



## **ANNEX TO MAIN REPORT**

### **SAMPLE OF CURRENT ORAL HEALTH NEEDS ASSESSMENTS**

**An overview of oral health needs assessments**

**– to support NICE public health guidance,**

**“Oral health: local authority strategies to improve oral health, particularly among vulnerable groups”**

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**August 2013**

## **Sample Oral Health Needs Assessments**

It was thought useful to provide sample OHNAs. To that end, we have provided this Annex to the main report. It contains two OHNAs. One is a comprehensive OHNA carried out in Cambridgeshire PCT and the other a contribution on Oral Health to the Manchester Joint Strategic Needs Assessment.

These are not included as representative of the OHNAs submitted, indeed such was the variety of material received that would not be possible. They are however presented to give a feel for what is currently produced in the National Health Service in England.

The authors of these documents have given their permission for the documents to be made public.

## Manchester Joint Strategic Needs Assessment 2012/13

### Template for Priority Topic Leads

This template is designed to provide a guide to the sorts of issues that should be covered in relation to the six priority topic areas chosen for inclusion in the JSNA. The aim is not to replicate existing strategy documents or plans but rather to pull the headlines together in one place in order to put the JSNA in a good position to inform the contents of the joint health and wellbeing strategy and, through that, the work of local authority and NHS commissioners.

The precise content and length of each section is left to the determination of the lead author and/or working group but each section should be covered so as to provide some structure and consistency to each topic chapter. Authors are advised to:

- Use hyperlinks to cross-reference to information sources, policy guidance or strategies (e.g. NICE guidance)
- Ensure data is in line with that included in the JSNA Core Dataset, State of the City reports and other sources
- Consider issues across the life course, where appropriate
- Where possible, highlight variations in prevalence, risk and service delivery between and within each locality so as to provide some CCG-specific evidence
- Highlight gaps in the existing information and evidence base as a means of informing future data collection and research activities

The intention is to turn the JSNA into a primarily electronic rather than paper-based resource and authors should consider this when drafting their chapter (e.g. through minimising the use of embedded graphs or pictures etc).

### Oral health

Section 1: National and local context	
Why is this topic an issue and what (if anything) has already been done about it?	Measures of poor oral health among young children are valuable outcome indicators of wider ill health and sub-optimal upbringing in early life. Poor baby feeding practices, poor weaning habits and poor diets lead not only to poor dental health but also to higher risks of obesity, diabetes, cardiovascular disease and some cancers in later life.

	<p>Poor oral health in itself causes problems for children and their families, children's services and unscheduled care services. Dental pain and infection leads to lost sleep, days off school, days off work for carers, poor concentration and a narrow choice of foods.</p> <p>Extraction of decayed teeth is the main reason for admission of children to hospital in the North West.</p> <p>Dental decay is caused by a poor diet which is high in sugar, along with infrequent exposure to fluoride due to rare use of fluoride toothpaste.</p> <p>Oral health is poor in the Manchester population and the main conditions, dental decay (caries) and poor gum health (periodontitis) are widespread but much could be done to control them. The costs of providing treatment for routine and urgent care are high.</p> <p>The Public Health Outcomes Framework specifies oral health among five year olds as a key indicator.</p> <p><a href="http://www.dh.gov.uk/health/2012/01/public-health-outcomes/">http://www.dh.gov.uk/health/2012/01/public-health-outcomes/</a></p> <p>This reflects the importance the coalition government has laid on improving oral health among children and reducing inequalities.</p> <p>Much has been done in Manchester to reduce levels of dental disease and this activity continues to develop.</p>
<p><b>Section 2: Epidemiology</b></p>	
<p>What is the scale of the issue or condition in the population?</p>	<p>In Manchester at least 23% of 3 year-olds have one or more teeth affected by decay</p> <p>Around 60% of 5 year olds have experience of caries, compared with 31% in England as a whole, and 8% have experienced extractions because of decay, many of them in hospital.</p>

<p>Are there any known variations or inequalities <u>within</u> the City?</p> <p>What are the key determinants or risk factors?</p>	<p>Children attending special support schools in Manchester fare worse.</p> <p>9% of adults in the North West have severe conditions linked with dental decay, 51% have symptoms of reversible gum disease and 43% signs of progressive periodontitis.</p> <p>There is limited variation across the city.</p> <p>Key determinants are linked with deprivation. Risk factors for caries are frequent intakes of sugar-containing foods and drinks, along with low use of fluoride toothpaste.</p> <p>Risks for gum disease are poor oral hygiene.</p> <p>Risks for oral cancer are smoking and drinking.</p> <p><a href="http://www.nwph.net/dentalhealth/">http://www.nwph.net/dentalhealth/</a></p> <p><a href="http://data.gov.uk/dataset/adult-dental-health-survey-2009-summary-report-and-thematic-series">http://data.gov.uk/dataset/adult-dental-health-survey-2009-summary-report-and-thematic-series</a></p>
<p><b>Section 3: Current services</b></p>	
<p>What services (if any) are already in place to address this issue?</p>	<p>Widespread access to NHS contracted general dental practices.</p> <p>Managed system of referrals to secondary care.</p> <p>Commissioned Oral Health Improvement Team (OHIT) with evidence informed Service Level Agreement and scientific guidance from Dental Public Health team.</p>

<p>What is our strategic approach to developing these?</p>	<p>Increase preventive activity by primary dental care providers by means of contracting and commissioning with key performance indicators backed up by education, training and increased skill mix. A key activity of the OHIT seeks to achieve this by means of a 'Preventive Practice Award' scheme.</p> <p>Population level activities by OHIT to increase fluoride exposure, including widespread distribution of free toothbrushes and family fluoride toothpaste, supervise brushing at Children's Centres and primary school nurseries and provision of fluoridated milk in primary schools.</p> <p>Activities to improve home care and increase attendance with a primary care dentist.</p> <p>Training of all education, health and social care partners with regard to the key oral health messages from Delivering Better Oral Health : an evidence based toolkit for prevention*</p> <p>which are:</p> <ul style="list-style-type: none"> <li>• Start to brush with a family fluoride toothpaste from when the first baby tooth shows in the mouth</li> <li>• Brush twice daily, last thing before bed and in the morning</li> <li>• Use limited amounts of family fluoride toothpaste</li> <li>• Supervise children when brushing to ensure correct amount of toothpaste is used</li> <li>• Brush all surfaces of all teeth</li> <li>• Limit how often sugar – containing food or drinks are consumed</li> </ul>

	<ul style="list-style-type: none"> <li>• Do not smoke</li> <li>• Drink alcohol in moderation only</li> </ul>
<p>What do we know about the views or experiences of service users or members of the public?</p>	<p>On average 92% of dental patients said they were satisfied when they were asked about the service they received. (Data from Dec 2011 Vital signs from BSA DSD e-reporting)</p> <p>Evaluation of all OHIT programmes are recorded in reports for monitoring.</p>
<b>Section 4: Gaps in services</b>	
<p>What are the known gaps in the range/type and volume of services that exist?</p>	<p>Action continues to be needed to stimulate a more proactive preventive focus in general dental practices.</p> <p>Improved preventive activity by dental practices only benefits those who attend. Those who are rare or occasional attenders do not benefit.</p> <p>The OHIT focus most of their activities on pre-school children as the levels of disease among 5 year olds are not improving. There is therefore limited coverage of other population groups.</p> <p>There are concerns for the dependent elderly population, more of whom will be retaining some natural teeth for life. Oral care is given low priority by many carers which leads to poor daily hygiene, loss of dentures and poor awareness of the importance of oral health.</p> <p>Other population groups that should receive extra attention are children and adults with special medical, physical, behavioural and psychological needs. Adults who are severely ill, have mental health problems or are dependent upon drugs or alcohol have additional needs with regard to dental care and these are not being met with consistency across the city.</p>

<p>Are there are any inequities in the geographic distribution of services across the City?</p>	<p>Following recent commissioning all wards now have a general dental practice with an NHS contract.</p> <p>The OHIT works across the city.</p>
<p><b>Section 5: What more do we need to know?</b></p>	
<p>What are the gaps in the evidence base or our knowledge of the issue/services?</p>	<p>How best to bring about behavioural change among parents of young children.</p> <p>Identification of effective methods to reach specific population groups which are least likely to benefit from mainstream projects.</p>
<p><b>Section 6: Recommendations</b></p>	
<p>What changes do local authority and NHS commissioners need to make in terms of <u>current</u> service provision (i.e. decommissioning or re-commissioning decisions)?</p>	<p>Continue to commission oral health improvement activity with specialist dental public health knowledge to ensure effective scientific rigour and strategic input. In order that population level activities can be maintained which ;</p>



- increase fluoride exposure by;

- widespread distribution of free toothbrushes and family fluoride toothpaste,
- running of a supervised brushing scheme at Children's Centres and primary school nurseries
- provision of fluoridated milk in primary schools.

- improve home care and increase attendance with a primary care dentist by running the Manchester Smiles Buddy Practice scheme.

- increase knowledge of professional partners by training of all education, health and social care partners with regard to the key oral health messages from Delivering Better Oral Health : an evidence based toolkit for prevention\*

which are:

- Start to brush with a family fluoride toothpaste from when the first baby tooth shows in the mouth
- Brush twice daily, last thing before bed and in the morning
- Use limited amounts of family fluoride toothpaste
- Supervise children when brushing to ensure correct amount of toothpaste is used
- Brush all surfaces of all teeth
- Limit how often sugar – containing food or drinks are consumed
- Do not smoke
- Drink alcohol in moderation only

Protect OHIT activity from funding reductions. So that they can maintain and intensify preventive activity by primary dental care providers by means of contracting and commissioning with key performance indicators backed up by education, training and increased skill mix. A key activity of the OHIT seeks to achieve this by means of a 'Preventive Practice Award' scheme.

Support adoption of healthy food and drink policies in child and adult care sites, including those for pre-school children, schools, homes for Looked After Children, homes and day care centres for ALDs.

Support training of education, health and social care partners.

Increase subsidy on school milk to encourage wider uptake of both dental and plain milk.

<p>What <u>new</u> services need to be commissioned?</p>	<p>Services to assist people in particular groups to seek and access suitable treatment services E.g. Older dependent adults, adults with mental health problems, families affected by dependency on drugs or alcohol.</p> <p>An interpreter service which is suitable for the provision of dental treatment</p> <p>A health promotion initiative to assist particular BME groups which are known to have higher levels of disease.</p>

\*[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_102331](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_102331)

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May 2012



Cambridgeshire and Peterborough  
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**D R A F T (6)**

**Oral Health Needs  
Assessment for  
Cambridgeshire PCT**

**April 2008**

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## **1. Introduction**

## **2. Broader Context**

### 2.1 National

#### 2.1.1 Overarching NHS Priorities

### 2.2 Dental Strategic Priorities (CBOH, Water Fluoridation)

#### 2.2.1 The New Dental Contract and the Move to Local Commissioning

#### 2.2.2 NHS Operating Framework 2008/09

#### 2.2.3 Choosing Better Oral Health

#### 2.2.4 Supporting documents to Choosing Better Oral Health

#### 2.2.5 Delivering Better Oral Health

#### 2.2.6 Water Fluoridation

## **3. Broad Context: Local Priorities**

### 3.1 SHA Priorities

### 3.2 PCT Priorities

### 3.3 Annual Public Health Report 2007

## **4. Population and Demography of Cambridgeshire**

### 4.1 General Population Characteristics

### 4.2 Ethnicity

- 4.3 Population Growth
- 4.4 Deprivation in Cambridgeshire
- 4.5 Morbidity and Mortality in Cambridgeshire

## **5. Common Oral Diseases and their Causes**

- 5.1 Definitions of Common Dental Diseases
  - 5.1.1 Dental Decay (Caries)
  - 5.1.2 Gum (Periodontal) Disease
  - 5.1.3 Oral Cancer
  - 5.1.4 Malocclusion and Orthodontics
- 5.2 Biological Determinants (Risk Factors) of Oral Disease
- 5.3 Social Determinants of Oral Disease
- 5.4 Common Risk Factor Approach
- 5.5 Common Risk Factors
  - 5.5.1 Obesity
  - 5.5.2 Smoking
  - 5.5.3 Alcohol
  - 5.5.4 Drug Abuse
- 5.6 Vulnerable Groups

## **6. Epidemiology of Oral Disease**

### **7. Oral Health in Adults**

#### 7.1 Dental Caries

##### 7.1.1 Inequalities in Dental Caries in Adults

##### 7.1.2 Dental Health in Adults in Cambridgeshire

#### 7.2 Gum (Periodontal) Disease in Adults

##### 7.2.1 Inequalities in Gum Disease Among Adults

#### 7.3 Oral Cancer in Adults

##### 7.3.1 Prevalence of Oral Cancer in Cambridgeshire

### **8. Oral Health in Children**

#### 8.1 Dental Caries in Children

##### 8.1.1 Inequalities in Dental Caries in Children

#### 8.2 Oral Health in Children in Cambridgeshire

##### 8.2.1 Dental Caries

##### 8.2.2 Inequalities in Oral Health of Children in Cambridgeshire

#### 8.3 Cleft Lip and Palate

#### 8.4 Orthodontic Treatment Need

### **9. Current Service Provision**

#### 9.1 General Dental Services

##### 9.1.1 National Activity

##### 9.1.2 Local General Dental Service Activity

##### 9.1.3 Courses of Treatment Performed by Treatment Band

##### 9.1.4 Mapping of Dental Services Provision

##### 9.1.5 Out of Hours Dental Care in Cambridgeshire



9.2 Specialist Services

9.2.1 Primary Care

9.2.2 Secondary Care

9.2.3 Tertiary Care

## **10. Water Fluoridation**

## **11. Public Voice**

11.1 National Surveys

11.1.1 Dentistry Watch

11.1.2 Citizen's Advice Bureau Survey

11.1.3 Omnibus Survey

11.1.4 Patients Association Report

11.1.5 Local Surveys

## **12. Recommendations**

## **13 Glossary**

## **14. References**

## Maps, Tables and Figures

### Maps

- 1 Index of Multiple Deprivation 2007 – Cambridgeshire SOA Rankings and Mid 2006 Ward Population Estimates

#### **Mapping of General Dental Services Provision**

- 2a Huntingdonshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity
- 2b Huntingdonshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation
- 3a South Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity
- 3b South Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation
- 4a Cambridge City – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity
- 4b Cambridge City – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation
- 5a Fenland – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity
- 5b Fenland – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation
- 6a East Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity
- 6b East Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation

### Tables

- 1 Population of Cambridgeshire 2005
- 2 Ethnic Composition by Local Authority
- 3 Numbers of Cambridgeshire Residents Who Attended Hospital for Oral Cancer Treatment, 2004 -2007

- 4 Summary Table of Treatment Bands and Associated Charges and Units of Dental Activity
- 5 Comparison of the Proportion of Patients Seen (by Adult/Child), at Local, National and Regional Level, in the Previous 24 Months Ending 31 March 2006 and 31 March 2007
- 6 Activity Levels at Dental Access Centres Across Cambridgeshire
- 7 Summary of Orthodontic Activity Provided in Primary Care, April 2006 – December 2007
- 8 Number of Patient Contracts by Year in Cambridgeshire Dental Access Centre
- 9 Number of Patient Contracts by Year in Cambridgeshire CDS, 2001
- 10 Patients Treated Under General Anaesthetic
- 11 Current Waiting Times for Treatment in Salaried Services
- 12 Responses to Patient Questionnaires on time Taken to Get a Dental Appointment
- 13 Responses to Patient Questionnaire on Patient's Satisfaction with Dentistry Received

## Figures

- 1 The Underlying Causes of Oral Health
- 2 The Common Risk Factor Approach
- 3 The Proportion of Adults with No Natural Teeth in England 1968-1998
- 4 Proportion of Adults with Decayed/Unsound Teeth or Periodontal (Gum) Disease by Social Class
- 5 The Condition of Teeth Among Dentate Adults in England by Jarman Area
- 6 Reported Usual Reason for Dental Attendance of Dentate Adults by Social Class
- 7 Dental Status of Adults in England, by Region
- 8 Changes in Mean dmft (decayed, missing and filled teeth) Over Time for Children in the UK
- 9 Comparison of Mean dmft for all 5-Year Olds with Decay Experience at Local, Regional and National Levels 2005-2006
- 10 Mean Number of Teeth with Obvious Decay Experience by Socio-Economic Status of Household in the UK 2003
- 11 The Proportion of Caries-free 5-Year Olds Nationally, Regionally and Locally 2005 -2006.
- 12 Comparison of the Mean dmft in 5-Year Olds, in Cambridgeshire to the Regional and National Average 2005 - 2006
- 13 Comparison of Mean dmft for all 5-Year Olds with Decay Experience Across Cambridgeshire PCTs
- 14 Percentage of Courses of Treatment (CoTs) Including Selected Treatments, Adult CoTs only, 2003-2004 and 2007, England
- 15 Percentage of CoTs Including Selected Treatments, Adult CoTs Only, 2003-2004 and 2007, England
- 16 Percentage of Courses of Treatment (CoT) Including Selected Treatments by Treatment Bands, Adult CoTs Only, 2003-2004 and 2007 England
- 17 Total Patients Seen as a Percentage of the Population in the Previous 24 Months Ending 31 March 2007 and 2007.
- 18 Comparison of Courses of Treatment Performed by Treatment Band at National, Regional and Local Level
- 19 Citizen's Advice Bureau Data on How People Go About Finding an NHS Dentist

20 The Course of Action Taken by Respondents to Citizen's Advice Bureau  
Survey Who Were Unable to Find an NHS Dentist

## 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 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.

Primary Care Trusts are required by the Department of Health to plan to meet the oral health needs of their populations. Part of this planning 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.

NHS dentistry was fundamentally reformed with the introduction of the new dental contract in April 2006. PCTs now have a statutory duty to provide dental services that reflect local needs. This Oral Health Needs Assessment is designed to inform PCT commissioning as well as facilitate the development of long-term strategies aimed at improving oral health and reducing health inequalities.

## 2. Broader Context

### 2.1 National Priorities

#### 2.1.1 Overarching NHS Priorities

##### **The NHS Operating Framework**

The Department of Health (DH) published *The NHS in England: the operating framework for 2008-09* in December 2007. This is an overarching document that frames the direction of the whole NHS over the next three years, that also includes guidance specifically for NHS dentistry. Within the six generic service priorities for the entire NHS, the priority that pertains particularly to dentistry is the obligation to reduce health inequalities.

##### **The Darzi Review of the NHS**

In reference to NHS Dentistry specifically, the NHS Operating Framework reinforces the need to develop dental services that are fair, personalised, effective and safe, in line with the vision for the wider NHS set out in Darzi interim report *Our NHS, Our Future*.<sup>1</sup> It stresses that the assessment of local health and access needs forms the basis for robust commissioning to provide high quality NHS dental services for both the short and long term. This commissioning will need to deliver improved outcomes through the longer-term, strategic approach of *World Class Commissioning*.<sup>2</sup>

##### **18 week patient pathway**

The principle of the 18-week patient pathway is that patients should receive high quality care without unnecessary delay. In practice, this means that any patient pathways that involve, or could potentially involve, consultant-led care should begin treatment within 18 weeks of the date of referral. This target has to be achieved by the end of 2008 with an interim target of 90% of non-admitted referrals and 85% of admitted referrals to reach 'first definitive' treatment within 18-weeks by March 2008. In terms of dental referrals, the 18-week rule will apply to the following:

- Referrals to a consultant-led service in either secondary or primary care.
- Referrals for a general anaesthetic (GA) service, eg extractions under GA provided by a salaried dental service.
- Referrals for care by postgraduate dental students and Specialist Registrars.
- Referrals processed through a referral management service or clinical assessment service.

## **2.2 Dental Strategic Priorities**

### **2.2.1 The New Dental Contract and the Move to Local Commissioning**

In 2003, the Health and Social Care (Community Health and Standards) Act provided the legislative framework for the new dental contract that was introduced in 1 April 2006. The new contract was designed to allow primary care dentists to work in line with evidence-based practice by focusing on prevention and health promotion and carrying out fewer interventions.<sup>3</sup> These policy changes represented a major overhaul of primary care dental services from the previous centralised fee-per-item system. The dentistry budget has now been devolved entirely to PCTs and is cash-limited, floor-funded and ring-fenced.



With the introduction of the new dental contractual arrangements in April 2006, came the move to local commissioning. PCTs became responsible for providing or commissioning primary dental services 'to the extent that it considers reasonable', which represented a significant attempt to tackle inequalities by policy-makers. Independent contractors working in the 'General Dental Service' provide the vast majority of dental services. Historically, these dentists have been free to choose where to provide services and an inverse care law (whereby those most in need of services are least likely to receive them) has been the result. PCTs now have control over funding, allowing them to match services to the needs of the local population. Over time, PCTs will increasingly be able to stipulate the location, quantity, cost or client groups of the General Dental Services, eg locating services in deprived areas where there is greatest need.

### 2.2.2 NHS Operating Framework 2008/09

The emphasis on NHS dentistry in *The NHS in England: the operating framework for 2008-09* illustrates the Government's commitment to maintain dentistry within the mainstream NHS over the long term. With the introduction of the new contractual arrangements for NHS dental services in 2006, PCTs were given a statutory duty to provide primary dental care services indefinitely. Increasing access to NHS dentistry has become a national priority and PCTs' will continue to have a legal duty to provide or commission dental services to meet all reasonable requirements for the foreseeable future.

The DH guidance *Commissioning NHS primary care dental services: meeting the NHS operating framework objectives*, launched in January 2008, emphasises the need to expand NHS dental services and increase access year on year through robust local commissioning.<sup>4</sup> This Government's commitment to NHS dentistry was reinforced with an 11 per cent increase in dental funding allocated to PCTs for 2008-2009 followed by an announcement that the ring-fencing of the NHS dentistry budget will be extended from 2009 to 2011.

This high level guidance requires that PCTs deliver the following within their local commissioning plans:

- Year on year improvements in the number of patients accessing local dental services.
- Commission high quality services to achieve improved oral health.
- Ensure that commissioned services prioritise prevention as well as treatment.
- Tailor services to need with special attention paid to hard to reach groups.
- Provide better patient information about what services are available and how to access them.

These commissioning plans should be based on local needs, oral health needs and access requirements.

### **2.2.3 Choosing Better Oral Health**

An oral health strategy document *Choosing Better Oral Health. An Oral Health Plan for England*<sup>5</sup> was published by the Department of Health in 2005. This document was designed to complement the public health white paper *Choosing Health; making healthier choices easier* and provide a good practice framework for tackling oral health inequalities.

The plan aims to reduce oral health inequalities and achieve sustained oral health improvements within the new contractual arrangements for NHS Dentistry. It emphasises the need to integrate oral health improvement with generic health improvement in order to reduce health inequalities and achieve sustained improvements.

This key aim of the oral health plan is as follows:

*“To reduce both the prevalence of oral disease and oral health inequalities across all age groups in England”*

#### **2.2.4 Supporting Documents to Choosing Better Oral Health**

A suite of 4 documents were published by the Department of Health to support the implementation of the oral health strategy document *Choosing Better Oral Health*. The 4 documents are as follows:

1. *Smokefree and Smiling*
  - Guidance for dental teams to support patients who wish to quit tobacco.
  - Published in May 2007.
  
2. *Delivering Better Oral Health*
  - A guide to prevention in general dental practice (described in detail below).
  - Published September 2007.
  
3. *Valuing People’s Oral Health*
  - A good practice guide for improving the oral health of disabled children and adults.
  - Published in November 2007.
  
4. *Improving Oral Health in Ethnic Minority Populations*
  - Guidance to improve the oral health of ethnic minorities of all age groups.
  - Currently in preparation and due to be published in 2008.

#### **2.2.5 Delivering Better Oral Health**

In the past, primary care general dental services have been treatment focused and have failed to maximize the potential benefits of a more evidence-based, preventive approach. Although the new dental contract has removed the incentive for over-

treatment inherent in the old fee-per-item system, there is still limited incentive for the general dentist to take a more preventive approach.

In September 2007, the Department of Health published the good practice guide *Delivering Better Oral Health* to support PCTs in the commissioning of preventive dental services. This document takes a population approach to prevention, endeavouring to tackle oral health inequalities by reducing levels of oral disease in all age groups. *Delivering Better Oral Health* is a reference guide on evidence-based prevention designed to be actively used by the entire primary care dental team to deliver a more preventive approach.

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*Delivering Better Oral Health* complements the new dental contract and the overarching oral health strategy document *Choosing Better Oral Health*. It encourages oral health professionals to give preventive oral health messages that are in line with generic health promotion: subject areas include increasing fluoride availability, healthy eating advice, identifying sugar-free medicines and stop-smoking guidance.

### **2.2.6 Water Fluoridation**

Best practice guidance on the *Fluoridation of Drinking Water*<sup>6</sup> was published by DH in February 2008. This guidance describes the legislative framework for water fluoridation, the evidence base of water fluoridation and the process to follow when planning a water fluoridation scheme, including technical considerations and how to conduct a local consultation.

The Secretary of State for Health, Alan Johnson, recently called for fluoride to be added to England's water supplies as a key means of tackling tooth decay<sup>7</sup> and the DH guidance encourages SHAs and PCTs to consider water fluoridation as a strategy for reducing oral health inequalities. It does however emphasise the requirement to assess the specific oral health needs of their population before reaching this decision.

### 3. Broad Context: Local Priorities

#### 3.1 SHA Priorities

Access to dental services has become a priority for the Strategic Health Authority (SHA) of the East of England. The upcoming document 'Improving Lives; Saving Lives' details eleven outcome-based pledges for the NHS in the East of England for the three years between 2008 and 2011. Pledge four focuses on dental services and reads as follows:

*"We will ensure NHS primary dental services are available locally for all who need it".<sup>8</sup>*

A three-month consultation process has just been completed on *Improving Lives; Saving Lives* and the final version is expected<sup>9</sup>.

The East of England Commissioning Framework 2008/2009<sup>10</sup> builds on this document and sets out the SHA's expectations for PCTs commissioning during 2008-2009. It includes the main priorities and specifies the actions that PCTs will need to take across a range of topics, as well as outlining financial assumptions for 2008-2009.

The key PCT business processes that are required in 2008-2009 are the development of:

- An operational plan by March 2008 that:
  - Describes local targets;
  - Defines success;
  - Details milestones;
  - Proposed LAA content on health outcomes;
  - A strategic plan for the medium term, by autumn of 2008.

Although there is a statutory duty to ensure that there is reasonable access to dentistry, it is not clear that this requirement is being met everywhere. The problems associated with accessing NHS dentistry are a recurrent theme in the media, suggesting that, in some areas at least, there is significant unmet need.

In order to meet the SHA pledge PCTs will need to:

- Agree clear local standards for accessing NHS dentistry.
- Develop a methodology to identify areas that fall below agreed standards.
- Begin to expand provision to ensure all areas meet agreed standards.
- Be in a position to give individual patients accurate information on the nearest NHS dentist(s) that will offer them an appointment.

In order to meet the SHA pledge the SHA will need to:

- Support PCTs in developing a methodology for identifying areas with poor access, and provide procurement expertise.

The SHA and PCTs will:

- Deliver year on year improvements in patient experience.
- Extend access guarantees to more of our services.
- Make our healthcare systems the safest in England.
- Improve the lives of those with long term conditions.
- Work with partners to reduce the differences in life expectancy between the poorest 20% of our communities and the average in each PCT.
- Ensure healthcare is as available to marginalised groups and 'looked after' children as it is to the rest of us.
- Cut the number of smokers by 140,000.
- Halt the rise in obesity in children and then seek to reduce it.

In February 2008 the SHA detailed the next steps PCTs would need to take to improve dental access. During 2008-2009 PCTs will need to:

- Formally define what is meant by "reasonable access" locally – September 2008.
- Systematically review current access against these standards – October 2008.
- Develop a clear action plan to improve access in areas that have an identified shortfall – December 2008.
- Provide a single point of contact for patients wishing to visit an NHS dentist – December 2008.

The dental pledge was made more explicit in a letter of 4 March 2008 from the SHA to Chief Executives of PCTs.

PCTs will be required to ensure that:

- 75% of its population will have seen a dentist within the previous two years by the end of 2010/2011.
- There is at least a 7.5% increase in patients attending the dentist (on June 2007 baseline in 2008-2009).

The role of the SHA will be to performance manage PCTs on these targets.

### **3.2 PCT Priorities**

Cambridgeshire's Local Area Agreement 2006-2009 aims to improve the quality of life in Cambridgeshire by working together to enable the county to be a prosperous, inclusive



healthy and safe area where growth is sustainably managed for the benefit of current and future residents.

This will be achieved by:

- Recognising geographical, social and economic differences within the County and responding appropriately to challenges and needs.
- Working in partnership at the local, subregional and regional level.
- Empowering local communities to engage in shaping service delivery.
- Focussing on the service user.
- Celebrating Cambridgeshire's diversity by promoting social inclusion, health and healthy lifestyles.

- Recognising and supporting the role of the voluntary sector in service delivery and community and service user involvement.
- Achieve communities that are sustainable, inclusive, safe, healthy and learning.

Specific oral health targets include:

- Increase to 95% (by 2009) the percentage of children looked after who had their teeth checked by a dentist and had an annual health assessment.

### **3.3 Annual Public Health Report 2007**

The Cambridgeshire population is generally healthier than the England average, with longer life expectancy and lower death rates from heart disease. There is more socioeconomic deprivation and poorer health in the Fenland area.

The recommendations from the Annual Public Health report that would positively affect oral healthcare are as follows:

- 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 in Cambridge City.
- 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
- Take forward the recommendations of the draft Travellers' Health Needs Assessment

## 4. Population and Demography of Cambridgeshire

### 4.1 General Population Characteristics

An estimated 578,600 people live in Cambridgeshire, a quarter of whom are aged under 20 years and just under a seventh are aged 65 years and over.<sup>11</sup>

**Table 1: Population of Cambridgeshire 2005**

Age group	Number	%
0-4	32,000	5.6%
5-15	75,900	13.3%
16-24	70,500	12.4%
25-39	119,300	20.9%
40-64	185,900	32.6%
65-74	45,300	7.9%
75+	41,300	7.2%
All ages	570,000	100.0%

Source: Research Group of Cambridgeshire County Council, mid-2005 population estimate

### 4.2 Ethnicity

Cambridgeshire has a predominantly white population overall.<sup>11</sup> Cambridge City however, has greater diversity with a higher proportion of people from non-white ethnic groups than the national average. The most noticeable proportional difference is in 'Chinese' and 'other' ethnic groups. There are also considerable numbers of travellers, migrant workers and students residing in Cambridgeshire.

**Table 2: Ethnic Composition by Local Authority**

Local authority	% White British	% White Irish/Other	% Other ethnic groups
England	87.0%	4.0%	9.0%
Cambridgeshire	91.0%	5.0%	4.0%
Cambridge	78.5%	11.0%	10.5%
South Cambridgeshire	93.3%	3.8%	2.9%
Huntingdonshire	93.4%	3.8%	2.8%
East Cambridgeshire	93.6%	4.3%	2.1%
Fenland	96.9%	1.7%	1.4%

Source: 2001 Census

### 4.3 Population Growth

Population forecasts suggest that the population of Cambridgeshire will increase by 16% by 2021, with the majority of this growth seen in Cambridge City and South Cambridgeshire.<sup>11</sup>

It is predicted that the child population will increase by 4%, particularly within Cambridge City and South Cambridgeshire. Other districts, specifically Huntingdonshire, are likely to see decreases.

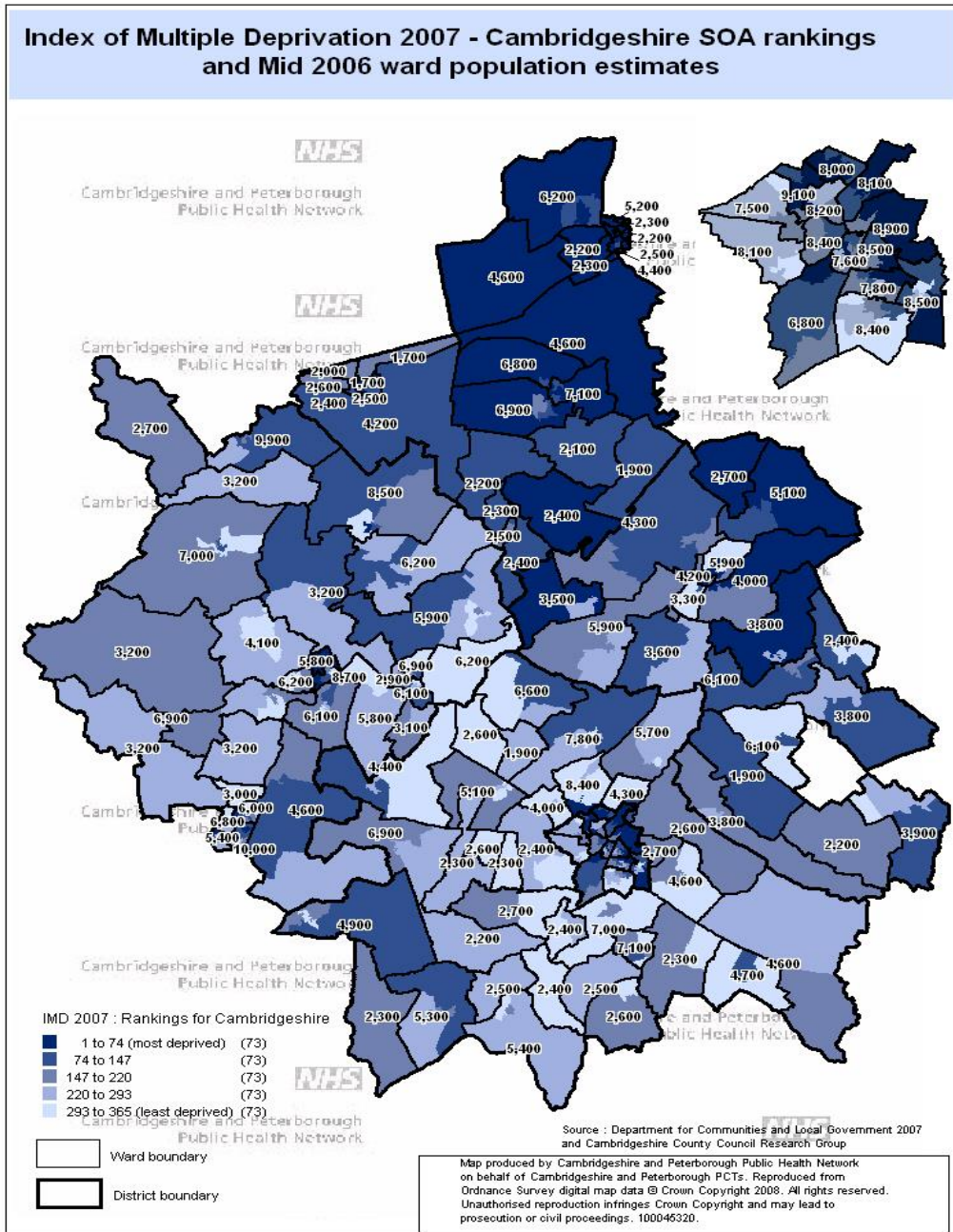
The older population aged 65 and over, is expected to increase by 60%, with the largest proportion increases in South Cambridgeshire and Huntingdonshire.

#### **4.4 Deprivation in Cambridgeshire**

Deprivation levels vary a great deal across Cambridgeshire. Areas with the highest levels of relative deprivation and highest numbers of children living in poverty are found in Fenland, north-east Cambridge and areas of Huntingdonshire.<sup>11</sup>

Unemployment rates are generally low at 1.4% on average, although again higher rates of 2.3% are found in Fenland. The highest levels of older people living on benefits areas are found within Huntingdonshire, Cambridge City and Fenland. Educational attainment is also variable across the county however, levels are lowest in Fenland and Cambridge City and eligibility rates for Free School Meals in these areas are highest overall.

#### **Map 1: Index of Multiple Deprivation 2007**



#### **4.5 Morbidity and Mortality in Cambridgeshire**

On average, Cambridgeshire has very low rates of overall mortality. Life expectancy at birth is higher across Cambridgeshire than the national average, with the exception of Fenland.<sup>11</sup>

The death rates for all cause mortality, circulatory disease, coronary heart disease, stroke and cancer are significantly lower than the national averages. The main causes of death overall are circulatory disease and cancer. In children, the main causes of death are conditions originating in the perinatal period and transport accidents.

Cambridge City and Fenland have a significantly greater number of people who considered themselves to have a limiting long term illness at the time of the 2001 Census than would be expected given the size and structure of their population.

## 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.<sup>12</sup> 'Free sugars' include all monosaccharides and disaccharides as well as those naturally present in honey, fruit juices and syrups.<sup>12</sup> The annual consumption of free sugars has increased since the 1970s.<sup>13</sup> 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.<sup>14</sup> 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.<sup>14</sup>

#### 5.1.3 Oral Cancer

Oral cancer is a generic term that is used to describe all malignancies of the oral cavity, oropharynx and hypopharynx (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.<sup>15</sup> An estimated 10–15% of oral cancers may be caused by unhealthy diets.<sup>16</sup>

#### 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.<sup>17</sup> 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.<sup>18</sup> Because malocclusion is not a disease and orthodontic treatment carries risks (eg root resorption, decalcification and non-improvement)<sup>17</sup> 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:<sup>19</sup>.

- 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.

#### 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:

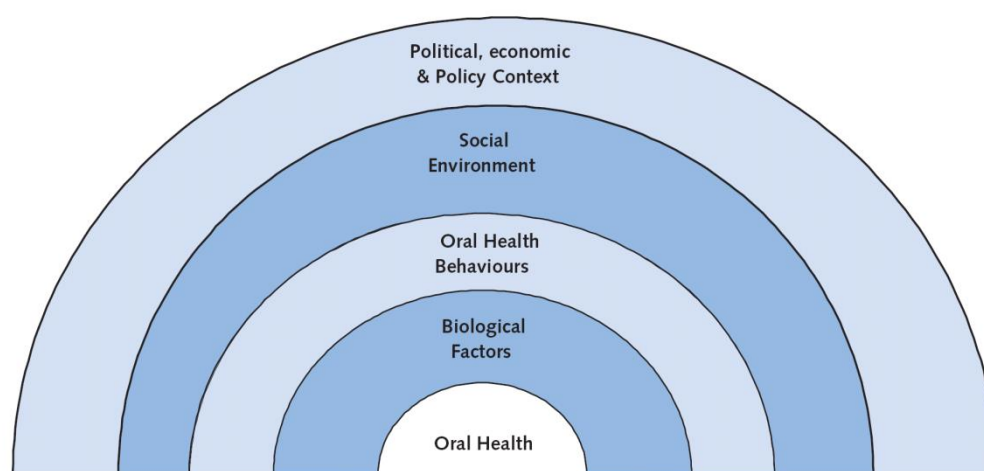
1. Poor diet and nutrition:
  - High consumption of free sugars leads to dental caries.
  - Poor nutrition can increase risk of oral cancer.
2. Poor oral hygiene:

- 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 1). 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 1: The Underlying Causes of Oral Health**



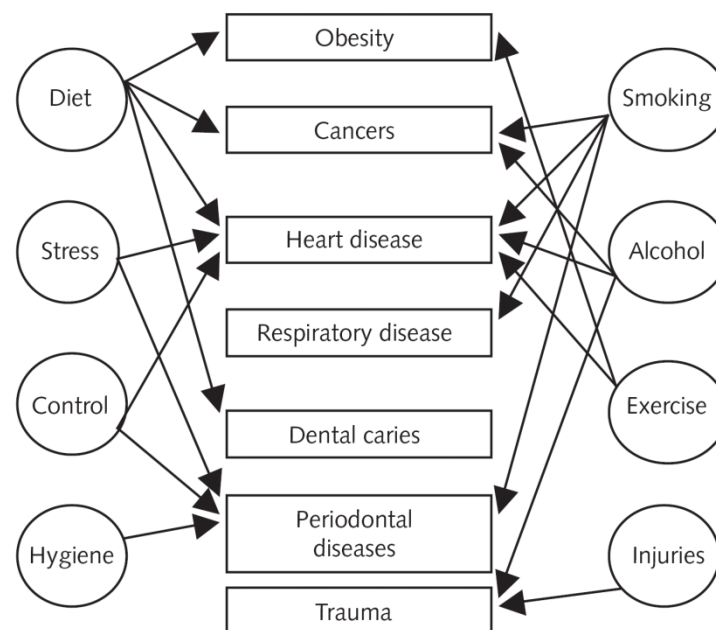
Source: Modified from Watt, 2005 in Department of Health Choosing Better Oral Health. An Oral Health Plan for England. 2005 Available at URL: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4123251](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4123251)

### 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.<sup>20</sup> See Figure 2.

**Figure 2: 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](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

The Health Survey for England suggests that 25.0% of adults in Cambridgeshire are obese.<sup>21</sup> This figure is higher than the England average of 21.8%.

There appears to be an association between dental caries and obesity, although there is limited supporting evidence at this time.<sup>22</sup> 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.

### 5.5.2 Smoking

The estimated proportion adults who smoke in Cambridgeshire is lower than the England average,<sup>21</sup> however, over 800 people a year die from smoking related causes in this area. 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.<sup>23</sup>

### 5.5.3 Alcohol

The Health Survey for England suggests that 17.4% of adults in Cambridgeshire are binge drinkers.<sup>21</sup> 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).<sup>24</sup> 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.<sup>25</sup>

### 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.<sup>26,27</sup> Prolonged drug use is often associated with self-neglect and a cariogenic (decay promoting) diet.<sup>28</sup> There are indications that drug addicts experience severe dental and periodontal tissue destruction.<sup>29</sup>

In comparison with the general population, drug users tend to have poorer oral health and display lower utilisation of dental services<sup>30</sup>. In Cambridgeshire there are 5.2 adult drug misusers per 1,000 population.<sup>22</sup> Although this is significantly better than the England average (9.9/1000), this group has special dental needs and require greater access to dental care than most.

## 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**  
Cambridgeshire has relatively low levels of income deprivation, however Fenland, northeast Cambridgeshire and areas of Huntingdonshire have the highest levels of relative deprivation. 1 child in 9 in Cambridgeshire lives in a household dependent on means-tested benefits.<sup>21</sup>

- **People who have learning disability**  
Individuals with disabilities experience more oral disease and have fewer teeth than the general population. They also have greater unmet dental needs<sup>31</sup> as they have more difficulty in accessing dental care.<sup>32</sup> 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<sup>33</sup>
- **People with mental illness**  
Over 15% of adults are estimated to be claiming benefits for mental or behavioural disorders in Cambridgeshire.<sup>21</sup>
- **People in long term institutional care (including residential homes, psychiatric hospitals, prisons)**  
The standard of oral health in prison populations, for example, is significantly worse than that of the general population.<sup>34</sup> Cambridgeshire has two prisons: HMP Whitemoor and HMP Littlehey. 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).<sup>35</sup> Evidence suggests that there is a substantial amount of unmet need in British prisons.<sup>36</sup>
- **Homeless people**  
Homeless people tend to have poorer health than the rest of the population. The level of statutorily homeless households in Cambridgeshire is slightly lower than the national average at around 6% (cf. national level of 7.8%).<sup>21</sup> 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<sup>37</sup>. 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.<sup>38</sup> Homeless people tend to have fewer remaining teeth and heavy plaque accumulation.<sup>39</sup> Despite these high levels of need however, homeless people experience difficulty in accessing dental services<sup>40</sup>
- **Some ethnic minority groups (where they are socially disadvantaged)**  
Data on the oral health of ethnic minorities are not routinely collected in the UK; therefore knowledge of the oral health status of different groups is limited. The two main ethnic groups likely to have significant oral health needs in Cambridgeshire are Asian groups and Travellers.
- **Asian Community**  
Evidence suggests that the oral health of this group is poorer than that of their indigenous White peers and that subsequent, British born generations, tend to have even higher caries experience.<sup>41</sup> Caries levels are high in children, while older Asians of Pakistani origin tend to suffer from periodontal disease.<sup>42</sup>

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.<sup>43</sup> 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.<sup>44</sup> The limited data available supports this supposition. Access to health services appears to be minimal<sup>44</sup> 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.<sup>44</sup>

- **Elderly people 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) will cause difficulties in controlling and retaining dentures.<sup>45</sup> 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.<sup>46</sup>

## 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. At a local level, the British Association for the Study of Community Dentistry (BASCD) co-ordinates regular surveys of children's teeth.

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

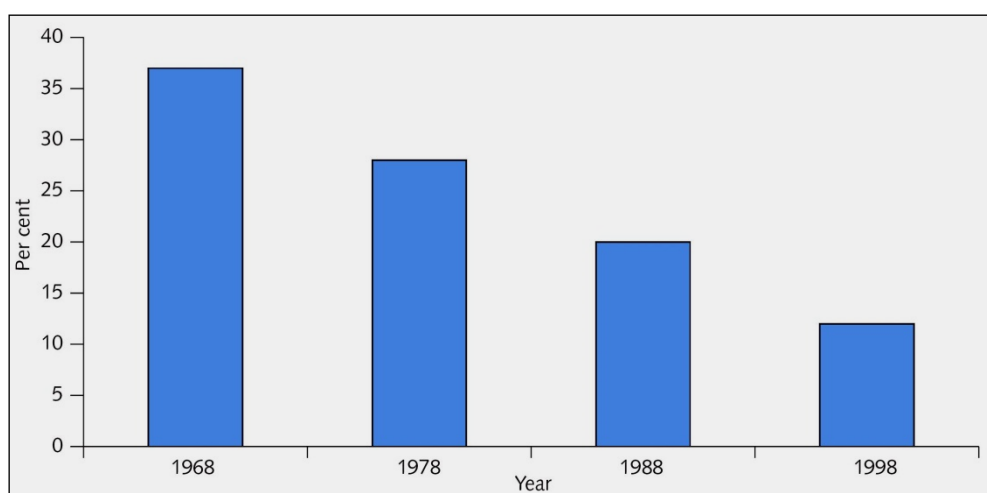
The dental health of adults and children has improved significantly in recent years however population averages mask oral health inequalities. A well-recognised association exists between socio-economic status and oral health, and trends suggest that disease is increasingly concentrated in the lower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

## 7. Oral Health in Adults

### 7.1 Dental Caries

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.<sup>47</sup> During the post-war years, the nation's oral health was poor and dental disease was rife<sup>48</sup> 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 12% in 1998 (see Figure 3).

**Figure 3: The Proportion of Adults with No Natural Teeth in England, 1968–1998**



Source: National Adult Dental Health Surveys, 1968 to 1998. Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E and White D (2000). In *Choosing Better Oral Health*, Department of Health (2005) <http://www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf>

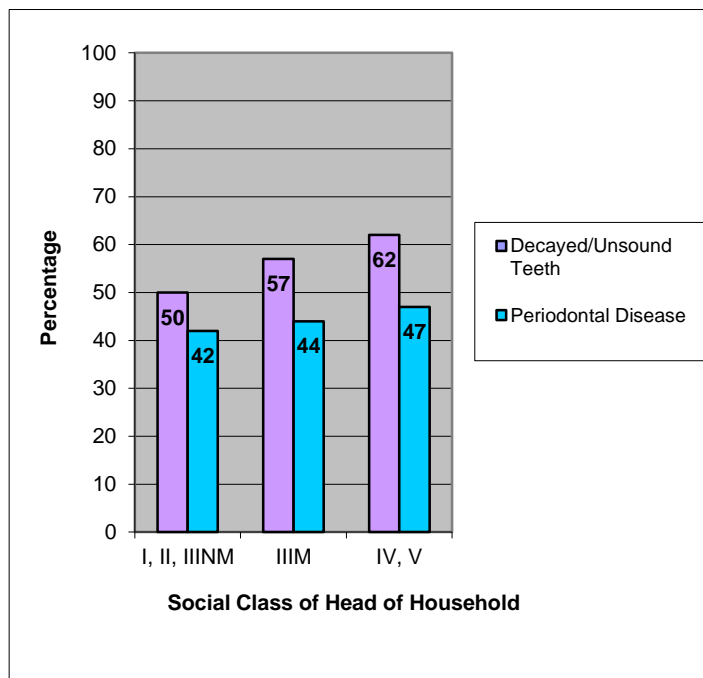
National surveys, conducted decennially, show that adult dental health is improving and almost a third of young adults (aged 16-24 years) have no fillings. More adults are keeping their teeth into older age and edentulousness is expected to drop to 8% by 2008.<sup>49</sup> It is predicted that by 2028, 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.<sup>50</sup>

The average number of decayed teeth has dropped substantially from 1.9 teeth in 1978 to 1.1 teeth in 1998<sup>51</sup> and the proportion of younger adults, with a sound dentition (ie without any dental restorations or decay) has risen dramatically from 9% in 1978 to 30% in 1998<sup>52</sup>.

### **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 4. This highlights that the prevalence of oral disease is highest in areas of social deprivation

**Figure 4: Proportion of Adults with Decayed/Unsound Teeth or Periodontal (Gum) Disease by Social Class**

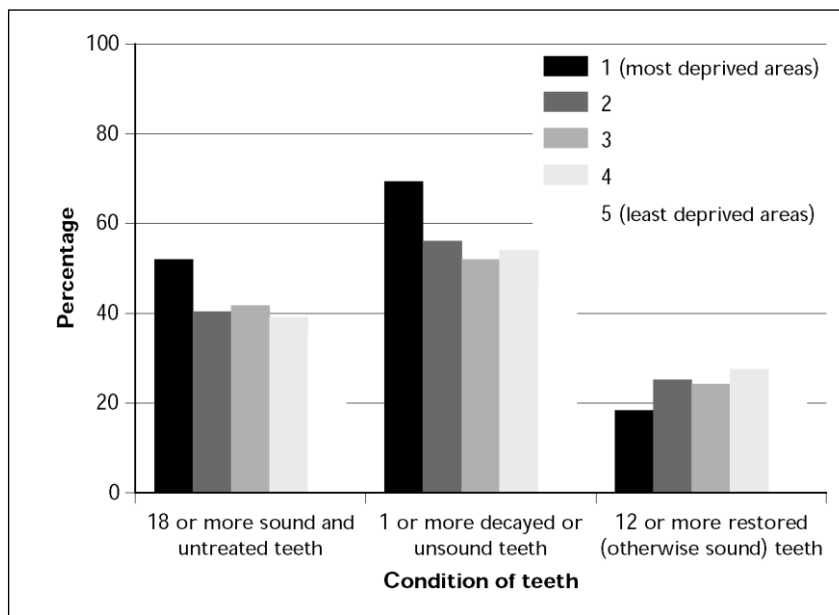


Source: Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E, White D. Adult Dental Health Survey. Oral Health in the United Kingdom 1998.

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 5.



**Figure 5: The Condition of Teeth Among Dentate Adults in England by Jarman Area**

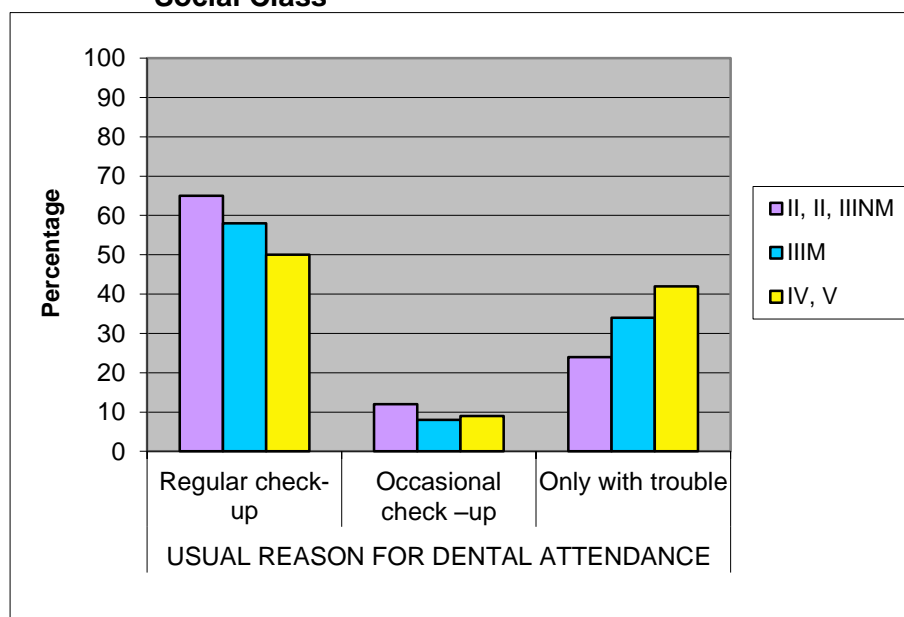


Source: Kelly M, Steele J, Nuttall N, Bradnock G, Morris J, Nunn J, Pine C, Pitts N, Treasure E, White D. Adult Dental Health Survey. Oral Health in the United Kingdom 1998. Available at URL: [http://www.statistics.gov.uk/downloads/theme\\_health/AdltDentHlth98\\_v3.pdf](http://www.statistics.gov.uk/downloads/theme_health/AdltDentHlth98_v3.pdf)

**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 6). Figure 5 shows that much decay goes untreated (even in the least deprived socio-economic groups the proportion of untreated decay is as high as 50%).

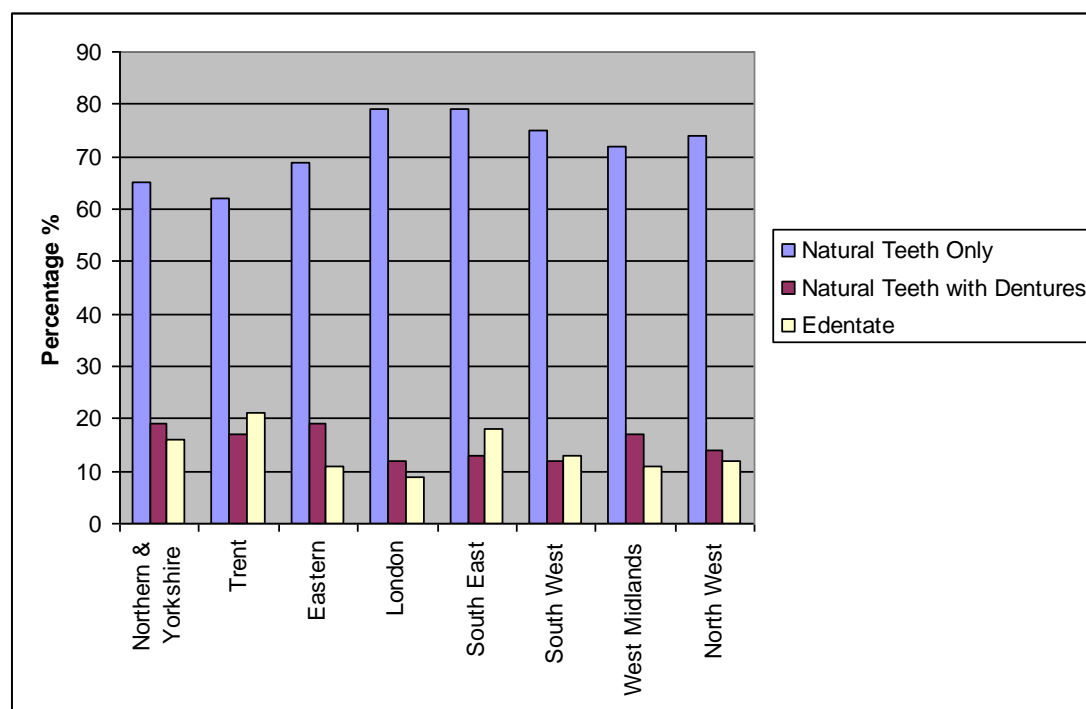
**Figure 6: Reported Usual Reason for Dental Attendance of Dentate Adults by Social Class**



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 Cambridgeshire**

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. The findings of the most recent adult survey (1998) suggests that oral health inequalities are geographically clustered; as Figure 7 shows, adults in the South of England tend to have better oral health than adults in the North.

**Figure 7: Dental Status of Adults in England by Region**

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.

## 7.2 Gum (Periodontal) Disease in Adults

It is difficult to collect robust data on periodontal disease, however national surveys suggest that the incidence of severe periodontal disease is declining.<sup>52</sup> Nevertheless, chronic periodontitis still affects a significant proportion of the population. The most recent Adult Dental Health Survey, in 1998, found that 54% experience chronic periodontitis. 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<sup>53</sup> and are, therefore, at significant risk of tooth loss.

### 7.2.1 Inequalities in Gum Disease Among Adults

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 4 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.

### **6.3 Oral Cancer in Adults**

The prevalence of oral cancer had been declining steadily over the past few decades, but it has recently begun to rise<sup>54</sup>. 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%.<sup>55</sup> 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.

Incidence of oral cancer increases with age from 30 years, although prevalence is beginning to increase in younger adults.<sup>56</sup> 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.<sup>57</sup>

### 7.3.1 Prevalence of Oral Cancer in Cambridgeshire

Local data on oral cancer are not routinely collected however hospital data can be used to estimate prevalence. Table 3 shows that over the past 3 years, 40 patients have attended hospital for treatment for oral cancer (mostly cancer of the tongue). Of these 40 patients, 72% were aged between 55 and 74.

**Table 3: Numbers of Cambridgeshire Residents\* Who Attended Hospital for Oral Cancer Treatment 2004 to 2007**

Year	Cambridge
2004/05	10
2005/06	18
2006/07	12

Source: HES data from Cambridgeshire PCT

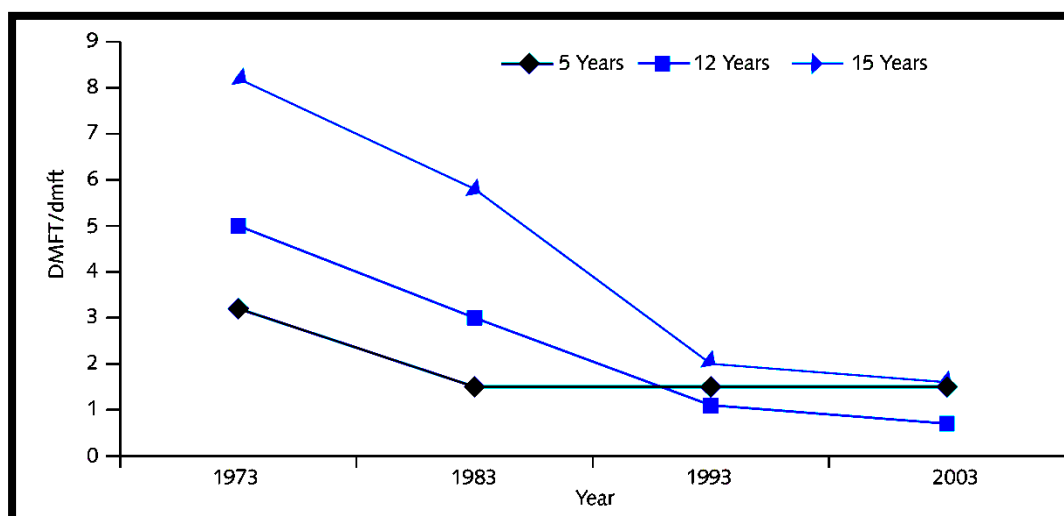
\*1 person may be counted in both years

## 8. Oral Health in Children

### 8.1 Dental Caries in Children

The prevalence of dental caries in young children has decreased substantially over the past 40 years (see Figure 11). 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.

**Figure 8: Changes in Mean dmft/dmft Over Time for Children in UK**



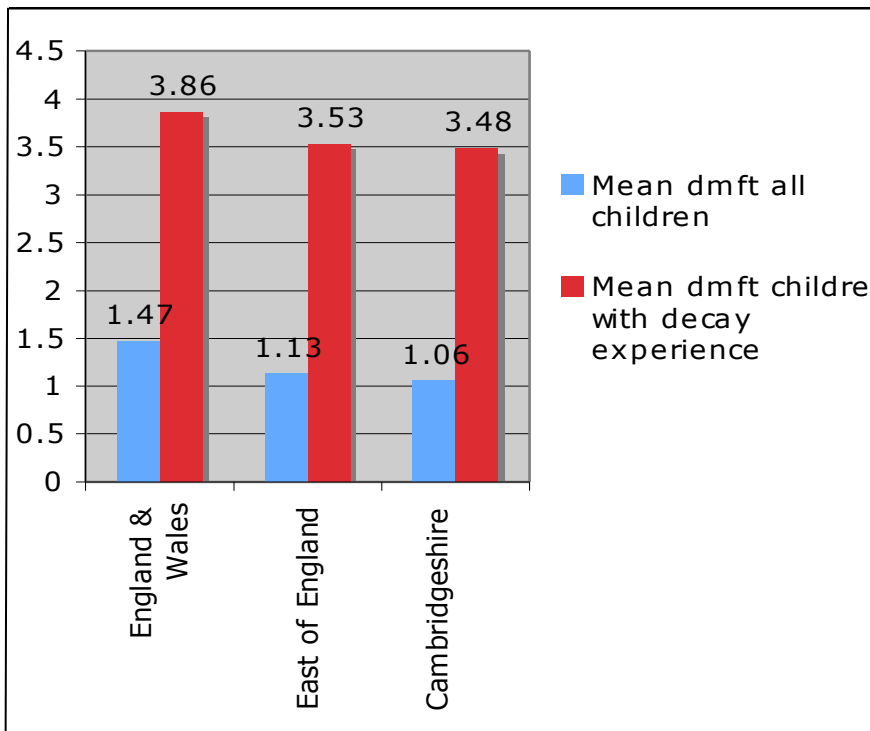
Source: National Children's Dental Health Surveys 1973 to 2003. Harker R and Morris J (2005). Office for National Statistics, London. In Choosing Better Oral Health, Department of Health (2005): <http://www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf>

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.

#### 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 Figure 9 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 9).

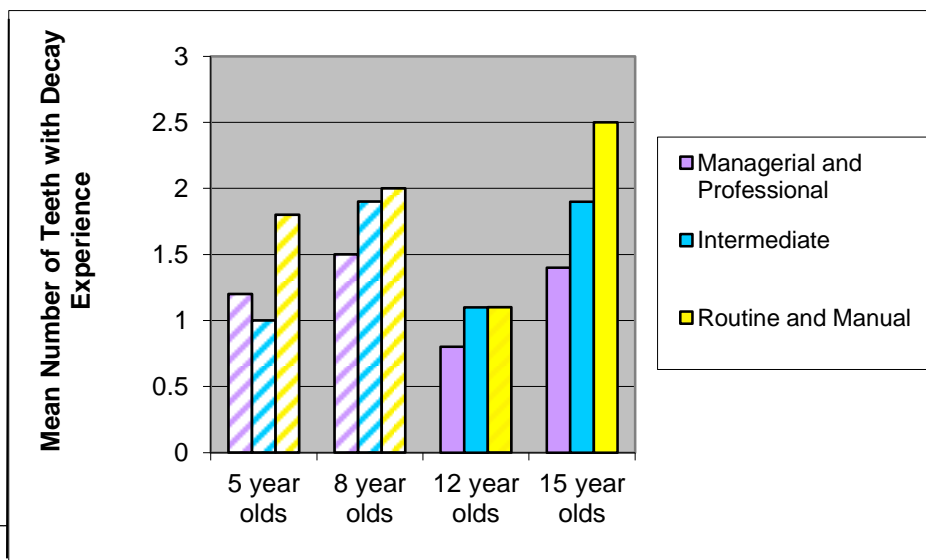
**Figure 9: Comparison of Mean dmft For All 5-Year-olds with Decay Experience at Local, Regional and National Levels 2005-2006**



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=](http://www.bascd.org/viewdoc.php?doc_id=45&offset=0&keyword=)

Dental caries, like many other diseases, is increasingly associated with social deprivation.<sup>58</sup> Children from socially disadvantaged groups experience disproportionately high levels of dental disease.<sup>59</sup> 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 Figure 10).<sup>60</sup>

**Figure 10: Mean Number of Teeth with Obvious Decay Experience by Socio-Economic Status of Household in the UK 2003\***



Source (Figure 10 previous page): 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=](http://www.bascd.org/viewdoc.php?doc_id=45&offset=0&keyword=)

\*Hashed columns indicate primary teeth, solid columns indicate permanent teeth

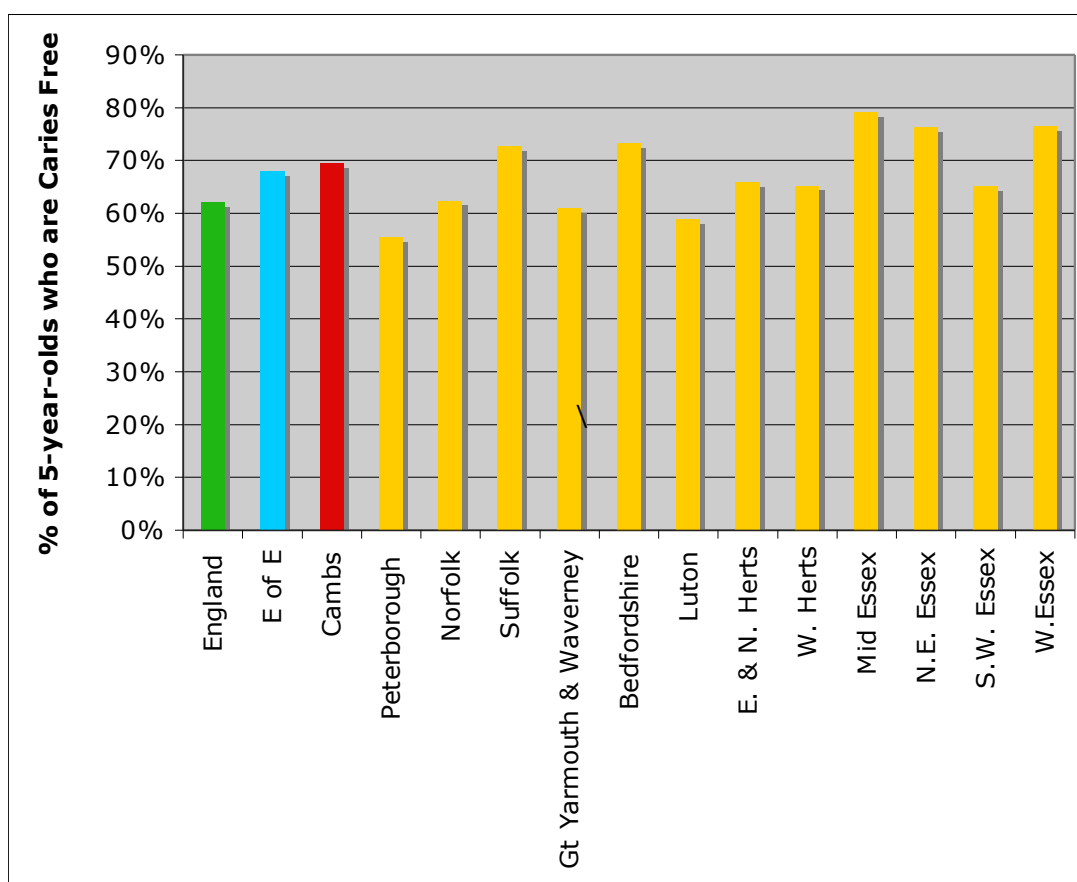
Similarly, there is a correlation between the percentage of children with decay experience (% of children caries free) and deprivation. This means that deprived groups are more likely to have decay experience. Figure 10 shows that this pattern is seen in both the primary and secondary teeth.

## 8.2 Oral Health in Children in Cambridgeshire

### 8.2.1 Dental Caries

The dental health of children in Cambridgeshire is relatively good. Local data on the oral health of children are regularly collected through British Association for the Study of Community Dentistry (BASCD) co-ordinated surveys. In the sample surveyed during 2005-2006, around 70% of five-year-olds in Cambridgeshire had no experience of dental decay. This compares favourably with regional and national levels, as shown in Figure 11.

**Figure 11: The proportion of Caries-free 5-Year Olds Nationally, Regionally and Locally 2005 to 2006**

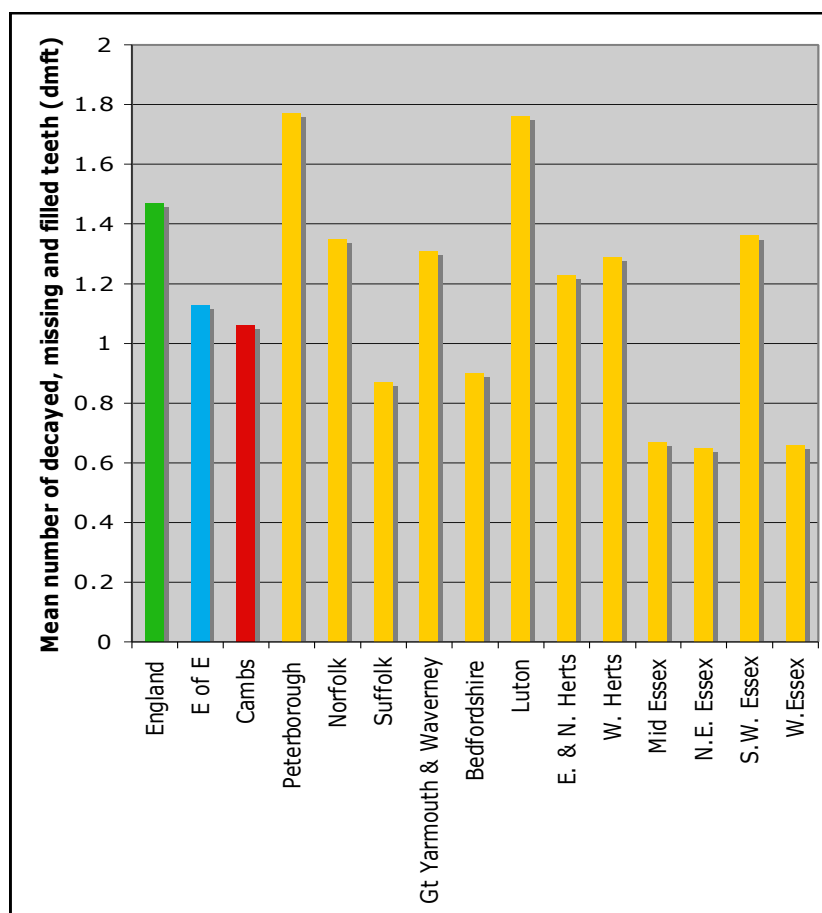


Source: The dental caries experience of 5-year-old children in Great Britain (2005/2006). Surveys co-ordinated by the British Association for the Study of Community Dentistry.. NB. Pitts, J Boyles, Z.J. Nugent, N. Thomas, and C.M. Pine . Available at URL: [http://www.bascd.org/viewdoc.php?doc\\_id=45&offset=0&keyword=](http://www.bascd.org/viewdoc.php?doc_id=45&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



Five-year old children in Cambridgeshire have on average 1.1 decayed, missing or filled teeth (dmft). Again this compares favourably with the regional and national average (5-year-olds in England and Wales for example, have an average of 1.5 decayed, missing or filled teeth) as Figure 12 shows.

**Figure 12: Comparison of the Mean Number of Decayed, Missing and Filled Teeth (dmft) in 5-Year Olds in Cambridgeshire to the Regional and National Average 2005-2006**



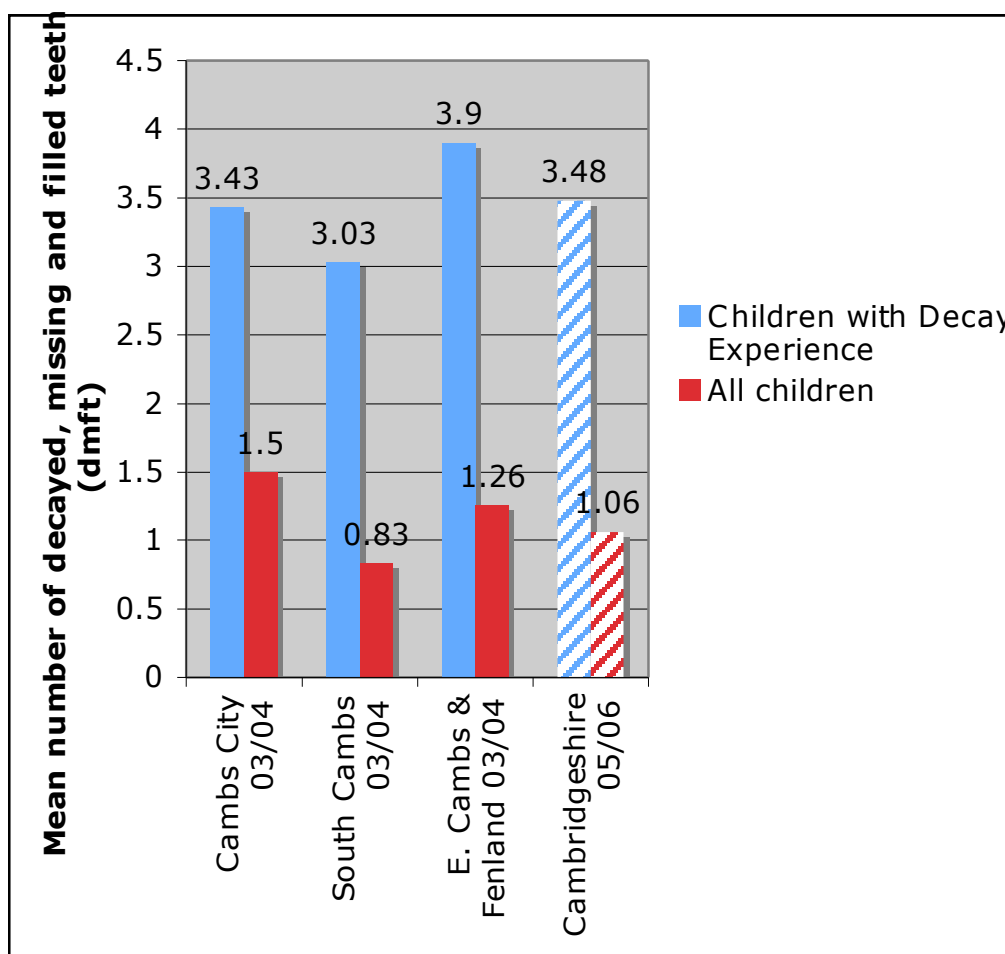
Source: The dental caries experience of 5-year-old children in Great Britain (2005/2006). Surveys co-ordinated by the British Association for the Study of Community Dentistry.. NB. Pitts, J Boyles, Z.J. Nugent, N. Thomas, and C.M. Pine . Available at URL: [http://www.bascd.org/viewdoc.php?doc\\_id=45&offset=0&keyword=](http://www.bascd.org/viewdoc.php?doc_id=45&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

It is clear from Figures 12 and 13 that both the proportion of five-year-olds who have decay experience and the mean dmft of five-year-olds varies substantially across the East of England. While Cambridgeshire compares well with the regional average, the unfavourable comparisons with PCTs like Suffolk and Bedfordshire show that there are still improvements to be made.

### 8.2.2 Inequalities in Oral Health of Children in Cambridgeshire

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 dmft values across the whole population and dmft values in those with decay experience can be seen in figure 9. In Cambridgeshire the average value is 1.1 teeth yet those with decay experience have an average of 3.5 decayed teeth (see Figure 13).

**Figure 13: Comparison of Mean dmft for All 5-Year-Olds with Decay Experience Across Cambridgeshire PCT(s) 2003-2004 to 2005-2006**



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=](http://www.bascd.org/viewdoc.php?doc_id=45&offset=0&keyword=)

\* The 05/06 data has only one PCT due to PCT boundary changes.

† The shaded columns represent 05/06 data. The non-shaded columns represent 03/04 data.

### 8.3 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.<sup>61</sup>

Orofacial clefts occur in around 1 in 500 live Caucasian births.<sup>17</sup> 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.

### 8.4 Orthodontic Treatment Need

The most recent Children's Dental Health Survey in 2003 found that 35% of 12-year-olds in England would benefit from orthodontic treatment.<sup>62</sup> 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<sup>17</sup>, e.g. girls receive more treatment than boys and adolescents in deprived areas are more likely to have untreated malocclusion.<sup>63</sup> Local data on the prevalence of malocclusion are not routinely collected.

## 9. Current Service Provision

### 9.1 General Dental Services

#### 9.1.1 National Activity

A new dental contract was introduced in England and Wales on 1st April 2006, bringing with it a fundamental reform of the remuneration system. Under the previous system, dentists were paid a fee for each item of treatment, however under the new contract, dentists are paid an agreed annual contract on the basis of completed courses of treatment (CoTs). Each course of treatment is allocated a number of Units of Dental Activity (UDAs), which dentists accumulate to meet the terms of their contract.

A Course of Treatment (CoT) is defined as 'an examination of a patient, an assessment of their oral health, and the planning of any treatment to be provided to that patient as a result of that examination and assessment' and 'the provision of any planned treatment (including any treatment planned at a time other than the time of the initial examination) to that patient.

CoTs are classified into treatment bands, according to their complexity. Bands range from 1 (simple treatment) to 3 (complex treatment) and there is a separate band for urgent treatment. Each band has an associated patient charge (see Table 4).

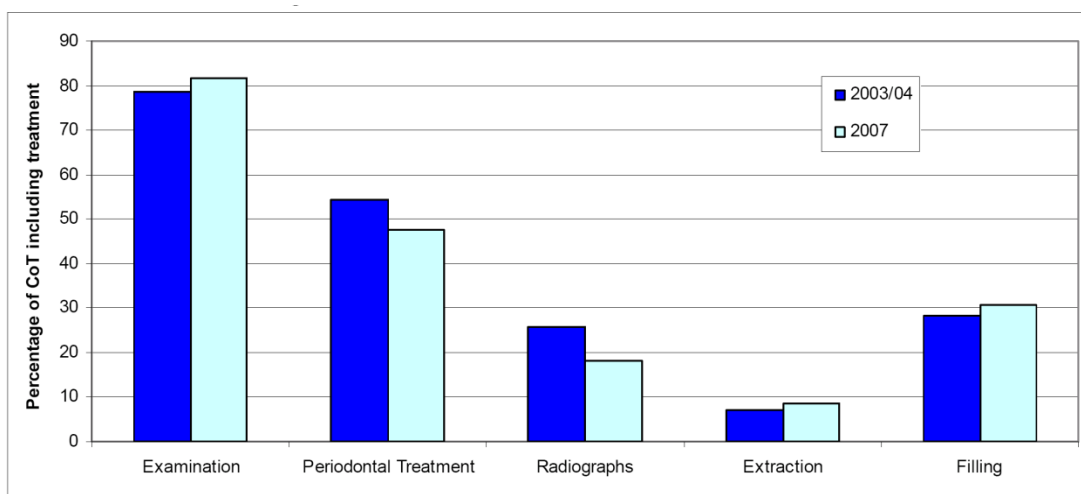
**Table 4: Summary Table of Treatment Bands and Associated Charges and Units of Dental Activity**

Treatment Band	Cost to patient	Treatment included	Number of associated Units of Dental Activity (UDAs)
1	£16.20	This covers an examination, diagnosis (eg: x-rays), advice on how to prevent future problems, and a scale and polish if needed	1
2	£44.60	This covers everything listed in Band 1, above, plus any further treatment such as fillings, root canal work or if your dentist needs to take out one or more of your teeth.	3
3	£198.00	This covers everything listed in Bands 1 and 2 above, plus crowns, dentures or bridges.	12
Urgent	£16.20	When you need to see a dentist immediately. Covers cost of 1 associated filling.	1.2

As a result of these changes in the dental contract, activity patterns have changed, as illustrated in Figures 14, 15 and 16.

There has been a relatively small decrease in the proportion of CoTs that include periodontal treatment and radiographs. The proportion of CoTs that included examination, extraction and fillings increased slightly, while those involving root fillings have dropped significantly from almost 3.5% to just under 2%. Similarly, the proportion of CoTs that include any advanced restorative work (involving lab work) has decreased, eg veneers, crowns, inlays and bridgework. Dentures, on the other hand, are more commonly provided now than in 2003-2004 (see Figure 18).

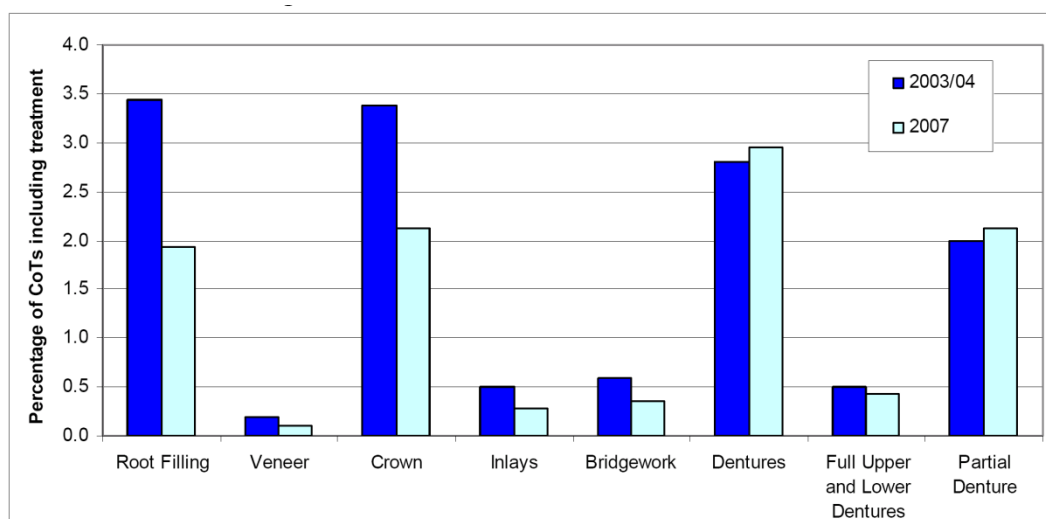
**Figure 14: Percentage of Courses of Treatment (CoTs) Including Selected Treatments, Adult CoTs only, 2003-2004 and 2007, England\***



\*Data taken from a sample of 3,244 CoTs processed between April and July 2007, covering dental contracts across England and compared to equivalent information for 2003/04.

Source: The Information Centre Dental Treatment Band Analysis England 2007 Preliminary Results. 2007 Available at URL: <http://www.ic.nhs.uk/pubs/dental/ba07>

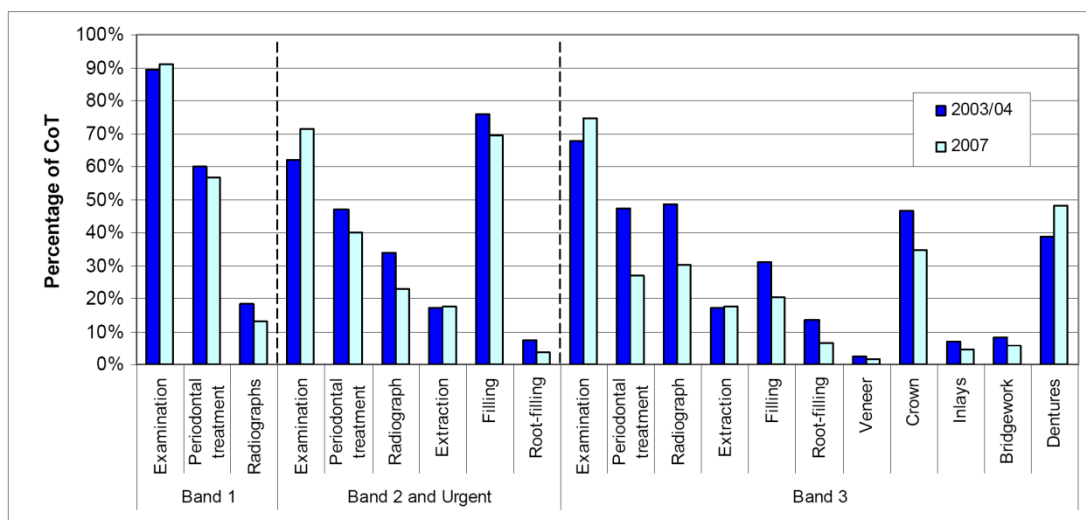
**Figure 15: Percentage of CoTs Including Selected Treatments, Adult CoTs Only, 2003/04 and 2007, England\***



\*Data taken from a sample of 3,244 CoTs processed between April and July 2007, covering dental contracts across England and compared to equivalent information for 2003/04

Source: The Information Centre Dental Treatment Band Analysis England 2007 Preliminary Results. 2007 Available at URL: <http://www.ic.nhs.uk/pubs/dentalba07>

**Figure 16: Percentage of Courses of Treatment (CoT) Including Selected Treatments by Treatment Band, Adult CoTs Only, 2003/04 and 2007, England**



Source: The Information Centre Dental Treatment Band Analysis England 2007 Preliminary Results. 2007 Available at URL: <http://www.ic.nhs.uk/pubs/dentalbta07>

**9.1.2 Local General Dental Services Activity**

The first year of the new dental contract saw the proportion of the population of Cambridgeshire to be seen by an NHS dentist decrease very slightly from 51.9% to 51.3% (see Table 5 and Figure 17).

**Table 5: Comparison of the Proportion of Patients Seen (by Adult/Child), at Local, National and Regional Level, in the Previous 24 Months Ending 31 March 2006 and 31 March 2007**

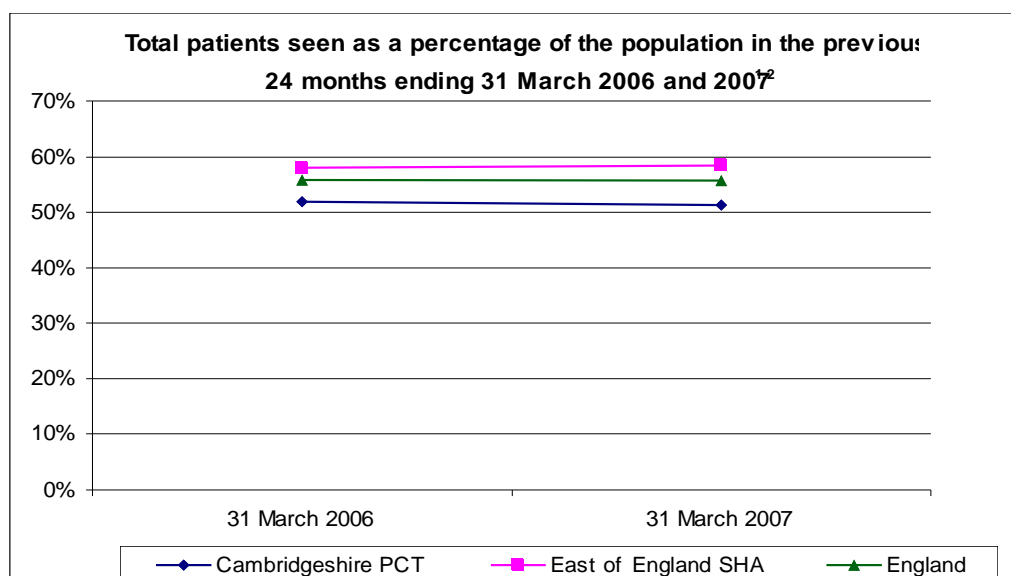
	31 March 2006			31 March 2007		
	ADULT	CHILD	TOTAL	ADULT	CHILD	TOTAL
<b>CAMBRIDGESHIRE PCT</b>	47.9%	66.9%	51.9%	47.2%	66.8%	51.3%
<b>England</b>	51.7%	70.6%	55.8%	52%	70.7%	55.7%
<b>East of England SHA</b>	54.2%	71.6%	58.0%	55%	72.2%	58.5%

Source: NHS Dental Statistics for England: 2006-07. 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-2006-07>





**Figure 17: Total Patients Seen as a Percentage of the Population in the Previous 24 Months Ending 31 March 2006 and 2007**



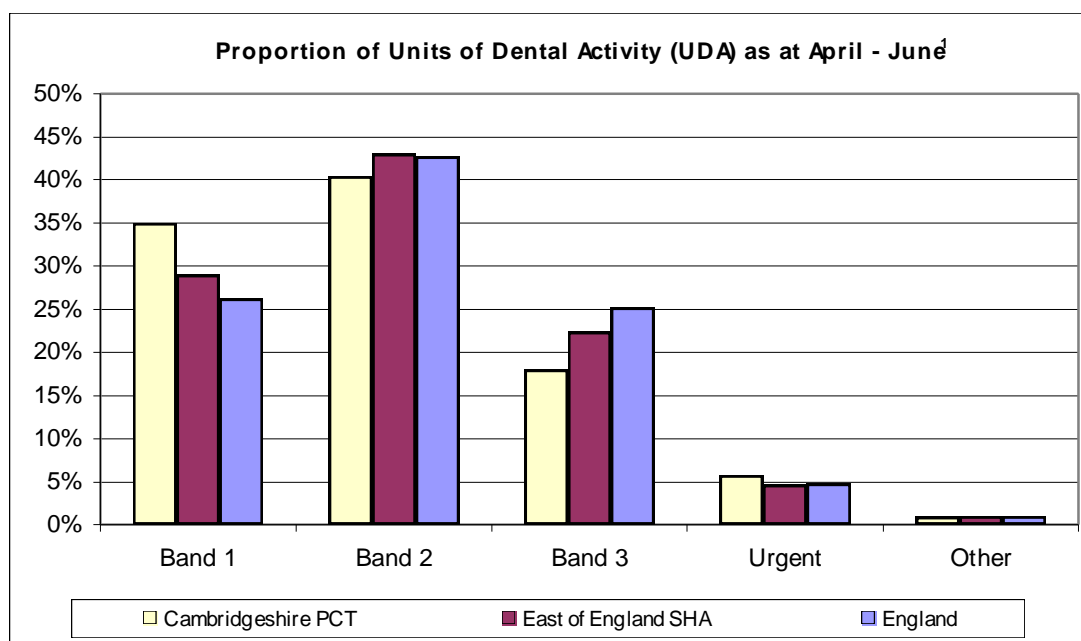
Source: NHS Dental Statistics for England: 2006-07. Annex 2: PCT & SHA Factsheet, Activity Statistics. Available at URL: <http://www.ic.nhs.uk/statistics-and-data-collections/primary-care/dentistry/nhs-dental-statistics-2006-07>

The local picture for dental access does not compare favourably with the regional and local picture. Access has decreased slightly from 51.9% of the population to 51.3% over the first year of the new dental contract.

### 9.1.3 Courses of Treatment Performed by Treatment Band

Figure 18 shows that a good spread of treatments are being carried out in Cambridgeshire, although the proportion CoTs in each band differs from the regional and national picture. Band 1 treatments in Cambridgeshire, for example, are around 10% higher than the regional figure, while Band 3 treatments are around 8% lower than the national figure.

**Figure 18: Comparison of Courses of Treatment Performed by Treatment Band at National, Regional and Local Level**



Source: NHS Dental Stats for England 2007/08, Quarter 1:30 June 2007. Annex 2: PCT and SHA Factsheet

#### 9.1.4 Mapping of General Dental Services Provision

April 2006 saw the most fundamental change in the way dental services are commissioned and provided since the inception of the NHS. Following the 2003 Health and Social Care Act PCTs, for the first time, held the entire dental budget and became responsible for the local commissioning of NHS dental services. The dental budget is ring-fenced until 2011 when it will be moved into the PCT's unified budget. The budget was based on historical spend and, consequently, areas with good provision and more services received more funding. Similarly, areas with poor provision and limited access received less funding.

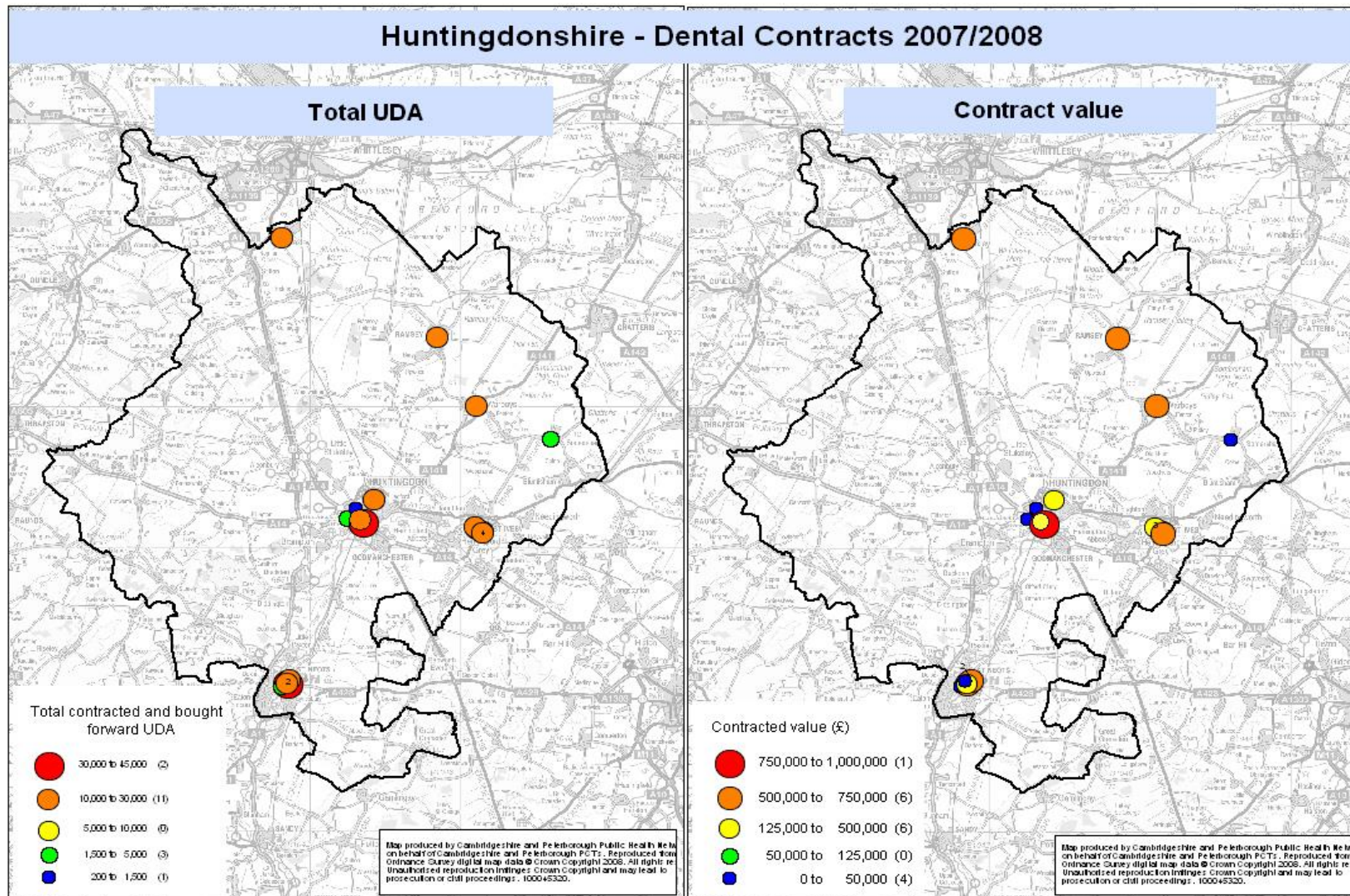
Historically, dental practices, which are independent businesses, have been established in more affluent areas with less provision in more deprived areas. Poor oral health is linked to deprivation and in the case of dental services the inverse care law applies. Areas with higher deprivation and more need for dental services are less likely to have that provision and the funding that is attached to it.

In Cambridgeshire, the areas with the highest level of relative deprivation and highest number of children living in poverty are found in Fenland, north-east Cambridge and areas of Huntingdonshire. The following maps show dental service provision, measured by contract value and commissioned UDA activity, against deprivation. Central Cambridge is well provided for while Fenland has the lowest level of dental provision.

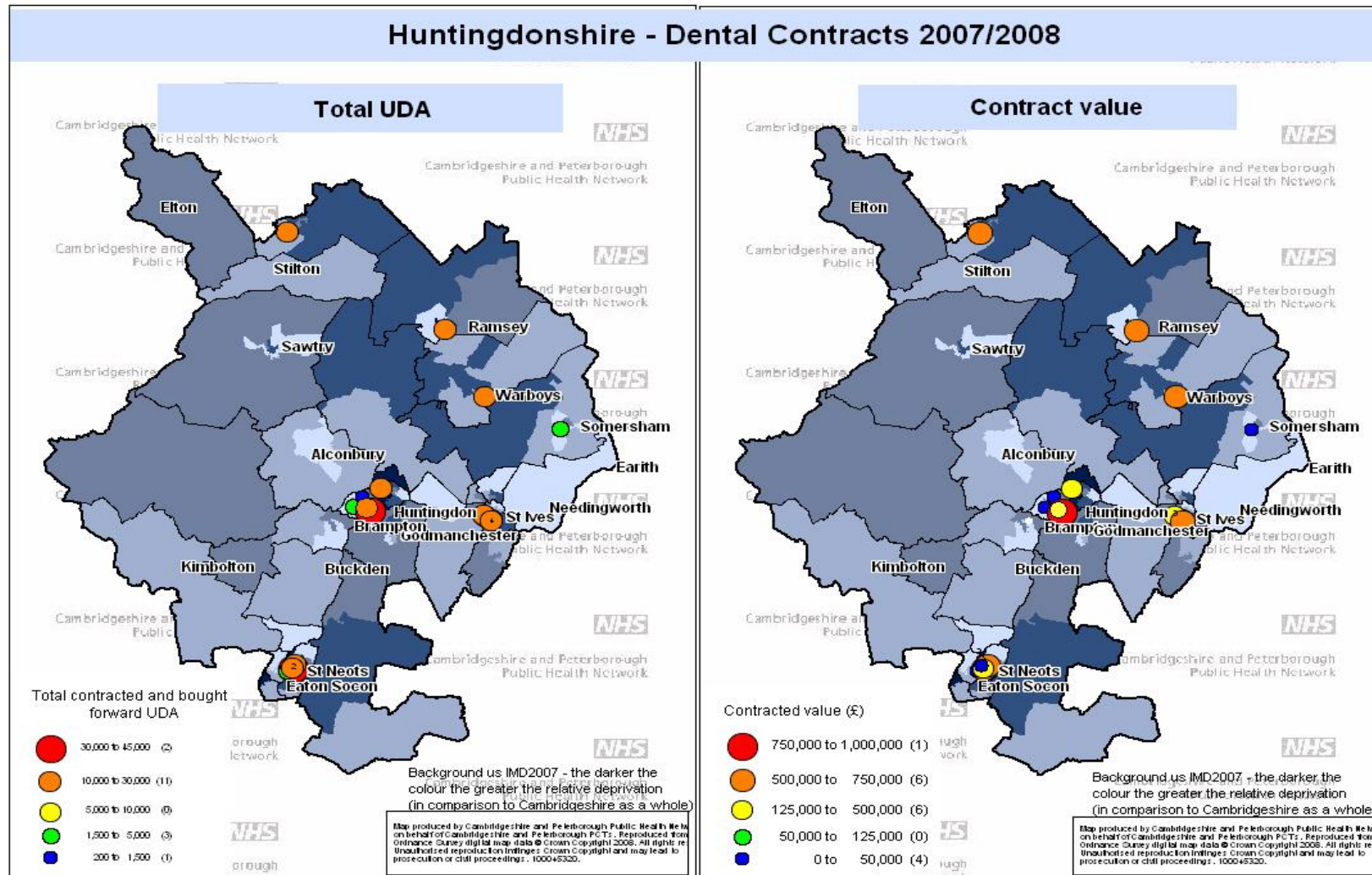
For the first time, the PCT has the opportunity to commission dental services in areas of highest need where in the past provision has been low and access to both routine and urgent care limited.

**Mapping of General Dental Services Provision**

**Map 2a: Huntingdonshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity**

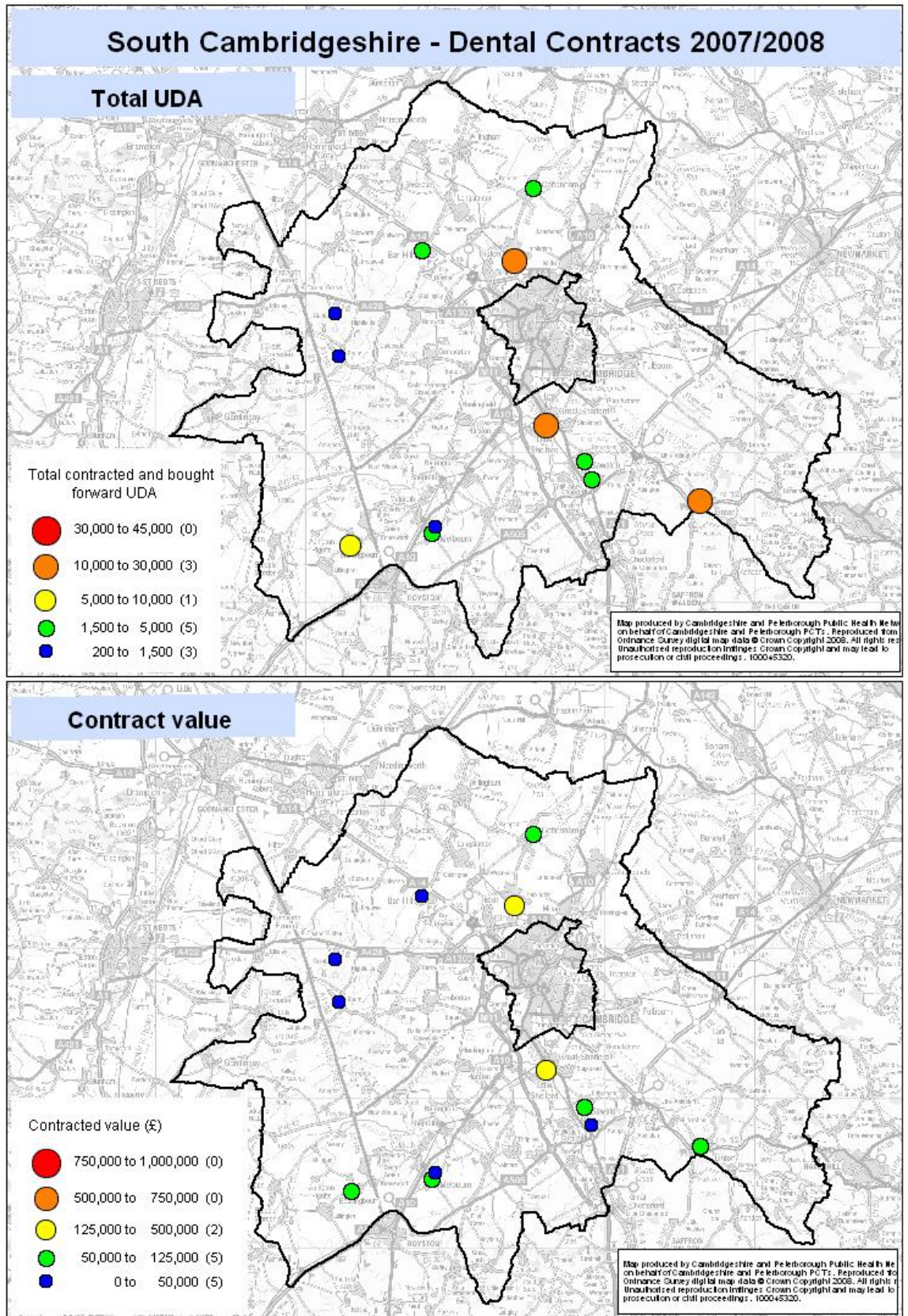


**Map 2b: Huntingdonshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation**

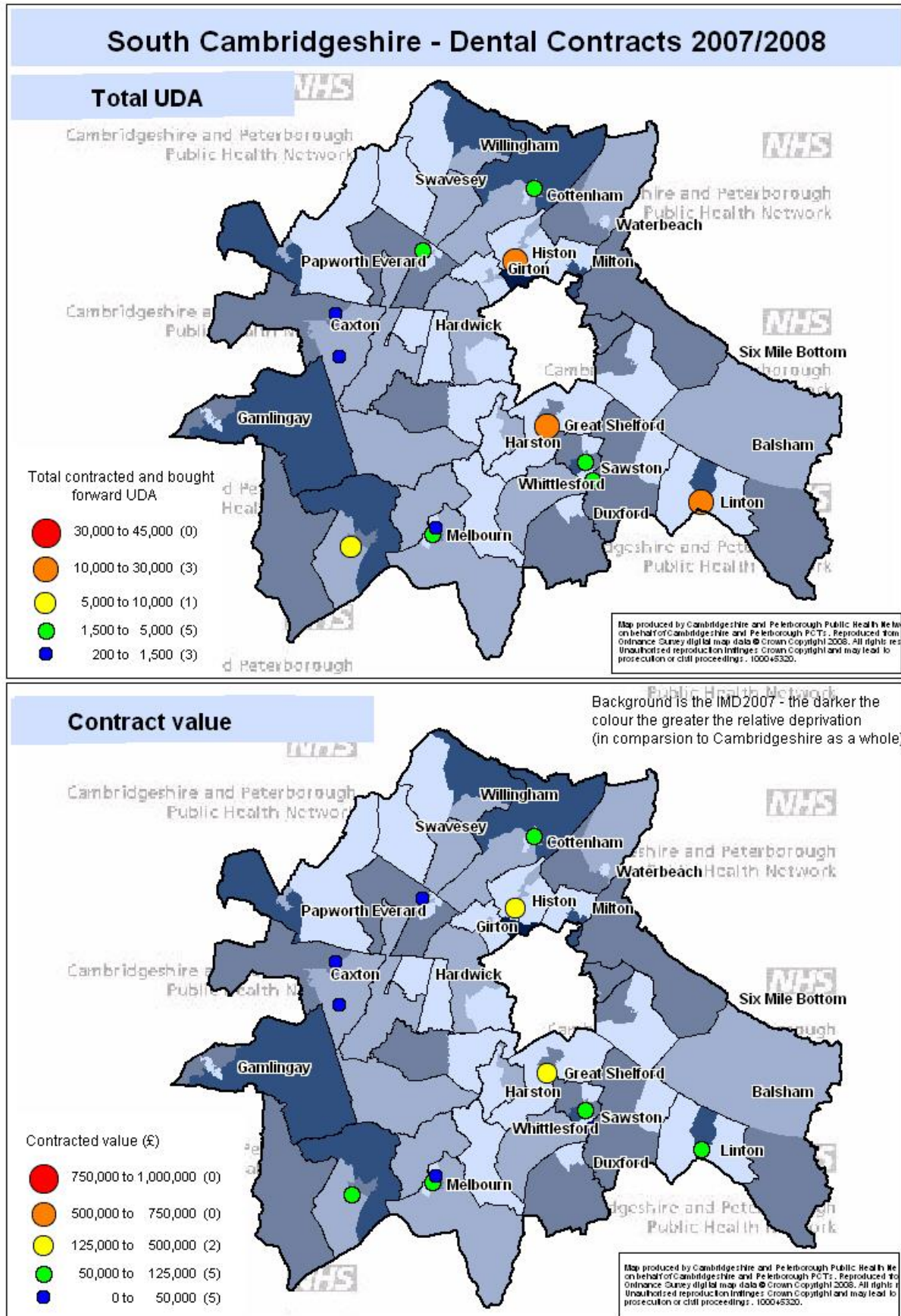




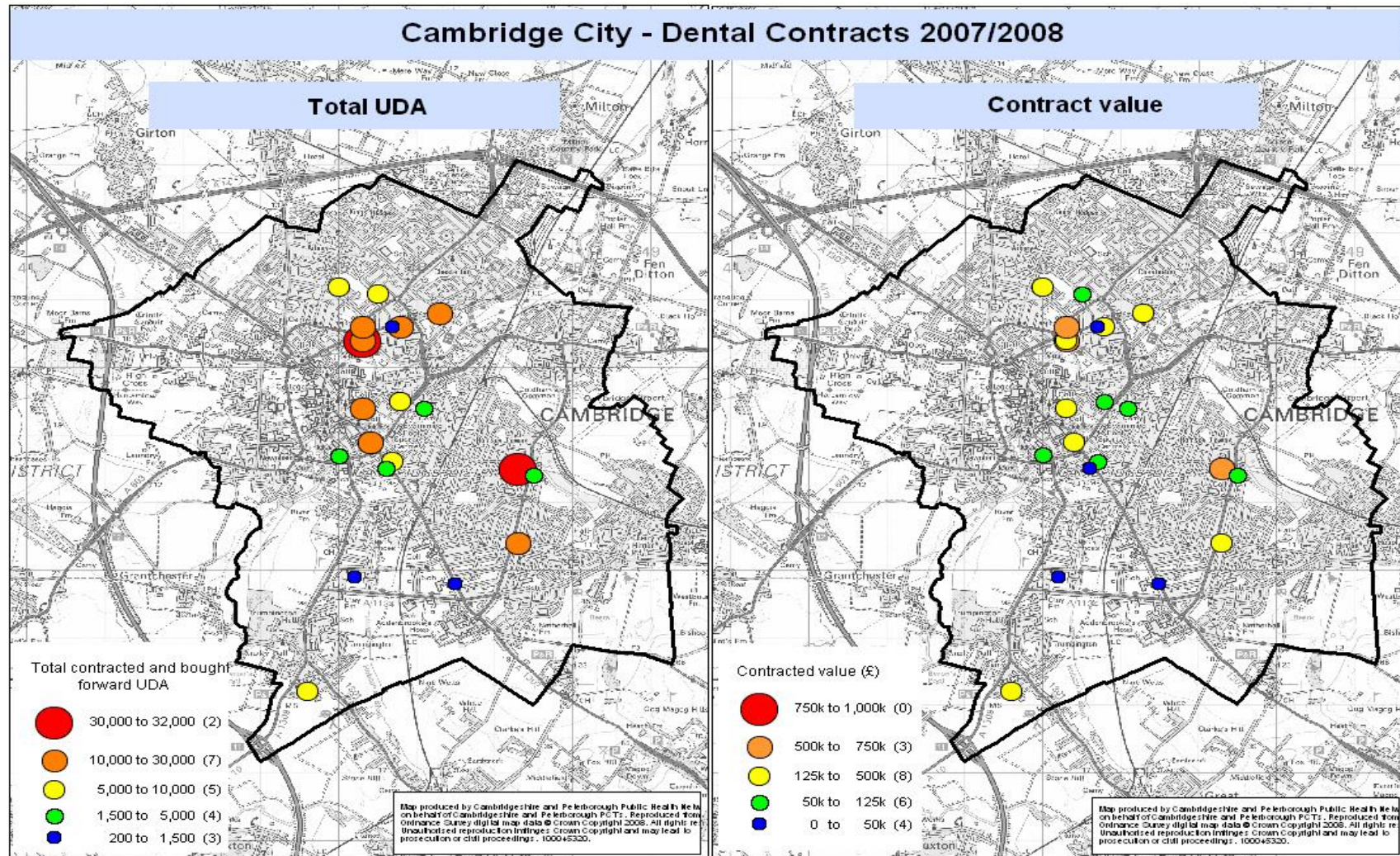
**Map 3a: South Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity**



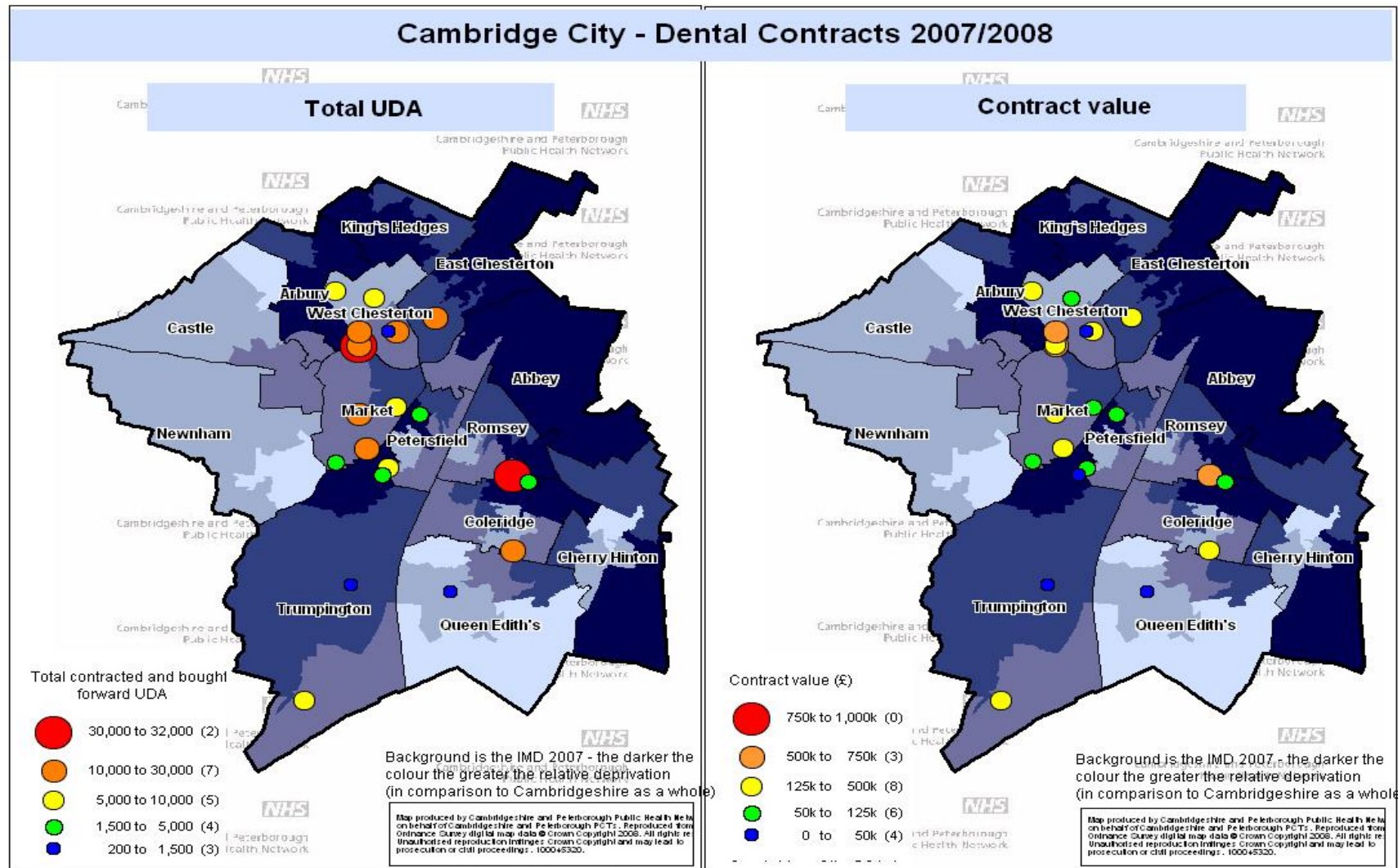
**Map 3b: South Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation**



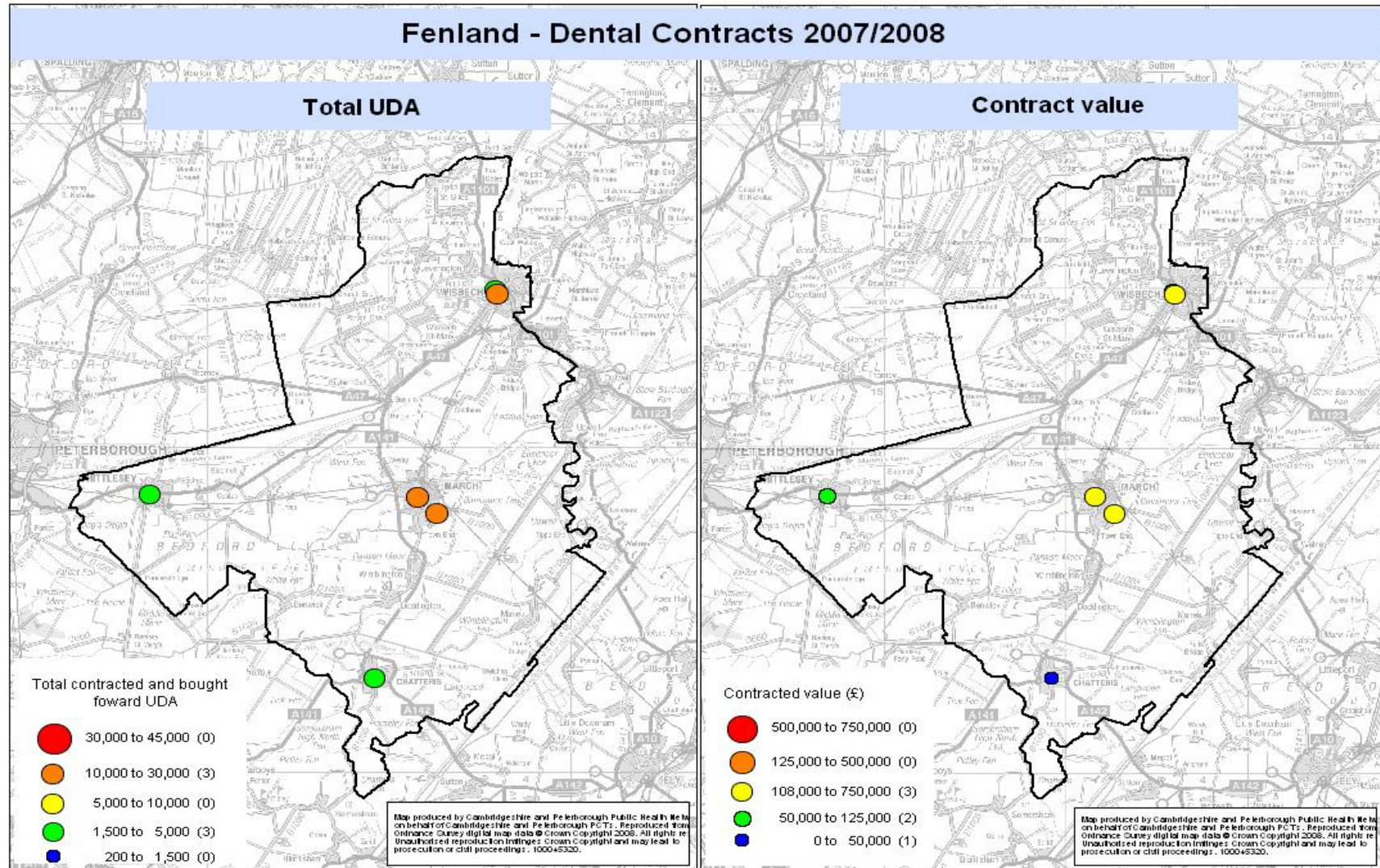
**Map 4a: Cambridge City – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity**



**Map 4b: Cambridge City – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation**

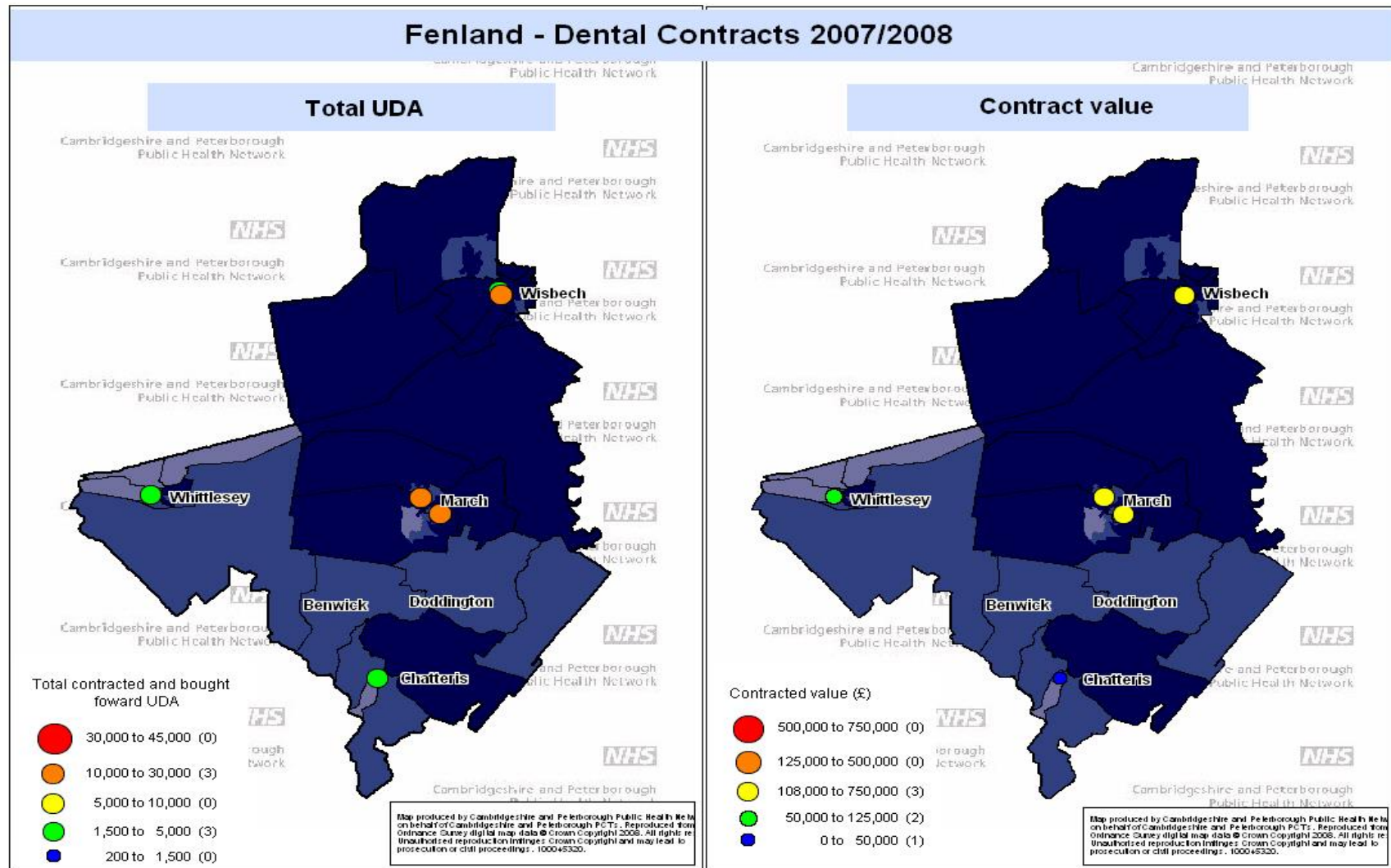


Map 5a: Fenland – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity

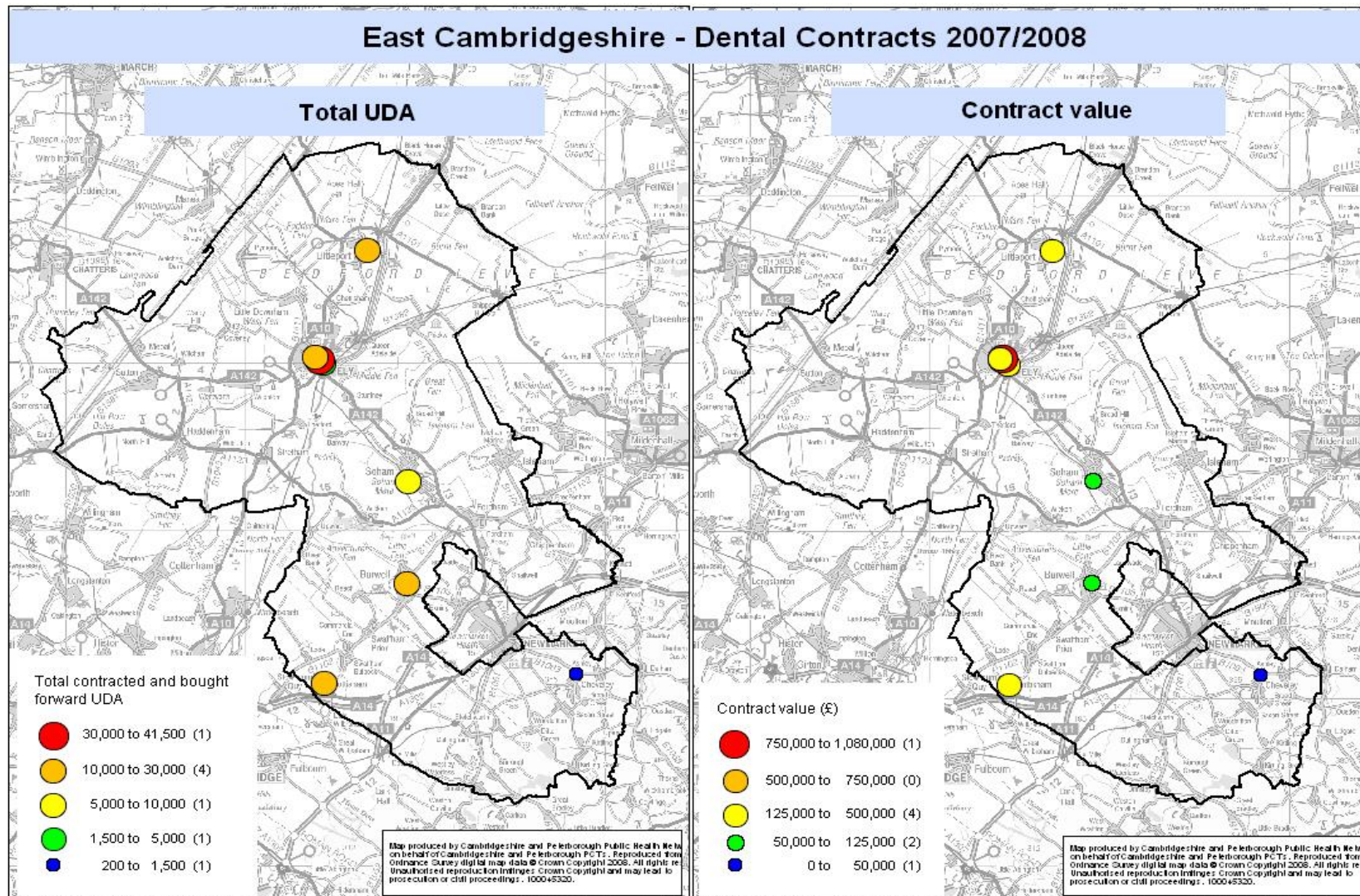


**Map 5b: Fenland – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity, Against Deprivation**



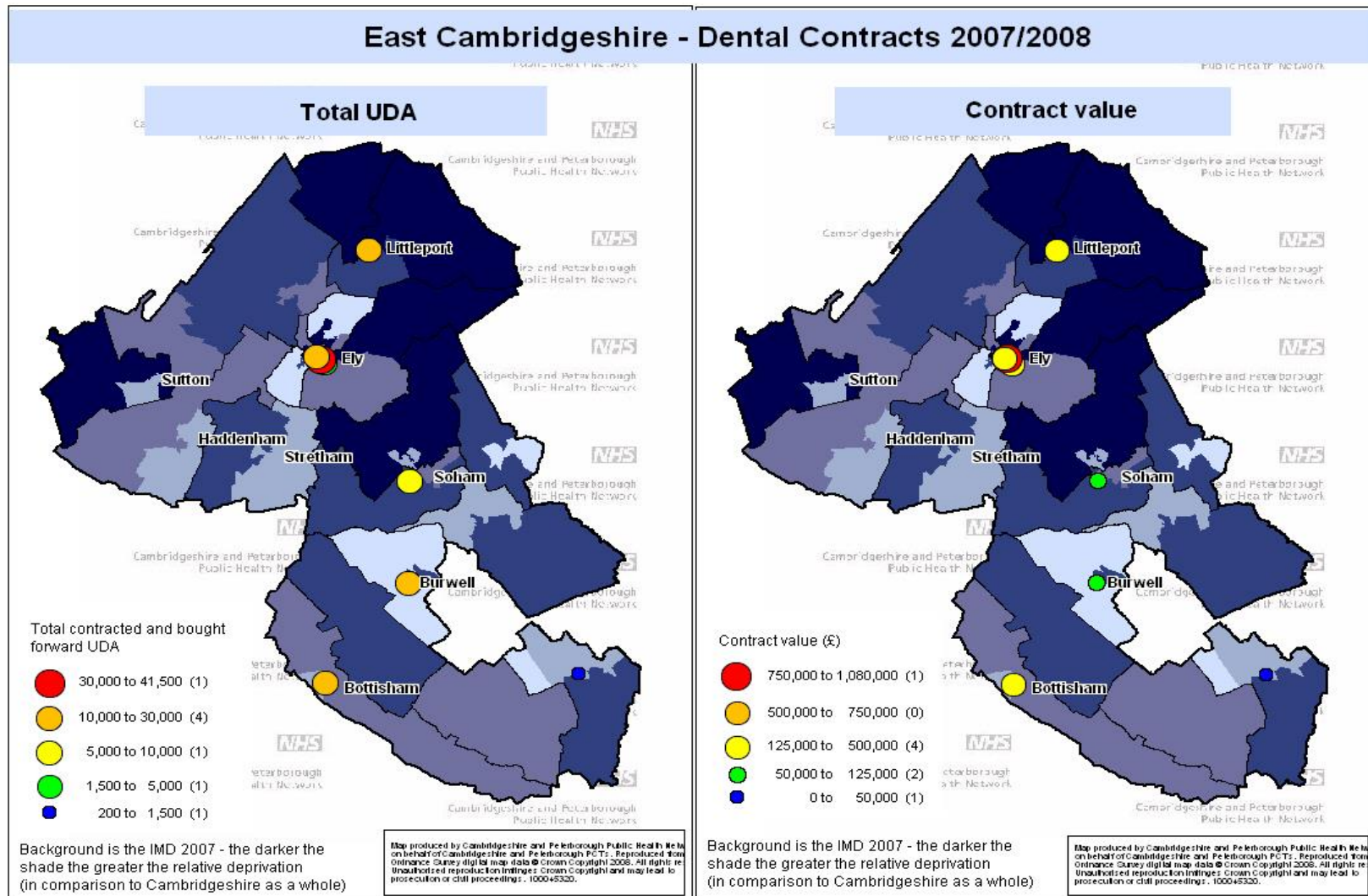


Map 6a: Fenland – East Cambridgeshire Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity,





**Map 6b: East Cambridgeshire – Dental Contracts 2007-2008 Measured by Contract Value and Commissioning UDA Activity,  
Against Deprivation**



### 9.1.5 Out of Hours Dental Care in Cambridgeshire

From April 2006 the provision of Out of Hours (OOH) care has been the responsibility of the Primary Care Trust. This service is provided from four sites. Patients under the care of a dental practice can access emergency Out of Hours (OOH) dental services by ringing their normal Dental Surgery number. For people who are not under the care of a dental practice, Cambridgeshire PCT has three dedicated Dental Access Centres to provide emergency care. These are sited in Cambridge, Huntingdon and Wisbech and are open from XX to XX on weekdays and XX to XX on weekends. Activity levels are shown in Table 6. There is a dedicated Cambridgeshire Dental Helpline, which will signpost patients to the appropriate service during working hours. Outside of working hours, NHS direct provides this function.

**Table 6: Activity Levels at Dental Access Centres Across Cambridgeshire**

Dental Access Centre	Number of Patients Seen OOH April 2006- March 2007
Cambridge	396
Huntingdon	?????
Wisbech	?????

Source: Data direct from Dental Access Centres

## 9.2 Specialist Services

### 9.2.1 Primary Care

#### Personal Dental Services

Personal Dental Services are a collection of different local initiatives that provide NHS

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dentistry under various remuneration arrangements. Most PDS practices provide specialist dental services (e.g. orthodontics or minor oral surgery) in primary care. The dentists contract with their PCT to provide services but may work within either the GDS or the salaried service. Around 30% of dentists work in PDS, which have been running since 1998.

### **Minor Oral Surgery PDS in Cambridgeshire**

Two in Minor Oral Surgery services have been operating in Dental Access Centres in Cambridgeshire since April 2006. These are provided by Dentists with 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. Since April 2006, the DwSI service in Minor Oral Surgery based in Huntingdon Dental Access Centre has treated 937 patients with an average waiting time of 2-3 weeks. The DwSI service in Cambridge Dental Access Centre treats up to 230 patients per year, on referral from Addenbrooke's Oral and Maxillofacial Surgery Department.

### Orthodontic PDS in Cambridgeshire

Orthodontic services in primary care are offered from a range of sites across the county and are provided either by dentists who are on the General Dental Specialist List for orthodontics or by Dws. Any patient can be referred for assessment, but only patients who score 3.6 or above on the Index of Orthodontic Treatment Need will be offered active treatment.

Approximately half of all 12-year olds are likely to score IOTN 3.6 and above and approximately 35% will present for treatment. Cambridgeshire has a population of 7,100 12-year olds so would need to make provision for approximately 2,485 case starts each year. The following table summarises orthodontic activity in primary care since the start of the new dental contract.

**Table 7: Summary of Orthodontic Activity Provided in Primary Care  
April 2006 – December 2007**

Orthodontic Activity	Treatment Starts	Assess and Accept	Assess and Review	Assess and Refuse	Treatment Completed	Treatment Abandoned	Treatment Discontinued
April 2006 – March 2007	1,465	829	2,981	493	851	65	61
April 2007 – December 2007		1,331	1,332	200	528	12	31

### Salaried Dental Services

PCT directly-managed salaried primary dental care services (SPDCS) are small, well established services, intended to be complementary to 'high street' dental practice provision. There are two separate elements to this service. Firstly, there are Dental Access Centres who provide oral health advice and ready access to dental care for people within the country who cannot secure care from an NHS general dental practice. They also have a key role in providing the PCT's dental out of hours cover. Three Dental Access Centres are situated in Cambridge, Wisbech and Hinchingsbrooke Treatment Centre in Huntingdon. They also host oral surgery and orthodontic services.



The second element of the SPDCS was previously the Community Dental Service (CDS) and since 1 October 2006 their roles are provided as under the powers of the Health and Social Care (Community Health and Standards) Act 2003.

Factsheet 14 – Salaried Primary Dental Care Services – Gateway 5917<sup>lxiv</sup> was published in March 2006 and authorised the roles of the salaried dental services within which the CDS will operate:

- Delivering public health programmes, including epidemiological surveys;
- Providing dental care for patients who because of disability have need for specialised dental care;
- Providing general primary care dentistry for patients of all aged;
- Providing specialised dental services, as required locally, for example: general anaesthesia in a hospital setting, orthodontics.

Activity within the Dental Access Centres has seen year on year increases and in the past may have been the result of limited access to routine NHS general dental services. It is also possible that many patients prefer to access services in this way and only wish to visit a dentist when they have a problem.

**Table 8: Number of Patient Contracts by Year in Cambridgeshire Dental Access Centres**

Year	Dental Access Centre		
	Cambridge	Wisbech	Huntingdon
2003-2004	780		
2004-2005	2,941		
2005-2006	3,771		
2006-2007	4,182		

Activity has also increased gradually within the CDS element of the service.

**Table 9: Number of Patient Contracts by Year in Cambridgeshire CDS 2001**

Year	Community Dental Service		
	Cambridge	Wisbech	Huntingdon
2003-2004	4,638		
2004-2005	4,765		
2005-2006	4,611		
2006-2007	4,966		

It is now a Department of Health requirement that all dental treatment provided under general anaesthetic is carried out in a hospital setting. This is provided in the SPDCS at Addenbrooke's (Cambridge) and Hinchingsbrooke (Huntingdon).<sup>71</sup>

**Table 10: Patients Treated under General Anaesthetic**

Year	Cambridge	Huntingdon
2003-2004	237	
2004-2005	255	
2005-2006	296	
2006-2007	296	

Dental care provided under general anaesthetic is subject to the 18-week principle. Cambridge also offers an IV sedation service for adult dental phobic patients on referral. Last year, 69 patients were treated under IV sedation with a further 23 successfully treated without.

PCTs are required by the Department of Health to undertake regular epidemiological surveys.<sup>lxv</sup> These are undertaken by SPDCS.

Cambridgeshire SPDCS regularly undertakes oral health promotion in schools and on average has 11,000 contracts per year. No such activity is undertaken in Wisbech or Huntingdon.

**Table 11: Current Waiting Times for Treatment in Salaried Services**

Dental Access Centre	WAITING TIME (weeks)			
	Routine care	Urgent treatment	Extractions under General anaesthetic	Restorative care under General Anaesthetic
Cambridge		0	6	8
Huntingdon	2	0	5	5
Wisbech	4	0	N/A	N/A

### Prison dental services

An oral health assessment has been carried out HMP Littlehay and Whitemoor as part of a Health Needs Assessment – March 2008. These can be found at .....??.

## 9.2.2 Secondary Care

### Hospital Dental Services

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, periodontics, prosthetics, endodontic oral medicine, and dental and maxillofacial radiology.

### Oral and Maxillofacial Surgery Services (OMFS)

The OMFS department of Addenbrooke's, and Peterborough and Stamford Hospitals NHS Foundation Trust 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. In the last few years the activity has been as follows:

*Table to be added ????*

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 GPs or in a specialist minor oral surgery service

## **Orthodontics**

Most orthodontic treatment is provided in primary care. More complex cases, including cleft lip and palate, hydentia 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 give no indicators of the length or complexity of the treatment.

*Table here Ortho activity – awaiting data*

Cambridge University Teaching Hospitals NHS Foundation Trust (Addenbrooke's) is a Primary Centre for the Treatment of Cleft Lip and Palate. Last year ????? cases were treated.

At present, there is no restorative or paedontic consultant in post, which is an important component of the multidisciplinary approach required for care of these patients.

### **9.2.3 Tertiary Care**

At present Addenbrooke's and Peterborough and Stamford Hospitals NHS Foundation Trust have no restorative dental services. This service is provided on referral to Guys and Thomas Hospital and the Eastman Dental Hospital where the PCT holds contracts. Data about referral and treatment patterns within these services is not readily available and patient pathways appear unclear and ill defined.

## 10 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”.<sup>52</sup> 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 Cambridgeshire PCT is not artificially fluoridated and the naturally occurring level is around 0.1ppm.<sup>lxvi</sup>

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.<sup>lxvii</sup> Research has shown that socially deprived areas benefit more from fluoridation.<sup>lxviii</sup> Water fluoridation is consequently one of the few public health interventions that directly reduce health inequalities.

Following a local oral health needs assessment PCTs 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) the authority to make this decision, following a public consultation. Public opinion has not been formally tested in Cambridgeshire. The main steps involved in the introduction of an artificial water fluoridation scheme are summarised in Figure 26.

In the recently published best practice guidance on Fluoridation of Drinking Water, 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,<sup>6</sup> 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 PCT and SHA boundaries necessitating a joint consultation process.

## 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.

Members from local Patient and Public Information Forums asked a total of 5,212 patients for their views on crucial issues regarding dental services between July and September 2007. The resulting *Dentistry Watch* report was published in October 2007<sup>lxix</sup>.

The main findings of this survey were as follows.<sup>lxix</sup>

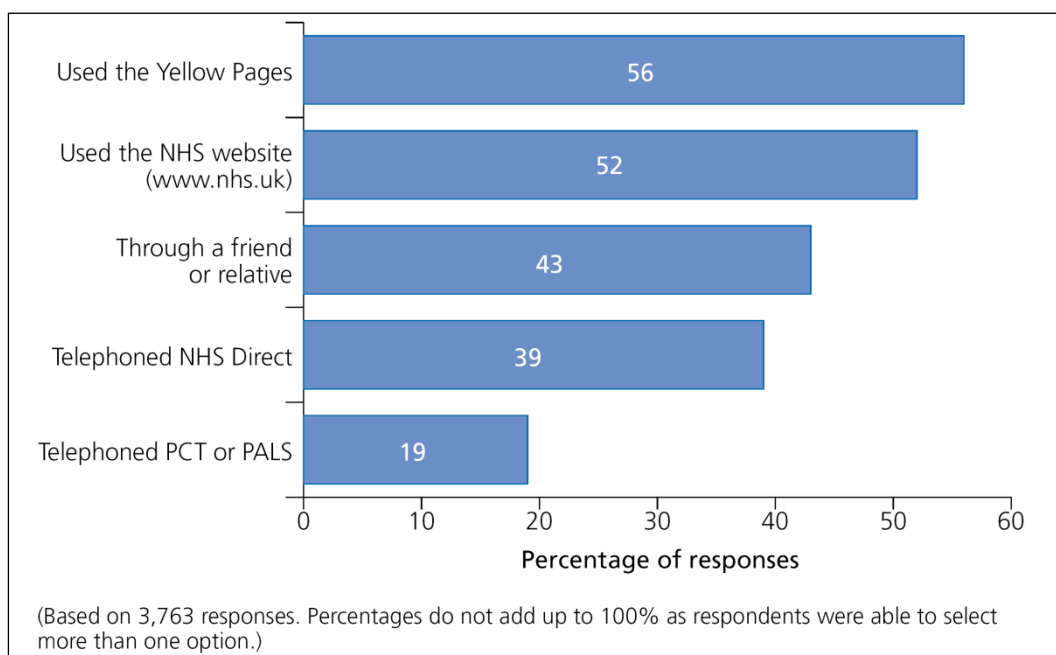
- 93% of NHS patients are happy with the treatment they receive.
- Almost a fifth of patients have gone without treatment because of the cost.
- Almost half of all NHS patients do not understand NHS dental charges.
- 78% of patients using private dental services are doing so because either their dentist 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 recommends that people searching for an NHS dentist should contact either their PCT or NHS Direct. A recent report from the Citizen's Advice Bureau, however, suggests that these search strategies are not well used (see Figure 20).<sup>lxx</sup> 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 (*Dentistry Watch Report, 2007*). This means that even where services are available, people may not be able to access them.



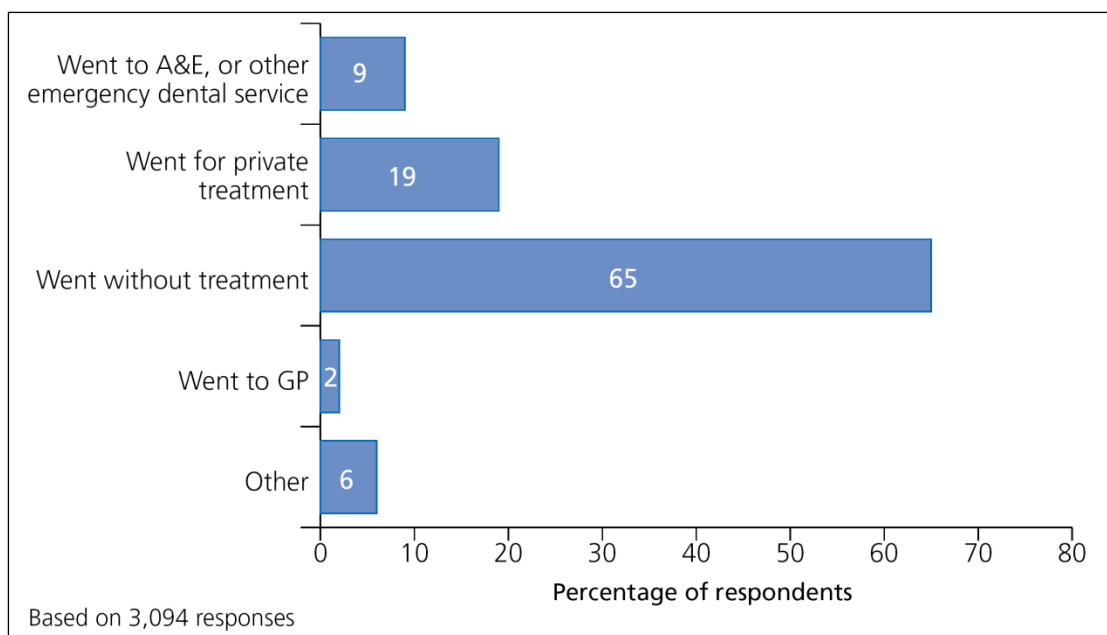
**Figure 19: Citizen’s Advice Bureau Data on How People Go About Finding an NHS Dentist**



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](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 (see Figure 21)

**Figure 20: The Course of Action Taken by Respondents if Citizens Advice Bureau Survey Who Were Unable to Find an NHS Dentist**



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](http://www.citizensadvice.org.uk/pdf_gaps_to_fill.pdf)

### 11.1.3 Omnibus Survey

The Omnibus survey gathered data about the impact of oral problems on the quality of life of adults. A population representative sample 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:<sup>lxxi</sup>

- 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 countries.
- 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 is based on the Association's recent survey of PCTs (although they are unspecific about their methodology). Their main findings are as follows:<sup>lxxii</sup>

- The NHS dentistry service provided 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 Local Surveys

#### Patient Satisfaction Questionnaires

As part of its Risk Management role the Dental Services Division of the NHSBSA writes to a random sample of (primary care) patients asking them to complete a brief questionnaire. The responses inform the monitoring of the quality and integrity of NHS dentistry services at both a local and national level. The PCT receives a summary report of the results of the questionnaires on a quarterly basis. Of the 928 questionnaires issued to patients treated in Cambridgeshire between April and September 2007, there was an encouraging response rate of 536 (57.76%).

Around 87% of patients reported that they were able to get a dental appointment as soon as was necessary (see Table 12).

**Table 12: Responses to Patient Questionnaires on Time Taken to get a Dental Appointment**

Patient's opinion of time taken to get appointment	Frequency	Percentage
It was as soon as was necessary	467	87.13%
It should have been a bit sooner	40	7.46%
It should have been much sooner	17	3.17%
No response	12	2.24%
Invalid	0	0.00%
Total	536	100.00%

Responses suggest that around 73% were completely satisfied with the dental treatment they received (see Table 13).

**Table 13: Responses to Patient Questionnaires on Patient's Satisfaction with Dentistry Received**

Patient's satisfaction with dentistry received	Frequency	Percentage
Completely satisfied	392	73.13%
Fairly satisfied	121	22.57%
Fairly dissatisfied	6	1.12%
Very dissatisfied	4	0.75%
No response	12	2.24%
Invalid	1	0.19%
Total	536	100.00%

Unfortunately, this survey did not include people who had been unable to access dental care as the questionnaire was sent to patients only. Nevertheless, the response is overall positive response is encouraging.

## 12. Recommendations

- Better patient information – work more closely with LINks (Local Involvement Networks) to provide services that fit with felt need of patients.
- Year on year improvements in the number of patients accessing local dental services.
- Commission high quality services to achieve improved oral health.
- Ensure that commissioned services prioritise prevention as well as treatment.
- Tailor services to need with special attention paid to hard to reach groups.
- Provide better patient information about what services are available and how to access them.
- Make sustainable service improvements that allow 18-week targets to be met across all of primary and secondary care.
- To decrease perio need, improved interdental and general plaque control – interdental cleaning should be promoted where tooth brushing is routinely practiced.
- Establish closer links for multidisciplinary working, for example smoking cessation as part of a common risk factor approach.
- Establish regular data collection around secondary care services.
- Improve data collection for specialist services provided in primary care.
- Undertake a survey of adult dental health locally.
- Regularly seek consumers' views on dental service provision.
- Develop an oral health strategy (OHS).
- Develop a dental commissioning strategy that is informed by HNA and OHS.
- Review oral health promotion services.
- Ensure that patients referred for oral surgery and orthodontic are seen in the most appropriate setting – either secondary or primary care.
- Co-operate with the SHA over water fluoridation.
- Establish clear patient referral pathways, including tertiary care and periodontology.
- Review local specialist services, for example periodontology, restorative, dentures.

## **13. Glossary**



## 14 References

- <sup>1</sup> Professor Lord Darzi NHS Next Stage Review Interim Report Gateway ref: 8857 Oct 2007 Available at URL [http://www.ournhs.nhs.uk/fromtypepad/283411\\_OurNHS\\_v3acc.pdf](http://www.ournhs.nhs.uk/fromtypepad/283411_OurNHS_v3acc.pdf).
- <sup>2</sup> Department of Health 2007 World Class Commissioning: Competencies. Available at URL [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_080958](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080958).
- <sup>3</sup> Department of Health. Choosing Better Oral Health: An Oral Health Plan for England. London: Department of Health; 2005. Available at URL [www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf](http://www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf)
- <sup>4</sup> Commissioning NHS primary care dental services: meeting the NHS operating framework objectives.
- <sup>5</sup> Department of Health Choosing Better Oral Health. An Oral Health Plan for England. 2005 London: Department of Health [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4123253.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4123253.pdf).
- <sup>6</sup> Department of Health 2008 Fluoridation of Drinking Water. Gateway Ref: 9361 Available at URL [http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH\\_4118694](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_4118694).
- <sup>7</sup> BBC News Feb 2008 <http://news.bbc.co.uk/1/hi/health/7227859.stm>.
- <sup>8</sup> NHS East of England SHA Pledge Board Report 13 12 07 Final Version.
- <sup>9</sup> NHS East of England Improving Lives; Saving Lives. 12 week consultation. September 2007 Available at URL <http://www.eoe.nhs.uk/improving/index.html>.
- <sup>10</sup> East of England Strategic Health Authority. East of England Commissioning Framework 2008/2009. Available at URL <http://www.eoe.nhs.uk/publications/EAST%20of%20ENGLAND%20COMMISSIONING%20FRAMEWORK%20FINAL.pdf>.
- <sup>11</sup> Robin L. Cambridgeshire Primary Care Trust. Overarching Health Needs Assessment. July 2007. Available at URL <http://www.cambridgeshire-pct.nhs.uk/documents/About%20Us/Public%20Health/Overarching%20Health%20Needs%20Assessment.pdf?preventCache=18%2F12%2F2007+10%3A52>.
- <sup>12</sup> Moynihan P.J. The role of diet and nutrition in the etiology and prevention of oral diseases. Bulletin of the World Health Organization 2005; 83:694-699 Available at URL
- <sup>13</sup> Office of Public Management. 2005 A futures study of dental decay in five and fifteen year olds in England. Available at URL [http://www.opm.co.uk/resources/papers/children\\_bhlp/dental\\_children\\_reportWEB.pdf](http://www.opm.co.uk/resources/papers/children_bhlp/dental_children_reportWEB.pdf).
- <sup>14</sup> Corbet E 'Public Health Aspects of Oral Diseases and Disorders – Periodontal Diseases.' In Pine C, Harris R. Community Oral Health 2<sup>nd</sup> edition. 2007 Surrey: Quintessence.
- <sup>15</sup> Downer MC. Oral Cancer. In: Pine C, editor. Community oral health. Oxford: Wright; 1997. p.88–93.
- <sup>16</sup> Nuttall N et al. A guide to the UK Adult Dental Health Survey 1998. London: British Dental Association; 2001.
- <sup>17</sup> Shaw WC, Turbill EA. 'Public Health Aspects of Oral Diseases and Disorders –Dentofacial Irregularities' In Pine C, Harris R. Community Oral Health 2<sup>nd</sup> edition. 2007 Surrey: Quintessence.

- 
- 18 De Oliveira CM, Sheiham A. Orthodontic treatment and its impact on oral health-related quality of life in Brazilian adolescents. *J Orthod* 2004; 31:20-27.
- 19 Statutory Instrument 2005 No. 3361 The National Health Service (General Dental Services Contracts) Regulations 2005. Available at URL.
- 20 Watt RG. Public Health Reviews. Strategies and approaches in oral disease prevention and health promotion. *Bull World Health Organ* website 2005; 83(9):711-718. Available at URL [www.who.int/bulletin/volumes/83/9/711.pdf](http://www.who.int/bulletin/volumes/83/9/711.pdf).
- 21 APHO and Department of Health. Cambridgeshire Health Profile 2007. Available at URL [http://www.communityhealthprofiles.info/profiles/hp2007/lo\\_res/12-HP2007.pdf](http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/12-HP2007.pdf).
- 22 Kantovitz KR, Pascon FM, Rontani RM, Gaviao MB. Obesity and dental caries – A systematic review. *Oral Health Prev Detn.* 2006;4(2):137-44.
- 23 Department of Health. Smokefree and Smiling: helping dental patients to quit tobacco. 2007. Available at URL [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_074970](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_074970).
- 24 Araujo MW, Dermen K, Connors G, Ciancio S. Oral and dental health among inpatients in treatment for alcohol use disorders: a pilot study. *J Int Acad Periodontology* 2004 Oct;6(4):125-30
- 25 Gelbier S, Harris C. Oral and dental health in the alcohol misuser. *Addictive Biology* 1996;1(2):165-9.
- 26 Zador D, Lyons Wall PM, Webster I. 1996 High sugar intake in a group of women on methadone maintenance in south western Sydney, Australia. *Addiction.* 91(7): 1053-61.
- 27 Titsas A, Ferguson MM. 2002 Impact of opioid use on dentistry. *Australian Dental Journal.* 47(2):94-8
- 28 Titsas A, Ferguson MM. Impact of opioid use on dentistry. *Australian Dental Journal* 47:94-8, cited in Jones CM, McCann M, Nugent Z. Scottish Prisons Dental Health Survey 2002. Scottish Executive: Edinburgh. 2004 <http://www.scotland.gov.uk/Resource/Doc/47210/0013527.pdf>.
- 29 Pilinova A, Krutina M, Salandova M, Pilin A. Oral health status of drug addicts in the Czech Republic. *J Forensic Odontostomatol.* 2003 Dec;21(2):36-9.
- 30 Robinson PG, Acquah S, Gibson B. Drug users: oral health-related attitudes and behaviours. *British Dental Journal* 2005 Feb 26;198(4):219-24.
- 31 Waldman HG, Perlman SP. Dental care for individuals with developmental disabilities is expensive, but needed. *J Calif Dent Assoc.* 2002 Jun; 30(6): 427-32.
- 32 Glassman P, Miller CE. Preventing dental disease for people with special needs: the need for practical preventive protocols for use in community settings. *Spec Care Dentist.* 2003 Sep-Oct; 23(5):165-7.
- 33 Tiller S, Wilson KI, Gallagher JE. Oral health status and dental service use of adults with learning disabilities living in residential institutions and in the community. *Community Dent Health.* 2001 Sep;18(3):167-71.
- 34 Jones CM, McCann M, Nugent Z. Scottish Prisons Dental Health Survey 2002. Scottish Executive: Edinburgh. 2004 <http://www.scotland.gov.uk/Resource/Doc/47210/0013527.pdf>.
- 35 Jones CM, Woods K, Neville J, Whittle JG. Dental health of prisoners in the north west of England in 2000: literature review and dental health survey results. *Community Dent Health.* 2005 Jun;22(2):113-7.
- 36 Wright D, Allen C, Gibson B. A study of the perceived oral health and treatment needs of prisoners. 2001 Unpublished.
- 37 King TB, Gibson G. Oral health needs and access to dental care of homeless adults in the United States: a review. *Spec Care Dentist* 2003 Jul-Aug; 23(4): 143-7.
- 38 Luo Y, McGrath C. Oral health status of homeless people in Hong Kong. *Spec Care Dentist.* 2006 Jul-Aug;26(4):150-4.
- 39 De Palma P, Frithiof L, Persson L, Klinge B, Halldin J, Beijer U. Oral health of homeless adults in Stockholm, Sweden. *Acta Odontol Scand.* 2005 Feb; 63(1): 50-55.

- 40 Conte M, Broder HL, Jenkinds, G, Reed R, Janal MN. Oral health, related behaviours and oral health impacts among homeless adults. *J Public Health Dent.* 2006 Fall; 66(4): 276-8.
- 41 Godson JH, Williams SA. Oral health and health related behaviours among three-year-old children born to first and second generation Pakistani mothers in Bradford, UK. *Community Dental Health.* 1996 Mar;13(1):27-33.
- 42 Mattin D, Smith JM. The oral health status, dental needs and factors affecting utilisation of dental services in Asians aged 55 years and over, resident in Southampton. *Br Dent J.* 1991 May 25;170(10): 369-72.
- 43 Newton JT, Thorogood N, Bhavnani V, Pitt J, Gibbons DE, Gelbier S. Barriers to the use of dental services by individuals from minority ethnic communities living in the United Kingdom: findings from focus groups. *Prim Dent Care.* 2001 Oct;8(4):157-61.
- 44 Edwards DM, Watt RG. Oral health care in the lives of Gypsy Travellers in east Hertfordshire *Br Dent J.* 1997 Oct 11;183(7):252-7.
- 45 Chiappelli F, Bauer J, Spackman S, Prolo P, Edgerton M, Armenian C, Dickmeyer J, Harper S. Dental needs of the elderly in the 21<sup>st</sup> century. *Gen Dent.* 2002 July-Aug; 50(4):358-63.
- 46 Gerodontology 2005; 22 (Supplement 1):2-48.
- 47 Sheiham A. Oral health, general health and quality of life. *Bull World Health Organ website* 2005;83(9):644. Available at URL [www.who.int/bulletin/volumes/83/9/644.pdf](http://www.who.int/bulletin/volumes/83/9/644.pdf)
- 48 Department of Health. An Oral Health Strategy for England. London: Department of Health; 1994.
- 49 Office for National Statistics Adult Dental Health Survey: Oral Health in the United Kingdom 1998. Available at URL.
- 50 Daly B et al. Essential dental public health. Oxford: Oxford University Press; 2003.
- 51 Nuttall N et al. A guide to the UK Adult Dental Health Survey 1998. London: British Dental Association; 2001.
- 52 Daly B et al. Essential dental public health. Oxford: Oxford University Press; 2003.
- 53 Office for National Statistics Adult Dental Health Survey 1998, accessed November 2005. Available at URL [www.statistics.gov.uk/downloads/theme\\_health/AdltDentHlth98\\_v3.pdf](http://www.statistics.gov.uk/downloads/theme_health/AdltDentHlth98_v3.pdf).
- 54 Department of Health. Choosing Better Oral Health. An Oral Health Plan for England. London: Department of Health; 2005. Available at URL [www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf](http://www.dh.gov.uk/assetRoot/04/12/32/53/04123253.pdf).
- 55 Cancer Research UK Information Resource Centre. Open Up to Mouth Cancer. London: Cancer Research UK; 2005. Available at URL <http://info.cancerresearchuk.org/healthyliving/openuptomouthcancer/healthprofessionals/statistics/>.
- 56 Daly B et al. Essential dental public health. Oxford: Oxford University Press; 2003.
- 57 Downer M. 'Public Health Aspects of Oral Diseases and Disorders – Oral Cancer' In Pine C, Harris R. *Community Oral Health* 2<sup>nd</sup> edition. 2007 Surrey: Quintessence.
- 58 Watt RG. 2005 Public Health Reviews. Strategies and approaches in oral disease prevention and health promotion. *Bulletin of the World Health Organisation Website* 83(9):711-718. Available at URL [www.who.int/bulletin/volumes/83/9/711.pdf](http://www.who.int/bulletin/volumes/83/9/711.pdf).
- 59 Department of Health. NHS Dentistry: Delivering Change. Report by the Chief Dental Officer (England) July 2004. London: Department of Health; 2004. Available at URL [www.dh.gov.uk/assetRoot/04/08/59/75/04085975.pdf](http://www.dh.gov.uk/assetRoot/04/08/59/75/04085975.pdf).
- 60 Office for National Statistics. 2003 Children's Dental Health Survey. London: ONS; 2004. Available at URL [www.statistics.gov.uk/children/dentalhealth/](http://www.statistics.gov.uk/children/dentalhealth/).
- 61 Department of Health Specialised Services National Definition Set: 15 Cleft lip and palate services (all ages) 2007 Available at URL [http://www.dh.gov.uk/en/Managingyourorganisation/Commissioning/Commissioningspecialisedservices/Specialisedservicesdefinition/DH\\_4001685](http://www.dh.gov.uk/en/Managingyourorganisation/Commissioning/Commissioningspecialisedservices/Specialisedservicesdefinition/DH_4001685)
- 62 Office for National Statistics. 2003 Children's Dental Health Survey. London: ONS; 2004. Available at URL [www.statistics.gov.uk/children/dentalhealth/](http://www.statistics.gov.uk/children/dentalhealth/).

- 
- 63 Tickle M, Kay EJ, Bearn D. Socio-economic status and orthodontic treatment need. *Community Dent Oral Epidemiol* 2001;29:315-17.
- lxiv Department of Health Factsheet 14 Salaried Primary Dental Care Services. Gateway ref: 5917 2006 Available at URL [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4124337](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4124337)
- lxv Statutory Instrument 2006, No 185. The Function of Primary Care Trusts (Dental Public Health) (England) Regulation 2006. Available at URL <http://www.opsi.gov.uk/si/si2006/20060185.htm>
- lxvi British Fluoridation Society 2004 One in a million - the facts about water fluoridation. 2<sup>nd</sup> edition. <http://www.bfsweb.org/onemillion/onemillion.htm>.
- lxvii University of York NHS Centre for Reviews and Dissemination. Mc Donagh M. et al. A Systematic Review of Water Fluoridation. York: NHS Centre for Reviews and Dissemination. University of York, 2000. Available at URL [www.york.ac.uk/inst/crd/fluores.htm](http://www.york.ac.uk/inst/crd/fluores.htm).
- lxviii Jones CM et al. Water fluoridation, tooth decay in 5 year olds, and social deprivation measured by the Jarman score: analysis of data from British dental surveys. *BMJ* 1997;315:514–517. Available at URL <http://bmj.bmjournals.com/cgi/content/full/315/7107/514>.
- lxix Commission for Patient and Public Involvement in Health. Dentistry Watch. National survey of the NHS dentistry system with views from both patients and dentists. October 2007 Available at URL <http://www.cppih.org/campaigns.htm>.
- lxx 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](http://www.citizensadvice.org.uk/pdf_gaps_to_fill.pdf).
- lxxi The Dental Observatory. Measuring the impact of oral problems on the quality of life among adults. An Omnibus survey. April 2008 Available at URL [http://www.bascd.org/info\\_home.php](http://www.bascd.org/info_home.php).
- lxxii The Patients Association 'The New Dental Contract – Full of Holes and Causing Pain?' March 2008 Available at URL <http://www.patients-association.org.uk/Research-Publications/194>.
- 71 General Anaesthesia for Dental Treatment in a hospital setting with critical care facilities – 8 August 2001.