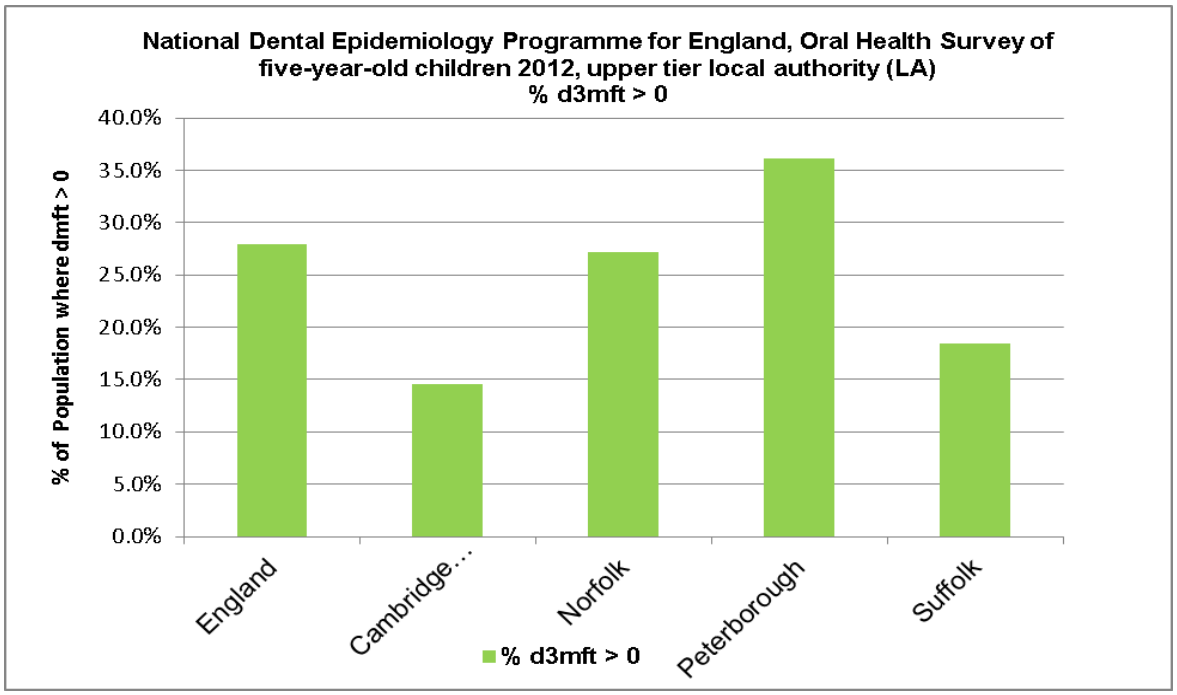
England	3.08 (*3.01 – 3.14*)	*Values for Peterborough, Southend-on-Sea and Thurrock are based on less than 30 children in this category examined in each of these LAs*
Anglia and Essex	2.99 (2.7-3.27)	
Cambridgeshire	3.38 (2.67-4.1)	
Essex (as above)	2.65 (2.24-3.05)	
Norfolk	2.77 (2.24-3.30)	
Peterborough	4.27 (1.92-6.63)	
Southend- on- Sea	4.01 (2.32-5.71)	
Suffolk	2.94 (2.31-3.56)	
Thurrock	2.09 (2.09-2.09)	

The number of children examined who fell into in this category, resident in Peterborough was 14, Southend- on- Sea, 13 and Thurrock, 5 and therefore the findings are likely to be unreliable.

The Report does provide data to lower tier LA level but these are likely to have limited practical value; sample numbers are small and confidence intervals wide.

In the sample of five year old children surveyed during 2011-2012 there was variation across the area however. In Cambridgeshire 86% of 5 year old children are decay free, in Suffolk 83%, Norfolk 73% and Peterborough 64%. See Graph 14 . This compares with an England average of 72.5%.

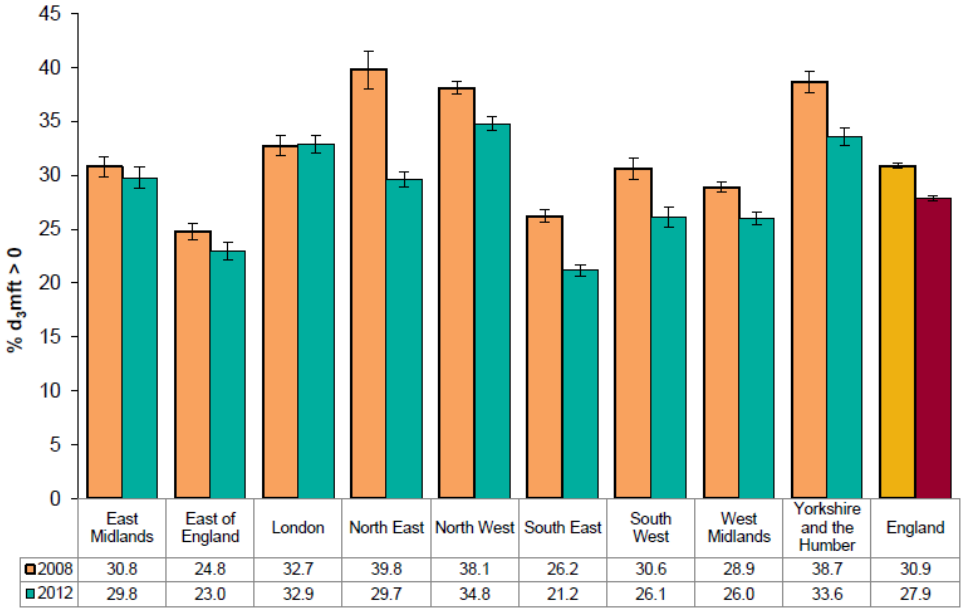
Graph 14: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West)

Although these surveys have been undertaken over a number of years the methodology had changes so it is not possible to make comparisons with the 1992 to 2006 series. Data from the 1992 to 2006 series shows there was little change in the prevalence or severity of dental decay between 1992 and 2006. The first two points of the 2008 to 2012 series shows a reduction that would require further investigation to determine the possible causes. Surveys in Wales and Scotland have shown similar trends over similar period. In terms of the methodology, however, surveys undertaken from 2008 required that, for the first time, parents given positive consent for their child to be examined. This may have a bearing on the findings and there may be an element of self- selection in this method. Graph 15 show the comparison between the 2008 and 2012 epidemiological survey.

Graph 15: Percentage of five year olds children with decay experience (d3mft>0) in England by region 2008 and 2012



	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire and the Humber	England
2008	30.8	24.8	32.7	39.8	38.1	26.2	30.6	28.9	38.7	30.9
2012	29.8	23.0	32.9	29.7	34.8	21.2	26.1	26.0	33.6	27.9

Error bars represent 95% confidence limits

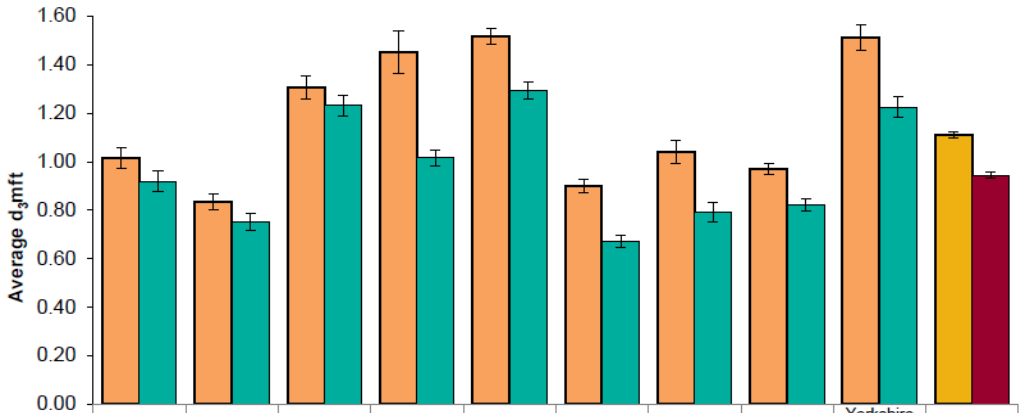
Source: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012, A report on the prevalence and severity of dental decay. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West)

The East of England averages for 5 year old children in the East of England is 0.83 and 0.75 in 2008 and 20012 respectively and is higher only then figures for the South West of England. Again this reduction between 2008 -2012 may not be significant.

The chart below also shows a reduction in the mean d3mft from 1.11 in 2008 to 0.9 in 2012 which is an overall reduction of 15.3%. The reduction in England severity was recorded for all regions but not all local authorities.

Graph 16

Figure 11: Average number of dentinally decayed, missing (due to decay) and filled teeth ($d_3$mft) among five-year-old children in England by region, 2008 and 2012.

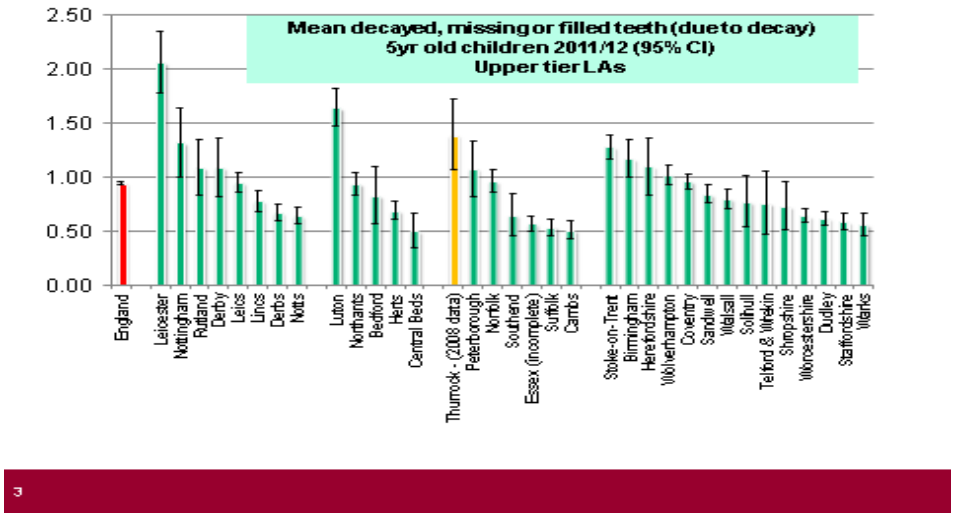


	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire and the Humber	England
2008	1.02	0.83	1.31	1.45	1.52	0.90	1.04	0.97	1.51	1.11
2012	0.92	0.75	1.23	1.02	1.29	0.67	0.79	0.82	1.23	0.94

Error bars represent 95% confidence limits

Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West)

Graph 16 : below shows the mean decayed, missing of filled teeth (due to decay) in 5 year old children 2001.12 for Upper Tier Local Authorities



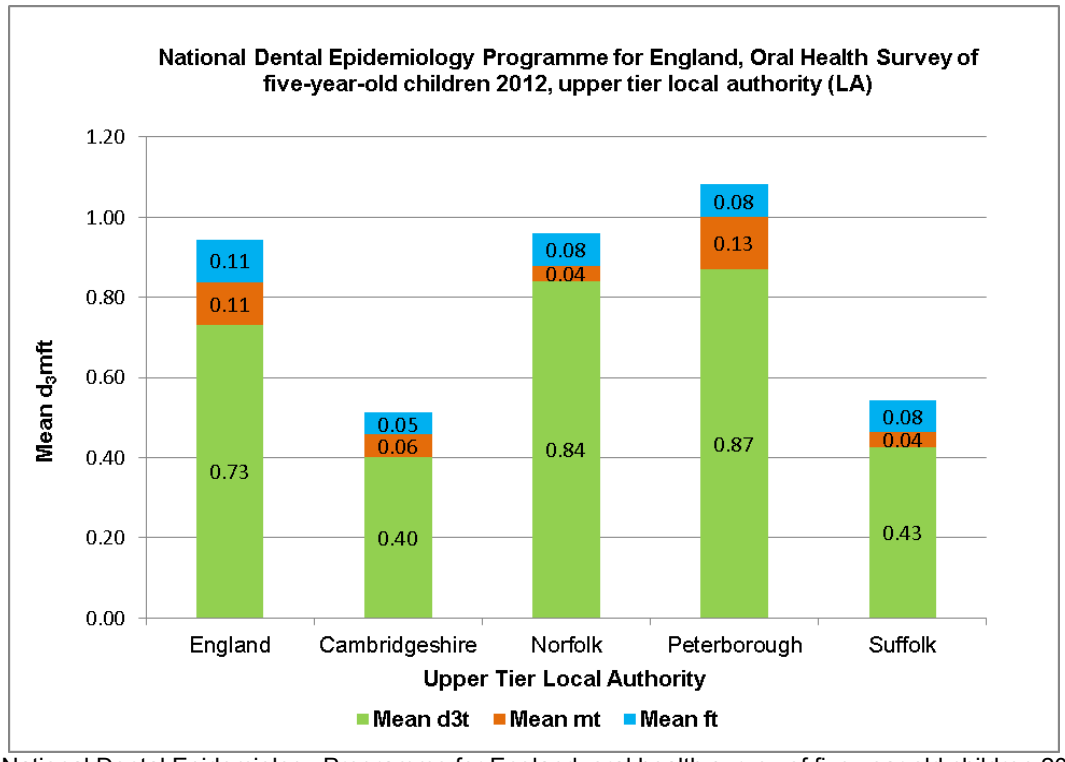
Source: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012, A report on the prevalence and severity of dental decay. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West

Graph 16 above shows the mean decayed, missing of filled teeth (due to decay) in 5 year old children 2012 for Upper Tier Local Authorities

Across the Midlands and East Region Cambridgeshire and Suffolk Upper Tier Local Authorities have some of the lowest mean d3mft values of 0.5, lower also than the England average. Peterborough and Norfolk have mean d3mft values of 1.1 and 0.9 respectively, closer to the average value for England.

Graph 17 shows the components of the dmft index while the average dmft in all areas except Peterborough is lower than the England average the largest component is untreated decay: Only a very small number of five year old children with dental decay receive active treatment for this condition, i.e. filling or extractions. While many decayed teeth may remain symptomless the impact of a decayed tooth in terms of pain, infection and sleepless nights in a child should not be under estimated.

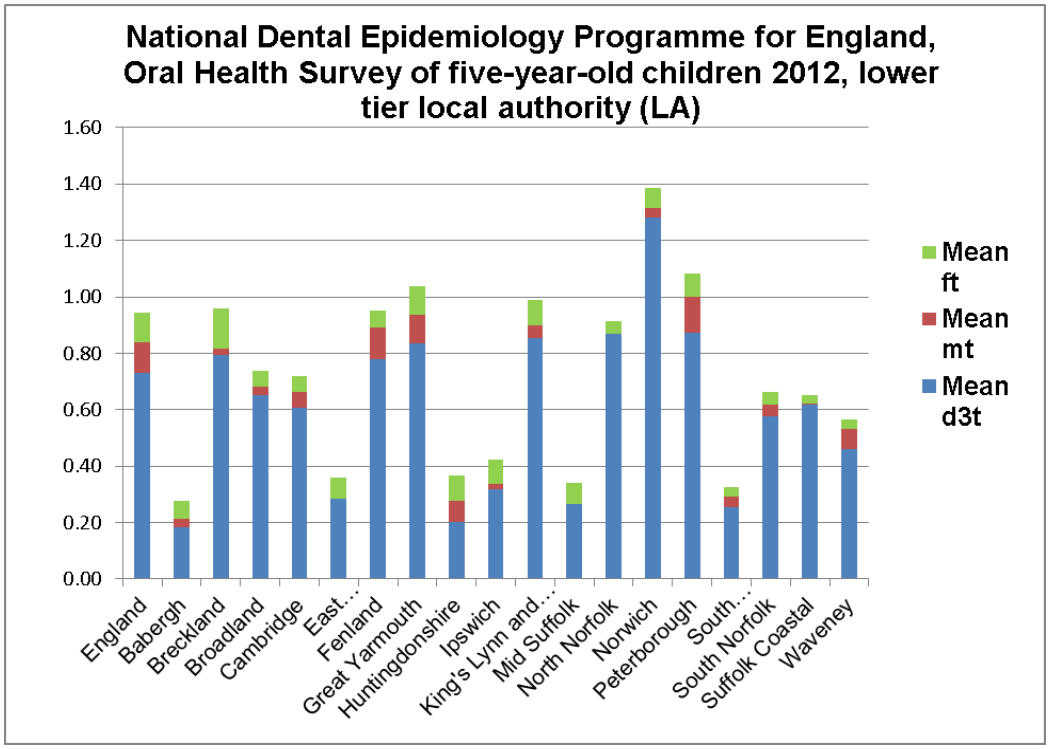
Graph 17: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West

Graph 17 shows the breakdown of dmft scores by lower tier local authorities. Local differences appear more marked with Norwich, Great Yarmouth and Peterborough exhibiting higher average dmft scores than England and the rest of the area.

Graph 18 : shows the breakdown into decayed, missing and filled components for each of the Lower Tier Local Authorities



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West

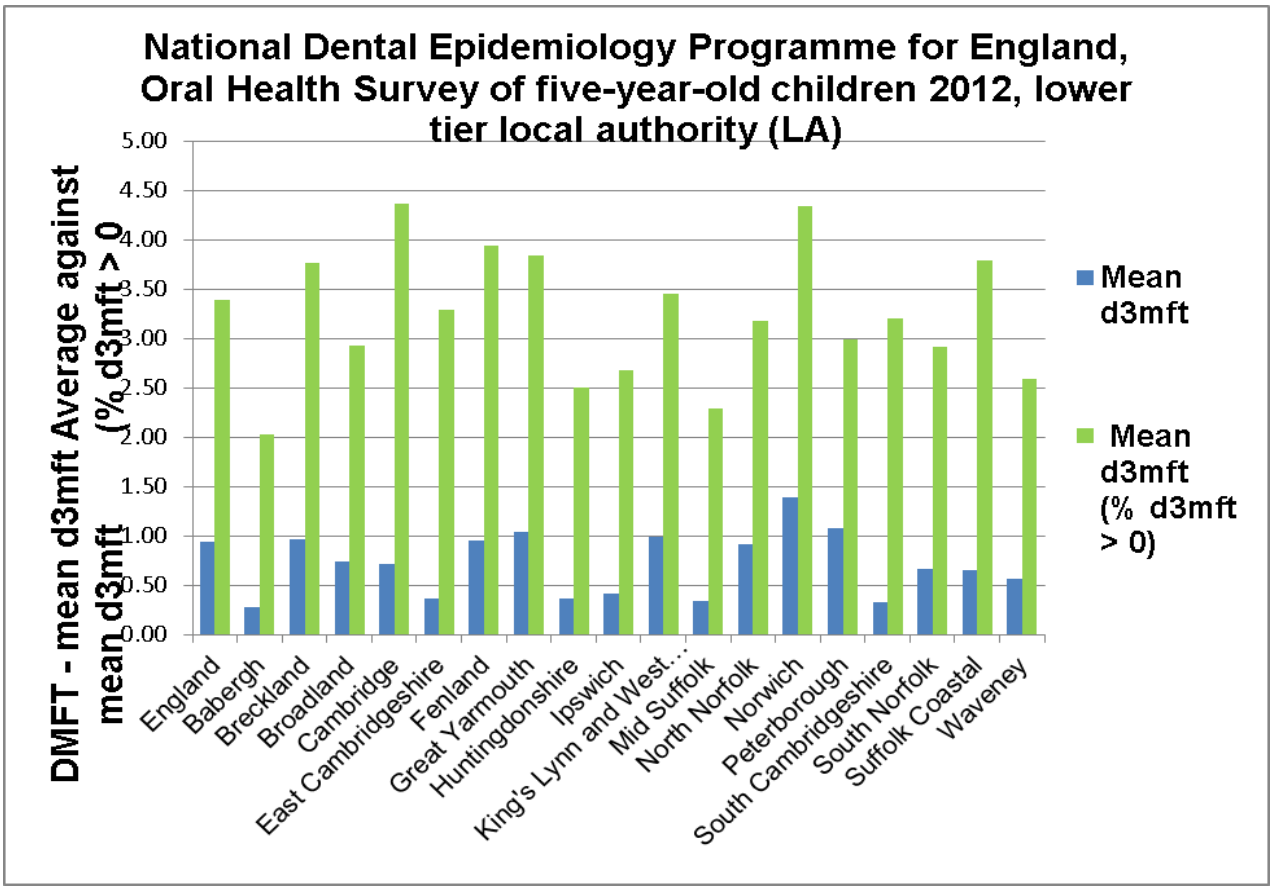
Average dmfts at higher tier local authority level can mask local variation. Targeted interventions such as community fluoride varnish schemes or brushing programmes in primary schools may help reduce levels of dental decay.

8.2.2 Inequalities in Oral Health of Children in East Anglia

The pattern of oral health inequalities seen at a national level is repeated locally. Again national averages hide oral health inequalities and the fact that a small proportion of the population experiences a high proportion of dental disease. The stark contrast between average $d_3$mft values across the whole population and $d_3$mft values in those with decay experience can be seen in figure 24.

For example in Cambridge a relatively affluent part of the region the difference between the average d3mft and the average d3mft of those with dental decay is from 0.7 to 4.4. Similar variation is seen most notably in areas such as Fenland, Norwich, Great Yarmouth and Suffolk Coastal.

Graph 19: National Dental Epidemiology Programme for England: oral health survey of five year old children 2012



Source: 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. PHE G Davies, J Neville, E Rooney. Dental Public health team. M Robinson. A Jones, C Perkins, Knowledge and Intelligence Team(North West

These figures highlight the wide variation in the levels of decay experienced by five year old children living in different parts of the Midlands and East Region, in Cambridgeshire, Norfolk, Suffolk and Cambridgeshire and even between areas covered by lower tier authorities.

The figures also highlight the differences in the level of decay experienced by five year old children living in different life circumstances. The cause of dental decay is well understood and is related to the frequent exposure of teeth to fermentable carbohydrates, most commonly through eating and drinking sugary snacks and drinks.

These are also contributory factors to other issues of public health concern in children, for example childhood obesity. The variation in dental decay reported at the local authority (lower-tier level) is well correlated with the index of multiple deprivation, with the highest levels of disease tending to be seen in the most deprived areas. The 2011-12 report of the national Child Measurement Programme (Department of Health: Health and Social Care Information Centre (2012). National Child Measurement Programme: England, 2011/12 school year. Available at: https://catalogue.ic.nhs.uk/publications/public-health/obesity/nati-chil-meas-prog-eng-2011-2012/nati-chil-meas-prog-eng-2011-2012-rep.pdf) identifies a similar relationship between childhood obesity and deprivation. This is understandable given

the common factors that lead to dental decay and obesity, and consideration should be given to this when preventive strategies and local interventions are being developed.

The 2011/12 survey is the second one to be carried out following a number of methodological changes including the requirement to seek positive written consent in 2007. It is likely that the non-responders have different levels of dental decay beyond that explained by deprivation alone. No clinical data exists on this non-consented part of the sample and therefore it is not possible to model or measure the impact this has had. Direct comparisons between this survey and surveys conducted before 2008 should not be made, as response bias may have resulted in lower estimates of levels of decay. .[73] [74]
There is also consistency in the relationship found between dental decay and deprivation, the most deprived local authorities having the highest decay levels. This relationship is supported by other studies.[75] [76]

Between 2008 and 2012 there was a reduction in the proportion of children affected by dental decay and its severity. The last time a substantial change in the levels of dental decay was observed among this population was in the Child Dental Health Surveys of 1973 and 1983. The reduction was widely considered to have been a result of the wholesale introduction of fluoride toothpaste in the late 1970s.

The increasing focus on prevention in general dental practice may also have had an influence. Evidence from the Health and Social Care Information Centre (HSCIC) shows an almost three-fold increase in dentists' prescriptions for fluoride-based products between 2007 and 2012,19 and a continuing increase in the application of fluoride varnish for children (a 63% increase between 2010-11 and 2011-12)20.

Although further work is needed to determine the reasons for the changes, widespread inequalities related to deprivation are still present and, under the arrangements introduced by the Health and Social Care Act 2012, upper-tier local authorities now have a duty to address dental health within their public health responsibilities. Data from this survey will be used to produce the dental indicator (4.2 tooth decay in children aged five) in the PHOF.

8.3 Orthodontic Treatment Need in East Anglia

The most recent Children's Dental Health Survey in 2003 found that 35% of 12-year-olds in England would benefit from orthodontic treatment.[77] While this figure is often used to plan commissioning of orthodontic services, it would be wrong to assume that all of these children will seek, accept or be suitable for orthodontic treatment.

Unlike most oral conditions, malocclusion does not vary between genders or social classes (although racial characteristics mean that there is some ethnic variation). Despite this, there have historically been inequalities in the receipt of orthodontic treatment[10], e.g. girls receive more treatment than boys and adolescents in deprived areas are more likely to have untreated malocclusion.[78] Local data on the prevalence of malocclusion are not routinely collected.

A review of orthodontic services across East Anglia was undertaken in July 2014. This document, An orthodontic needs assessment and service review for East Anglia 2014, can be viewed separately.

In summary the main findings indicate that orthodontic provision across East Anglia is variable. In some areas such as Cambridge and Great Yarmouth and Waveney there appear to be areas of over commissioning orthodontic services while other areas such as Fenland, East Cambridgeshire, Kings Lynn and Thetford are more poorly served. At the same time the 12 year old population has fallen by approximately 1000 between 2008 and 2012. The majority of orthodontic services are provided under time limited personal dental services (PDS) contracts and this gives the Area Team opportunities to re-commission services to more appropriately meet the needs of the population.

9. Current Service Provision

9.1 Access to NHS primary care dental services in East Anglia

The vast majority of primary care NHS dental services are provided by 'high street' dentists working under General Dental Services (GDS) non time limited contracts. Salaried dental services also provide NHS dental services and they tend to be small and well established and are intended to be complementary to the 'high street' provision. They generally offer services to patients who, for various reasons may find it more difficult to access routine care. These groups of patients include adults and children with special needs, irregular attenders, older patients requiring domiciliary care, adults with anxiety and dental phobia, prisoners and people living in long term institutional care.

The Department of Health defines access as "the percentage of children in the population who have seen the dentist within the last 24 months". This is a very narrow definition of access.

The priorities for dental service provision are access to:

- Routine and preventive services
- Urgent care services
- Specialist services

9.2 Availability of NHS dental services

Since the inception of the new dental contract in March 2006 the number of dentists with NHS activity has increased everywhere in East Anglia apart from in Peterborough (see Table 13). It is interesting to note that Peterborough, with the highest level of childhood decay, has a much higher number of dentists per 100,000 population than England.

Table 13: The number of dentists with NHS activity Cambridgeshire, Norfolk, Peterborough, Suffolk and Great Yarmouth and Waveney March 2007 and March 2012

	March 2007			March 2012		
	Total number of dentists	Population per dentist	Dentists per 100,000 of population	Total number of dentists	Population per dentist	Dentists per 100,000 of population
England	20,160	2,518	40	22,920	2,279	44
Cambridgeshire	232	2,521	40	331	1,862	54
Norfolk	301	2,444	41	350	2,186	46
Peterborough	90	1,861	54	88	1,971	51

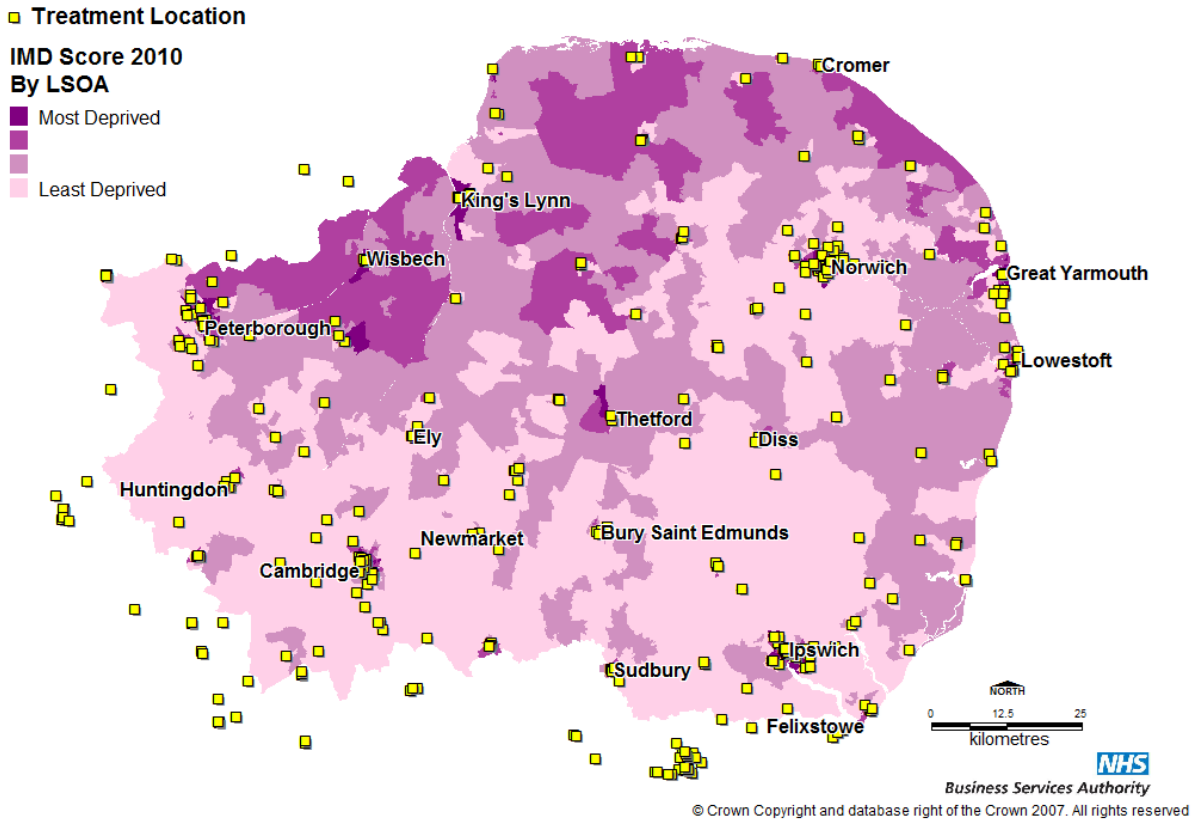
Suffolk	249	2,335	41	315	1,911	52
Great Yarmouth and Waveney	92	2,305	43	129	1,664	60

Source: NHS Dental Statistics for England: 20011-12. Annex 2: PCT & SHA Factsheet, Activity Statistics. Available at URL: http://www.ic.nhs.uk/statistics-and-data-collections/primary-care/dentistry/nhs-dental-statistics-2011-12

9.3 Location of NHS dental practices

Most NHS dental practices are located in the towns and cities. There is good provision in some of the most deprived areas of East Anglia for example Peterborough, Great Yarmouth and Lowestoft but not in others for example Wisbech, Kings Lynn and Thetford. Map 2 shows the distribution of NHS dental practices mapped to deprivation across the Anglia area and demonstrates that dental practices are mainly based in urban areas and do not map to the areas of highest deprivation. It is unclear whether this mis-match in provision contributes to poor dental health but should be considered when planning new services.

Map 2: Treatment locations and IMD Score 2010 by LSOA 2013/ 2014



9.4 Barriers to Dental Care

Access to dental services is not just about the location of the practices. Most dental practices in East Anglia are situated in towns and cities where most of the population

reside yet still only just over half the population in East Anglia (54.2%) visit the dentist in a two year period. The way people use services depends on other factors as well including acceptability, affordability, availability, accessibility and the appropriateness of the service offered.

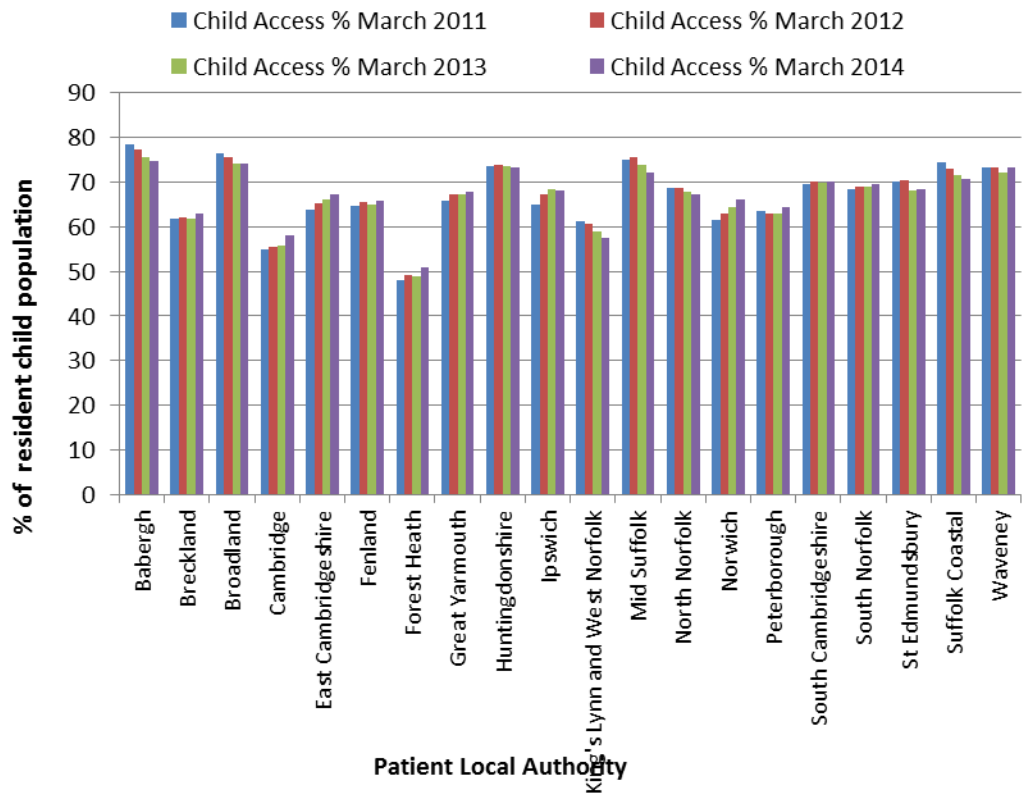
Obstacles to attending the dentist include dental anxiety, cost of treatment and the attributes of the dental practice.[79808182]Just over a quarter of adults (26%) surveyed in the ADHS 2009 said that the type of dental treatment they had opted for in the past had been affected by cost and almost a fifth (19%) said they had delayed dental treatment for the same reason.

The rural nature of the area and poor public transport will affect peoples' ability to access dental services as well as lack of availability of appointments at evenings and weekends.

9.5 Access to primary care dental services for children

Access to dental services is defined by the Department of Health as the percentage of the population who have visited the dentist within the last 24 months. The data is based on where the patient is resident irrespective of where the visit took place. In March 2014 67.4% of the child population had visited the dentist. This is unchanged since March 2011. Graph 20 shows the access rates for children across East Anglia at March 2014

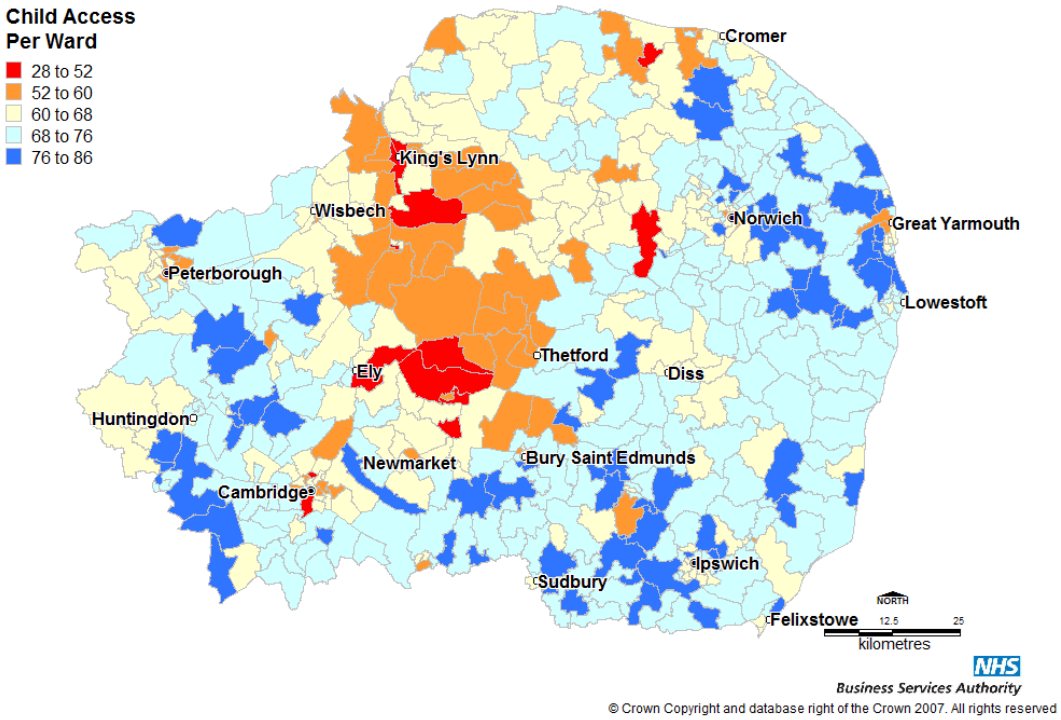
Graph 20 : Child access rates trend by lower tier local authority in East Anglia March 2014



Source: NHSBSA Information Services (dental) Dental Public Health Report: East Anglia June 2014

The map below shows child access rates by ward. Those shown in red (>60%) have the lowest access rates and this is mostly in Fenland, Forest Heath, Kings Lynn and West Norfolk, parts of Peterborough and the North Norfolk coast.

Map 3: Access rate resident child patients in East Anglia (24 months to March 2014)

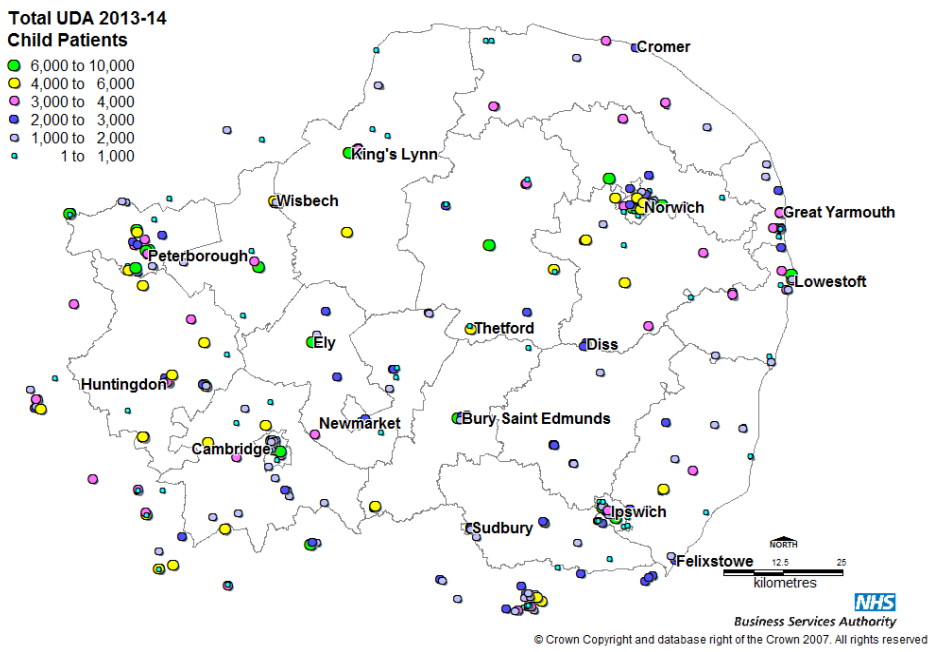


Source: NHSBSA Information Services (dental) Dental Public Health Report: East Anglia June 2014

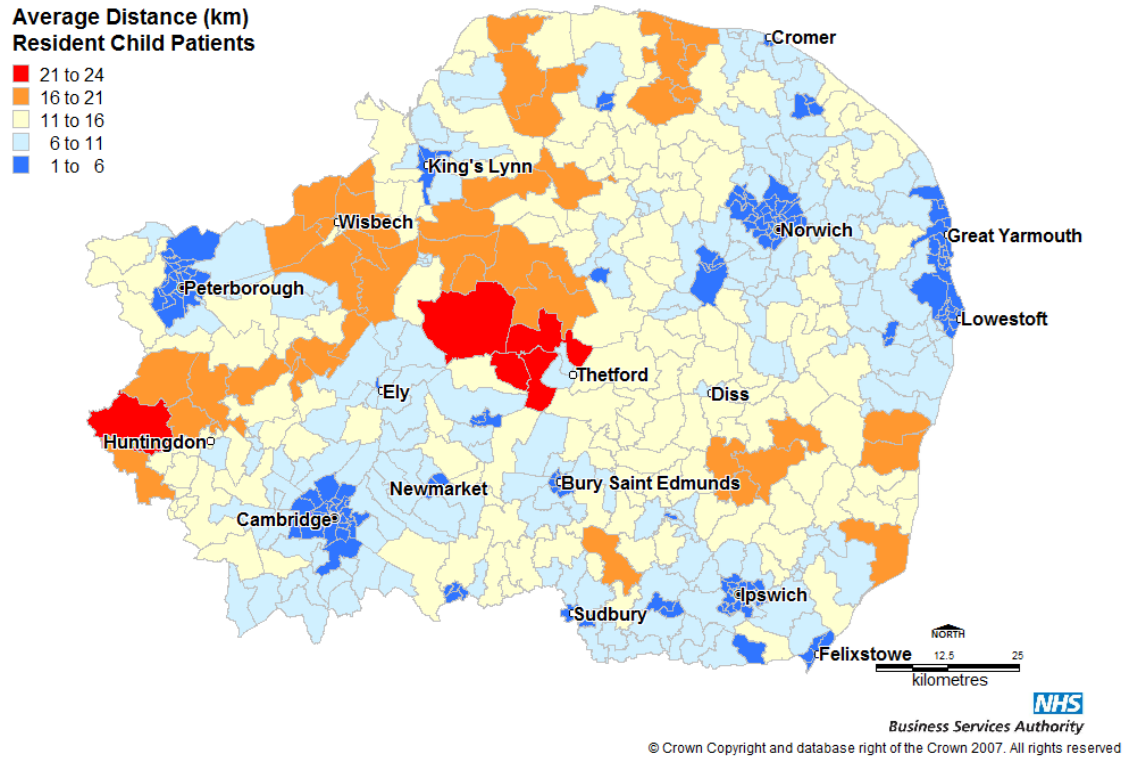
9.6 Treatment locations and distance travelled for child patients

Most dental services are located in the towns and cities in Peterborough, Norwich, Cambridge and Ipswich. The maps below show the treatment locations for child patients in East Anglia by the number of Units of Dental Activity (UOAs) 2013 -2014 and the distance travelled by those patients to access dental care.

Map 4 : Treatment locations for child patients in East Anglia by the number of Units of Dental Activity (UOAs) 2013 -2014.



Map 5 : Average distance travelled by resident child patients in East Anglia (24 months to March 2014)



Not surprisingly access is lowest when children have to travel furthest to visit a dentist. Again patients from areas such as Forest Heath, Kings Lynn and West Norfolk, Fenland, North Norfolk and Suffolk Coastal are affected.

9.7 Dental treatment provided for children living in East Anglia

Most children who visit an NHS dentist (72.1%) receive a Band I course of treatment only. This covers an examination and may include preventive advice, scaling and polishing and application of fluoride varnish. A further 22.7% receive this plus any further treatment such as fillings, root canal work or extractions. A very small number 0.6% may also receive crowns, dentures or bridges. 4.7% of courses of treatment are for urgent care. Just under half of those who visit a dentist (46.5%) will re attend within 6 to 12 months. 13.9% re attend within 3 months and 19.8% between 3 to 6 months. National Institute of Clinical Excellence (NICE) guidelines recommend an interval of between three months and two years, depending on the oral health of the patient. Intervals shorter than three months may indicate poor quality treatment or diagnosis. This may also indicate that patients are at greater risk of poor oral health, for example from deprived communities and more frequent interventions are required.

Access to urgent care is a priority for the relief of pain and for accidental damage. In 2013/2014 4.7% of all courses of treatment provided for children were for urgent care compared with an England average of 4.6%. This may not reflect need as children are dependent on others, such as parents to arrange urgent dental care. Delivering Better Oral Health: an evidence based toolkit for prevention, third edition, June 2014 recommends that all children over 3 years should receive a professional application of fluoride varnish to the teeth two times a year. Children aged from 7 years who give concern to the dentist, including those with current active decay and those with special needs should have their permanent molars fissure sealed. However, compared to national averages the percentage of children living in East Anglia who receive a preventive intervention as part of a course of treatment is low, about half the rate for England.

Table 14: Rate of fluoride varnish or fissure sealant application per 100 courses of treatment by age group for children resident in East Anglia 2013/2014

	Children aged 0-2 years		Children aged 3-5 years		Children aged 6-12 years	
	England	E. Anglia	England	E. Anglia	England	E. Anglia
Fissure sealants	0.0	0.0	0.1	0.0	1.4	0.7
Fluoride Varnish	5.4	2.6	24.6	13.6	30.7	22.1

Source: NHSBSA Information Services (dental) Dental Public Health Report: East Anglia June 2014

9.8 Access to dental services for looked after children

There is a requirement that looked after children have an annual health assessment and that this should include a dental check- up within the last year. Currently this requirement is not being met and figures for Norfolk and Suffolk are low, 65.2% and 58.1 % respectively. Table 15 Interestingly, Peterborough achieves the highest take up of annual health assessment compared to other areas, and much higher than then England average. It should be noted that attendance at a dental check- up does not provide any information about the quality of care or if any necessary treatment

was completed. This group of children is likely to have poorer oral health and, if they are moved between different carers, more erratic and irregular access to dental care.

Table 15 : Percentages of looked after children attending for a dental check- up 2011 and 2012

	England	East of England	Cambridgeshire	Norfolk	Peterborough	Suffolk
2011	82.4	74.7	92.6	27.2	84.4	68.8
2012	82.4	79.9	92.4	65.2	93.2	58.1

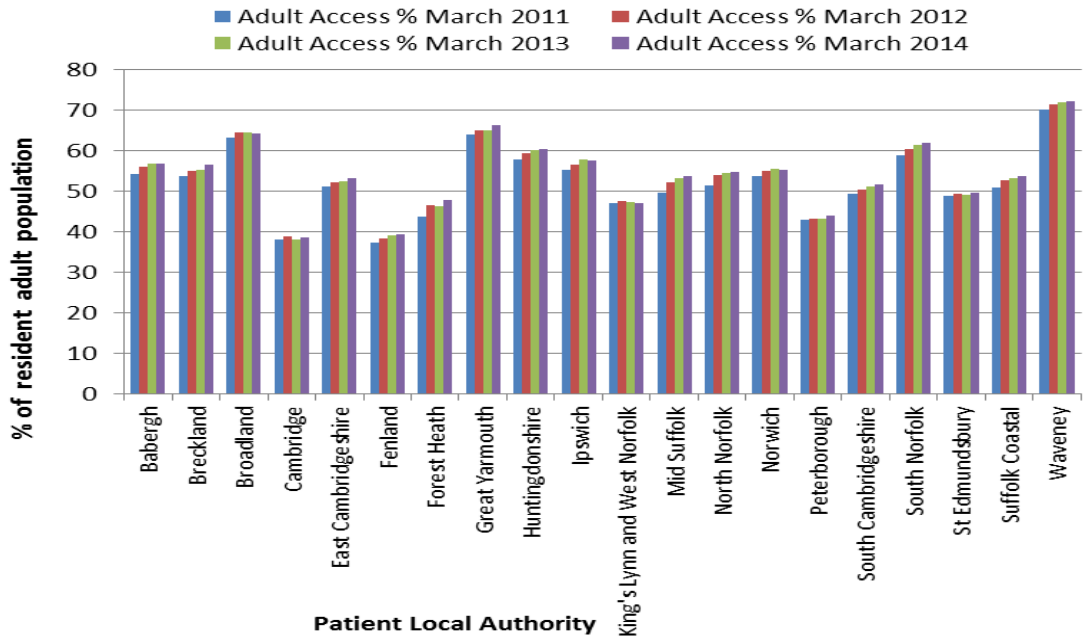
Source: Fingertips 2012

9.9 Access to primary care dental services for adults

The Department of Health defines access as the percentage of patients who have seen the dentist within the last 24 months. Access was highest in Waveney and Great Yarmouth and lowest in Cambridge, Fenland, Forest Heath, Kings Lynn and West Norfolk and Peterborough where less than fifty per cent, and in some case less than forty per cent of the population have visited the dentist within the last two years, Figure ?. Again this does not include access to private services for which there is no data.

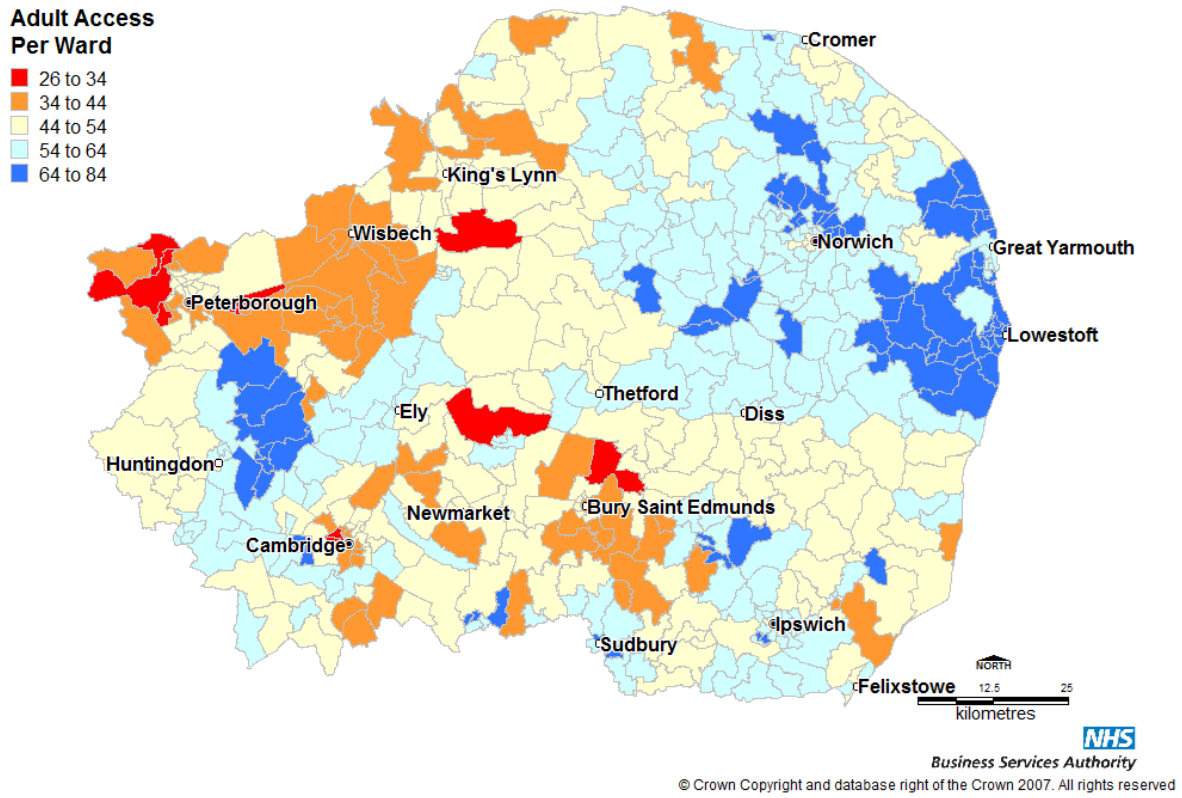
Overall the percentage of the adult population visiting an NHS dentist within the last 24 months has not changed and remains stable at 54.2%. A visit to the dentist also provides the opportunity to deliver evidence based preventive interventions such as oral hygiene and diet advice smoking cessation advice and scaling and polishing (DBOH).

Graph 21: Adult access rates by Local Authority in East Anglia March 2011-March 2014



The map below shows adult access rates by ward. Those shown in red (>60%) have the lowest access rates and this is mostly in Fenland, Forest Heath, Kings Lynn and West Norfolk, parts of Peterborough and the North Norfolk coast.

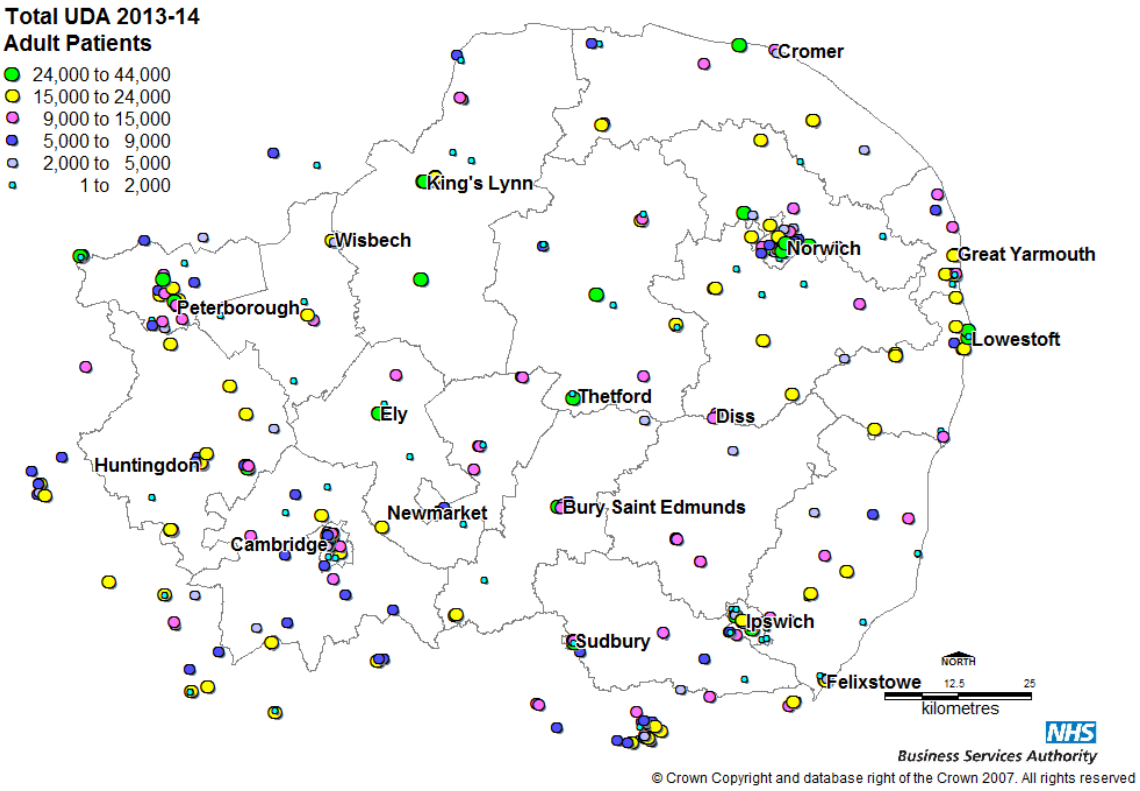
Map 6 : Access rate resident adult patients in east Anglia (24 months to March 2014)



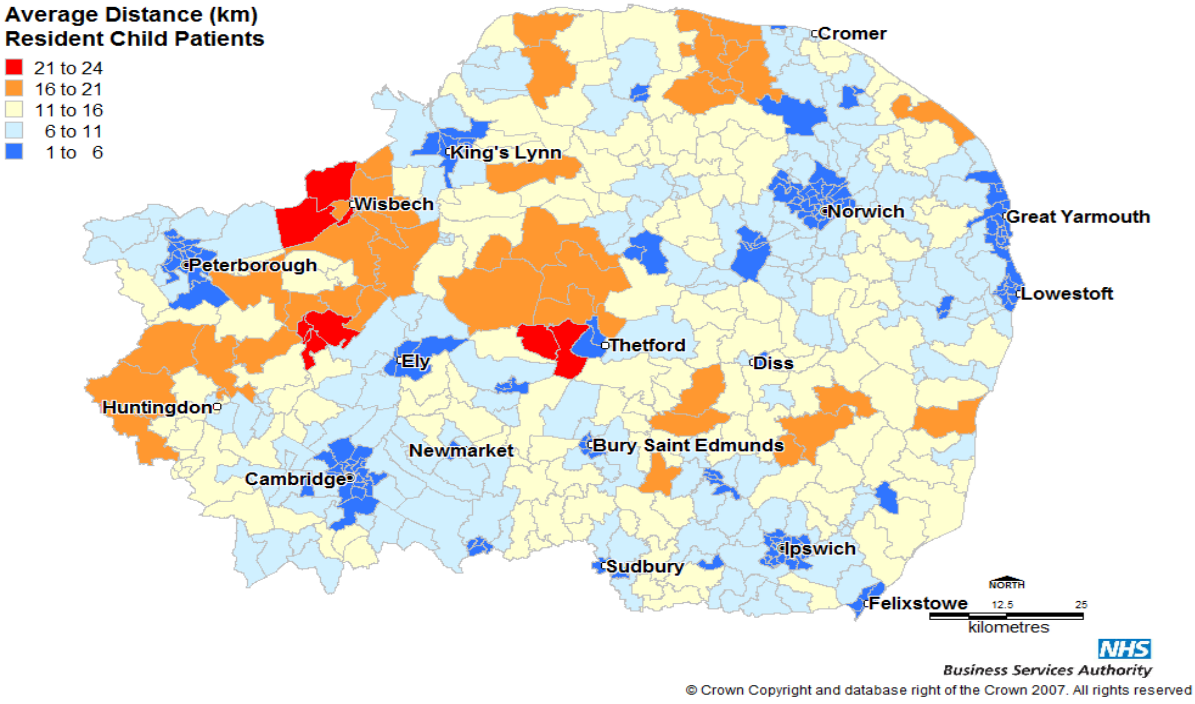
9.10 Treatment locations and distance travelled for adult patients

Most dental services are located in the towns and cities in Peterborough, Norwich, Cambridge and Ipswich. The Maps below show the treatment locations for adult patients in East Anglia by the number of Units of Dental Activity (UOAs) 2013 -2014 and the distance travelled by those patients to access dental care.

Map 7: Treatment locations for adult patients in East Anglia by the number of Units of Dental Activity (UOAs) 2013 -2014.



Map 8: Average distance travelled by resident Adult patients in East Anglia 2013/2014



Again, as in children access is lowest when adults have to travel furthest to visit a dentist. Again patients from areas such as Forest Heath, Kings Lynn and West Norfolk, Fenland, Thetford North Norfolk and Suffolk Coastal are affected

9.11 Dental treatment provided for adults living in East Anglia

52.3% of adults who visit a dentist receive a Band 1 course of treatment. This may include an examination, diagnosis (including X rays), advice on how to prevent future problems, a scale and polish and application of fluoride varnish or fissure sealant. 29.5% receive a Band 2 course of treatment which may include everything in a band 1 plus any further treatment such as fillings, root canal work or removal of teeth. A further 5.6% receive a band 3 course of treatment which may include all of the above plus crowns, denture and bridges.

Across all ages the examination rate was approximately 80%. This seems low as an examination should be an integral part of any course of treatment. Around 25% received fillings and about 6% extractions. Around half were provided with a scale and polish. Very few had crowns (2.0%), bridges (0.2%), root fillings (2.0%) and dentures (0.1%)

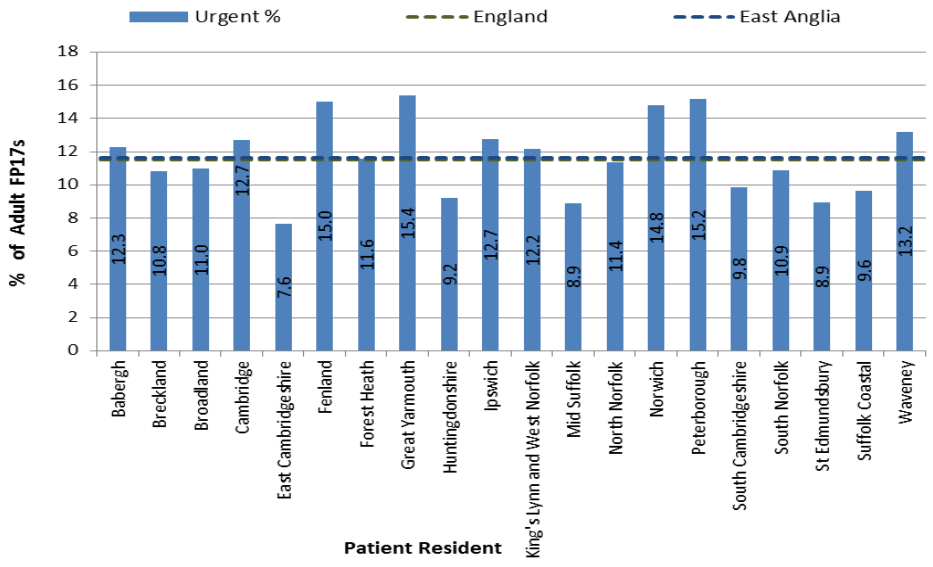
9.12 Access to urgent dental care

Access to urgent care is a priority for the relief of pain and for accidental damage. One in four, (26%), of the adult population in the East of England report that they only go to the dentist when they have problem. (ADHS 2009). Just under half the population in East Anglia (45.8%) has not visited the dentist in the last two years and may not have a regular dentist when they have a problem.

Patients' use of urgent care services is more complex than just a failure to access preventive or routine care and a range of services should be available to meet the needs of patients who choose to access dental services in different ways

Figure 4 shows the percentage of courses of treatment that were recorded as urgent treatment and compares this with national levels.

Figure 4: Percentage of claim forms (FP17s) that were for Band I urgent courses of treatment for adults March 2014.



Source: BSA Dental Public Health Report June 2014. R. Wise

Levels for urgent care are highest in Fenland (5,466 claims), Great Yarmouth (10,078 claims), Ipswich (8,730), Kings Lynn and West Norfolk (8,434), Norwich (11,148), Peterborough (10,026) and Waveney (10,933). All of these are higher than the national average. Higher levels of urgent care can indicate an issue with the quality of diagnosis and treatment planning, patients not able to access routine dentistry or patient choice. Dental Access Centres (DAC) in Wisbech, Cambridge, Kings Lynn and Norwich provide only access to urgent care and this may have skewed the data.

Research indicates that DACs are offering treatment to a different population of patients from that seen in neighbouring 'high street' practices. Patients attending DACs were younger and from a more disadvantaged background. They had worse oral health, experienced more frequent episodes of dental pain, were more likely to be dentally anxious and had different attitudes to dental health than their 'high street ' counterparts'[83]. It is important that access to urgent care is offered to patients when they need it and to enable different sectors of the population to access dental services in different ways.

9.13 Access to out of hours dental care

From April 2006 the provision of out of hours (OOH) dental care became the responsibility of the Primary Care Trusts. From April 2013 this responsibility was transferred to NHSE and the Area Teams.

Out of hours dental services across East Anglia are provided by a number of different providers including local general dental practitioners and salaried dental services. The opening hours vary and in some areas are only accessible at weekends and bank holidays. Acceptance and triage criteria vary across the patch and in some instances telephone only advice is available. There is no evidence that the provision of these services is related to need .Data collection on service use is not consistent across the area. Some patients may choose to attend Accident and Emergency services in local hospitals or use the primary medical care out of hours services and information about this is not routinely collected or reported. Information about out of hours dental services is poor and this will impact on future commissioning of these services

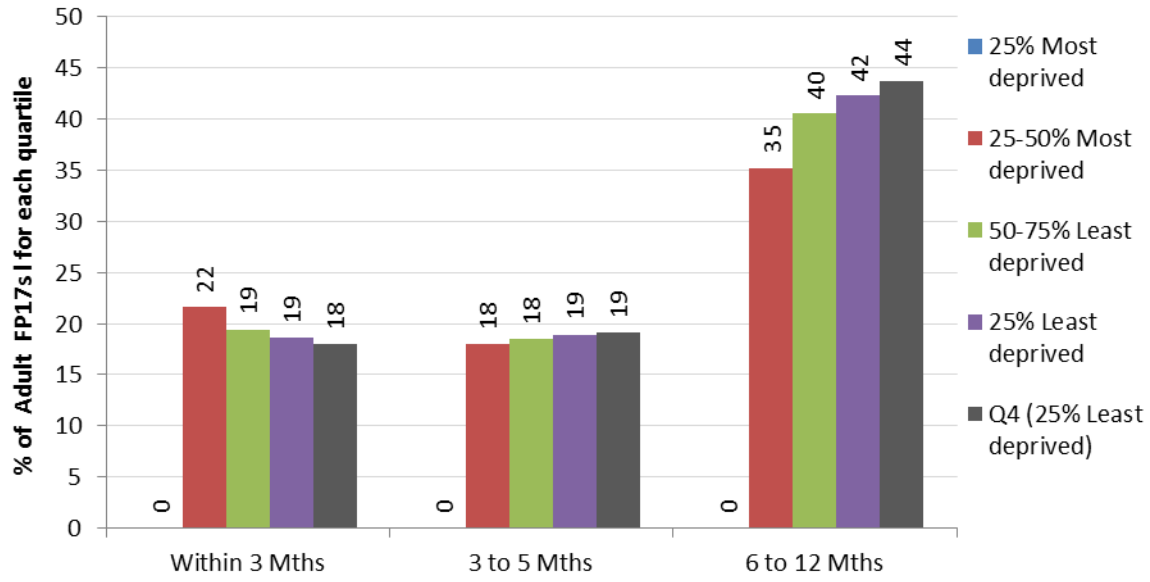
9.14 Re-attendance rates for adults and children

Re-attendance patterns are based on the length of time between re-attending at an NHS dentist for patients resident in the area. NICE guidelines recommend that the recall interval should be appropriate to the level of risk of dental disease for each patient. For adults and children the recommendations are that the shortest interval (exceptionally) should be 3 months. The longest should be 12 months for children and 24 months for adults, where there is no sign or risk of dental disease in the patient. If guidelines were being followed then a relatively small proportion of treatments would be expected to be within 3 months of a previous course of treatment.

The chart below shows the proportion of total courses of treatment by re-attendance intervals under a year for adult patients resident in the area by the relative deprivation of the patients' resident area, defined as before using by IMD National Quartiles.

A high proportion of re-attendance interval within 3 months could signify greater dental need whilst high levels in the 6-12 month interval may suggest that a significant number of patients and their dentists are continuing with the long established pattern of twice yearly dental attendance, it is feasible for some patients that such an attendance pattern is required, but for others a longer recall may be appropriate. The pattern for children is similar.

Graph 22: Adult re-attendance intervals as a percentage of total courses of treatment 201/2014



9.15 Patient flow in and out for child and adult patients

Patient flow in details where the patients treated in an area reside. Significant numbers of patients from outside an area can limit access to services for residents. In East Anglia 97.7% of adults and 97.5% of children who live in East Anglia are treated in East Anglia.

Patient flow out details where patients living in an area have received their dental treatment. Significant numbers of patients travelling outside may be an indication of poor quality or a lack of services in the area. Very few people, (2%) travel outside the area for treatment and this may be related to other factors for example where patients work.

9.16 Deprivation and access to dental services in children and adults

Socio-economic factors have often been cited as a crucial determinant in dental health. (Impacts of poor oral health, Department of Health Annual report 2007).

Table below shows the proportion of the child and adult population in East Anglia attending an NHS dentist by IMD quartile.

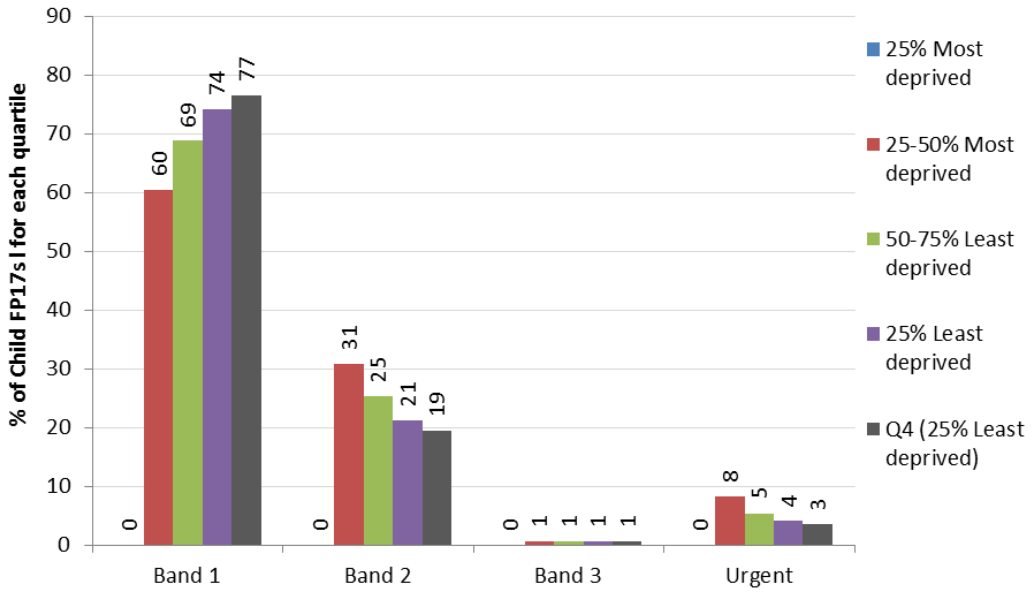
Table 16: Child and Adult Access rates by IMD quartiles

Quartile rank	Children		Adults	
	East Anglia	England	East Anglia	England
25% most deprived	64.4	67.5	52.6	53.3
25-50% most deprived	66.9	66.2	53.9	52.0
50-75% least deprived	69.0	71.1	54.4	51.0
25% least deprived	71.0	72.3	55.4	51.0

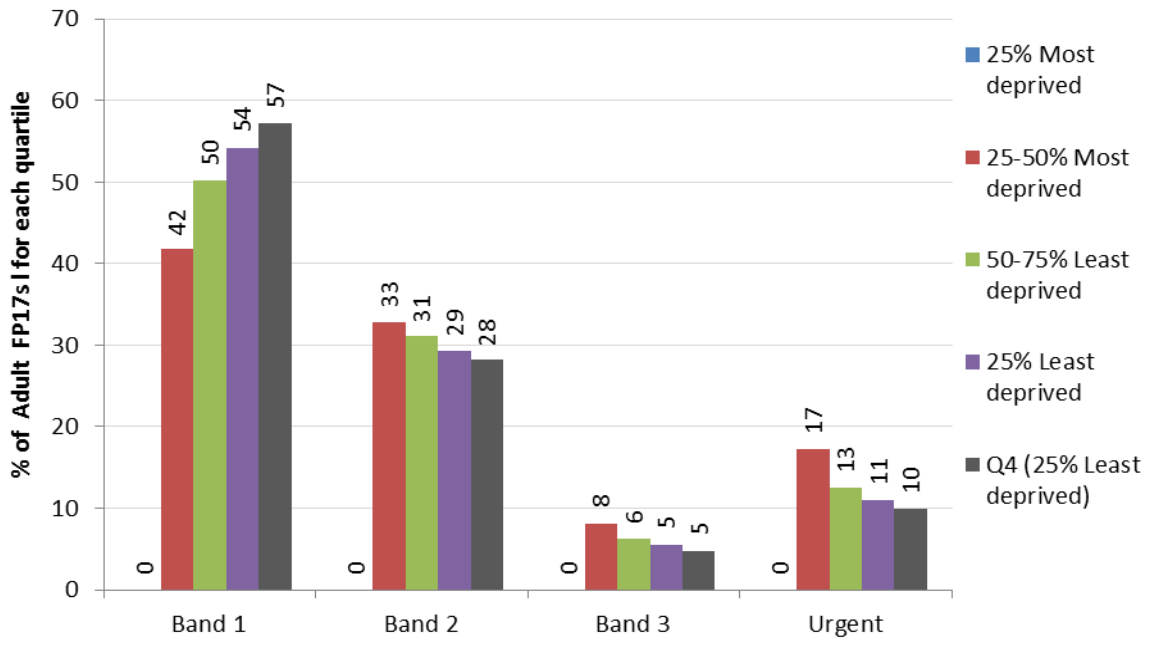
Source: NHSBSA Information Services (dental) Dental Public Health Report: East Anglia June 2014

Generally it is expected that Band 1 treatments are the most frequent courses of treatment provided. However the proportion that is made up of Band 1 treatments may differ depending on deprivation. In the most deprived areas, Band 1 treatments often account for a noticeably lower proportion than the overall proportion, with higher levels in each of the other treatment bands. An inference from this is that in more deprived areas there are higher levels of more serious treatment, reflecting increased dental need. In the least deprived areas, treatments involving check-ups and examinations reflect lesser needs. The graph below show the types of treatment provided by IMD quartile.

Graph 23: Treatment bands for child patients resident in East Anglia 2013/2014 as % of the total courses of treatment by IMD National Quartiles



Graph 24 : Treatment bands for adult patients resident in East Anglia 2013/2014 as % of the total courses of treatment by IMD National Quartiles



9.17 Access to specialist services in primary care

9.17.1 Access to salaried dental services

The salaried dental services traditionally provide a number of specialist services. These include;

Oral health promotion, the key strategic features include links to other health promotion programme delivery to maximise impact through common risk factor approaches and programmes are targetted to reduce inequalities.

Clinical Treatment the key strategic features include provision of services, complementary to those available in 'high street 'dental practices, offering routine care for people unlikely to be successful in obtaining necessary routine care in such practices, as a provider of services requiring specialised facilities or expertise and a provider of safety net services to the general population.

Dental inspection (screening) of school age children the key strategic features include Screening for disease without mechanisms to ensure provision of follow-up treatment when needed has no health benefit.

Epidemiological Fieldwork is still a formal requirements under formal regulations the key strategic features include calibrated/trained examiners are needed and links to national programme leads required for data analysis and reporting.

Teaching and Training the key strategic features include a need to ensure quality of service maintained by existing staff and ensuring continuing availability of appropriately trained dental workforce in the future.

More detail on these functions is attached at **Annex 1**

9.17.2 Access to domiciliary dental services

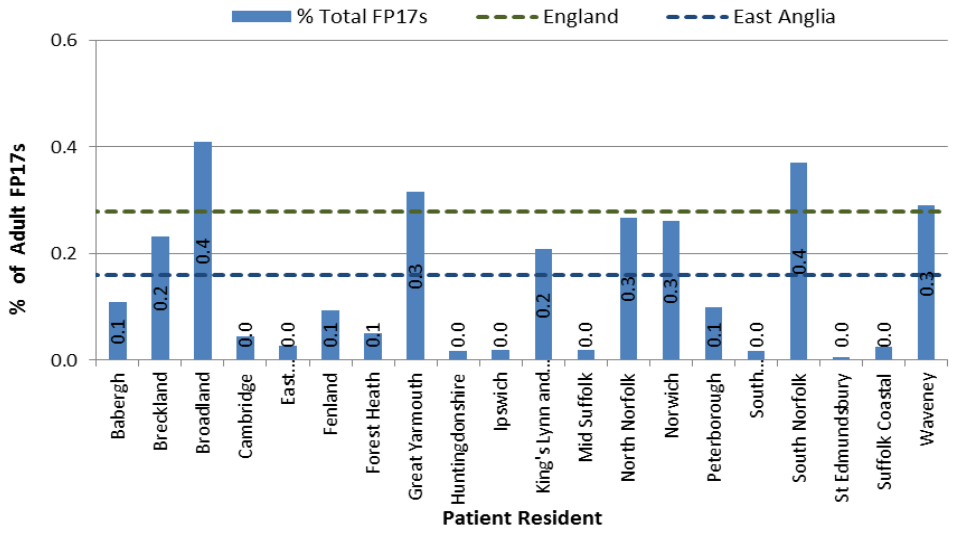
Domiciliary dental care can be the only care available to patients who are housebound. Poor access to timely domiciliary services has the potential to further increase oral health inequalities in the most vulnerable groups of patients particularly elderly people and those suffering from dementia. (Borreani E et al – ref 80) A lack of preventive interventions increases the risk of poor oral health and dental pain and infection, which when left untreated, is likely to affect the ability to eat and speak. There is a clear and consistent relationship between good oral health, the retention of natural teeth and a healthy diet and good nutrition especially in older people. (Gerodontology 2005)

Domiciliary visits undertaken in East Anglia included an examination,(64.4%). provision of a denture(12%), extractions (6%) and permanent fillings (11%). Most visits, (72%) are provided for people who are seventy five years and over.
The level of service across East Anglia varied and was not associated with age, level of deprivation or level of disability across the population graph 25.

Areas with the highest level of deprivation, for example East Cambridgeshire, Fenland and Ipswich had little or no service provision.

In 2011 Suffolk had the second highest number of people over the age of 75 years and yet Ipswich, South Suffolk and Suffolk Coastal had little or no service provision (Peterborough 12,288, Cambridgeshire 47,549, Suffolk 70,260, Norfolk 89,669). (ONS). Figure 5 and Table W

Graph 25: Percentage of adult FP17s by local authority with a domiciliary visit for patients resident in East Anglia 2013/2014



Source: BSA Dental Public Health Report June 2014. R. Wise

The percentages for domiciliary visits in Broadland, Great Yarmouth and South Norfolk were higher than the national average and much higher than the average for East Anglia.

There are marked discrepancies across East Anglia and eight districts had almost no services at all Table W. No information is available about the quality of the service and because referral criteria vary across East Anglia there is no information about whether patients who have the most need of this service are able to access it. This variation is of concern.

In future there may be greater demand for these services as population projections from the Office for National Statistics indicate that by 2021 the population of adults over 75 years living in East Anglia is likely to increase by about 30% (source: http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Subnational+population=Projections#t) (KITS PHE)

Table 17: number of courses of treatment provided as domiciliary services 2013-2014

Lower tier LA	Total claims with domiciliary
Babergh	52
Breckland	176
Broadland	352
Cambridge	20
East Cambs	12
Fenland	34
Forest Heath	15
Great Yarmouth	206
Huntingdonshire	19
Ipswich	13
Kings Lynn and West Norfolk	144
Mid Suffolk	9
North Norfolk	171
Norwich	197
Peterborough	65
South Cambs	12
South Norfolk	298
St Edmundsbury	3
Suffolk Coastal	17
Waveney	240

Source: NHSBSA Information Services (dental) Dental Public Health Report June 2014. R. Wise

9.17.3 Access to anxiety management services

In East Anglia 232,796 (12%) of the adult population (19 years and above), (ONS 2011), is likely to suffer from dental phobia and avoid dental care as a result. (ADHS 2009)
The ADHS 2009 also found that the proportion of adults with extreme dental anxiety varies by socioeconomic occupation of the household and is higher in adults from

routine and manual occupation households (15%) than professional and managerial occupation households (10%)

The provision of adequate anxiety control is an integral part of the practice of dentistry. Child dental anxiety, for example, is widespread and many anxious children, and adults, can be satisfactorily treated using behaviour management techniques.

Dental anxiety is a potential barrier to those seeking dental care and its association with oral health is of central importance. [79] There is a continuum of dental anxiety ranging from those who feel relaxed during dental treatment to those who are dentally anxious but cope, through to those who are dentally phobic and avoid care [81] [82] In the 2009 ADHS dental anxiety was assessed by the Modified Dental Anxiety Scale (MDAS)[100] Using this scale 12% of the adult population had a score of 19 or more suggesting extreme anxiety.
http://medicine.st-andrews.ac.uk/supplemental/humphris/MDASscale.pdf

Adequate provision of anxiety management services, including behaviour management and sedation techniques is important in reducing barriers to accessing dental care as well as reducing the health inequalities associated with deprivation.

9.17.4 Sedation services as an adjunct to dental services.

Some patients will have reasons, other than anxiety, to have need of sedation to complete dental treatment for example to manage the pain and discomfort of surgical dentistry where local analgesia alone is not adequate or effective. Certain groups of patients for example those with learning or physical disabilities such as cerebral palsy benefit from the provision of sedation services.

When sedation services are offered the quality of the clinical dental care provided in these situations must be excellent to minimise the risk of repeat procedures.

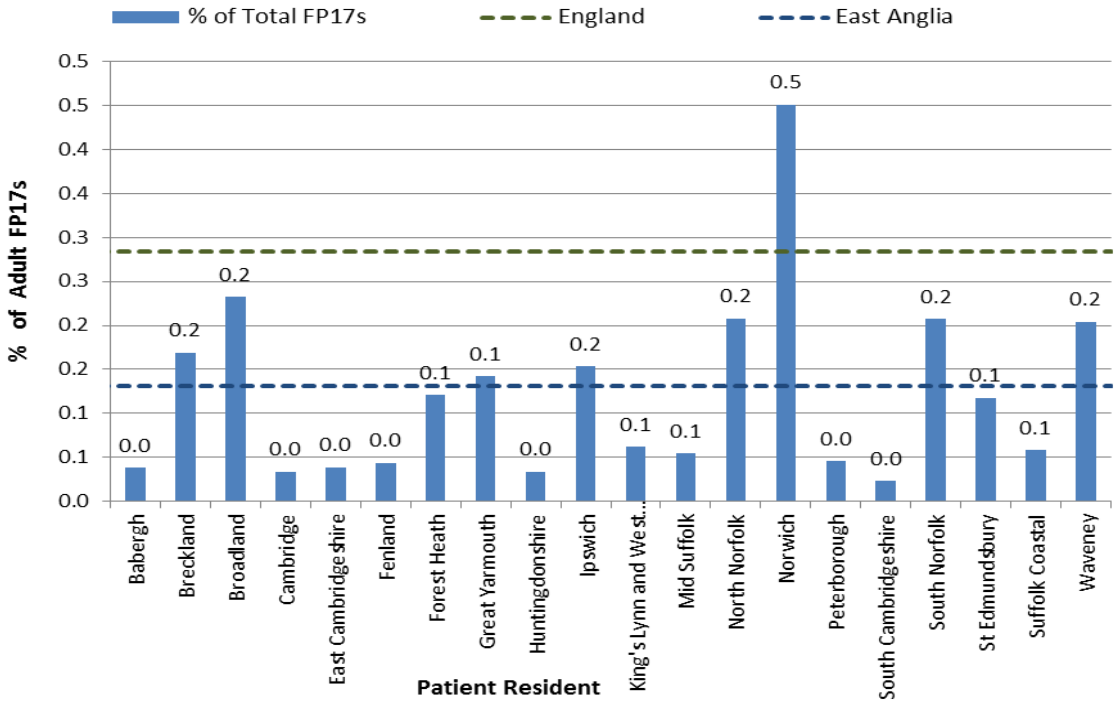
Seven per cent of courses of treatment including sedation are provided for children up to the age of five years Most (61%) are provided for children between the ages of six and twelve years and are mostly for fillings (42%) and extractions (67%).

9.17.5 Access to sedation services for adults in East Anglia

Only 0.1 % of adults who attend for NHS dental treatment in East Anglia receive sedation as part of that course of treatment. Most of the care provided under these arrangements is for extractions, (71%), or fillings (44.5%). Nearly half of the patients, (49%) are aged 25 to 44 years.

Provision across the area shows a great deal of variation and this may reflect ease of access to NHS services rather than patient need. It is not known how many patients may visit private providers to use these services.

Graph 26: Percentage of adult courses of treatment by Local Authority with sedation for patients resident in East Anglia 2013/2014



Source: NHSBSA Information Services (dental) Dental Public Health Report June 2014. R. Wise

Patients in seven districts have almost no access to sedation services and this is unlikely to be related to need. Areas with higher deprivation and consequently higher need and higher anxiety levels such as Fenland, East Cambridgeshire, Peterborough, have very limited access to sedation services and this is of concern

Table 18: Number of courses of treatment provided by Lower Tier Authority in East Anglia including sedation services 2013/2014

Lower tier LA	Total claims with sedation	
	Adults	Child
Babergh	18	-
Breckland	128	1
Broadland	200	5
Cambridge	15	-
East Cambs	17	-
Fenland	16	-
Forest Heath	36	-
Great Yarmouth	93	28
Huntingdonshire	38	-
Ipswich	105	-
Kings Lynn and West Norfolk	43	1
Mid Suffolk	27	-
North Norfolk	133	-
Norwich	340	-
Peterborough	30	-
South Cambs	17	1
South Norfolk	167	2
St Edmundsbury	60	1
Suffolk Coastal	39	3
Waveney	169	-

Source: NHSBSA Information Services (dental) Dental Public Health Report June 2014. R. Wise

9.17.6 Access to Primary Care Minor Oral Surgery Services in East Anglia

Despite the promising reports from the 2009 adult health survey of improving dental health, recent data has demonstrated a trend for an increasing demand for extractions, possibly related to less complex care being offered in primary care by GDPs due to the current General Dental Services contract, which will hopefully be rectified by the currently trialled dental contract[84] . The population is ageing and may provide a singular challenge with regard to increasing difficulty of surgery and increased pathology[85] . These patients are also likely to be more medically complex. Furthermore, research from 2012 highlighted the increasing age of patients undergoing third molar removal, probably due to the introduction of surgical guidelines instituted by the National Institute for Clinical Excellence (NICE) between 1997 and 2000.[86]

Cambridgeshire

Minor Oral Surgery services have been operating in Dental Access Centres in Cambridgeshire and Peterborough since April 2006 and more recently in Wisbech and Huntingdon. These are provided by dentists who are on the GDC specialist list for oral surgery or dentists who were recognised by the former PCTs to have a special interest (Dwsi). This service provides a range of Minor Oral Surgery procedures, including routine extractions, surgical extractions and apicectomies, and accepts referrals directly from local dentists. The primary care services also provide a clinical triage process with on- ward referral to secondary care services where appropriate. These services are currently provided by Cambridgeshire Community Services (CCS) and Oasis in Peterborough.

A service review was carried out in March 2013 to look at patient pathways. The document can be viewed in full but the main findings are detailed below.

Table 25 below shows the breakdown of the total number of patients accepted for treatment by CCS Primary Care MOS service between April 2012 - Jan 2013, after the initial paper triage assessment. This is essentially the number of “please contact” letters that are sent out to patients.

Between April 2012 - Jan 2013, 14.3% of patients failed to respond to the initial contact letter, and after 6 weeks were discharged back to the referring GDP. 6.3% of patients then fail to attend their scheduled appointment for assessment and likely treatment.

Table 19: Total number of patients accepted for treatment to PCMOSS April 2012 - Jan 2013

Centre	Number of patients
Brookfields	1900
Huntingdon	1148
Wisbech	390
Total	**3438**

Table 20 demonstrates the complexity of treatment undertaken. Non-surgical treatment includes extractions that require simple elevation. Surgical procedures include any extraction involving raising a flap, bone removal and/or suture placement; apicectomies; OAC closure; and frenectomies. From the table below it is evident that the vast majority of treatment undertaken is non-surgical in nature.

Table 20: Total number of patients treated by PCMOSS April 2012 - Jan 2013

	Non surgical	surgical	Total
Cambridge	970	533	1503
Huntingdon	860	236	1096
Wisbech	213	20	233
Total	**2043**	**789**	**2832**

Peterborough

In the same time period the MOS service provide by Oasis in Peterborough received 1885 referrals and accepted 989 for treatment. 108 referrals were referred on to secondary care. The failure rate for patients was approximately seven per cent.

Overall a service review completed in July 2013 found that patients were being treated in an appropriate setting either in primary or secondary care. Areas of good practice were identified and these should be taken forward in any new commissioning arrangements. These include strategies for reducing the failure rate, up-skilling referring GDPs and managing referrals that are inappropriately sent directly to secondary care. Challenges still remain however including reducing the number of inappropriate referrals, inconsistent data recording and improving the quality or referrals particularly the quality of radiographs.

Suffolk

A minor oral surgery service is also in operation in Suffolk using a central Referral Management Service (RMS) commissioned from CCS. Referrals that meet the acceptance criteria are referred on to a number of Any Qualified Providers or secondary care. A review of this service in being undertaken currently and results are expected in 2014.

Norfolk

Norfolk also operates a RMS and patients are referred to a number of specialist providers. Information from 2010-2013 oral health needs assessment suggested that the service receives approximately 1,300 referrals a year. A third of these were referred on to secondary care and the remainder to specialist providers. The annual spend is around £514,000.

No other information in minor oral surgery services in primary care in Norfolk and Suffolk has been supplied.

9.17.7 Future commissioning of oral surgery services

Patients should be treated in the most appropriate setting, it is important that there is collaboration between GDPs, primary care MOS units OMFS departments in hospitals and commissioning organisations to allow effective patient pathways to develop. It is also important that there are clear acceptance criteria for each stage of the pathway as well as an availability of suitably trained staff, appropriate treatment tariffs and longevity of commissioned contracts.

It is likely that in the future oral surgery procedures will be classified according to complexity into 3 levels. The expectation is that level 1 procedures will be carried out by GDPs under mandatory services and that treatment in levels 2 and 3 will be undertaken by practitioners with more specialised skills.

A single operating model framework for the commissioning or oral surgery services is expected from NHS England detailing a MOS patient pathway. Any future commissioning will need to follow these standard operating policies.

9.17.8 Access to Orthodontic Primary Care Services in East Anglia

A review of orthodontic services across East Anglia was undertaken in July 2014. This document, An orthodontic needs assessment and service review for East Anglia 2014, can be viewed separately.

In summary the main findings indicate that orthodontic provision across East Anglia is variable. In some areas such as Cambridge and Great Yarmouth and Waveney there appear to be areas of over commissioning orthodontic services while other areas such as Fenland, East Cambridgeshire, Kings Lynn and Thetford are more poorly served. At the same time the 12 year old population has fallen by approximately 1000 between 2008 and 2012. The majority of orthodontic services are provided under time limited personal dental services (PDS) contracts and this gives the Area Team opportunities to re-commission services to more appropriately meet the needs of the population.

9.17.9 Future commissioning or orthodontic services in primary care.

In November 2013 NHD England published Transitional commissioning of primary care orthodontic services- Single Operating Model. Gateway reference 00642. November 2013 and National guidance is expected in March 2015. Future commissioning of primary care orthodontic services will need to comply with these standard operating policies and procedures for primary care.

9.17.10 Dental treatment provided under general anaesthesia for children in East Anglia

Dental extractions, carried out under general anaesthesia (GA), in children with decayed teeth occur when all other interventions have failed.
Dental decay is almost entirely preventable and the causal relationship between sugar and dental decay is well understood.
The decision to use GA is complicated by the knowledge that there is a small but real risk of death associated with GA. The knowledge that the majority of operative care can be carried out using either local analgesia (LA) or LA with conscious

sedation sets dentistry aside from other paediatric surgical specialties where GA is the norm (Blain KM et al) (Shaw A et al). (Smallridge JA), (Holt R D et al)
Tooth decay was the most common reason for hospital admissions in children aged five to nine years old in 2012/13.[87]

Dental extractions carried out on children under the age of ten are most likely to be because of dental decay. Extractions for older children could also include teeth removed to relieve crowding as part of a course of orthodontic treatment. Approximately 0.1 to 0.6 per cent of the child population visit hospital to have dental extractions under general anaesthesia each year. These figures are likely to be an under estimate as any extractions carried out as part of a PDS salaried dental service contract may not be recorded.

Table 21 : Number of finished consultant episodes (FCEs) for children and adolescents aged 0-19 years in East Anglia admitted to hospital for extraction during 2012/ 2013

Lower tier LA	0-4	5-9	10-14	14-19	**Total 2012/13**	*Total 2011/12*
Babergh		28	16	19	**63**	*65*
Breckland			25	19	**44**	*41*
Broadland			15	12	**27**	*41*
Cambridge			14	10	**24**	*44*
East Cambs		6	21	9	**36**	*31*
Fenland	20	36	28	16	**100**	*107*
Forest Heath			10	10	**20**	*32*
Great Yarmouth	6		22	28	**46**	*66*
Huntingdonshire	23	62	57	32	**174**	*207*
Ipswich	29	115	46	24	**214**	*172*
Kings Lynn and West Norfolk		9	51	70	**130**	*125*
Mid Suffolk		9	19	14	**42**	*58*
North Norfolk			24	11	**35**	*39*
Norwich		9	26	14	**49**	*37*
Peterborough	11	19	39	30	**99**	*99*
South Cambs		12	42	17	**71**	*81*
South Norfolk			22	19	**41**	*53*
Suffolk Coastal		24	18	25	**75**	*97*
Waveney		8	29	27	**64**	*85*
Total	**89**	**337**	**524**	**406**	**1356**	***1480***

Source: http://www.nwph.net/dentalhealth/

The picture is complex. Increasing numbers of children undergoing dental extractions under general anaesthesia may not, in itself, reflect a growing burden of disease. Increasing provision and improved access to general dental services may increase the number of children referred on for the service who otherwise may not have received treatment.

The majority undergoing treatment under GA however are likely to be children living in deprived areas who suffer the poorest oral health and who are less likely to visit the dentist unless there is a problem.

Following the publication of A Conscious Decision: A review of the use of general anaesthesia and conscious sedation in primary dental care. Department of Health 1 July 2000. Gateway 21967 dental treatment can only be provided under GA in a hospital with a critical care facility For children living in rural areas without a family car and poor public transport accessing these services, especially in a timely manner, can be difficult. Any delay in the provision of care can result in pain, infection, sleepless nights and failure to thrive.

9.17.11 Access to specialist restorative services in primary care in East Anglia

At present there are no local restorative dental services provided in primary care in East Anglia. Until March 2013 Norfolk PCT commissioned a small amount of restorative services provided by local dentists who were prepared to accept referrals for patients requiring more complex care but who did not meet the acceptance criteria for the most complex level of care required by patients who would benefit from a multi- disciplinary approach offered by secondary care services. Treatment was generally carried out under the guidance of the consultant restorative dentistry at the NN&UH and followed a prescribed treatment plan. Triage to this service was carried out by the local dental practice adviser.

9.17.12 Access to prison dental services in East Anglia

Public Health England Anglia and Essex Centre has undertaken health needs assessments of all the prisons within the patch and this is likely to include an oral health needs assessment. This will be reported separately. A national survey, A survey of dental services in adult prisons in England and Wales July 2014 has been carried out by Public Health England Gateway 2013420 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/328177/A_survey_of_prison_dental_services_in_England_and_Wales_2014.pdfput in link.

9.18 Access to secondary care dental services

9.18.1 Secondary Care Dental Services in East Anglia

The principal hospital dental specialties are orthodontics and oro-maxillofacial surgery. Other specialties provided in hospital may include paedodontic and restorative dentistry. All referrals into secondary care are now subject to the 18-week rule. The Operating Framework for the NHS 2008-2009 has as one of its targets: Improving access through achievement of the 18-week referral to treatment pledge. These principles apply to pathways that involve or could potentially involve care led by a dental consultant. This includes oral surgery, orthodontics, paediatric dentistry, perodontics, prosthetics, endodontic oral medicine, and dental and maxillofacial radiology.

9.18.2 Oral and Maxillofacial Surgery Services (OMFS)

The OMFS department of Cambridge University Hospital NHS Foundation Trust Hospital, Peterborough City Hospital, NHS Foundation Trust Norfolk and Norwich University Hospital (N&NUH), James Paget, Queen Elizabeth Hospital Kings Lynn and Ipswich Hospital will see patients requiring more complex care mostly on referral, but also via the accident and emergency route. This includes reconstruction

of the mouth and jaws, oral cancer, treatment of patients with cleft lip and palate and facial trauma.

They also receive, mostly from local dentists, a significant number of referrals for more routine care including wisdom teeth removal and simple or surgical extractions of single or multiple teeth.

Although many treatments carried out are most appropriately provided in a hospital setting, a significant number could be offered in primary care either by local GDPs or in a specialist minor oral surgery service. In recent years services have been developed in primary care to meet this need.

9.18.3 Orthodontics Services

Most orthodontic treatment is provided in primary care. More complex cases, including cleft lip and palate, hypodontia and severe dental skeletal discrepancies are more appropriately treated in secondary care.

Hospital data collection is measured as outpatient visits and recorded only as first or subsequent appointments. This is unsatisfactory as it gives no indicators of the length or complexity of the treatment.

Training for orthodontic specialist is also carried out in secondary care.

9.18.4 Restorative Services

Consultants in restorative dentistry make up part of the multidisciplinary team in secondary care required to treat patients with the most complex problems. At present Addenbrookes NHS Foundation Trust Hospital and Peterborough City Hospital employ part time consultants for six and two sessions per week respectively. N&NUH is carrying a part time vacancy as there have been problems with recruitment.

There is a potential, where capacity exists, to use these specialist services to support local GDPs with advice and treatment planning. The ageing population and the increasing demands from this population for more complex restorative services to address the increasing problems of tooth wear may lead to an increased need for this type of support service.

Information about hospital procedures is limited and the only data available to the East Anglia Area Team are procedures carried out from April 2013

Table 22 shows a summary of all procedures carried out in all secondary care services from April 2013

Table 22: Procedures in all hospitals April 2013-September 2013

	April	May	June	July	August	September	**Total**
Dental medicine specialities	27	35	39	24	24	25	**174**
Maxillo-	534	12	16	352	340	473	**1727**

facial surgery							
Oral surgery	3012	2969	2771	3365	3212	3267	**18596**
orthodontics	1720	1189	1211	1745	1503	1714	**9082**
Paediatric dentistry	14	28	21	25	10	17	**115**
restorative	201	178	180	201	143	168	**1071**
Total	**5522**	**4423**	**4249**	**5726**	**5244**	**5674**	**30,838**

Under patient choice arrangements patients are able to choose where they wish to access secondary care services. The main providers of dental secondary care services are still the local hospitals in the three counties. Table 23 shows the number of out- patient procedures carried out from April to September 2013 by provider.

Table 23: All dental specialities outpatient procedures by secondary care provider April-September 2013

	April	May	June	July	August	September	**Total**
Cambridge University Hospital	1426			1033	85	1303	**4,618**
Ipswich	1188	1462	1467	1469	1443	1410	**8,439**
N&NUH	1264	1229	1158	1378	1286	1215	**7,330**
Peterborough & Stamford Hospital	732	753	737	815	779	815	**4,631**
Queen Elizabeth	564	617	515	636	579	629	**3,537**
UCL London	139	141	143	144	137	140	**844**
Other	209	221	229	251	935	165	**2010**
Total	**5,522**	**4,423**	**4,249**	**5,726**	**5,244**	**5,674**	**30,838**

The majority of out- patient procedures for the dental secondary care specialities are coded as oral surgery procedures. From April to September 2013 18,596 were coded as oral surgery procedures although the detail of what the intervention was for the vast majority appears to be blank. Table 24 summarises a selection of the most common procedures carried out in secondary care.

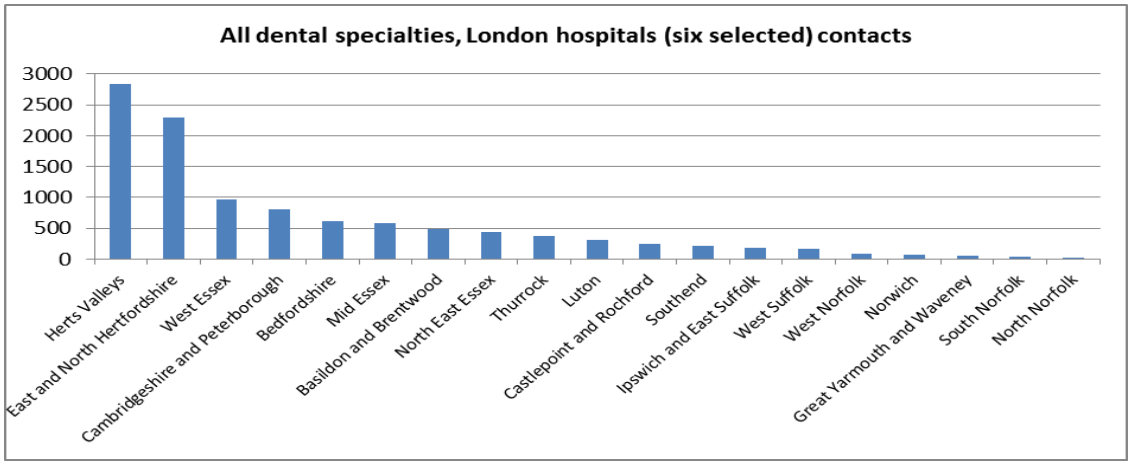
Table 24: Summary of the most commonly recorded reasons for an oral surgery procedure in secondary care April-September 2013

Procedure	**Number**
Surgical removal of impacted wisdom tooth	14
Extraction of multiple teeth	162
Surgical removal of retained root	19
Surgical removal of tooth	181
Surgical removal of non- impacted wisdom tooth	33
Blank	15,767
Total	**18,596**

9.19 Tertiary Care

Patient across East Anglia are also referred to the London dental hospitals either as a tertiary referral from the local secondary care providers for more specialist care or directly by local GDPs for patients who may benefit from specialist restorative care. This service is provided on referral to Guys and Thomas Hospital and the Eastman Dental Hospital where the AT now holds contracts. Data about referral and treatment patterns within these services is not readily available and patient pathways appear unclear and ill defined. The following figure, 29 -33 show the number of contacts seen by the six main London dental hospitals by CCG compared to the rest of the East of England and figure 29 shows the distribution across the specialities. Relatively few patients from the eight East Anglia CCGs receive care from the London dental hospitals.

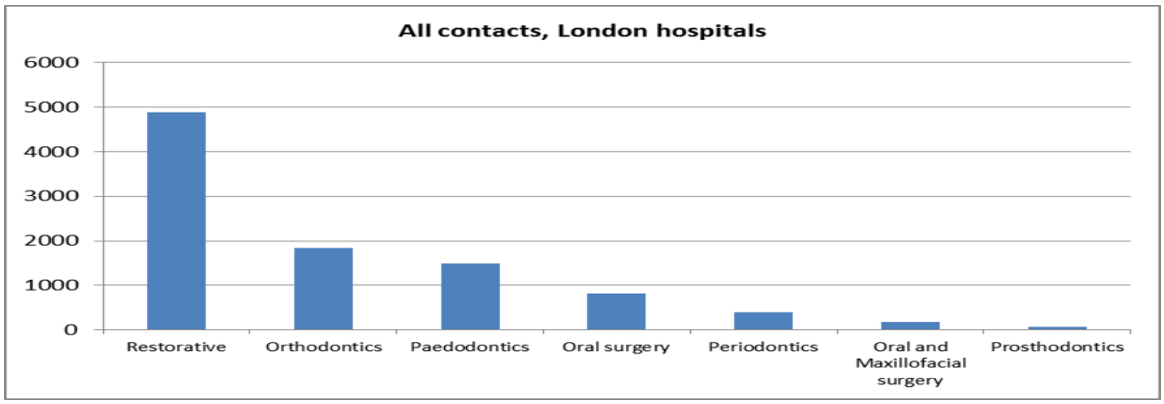
Graph 27: Number of contacts by East of England CCG for London dental hospitals April – September 2013



Source : The information is taken from a spread sheet listing all contacts by residents of CCGs in Anglia, Essex and Herts & South Midlands with secondary care dental specialties is created monthly by the North and East Commissioning Support Unit. Data from April to September 2013 has been used. Data before April 2013 is not available to the CSU.

The main specialities that patients are referred for are restorative dentistry, orthodontics, paedodontics, oral surgery, maxillofacial surgery, periodontics and prosthodonics. The vast majority of patients that are referred and accepted are for restorative dentistry but the numbers from the eight East Anglia CCGs are small.

Figure 30: All contacts at London dental hospitals by speciality April-September 2013



10 Preventive Interventions

10.1 Dental public health programmes

Dental public health programmes, which are the responsibility of local authorities, should be commissioned following strategic planning. Guidance for local authorities is available from *Local authorities improving oral health: commissioning better oral health for children and young people, An evidence-informed toolkit for Local Authorities.* June 2014, PHE gateway number 2014147 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321503/CBOHMaindocumentJUNE2014.pdf
Other guidance is currently in preparation through NICE and is expected in November 2014. There is good evidence that in addition to place-based generic health improvement activities, which will address some of the common risk factors for dental decay, strategies to increase the exposure to fluoride are effective.

10.2 Fluoride delivery

10.2.1 Water Fluoridation

Water fluoridation is defined as "the controlled adjustment of a fluoride compound to a public water supply in order to bring the fluoride ion concentration up to a level which effectively prevents caries".[56] The optimal concentration in temperate climates is 1 part per million (ppm). Approximately 10% of the UK population (6 million people) are currently receiving water with a fluoride content adjusted to the optimal level (including naturally and artificially fluoridated areas). The water supply to East Anglia is not artificially fluoridated and the naturally occurring level is around 0.3 to 0/7ppm.[88]

The best available evidence suggests that the fluoridation of drinking water reduces the prevalence of caries, both in terms of the proportion of children who are caries free and by the mean change in dmft. There is also evidence to suggest that water fluoridation reduces the severity of caries (as measured by dmft) across social groups and between geographical locations.[89] Research has shown that socially deprived areas benefit more from fluoridation.[90] Water fluoridation is consequently one of the few public health interventions that directly reduce health inequalities.

Following a local oral health needs assessment PCTs, before April 2013 and now the Local Authorities may elect to fluoridate their water supply in order to reduce oral health inequalities. Until recently, water companies have had the right to refuse to fluoridate, which has limited the number of people in the UK receiving fluoridated water. This changed with the Water Act 2003, which gave Strategic Health Authorities (SHAs) and now Local Authorities the authority to make this decision, following a public consultation. Public opinion has not been formally tested in East Anglia.

In the recently published best practice guidance on Fluoridation of Drinking Water Gateway 9361, the Department of Health states that water fluoridation schemes would ideally 'serve precisely only the high-need target population' where the prevalence of disease is high,**Error! Bookmark not defined.** although it is likely that any

scheme will also serve some areas with low decay levels. A further consideration is that any feasible scheme may cross AT, and LA and regional boundaries necessitating a joint consultation process.

PHE has a national lead for water fluoridation and any feasibility study proposed in East Anglia would be led by PHE.

PHE, on behalf of the secretary of state for health, is required to monitor the effects of water fluoridation schemes on the health of people living in the areas covered, and to produce reports at no greater than four yearly intervals. In March 2014 PHE published Water Fluoridation, health monitoring report for England 2014, gateway number 2013547. The main findings of the report were that, on average, there are 15 per cent fewer five year olds with tooth decay in fluoridated areas than non-fluoridated areas and 11 per cent fewer 12 year olds with tooth decay. When deprivation and ethnicity are taken into account (both important factors for dental health) 28 per cent of five year olds and 21 per cent of 12 year olds have tooth decay in fluoridated areas than non- fluoridated areas.

In fluoridated areas there are 45 per cent fewer hospital admissions of children aged one to four for dental caries (mostly extraction of decayed teeth under a general anaesthetic) than in non- fluoridated areas.

Dental fluorosis (mottles or flecks on teeth caused by fluoride) has been found to be higher in fluoridated areas than non -fluoridated areas but the difference, one per cent, is low.

Other non-dental health indicators were examined, such as hip fractures, bladder cancer, osteosarcoma and Down's syndrome and there was no evidence of increased harm associated with water fluoridation. The report provides further reassurance that water fluoridation is a safe and effective public health measure.

10.2.2 Targeted community based fluoride varnish programmes

These schemes involver the application of fluoride varnish to children's teeth carried out by dental personnel outside dental practices. There is strong evidence of effectiveness. These programmes can have a positive impact on inequalities if high risk populations are targeted. [91] [92] [93]

10.2.3 Targeted provision of toothbrushes and fluoride toothpaste and supervised tooth brushing programmes established in targeted childhood settings

The effectiveness and benefit of fluoride toothpaste is firmly established. These schemes rely on targeted and timely provision of free toothbrushes and toothpaste either through health visitors, schools or postal schemes. The success of brushing programmes will rely on co-operation with parents, schools and early years settings. [94]

10.2.4 Other targeted fluoride delivery programmes

Commissioning better oral health (CBOH) found that fluoride rinsing programmes, provision of fluoridated milk schemes in schools and community based fissure sealant programmes were of limited value.

10.3 Training of health care and other professionals

The document Commissioning Better Oral Health recommends oral health training for the wider health, social care and education workforce, based on capacity building (i.e. increasing the knowledge and skills of others) to support oral health improvement in their daily role. Oral health should also be integrated into targeted home visits by health and social workers. There is little evidence to support one off dental health education by the dental workforce to the general population. It is short term in nature and improvements are unlikely to be sustained in the longer term.

10.4 Practice based oral health improvement interventions

Delivering better oral health- an evidence based toolkit for prevention was first published in 2007. The third edition was published June 2014, PHE gateway number: 2014126.
https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention
This practice based toolkit puts a greater emphasis on prevention of ill-health and reduction of inequalities of health by the giving of advice, provision of support to change behaviour and application of evidence-informed actions. It is important that the whole dental team, as well as other healthcare workers, give consistent messages and that those messages are up to date and correct. Recent thinking suggests that all patients should be given the benefit of advice and support to change behaviour regarding their general and dental health, not just those thought to be 'at risk'. Delivering better oral health lists the advice and actions that should be provided for all patients to maintain good oral health. For those patients about whom there are greater concern (e.g., those with medical conditions, those with evidence of active disease and those for whom the provision of reparative care is problematic) there is guidance about increasing the intensity of generally applied actions.

10.5 Improving oral health through the common risk factor approach (CRFA)

Diet

Improving diets in the population and the promotion of consistent nutritional messages about making healthy choices has the potential to improve oral health by reducing the amount and frequency of sugar consumption as well as reduce obesity. Sugar Reduction-responding to the challenge June 2014 PHE Gateway number 2014155 details the problems with eating sugar and says that diet and obesity related diseases including cardiovascular disease and some cancers cost the NHS at least 11 billion pounds per year.
https://www.gov.uk/government/publications/sugar-reduction-responding-to-the-challenge

Smoking and Tobacco use- Preventive interventions

There is a close relationship between, periodontal disease and oral cancer and smoking. The Department of Health published *Smokefree and Smiling*: *helping dental patients to quit tobacco'* as part of their on-going campaign to involve dental teams in supporting people to stop using tobacco.[95] This guidance had been updated 12th March 2014.

Public health policies and legislation such as banning smoking in public places, warnings on tobacco products and the ban on advertising products have all been introduced in an attempt to reduce smoking. Smokeless tobacco such as areca nuts betel quid and oral snuff has been found to independently increase the risk of oesophageal cancer. Recommendations to decrease their use focus on the provision of brief advice and training for health practitioners.

Alcohol-Preventive interventions

Oral health promotion strategies should include joint working with other partners such as local authorities, the police and owners of licensed premises in known flashpoints. Since the 2003 Licensing Act consideration can now be given to the awarding of alcohol licences and this responsibility now rests with the local authority. Other preventive measures such as replacing glass bottles and glasses with safe non glass materials such as plastic or polycarbonate material should be encouraged and this can now be a condition of the licence.(Warburton A, Shepherd J. P. Effectiveness of toughened glass in terms of reducing injury in bars: a randomised controlled trial, Injury prevention Vol 6, pp36-40 2000) (Rickinson, B and Preston, S Materials for Drinking Glasses, A short test programme with one pint glasses, Executive Summary London IOM3 March 2009) Local data from hospitals and the police should continue to be collated to help identify problem areas.

As well as local policies brief interventions around alcohol use following NICE guidance have also been demonstrated to be effective in modifying future behaviour. These can be delivered by hospital staff, both with the victim and the assailant, at the time of treatment and from other health care professionals in different settings. http://pathways.nice.org.uk/pathways/alcohol-use-disorders/brief-interventions-for-alcohol-use-disorders)

HPV vaccinations

Oral cancers associated with the human papilloma virus (HPV) are increasing in cadence in anew population. Between 1990 and 2008 there was an increase of 160% in males and 110% in females. Since 2008 all girls aged 12-13 years in the UK are offered the HPV vaccine. It is effective for eight years or more. The US and Australia offers the vaccine to both sexes.

Prevention of injury

CBOH indicates that the use of mouth guards during contact sports can reduce the risk of injuries. There are clear individual benefits although it is limited as population measure. Commissioning arrangements would need to be in place in NHS England to support widespread use otherwise there is the potential to increase inequalities as mouth guards may be in greater use in more affluent population groups. There should be additional complementary action to create safe environments.

11 Public Voice

11.1 National Surveys

11.1.1 Dentistry Watch

In 2007, the Commission for Patient and public involvement in Health conducted a national survey to find out what patients really think about NHS dental services. The resulting *Dentistry Watch* report was published in October 2007[96].

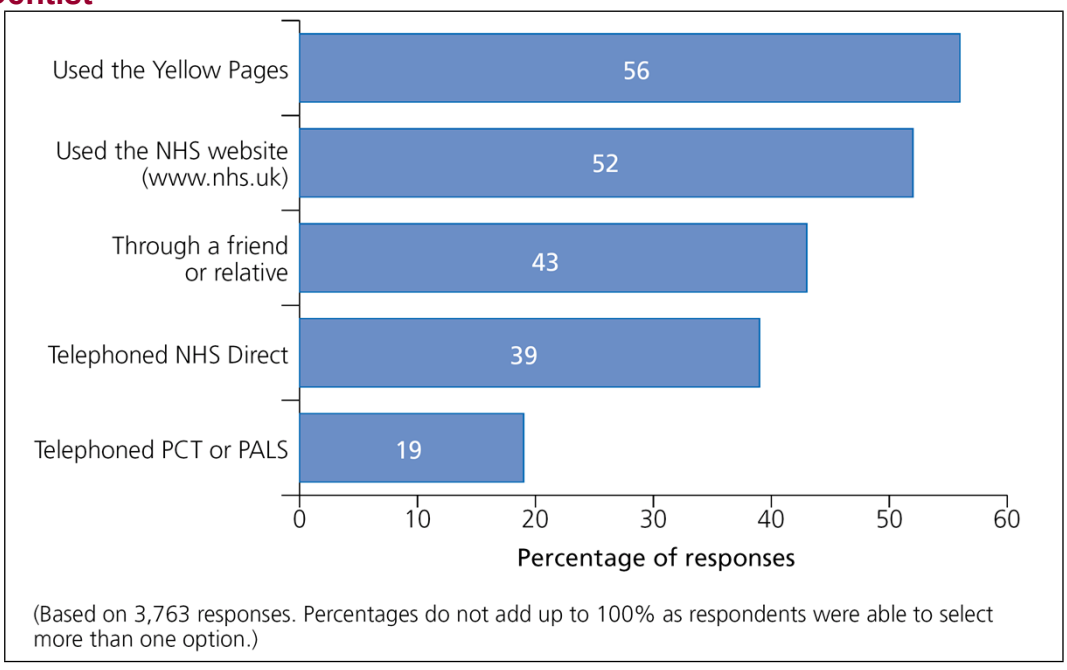
The main findings of this survey were as follows:[96]

- 93% of NHS patients are happy with the treatment they receive.
- Almost a fifth of patients have gone without treatment because of the cost.
- Almost half of all NHS patients do not understand NHS dental charges.
- 78% of patients using private dental services are doing so because either their dentist stopped treating NHS patients (49%), or because they could not find an NHS dentist (29%).
- 35% of those not currently using dental services stated it is because there is not an NHS dentist near where they live.

11.1.2 Citizen's Advice Bureau Survey

The Department of Health recommended that people searching for an NHS dentist should contact either their PCT or NHS Direct. A 2007 report from the Citizen's Advice Bureau, however, suggested most people found a dentist (63%) by asking family or friends.[97] In the East of England, for example, around 63% of patients heard about their current dentist from friends and family and around 42% do not know how to get emergency treatment outside office hours. This means that even where services are available, people may not be able to access them.

Graph 29: Citizen's Advice Bureau Data on How People Go About Finding an NHS Dentist



(Based on 3,763 responses. Percentages do not add up to 100% as respondents were able to select more than one option.)

Source: CAB Evidence Briefing Gaps to fill. CAB evidence on the first year of the NHS dentistry reforms. March 2007 Available at URL: http://www.citizensadvice.org.uk/pdf_gaps_to_fill.pdf

The CAB found that 65% of people who were unable to find an NHS dentist simply went without treatment, 9% went to A& E, 19% went to a private dentist and 2% went to their GP.

11.1.3 Omnibus Survey

The Omnibus survey gathered data about the impact of oral problems on the quality of life of adults. Population representative samples of 2,507 adults across the UK were briefly interviewed on oral health related quality of life. The results were analysed by the Dental Observatory.

The main findings of this survey were as follows:[98]

- 7% of adults in England and 5% of adults in the East of England, experience 'painful aching in the mouth fairly or very often'. The figures for men and women are equal
- Experience of painful aching in the mouth varied little between counties.
- As age of respondents increased, there was a general reduction of reported painful aching.
- The prevalence of painful aching 'fairly or very often' and experience of oral problems compare closely with the values arising from the Adult Dental Health Survey 1998. This finding suggests that this parameter varies little over time.

11.1.4 Patients Association Report

The Patients Association published their report, *The New Dental Contract - Full of Holes and Causing Pain*, on the new dental contract in March 2008.

The report was based on the Association's survey of PCTs (although they are unspecific about their methodology). Their main findings were as follows:[99]

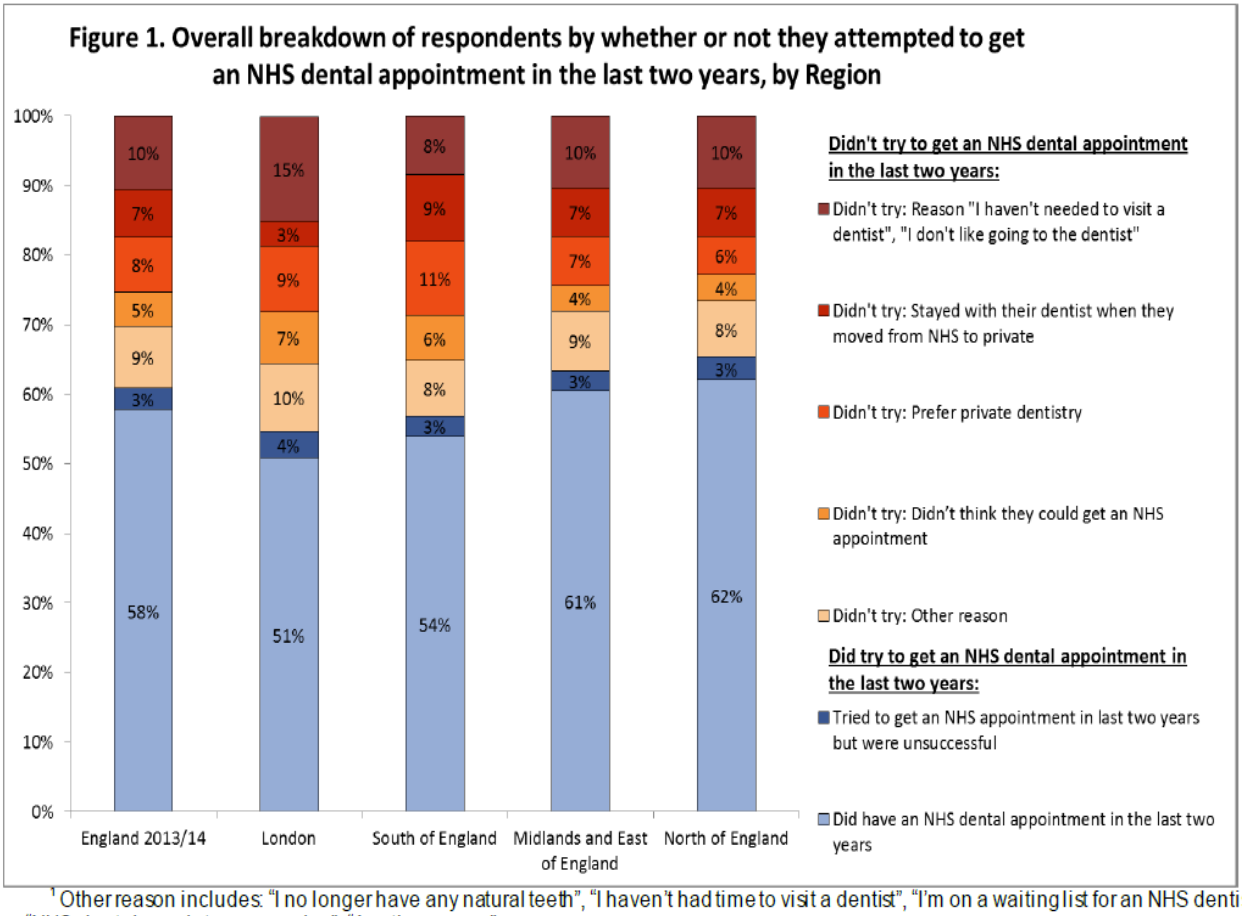
- The NHS dentistry service provided by PCTs varies from PCT to PCT creating a 'postcode lottery'.
- Patients are confused about how to access dental services in their locality.
- Patients are at risk of inadequate care because 'UDAs, rather than patient need, is being funded'.
- Prevention of oral disease is at risk under the new contracting system.

11.1.5 GP Patient Survey July – September 2013

Dental questions were originally added to the GP survey in January to March 2010 as the Department of Health wanted information on NHS dental access and demand for services based on peoples reported experience. THE GP patients survey was chose to capture this information as a portal to access the proportion of the population who do not use NHS dental services (or have not recently) to give a fuller picture of people's dental behaviour and experience.

The following graph shows the overall survey population breakdown of dental behaviour.

Graph 30



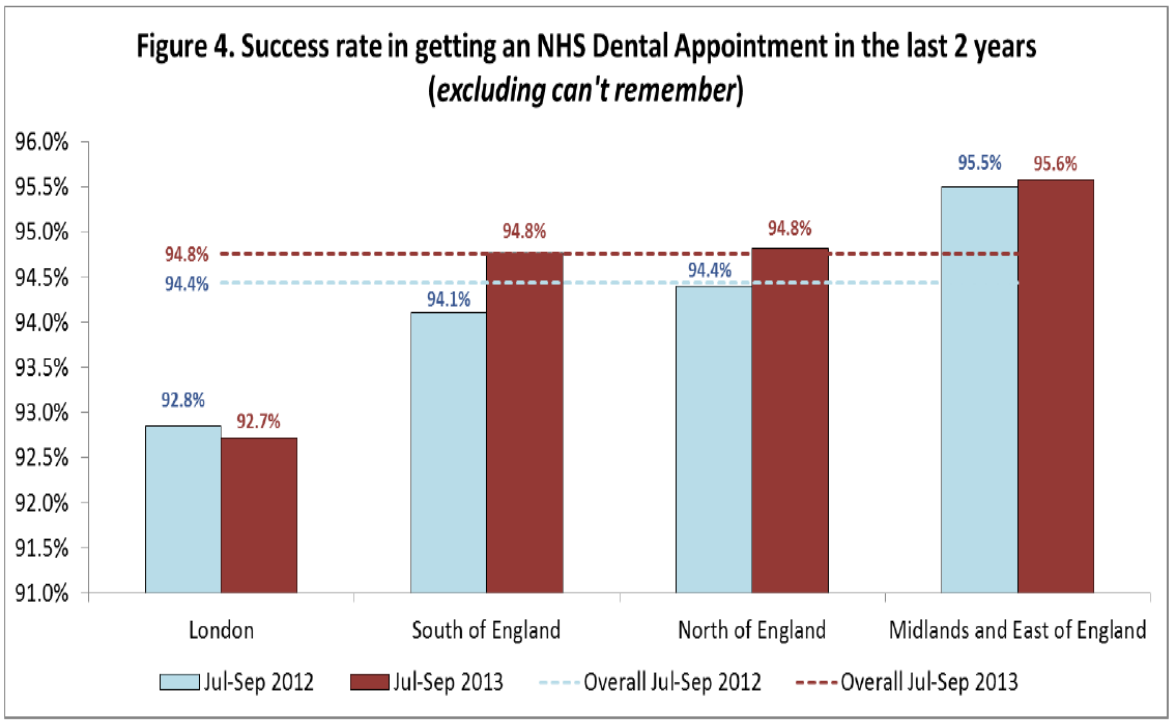
[1] Other reason includes: "I no longer have any natural teeth", "I haven't had time to visit a dentist", "I'm on a waiting list for an NHS dentist", "NHS dental care is too expensive", "Another reason".

Nationally just under three fifths (58%) of all respondents stated that they had visited an NHS dentist in the last two years. Of the remaining, 10% didn't try to see an NHS dentist because they stated they " didn't need to go " or " don't like going " and 8% didn't try because they prefer private dentistry.

Midlands and East show a much higher use of NHS Dental services that the south of England and London. (Just over 60% of all respondents compared to 54% of the south and 51% of London respondents)

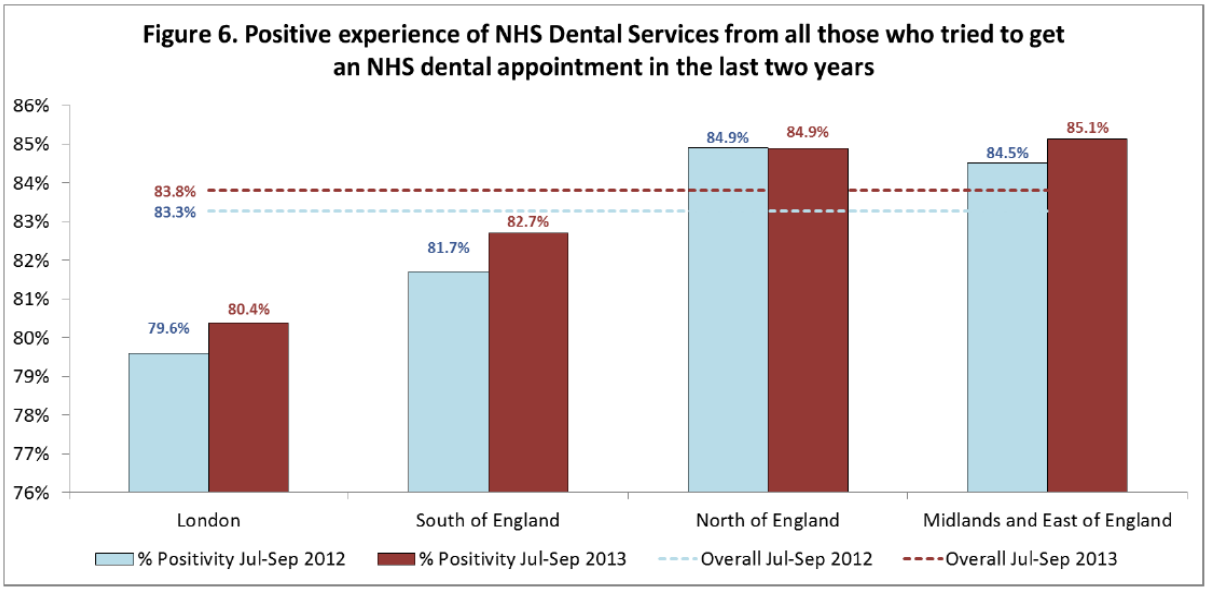
In the Midlands and East the vast majority of dental patients were successful at getting an NHS dental appointment in the last two years. This is the highest across England.

Graph 31



The graph below show that Midlands and East of England had the highest positive patient experience at 85 percent across England.

Graph 32



11.1.6 GP Patient Survey March 2014 – Responses to questions about dental services

In January to March 2014 the GP survey for NHSE East Anglia Area Team / CCGs in East Anglia was repeated.

This large survey samples adult patients registered with General Medical Practices in the local CCG area with questions mainly related to their primary medical care. 41,368 survey forms were distributed, and 18,123 returned (44% response rate). Several questions cover experience of dental practice. It is important though to recognise that responses may relate to dental practices outside of the specific CCG or NHSE Area boundary used for the data presentation, as analysis relates to the location of the respondents medical practice only, not the dental practice.
The weighting strategy applied is described in the Technical Annex: http://gp-survey-production.s3.amazonaws.com/archive/2014/July/1301375001_Technical%20Annex%202013-2014_FINAL%20v1.pdf

Table 25: When did you last try to get an NHS dental appointment for yourself? by number and proportion of respondents

All East Anglia

	Number of respondents	Percentage of respondents
In the last 3 months	4,846	24%
Between 3 and 6 months ago	3,458	17%
Between 6 months and a year ago	2,875	14%
Between 1 and 2 years ago	1,522	8%
Over 2 years ago	3,602	18%
Never tried to get an NHS appointment	*3,905*	*19%*

Table 26: When did you last try to get an NHS dental appointment for yourself?, by proportion of respondents

East Anglia CCGs

	In last 3 months	3- 6 months ago	6-12 months ago	12-24 months ago	Over 24 months ago	Not tried in last 24 months
All East Anglia	*24%*	*17%*	*14%*	*8%*	*18%*	*19%*
NHS Cambs & Peterborough CCG	23%	16%	12%	7%	19%	22%
NHS Ipswich & E Suffolk CCG	24%	18%	14%	7%	18%	19%
NHS Gt Yarmouth & Waveney CCG	30%	19%	18%	9%	13%	12%
NHS N. Norfolk CCG	26%	19%	16%	6%	15%	19%
NHS Norwich CCG	24%	19%	15%	10%	17%	16%
NHS S. Norfolk CCG	26%	17%	18%	6%	17%	16%
NHS W .Norfolk CCG	21%	16%	14%	9%	19%	21%
NHS W. Suffolk CCG	21%	15%	15%	7%	21%	22%

Table 27: Last time you tried to get an NHS dental appointment, was it with a dental practice you had been to before for NHS dental care?

	Yes	No	Can't Remember
All East Anglia	*88%*	*10%*	*3%*
NHS Cambs & Peterborough CCG	86%	10%	4%
NHS Ipswich & E Suffolk CCG	87%	11%	2%

NHS Gt Yarmouth & Waveney CCG	92%	7%	1%
NHS N. Norfolk CCG	90%	8%	2%
NHS Norwich CCG	87%	11%	2%
NHS S. Norfolk CCG	89%	7%	4%
NHS W .Norfolk CCG	91%	11%	3%
NHS W. Suffolk CCG	87%	9%	2%

Table 28: Respondents who last tried to get an NHS Dental Appointment in the last 2 years;

Proportion who said they were they successful in getting the appointment.
East Anglia CCGs

	Successful	Unsuccessful	Can't Remember
All East Anglia	94%	4%	2%
NHS Cambs & Peterborough CCG	93%	6%	2%
NHS Ipswich & E Suffolk CCG	96%	3%	1%
NHS Gt Yarmouth & Waveney CCG	95%	4%	2%
NHS N. Norfolk CCG	97%	2%	1%
NHS Norwich CCG	93%	4%	3%
NHS S. Norfolk CCG	94%	4%	2%
NHS W .Norfolk CCG	93%	5%	2%
NHS W. Suffolk CCG	96%	3%	1%

Table 29: Overall experience of NHS dental services [respondents visiting dentist in past 2 years]?

East Anglia CCGs

	Very good	Fairly good	Neither good nor poor	Fairly poor	Very poor
All East Anglia	*47%*	*38%*	*9%*	*4%*	*2%*
NHS Cambs & Peterborough CCG	43%	39%	10%	5%	3%
NHS Ipswich & E Suffolk CCG	48%	36%	9%	5%	2%
NHS Gt Yarmouth & Waveney CCG	56%	33%	7%	3%	1%
NHS N. Norfolk CCG	48%	38%	8%	4%	2%
NHS Norwich CCG	48%	37%	10%	4%	1%
NHS S. Norfolk CCG	46%	39%	8%	4%	2%
NHS W .Norfolk CCG	42%	37%	13%	4%	4%
NHS W. Suffolk CCG	47%	39%	8%	4%	2%

Table 30: Why haven't you tried to get an NHS dental appointment in the last two years [single main reason]?
All East Anglia

	Percentage of respondents
I haven't needed to visit a dentist	18%
I no longer have any natural teeth	8%
I haven't had time to visit a dentist	20%

I don't like going to the dentist	7%
I didn't think I could get an NHS dentist	11%
I'm on a waiting list for an NHS dentist	+
I stayed with my dentist when they changed from NHS to private	21%
I prefer to go to a private dentist	22%
NHS dental care is too expensive	4%
Another reason	9%

Please note, these figures should only be compared to January to March 2012 and January to March 2013 results, due to changes that were made to the GP Patient Survey methodology prior to these dates.

GP Patient Survey website http://www.gp-patient.co.uk/

Questions relating to NHS Dentistry

Q46 **When did you last try to get an NHS dental appointment for yourself?**

In the last 3 months
Between 3 and 6 months ago
Between 6 months and a year ago
Between 1 and 2 years ago More than 2 years ago **.....Go to Q50** I have never tried to get an NHS dental appointment**.....Go to Q50**

Q47 **Last time you tried to get an NHS dental appointment, was it with a dental practice you had been to before for NHS dental care?**

Yes
No
Can't remember

Q48 Were you successful in getting an NHS **dental appointment?**

Yes
No
Can't remember

Q49 Overall, how would you describe your **experience of NHS dental services?**

Very good
Fairly good
Neither good nor poor
Fairly poor
Very poor

Q50 **Why haven't you tried to get an NHS dental appointment in the last two years?**

If more than one of these applies to you, please tick the main ONE only

I haven't needed to visit a dentist
I no longer have any natural teeth
I haven't had time to visit a dentist
I don't like going to the dentist
I didn't think I could get an NHS dentist
I'm on a waiting list for an NHS dentist
I stayed with my dentist when they changed from NHS to private
I prefer to go to a private dentist
NHS dental care is too expensive
Another reason

11.1.7 Healthwatch

Healthwatch is the national consumer champion in health and social care. They have been given significant statutory powers to ensure the voice of the consumer is strengthened and heard by those who commission, deliver and regulate health and care services. Across East Anglia there are four services in Cambridgeshire, Peterborough, Suffolk and Norfolk. Healthwatch is an important stakeholder for East Anglia Area Team and representation on the Local Professional Network would strengthen that link. There are opportunities for Healthwatch to use the public voice to help influence the commissioning of local dental services.

12. General Principles

Oral diseases are important public health issues as they are among the most commonly found chronic diseases and are almost entirely preventable. The causal relationships between sugar and dental decay and gum disease and poor oral hygiene, for example, are well understood.

Primary prevention, employing the principles of universal proportionalism and integrating oral health with generic health, using the common risk factor approach (CRFA) is the most effective way of improving the oral health of the population of East Anglia. Working with other agencies such as local authorities is important to tackle these common risk factors such as poor diet, tobacco use, poor hygiene, alcohol consumption and injuries, factors which are also associated with obesity, cancer, heart disease, diabetes and strokes. This is consistent with Commissioning Better Oral Health June 2014

Secondary prevention, using targeted interventions such as fluoride varnish and brushing schemes, are important in areas where oral health is worse.
Access to high quality dental services, delivering consistent oral health promotion interventions such as preventive advice, tooth brushing instruction and fluoride varnish applications is key and is consistent with Delivering Better Oral Health, third edition June 2014

13. Summary

Oral health in East Anglia is generally good. This, however, masks oral health inequalities and a small number of people bear the burden of disease. They are children and adults living in material and social deprivation and people in at risk groups, such as older people and people living with disability or in long term institutional care. This health divide is of concern.

Access to dental services is variable across East Anglia and, for some marginalised groups, access is poor. Not much is known about the quality of these services or how accessible patients find them. Referral criteria and access for specialist dental services vary.

Access to a range of dental services is available but there is little evidence that this is meeting the differing needs of the population. At present these inequities in service provision have the potential to increase rather than decrease oral health inequalities.

The quality and availability of information both about the oral health status of the population and the services provided is poor and provides little information for future commissioning of these services.

14. Key messages

Prevention
Oral health problems are not being prevented in adults and children from marginalised and deprived groups in East Anglia.

Access
Dental service provision in East Anglia bears little relation to oral health need. There are discrepancies between the availability of services and need, and patients do not always get the right care when they access dental services.

At risk groups
People in marginalised or deprived groups in East Anglia are more likely to have poor oral health and less likely to access services. This includes people living in areas of material and social deprivation as well as those with physical and learning disabilities, dementia sufferers or people in long term institutional care.

Data
Information about services and the quality of those services is limited. There is some local data about the oral health of children but no local data available about the oral health of adults.

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ANNEX 1

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