Oral Health Needs in Hull summary 2015
(November 2015)

This document summarises the oral health needs in Hull and has been prepared to inform and complement the Hull's Oral Health Action Plan 2015 -2020

1. What's the issue?

Despite improvements in oral health in England over the last forty years, many people continue to suffer the pain and discomfort associated with oral diseases, which are largely preventable. A healthy mouth and smile means that people can eat, speak and socialise without pain or discomfort and play their parts at home and in society. Oral health is an integral part of health and wellbeing and many of the key risk factors are associated with other diseases.

The distribution and severity of oral diseases varies between and within countries and regions. Unacceptable inequalities exist with more vulnerable, disadvantaged and socially excluded groups experiencing more oral health problems. As with health inequalities, oral health inequalities are not inevitable. They stem from inequalities in income, education, employment and neighbourhood circumstances throughout life and can be reduced. Focussing on the wider determinants of health and individual behavioural change approaches to improving oral health are necessary to achieve sustainable improvements in oral health related behaviours. Social, environmental, economic circumstances or lifestyle place vulnerable groups at high risk of poor oral health or make it difficult for them to access dental services

The two main oral diseases are tooth decay (dental caries) and gum disease (chronic inflammatory periodontal disease). Whereas tooth decay tends to be a problem in the younger population, gum disease is more prevalent in the older population. Both these diseases can lead to loss of teeth and both conditions are preventable. There are other oral conditions that are not as widespread but do have an impact, sometimes significantly, on the population. The more serious conditions are mouth cancer and congenital deformities, such as cleft lip and palate. The less serious conditions are crowded and misaligned teeth and tooth surface loss.

Tooth decay may be prevented by reducing the amount and frequency of consumption of sugary foods and drinks and optimising exposure to fluoride. Gum disease may be prevented by good oral hygiene and stopping smoking; and the risk of oral cancer may be reduced by stopping smoking, drinking alcohol within recommended safe limits, eating a healthy diet. Mouth and oropharyngeal cancers have been linked to the human papilloma virus.

Oral diseases and conditions share risk factors with other diseases such as cancer, cardiovascular disease and obesity. A common risk factor approach aims to control the shared risk factors thereby impacting on a multitude of conditions and diseases.

NHS England currently has a statutory duty to secure all NHS dental services. Access to NHS dental services including more specialist care is important, by ensuring that people can have examinations, necessary treatment, sometimes complex in nature, including prevention based interventions. It is recognised that dental services are demand led, but that they should be increasingly targeted towards those whose oral health is poor or who are at high risk of developing disease.

Whilst NHS England is responsible for commissioning the totality of NHS dental services, Hull City Council's statutory dental public health responsibilities include securing the provision of both oral health improvement programmes to improve the health of the local population and oral health surveys. Guidance documentation has been published to support Local Authorities to commission evidence based programmes that meet the needs of the local population (PHE 2014, NICE 2014, LGA 2014).

2. What's our situation?

a) Local Population

The City's Joint Strategic Needs Assessment provides a detailed picture of the population of Hull (Hull City Council and NHS Hull, 2013).

In summary, in line with the national trend, the population of Hull is expected to grow between 2012-2037 with the largest increase seen in those people aged 65 years and above. Deprivation in Yorkshire and The Humber is higher than the England average with 47.4% of the population of Yorkshire and the Humber in the lower two national quintiles of deprivation. Hull has high levels of deprivation as compared with other local authorities and is within the 5% most deprived local authorities in England. Just over 30% of children under 16 years old live in poverty which is the highest in North Yorkshire and Humber.

The population profile shows that Hull has higher proportions under five year olds as compared with the other local authority areas in North Yorkshire and Humber. Moreover, the percentage of school children from Minority Ethnic Groups in Hull is greater than other local authority areas in North Yorkshire and Humber (13.7%).

b) Oral Health of people living in Hull

Based upon national and local dental surveys, the following section describes the oral health of both adults and children living in Hull. Detailed information is provided in the recent North Yorkshire and Humber Oral Health Needs Assessment (Yorkshire and Humber Dental Public Health Team, PHE, 2014) and the JSNA.

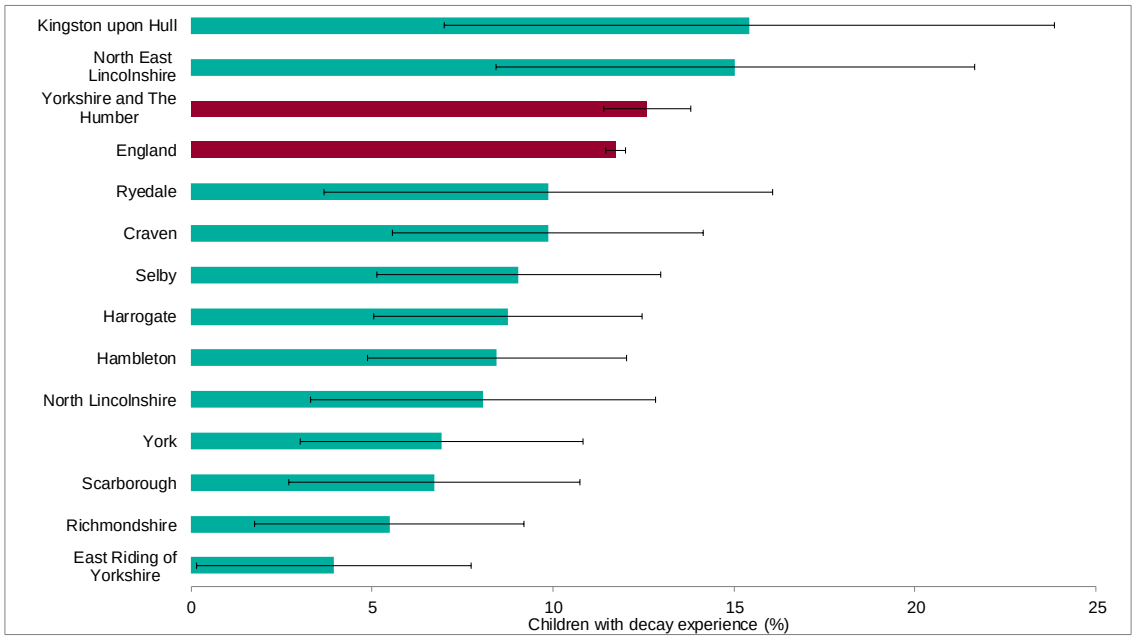
c) Children

Whilst children's oral health has improved over the last 20 years nationally, recent local data for Hull shows that tooth decay continues to be the main oral health problem affecting children.

A commonly used indicator of tooth decay and treatment experience, the dmft index, is obtained by calculating the average number of decayed (d), missing due to decay (m) and filled due to decay (f) teeth (t) in a population. In five-year-old children, this score will be for the first (primary) teeth and is recorded as dmft. In 12-year-old children it reports the adult teeth in upper case (DMFT). The average (mean) dmft/DMFT is a measure of the severity of tooth decay experience.

The prevalence of tooth decay describes the proportion of a population experiencing tooth decay. The prevalence and severity of tooth decay in children increases with increasing deprivation. The prevalence of tooth decay in 3 year old children is over 15%, higher than both the regional and national figures (Figure 1). Of the three-year-old children who had decay in Hull, each child had on average three decayed, extracted or filled teeth. The numbers of affected children were too small to allow for robust comparison of severity in these children across local authorities in Yorkshire and The Humber.

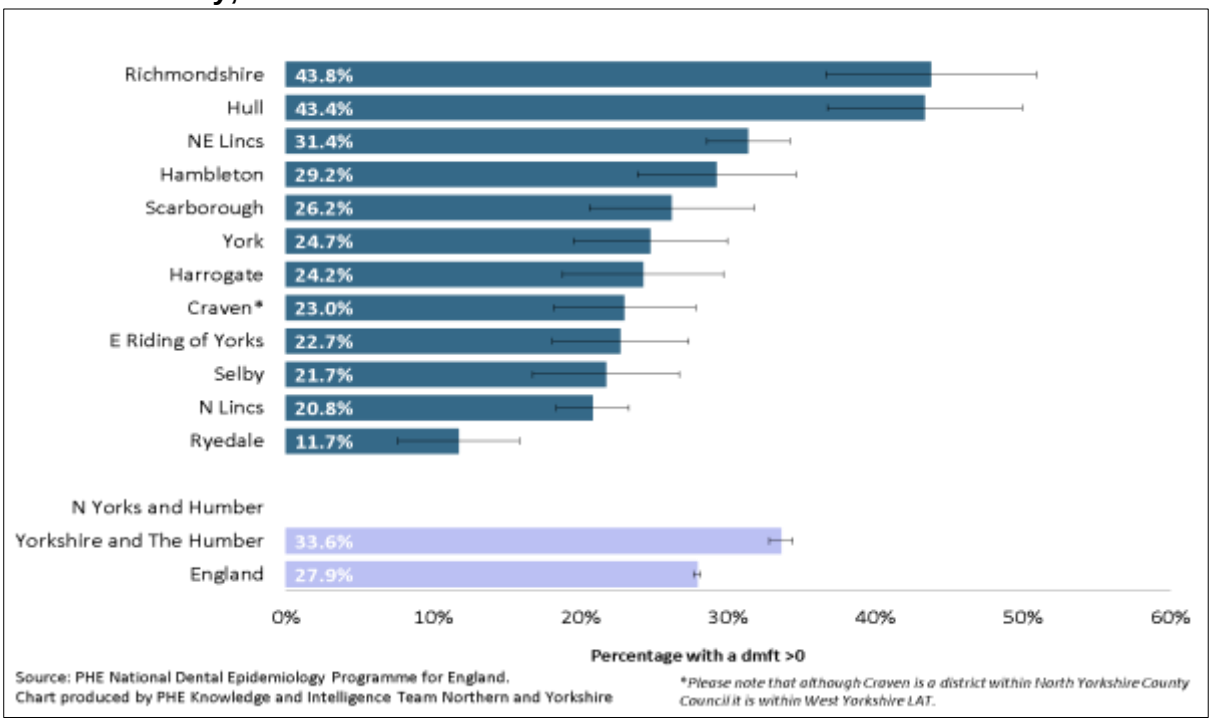
Figure 1 Prevalence of tooth decay experience in three-year-olds by local authority in North Yorkshire and Humber, 2013



Source: PHE, 2014.

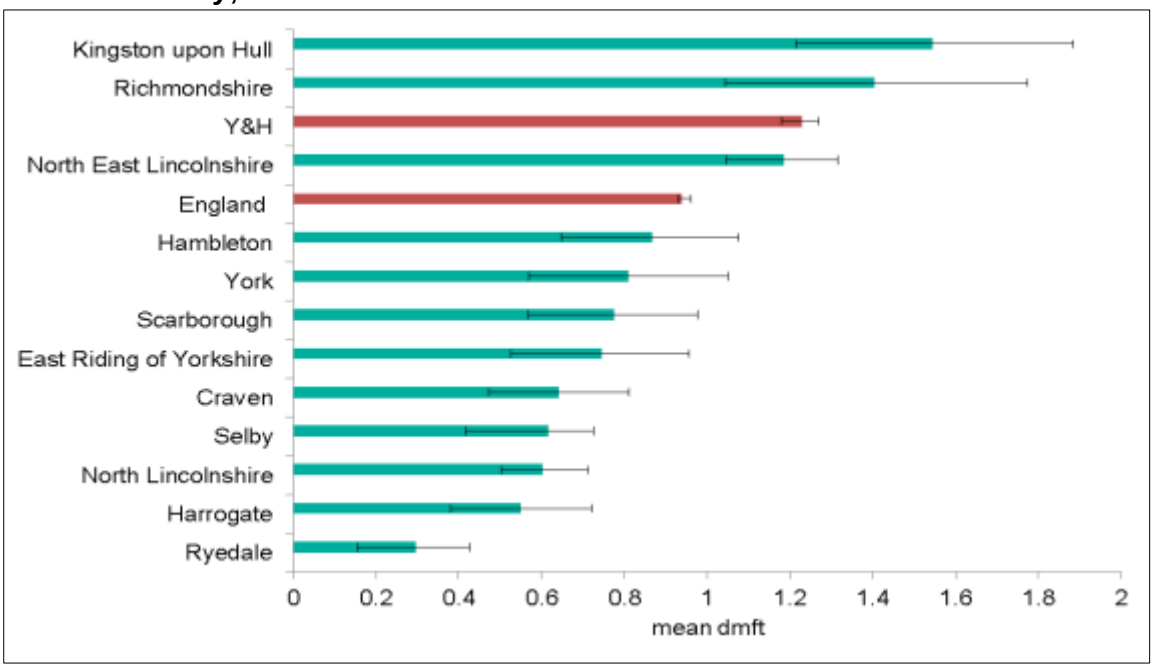
Almost half of local 5 year old children experience tooth decay, which is significantly higher than the regional and national figures. The proportion of five -year-olds in Hull with experience of tooth decay was the second highest as compared with the other local authority areas in North Yorkshire and Humber. Moreover, particularly in our most disadvantaged communities, poor oral health is likely to remain a significant problem (Figure 2).

Figure 2 Prevalence of tooth decay experience in five-year-old children by local authority, 2011/12



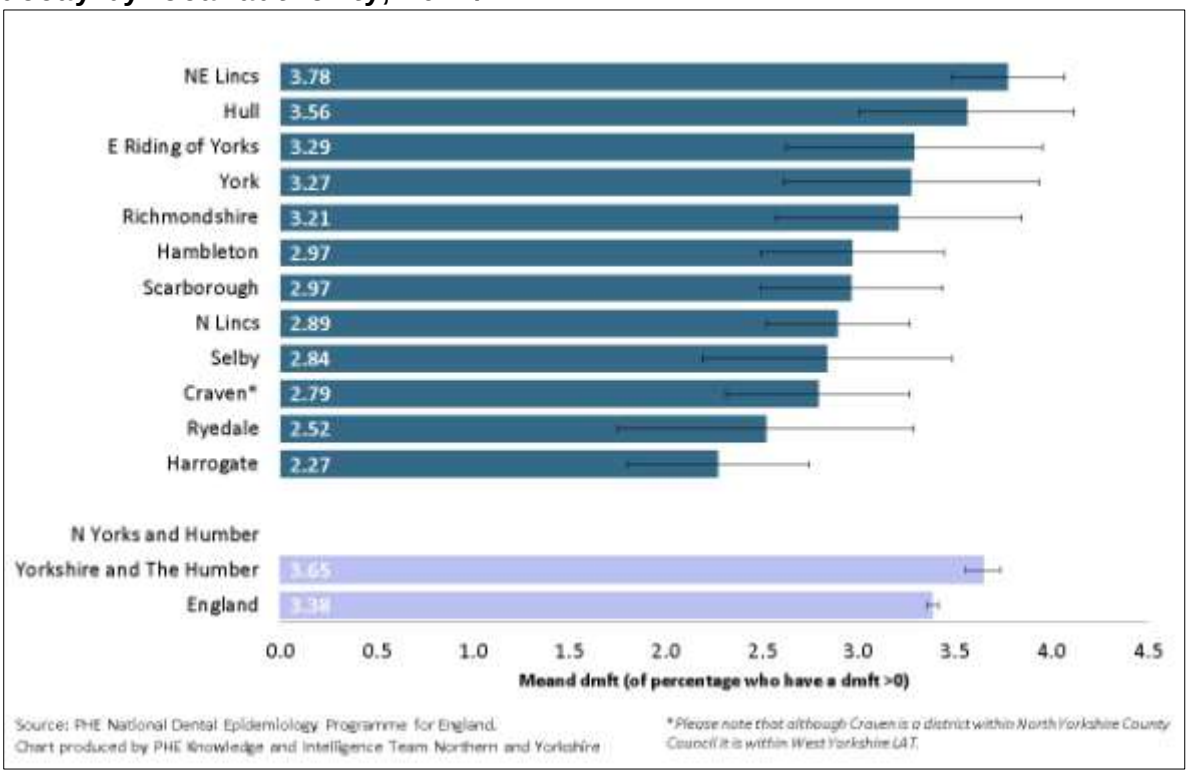
By the time they start school, half of our children have several decayed teeth. Five-year-old children in Hull had significantly more tooth decay experience than the England average (Figure 3). For those 5 year old children with tooth decay in Hull, on average, each child had on average 3.5 teeth affected (Figure 4).

Figure 3 Severity of tooth decay experience in five-year-old children by local authority, 2011/12



Source: PHE, 2013

Figure 4 Severity of tooth decay in those children with experience of tooth decay by local authority, 2011/12



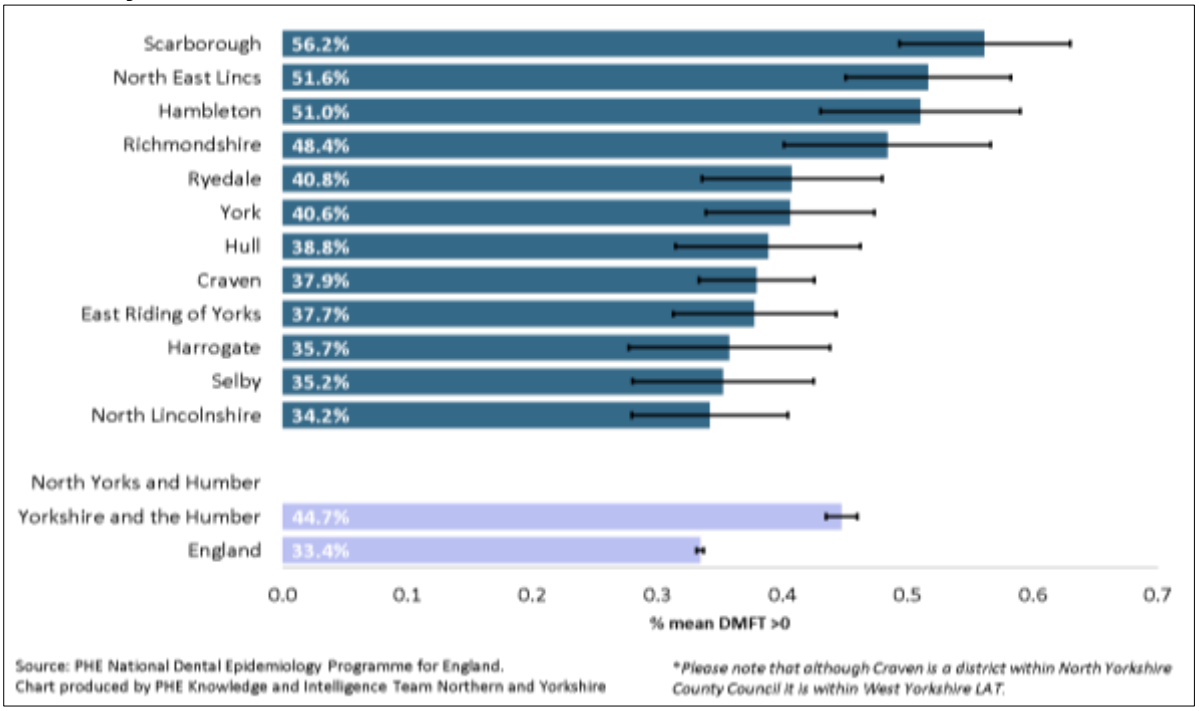
As described previously, the prevalence and severity of tooth decay in children increases with increasing deprivation. In North Yorkshire and the Humber over one third (37.3%) of the most deprived five-year-old children experienced decay compared with just over a quarter (25.9%) in the least deprived quintile. Similarly, those children in the most deprived quintile had over three times more decay experience than those in the least deprived quintile

There have been no measurable improvements in the prevalence or severity of tooth decay levels in children in Hull between 2007/08 and 2011/12 (PHE, 2015).

The care index is the proportion of teeth with caries that have been filled. The care index for 5 year old children was 10.1% in Hull, showing that about a tenth of decayed teeth are treated by fillings. Opinions differ regarding the appropriateness and benefit of filling decayed primary teeth and a lack of definitive evidence-based guidance on this. The figure needs careful interpretation, is dependent on children accessing dental care and should be explored further.

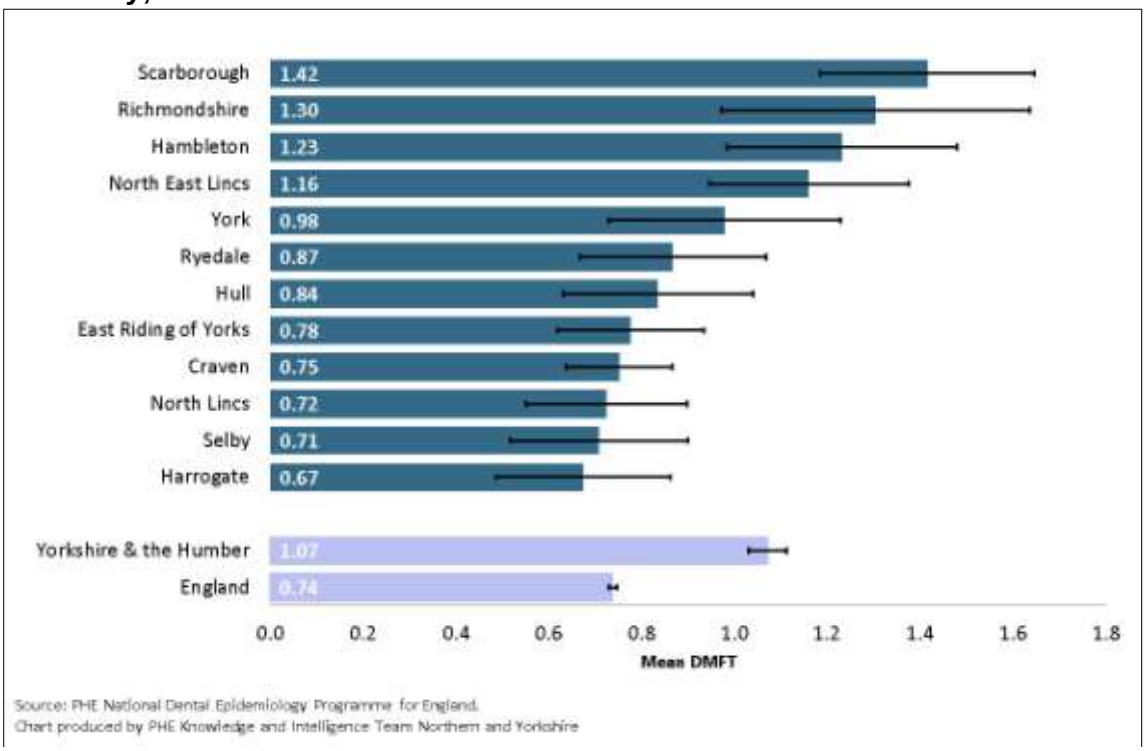
In 2008/09 the prevalence and severity of tooth decay in 12-year-old children in Yorkshire and The Humber was the worst in the country. The Hull figure was lower, but not significantly so than the figure for Yorkshire and the Humber.

Figure 5 Prevalence of tooth decay experience in 12-year-old by local authority, 2008/09



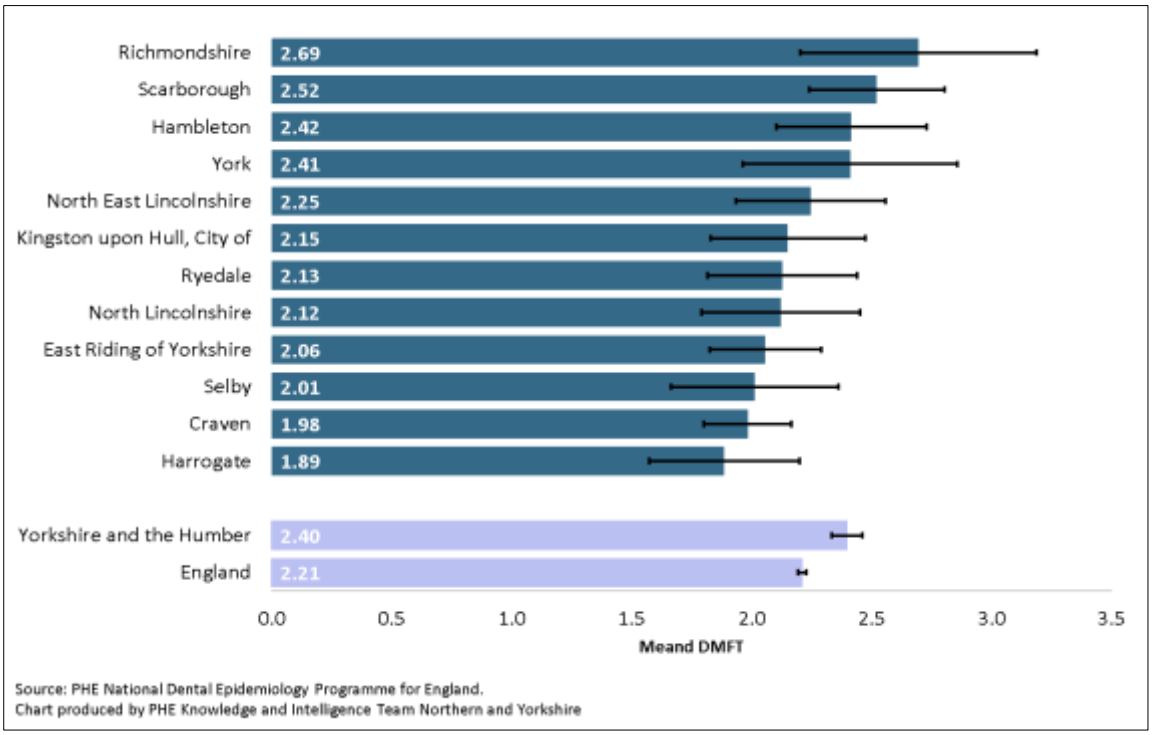
The severity of tooth decay was lower, but not significantly so in Hull when compared to Yorkshire and the Humber (Figure 6).

Figure 6 Severity of tooth decay experience in 12-year-olds by local authority, 2008/09



For those 12 year old children with tooth decay, on average, each child in Hull had 2.15 teeth affected which was slightly lower, but not significantly lower than the national figure (Figure 7).

Figure 7 Severity of tooth decay in children with caries experience in North Yorkshire and the Humber, 2008/09



As with younger children living in North Yorkshire and the Humber, significantly higher proportions of 12-year-old children in the most deprived quintile of deprivation experienced tooth decay (55.9%) compared to children in all other quintiles with just over one third of children (36.9%) in the least deprived quintile experiencing tooth decay. There is a positive correlation between the level of tooth decay experience and deprivation. Children within the most deprived quintile had over 1.8 times more decay experience than those in the least deprived quintile.

Nationally, the prevalence and severity of tooth decay in 12-year-olds has been declining over the past 26 years.

The care index in 12 year old children describes the proportion of permanent teeth with tooth decay that had been filled. This index was significantly lower in children living in Hull as compared with the Yorkshire and the Humber and national figure. Reasons for this should be explored.

There are approximately 640 Looked after Children (LAC) in Hull. Although LAC experience similar health problems as children living in other family environments, they often enter the care system in a poorer state of health than other children because of poverty, abuse and parental neglect. Reports suggest they may experience poorer oral health. Frequent relocation within the foster care system could also make it more difficult for the children to complete their dental treatment, participate in school-based dental health programmes or obtain on-going preventive care. There is no local dental data for LAC in Hull.

Hull has proportionately more children with learning disabilities known to schools than England (PHE, 2014). Children with additional needs, such as learning disabilities have similar tooth decay experience and are more likely to have their teeth extracted than their healthy peers (Nunn et al, 1987 and Evans et al, 1991). Following the recent oral health survey of 5 year and 12 year old children attending special schools in Hull, local data will be published soon.

In England extraction of teeth because of tooth decay was the most reason for hospital admission in children aged between 5 -9 years old in 2012-2013. Locally, children are still having extractions under general anaesthesia. Published data shows that 220 children aged 0-19 years had extraction of one or more teeth under general anaesthesia in 2012/13. However, it is likely that this figure underestimates the true figure due to inconsistencies in hospital coding and may not include all activity carried out by a primary dental care provider at Hull Royal Infirmary. Dental treatment under general anaesthesia is expensive for the NHS, disruptive for families and presents a small but real risk of life threatening complications for children.

d) Adults

Across the UK the oral health of adults has improved significantly over the last 40 years. More people are retaining more of their natural teeth into older age. Trends from national and local surveys show that edentulousness (having lost all teeth) is now uncommon amongst people over the age of 65 years of age. Even the very old (85 years plus) have in many cases retained some natural teeth. This has important implications for the future in terms of good oral function but carries service, including oral health improvement programme, implications related to the continued maintenance and advanced restorative and preventative care of older adults who are likely to be increasingly frail with complex medical histories and difficulties accessing dental services.

Between 1998 and 2009 the prevalence of active tooth decay in England fell from 46% to 30%. There were reductions across all age groups but the largest reduction was in those

aged 25-34 years. As adults age the accumulated effects of gum disease may cause exposure of root surfaces, therefore with age the prevalence of decay on the root surface is likely to increase. Seven per cent of adults in England had active decay on one or more root surface, the proportion increasing with age (20% in 75-84 years), being male and social deprivation. This data is not available at a local level.

A self-reported adult postal survey was carried out across Yorkshire and the Humber (YHPHO, 2008). This highlighted that a significantly higher proportion of adults in Hull (31%) rated their oral health as fair/poor/very poor compared with the figure for Yorkshire and the Humber (25%). The percentage of those reporting having 20 or more natural teeth in Hull (68%) was comparable with the Yorkshire and the Humber figure (71%). However, significant differences were found in the age ranges 55-64 years and 65-74 years with figures for Hull in the respective groups being 46% and 19% as compared with 61% and 39%. In addition, a higher proportion of adults reported wearing upper dentures (40%) as compared with the figures for the Yorkshire and The Humber (28%). Similarly, about a fifth of the surveyed adults reported wearing lower dentures, higher than the figure for Yorkshire and the Humber (14%).

Just under a third reported experiencing discomfort on eating and being self-conscious because of their mouth. Just over a third of adults reported feeling discomfort when eating because of problems their mouth which was comparable to the figure for Yorkshire and the Humber.

Inequalities exist in the oral health of adults both regionally and related to socioeconomic status. The 2009 Adult Dental Health Survey reported that the average number of decayed teeth was higher in Yorkshire and the Humber than the England average.

Mouth cancers make up 1-2% of all new cancers in the UK. Historically, mouth cancer has been twice as common in men as in women, with cancer incidence increasing with age. In the UK the majority of mouth cancers (87%) occur in people aged 50 or over, however mouth cancer is increasingly being seen in younger age groups and recently rates have increased from approximately 5,000 cases per year in the UK to more than 7,000. This has been attributed to HPV transmissions and increased excessive alcohol consumption and smoking amongst women. The risk of developing mouth cancer is greater in people living in areas of deprivation. This may be because people living in more deprived areas are more likely to smoke and patterns of alcohol consumption. Incidence of mouth cancer is slightly increasing in Hull.

e) Vulnerable adults

Vulnerable groups are those people whose economic, social, environmental circumstances or lifestyle place them at high risk of poor oral health or make it difficult for them to access dental services. Vulnerable adult groups include older people, people with learning disabilities, people with mental health problems and the homeless. Co-morbidities, progressive medical conditions, dementia and increasing frailty contribute to more complex oral health needs and difficulties in accessing NHS dental services. People with learning difficulties: This group are more likely to have poorer oral health than the general population. No local dental data is available for people with mental health problems, homeless, bariatric patients, Eastern European immigrants, travellers, refuges and asylum seekers. It is expected they will experience poorer oral health, access dental services less regularly. Barriers to accessing care should be explored. Information describing the oral health of vulnerable groups in North Yorkshire and Humber is limited and future work to consider their oral health needs locally should be explored. It is likely that the current domiciliary dental service provision is not sufficient to meet current or increasing demand.

f) Dental Services

The adult access rate between 2011 and 2014 shows a year on year increase in the proportion of Hull residents accessing an NHS dentist in a 24 month period. For 2013/14 the proportion of adults accessing NHS dental services in the last 24 months is higher (56.2%) than the national average (51.4%). During the same period, the proportion of children accessing services (72.2%) is higher than the national average (68.0%). With increasing deprivation, access rates fall in both adults and children in North Yorkshire and the Humber (BSA, 2014). For 2013/14, Hull has a relatively high number of dentists per population with 58.7 dentists per 100,000 population, and this increased by 17 dentists from 134 dentists in 2011/12 to 151 dentists in 2013/14. It is not known how many residents of neighbouring East Riding of Yorkshire use dental services in Hull.

As described previously, it is recognised that dental services are demand led, but that they should be increasingly targeted towards those whose oral health is poor or who are at high risk of developing disease. Future work should consider completing undertaking health equity audit of access to dental services to address gaps and inequity in service provision. It is likely that the current domiciliary dental service provision locally is not sufficient to meet current or increasing demand.

Evidence from systematic reviews shows that application of fluoride varnish between two and three times a year can reduce tooth decay by 37% in baby teeth and 43% in adult teeth (Marinho et al, 2013). Therefore evidence based guidance for dental professionals recommends application of fluoride varnish every six months for all children between 3-16 years-old and more frequently for all children (0-16 years-old) at higher risk of tooth decay. For adults with a higher risk of tooth decay, it is recommended that fluoride varnish is applied twice a year (PHE, 2014). Fluoride varnish applications are available as part of NHS dental treatment and are free for children including adults who are exempt from payment charges. Information describing fluoride varnish rates is dependent on the applications being recorded by dentists. Fluoride varnish application rates are increasing however a significant proportion of children in North Yorkshire and Humber who visit the dentist appear not to be receiving fluoride varnish applications. During 2013-2014, approximately 43 % of Hull children aged between 3-16 years who visited the dentist received fluoride varnish applications. During this same period, relatively low proportions of adults appear to be receiving fluoride varnish applications, with less than 2% of Hull adults receiving this evidence based preventative clinical intervention. Dental practices need to be supported to ensure that evidence-based guidance on fluoride varnish applications is implemented in Hull practices. It would be helpful if key performance indictors to encourage evidence-based practice could be considered for inclusion in any new Hull dental contracts by NHS England.

Based on the adult Health and Lifestyle Survey 2011-12, around 70% or men and 76% of women had seen a dentist within the last two years. From the Young People Health and Lifestyle Survey 2012, around four fifths of pupils had visited the dentist in the last 6 months, with more than 90% having been at some time in the past year (and 95% in the last two years). From the GP patient survey, 96% of patients who had tried to get an NHS dental appointment within the last two years had been successful with only 3% being unsuccessful (the remaining 1% could not remember), and the majority were satisfied with their dental experience.

Further more detailed information is provided within the JSNA Toolkit: Dental Health report and the North Yorkshire and Humber Oral Health Needs Assessment (PHE, 2015)

References

Hull City Council and NHS Hull (2013). Hull's Joint Strategic Needs Assessment. http://www.hullpublichealth.org/jsna.html

PHE (2014). Local authorities improving oral health: commissioning better oral health for children and young people – an evidence informed tool-kit for local authorities

NICE (2014). Oral health approaches for local authorities and their partners to improve the oral health of their communities.

Local Government Association (2014). Tackling poor oral health in children

Public Health England (2014). Dental public health epidemiology programme. Oral health survey of three year old children 2013. A report on the prevalence and severity of dental decay.

Marinho V, Worthington, H, Walsh T, Clarkson J (2013). Fluoride varnishes for preventing dental caries in children and adolescents.: Cochrane Database of Systematic Reviews.

Public Health England (2014). Dental public health epidemiology programme. Oral health survey of three year old children 2013. A report on the prevalence and severity of dental decay.

YHPHO. The dental health of adults in Yorkshire and the Humber 2008. Yorkshire and Humber Public Health Observatory

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

PHE (2015). North Yorkshire and Humber Oral Health Needs Assessment: https://www.gov.uk/government/publications/oral-health-needs-assessment-for-yorkshire-and-the-humber

Nunn J, Murray J. The dental health of handicapped children in Newcastle and Northumberland. *British Dental Journal.* 1987;162:9-14.

Evans D, Greening S, French A. A Study of dental health of children and young adults attending special schools in South Glamorgan. *International Journal of Paediatric Dentistry.* 1991;1:17-24.

PHE (2014). Learning disability profiles

http://fingertips.phe.org.uk/profile/learning-disabilities

NHS Business Authority (2014). North Yorkshire and Humber Dental Public Health Report

Public Health England (2014). *Delivering better oral health: an evidence-based toolkit for prevention.* 3rd ed. London: Public Health England.

30 November 2015