Introduction

Oral health is essential to general health and quality of life. The term encompasses both clinical conditions, for example oral cancer, periodontal (gum) disease and tooth decay along with disorders that limit an individual’s capacity to function. These include pain, ability to chew, smile and speak and psychosocial wellbeing. Two major oral diseases: tooth decay and the periodontal diseases. Both are a major public health problem. Dental care can be costly. Nearly 5% of all healthcare expenditure is spent on treating oral problems, despite them being largely preventable.

Oral disease in children and adults is higher among poor and disadvantaged population groups. Besides pain and discomfort, the impact on children includes the need for treatment leading to absence from school further disadvantaging their educational opportunities. For the elderly, at a national level 30% of people aged 60-74 have no natural teeth and uptake of dental care services is low. With the ageing population and associated co-morbidities the problems in caring for this section of society are only likely to increase.

Risk factors for oral diseases include: poor diet, tobacco, alcohol, poor oral hygiene, non-communicable chronic diseases, and social determinants. Dental decay is the most common food-related disease which affects all families and which has a parallel impact to that of diabetes, obesity and heart disease.

Most oral diseases are largely preventable. Dietary sugars are the main cause of dental decay. Tobacco usage is linked to both an increased risk in oral cancers and the periodontal diseases. Excessive alcohol consumption is associated with an increased risk of oral cancers, especially among smokers. Oral diseases can be also caused by both accidental and non-accidental injuries including facial trauma. A safe environment reduces the risk of oral health problems by reducing the likelihood of ortho-facial injuries. Steps to reduce the risk include: safe play areas, traffic safety measures and the use of mouth guards for contact sporting activities.

Improvements in oral health are most likely to be achieved by ensuring the adoption of the single most important measure in contributing to improvements in oral health over the last 30 years, namely the appropriate use of fluoride, especially fluoride-containing toothpastes.

Maintaining good oral health is a lifelong process that starts from birth and supported throughout life. The ability to chew, bite and swallow is essential for good health in
general and helps support a high quality of life. A poor diet not only leads to dental decay, but is linked to other chronic health problems such as obesity and diabetes.

Dental decay may be viewed as the most acute presentation of future chronic health problems. This can often be caused by periodontal disease. Poor oral health has been associated with a number of other conditions including: coronary heart disease; diabetes; rheumatoid arthritis, and; adverse pregnancy outcomes.

What do we know?

The World Health Organisation (WHO) estimates that globally, 60-90% of children and nearly 100% of adults have suffered from dental decay. Since 1973, a Children’s Dental Health Survey has been carried out every 10 years into the dental health of 5, 8, 12, and 15 year old children in England, Wales, and Northern Ireland. The 2013 survey published in March 2015 found large numbers of children were found to be affected by tooth decay though there were reductions in the extent and severity of tooth decay since the 2003 survey. Nearly half of 15 year olds had obvious decay. Nearly a third of 5 year olds and nearly half of 8 year olds had obvious tooth decay in their primary teeth.

The Public Health England Dental Public Health Intelligence Programme support the collection of reliable information on oral health needs in local populations. They undertake a rolling programme of surveys into the dental health of specific age groups/populations. The 2013 survey found that children from low income families are more likely to have oral disease and more than a third of 12 year olds and more than a quarter of 15 year old reported being embarrassed to smile or laugh due to the condition of their teeth.

### Proportion of 5-year-olds examined as part of the Dental Survey (2012)

<table>
<thead>
<tr>
<th>Region</th>
<th>5-year old population</th>
<th>Drawn Sample</th>
<th>Percentage Examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>635,925</td>
<td>204,640</td>
<td>65.2%</td>
</tr>
<tr>
<td>West Berkshire</td>
<td>1,910</td>
<td>349</td>
<td>67.9%</td>
</tr>
</tbody>
</table>

*Source: Public Health England*

### Results of dental survey of 5 year-olds (2012)

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage of children who had experienced tooth decay</th>
<th>Average number of DMF teeth per child in the whole sample</th>
<th>Average number of DMF teeth per child in sample of patients with tooth decay</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>27.9%</td>
<td>0.94</td>
<td>3.38</td>
</tr>
<tr>
<td>West Berkshire</td>
<td>18.1%</td>
<td>0.63</td>
<td>3.47</td>
</tr>
</tbody>
</table>

*Source: Public Health England*
The data shows that by 5 years of age, children are assessed as having less DMF teeth, on average, in West Berkshire than in England as a whole. The data also highlights the average number of DMF per child in West Berkshire 5-year-olds (0.63) compared to the England average (0.94).

**Percentage of children with 2 or more DMF teeth**

Children with two or more DMF teeth as a percentage of the surveyed sample by Berkshire electoral ward. In the present survey sample, 273 children in Berkshire had two or more DMF teeth. 183 (67%) of these had teeth that had no indication of any care intervention. Mortimer and Aldermaston wards have a high percentage rate of children with 2 or more DMF teeth (between 26.3% and 39.2%) when compared to areas such as Lambourn Valley and Kintbury (under 3.3%).

Decayed teeth by local authority of school 2012
The overall majority of disease experience was untreated at the time of the survey and while variation between the Local Authorities (LAs) exists, the confidence intervals would suggest that any differences between them are not statistically significant.

Identifying children in which 100% of the DMF total was formed by the decayed component alone helps provide an insight into possible barriers to accessing care. The chart shows this analysis for children who had a DMF total of two or more. Again, while variation exists, the small sample size means that any interpretations need to be treated with caution. Nevertheless, there would appear to be pockets where children appear not to be accessing care and work is needed to understand why.

Source: Berkshire Healthcare Foundation Trust 2012
Percentage of children sampled with a dmf-t score of 2 or more in which the total score was decay alone.

The dark green areas on the map illustrate a high percentage of children with decayed teeth whilst those not so green have the lowest percentages rates. In West Berkshire, Downland and Mortimer wards have a high percentage of children with decayed teeth whilst wards with little or no green are areas of which children have little or no decayed teeth. Dental services have the key role in managing disease once it has occurred.

Mean number of decayed, missing, or filled teeth in West Berkshire (2009 – 2013)

Source: Public Health England
These mean figures in West Berkshire are compared against the average across England. The figures show that West Berkshire has a significantly lower rate than compared to the England average across the 3 age groups with the largest gap in 5 year olds.

### NHS dental service usage 2008 and 2013

<table>
<thead>
<tr>
<th>Patient Age Group</th>
<th>Number of Current Patients March 2008</th>
<th>Percentage of population 2008</th>
<th>Number of Current Patients March 2013</th>
<th>Percentage of population 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>599</td>
<td>10%</td>
<td>867</td>
<td>13%</td>
</tr>
<tr>
<td>3-5</td>
<td>3,416</td>
<td>62%</td>
<td>4,096</td>
<td>65%</td>
</tr>
<tr>
<td>6-12</td>
<td>10,488</td>
<td>80%</td>
<td>11,324</td>
<td>85%</td>
</tr>
<tr>
<td>13-17</td>
<td>7,746</td>
<td>73%</td>
<td>8,059</td>
<td>77%</td>
</tr>
<tr>
<td>18-24</td>
<td>5,209</td>
<td>48%</td>
<td>6,591</td>
<td>65%</td>
</tr>
<tr>
<td>25-34</td>
<td>6,847</td>
<td>37%</td>
<td>8,826</td>
<td>48%</td>
</tr>
<tr>
<td>35-44</td>
<td>8,850</td>
<td>36%</td>
<td>10,878</td>
<td>47%</td>
</tr>
<tr>
<td>45-54</td>
<td>6,762</td>
<td>31%</td>
<td>10,062</td>
<td>41%</td>
</tr>
<tr>
<td>55-64</td>
<td>5,753</td>
<td>30%</td>
<td>7,545</td>
<td>40%</td>
</tr>
<tr>
<td>65-74</td>
<td>3,728</td>
<td>32%</td>
<td>6,001</td>
<td>41%</td>
</tr>
<tr>
<td>75+</td>
<td>2,647</td>
<td>26%</td>
<td>3,893</td>
<td>34%</td>
</tr>
<tr>
<td>Total</td>
<td>62,045</td>
<td>41%</td>
<td>78,142</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: NHS Business Service Authority Information Services

The data show the number of patients who have attended for an NHS dental inspection within the past 24 months in West Berkshire broken down into age bands for 2008 and 2013. From the ages of 25-75, the population percentage between 2008-2013 and the subsequent dental service usage has risen over 10%.

While overall there has been a 9% increase in uptake, the data highlights the considerable variation in the percentage of uptake within the age groups. Up to the age of 2, service uptake is very low, possibly with parents perceiving that there are few if any benefits of taking their child to a dental practice before teeth have erupted. For the early teens, both parents and children are concerned about the development of their teeth, especially whether they need orthodontic treatment as the secondary (adult) dentition replaces the primary (baby) teeth.

The drop in uptake in early adulthood corresponds with the introduction of patient co-payments and for the elderly factors influencing service usage. Patient co-payments
require the patient to contribute toward the cost of NHS care, including prescriptions, eye care and dental health. This includes perceived need, many of the elderly having none of their own teeth.

**What is the data telling us?**

Although oral health has improved over the past five years there remain disparities within the population. A significant number of very young children are experiencing difficulties arising from poor oral health that indicate a need to improve efforts aimed at reducing the factors influencing disease and its sequel in children and supporting parents in a targeted manner.

Over the last decade, oral cancer incidence rates have increased by almost two-fifths (39%) in the UK, with a similar increase in males (37%) and females (37%). The increasing prevalence of HPV is leading to an increase in the number of oral cancers diagnosed. Working with young people and informing them of oral cancer as well as all of the other risks of contracting a sexually transmitted disease may help to reduce these figures.

The current unmet needs are:

- The prevalence of children with dental decay highlights the lack of take up and/or access to dental care. The ‘Brushing for Life’ programme is designed to help address this and lead to improvements in both overall levels of oral health and reduce inequalities. This programme could also be linked into programmes aimed at helping increase attendance for care.
- The growing oral health needs of the elderly population will require appropriate solutions. Work needs to be undertaken to help quantify the needs of this growing section of the population. While currently all new entrants to a care or nursing home have a medical assessment, dental assessments are not included.
- The changing epidemiology of oral cancer and the growing evidence of an association with HPV exposure suggests that good opportunities would arise through collaboration with the department of Sexual Health at Royal Berkshire NHS Foundation Trust Hospital. Work is also required to understand how patients with the oral health problems are initially accessing primary care services.

**Recommendations for consideration**

- The development and implementation of appropriate fluoride strategies, for example the adoption of an oral health promotion programme aimed at developing good hygiene practices from birth.
- The promotion of oral health as part of a life course approach as part of healthy eating and the prevention of other medical conditions. This could include more ‘Early Years’ settings to obtain the ‘Smiling for Life’ accreditation.
• To work with various agencies to help develop improved oral health care arrangements for the elderly.
• Collaborative working between professionals across the wider sectors to ensure that oral problems are identified as earlier as possible and managed efficiently and effectively

Other services and partner organisations

The Brushing for Life programme is a dental health promotion initiative delivered across West Berkshire. The programme combines advice on good oral hygiene and the supply of toothpaste/toothbrush packs to Parents/Carers at their child’s 9 month check with health visitors. Packs contain a toothbrush and toothpaste both suitable for under 3’s, and more importantly a leaflet which reminds parents and children to brush their teeth twice daily with fluoride toothpaste. It also gives examples of foods and drinks that are good for children's teeth. Parents/Carers of young children can get replacement packs from any one of our children centres once they have run out of toothpaste or require a new toothbrush.

National and local strategies


PHE Guidance: Improving oral health: community water fluoridation toolkit 2016

NICE Guidance: Oral health: local authorities and partners 2014

Other chapters you might be interested in

Childhood Obesity

Emotional Health and Wellbeing of Children

Sexual Health and HIV

Substance Misuse in Children and Young People

Teenage Pregnancy

If you have any questions about this chapter, please contact Public Health and Wellbeing Team on publichealthandwellbeing@westberks.gov.uk or 01635 503437