Somerset County Council

Improving Oral Health in Somerset 2015-2018

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Executive Summary

The aim of this strategy is to help promote good oral health in a planned and co-ordinated way across Somerset. To achieve this, an action plan accompanies this strategy and focuses on preventative activity taking place in community settings with a range of key partners. Somerset's dental workforce is a key partner for health and social care services in preventing poor oral health in Somerset, therefore their role in prevention is considered within. This strategy **does not** however specifically refer to routine or emergency primary dental services and treatment contracted by NHS England.

What is oral health?

Oral health refers to the health of people's teeth, gums, supporting bone and soft tissues of the mouth, tongue and lips. Poor oral health can exacerbate existing health conditions, impact on wellbeing by causing pain, difficulties with speaking, eating and socialising. This is as well as being an indicator of neglect or difficult social circumstances. Oral cancers are considered within the context of oral health. Poor oral health is almost entirely preventable.

Populations at risk of poor oral health

Although it is important to give advice and support to the whole population on how to maintain good oral hygiene, it is recognised that certain populations are at increased risk of poor oral health. This is due to physical, social, environmental and lifestyle circumstances that impact on their ability to; maintain good oral hygiene, eat a healthy diet and/or access dental services. Vulnerable populations include those;

- from a lower socioeconomic group
- who are socially isolated or excluded, for example, Gypsy and Traveller communities, those in prison or the homeless
- who are old and frail or geographically isolated
- who have physical and/or learning disabilities or an autistic spectrum disorder
- who have a mental health condition, including dementia
- who smoke or drink heavily or misuse other substances
- children of parents with the above risk factors and children in care
- from some black, Asian and minority ethnic groups (specifically where language is a barrier to accessing services)
- with certain clinical conditions, such as Diabetes, congenital heart problems and pregnant women

Oral health of children and young people in Somerset: key points

- Childhood is a key time to develop lifelong skills and behaviours relating to oral health and hygiene. Despite this 12% of three year olds in England already have evidence of childhood decay
- Although decay in five year olds has reduced over time, the prevalence of decay in this age group is still 30.9% nationally. In Somerset the prevalence of tooth decay experience is 25.8% however it is evident that there is inequality in the severity of decay seen across the county. Children in Sedgemoor are more likely to have multiple decayed teeth and children in Sedgemoor/West Somerset have higher rates of abscess and/or sepsis
- The prevalence of tooth decay in twelve year olds in Somerset is slightly higher than that seen nationally (36.6% V 33.4%). At a district level this higher prevalence is evident in Sedgemoor, Taunton Deane and West Somerset. Greater severity of decay is also evident in West Somerset and Sedgemoor
- Attendance at primary dental care services for children less than two years of age in Somerset appears to be lower than that seen nationally, especially in Sedgemoor and West Somerset
- Dental extractions were the leading cause of admissions to hospital for children in England aged 5-9 years of age in 2013/14. 25,812 children in this age group were exposed to the risks and stress associated with a hospital admission and general anaesthetic for a predominately preventable condition
- The most common age group for dental extraction is in 5-9 year olds. At a district level the proportion admitted for dental extraction in this age group ranges from 0.9% in Sedgemoor to 0.2% in South Somerset. When explored by 'getset' catchment area rates are highest in Sedgemoor South, Taunton North and East and Quantock West.

Table 1: District profiles for survey findings where areas have higher or lower %d3mft, d3mft or access than the national average
('Sig' = statistically significant at the 95% confidence level)

	3 year olds	5 year olds	12 year olds	Access (<2 years)
Mendip	Comparable	Comparable	Comparable	Slightly lower
Taunton Deane	Comparable	Comparable	Higher %d3mft>0 (sig)	Lower
Sedgemoor	Comparable	Higher d3mft (sig) Higher sepsis/absce	Higher %d3mft>0 (sig) Higher d3mft (sig)	Lower
South Somerset	Comparable	Comparable	Lower d3mft (sig)	Slightly lower
West Somerset	Comparable	Higher sepsis/abscess	Higher %d3mft>0 (sig) Higher d3mft (sig)	Lower

Young adults and families

A HCSIS survey in 2013 also highlighted the impact of poor oral health on older children and families;

- A fifth of 12 and 15 year olds reported difficulty eating in the past three months
- More than a third of 12 year olds and more than a quarter of 15 year olds reported being embarrassed to smile or laugh due to the condition of their teeth
- Overall, 58 per cent of 12 year olds and 45 per cent of 15 year olds reported their daily life had been affected by their teeth and mouth in the past three months
- More than a third of the parents of 15 year olds reported that their child's oral health had impacted on family life in the last six months. 23 per cent taking time off work

Oral health of adults in Somerset: key points

- Over the past twenty years there has been significant improvements in the oral health indicators for adults, however inequalities in oral health remain
- In the South West there is a slightly higher prevalence of tooth extraction, dental decay and tooth-wear in adults when compared to the England average
- There are an increasing proportion of younger adults with moderate tooth-wear nationally. This is indicative of rapid tooth wear and is therefore of clinical concern
- Just over half of adults visited the dentist in a two year period in Somerset – this is slightly higher than the England average. From March 2011 - March 2014, access rates have increased in all districts other than in Taunton Deane and West Somerset
- Courses of treatment involving preventive interventions for adults occur at a higher than national average rate for fluoride varnishing (2.8% V 2.5%); but below the national average for scale and polishes (9.4% V 19.3%)
- Incidence of oral cancer is highest in Taunton Deane and West Somerset. West Somerset also has a higher than expected mortality rate from oral cancers which requires greater exploration
- 75% of adults over 55 years of age experienced some degree of periodontal disease
- Older adults are particularly vulnerable to poor oral health as their dental needs become more complex. Especially if they are affected by additional health problems such as diabetes, cardiovascular disease and dementia

How to improve oral health?

- Many chronic non-communicable diseases share a set of common risk conditions and factors. These risk factors include smoking, poor diet, stress, alcohol consumption, poor hygiene and injuries. Using a common risk factor approach to address the underlying determinants

of poor oral health will help ensure that services can prevent or improve a wide range of conditions

- Interventions with individuals and communities, with a focus on early year's prevention, will help develop good oral health behaviours and reduce inequalities in oral health outcomes throughout the life-course

A strategy to improve oral health in Somerset

Improve diet and reduce the consumption of sugary foods, drink, alcohol and tobacco

- Healthy food and drink policies in early years, school and workplace settings
- 'Make Every Contact Count': Consider oral health in all contacts
- Signpost those ready to change their behaviours to services that can support them e.g. stop smoking services
- Raise awareness of the risk factors and early symptoms of oral cancer across all age groups

Increase the availability of fluoride

- Ensure all young children and parents have access to fluoride toothpaste and tooth-brushing information
- Provide targeted, community-based fluoride varnishing and education programmes
- Signpost people to primary dental care for further oral health education and preventive treatments (such as fluoride varnishing and fissure sealants)

Improving oral hygiene

- Ensure that the wider professional workforce have access to training and information on oral health
- Promote supervised tooth-brushing schemes in all early years settings and primary schools
- Support supervised tooth-brushing schemes in schools with children at increased risk of poor oral health
- Integrate oral health education and dental signposting into home visits and assessments by health & social care workers

Addressing inequalities in oral health

- Promote good oral health behaviours and attendance at a dentist throughout the life-course (prenatally onwards)
- Provide targeted and evidence based interventions to populations at increased risk of poor oral health (e.g. supervised tooth-brushing schemes and community fluoride varnishing)
- Equip the wider health and social care workforce with the knowledge and skills to recognise those at risk of poor oral health and the link with neglect and/or complex social circumstances
- Ensure all dental, health and social care staff receive safeguarding training and are aware of how to refer those raising concern

Increasing access to dental services

All services to seize opportunities to a) signpost parents to primary dental care, and b) to ensure that information is available on how to access dental care,

including the associated costs/eligibility for support with healthcare costs. Information should be available in easy to read and language appropriate formats

Commissioning oral health improvement services

This strategy will inform the commissioning of oral health improvement services from April 2016. In addition it will consider the role of the wider Somerset health and social care workforce in improving the oral health of its population throughout the life-course.

Current commissioned oral health services

Currently Somerset County Council (SCC) commission oral health improvement services that deliver specific activity aimed to reduce inequalities in oral health in Somerset. This activity includes;

- Universal toothbrush distribution at age 1, 2, 3 and 4 years
- Oral health training and supervised tooth-brushing support in Special Schools
- Targeted fluoride varnishing scheme for 3 year olds

Oral health improvement services for children and young People are due to be re commissioned from April 2016. The objectives of this service will be to reduce inequalities in oral health through evidence based interventions with populations at risk of poor oral health (as identified within this strategy).

Targeted adult oral health improvement activity is currently commissioned through a NHS England primary dental contract. This activity may or may not be included in the forthcoming service specification from Somerset County Council depending on commissioning arrangements in the future.

(For more detail on oral health responsibilities please see **Appendix A, policy background**)

Contents

1. Introduction

1.1 Oral health refers to the health of people's teeth, gums, supporting bone, and soft tissues of the mouth, tongue and lips (DH, 2005). Poor oral health can impact on someone's wellbeing by causing pain, difficulties with speaking, eating and socialising. Gum (Periodontal) disease is known to be associated with numerous health problems including coronary heart disease, rheumatoid arthritis and adverse pregnancy outcomes (NICE, 2014a). Gum disease can also be exacerbated by chronic conditions such as poorly controlled diabetes.

Figure 1: The most common oral diseases and conditions

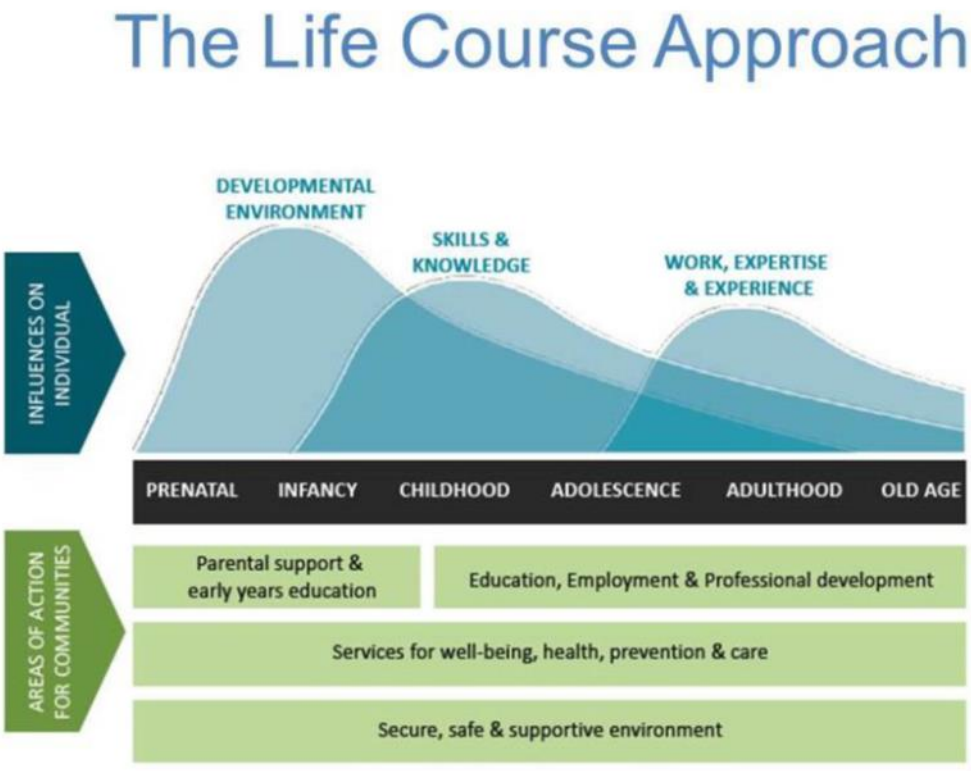
1.2 As well as the impact on individual well-being, oral disease is expensive to treat. The World Health Organisation (WHO) estimates that in high-income countries 5-10% of national public health expenditure relates to the costs of curative dental care (WHO, 2012). This is despite it being a largely preventable health problem. To address this it is increasingly being recognised that everyone should be given the benefit of advice and support to change their behaviour regarding their general and oral health at all ages (PHE, 2014).

2. The common risk factor and life-course approaches

2.1 National policy (**appendix A**) over the past decade has recommended a 'common risk factor' approach to tackling diseases with the same underlying causes. This means recognising that chronic non-communicable diseases and certain health conditions (such as obesity, heart disease, stroke, cancers, diabetes and oral diseases) share a set of common risk conditions and factors. These risk factors include smoking, poor diet, stress, alcohol consumption, poor hygiene and injuries. Using a common risk factor approach to address the underlying determinants of poor oral health will help ensure that services can prevent or improve a wide range of health conditions.

2.2 The 'Marmot' review of 2010 highlighted the importance of early life interventions in health improvement. Interventions with individuals and communities through all important life stages, with a focus on early year's prevention, helps reduce inequalities in health outcomes at all ages.

Figure 2: The Life Course approach (CMO, 2011 cited in PHE 2014a, p.19)



2.3 A review of the national policy and evidence for oral health improvement shows that community based interventions and activities to promote good oral health in Somerset should focus on the following key priorities;

- **improving diet and reducing the consumption of sugary food, drinks, alcohol and tobacco** *(see appendix b for dietary recommendations and appendix d for information on making 'brief interventions')*
- **increasing the availability of fluoride**
- **improving oral hygiene** *(see appendix c for toothbrushing recommedations)*
- **increasing access to dental services**
- **addressing inequalities in oral health**

3. Oral health in England

3.1 Over the past four decades oral health in England has improved significantly with more and more children and adults keeping their natural teeth. 'Delivering better oral health – an evidence-based toolkit for prevention' in 2007 recommended minimum fluoride levels of toothpastes for manufacturers and gave clear advice on best practice both in terms of tooth-brushing and supporting those at greater risk of poor oral health. This was fundamental in influencing both universal and targeted oral health improvement activity.

3.2 However, oral health remains a key concern in terms of the public's health because it is almost completely preventable. It is also well recognised that there is a strong correlation between deprivation and oral health, and that despite vast improvements, inequalities persist.

The Dental Public Health Intelligence Programme (DPHIP) at the North-West Knowledge and Information Team (KIT), Public Health England

Each year a sample of children and/or adults in each Local Authority in England are invited to participate in an oral health survey. The purpose of these surveys is to provide information on the current state of adults and children's teeth and oral health and to measure changes over time. The age of participants invited changes each year, although specific age groups (5 year olds and 12 year olds) are repeated regularly.

Dental caries (a common method of benchmarking dental health) are measured using the **d3mft** measure. This is a record of the mean number of decayed, missing and filled teeth in that sample of people.

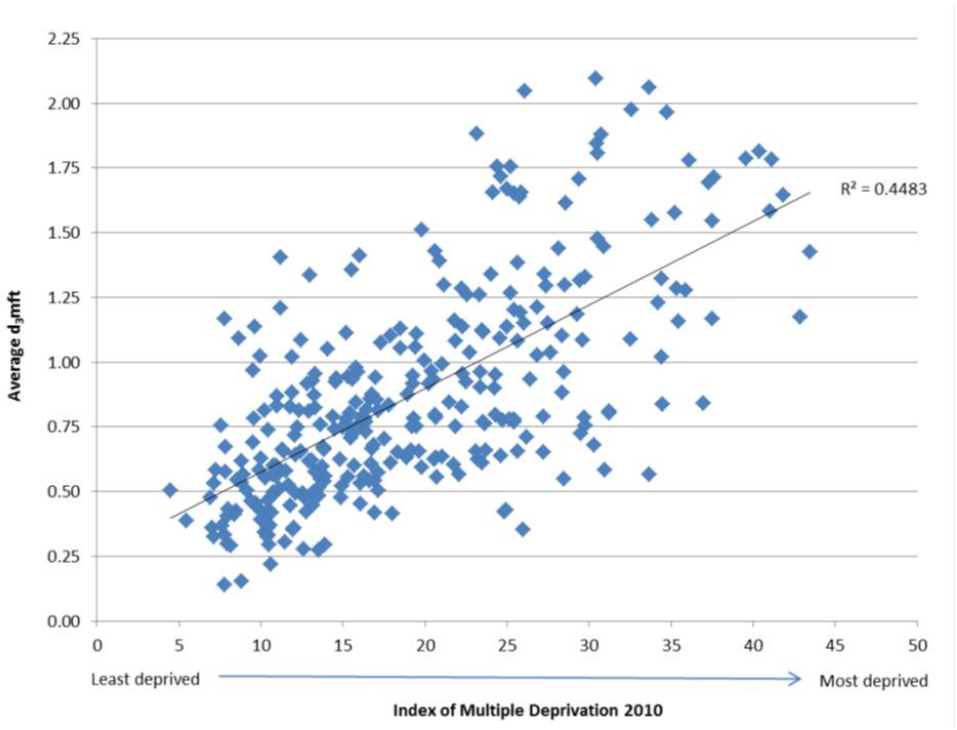
4. Children and young people's oral health in England

4.1 Ensuring that children and young people have good oral hygiene and behaviours from an early age is key for life-long oral health, however severe tooth decay is still a problem for many children. A 2013 survey of three year old children found that even at this early age 12% had experienced dental decay. Additionally dental extractions were the leading cause of admissions to hospital for children aged 5-9 years in England during 2013/14 (HCSIS, 2014). 25,812 children in this age group were exposed to the risks and stress associated with a hospital admission and general anaesthetic for a predominately preventable condition.

4.2 Tooth decay is strongly associated with deprivation. **Figure 3** demonstrates the relationship between the rates of decay seen in 5 year old children in 2012 against a commonly used measure of deprivation (the IMD 2010). This graph shows that as deprivation increases so does the average number of decayed teeth in the sample of 5 year old children surveyed.

> **The IMD 2010:** The Index of Multiple Deprivation (IMD) 2010 uses 38 indicators, organised across several domains (and subdomains) of deprivation, which are then combined. This enables small geographical areas to be ranked from least to most deprived.

Figure 3: Correlation between the rate of decay among 5 year-old children and deprivation score. Lower tier local authorities in England 2012 (NHS, 2014)



4.3 Every ten years the Health and Social Care Information Centre (HCSIS) carry out a survey of oral health in England. HCSIS (2015) found that in 2013 there were reductions in the extent and severity of tooth decay present in the permanent teeth of 12 and 15 year olds overall in England, Wales and Northern Ireland from 2003 to 2013. Large proportions of children, however, continue to be affected by disease, and the burden of disease is substantial in those children that have it.

4.4 What HCSIS also highlighted was the impact of poor oral health on older children and families.

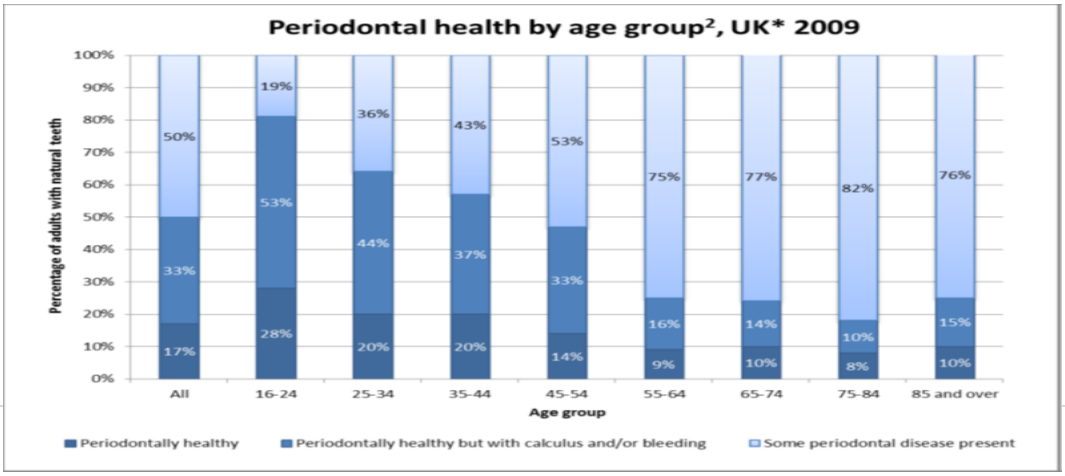
- A fifth of 12 and 15 year olds reported difficulty eating in the past three months
- More than a third of 12 year olds and more than a quarter of 15 year olds reported being embarrassed to smile or laugh due to the condition of their teeth
- Overall, 58 per cent of 12 year olds and 45 per cent of 15 year olds reported their daily life had been affected by their teeth and mouth in the past three months
- More than a third of the parents of 15 year olds reported that their child's oral health had impacted on family life in the last six months. 23 per cent taking time off work

5. Adult's oral health in England

5.1 Oral diseases and conditions can be acute or progressive and cumulative. This means that they are a concern for both children and adults alike. Once the structure of the tooth is compromised, life-long maintenance will be required by dental practitioners (PHE, 2014b). Additionally we know that the rate of periodontal (gum) disease increases with age. **Figure 4** from 'A Call to Action' shows that in 2009 approximately 75% of adults over 55 years of age experienced some degree of periodontal disease.

5.2 Older adults are particularly vulnerable to poor oral health as their dental needs can be more complex, especially if they are affected by additional health problems such as diabetes, cardiovascular disease and/or dementia. Therefore poor oral health has a disproportionate effect on older adults (Petersen and Yamamoto, 2005).

Figure 4: Periodontal health by age group in 2009 (NHS, 2014)



6. Oral cancer

6.1 Oral cancers include those of the mouth, tongue, sinus, hypopharynx, and lip. As with much oral ill-health oral cancer is associated with deprivation. Oral cancer is most commonly caused by exposure to poor diet, smoking and alcohol. The Human Papilloma Virus (HPV) is also a significant cause of oral cancers.

6.2 Incidence of oral cancer increases with age and is the 16th most common cancer in the UK (Cancer Research UK, 2011). It is more common in men than in women and accounts for 2% of all cancer cases nationally. The incidence of oral cancer has increased by a third in the last decade, probably due to a preceding increase in the prevalence of risk factors (smoking and alcohol consumption). Importantly the rate of oral cancer in younger adults is increasing. This is likely to be attributable to increasing rates of HPV infection (PHE, 2014b p.130). Prognosis for oral cancer is poor, however early detection and treatment can significantly improve outcomes for those affected. Around 50% of people with cancer of the tongue or oral cavity will survive for five years or more (Cancer Research UK, 2014).

7. Who is at greatest risk of poor oral health?

7.1 Although it is important to give advice and support to everyone on how to change behaviours or maintain good oral hygiene, it is recognised that certain populations are at increased risk of poor oral health. This is due to physical, social, environmental and lifestyle circumstances that impact on their ability to maintain good oral hygiene eat a healthy diet and/or access dental services. Vulnerable populations include those;

- from a lower socioeconomic group
- who are socially isolated or excluded, for example, Gypsy and Traveller communities, those in prison or the homeless
- who are old, frail or geographically isolated
- who have physical and/or learning disabilities
- who have a mental health condition, including dementia
- who smoke or drink heavily or misuse other substances
- children of parents with the above risk factors and children in care
- those from some black, Asian and minority ethnic groups (specifically where language is a barrier to accessing services)
- those with certain clinical conditions, such as Diabetes, congenital heart problems and pregnant women

8. Oral health in Somerset

Somerset is a predominately rural county divided into five districts (Mendip, Sedgemoor, South Somerset, Taunton Deane and West Somerset). Low population density in some parts of the county present challenges for the provision of appropriate transport infrastructure and the viability and accessibility of local services (JSNA, 2013). Other challenges for oral health in Somerset include an ageing population and inequalities in health outcomes between districts.

9. Children and young people

Children aged three years

9.1 In 2012 the first national survey of oral health in three year old children was carried out by Public Heath England and highlighted the significant numbers of children with evidence of decay at a very young age. This survey aimed to approximate prevalence by measuring decay experience (the proportion of children with one or more teeth that were decayed, extracted or filled: %d3mft>0) and the severity of dental decay (average number of teeth affected by decay, extracted or filled: d3mft). Early Childhood Caries (ECC) were also measured. ECC are an aggressive form of dental decay that is often associated with long-term bottle use with sweetened drinks (PHE, 2014b).

9.2 Somerset 3 year olds had a prevalence of decay experience of 10.2% with a mean d3mft of 0.3. 3.2% of three year olds had evidence of ECC. All measures were comparable with the South-West and England averages, however wide confidence intervals and small sample sizes mean that caution should be taken in interpreting these results.

Children aged five years

9.3 The results from the 2011/2012 epidemiology survey of five year old children showed that nationally 30.9% of five year olds had experience of tooth decay (PHE, 2013). Somerset had comparable prevalence of decay with the national average and those counties with similar geographies (**Figure 5**). Comparison of the 2008/09 and 2011/12 survey results for Somerset show that the prevalence of dental decay in this age group in Somerset has reduced over time (31.4% to 25.8%). When the severity of tooth decay at a district level in Somerset is explored however, it can be seen that the mean d3mft at age five is significantly higher in Sedgemoor than in Mendip. A high mean d3mft suggests that there is significant decay affecting multiple teeth (**Figure 6**).

9.4 PHE (2014b) identified that the percentage of children with obvious oral abscess/sepsis in this age group was higher than the national average of 1.7% in West Somerset (3.2%) and Sedgemoor (3.1%). It is unclear if these are statistically significant however treatment for abscess/sepsis can often be extraction, exposing children to the risks and complications

associated with this. It is therefore important to prevent this wherever possible.

The Public Outcomes Framework (PHOF) encouraged the prioritisation of oral health improvement by including a measure of the oral health of five year old children as a key indicator in the 2012 document. The PHOF is designed to help inform those involved in providing and commissioning activity to improve the health of their local population. This PHOF indicator measures the *'mean severity of tooth decay in children aged five years based on the mean number of teeth per child sampled which were either actively decayed or had been filled or extracted decayed/missing/filled teeth (d3mft)*'. This data is collected through the National Dental Programme for England at the North-West Knowledge and Information Team, Public Health England.

Figure 5: Mean d3mft in children 5 year old children (2011/2012), Public Health England

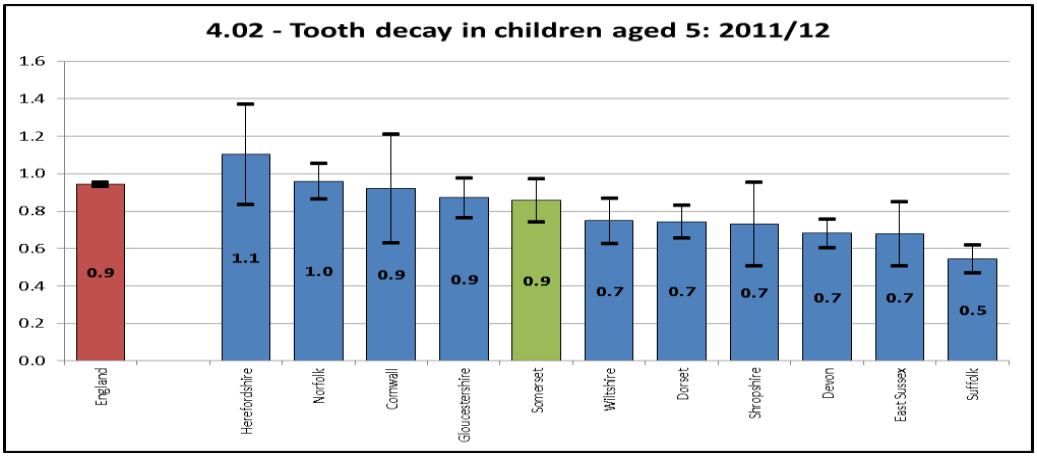
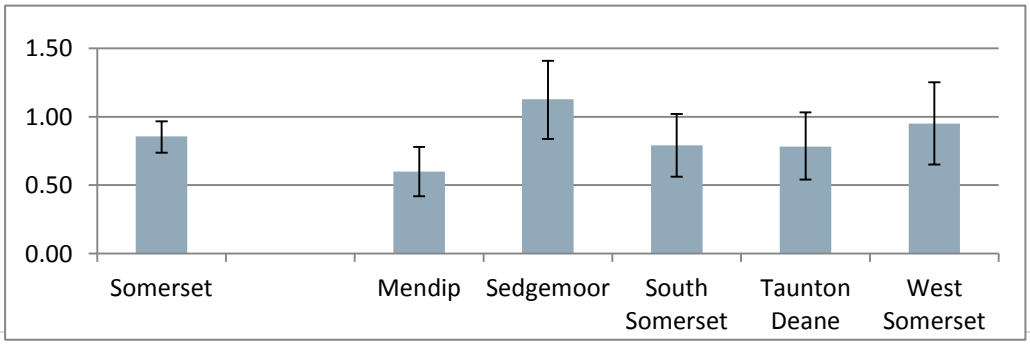


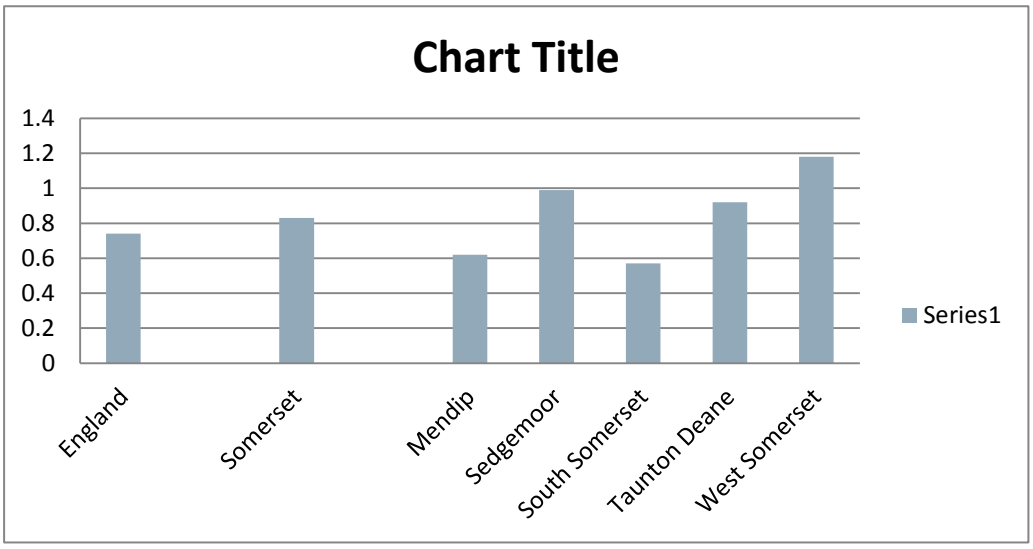
Figure 6: Mean d3mft in 5 year old children by district (2011/2012), Public Health England. Sample n = 1267 (produced by Somerset County Council, Public Health Team).



9.5 Although tooth decay in 12 year old children is not a PHOF indicator the last survey of this age group (2011/12) showed that 33% of pupils in England had decay experience. Somerset was found to have a slightly higher prevalence of decay experience in this age group than the national average, although it was not statistically significantly higher (36.6% V 33.4%). At a district level there is significantly higher prevalence of dental decay experience for twelve year olds in West Somerset (45.5%), Taunton Deane (40.7%) and Sedgemoor (39.4%) compared to the national average.

9.6 Somerset has a higher mean d3mft than that seen nationally for this age group (0.83 V 0.74) although this was not statistically significantly higher. However, when mean d3mft is explored at a district level it is apparent that there is greater severity of dental decay seen in West Somerset (0.95) and Sedgemoor (1.13) (**Figure 7**).

Figure 7: Mean d3mft in 12 year old children by district (Public Health England Oral Health Survey, 2008-2009. Graph produced by SCC Public Health Team). Sample n = 1689



Child access and treatment in Primary Dental Care

9.7 Registration at a dental practice is important to ensure that all children are offered individualised dental treatment in addition to preventive advice and interventions e.g. sealants and fluoride varnishing. Figure 8 and 9 show that although the proportion of children in Somerset accessing dental services is comparable to the England average, it appears to be low in children under 2 years of age, especially in Sedgemoor, Taunton Deane and West Somerset. Of the 70.4% attending for a check-up appointment, the percentage of children who receive a ‘’preventive intervention’’ (fissure sealant or fluoride varnish application) was reported by PHE (2014b) as being lower than the national average (2.7% V 6%). However, fluoride varnish applications (23.6%) were reported as being far above the national average of 11% (PHE, 2014b).

9.8 The ‘Care Index’ is the proportion of teeth with caries that have been filled. It gives an indication of the restorative care received by children with decay by dentists (PHE, 2014b). The PHE 2012 survey of five year old children identified that in Sedgemoor and South Somerset the care index for five year olds is below that of the England average. This could indicate that children in this locality may not be gaining the appropriate access and/or dental treatment that is required (9.7% and 6.9% V 11.2%). In the PHE survey of 12 year old children the care index for children living in West Somerset was lower than that seen nationally (38.5% V 47.2%).

Figure 8: Access Rate Resident Child Patients in BNSSSG (24 Months to March 2014, PHE 2014b)

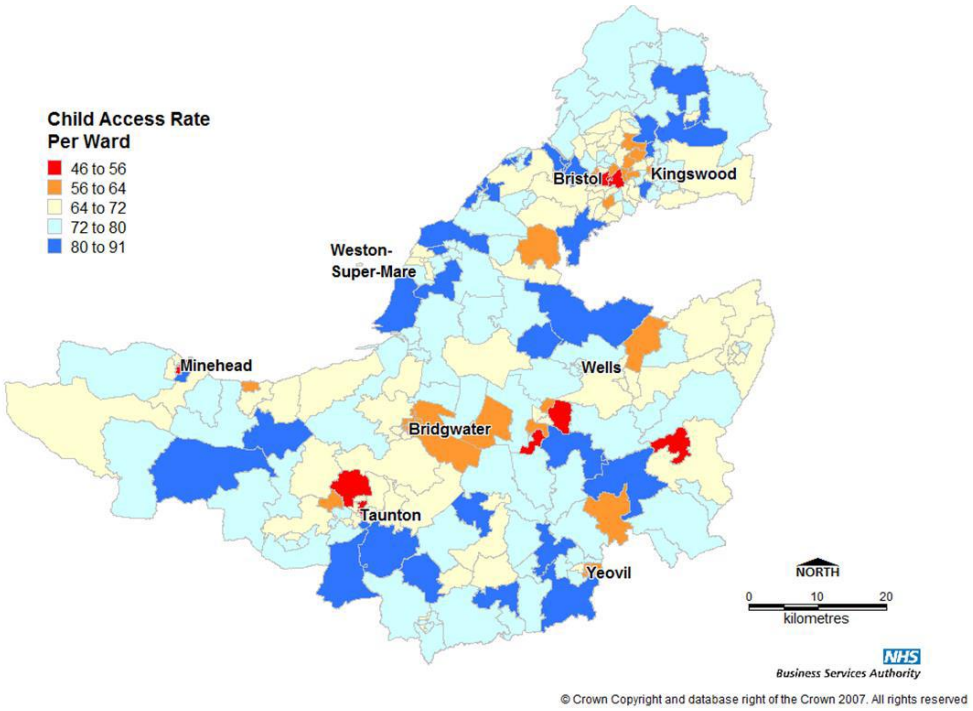
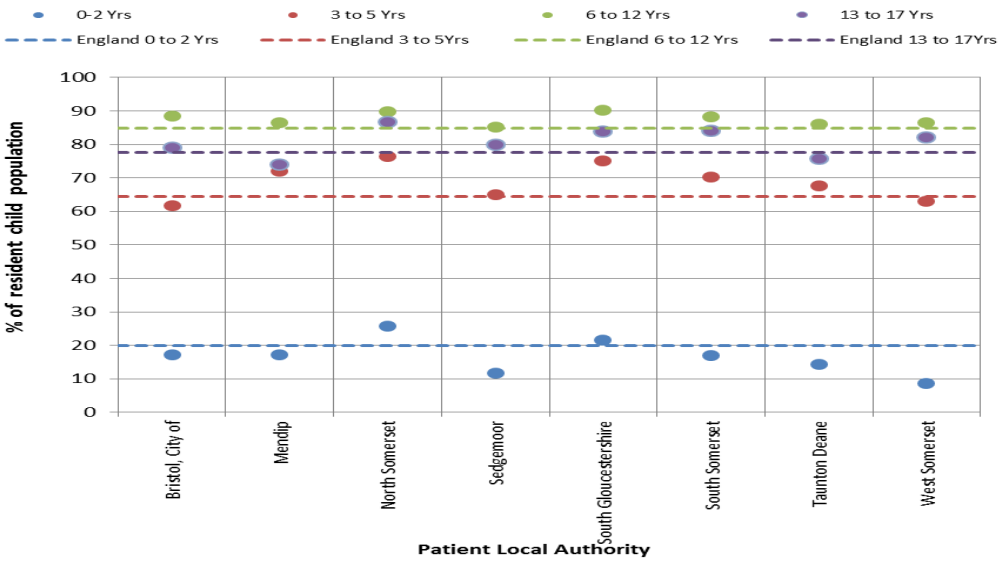


Figure 9: Bristol, North Somerset, Somerset and South Gloucester Local Authority Child Access by Age bands latest period (reproduced with permission from BNSSSG NHS Area Team)

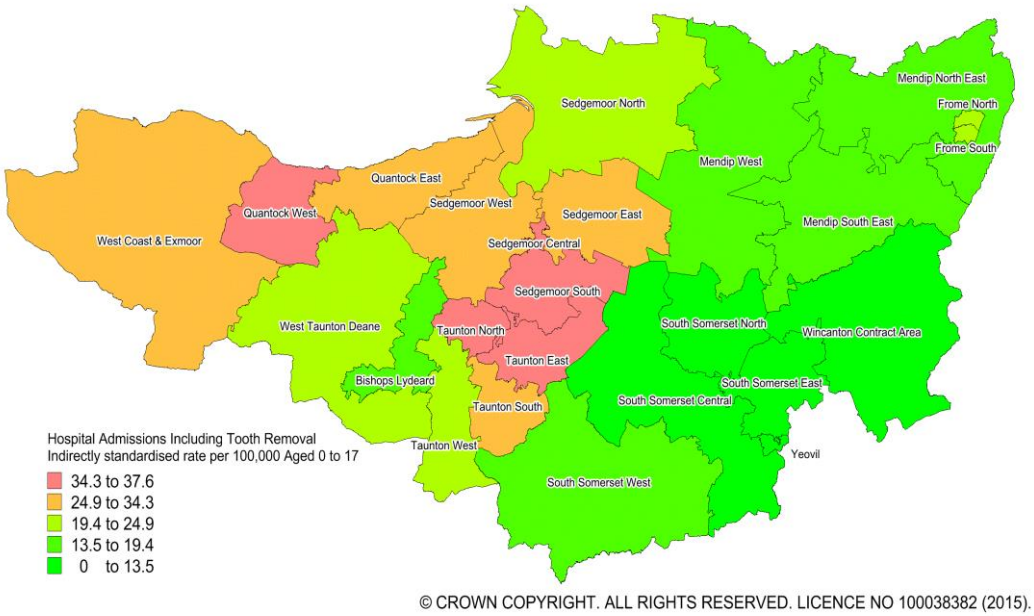


Admissions to hospital for dental extraction

9.9 When multiple teeth are decayed extraction of teeth may be required. This will typically be under general anaesthetic or heavy sedation for children, exposing them to the risks and complications associated with this. The proportion of five year old children with one or more teeth extracted in 2011/12 in Somerset was found to be comparable with the England average (2.05% V 3.1%) as well as the regional average (2.19%) (PHE, 2014b).

9.10 When Hospital Episode Statistics (HES) are analysed it is possible to explore the data on admissions for dental extractions in all children and young people (aged 0-19 years). PHE (2014) found that in the South West the most common age-group for dental extraction were children aged 5-9 years. At a district level in Somerset the proportion of children and young people admitted for dental extraction ranges from 0.5% in Sedgemoor to 0.2% in South Somerset. This range is greater in the 5-9 age group (0.2-0.9%). When admissions are explored by 'getset' catchment area (**Figure 10)** age standardised rates of admissions are highest in Sedgemoor South, Taunton North and East and Quantock West.

Figure 10: Map showing child and young person (0-17years) admissions for dental extraction by 'getset' catchment area (three year age-standardised average, 2012-14 – produced by SCC Public Health Team)



Oral health of children and young people: District summary

9.11 **Table 1:** District profiles for survey findings where areas have higher or lower %d3mft, d3mft or access than the national average

	3 year olds	5 year olds	12 year olds	Access (<2 years)
Mendip	Comparable	Comparable	Comparable	Slightly lower
Taunton Deane	Comparable	Comparable	Higher %d3mft>0 (sig)	Lower
Sedgemoor	Comparable	Higher d3mft (sig) Higher sepsis/ abscess	Higher %d3mft>0 (sig) Higher d3mft (sig)	Lower
South Somerset	Comparable	Comparable	Lower d3mft (sig)	Slightly lower
West Somerset	Comparable	Higher sepsis/abscess	Higher %d3mft>0 (sig) Higher d3mft (sig)	Lower

'Sig' = statistically significant at the 95% confidence level

10 Adults

Trends in oral health

10.1 PHE (2014) explored the findings of the National Adult Health Surveys, collected by the Office of National Statistics every ten years (most recently carried out in 2009). They found that over the past 20 years there has been a significant improvement in the oral health of indicators for adults, however inequalities remain and many older adults have very complex oral health needs. This data is not available at a local level, however at a national and regional level the key findings in 2009 were as follows;

- Number of teeth
  - 6% of adults nationally and regionally had no teeth, a significant reduction from the 28% observed in 1978). This figure varied by gender (4% male, 7% female)
  - 83% of adults in the South West had 21 or more natural teeth (compared to 86% nationally)
- Dental Decay
  - Prevalence of tooth decay in the crown of the tooth (coronal caries) had fallen in England from 46% to 29%, although this was higher in the South West (34%). Coronal caries prevalence was higher in 25-34 year olds and those from more deprived households
  - Presence of decay in the root of the tooth typically increases with age as the gums recede. Prevalence of root decay was found to affect 7% of adults in England and 11% in the South West
- Periodontal health

- There has been an overall reduction in the prevalence of periodontal disease in adults across all age groups

- Tooth wear
  - Erosion of the tooth is a natural process, however where it is rapid and destructive it can result in treatment being required. Prevalence of tooth wear in England has increased in the past 10 years (66% to 77%). In the South West this figure was 82%.
    There are an increasing proportion of younger adults with moderate wear nationally. This is indicative of rapid tooth wear and is therefore of clinical concern

Access to services

10.2 Easy and timely access to dental services is essential to ensure that individuals are able to receive preventive interventions and advice as well as treatment. Access rates measure the number of people seen as a proportion of the resident population. Influences on access to dental services can be availability of services, distance to travel, oral health needs and individual preferences (e.g. private dental care). Just over half (55.1%) of the South West adult population, and 70.7% of children, have visited their dentist in the last two years (PHE, 2014). From March 2011 - March 2014, access rates have increased in all districts other than in Taunton Deane and West Somerset.

10.3 Courses of treatment involving preventive interventions for adults were reported by PHE (2014) as occurring at a higher rate than the national average for fluoride varnish (2.8% V 2.5%); but below the national average for scale and polishes (9.4% V 19.3%) (PHE, 2014b).

10.4 12% of the general adult population are likely to suffer from dental phobia, and avoid dental care as a result (PHE, 2014b). Adequate provision of anxiety management services, including behaviour management and sedation techniques are recommended to remove barriers to accessing dental care and reduce health inequalities. PHE (2014b) found that children and adults in West Somerset typically have further to travel to access dental anxiety management services and there is limited provision in the district. Although the population in West Somerset is relatively small, anxiety management services should consider this finding in service planning.

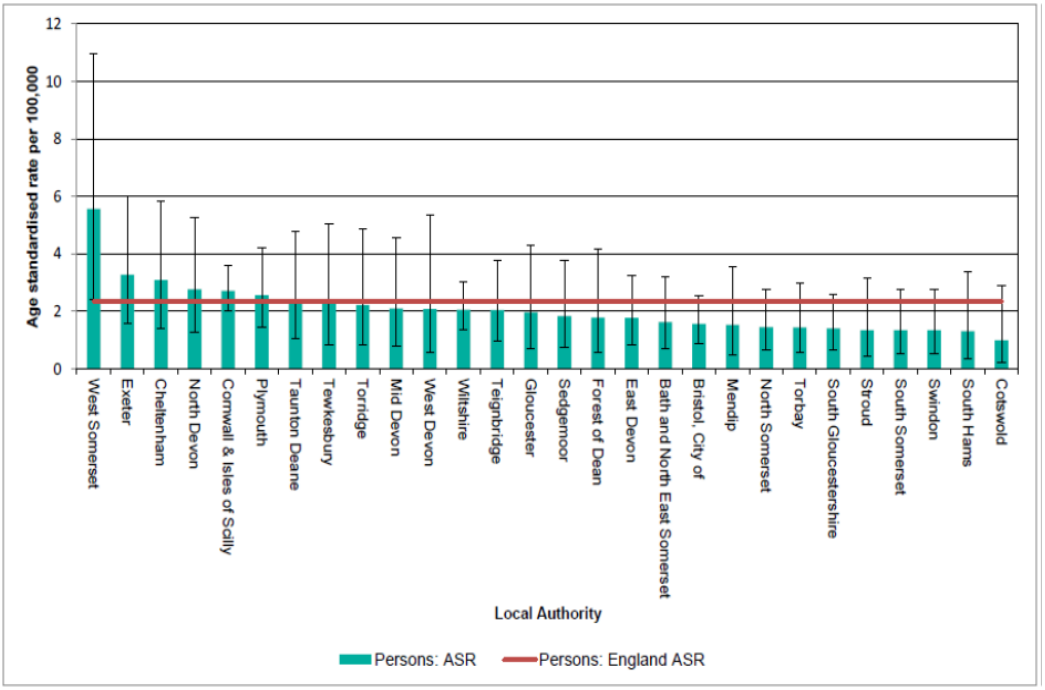
Oral Cancer

(See section 6 for background information)

10.5 Somerset has a slightly lower rate of oral cancer compared to the England average (8.3 V 8.9 pre 100,000). Across the county incidence varies and is highest in Taunton Deane (9.8 per 100,000) and West Somerset (12.8 per 100,000). In terms of cancer survival rates West Somerset has statistically significantly worse outcomes than that seen nationally, and the highest oral cancer mortality seen in the region (**Figure 11**) (PHE, 2014b). It is important to note that oral cancer is a relatively rare event and West

Somerset has a low population density. It would be advisable to consider incidence and survival over a longer period of time, e.g. 5-10 years.

Figure11: Oral Cancer Mortality, Age Standardised Rates for Counties in the South West, 2010-12 (NCRS ONS, reproduced from PHE, 2014b p.134)



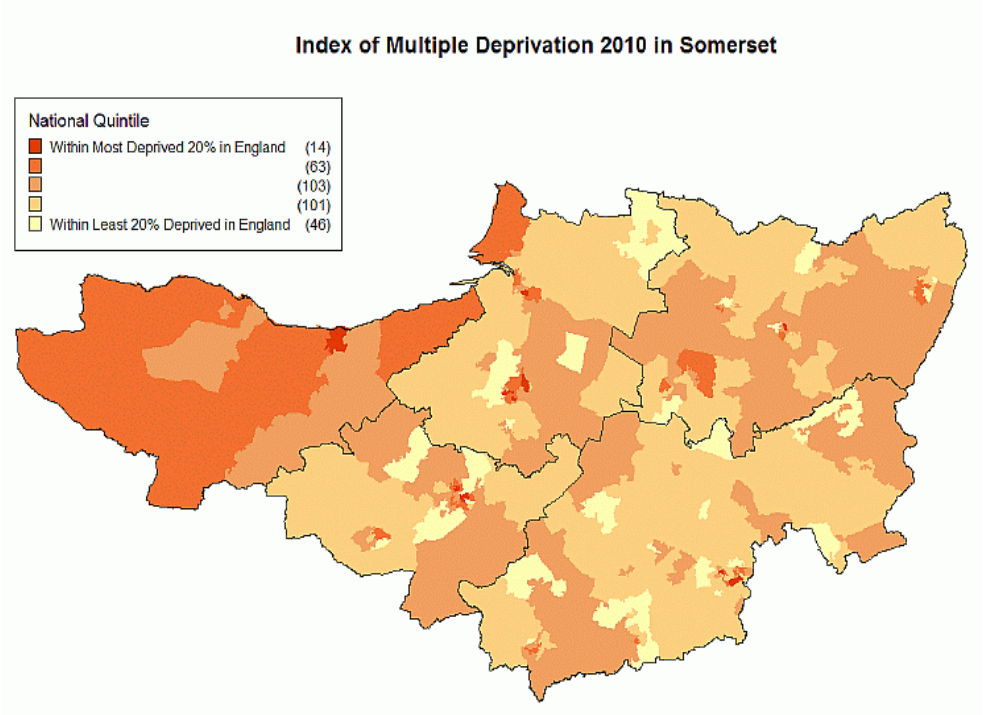
11. Vulnerable populations in Somerset

More deprived communities

11.1 Whilst there are many areas of affluence within Somerset there are also significant pockets of deprivation. These populations can experience higher levels of unemployment, lower educational attainment and poorer health and wellbeing (SCC, 2013a). Rural deprivation is a significant problem in many areas, particularly West Somerset, where access to transport and services is more limited. The areas with the greatest proportion of deprived LSOAs* in Somerset are the rural areas of West Somerset and urban areas of Bridgwater, Taunton and Yeovil. Five of Somerset's LSOAs are within the most deprived 10% nationally. Together they represent around 7,500 people, or around 1% of Somerset's population.

**Lower Super Output Areas (LSOA's) is a geographical area typically consisting of 1500 residents which is used to improve the reporting of small area data*

Figure 12: Areas of deprivation in Somerset (dark red = most deprived)



Children and Young People

11.2 Childhood is a key time to develop skills and behaviours relating to oral hygiene which can then be carried into adulthood. There are 115,396 children and young people under 18 living in Somerset. Children and young people are at risk of poor oral health due to their reliance on parents and carers to help maintain good oral hygiene and access the dentist. There are significant numbers of children who are at an even greater risk of poor oral health who are identified in the Somerset Learners Needs Assessment (SCC, 2013b);

- 13,770 children living in poverty
- 515 children looked after by the local authority
- 850 pupils with a statement of special education need (although the actual numbers of children with a physical and/or learning disabilities or autistic spectrum disorder are far greater)
- 7,658 children claiming free school meals
- 2,727 children who do not have English as their first language

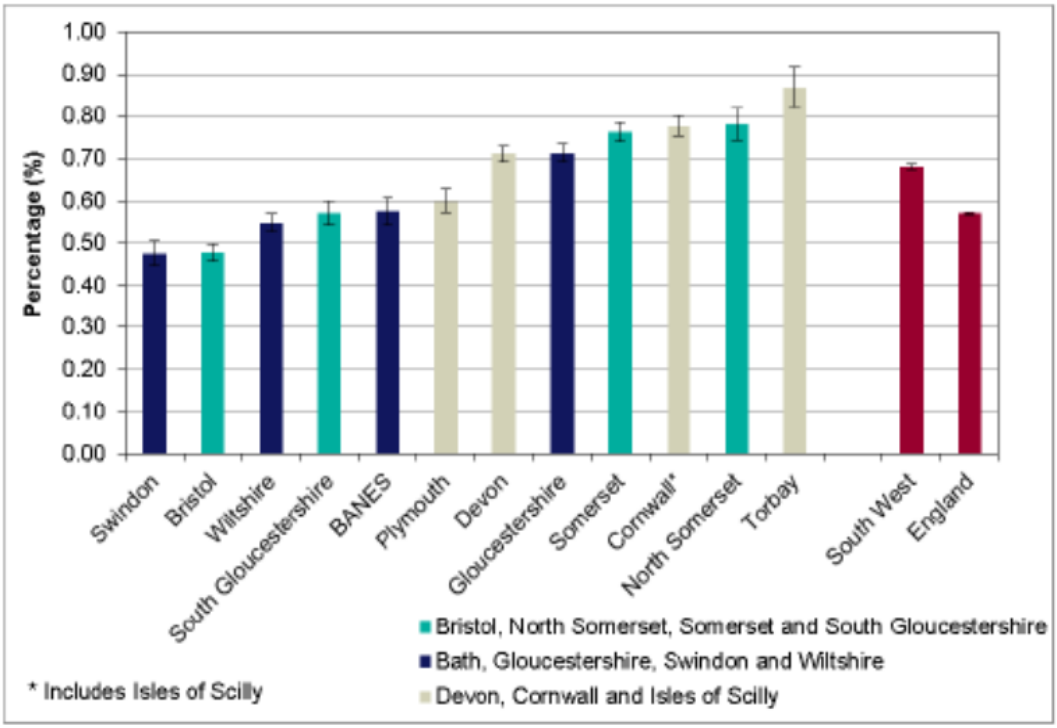
Gypsy and Traveller communities

11.3 There are an estimated 733 Gypsy or Irish Traveller residents in Somerset; the second highest number of any local authority in the South West. Just over a third of this community are resident in Mendip (Somerset Intelligence, 2014).

Older adults and adults living in nursing or residential care

11.4 Age related changes and medications can result in older adults experiencing dry and uncomfortable mouths, recurrent decay and a reduction in their ability to effectively maintain their own oral hygiene. Poor oral health and denture care can lead to pain, a reluctance to eat or drink and can affect an individual's emotional well-being. There is a higher proportion of older people living in Somerset than that seen nationally (**Figure 13**) as well as a higher proportion of residents with a diagnosis of dementia. These figures are expected to grow significantly over the next ten years. In 2014 the population over 65 in Somerset living in one of the 245 registered care homes in Somerset was 4300 (POPPI and HSCIC, 2014 in PHE 2014b).

Figure 13: Proportion of population living with Dementia (by County in South West



Adults with mental health problems and/or learning disabilities

11.5 In 2014 it was estimated that there were 2,036 people aged 18 and over with a moderate to severe Learning Disability (LD) living in Somerset. Based on current prevalence estimates and ONS population projections, the number of people aged 18 and over in Somerset with some form of LD is projected to rise by around 10% to almost 11,000 by 2030, and the number with a moderate or severe form of LD to increase by 5% to 2,139 (SCC, 2014)

11.6 Mental ill-health affects around 1 in 6 adults in the UK, although not all will be in touch with any form of service. The number of people in contact with mental health services in Somerset is reported as being approximately 2332 per 100,000 (SCC, 2014). Although poor mental health and wellbeing can influence oral health behaviours, poor physical health can also exacerbate mental health problems. It is known that physical health problems in people with an LD and/or mental health problem often go undiagnosed and/or treated for longer than they would in the general population (DRC, 2011). Prevention of poor oral health may not always be considered a priority for those supporting people with very complex physical and mental health problems.

Black, Asian and minority ethnic groups

11.7 Somerset has a predominately white British population, however a total of 31,761 Somerset residents were born outside the UK (SCC, 2013a). 5,287 residents were born in Poland, more than any other country outside Britain. The proportion of residents whose ethnicity is other than 'White British' rose from 2.9% in 2001 to 5.4%. Almost 3000 students in Somerset do not cite English as their first language (see 6.2).

Homelessness

11.8 Homelessness is often associated with complex health needs including a higher rate of emergency admissions to hospital. Homeless persons can suffer poor oral health due to difficulty accessing primary care and low perceived need for oral health care (PHE, 2014b). In 2012/2013 there were around 1000 applications for homelessness support in Somerset (Somerset Intelligence, 2014)

11.9 Across Somerset, in both overall numbers and as a proportion of all households, South Somerset and Taunton Deane are consistently highest in the county for accepting homeless applications. Four in five applications are from people aged under 45 years.

People who smoke or drink heavily or misuse other substances

11.10 Smoking, drinking alcohol in excess and taking drugs are all associated with an increased risk of poor oral hygiene and increased risk of oral cancer. In Somerset;

- Approximately 17.5% of the adult population of Somerset currently smoke, equating to around 75,000 people (PHOF, 2014)
- Approximately 26% of adults (aged 16-74) drink a dangerous amount of alcohol each week (INFORM Somerset, 2009)

12. Improving oral health: a summary of the evidence

Fluoridation of public water supplies

12.1 Fluoride is a naturally occurring mineral found in water (in varying amounts). In some parts of England the level of fluoride in the public water supply has been adjusted to one mg per litre (one part per million) - six million people live in areas with fluoridation schemes.

12.2 A report by Public Health England (PHE) in 2014 found that fluoridation is a safe and effective method of improving oral health and reducing inequalities in populations. Fluoridation of water supplies was found to be associated with lower rates of dental decay and infant admission rates and not associated with any change in non-dental health indicators.

12.3 Current recommendations are that fluoridation is not cost effective unless the level of decay in the population is >2.0 d3mft, and the local water supply serves a population of at least 200,000. Water fluoridation is therefore not recommended in Somerset where decay prevalence is below this in all areas. More detail on fluoridation of water supplies can be found at http://www.nhs.uk/conditions/fluoride/documents/crdreport18.pdf

12.4 PHE plan to continue to monitor this evidence base and produce a report for local authorities in the coming years, therefore current PHE policy recommendations may change.

13. Evidence on interventions

13.1 NICE reviewed and published the evidence for oral health improvement interventions in 2014. **Table 2** shows the interventions identified as having evidence of effectiveness for improving oral health (themed by Somerset strategy aim);

Table 2: Evidence based interventions for improving oral health (NICE, 2014)

IMPROVING DIET AND REDUCING THE CONSUMPTION OF SUGARY FOODS, DRINKS, ALCOHOL AND TOBACCO
○ Healthy food and drink policies in childhood settings ○ Influencing local and national government policy and fiscal policy in relation to food, infant feeding, smoking and alcohol (risk factor approach)
INCREASING THE AVAILABILITY OF FLUORIDE
○ Targeted provision of toothbrushes and toothpaste ○ Targeted community-based fluoride varnish programmes ○ Fluoridation of public water supplies (see 7.1)
IMPROVING ORAL HYGIENE
○ Targeted peer (lay) support groups and peer oral health workers ○ Oral health training for the wider professional workforce ○ Supervised tooth-brushing in targeted childhood settings ○ Integration of oral health into targeted home visits by health & social care workers
ADDRESSING INEQUALITIES IN ORAL HEALTH
○ Integration of oral health into targeted home visits by health & social care workers ○ Targeted provision of toothbrushes and toothpaste (e.g. postal or through health visitors) ○ Targeted community-based fluoride varnish programmes ○ Supervised tooth-brushing in targeted childhood settings
INCREASING ACCESS TO DENTAL SERVICES
There is only weak evidence to suggest that intensive home visits by dental co-ordinators may increase access to dental service. It is therefore the responsibility of all services to seize opportunities to a) signpost parents to primary dental care, and b) to ensure that information is available on how to access dental care, and the associated costs/eligibility for support with healthcare costs.

Local consultations

13.2 A number of local consultations have been combined to explore professional and public experiences of oral health and oral health services in Somerset.

Health Visitor Survey

13.3 In Somerset Health Visitors distribute toothpastes and toothbrushes to children aged 1 and 2 years as part of the Healthy Child Programme. This resource pack also includes information on the correct amount of fluoride in toothpaste and basic oral health education (developed by the current Oral Health Team). Twenty-six Health Visitors in Somerset responded to an on-line survey exploring their experiences of delivering the programme, and oral health education in general.

13.3.1 Health Visitors reported that all parents responded positively to the distribution programme and that the resources were a good way to initiate a conversation about oral health. Health Visitors reported that the programme was easy to implement, although the resource management was typically overseen by administrators.

13.3.2 Although 92% of this sample reported that their advice to parents includes information on diet, sugar intake and weaning, it less frequently included information on dental registration (76%). Very few Health Visitors (11.5%) reported feeling 'very confident' in their knowledge of oral health but most (>90%) considered their knowledge to be adequate. 73% had never received any specific training on oral health. A small number of Health Visitors in the sample (15%) did not commence oral health conversations until after the child had turned 1 year of age.

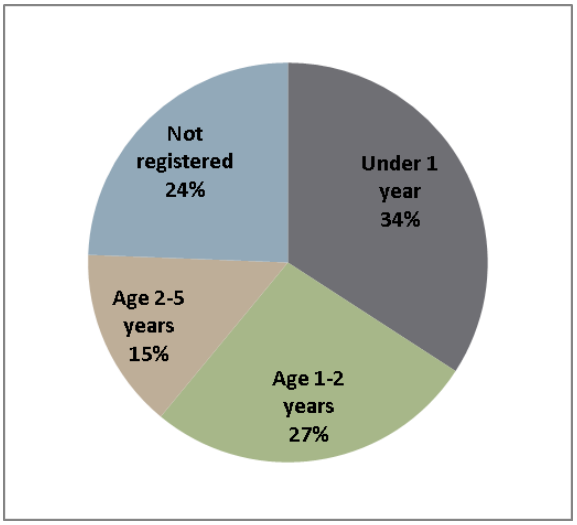
13.3.3 Health Visitors identified that there were mixed messages in the community about when a child should first start attending the dentist, or when children should start cleaning their teeth. For example, it was reported that frequently parents with children aged 1 year and older told the Health Visitor they had not started to clean their child's teeth because they didn't realise they should. This was also evident when parents of children accessing a fluoride varnishing scheme in children's centres were asked about their child's oral health (see 8.3). Several Health Visitors suggested that attendance at post-natal groups by dental or oral health services could help new parents better understand their families' oral health and hygiene needs.

Parents of children taking part in a community Fluoride Varnishing programme at 'getset' children's centres in Somerset

13.4 41 parents of children invited to participate in a community fluoride varnishing scheme in children centres were asked a series of questions on dental registration and oral hygiene. (Children participating in this scheme will be 3 years of age or older).

13.4.1 Although some parents reported registering their children with a dentist when they were 1 year of age or younger (34%) the vast majority did not. A significant proportion remained unregistered even at age 3. When parents were not registered with a dentist it followed that their child was also unregistered.

Figure 14: Age child first registered with a Dentist



13.4.2 Half of the parents asked had received demonstration and advice on how to clean their child's teeth. This was from a variety of sources, but predominately this was from their Dentist (40%), Health Visitor (30%) or Family (15%).

13.4.3 No parents reported being refused registration because their child was too young, although only 34% reported registering their child under 1 year of age.

Primary and secondary school survey

13.5 In the Spring and Summer of 2014 a school age survey was commissioned by the Somerset Health and Wellbeing in Learning Programme as a way of collecting information about young people's lifestyles. A total of 8825 pupils in years 4 and 6 (Primary) and years 8 and 10 (Secondary) took part in the survey. Two questions in this survey related to dental visits and oral hygiene.

Primary Schools

- Although 80% of children reported that they had cleaned their teeth the morning of the survey, 3% reported that they did not
- 20% of primary school pupils responded that they had fillings the last time they visited the dentist. This figure was significantly higher for children with a rural postcode (24%)

Secondary Schools

- 83% of secondary pupils responded that they visited the dentist in the last 6 months. This figure was statistically lower for children that were carers (75%)

- 6% reported visited their dentist over a year ago; this figure was statistically higher for children with a disability (21%)
- 1% reported having never been to the dentist

Full survey results available on request from SCC Public Health Team

14. A strategy to improve oral health in Somerset

Improve diet and reduce the consumption of sugary foods, drinks, alcohol and tobacco

- Healthy food and drink policies in early years, school and workplace settings
- 'Make Every Contact Count': Consider oral health in all contacts
- Signpost those ready to change their behaviours to services that can support them e.g. stop smoking
- Raise awareness of the risk factors and early symptoms of oral cancer

Increase the availability of fluoride

- Ensure all young children and parents have access to fluoride toothpaste and tooth-brushing information
- Provide targeted community-based fluoride varnishing and education programmes
- Signpost people to primary dental care for further oral health education and preventive treatments (such as fluoride varnishing and fissure sealants)

Improving oral hygiene

- Ensure that the wider professional workforce have access to training and information on oral health
- Promote supervised tooth-brushing schemes in early years settings and primary schools
- Support supervised tooth-brushing schemes in schools with children at increased risk of poor oral health
- Integrate oral health and dental registration into home visits and assessments by health & social care workers

Addressing inequalities in oral health

- Promote good oral health behaviours and attendance at a dentist throughout the life-course (prenatally onwards)
- Provide targeted and evidence based interventions to populations at increased risk of poor oral health (e.g. supervised tooth-brushing schemes and community fluoride varnishing)
- Equip the wider health and social care workforce with the knowledge and skills to recognise those at risk of poor oral health and the link with neglect and/or complex social circumstances
- Ensure all dental, health and social care staff receive safeguarding children and adult training and are aware of how to refer those raising concern

Increasing access to dental services

- All services to seize opportunities to a) signpost parents to primary dental care, and b) to ensure that information is available on how to access dental care, and the associated costs/eligibility for support with healthcare cost.

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16. Appendix A: national policy drivers

16.1 Since 2008 there has been a progression towards clinically led commissioning and localism with a strong focus on patient choice. This was supported by policy including 'Equity and Excellence: liberating the NHS July' (2010), 'The Health and Social Care Act' (2012), 'Delivering Better Oral Health An evidence-based toolkit for prevention' (2009) and more recently 'A Call to Action' (2013).

16.2 The 2012 Health and Social Care Act led to the restructuring of NHS services and the move of Public Health responsibilities to the Local Authority. In terms of dental public health the Act gave Local Authorities the responsibility for;

(a) (To the extent that the authority considers appropriate for improving the health of the people in its areas) oral health promotion programmes

(b) Facilitation of oral health surveys

  (i) The assessment and monitoring of oral health needs

  (ii) The planning and evaluation of oral health promotion programmes

  (iii) The planning and evaluation of the arrangements for provision of dental service as part of the health service, and

  (iv) Where there are water fluoridation programmes affecting the authorities, the monitoring and reporting of the effect of water fluoridation programmes.

16.3 To encourage a focus on and the prioritisation of oral health improvement the topic was included as an indicator in the 2012 Public Health Outcomes Framework (PHOF). This indicator measures the *'mean severity of tooth decay in children aged five years based on the mean number of teeth per child sampled which were either actively decayed or had been filled or extracted decayed/missing/filled teeth (d3mft)*'. This data is collected through the National Dental Epidemiology Programme for England, with the North West Public Health Observatory leading in the collection and collation of local surveillance data.

16.4 At the time of writing a national public and professional consultation was taking place by NHS England (as the main commissioner of dental services). This was prompted by the publication of 'The NHS belongs to the people – a call to action' which set out the challenges of 'improving quality services in the face of demographic pressures and rising public expectations, against a backdrop of financial constraint' (Call to Action, 2013). Results of this consultation should be publicly available later this year (2014).

16.5 The National Institute for Clinical Excellence (NICE), an organisation that makes evidence based recommendations for health and social care, consulted with stakeholders and published guidance for Local Authorities

in October 2014. This guidance makes evidence based recommendations for local authorities to consider in their oral health improvement strategies.

Local policy drivers

16.6 Activity to address inequalities and to improve the oral health in the local population aligns with many priorities of Somerset County Council and Health and Wellbeing Board, as well as contributing towards multiple PHOF outcomes.

16.7 In addition to the need to adhere with the responsibilities placed on Local Authority by the Health and Social Care Act (2013), the Public Health Programme within Somerset County Council has a number of clear commissioning end benefits which are drivers to the development of an updated strategy and the re-commissioning of oral health preventative activity in Somerset. These are to;

- Ensure mechanisms are in place to deliver PHOF outcomes (PE1)
- Reduce number of contract waivers in place (PE3)
- Encourage a wider range of providers (PE4)
- Increase competition (PE5)
- Ensure contract efficiencies and value for money (PE6)

16.8 Public Health England conducted a regional Health Needs Assessment in 2014. The findings from this form the epidemiological component of this strategy document.

Appendix B: PHE (2014a) dietary advice to reduce dental caries

16.9 Demineralisation of tooth surfaces occurs after sugar intake. The subsequent drop in pH that takes place in the mouth occurs as the oral bacteria convert this sugar to acid. This process slows and stops as the buffering action of saliva takes place (this is more rapid in the presence of fluoride). When sugar intakes are spaced some hours apart there is a good opportunity for remineralisation (which is also more effective in the presence of fluoride). Saliva production is stimulated at mealtimes and much reduced during sleep.
Consensus recommendations advocate the following to prevent caries:

- The amount and frequency of consumption of sugars should be reduced
- Avoid sugar-containing foods and drinks at bedtime
- Added sugars should provide less than 10% of total energy in the diet or 60g per person per day whichever is the lesser. Note that for young children this will be around 30g per day (one teaspoon of sugar equates to approximately 5-6g)

16.10 Most added sugars in the diet are contained in processed and manufactured foods and drinks. Consumers should check labels carefully. Potentially cariogenic foods and drinks include:

- sugared soft drinks
- sugar and chocolate confectionery
- cakes and biscuits
- buns, pastries, fruit pies
- sponge puddings and other puddings
- table sugar
- breakfast cereals
- jams, preserves, honey
- ice cream and sorbets
- fruit in syrup or canned in juice
- fresh fruit juices (ONE 150ml glass of fresh fruit juice can count towards ‘five a day’)
- sugared, milk-based beverages
- sugar-containing alcoholic drinks
- dried fruits
- syrups and sweet sauces
- It is important to recognise that honey, fruit smoothies, fresh fruit juice and dried fruit all contain cariogenic sugars.

Appendix C: PHE (2014a) recommendations for effective tooth-brushing

16.11 There is evidence to suggest that the preventive action of tooth brushing can be maximised if the following principles are followed:

- Brushing should start as soon as the first primary tooth erupts
- Brushing should occur twice daily as a minimum – clean teeth last thing at night before bed and at least one other time each day
- Children under three years of age should use a toothpaste containing no less than 1,000 ppm fluoride
- Children under three years of age should use no more than a smear of toothpaste (a thin film of paste covering less than three-quarters of the brush) and must not be permitted to eat or lick toothpaste from the tube
- Family fluoride toothpaste (1,350-1,500 parts per million fluoride – ppmF) is indicated for maximum caries control for all children, except those who cannot be prevented from eating toothpaste. Advice must be given about adult supervision and the small amounts to be used
- Children between three and six years should use no more than a pea-sized amount of toothpaste
- Children need to be helped or supervised by an adult when brushing until at least seven years of age and must not be permitted to eat or lick toothpaste from the tube
- Rinsing with lots of water after brushing should be discouraged – spitting out excess toothpaste is preferable
- Rinsing with water, mouthwashes or mouth rinses (including fluoride rinses) immediately after tooth brushing will wash away the concentrated fluoride in the remaining toothpaste, thus diluting it and reducing its preventive effects. For this reason rinsing after tooth brushing should be discouraged
- The patient's existing method of brushing may need to be modified to maximise plaque removal, emphasising the need to systematically clean all tooth surfaces. No particular technique has been shown to be better than another
- Disclosing tablets can help to indicate areas that are being missed
- Brushing is more effective with a small-headed toothbrush with medium bristles
- While there is evidence that some powered toothbrushes (with a rotation, oscillation action) can be more effective for plaque control than manual tooth brushes, probably more important is that the brush, manual or powered, is used effectively twice daily. Thorough cleaning may take at least two minutes.

Appendix D: PHE (2014) very brief advice (vba) in smoking

The role of dental teams in very brief advice for smoking;

Ask

16.12 All patients should have their tobacco use (current, ex, never used) established and checked at least annually. The member of the dental team who elicits this information should ensure the update of this information in the patient's clinical notes.

Advise

16.13 Having found someone is a tobacco user, the traditional approach has been to warn them of the dangers of use and advise them to stop. This is deliberately left out of VBA for two reasons:

1. It can immediately create a defensive reaction and raise anxiety levels
2. It takes time and can generate a conversation about their tobacco use, which is more appropriate during a dedicated stop smoking consultation

16.13.1 There is no need to ask how long someone has used tobacco, how much they use or even what they use (cigarettes, shisha, cigars, chewing tobacco or paan). Stopping use will be beneficial in every case and the details of this are better saved for the stop smoking consultation. The best way of assessing motivation to stop is simply to ask: "Do you want to stop smoking/chewing tobacco?"

16.13.2 Therefore, what very brief advice involves is a simple statement advising that, the best way to stop is with a combination of support and treatment, which can significantly increase the chance of stopping.

Act

16.14 All tobacco users receive advice about the value of attending their local stop smoking services for specialised help in stopping. Those who are interested and motivated to stop receive a referral to these services.

16.14.1 For some people, it might not be the right time to stop. For those not interested in stopping a simple, "that is fine but help will always be available, let me know if you change your mind" works best.

Stop smoking services in Somerset:

16.15 Very brief advice and signposting can be used by all staff in Somerset for any issue that could help a service user or colleague. Stop Smoking Service Numbers: 0800 246 1063 / 01823 765006

See: http://www.alcohollearningcentre.org.uk/eLearning/

http://makingeverycontactcount.co.uk/

For further information contact: publichealth@somerset.gov.uk