



Public Health
England

Protecting and improving the nation's health

South Yorkshire and Bassetlaw oral health needs assessment 2015

This document details the oral health of the people of South Yorkshire and Bassetlaw and describes the services currently commissioned to meet those needs. It identifies key issues that should be addressed in future oral health and dental commissioning strategies.

About Public Health England

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Published September 2015

PHE publications gateway number: 2015317

This document is available in other formats on request. Please call 0782 5105728 or email: siobhan.grant@PHE.gov.uk



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Executive summary

Introduction

Despite improvements in oral health in England over the last forty years, many people continue to experience the pain and discomfort associated with oral diseases, which are largely preventable. There are socio-demographic variations in the distribution and severity of oral diseases with vulnerable groups experiencing significant oral health problems.

This oral health needs assessment describes the oral health of people living in South Yorkshire and Bassetlaw and the services currently commissioned to meet those needs. It identifies the key issues that should be addressed in future oral health improvement and dental commissioning strategies to improve oral health and reduce oral health inequalities in the area.

Population and demographics

South Yorkshire is densely populated and has a mainly White population. Bassetlaw is a rural local authority area with an older age profile. The residents of South Yorkshire and Bassetlaw are relatively deprived when compared with the national population, with the people of Doncaster and Sheffield experiencing greater levels of deprivation and child poverty. Men and women in all the local authority areas of South Yorkshire and Bassetlaw have lower levels of life expectancy than the England average.

The population of Barnsley and Sheffield increased in 2012 and this trend is predicted to continue, which will have an impact on service planning and provision.

Lifestyle choices such as unhealthy eating, poor oral hygiene and tobacco and alcohol use impact on oral and general health. People across South Yorkshire are less likely to have a healthy diet when compared with England. A greater proportion of the residents in Bassetlaw are at higher risk from excessive alcohol consumption. Residents in Barnsley, Doncaster and Rotherham are more likely to smoke relative to the England average.

Determinants and impacts of oral health

Poor oral health results in social and financial impacts both for the individual and society as a whole. A large spectrum of factors have been identified as influencing oral health including economic and social policy and individual health behaviours. However, focusing solely on individual behaviour change has only short term

benefits for oral and general health. It is therefore essential to focus on the wider determinants of health and partnership delivery to achieve sustainable improvements.

Epidemiology of oral diseases

There has been a significant decline in tooth decay and improvements in oral health over the past 40 years. However, a substantial proportion of the population experiences high levels of oral disease.

The prevalence and severity of tooth decay in three-year-olds in South Yorkshire in 2013 was similar to the England average.

Five and 12-year-old schoolchildren in South Yorkshire were more likely to have tooth decay and have more decayed teeth than nationally. Children in the more deprived areas of South Yorkshire experienced greater levels of tooth decay. Five-year-olds in Barnsley and 12-year-olds in Barnsley and Doncaster were less likely to have a filling placed in their decayed teeth when compared with schoolchildren in the other local authority areas.

In 2009 men from socially deprived backgrounds were more likely to experience higher levels of tooth decay and gum diseases, but less likely to visit a dentist. Adults in Doncaster were more likely to report poorer oral health and perceive a greater need for treatment. People in Yorkshire and The Humber were more likely to wear a denture than people nationally.

The incidence of mouth cancer in Barnsley has increased and there has also been a recent increase in Bassetlaw.

There is limited information describing the oral health needs of vulnerable groups in South Yorkshire and Bassetlaw.

Sheffield has a higher prevalence of adults and children with learning disabilities. People with learning disabilities are more likely to have poorer oral health. Children with learning disabilities are more likely to have their teeth extracted than filled and have poorer gum health.

Approximately one quarter of the population experiences some kind of mental health problem in any one year however there is no local information on the oral health needs of this group. Sheffield City Council has prioritised the needs of people with mental health problems although local commissioning arrangements may not consider access to dental services for this vulnerable group.

The Roma Slovak population is increasing in Rotherham and Sheffield and this group is likely to have difficulty accessing oral healthcare services.

Severely obese people may be at higher risk of oral disease. There are currently no dental services for severely obese people in South Yorkshire and Bassetlaw. The closest service provider is Leeds Salaried Dental Service.

Looked after children are likely to have greater oral health needs. Doncaster and Rotherham have a significantly greater proportion of children in care than Sheffield and Barnsley. Sheffield has the lowest proportion of children in care in the area, however, a significantly lower proportion of these children have their teeth checked by a dentist when compared with England.

Oral healthcare services

Most dental services in South Yorkshire and Bassetlaw are primary care services provided by general dental practitioners. The availability of services is variable across local authority areas and does not reflect need or access to care. Access to care is better than nationally across all local authority areas.

Limited data was available on the provision of unplanned care as well as services provided by the community dental services.

There are inconsistencies in service provision for vulnerable groups including access to domiciliary care, general anaesthetic services, sedation services and anxiety management services.

There is inconsistent provision of primary care specialist oral surgery services across the area, with differences in tariffs across providers.

There is adequate provision of orthodontic services. However, there are inconsistencies in UOA rates and some non-specialist provision.

Most hospital activity is provided on an outpatient basis. The highest spend is on oral surgery day cases and most activity is outpatient oral surgery. There are a significant number of non-elective oral surgery inpatient cases. Local data on tariffs and quality assurance programmes for hospital services was not available.

Dental public health services

From April 2013, oral health improvement became the responsibility of local authorities. A range of universal and targeted oral health improvement programmes are implemented by local authorities in South Yorkshire with some, sufficient or

strong evidence of effectiveness for most of them. Most oral health improvement programmes are directed towards children.

Patient and public engagement

The overall experience of people using primary care dental services in South Yorkshire and Bassetlaw is positive. Parents and carers tend to report adequate access to dental services. The main reported barriers to accessing NHS dental services include dentists not taking on patients, costs, lack of time and convenience of appointments.

Key issues for consideration

Population and demographic variations

- oral health and oral health improvement strategies should address the health inequalities that exist across South Yorkshire and Bassetlaw in addition to improving absolute levels of health
- NHS England should ensure that commissioning plans consider the expected increases in population size in Barnsley and Sheffield

Determinants and impacts of oral health

- a common risk factor approach focusing on the wider determinants as well as facilitating healthy choices will impact not only on oral health but wider general health.

Epidemiology of oral diseases

- prevention of tooth decay and identification and restoration of decayed teeth in children's permanent dentitions should be a priority for dental services
- oral health improvement strategies in Barnsley and Bassetlaw should include actions to address the increasing incidence of mouth cancer in these areas
- undertaking a more detailed oral health needs assessment of vulnerable groups should be considered by NHS England and local authorities
- dental services including urgent care should be accessible to people with learning disabilities and provide preventive and treatment services

- NHS England, local authorities, PHE and clinical commissioning groups should work together to ensure access to dental and oral health improvement services for people with mental health problems
- NHS England, Rotherham and Sheffield local authorities and PHE should work together to ensure access to dental and oral health improvement services for Roma Slovak people
- need for and access to dental services for severely obese people should be reviewed
- need for and access to dental services for looked after children should be reviewed

Oral healthcare services

- the feasibility of undertaking a health equity audit of access to dental services should be explored in view of variations in availability of and access to dental services across and within local authority areas and across different groups
- dental practices need to be supported to ensure that ethnicity data is captured on dental service activity forms to inform future needs assessments and health equity audits
- dental practices need to be supported to ensure that evidence-based guidance on fluoride varnish applications and recall intervals is implemented in practices. Key performance indicators to encourage evidence-based practice should be considered for inclusion in any new dental contracts
- domiciliary dental care provision has been highlighted as a priority area of work by the dental local professional network. Given the limited information on it within this oral health needs assessment, this work should be progressed to ensure equity of provision
- given the variation in provision and the limited information on activity and costs, NHS England may wish to consider commissioning or undertaking a more in-depth review of sedation services to support the development of a consistent model for anxious patients that incorporate sedation and behaviour management techniques
- given the limited information on unplanned dental care, NHS England may wish to consider a more in-depth review of unplanned dental services, which parallels the evaluation in Sheffield, to establish their cost effectiveness and equity
- given the limited information on community dental services, NHS England may wish to consider a more in-depth review of these services
- to help inform a more in-depth needs assessment for special care dental services in preparation for implementation of the national

commissioning guide, robust activity indicators should be considered for incorporation into current community dental service contracts, together with the development of a managed clinical network in special care dentistry

- the review of general anaesthesia services should be completed and any findings considered by the dental local professional network to support improvements in service quality
- NHS England is developing a commissioning guide for oral surgery services. Provision and procurement in South Yorkshire and Bassetlaw should be reviewed against this framework when published in April 2015
- establishment of managed clinical networks in oral surgery and orthodontics should be considered to support improvements in and consistency of quality of service provision across the area
- a review of orthodontic services should be considered to explore ways of providing more equitable access, especially for the residents of Rotherham and to inform the develop of a service model with a consistent UOA rate that incorporates key performance indicators including PAR scoring and that is delivered by specialists. This should be in line with the forthcoming commissioning guide for orthodontics
- NHS England may wish to consider working with secondary care providers to review secondary care local tariffs and develop and agree standard coding for secondary care dental activity to contain spend on secondary care and ensure value for money
- NHS England may wish to consider working with local clinical networks, PHE and providers to develop and incorporate quality assurance into secondary care contracts and in preparation for implementation of the soon to be published NHS England commissioning guides

Dental public health services

- local authorities should consider including oral health in joint strategic needs assessments and health and wellbeing strategies
- local authorities should consider reviewing current provision of oral health improvement services and developing oral health improvement strategies that address local needs and reflect the principles of *Commissioning Better Oral Health* and NICE guidance
- local authorities should work together to explore the feasibility of jointly commissioning oral health improvement and dental epidemiology services to support the efficient management of limited resources

- local authorities should ensure that contracts for dental public health services are supported by service specifications that detail a process for assuring the quality of programmes
- a combination of evidence based universal and targeted activities are required to support reducing inequalities in oral health. Upstream interventions should be complemented by downstream interventions
- local authorities should consider the case for water fluoridation in the context of local needs, current oral health improvement initiatives and national guidance
- oral health improvement should be an integral part of the work of health visitors and school nurses and should be included in specifications for these services
- service specifications for care homes should include a responsibility for oral health that incorporates an oral health assessment on entry, daily mouth care in care plans of residents and regular access to an NHS dentist
- while most oral health improvement activities focus on children, consideration should be given to ensuring programmes support oral health improvement for more vulnerable adults
- evaluation should be an integral part of all oral health improvement programmes to guide future commissioning
- Doncaster and Rotherham may wish to consider developing oral health advisory groups to oversee the development, delivery and evaluation of oral health improvement programmes
- all local authorities should continue to commission oral health surveys, including surveys to support the public health outcomes framework
- service specifications should be in place to support the planning and delivery of the surveys. This should include robust performance monitoring arrangements to ensure that the survey is completed in line with the national protocol
- where appropriate, consideration should be given to increasing sample size together with promoting participation to provide reliable data to support the planning and evaluation of dental services and oral health improvement programmes
- PHE should explore developing a Yorkshire and The Humber Oral Health Improvement Commissioners Network to facilitate learning and sharing of good practices

Patient and public engagement

- NHS England, local authorities and PHE should engage with local Healthwatch to ascertain public views regarding access to and quality of dental services. Local people's views should be reflected when commissioning services and developing oral health improvement strategies
- NHS England, PHE and local Healthwatch organisations should work together to ensure people receive accurate information on how to access dental services and which practices are accepting new NHS patients
- PHE should ensure that the views of patients and the public are sought in the consultation process for this oral health needs assessment

Next steps

This needs assessment is an on-going shared planning resource to enable locally prioritised actions. The next stage is for NHS England, local authorities and PHE to develop a prioritised list of actions based on the evidence of effectiveness, local organisational structures and the potential for greatest impact. Review of the actions should be planned from the outset to evaluate their impacts.

1. Introduction

Despite improvements in oral health in England over the last forty years, many people continue to experience the pain and discomfort associated with oral diseases, which are largely preventable. A healthy mouth and smile mean 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 for poor oral health are associated with other diseases. The distribution and severity of oral diseases varies between and within regions. Therefore unacceptable inequalities exist with more vulnerable, disadvantaged and socially excluded groups experiencing more oral health problems.

This oral health needs assessment describes the oral health of the people living in South Yorkshire and Bassetlaw and the services currently commissioned to meet those needs. It identifies the key issues that should be addressed in future oral health improvement and dental commissioning strategies.

In developing this oral health needs assessment, the national and local context has been considered.

National background

Health and Social Care Act 2012¹

The Health and Social Care Act 2012 created a new commissioning framework for the provision of health, social care and public health in England. From April 2013, NHS England became the single commissioner for all dental services, including primary, secondary and unscheduled dental care. In addition, local authorities became responsible for improving the oral health of their communities and for commissioning oral health improvement services.²

Statutory dental public health responsibilities of local authorities include:

- securing the provision of oral health improvement programmes to improve the health of the local population to the extent that they consider appropriate in their areas
- securing the provision of oral health surveys to facilitate:
 - 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 services as part of the health service

IV. where there are water fluoridation programmes affecting the authority's area, the monitoring and reporting of the effect of water fluoridation programmes

- participation in any oral health survey conducted or commissioned by the secretary of state
- making proposals regarding water fluoridation schemes, including a duty to conduct public consultations in relation to such proposals and powers to make decisions about such proposals²

Chapter 7 provides further detail regarding the role of local authorities in relation to oral health improvement.

The Health and Social Care Act 2012 also describes the joint and equal responsibilities of local authorities and clinical commissioning groups to prepare both joint strategic needs assessments (JSNA) and joint health and wellbeing strategies through health and wellbeing boards. The purposes of JSNAs and joint health and wellbeing strategies are to improve health and wellbeing and reduce inequalities in the local population by promoting integration and partnership working between the NHS, social care, children's services, public health and other local services and to improve democratic accountability in health. A JSNA describes the current and future health and social care needs of a community within the health and wellbeing board area. Joint health and wellbeing strategies are strategies for meeting the needs identified in the JSNAs. Health and wellbeing boards are tasked to consider the demographics of the area and the needs of local people, including vulnerable groups.

This oral health needs assessment should be a useful resource for local authorities to inform JSNAs, joint health and wellbeing strategies and oral health improvement strategies.

Fair Society, Healthy Lives³

The Marmot report *Fair Society, Healthy Lives* (2010) set out a strategy on health inequalities that calls for actions that are universal but proportionate. Key messages from the review include:

- there is a social gradient in health and the lower a person's social position, the worse his or her health. Action should therefore focus on reducing the gradient in health
- health inequalities result from social inequalities. Action on health inequalities therefore requires action across all the social determinants of health. Focusing solely on the most disadvantaged will not reduce health inequalities sufficiently

- to reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity that is proportionate to the level of disadvantage ‘proportionate universalism’

Commissioning strategies should work across six policy objectives:

- give every child the best start in life
- enable all children young people and adults to maximise their capabilities and have control over their lives
- create fair employment and good work for all
- ensure healthy standard of living for all
- create and develop healthy and sustainable places and communities
- strengthen the role and impact of ill health prevention

Healthy Lives, Healthy People: Our Strategy for Public Health in England⁴

In response to the Marmot report, *Healthy Lives, Healthy People* describes the government’s plan for public health, which from April 2013 became the responsibility of local authorities rather than the NHS. The strategy promotes the adoption of a life course approach for tackling the wider social determinants of health.

Healthy Lives, Brighter Futures the strategy for children and young people’s health⁵

Healthy Lives, Brighter Futures describes policy recommendations to inform collaborative working between the NHS, local authorities and partners working across child health services to reduce inequalities in children and young people, particularly for more vulnerable groups. It sets out the *Healthy Child Programme* and it is essential that oral health is considered as an integral part of this programme across South Yorkshire and Bassetlaw.

Healthy Lives, Healthy People: Improving outcomes and supporting transparency⁶

The public health outcomes framework describes the overarching vision for public health together with outcomes and indicators for monitoring purposes. Two high level outcomes, which cross four domains of indicators, have been developed to cover the whole life course from preconception to old age. Those indicators to which oral health improvement and dental services will contribute are:

- mortality from cancer
- tooth decay in children aged five
- indicators related to smoking and overweight and obesity
- diet
- pupil and sickness absence

The NHS Outcomes Framework 2014/15⁷

The purpose of the *NHS Outcomes Framework 2014/15* is to drive improvements in the quality of the NHS placing a focus on improving health and reducing inequalities. Indicators in the framework are grouped around five domains, which describe the high-level national outcomes that the NHS should be aiming to improve.

It is expected that NHS dental services will contribute to the following indicators:

- one year survival for all cancers
- five year survival for all cancers
- emergency admissions for acute conditions that should not usually require hospital admission
- positive experience of NHS dental services
- patient experience of outpatient services
- access to dental services

In the Mandate from Government to NHS England 2015 to 2016 two new indicators for dental health were included:

- tooth decay in children aged five
- tooth extractions in secondary care for children under 10

Transforming Participation in Health and Care⁸

NHS England is required to engage with patients and the public with regard to their commissioning responsibilities. This guidance supports the two legal duties described below:

- patients and carers to participate in planning, managing and making decisions about their care and treatment
- effective public participation in the commissioning process itself, so that services reflect the needs of local people

The views of local people are captured within this needs assessment (chapter 8).

Choosing Better Oral Health: An oral health action plan for England⁹

Choosing Better Oral Health: an Oral Health Plan for England sets out the strategy for oral health in England. The *Oral Health Plan* is underpinned by several principles including:

- the common risk factor approach, which recognises that risk factors for poor oral health are also the risk factors for other common chronic conditions, namely diet, tobacco, hygiene and alcohol
- basing decisions on the best available evidence

- taking a targeted population approach to reduce inequalities in oral health
- partnership working within the NHS and with education and social care professionals

The document suggests a variety of ways to improve diet and oral hygiene, optimise exposure to fluoride, control tobacco use and promote sensible alcohol use. Oral health promotion and commissioned dental services across South Yorkshire should incorporate the recommendations of *Choosing Better Oral Health*.

Valuing People's Oral Health¹⁰

Valuing People's Oral Health aims to improve the oral health of disabled children and adults, who have the same entitlement to good oral health as the rest of the population and an equal right to responsive high quality oral health services.

The oral health needs of children and adults with disabilities are less well documented than those of the general population and should be considered in future work to inform the commissioning of appropriate high quality dental and oral health improvement services for this vulnerable group. The recommendations from this guide should be incorporated into oral health promotion activities across South Yorkshire and Bassetlaw.

Securing Excellence in Commissioning NHS Dental Services¹¹

NHS England is responsible for commissioning all NHS dental services. *Securing Excellence in Commissioning NHS Dental Services* proposed a care pathway approach that supports evidence-based decision making and the seamless organisation of care across different care settings for each dental speciality. The care pathway is regarded as a journey through the clinical experience, where co-ordination, consistent high standards, appropriateness of care in relation to best practice and the evidence base and a focus on patient related outcomes are fundamental.

Securing Excellence in Commissioning NHS Dental Services also described the establishment of local dental networks as an integral part of NHS England to ensure clinically led commissioning drives improvements in the quality of dental services, thereby improving oral health and reducing inequalities locally.

To support commissioning based on a care pathways approach, NHS England has established four multi-stakeholder commissioning guide working groups to develop commissioning guidance for four dental care pathways:

- orthodontics

- oral surgery
- restorative
- special care dentistry

Local dental networks will play an important role in supporting the implementation of the commissioning guides locally.

Local Authorities Improving Oral Health: Commissioning better oral health for children and young people¹²

Commissioning Better Oral Health for Children and Young People provides guidance to local authorities to support the commissioning of evidence informed oral health improvement programmes for children and young people aged up to 19 years of age across the life course. The guidance enables local authorities to review and evaluate existing oral health improvement programmes and consider future commissioning intentions that meet the needs of the population, providing an evidence based approach with examples of good practice. The guidance encourages the adoption of an integrated approach to commissioning with partner organisations including NHS England, PHE and clinical commissioning groups to ensure that all local authority services for children and young people have oral health improvement embedded at both a strategic and operational level.

Oral Health: approaches for local authorities and their partners to improve the oral health of their communities¹³

The National Institute for Health and Care Excellence (NICE) guidance on oral health approaches for local authorities and their partners to improve the oral health of their communities made recommendations aiming to promote and protect oral health by improving diet and reducing consumption of sugary foods and drinks, alcohol and tobacco, improve oral hygiene, increase the availability of fluoride, encourage people to go to the dentist regularly and increase access to dental services. The 21 evidence-based recommendations include:

- ensuring oral health is a key health and wellbeing priority with information and advice on oral health in local policies
- carrying out an oral health needs assessment using a range of data sources and developing an oral health strategy
- ensuring public service environments and workplaces promote oral health
- ensuring frontline health and social care staff can give advice on the importance of oral health
- incorporating oral health promotion and staff training in existing services for all children, young people and adults at high risk of poor oral health

- commissioning tailored oral health promotion services for adults at high risk of poor oral health
- including oral health promotion in specifications for all early years services
- considering supervised tooth brushing and fluoride varnish schemes for nurseries and primary schools in areas where children are at high risk of poor oral health
- raising awareness of the importance of oral health, as part of a 'whole-school' approach in all primary and secondary schools
- introducing specific schemes to improve and protect oral health in primary schools in areas where children are at high risk of poor oral health

NICE is currently developing further guidance documents related to oral health:

- *Oral Health Approaches for Dental Teams*. This guidance will describe approaches for general dental practice teams on promoting oral health and is due for publication in October 2015
- *Oral health in nursing and residential care*. This guidance is for nursing and residential care homes on promoting oral health and ensuring access to dental treatment and is due for publication in June 2016

Delivering Better Oral Health¹⁴

Delivering Better Oral Health provides guidance on evidence based interventions and advice on how dental team members can improve and maintain both the oral health and general health of their patients. Smoking, alcohol misuse and a poor diet are risk factors for a number of general health and oral health conditions. A patient facing version of the guidance will be published to help patients to understand the preventive messages.

Implementation of the guidance should be included in oral health improvement strategies across South Yorkshire and Bassetlaw.

Smokefree and Smiling¹⁵

Smokefree and Smiling describes how dental teams, commissioners and educators can contribute to reducing rates of tobacco use and highlights resources available to support them. The document acknowledges that dental teams are well placed to provide very brief advice to their patients who smoke to help them understand the benefits of stopping and to signpost them to their local stop smoking service.

Oral health promotion services and primary care dental teams should work closely with local stop smoking services to implement *Smokefree and Smiling*.

NHS dental contract reform programme

In 2010, the government's plans for the NHS included a commitment to introduce a new NHS dental contract that would focus on achieving good oral health and increasing access to NHS dentistry, with a particular focus on improving the oral health of schoolchildren.¹⁶ The Department of Health subsequently established the contract reform programme, with the establishment of seventy dental contract pilot practices in 2011 to inform the development and implementation of a more prevention-orientated contract. Fundamentally, the aims of the new dental contract are to improve the quality of patient care, including access to NHS dental services and the oral health of the population especially children. Two reports have since been published which describe the preliminary and later findings from the dental contract pilots.^{17,18}

More recently, the Department of Health published four documents aimed at engaging and seeking the views of the dental profession and the wider dental community in the contract reform programme.¹⁹

Building on its engagement programme, NHS England's *Dental Care and Oral Health Call to Action*²⁰ obtained views across local communities, including health, dental and social care professionals and patients to inform the future development of NHS dental services. The challenge remains to address inequalities in oral health and access to dental services across England, placing a greater focus on prevention and improved outcomes.

Local context

NHS South Yorkshire and Bassetlaw dental commissioning intentions

NHS South Yorkshire and Bassetlaw's commissioning plan identifies a number of local priorities including:

- re-configuring oral surgery services to allow some provision in primary care
- training and development of the primary care dental workforce
- equity of access for vulnerable groups particularly older people and severely obese people
- introducing key performance indicators in orthodontic contracts to enhance quality
- reviewing the pathway for unplanned dental care
- reviewing the paediatric general anaesthetic care pathway

- reviewing community dental services
- introducing a quality assurance programme for dental services
- developing a South Yorkshire and Bassetlaw preventive programme

This oral health needs assessment will help inform future local commissioning priorities.

Joint health and wellbeing strategies

Joint health and wellbeing strategies have been developed across all the local authority areas in South Yorkshire.

The *Joint Health and Wellbeing Strategy for Sheffield 2013-2018*²¹ describes the following priorities:

- ensuring every child has the best possible start in life
- ensuring equality in access
- using patient experiences as measures of quality
- establishing more preventive and targeted approaches
- commissioning training for all front line workers to raise the profile of public health, mental health and safeguarding to make every contact count

The *Joint Health and Wellbeing Strategy for Barnsley 2014-2019*²² describes the following priorities:

- reducing the prevalence of smoking and exposure to second hand smoke
- tackling excess weight and obesity
- reducing excessive alcohol consumption
- developing high quality primary care services that are accessible across the borough

The *Joint Health and Wellbeing Strategy for Doncaster 2013-2016*²³ describes the following priorities:

- access to high quality care services
- prevention to include alcohol and obesity reduction

The *Joint Health and Wellbeing Strategy for Rotherham 2013-2015*²⁴ describes the following priorities:

- prevention and early interventions
- matching services to people's expectations
- commitment to reducing health inequalities

Whilst none of the strategies include oral health, oral health improvement and oral healthcare services can contribute to the priorities across all the strategies through ensuring that this oral health needs assessment underpins local oral health improvement and dental commissioning strategies.

2. Context for oral health needs assessment

Oral health is an important part of general health and wellbeing. Good oral health is that without active disease, pain or discomfort, which allows good functioning such as eating, speaking and socialising without embarrassment.²⁵ Oral healthcare includes provision of both clinical treatments and oral health improvement initiatives.

An oral health needs assessment is a tool for identifying the oral health needs and oral healthcare needs of a population to target resources towards improving the oral health of those at specific risk or in underserved population subgroups.²⁶ The process involves establishing and describing the oral health of a population, ascertaining their needs, measuring the capacity of existing services to meet these needs and where gaps exist, identifying new or alternative ways in which such gaps can be prioritised and filled'.²⁷

The restructuring of the NHS in April 2013 followed the passing of the *Health and Social Care Act 2012*. The Act conferred the responsibility for the commissioning of NHS dental services to NHS England and conferred the responsibility for health improvement, including oral health improvement to local authorities.

Local authorities now have a statutory requirement to assess their local population's oral health needs.² An oral health needs assessment can help local authorities identify the oral health needs in their local communities for inclusion in the joint strategic needs assessment.¹²

New guidance has been produced by NICE to inform local authorities on how to undertake oral health needs assessments and develop local strategies for delivery of community-based interventions and activities.²⁸ Informing the NICE guidance is a recent review²⁷ of existing methods for undertaking oral health needs assessments. This review found that there was no one format and no evidence on how to conduct an ideal oral health needs assessment that results in changes that are clinically effective and cost effective.

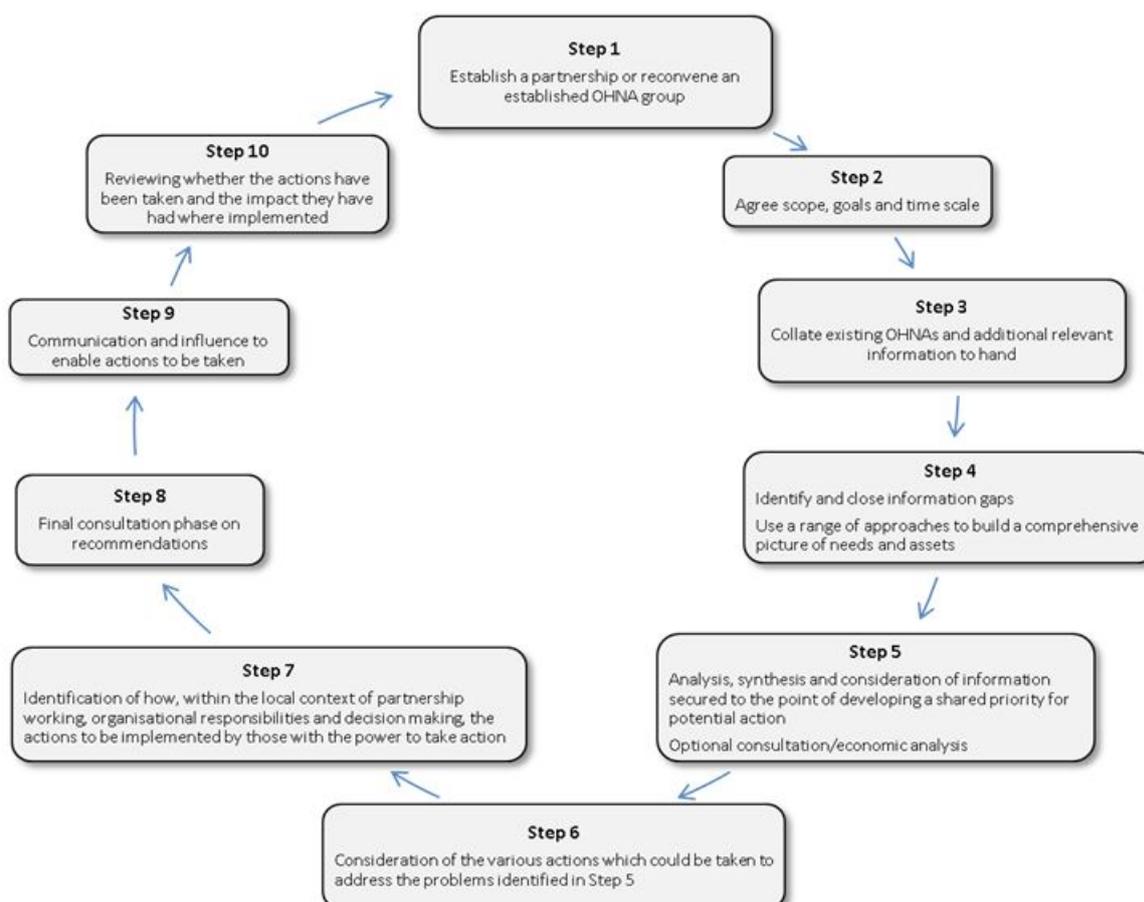
Need is the capacity to benefit from care. Need may be described from the perspective of the service provider or the service recipient.²⁷ The different types of need include normative need (need defined by experts), expressed need or demand (actions taken by service recipients to utilise health services), felt need (perceived needs of lay people or service recipients), comparative need (need between similar groups of people) and unmet need (as defined by either group).^{29, 30} Unmet oral

health needs are the gap between service and/or oral health improvement activities and that considered necessary by providers and recipients.

Assessment of need can be made using one or a number of approaches: an epidemiological approach by assessing disease incidence and prevalence; a comparative approach by comparing services and providers in different areas; and a corporate approach drawing on the views of different groups such as the public and providers of healthcare.²⁷

Hence a definitive approach to undertaking an oral health needs assessment needed to be established in the context of the broader JSNA²⁷ and a 10 step approach for carrying out an oral health needs assessment was proposed that incorporated the key operating principles for a JSNA³¹ (Figure 2.1).

Figure 2.1 The 10 Step Approach for an Oral Health Needs Assessment



Source: Modified from Chestnutt *et al.*, 2013, p56

The 10 step approach is consistent with the key operating principles for quality JSNAs and joint health and wellbeing strategies:

1. Establish a partnership to undertake the oral health needs assessment. Engage key people to ensure 'sponsorship' of the process by those with the power to make the necessary decisions to change if required and involve corporate partners and health alliances where appropriate. Involve patients and the public
2. Agree scope, agree goals and timescale (where geography boundaries differ to agree the population of interest)
3. Review and learn from previous oral health needs assessments.
4. Close the information gaps. Build up a comprehensive range of data, evidence and information on oral health needs and provision of dental services and oral health improvement activities. A range of approaches may be undertaken to engage with the local population
5. Analysis, synthesis and consideration of the information. Develop a list of priority problems. Prioritisation should be based on issues requiring the greatest attention and where the greatest impact can be made from available resources
6. Consider actions to be taken to address the problems identified in Step 5, reviewing the evidence on the predictability of the effectiveness of those actions. Develop a prioritised list of actions
7. Identify how, within the local context of partnership working, organisational responsibilities and decision making, the actions will be implemented by those in power to take action
8. Final consultation with key stakeholders on proposed recommendations
9. Communication and influence to enable actions to be undertaken
The oral health needs assessment is an on-going shared planning resource
10. Review of the actions undertaken and their impact where they have been implemented. The end of one planning cycle is used to inform the next oral health needs assessment

This approach has been used to develop this oral health needs assessment to give a comprehensive description of oral health needs in South Yorkshire and Bassetlaw and to make recommendations on targeting of resources to meet those needs.

Aim

To undertake an oral health needs assessment across South Yorkshire and Bassetlaw to support the planning of oral healthcare services and dental public health services for the local population.

Objectives

- to describe the oral health needs in the South Yorkshire and Bassetlaw population
- to describe the current oral healthcare and dental public health services provision
- to identify any gaps in service provision
- to identify key issues for consideration in the future development of high quality, evidence based and outcomes focused oral healthcare and dental public health services across South Yorkshire and Bassetlaw

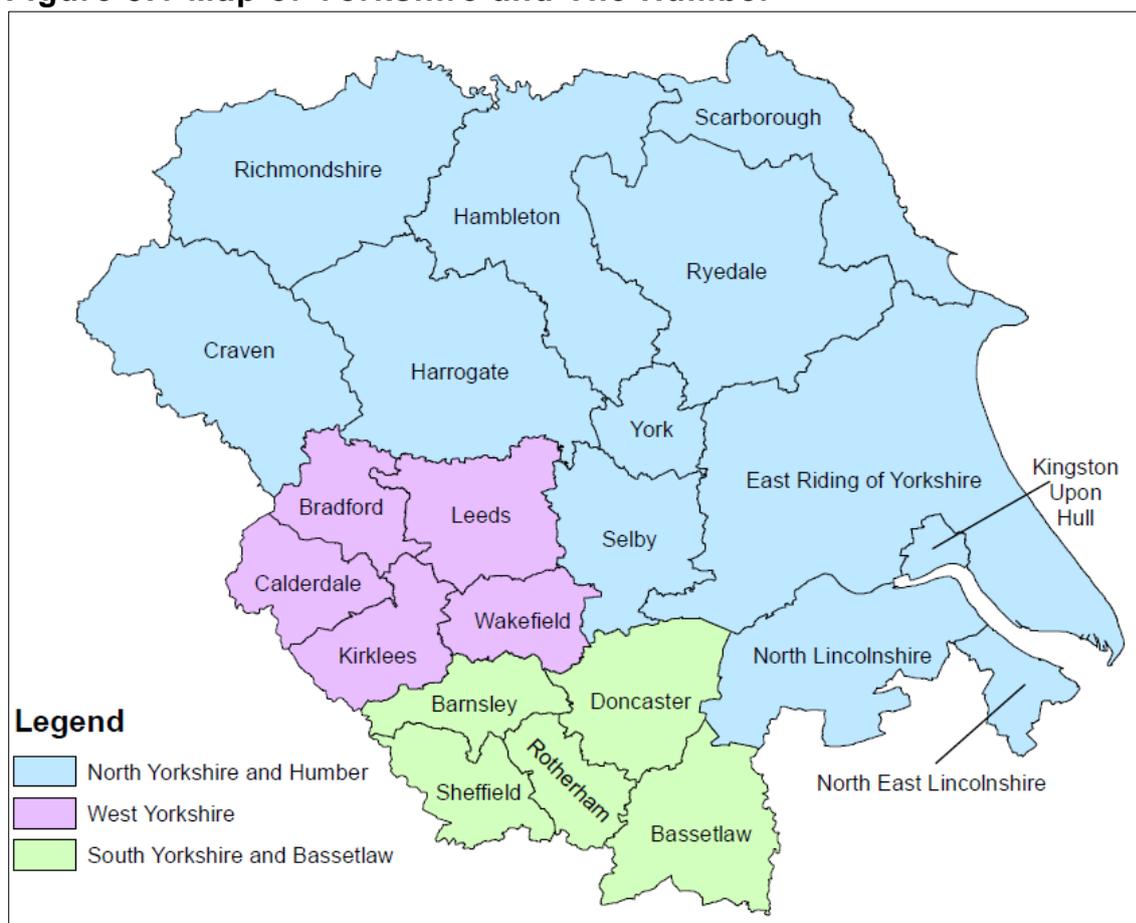
3. Population and demographic variations

Population of South Yorkshire

South Yorkshire is a metropolitan county of 1,552 square kilometres with a population of 1.34 million within the Yorkshire and The Humber area of England (Figure 3.1). It consists of four metropolitan boroughs: Barnsley, Doncaster, Rotherham and Sheffield governed by the metropolitan borough councils of Barnsley, Doncaster, Rotherham, and Sheffield City Council respectively.

Bassetlaw is south of Doncaster in Nottinghamshire within the East Midlands area of England. It is 638 square kilometres and has a population of 113,000.

Figure 3.1 Map of Yorkshire and The Humber

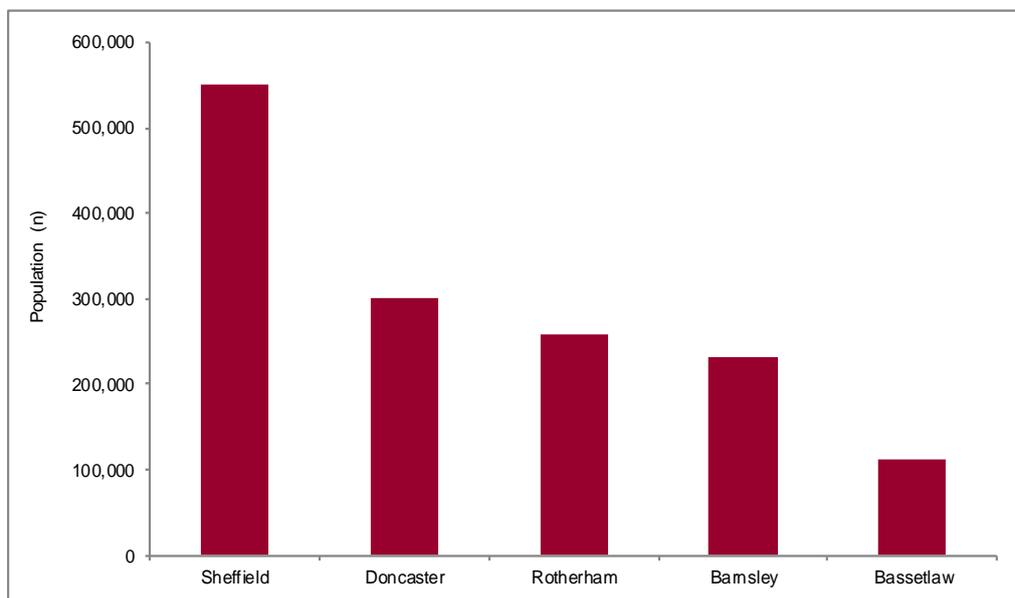


Source: University of Sheffield, 2014

Eighty per cent of the population of Yorkshire and The Humber live in urban areas.³²

Sheffield has the largest population in South Yorkshire and Bassetlaw with 552,000 people and Bassetlaw the smallest, with 113,000 people (Figure 3.2).

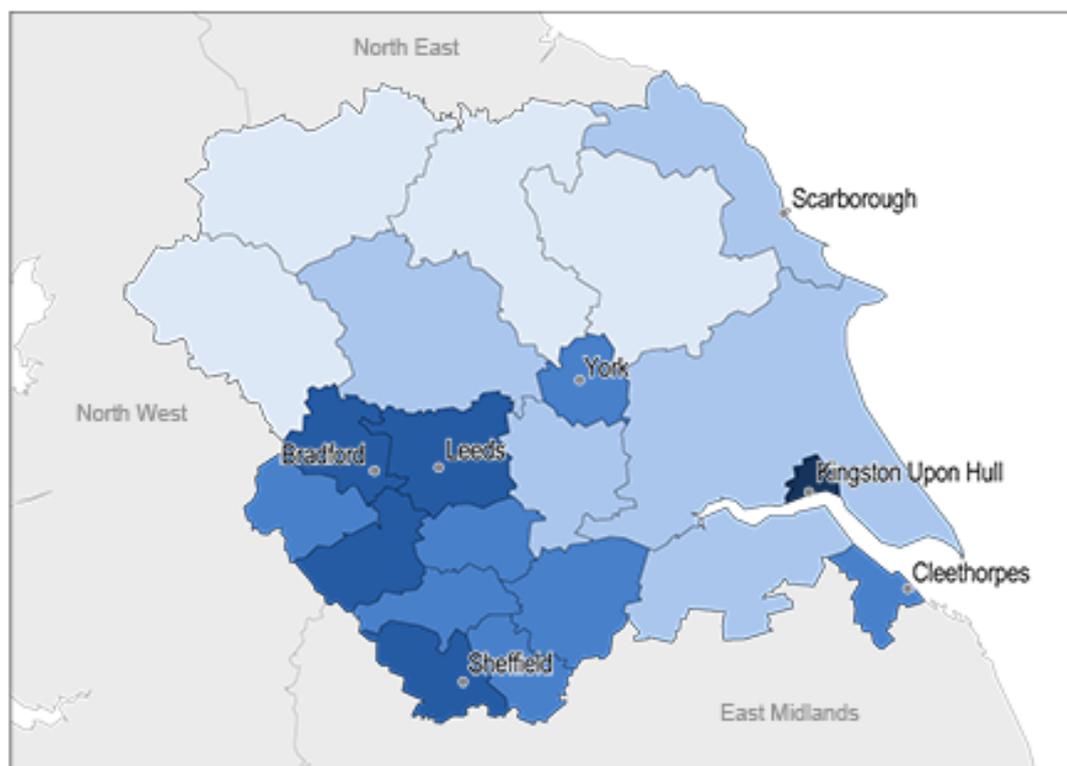
Figure 3.2 Population of South Yorkshire and Bassetlaw



Source: ONS, 2011

South Yorkshire is relatively densely populated with Sheffield ranked as the third most densely populated district in England (Figure 3.3). Relative to the boroughs of South Yorkshire, Bassetlaw is sparsely populated with a ranking of 198.

Figure 3.3 Yorkshire and The Humber population density by local authority, 2010



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Contains National Statistics data © Crown copyright and database right 2012

**Population density, 2010
(people per sq km)**



Source: ONS, 2012

Gender and age profiles

The age and gender population profiles of the South Yorkshire local authority areas and Bassetlaw (in blue) are shown below together with the national population profile (in brown) (Figures 3.4 to 3.8).

Figure 3.4 Sheffield population

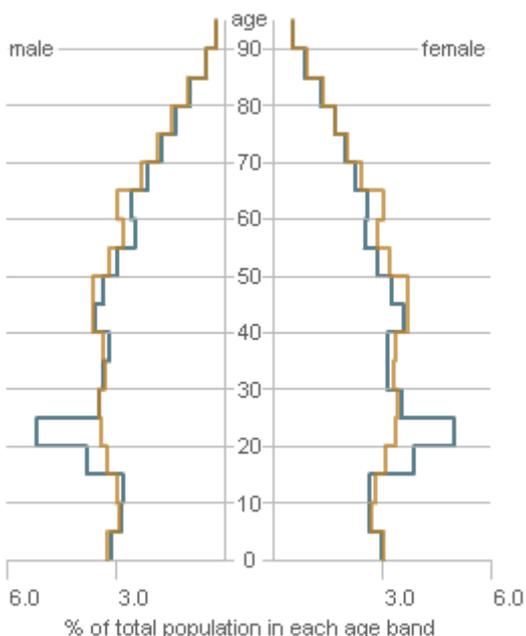
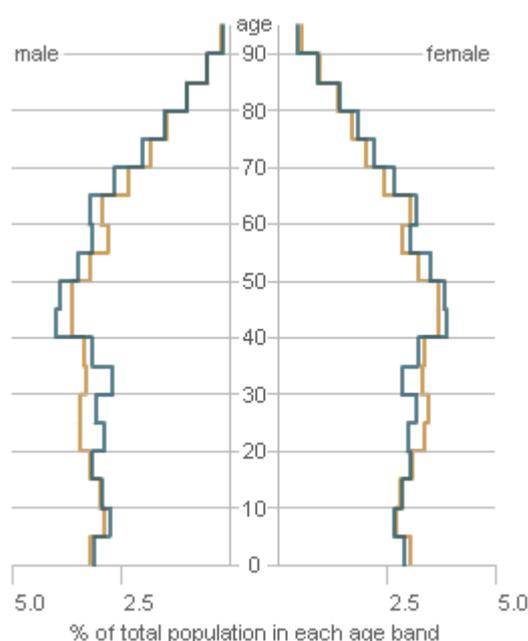


Figure 3.5 Barnsley population



Sheffield has a relatively younger population than nationally reflecting the large student population attending the two universities in the city.

Figure 3.6 Doncaster population

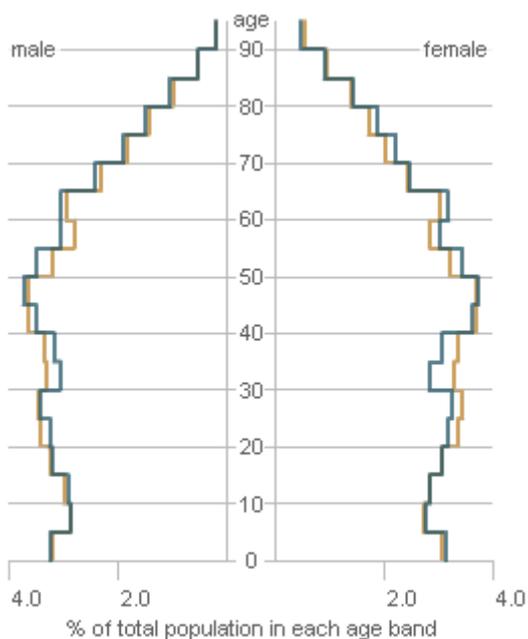
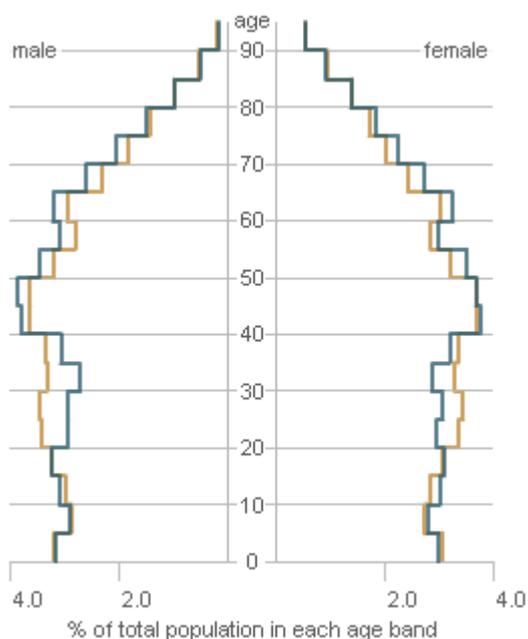
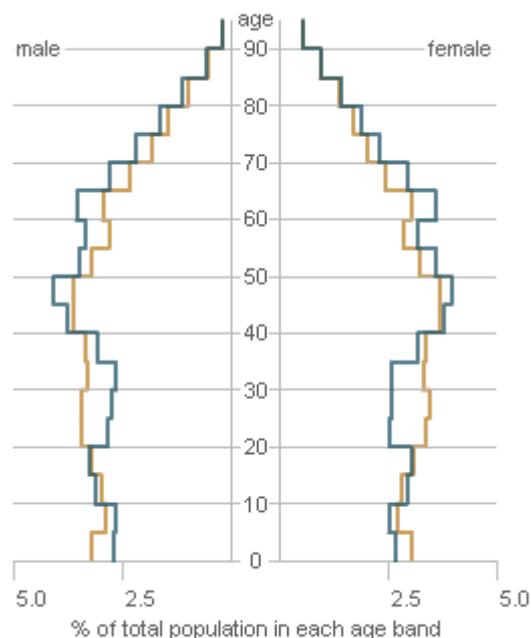


Figure 3.7 Rotherham population



Rotherham has fewer 20 to 40-year-olds relative to the national average (Figure 3.7). Overall, the populations of Barnsley and Doncaster are similar to the national profiles (Figures 3.5 and 3.6).

Figure 3.8 Bassetlaw population



Key: Blue = South Yorkshire and Bassetlaw population; Brown = England Population

Source: ONS licensed under the Open Government Licence v2.0

The Bassetlaw population is older than the national profile and there are fewer 0 to five-year-olds and 20 to 40-year-olds relative to the national average (Figure 3.8).

Births, deaths and migration

The population of Yorkshire and The Humber is increasing and ageing in line with national trends. The population estimates for mid-2011 to mid-2012 reported that births (67,408) were higher than deaths (49,571) (Table 3.1). From 2001 to 2011 the number of residents aged 65 years and over in Yorkshire and The Humber increased by 16.6%, slightly more than the national level of 16.3%.

Population change can also result from internal migration in and out of the areas as well as by international immigration or international emigration. There was a net internal migration out of 2,209 and a net international immigration of 11,040, which together accounted for a 0.5% increase in the population.³³

Table 3.1 Births and Deaths, Yorkshire and The Humber (including Bassetlaw, Nottinghamshire), 2012

Geographical Area	Births	Deaths
England	694,241	224,460
Yorkshire and The Humber	67,408	49,571
South Yorkshire	16,869	12,678
Barnsley	2,961	2,206
Doncaster	3,752	2,581
Rotherham	3,264	3,095
Sheffield	6,892	4,796
Bassetlaw	1,237	1,136

Source: ONS, 2012

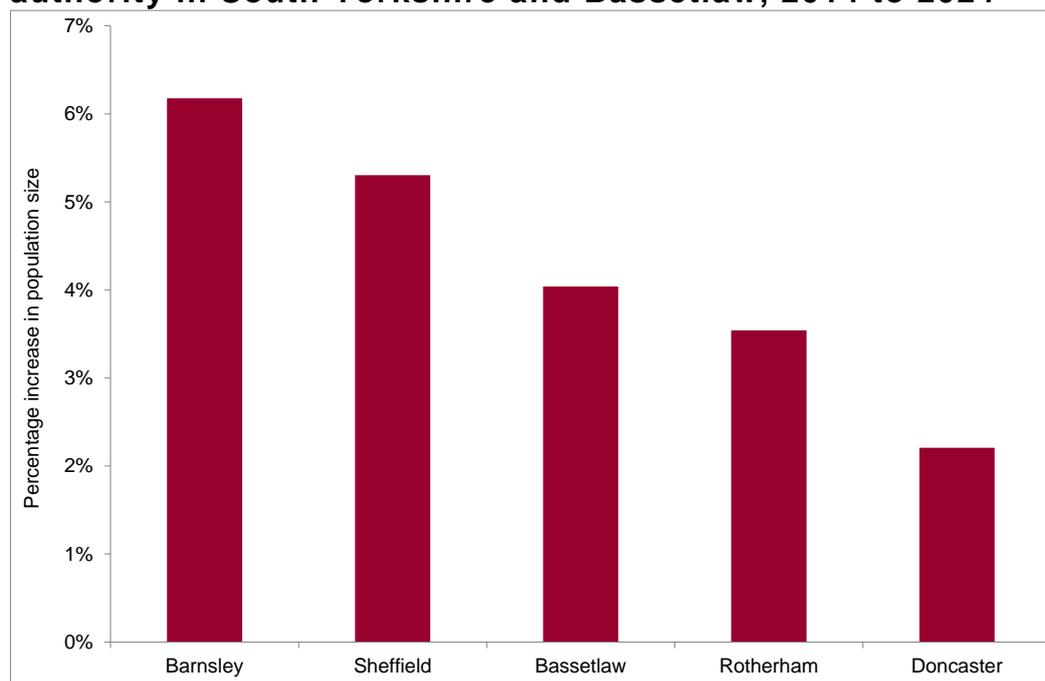
Bassetlaw had a fairly constant population over the two year period 2011 to 2012. In Sheffield and Rotherham there were also no significant changes in the net migration. However, in 2012 the number of births in Sheffield exceeded the number of deaths (Table 3.1).

Doncaster had a net outflow of approximately 1,000 people over the two years whereas Barnsley had a net inflow estimated at 900 people in 2011 and 659 in 2012.

Population projections

There is a projected percentage population increase in all local authorities in South Yorkshire and Bassetlaw between 2014 and 2024 (Figure 3.9). The projected increase is highest in Barnsley and Sheffield in line with the changes in births, deaths and migration described above. This trend will impact on services if it continues.

Figure 3.9 Projected percentage increases in population by local authority in South Yorkshire and Bassetlaw, 2014 to 2024

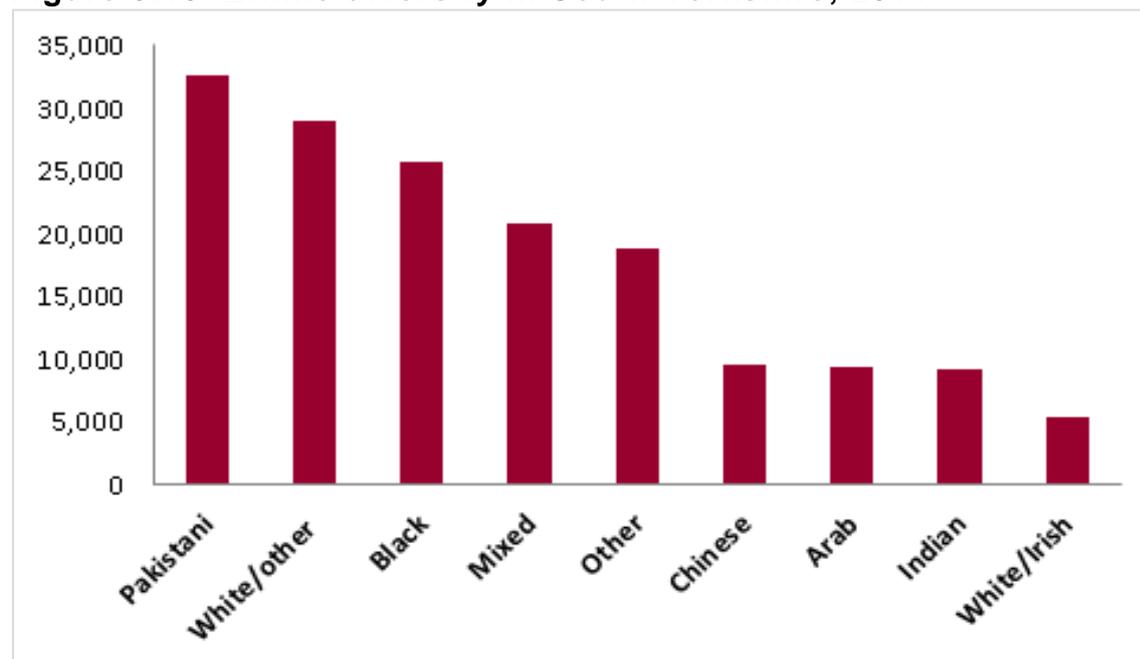


Source: ONS, 2014

Ethnic diversity

South Yorkshire and Bassetlaw is less ethnically diverse than England or Yorkshire and The Humber, Nevertheless, there are significant numbers of people from minority ethnic groups (Figure 3.10).

Figure 3.10 Ethnic diversity in South Yorkshire, 2011



Source: ONS, 2014

Sheffield is the most ethnically diverse local authority area whilst Barnsley and Bassetlaw have predominantly White populations. The Asian group is the largest minority group in all local authority areas (Table 3.2).

Table 3.2 Ethnic diversity in South Yorkshire and Bassetlaw, 2011

Area	All categories (n)	White n (%)	Mixed n (%)	Asian n (%)	Black n (%)	Other n (%)
England	53,012,456	42,279,236 (79.8)	2,588,581 (4.9)	4,143,403 (7.8)	1,846,614 (3.5)	548,418 (1.0)
Yorkshire and The Humber	5,283,733	4,691,956 (88.8)	84,558 (1.6)	385,964 (7.3)	80,345 (1.5)	40,910 (0.8)
Sheffield	552,698	462,544 (83.7)	13,289 (2.4)	44,385 (8.0)	20,082 (3.6)	12,398 (2.2)
Barnsley	231,221	226,285 (97.9)	1,630 (0.7)	1,661 (0.7)	1,221 (0.5)	424 (0.2)
Doncaster	302,402	288,066 (95.3)	3,321 (1.1)	7,614 (2.5)	2,337 (0.8)	1,064 (0.4)
Rotherham	257,280	240,758 (93.6)	2,551 (1.0)	10,551 (4.1)	2,112 (0.8)	1,308 (0.5)
Bassetlaw	112,863	109,892 (97.4)	996 (0.9)	1,255 (1.1)	520 (0.5)	200 (0.2)

Source: ONS, 2012

Deprivation

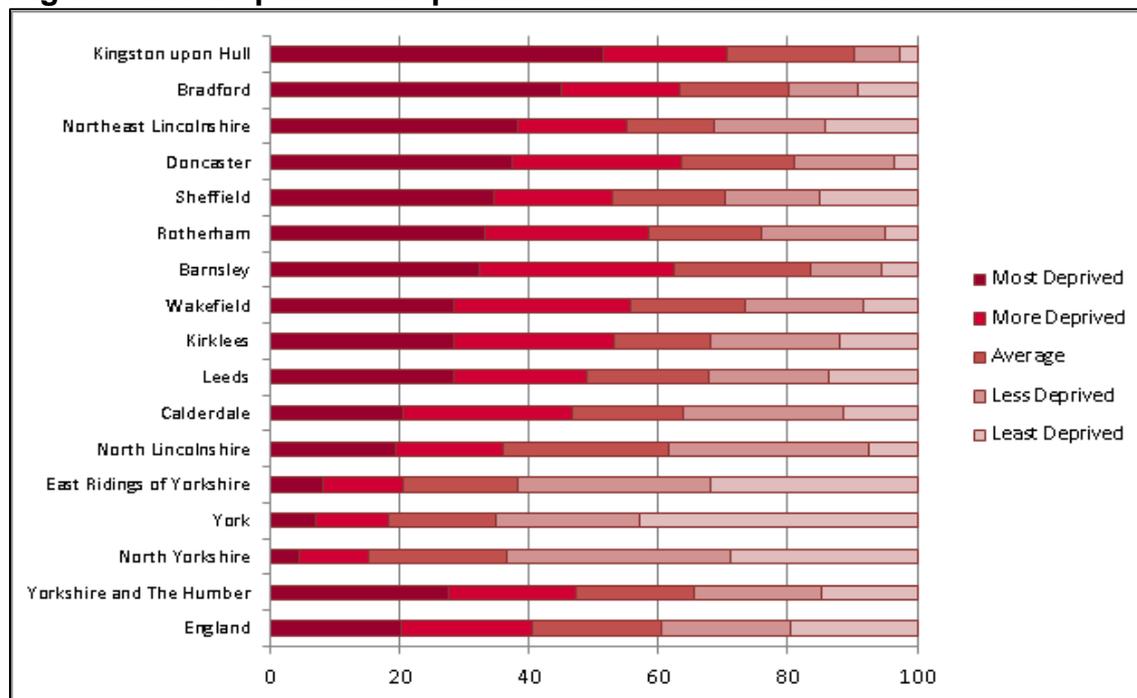
Deprivation covers a wide range of factors and refers to unmet needs caused by a lack of resources of all kinds, not just financial. Accordingly, the English Indices of Deprivation (2010) comprise 38 separate indicators, organised across seven distinct domains or dimensions that can be combined, using appropriate weights, to calculate the Index of Multiple Deprivation 2010.³⁴ The IMD is calculated at lower layer super output area (LSOA) level. LSOAs are geographical areas with an average population of 1,500 people living in mutual proximity and social homogeneity.

The seven domains used are:

- income deprivation
- employment deprivation
- health, deprivation and disability
- education, skills and training deprivation
- barriers to housing and services
- crime
- living environment deprivation

Deprivation in Yorkshire and The Humber is higher than the England average with 27.7 % of the population living in the 20% most deprived LSOAs in the country (Figure 3.11).

Figure 3.11 Deprivation quintiles in Yorkshire and The Humber

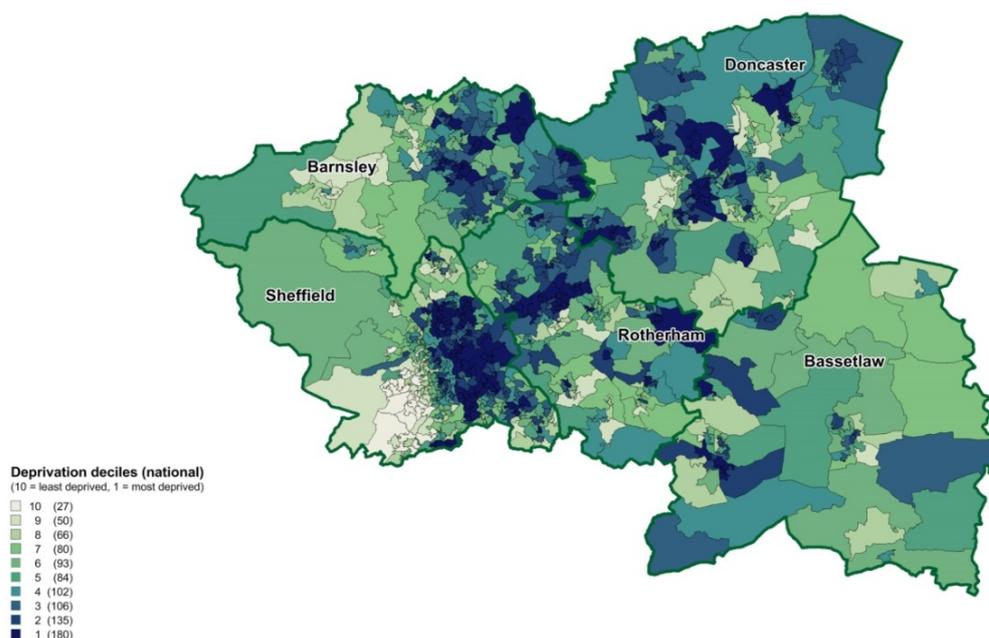


Source: PHE, 2013

Deprivation in South Yorkshire is higher than the England average although there are large variations in levels of deprivation across the local authority areas (Figure 3.12).

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Source: English indices of deprivation 2010, DCLG, map produced by FHE Knowledge and Intelligence Team Northern and Yorkshire. © Crown copyright and database rights 2014 Ordnance Survey 100016969 Contains National Statistics data © Crown copyright and database right 2014

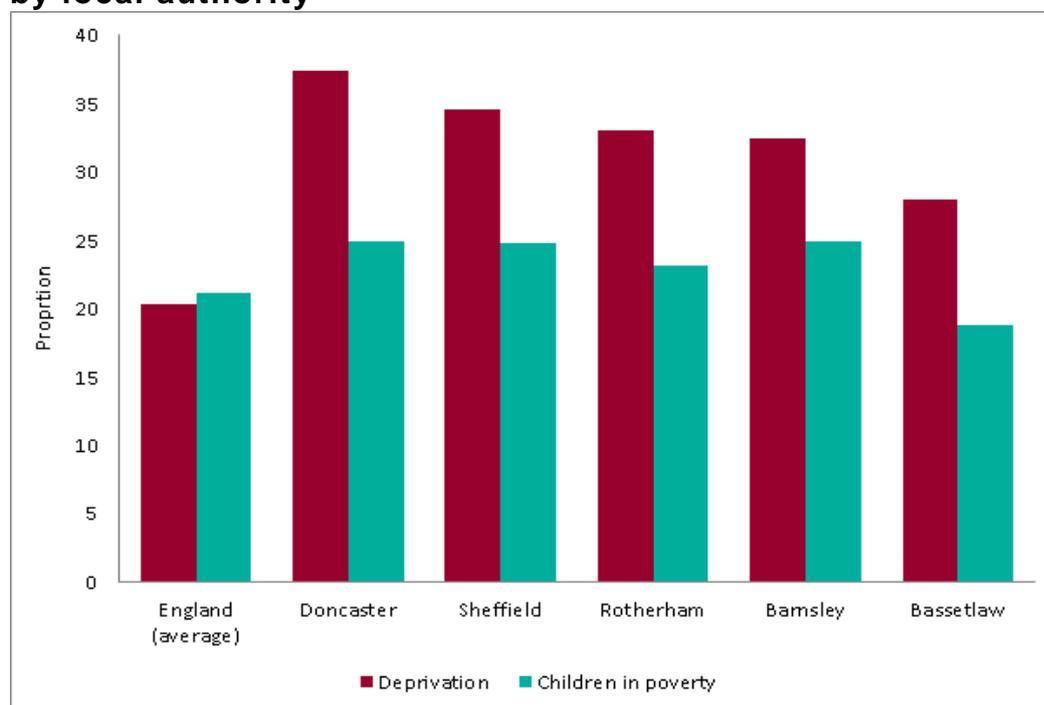
All the local authority areas in South Yorkshire have proportionately more people in the most deprived decile than the national average. Sheffield has the greatest proportion of the population (23.3%) in the most deprived decile relative to England and the other local authority areas in South Yorkshire. Sheffield also has stark inequalities (Appendix I, figure V).

Doncaster has the next largest proportion of the population (21.7%) in the most deprived decile (Appendix I, figure III) compared to Barnsley and Rotherham with 17.7% and 16.8% respectively (Appendix I, figures I and IV).

Bassetlaw has proportionately less of its population (8.6%) in the most deprived decile relative to England and South Yorkshire (Appendix I, figure II).

The proportion of people living in the 20% most deprived areas in England and the proportion of children in families receiving means tested benefits are shown below (Figure 3.13). All local authority areas are more deprived relative to England with Doncaster and Sheffield being the most deprived. Proportionately more children in South Yorkshire live in poverty compared to the England average with the exception of Bassetlaw.

Figure 3.13 Proportion of the population living in the twenty per cent most deprived areas and the proportion of children living in poverty by local authority



Source: PHE, 2013

Health inequalities

Variations in health follow a continuum³⁵ between different socioeconomic groups in society. Higher socio-economic status groups enjoy the best health whereas those of the lowest socio-economic status experience the worst health, as measured by key health indicators such as mortality and morbidity.³⁶

In Yorkshire and The Humber life expectancy is lower than the England average with men living on average to 78.3 years and women to 82.2 years (Table 3.3).

Table 3.3 Life expectancy of males and females in South Yorkshire and Bassetlaw

	England	Yorkshire and The Humber	Sheffield	Barnsley	Doncaster	Rotherham	Bassetlaw
	(years)						
Male	79.2	78.3	78.9	77.4	77.6	77.8	78.2
Female	83.0	82.2	82.9	80.9	81.8	81.7	81.9

Source: PHE, 2013

Men and women in all the local authority areas of South Yorkshire and Bassetlaw have lower life expectancy than the England average (Table 3.3). There is variation in life expectancy across the local authorities with Sheffield men and women living

longest. However, Sheffield also displays the greatest variations in life expectancy between those in the most and least deprived areas (Table 3.4).

Table 3.4 Gap in life expectancy between men and women in the most deprived areas compared to men and women in the least deprived areas in South Yorkshire and Bassetlaw

	Gap (years)				
	Sheffield	Barnsley	Doncaster	Rotherham	Bassetlaw
Males	10.7	8.7	10.5	10.2	7.4
Females	7.7	7.4	7.0	6.4	6.1

Source: PHE, 2013

Health related behaviours in South Yorkshire and Bassetlaw

Healthy behaviours can contribute to the prevention and control of non-communicable diseases such as cardiovascular diseases, chronic respiratory diseases, diabetes and cancers.³⁷ The Health Survey for England monitors trends in the nation's health and health related behaviours as measured by healthy eating, physical activity, alcohol use and tobacco use.³⁸ Health related behaviours in South Yorkshire and Bassetlaw local authorities are compared with the England 2012 data below (Table 3.5).

Table 3.5 Prevalence of health related behaviours in South Yorkshire and Bassetlaw local authorities and England

Health related behaviours	England %	Sheffield %	Barnsley %	Doncaster %	Rotherham %	Bassetlaw %
Healthy eating adults	28.7	24.7	20.3	21.4	21.3	26.2
Physically active adults	56.0	54.6	50.8	52.1	52.4	56.9
Increasing and higher risk drinking	22.3	22.1	22.1	21.9	21.6	23.1
Smoking	20.0	21.6	25.6	27.0	23.0	13.1
Smoking in pregnancy	13.3	14.1	23.3	22.2	-	20.6

Significantly worse than England average	
Not significantly different from England average	
Significantly better than England average	

Source PHE 2013

Healthy eating

A healthy diet is important in preventing diseases such as cardiovascular disease and diabetes.³⁹ The annual cost of food related ill health to the NHS was estimated to be £6 billion.⁴⁰ A minimum intake of five portions of fruit and vegetables is an important component of a healthy diet and is the measure used for healthy eating in adults.⁴¹ Fewer adults in South Yorkshire ate healthily than the England average (Table 3.5).

Physically active adults

Lack of physical activity is an important risk factor for chronic non-communicable diseases such as ischemic heart disease and stroke³⁸ with an estimated direct cost to the NHS of £1.1 billion.⁴² Guidelines for physical activity for all ages suggest adults (aged 16 and over) should have 150 minutes of activity of moderate intensity a week.⁴³ Fewer adults in Barnsley (50.8%) and Doncaster (52.1%) met this level than nationally (56.0%) (Table 3.5).

Obesity in South Yorkshire and Bassetlaw

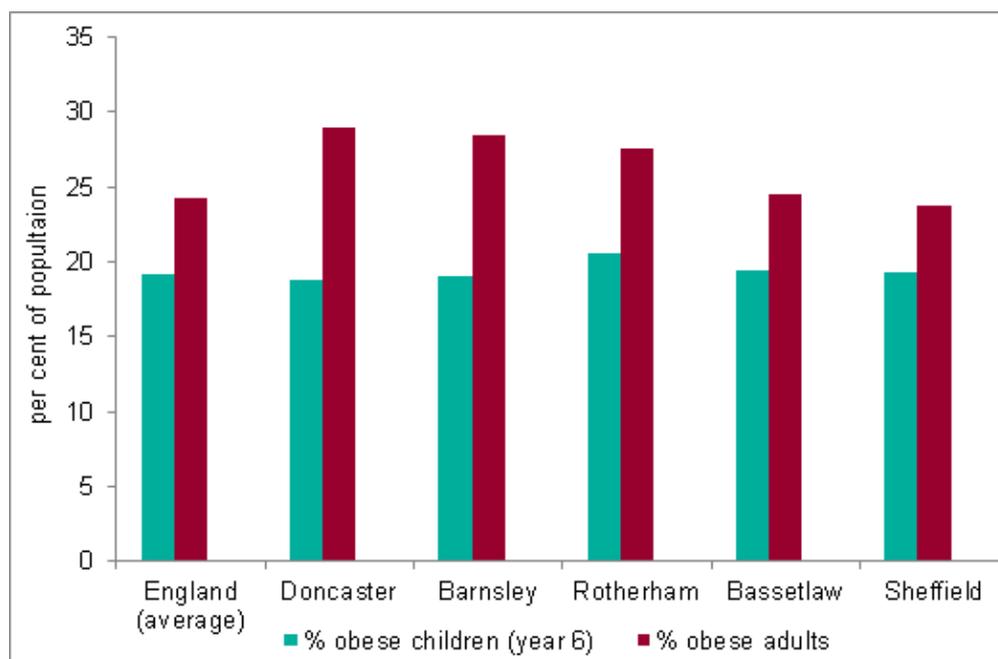
Whilst not a health related behaviour, being overweight or obese reflect an unhealthy diet and lack of physical activity. Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Obesity in adults is associated with cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers.⁴⁴ Obesity in children is linked to long term physiological and psychological health risks and can persist into adulthood.⁴⁵ The estimated cost to the NHS of excess weight is £5 billion each year.⁴⁶

The WHO definition of obesity is a Body Mass Index (BMI) greater than or equal to 30. BMI is calculated by weight (kg) divided by height squared (m²).⁴⁴ In children those classified as obese are those above the 95th BMI centiles of the 1990 reference population.⁴⁵

Obesity is associated with low income in women but is evenly distributed across income groups in men.⁴⁷ Obesity prevalence in children is highest for both boys and girls in the two most deprived IMD quintiles (16% and 19% compared with 9% and 14% in higher quintiles).⁴⁵

With the exception of Sheffield, proportionately more South Yorkshire and Bassetlaw adults are obese than nationally, with Doncaster having some of the highest levels of adult obesity. Rotherham has greater levels of child obesity relative to the national average (Figure 3.14).

Figure 3.14 Obesity levels in South Yorkshire and Bassetlaw, 2013



Source: PHE, 2013

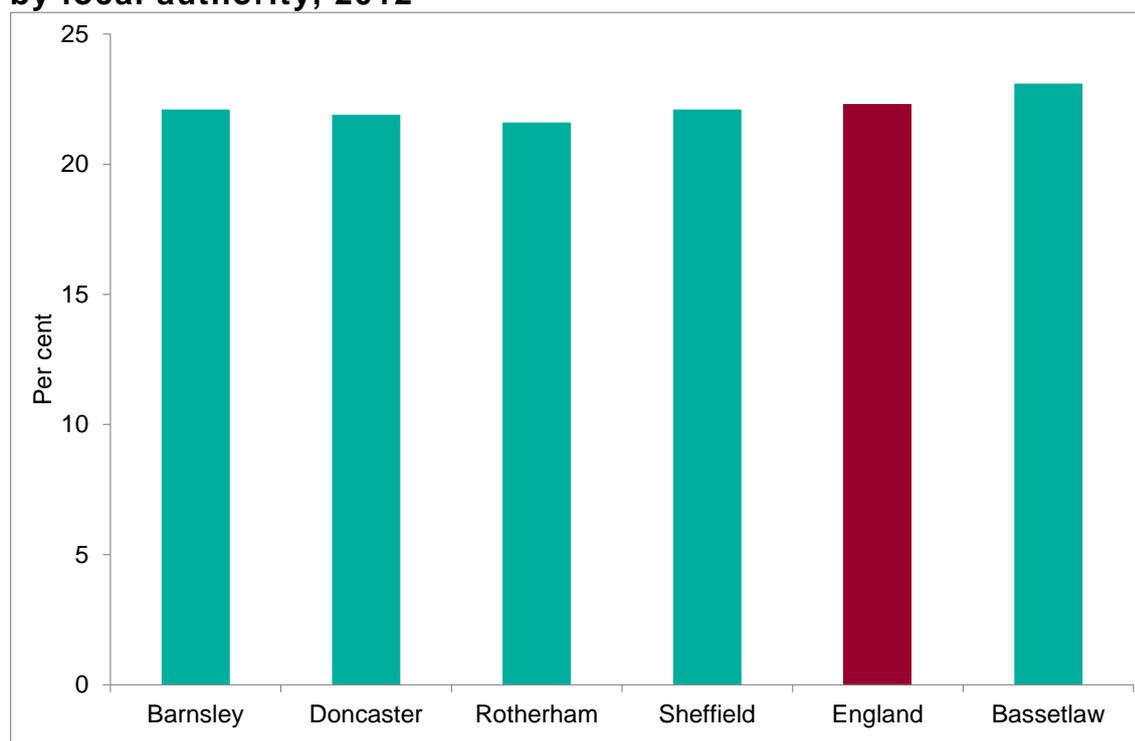
Alcohol use

Alcohol use can affect health and increases the risks of accidents, injury and violence. The health harms of alcohol are dose dependent; that is the risk increases with the amount drunk. In England hospital admissions related to alcohol consumption doubled from half a million to over a million between 2002 and 2012.³⁸

The recommended limits to avoid the risk of alcohol-related harm are no more than 21 units in men and 14 in women. Adults who regularly drink more than these amounts are considered to be at increased risk. Men and women who regularly drink more than eight units a day (or 50 units a week) and more than six units a day (or 35 units a week) respectively, are higher risk drinkers at particular risk of harm.³⁸

The proportion of adults over the age of 16 years who are higher risk drinkers is described below (Figure 3.15). Proportionately more Bassetlaw adults are higher risk drinkers compared to South Yorkshire and the national average.

Figure 3.15 Proportion of the population who are higher risk drinkers by local authority, 2012



Source: PHE, 2013

Tobacco use

Tobacco use is a risk for cancers and chronic respiratory and circulatory disease.³⁷ In England tobacco smoking is the greatest cause of preventable illness and premature death⁴⁸. Approximately 102,000 people died from smoking related diseases in the UK in 2009.⁴⁹ It costs the NHS an estimated £2.7 billion to treat smoking related diseases.⁵⁰

Twenty per cent of English adults aged 18 years and over smoke tobacco. Proportionately fewer Bassetlaw adults use tobacco, but tobacco use is significantly worse in Barnsley (25.6%), Doncaster (27.0%) and Rotherham (23.0%). Smoking in pregnancy (% smoking in pregnancy where smoking status is known) was significantly higher than the England average (13.3%) in Barnsley (23.3%), Doncaster (22.2%), Rotherham (%) and Bassetlaw (20.6%).⁵¹

The 2009 Adult Dental Health Survey reported that more men than women smoked and that smoking was socially patterned, with 8.8% of participants smoking in the least deprived areas compared to 26.4% in the most deprived. Despite this prevalence, only 6.8% of smokers reported receiving quitting advice from a dentist and only 2.9% reported receiving advice from a member of the dental team.

Oral hygiene practices

The most prevalent oral diseases, tooth decay and gum diseases can both be reduced by regular tooth brushing with fluoride toothpaste. The fluoride in toothpaste is the important element of tooth brushing to control tooth decay, as it prevents, controls and arrests decay. Higher concentrations of fluoride in toothpaste lead to better control. By contrast, the physical removal of plaque is the important element of tooth brushing to control gum diseases as it reduces the inflammatory response of the gum and its consequences.¹⁴

In 2008/09, most 12-year-old schoolchildren in Yorkshire and The Humber reported brushing their teeth twice daily (Table 3.6).

Table 3.6 Frequency of tooth brushing among 12-year-olds, 2008/09

Area	Never (%)	Once a day or less (%)	Twice daily (%)	More than twice daily (%)
Yorkshire and The Humber	0.2	22.3	73.1	3.8
East Midlands	0.4	25.5	70.8	3.1
England	0.2	22.8	72.9	3.7

Source: British Association for the Study of Community Dentistry, 2009

In the 2009 Adult Dental Health Survey, 72% of adults in Yorkshire and The Humber claimed to brush their teeth twice or more often per day, 22% once per day, 5% less than once per day and 1% never, which was comparable to the England responses (75%, 22%, 2% and 1% respectively).⁵²

The relationship of health related behaviours to deprivation

Health behaviours are related to deprivation with those in the most deprived quintile having the lowest physical activity,³⁸ more likely to drink alcohol in the previous week, more likely to smoke tobacco and less likely to consume five or more portions of fruit and vegetables.⁴¹

Summary

- South Yorkshire is a densely populated area with a largely White population
- the population of Sheffield is younger and the population of Bassetlaw is older than then the national profile
- the populations of Barnsley and Sheffield grew in 2012 and this trend is predicted to continue
- Sheffield is the most ethnically diverse local authority in the area

- Bassetlaw is sparsely populated and less ethnically diverse
- South Yorkshire and Bassetlaw are relatively deprived compared to the England average
- all South Yorkshire local authorities have proportionately more children living in poverty than the rest of England
- Doncaster and Sheffield have the highest levels of deprivation and child poverty in South Yorkshire and Bassetlaw
- health inequalities exist between and within local authority areas
- Sheffield is the most unequal local authority area
- in all local authorities except Bassetlaw, fewer people adopted health eating habits than nationally. Levels of obesity were significantly worse than the England average in all local authorities except Sheffield
- rates of smoking were higher than nationally in Barnsley, Doncaster and Rotherham
- proportionately more Bassetlaw adults were higher risk drinkers
- most children and adults in Yorkshire and The Humber brushed their teeth at least twice a day

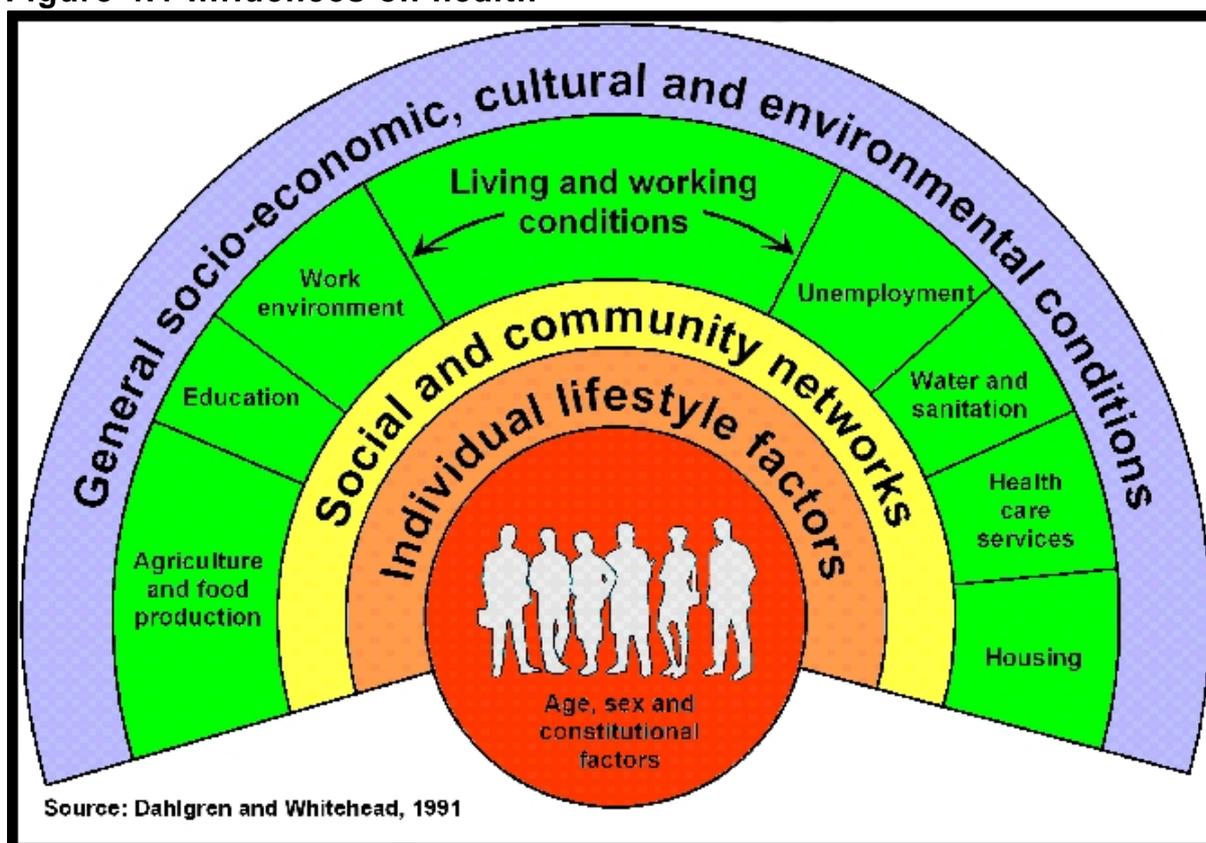
Key issues for consideration

- oral health and oral health improvement strategies should address the health inequalities that exist across South Yorkshire and Bassetlaw in addition to improving absolute levels of health
- NHS England should ensure that commissioning plans consider the expected increases in population size in Barnsley and Sheffield

4. Determinants and impacts of oral health

Good oral health is imperative for good general health as it influences the general wellbeing and quality of life of people by allowing them to eat, speak and socialise without active disease.²⁶ To achieve sustainable improvements in oral health and reduce inequalities it is necessary to consider the underlying factors influencing poor oral health. A large spectrum of factors have been identified by contemporary public health research as influencing oral health including economic and social policy and individual health behaviours (Figure 4.1). Individual behavioural change approaches to improving oral health have been shown to have only short term benefits⁵³ and focussing on the wider determinants of health is necessary to achieve sustainable improvements in health related behaviours.

Figure 4.1 Influences on health



Social determinants of oral health

The World Health Organization (WHO) defines the social determinants of health as the conditions in which people are born, grow, live, work and age, including the health system.⁵⁴ These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices. The social determinants of health are mostly responsible for health inequities, which are the unfair and avoidable differences in health status seen within and between countries.

In the UK health inequalities including oral health inequalities are a dominant feature, both nationally and across all geographical areas. Health inequalities are not inevitable; they stem from inequalities in income, education, employment and neighbourhood circumstances throughout life and can be reduced. Avoidable inequalities are unfair and remedying them is a matter of social justice. As described in Chapter 1, Marmot proposed the most effective evidence based strategies for reducing health inequalities in England.⁵

The relationships between oral diseases and the social determinants of health are inextricably bound together. As discussed above, it is well-recognised that oral health is influenced by a wide range of determinants starting from individual lifestyle choices such as sugar intake to national policy, for example smoke-free environments and policies tackling alcohol and sugar availability. It is essential that for a successful public health approach, these wider determinants must be focussed upon through a partnership approach.

Oral diseases and conditions

Good oral health is threatened by conditions such as gum disease (periodontitis), tooth decay (dental caries), trauma and oral (mouth) cancers. The common oral diseases and conditions are described below together with their impacts on individuals and society.

Tooth decay

Tooth decay occurs when a tooth demineralises in response to the acids produced when plaque bacteria use dietary sugars for energy. The acids attack the tooth causing it to lose minerals shortly after the sugar enters the mouth and the process can last for an hour. If the tooth is given a rest phase without any sugar, the chemistry of the mouth (particularly saliva) can then replace the lost minerals. Frequent sugar intakes with fewer periods of rest shift the balance towards demineralisation of the tooth, eventually leading to tooth decay. Once decay has breached the outer layer of enamel it spreads widely in the dentine beneath. As it

reaches the central pulp (tooth nerve), it causes severe pain and infection often leading to the loss of the tooth. In older people tooth decay can also attack the root surface of the tooth where the gums have receded, which has no outer protective layer of enamel. The groups at highest risk of tooth decay include infants, preschool children, adolescents and older people, especially those living in institutions.

The sugars causing tooth decay are present mainly in confectionary, biscuits and soft drinks. The WHO currently recommends sugar should make up less than 10% (approximately 50g) of people's energy intake per day with a further reduction to below 5% offering additional benefits.⁵⁵ Most people in England consume more sugars than the recommended amount.

Factors such as costs, availability, access to healthy foods and clear information are all important in influencing what people eat and drink. Eating a healthy balanced diet containing fruit and vegetables that is low in fat, salt and sugar and based on whole grain products is important for good health. *Delivering Better Oral Health*¹⁴ supports dental teams to give clear and consistent evidence-based advice to their patients. Advice relates to infant feeding, the intake of sugars within the diet, a balanced diet and the five a day message. Current dietary advice is to reduce not only the amount of sugar within the diet but also the frequency of its intake to reduce the risk of tooth decay.

Fluoride use

Fluoride acts in several ways to slow and prevent the decay process and also to reverse decay in its early stages. The most important modes of action are to reduce demineralisation and promote re-mineralisation so that minerals are deposited back into the tooth surface. The effectiveness of fluoride in reducing levels of tooth decay at an individual and community level is well documented.¹⁴

Individual level

Fluoride has been added to toothpaste since the 1970s fluoride and this is widely recognised as the main reason for improved oral health in the UK. The preventive fraction, that is the relative effectiveness of fluoride toothpaste in reducing tooth decay is 24%.⁵⁶ Programmes such as *Brushing for Life* have been commissioned in South Yorkshire and involve the promotion of tooth brushing as soon as the teeth erupt in order to increase the delivery of fluoride to children from lower socio-economic groups.

Fluoride varnishes are applied professionally, usually six monthly and have a preventive fraction of 37% in baby teeth and 4s% in adult teeth.⁵⁶

Fluoride rinses can be prescribed for people aged eight years and above for daily or weekly use in addition to twice daily brushing with fluoride toothpaste. Rinses require compliance and should be used at a different time to tooth brushing to maximise the topical effect of fluoride, which relates to frequency of availability. The preventive fraction for fluoride rinses is 26%.⁵⁷

Community level

In areas with high levels of tooth decay water fluoridation is an effective and safe public health intervention. The level of fluoride, which is naturally present in water supplies, can be adjusted to the optimal level, one part per million (ppm) to improve dental health. In the West Midlands 70% of the population consumes fluoridated water and children living in these areas have better oral health at every level of deprivation.⁵⁸

The water supplied in Bassetlaw by East Anglian Water in the Retford area is fluoridated. The average levels between January 2013 and June 2013 were 0.8ppm. In the southeast of Sheffield, Mosborough, Halfway, Beighton, Westfield, Hackenthorpe, Birley, Stothall, Waterthorpe and Owlthorpe have naturally fluoridated water albeit at a sub-optimal level of 0.4ppm.

Water fluoridation became the responsibility of local authorities from April 2013. Local authorities are responsible for conducting public consultations and for meeting the costs the water companies incur for implementing and operating water fluoridation schemes.

Fluoride varnish and tooth brushing may also be provided at a community level such as tooth brushing clubs in schools.¹³

Tooth wear

Apart from tooth decay, tooth tissue loss can also occur due to tooth wear. Tooth wear is a natural part of life, so the extent and severity of wear is age related. The wear can have chemical, mechanical or physical causes. The tooth tissue can dissolve in dietary or other acids (erosion), be worn away by contact with something else, such as a toothbrush and abrasive paste (abrasion) or the top and bottom teeth may grind against each other and be worn away (attrition). Typically, these processes all occur together with the overall result being loss of tooth tissue changing the shape and form of the tooth. Whilst wear is a natural process, sometimes it can be rapid and destructive and require treatment.

Tooth wear is most commonly seen as erosion. Children and young people, who consume excessive amounts of acidic fizzy drinks, including diet and sugar free, are more likely to be affected. Less commonly, erosion arises from intrinsic factors such

as frequent vomiting or regurgitation in people with stomach acidity problems or eating disorders such as bulimia.

Whilst severe tooth wear can have significant impacts on individuals, affecting function and appearance, it is not considered to be a public health problem.

Gum disease

Gum (periodontal) diseases comprise a range of conditions characterised by inflammation of the gums and loss of the tissues supporting the teeth, including bone. The diseases are caused by the interaction between plaque bacteria and the body's immune system. The mild forms of disease, where there is only inflammation of the gums (gingivitis) are very common. In the more severe forms the attachment between tooth and gum is lost, causing a pocket. As the pocketing progresses slowly it is more common among older people.

Gum diseases can cause a variety of symptoms but are usually painless until an advanced stage. The progressive loss of the supporting structures of the teeth can ultimately lead to looseness. Loss of untreated teeth is the most important manifestation of periodontal diseases.

Mouth (oral) cancers

Although mouth cancer is relatively uncommon it has a significant impact on the lives of those people affected because the disease and its treatments may cause difficulty in speaking and swallowing and sometimes affect facial appearance. The average five-year survival rate is 50%. Early diagnosis increases five-year survival to 80% but small tumours are often undetected because of low awareness and their painless nature means that people often only seek help when the cancer is advanced.

The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD 10) defines mouth cancers as including ICD 10 codes C00-C14, C30-C32, which can be defined as head and neck cancers, excluding the thyroid gland.

The main risk factors for mouth cancer are use of tobacco, combined with alcohol consumption. These two factors act synergistically and this multiplies the risk of developing mouth cancer by up to 40%.⁵⁹ Smokers are 7-10 times more likely to develop mouth cancer when compared to people who have never smoked and people who regularly use smokeless tobacco have 11 times the risk of a non-user.⁶⁰ Diet is also a risk factor for mouth cancer with some evidence stating the protective role of fruits and vegetables, particularly citrus fruits, in the prevention of the development of cancers of the digestive and upper respiratory tract.⁶¹

Tobacco use

As well as causing mouth cancer, tobacco use affects the mouth by staining of the teeth, discolouring 'tooth-coloured' restorations and dentures, reducing taste sensation causing bad breath (halitosis), delaying healing and strongly increasing the risk of gum disease.

Tobacco products may be smoked or used smokeless.

Smokeless tobacco

Smokeless tobacco refers to over 30 different products worldwide. The main products used in the UK are betel quid (paan) with tobacco, gutkha and niswar. All forms of smokeless tobacco, whether or not combined with other ingredients, increase the risk of mouth cancer, pancreatic cancer, gum disease and heart disease. In England, smokeless tobacco products are mainly used by the South Asian community. The Health Survey for England (2004) recorded the highest self-reported use of smokeless tobacco among Bangladeshi women (16%) and men (9%), followed by Indian men (4%), Pakistani men (2%) and Indian and Pakistani women (both 1%).⁶²

Smokeless tobacco is sometimes used by the whole family and children are often not discouraged.⁶³ There is compelling evidence that people from South Asian backgrounds are at increased risk of mouth cancer with increased morbidity and mortality rates because of smokeless tobacco use. The debate around how to support smokeless tobacco users has begun at a national government policy level. The issues include regulations in the sale of these products⁶⁴ along with the support to quit for user.^{14, 15}

Shisha smoking

Shisha is a device for smoking tobacco that is traditionally used in Middle Eastern cultures. Shisha is operated through a water filter and indirect heat, consequently smokers often feel it is less harmful than cigarettes. South Yorkshire has a large Arab population approximately twice the size of the national average (Figure 3.10). Shisha smoking is a communal recreational activity amongst these communities, which can have an impact on oral health.

Khat chewing

Khat or Qat is an edible flowering plant and mild stimulant that WHO classifies as a drug of abuse, though it is not considered to be very addictive. Until July 2013, the UK was the only European country where khat was legal. With South Yorkshire's Somali and Yemeni populations, Sheffield has been a major destination for its import and consumption. Since July 2013, khat has been classified as a class C substance under the Misuse of Drugs Act 1971. However, due to the recent timing of the ban

and the historical and cultural nature of the use of the plant, khat may still be widely used in Sheffield's Somali and Yemeni populations.

Khat is often chewed and kept in the mouth for prolonged periods, up to six hours. Consequently, negative oral effects are attributed to chemical and mechanical irritation of the mouth. These effects include white changes in the mouth, mucosal pigmentation, dry mouth and gum disease.^{65, 66}

Alcohol

As stated previously, alcohol is a key risk factor for mouth cancer, particularly in combination with tobacco use. Additionally many major facial traumas are related to alcohol use.^{67, 68}

Alcohol misuse contributes to increased mortality, chronic ill-health, violent crime and antisocial behaviour and places a considerable burden on the NHS. The annual cost to the NHS due to alcohol misuse was estimated at £2.7 billion at 2006/07 prices with alcohol accounting for 6% of all hospital admissions.

Human papilloma virus

The human papilloma virus has a role in the development of mouth cancer. There are over 100 genotypes in the human papilloma group of viruses. However, human papilloma virus types 6, 11, 16 and 18 are the viruses which infect the mucosal epithelial cells in the oral cavity and oropharynx. It has been suggested that 20-25% of head and neck cancers contain human papilloma virus.⁶⁹ In England incidence rates of human papilloma virus associated oral pharyngeal cancers rose sharply between 2005 and 2010 from 2.1 per 100,000 to 6.2 per 100,000 of the population.

Currently all females aged 12 years to 13 years are offered vaccination against some human papilloma viruses to reduce the risk of developing cervical cancer. It is estimated that this programme will eventually prevent up to 400 deaths a year. The British Dental Association is supporting calls for gender-neutral human papilloma virus vaccination in a bid to reduce the number of oro-pharyngeal cancers although no trials of its use against oral cancer have been reported.

Facial and tooth abnormalities

Tooth alignment problems occur because of a discrepancy between jaw size and the number of teeth present. Commonly, there is a lack of space in the mouth for all the adult teeth. Problems with tooth alignment may also occur in association with other syndromes such as cleft lip and palate.

Irregularly positioned teeth may be treated with orthodontic care depending on the severity of misalignment (malocclusion). Orthodontic treatment need is assessed using the Index of Orthodontic Treatment Need (IOTN). The IOTN consists of two separate components, the aesthetic component and the dental health component. The aesthetic component is graded from 1-10, looking at the overall attractiveness of the anterior teeth by comparison with a visual chart. The dental health component is a five point scale which looks at different aspects of malocclusion including missing teeth, overjet, crossbite, displacement of contact points and overbite. It is considered that children who fall into the most severe categories of misaligned teeth, IOTN 4 and 5 are most likely to benefit from orthodontic care as the benefits of treatment in these children are likely to outweigh the risks. In addition, children in category 3 with the most severe dental aesthetic components (categories 6-10) are also considered to need orthodontic treatment.

Cleft lip and palate

Clefts occur when the upper lip and/or palatal shelves fail to fuse during development of the embryo. The type of cleft and how severe it is can vary widely. The exact cause of clefts is not known, although evidence suggests they are caused by a combination of genetics and environmental factors, such as smoking and drinking in early pregnancy and a lack of folic acid in the mother's diet. Cleft lip and palate can occur on its own (non-syndromic) or can sometimes be part of a wider series of birth defects (syndromic).

Cleft lip and/or palate can affect a variety of functions, including speech and hearing. Appearance and psychosocial health may also be compromised in those with a cleft. Typically, children with these disorders need multidisciplinary care from birth to adulthood and they have higher morbidity and mortality throughout life compared with unaffected individuals.

Social impacts of oral disease

Good oral health is essential for good general health and wellbeing. Oral disease may cause pain and discomfort, sleepless nights, loss of function and self-esteem. The discomfort may disrupt family life and lead to time off work or school. Decayed or missing teeth or ill-fitting dentures may lead to social isolation and loss of confidence. Limited function of the dentition may also restrict food choices compromising nutritional status. The 2010 Global Burden of Disease study reported that children aged five to nine years experienced the most disability caused by poor oral health, with the level of disability exceeding that caused by vision or hearing loss and diabetes mellitus.⁷⁰

There is a substantial body of evidence that links the oral diseases described in this report to impacts on people's quality of life. Furthermore, treatment of these diseases improves quality of life.

Financial impacts of oral disease

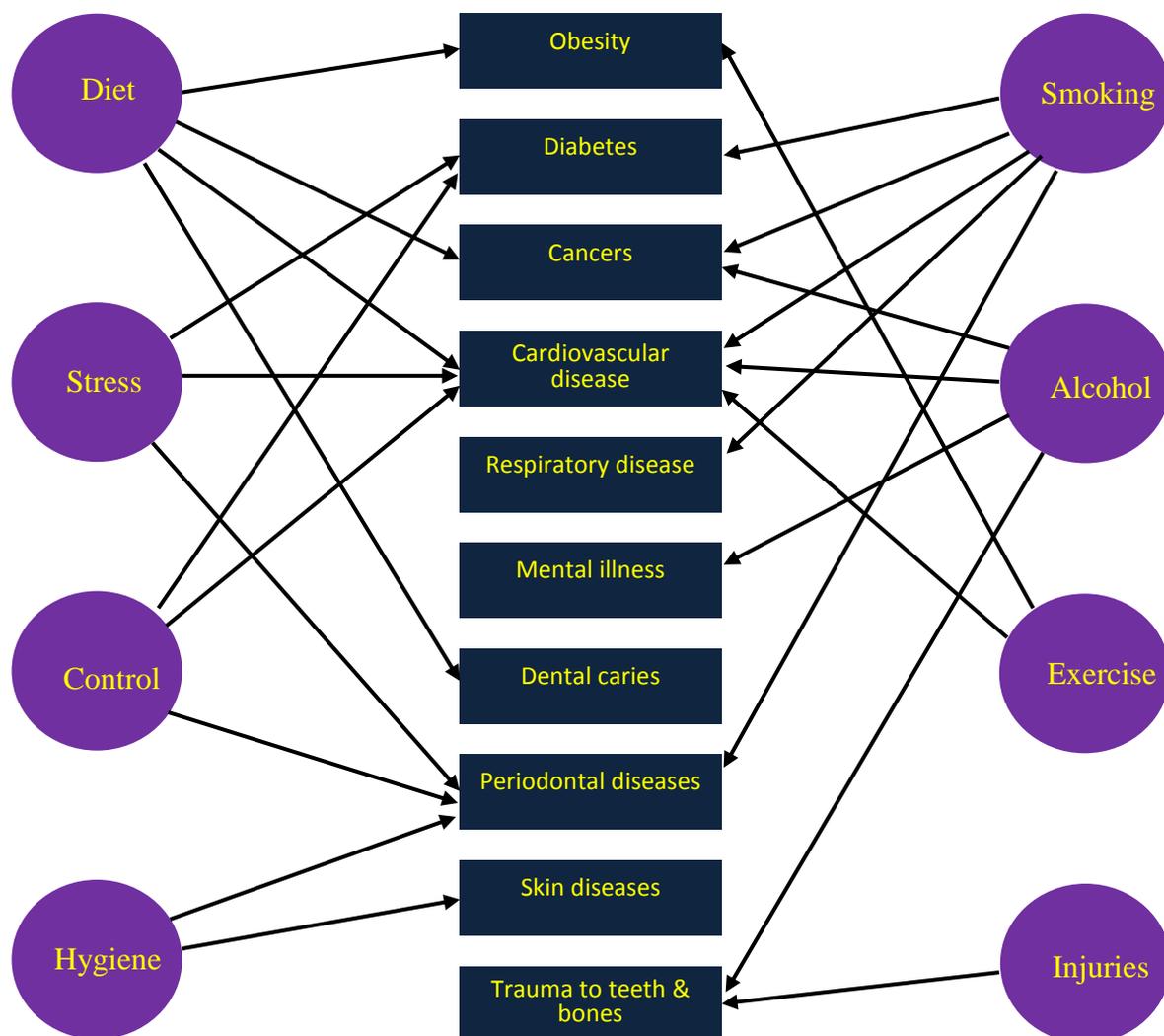
In England in 2012/13 the spend on NHS dental services was £3.58 billion with a further spend of £660 million in patient charges. The costs locally are detailed in chapter 6. In addition, expenditure on private dentistry outside the NHS is likely to exceed £2.5 billion in England. The financial impacts are likely to increase as treatment options become more complex and costly for an ageing population retaining heavily restored teeth for longer and public expectations regarding maintaining teeth for life increase.

A common risk factor approach

Oral diseases and conditions share risk factors with other diseases such as cancer, cardiovascular disease and obesity.⁷¹ A common risk factor approach was developed as there are identifiable risk factors which, if controlled, could have an impact on a multitude of conditions and diseases. Applying a common risk factor approach to multiple public health strategies would impact on multiple health outcomes and ensure more effective use of limited resources.

The links between the common risk factors for oral and general health are shown below for several general and oral health conditions such as obesity, diabetes, cancers, cardiovascular diseases, tooth decay and gum diseases (Figure 4.2).

Figure 4.2 The common risk factor approach



Summary

- poor oral health results in social and financial impacts both for the individual and society as a whole
- the main oral diseases are preventable through optimising exposure to fluoride, limiting consumption of dietary sugars, good oral hygiene and reducing tobacco and alcohol consumption
- focusing solely on individual behaviour change has only short term benefits for oral and general health. It is therefore essential to focus on the wider determinants of health and partnership delivery to achieve sustainable improvements

- Marmot's review of health inequalities advocated six policy actions to reduce health inequalities. All health improvement partnerships should contribute to this agenda addressing the wider determinants of health
- lifestyle choices such as poor diet, poor oral hygiene practices, tobacco and alcohol use and sexual behaviours all have impacts on oral health and general health

Key issue for consideration

- a common risk factor approach focusing on the wider determinants as well facilitating healthy choices will impact not only on oral health but wider general health

5. Epidemiology of oral diseases

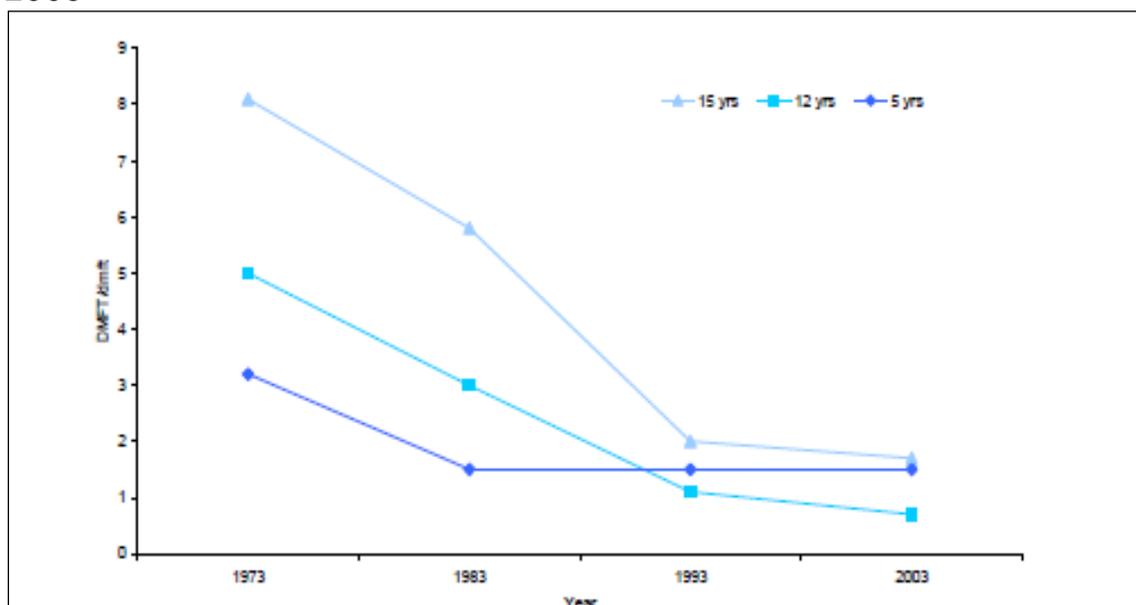
There has been a significant decline in tooth decay and improvements in oral health over the past 40 years. However, a substantial proportion of the population experiences high levels of oral disease. The main oral diseases and their impacts have been described in Chapter 4. This chapter will describe the common oral diseases in children, adults and vulnerable people using national and local oral health survey data.

Epidemiology of oral diseases in 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 baby teeth and is recorded in lower case. In 12-year-old children it reports on the adult teeth in upper case (DMFT). As tooth decay in children is highly polarised towards lower socio-economic groups, another useful indicator, $dmft > 0$, demonstrates the proportion of children with obvious tooth decay experience. A further indicator is the proportion of decayed teeth that have been treated by restoration or filling, the Care Index.

National surveys of the oral health of children have been undertaken on a ten yearly cycle since 1973. The last national children's survey in 2003 demonstrated a continuing decline in decay experience in the permanent teeth of 12 and 15-year-old children. However evidence for this in the baby teeth of five-year-olds was more limited with the improvement seen from 1973 to 1983 having curtailed in this age group (Figure 5.1).⁷²

Figure 5.1 Severity of tooth decay experience in children from 1973 to 2003



Source: ONS, 2005

The 2003 national survey also highlighted inequalities by social status in five-year-old children. Children from the lowest social groups were twice as likely to have tooth decay as children from the highest social group.

Regular NHS dental epidemiological surveys allow more detailed information at a local level and have provided information on the oral health status of five, 12 and 14-year-old schoolchildren since 1985. In 2013 a national survey of three-year-old pre-school children was carried out for the first time.

Tooth decay in three-year-old preschool children

The 2013 national survey examined three-year-old children attending private and state funded nurseries and nursery classes attached to schools and play groups.

The proportion of three-year-olds experiencing tooth decay in the East Midlands was the worst in England (15.3%) and the prevalence in Yorkshire and The Humber (12.6%) was slightly higher than the national average (11.7%) (Figure 5.2).

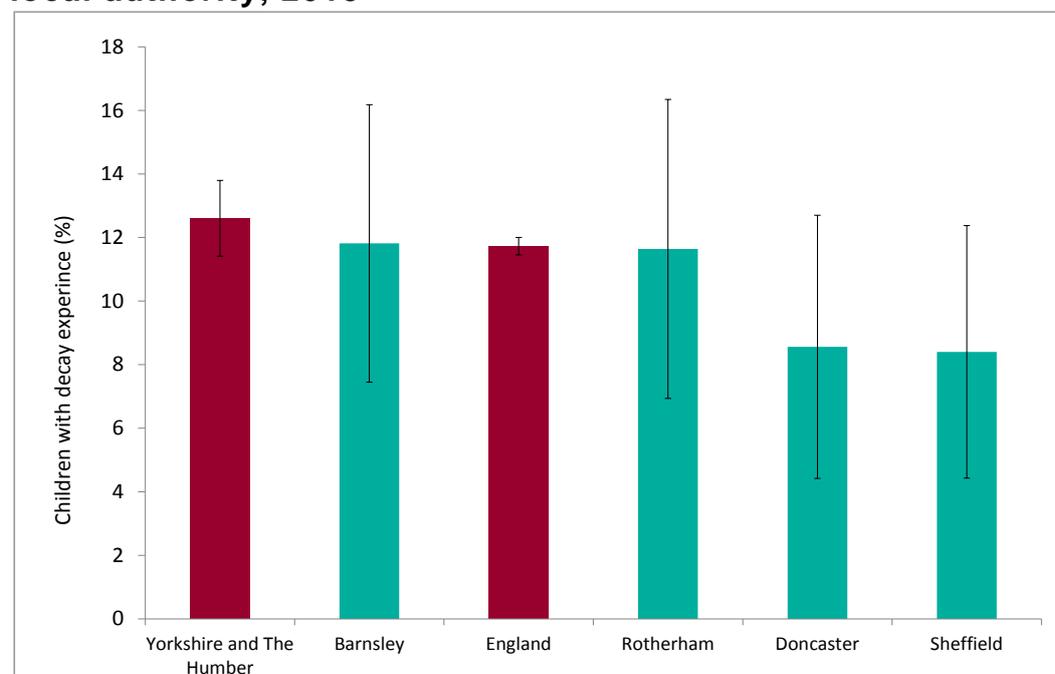
Figure 5.2 Prevalence of tooth decay experience in three-year-old children by area, 2013



Source: PHE, 2014

At local authority level, the proportion of three-year-olds in South Yorkshire and Bassetlaw who had experienced tooth decay was similar to the national average (Figure 5.3).

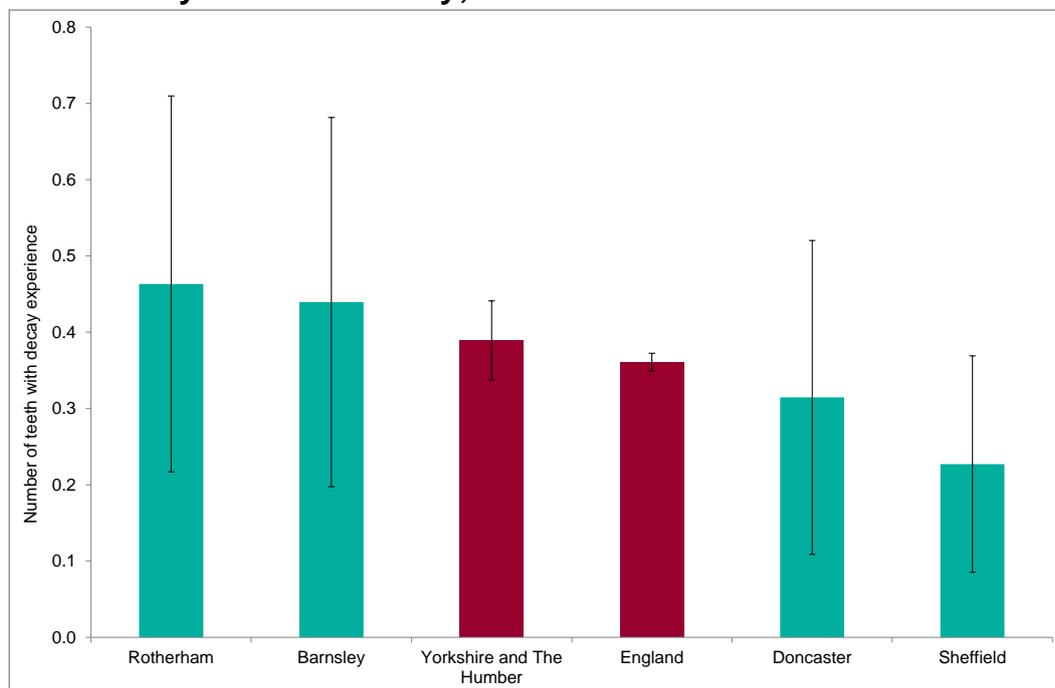
Figure 5.3 Prevalence of tooth decay in three-year-old children by local authority, 2013



Source: PHE, 2014; Bassetlaw data not available

No differences in severity of tooth decay across local authority areas could be determined due to the small numbers of children participating (Figure 5.4).

Figure 5.4 Severity of tooth decay experience in three-year-old children by local authority, 2013



Source: PHE, 2014

Of the three-year-old children who had decay, each child had on average three decayed, missing or filled teeth. The numbers of affected children were too small to allow for robust comparison of severity in these children across local authorities.

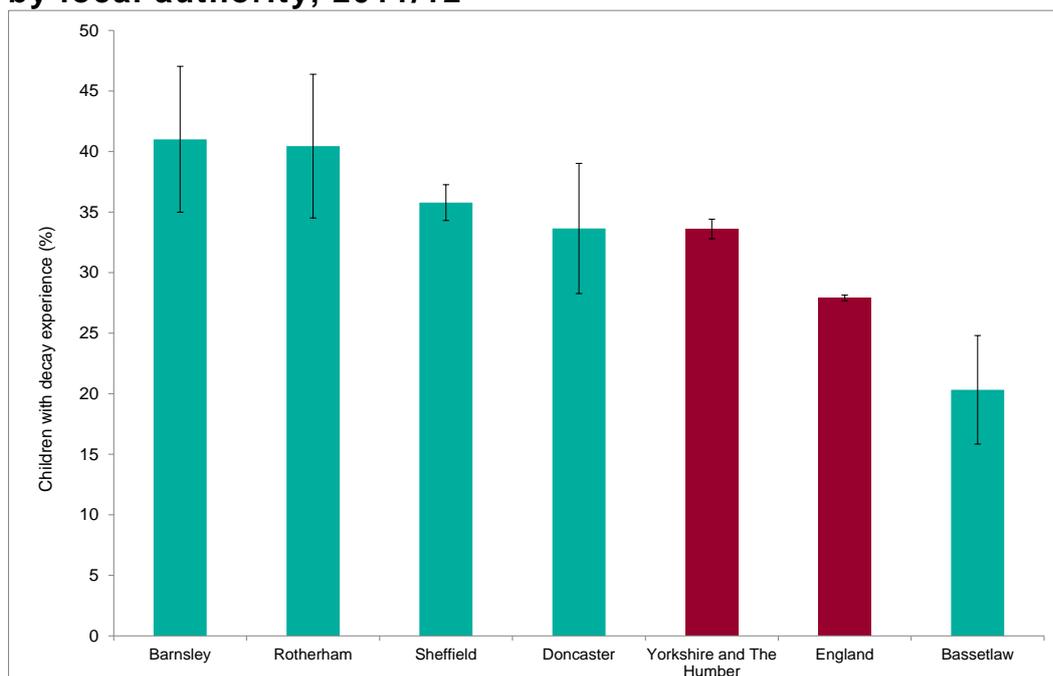
There was a strong association between levels of tooth decay and level of deprivation. Deprivation explained 19% of the variation in prevalence and 25% of the variation in severity of tooth decay.

A moderate association was found between prevalence of tooth decay at age three and at age five.

Tooth decay in five-year-old schoolchildren

In 2011/12, the proportion of five-year-old schoolchildren in Yorkshire and The Humber with tooth decay was higher than the national average (Figure 5.5).

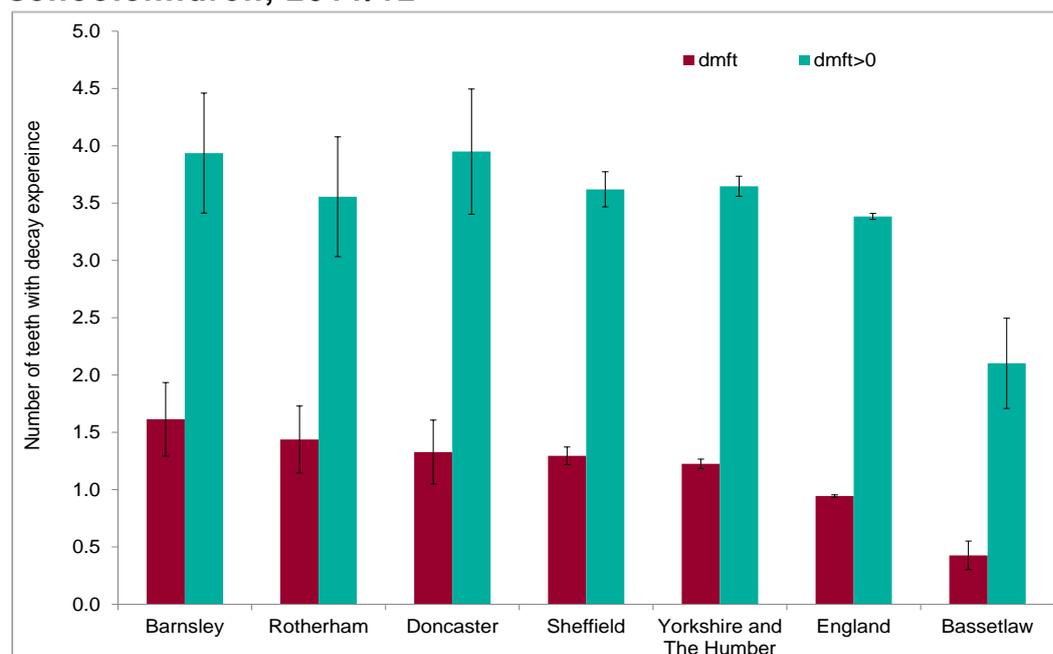
Figure 5.5 Prevalence of tooth decay in five-year-old schoolchildren by local authority, 2011/12



Source: PHE, 2012

Five-year-old schoolchildren living in Barnsley, Sheffield and Rotherham were more likely to experience tooth decay than the average schoolchild in England. Schoolchildren living in Bassetlaw were less likely to experience tooth decay (Figure 5.6). This may be due to the higher socio-economic status and fluoridated water in some areas of Bassetlaw.

Figure 5.6 Severity of tooth decay experience in five-year-old schoolchildren, 2011/12



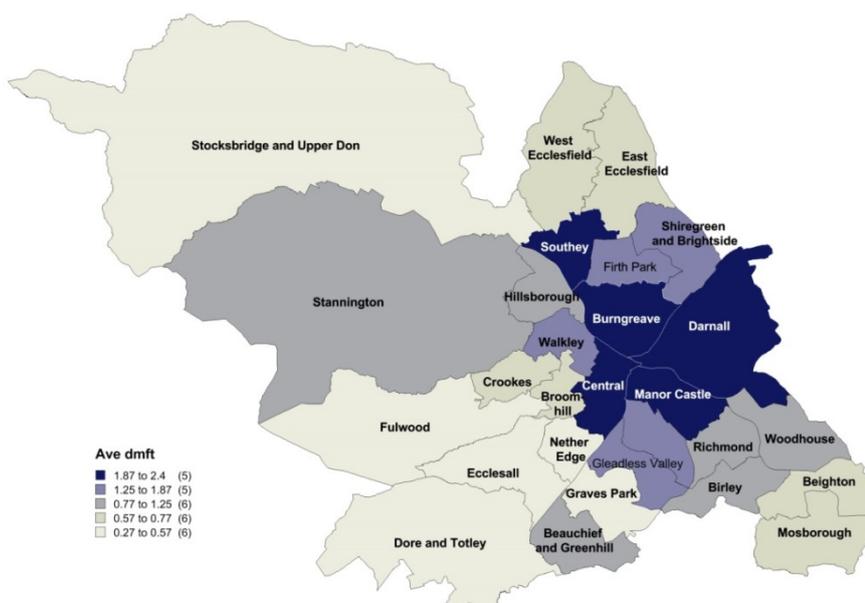
Source: PHE, 2013

Differences in oral health existed at all geographical levels. Most tooth decay was experienced by a small proportion of children as there were differences in the average number of teeth with decay experience between all children and those children with any decay experience (Figure 5.6). Children living in Bassetlaw were less likely to have experienced tooth decay.

There were inequalities within local authority areas and children living in the more deprived wards tended to have more decay than children living in more affluent wards.

In Sheffield, children living in areas of greater material and social deprivation such as Darnall experienced higher levels of disease than children in affluent areas such as Fulwood (Figure 5.7).

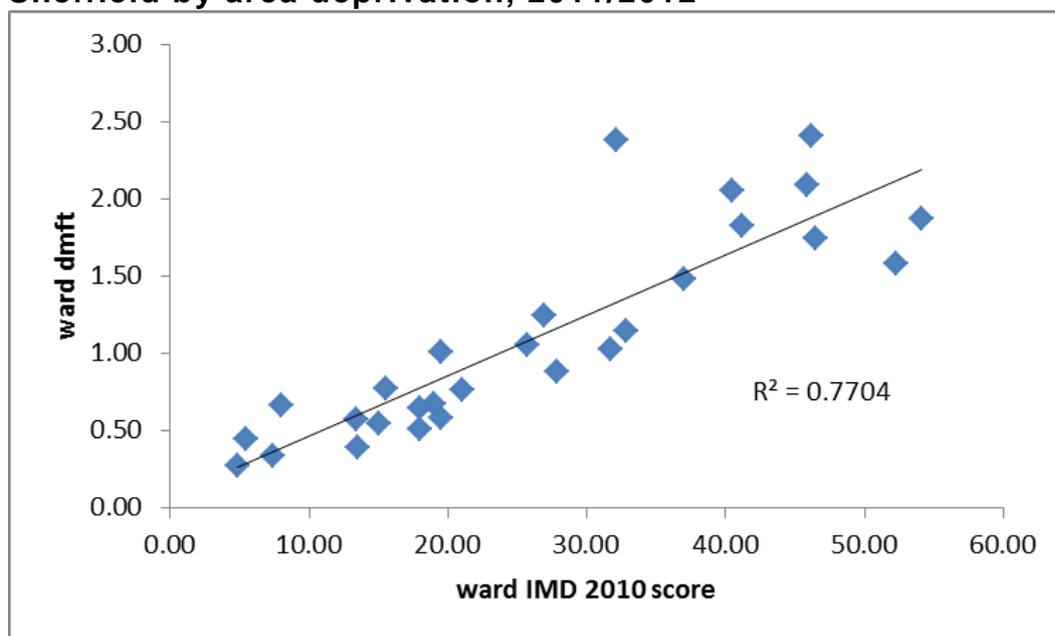
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Likewise, there was a strong relationship between the severity of tooth decay experience and deprivation with deprivation explaining 77% of the variation at ward level (Figure 5.8).

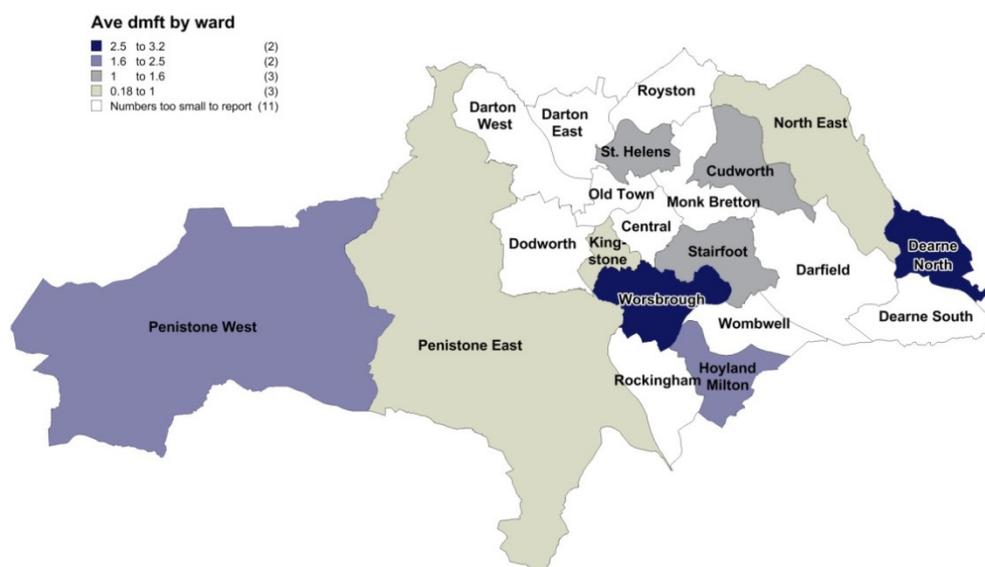
The samples were too small to plot the relationship between deprivation and tooth decay for the other local authority areas.

Figure 5.8 Severity of tooth decay in five-year-old schoolchildren in Sheffield by area deprivation, 2011/2012



Source: PHE, 2014

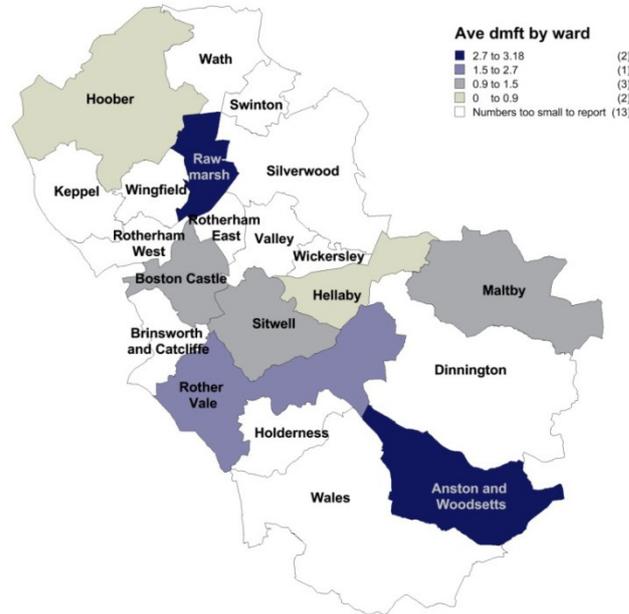
The wards in Barnsley in which five-year-olds had the highest levels of tooth decay with at least 2.5 decayed teeth were Worsbrough and Dearne North (Figure 5.9).



Source: PHE 2014

The wards in Rotherham in which five-year-olds had the highest levels of tooth decay with at least 2.7 decayed teeth were Rawmarsh and Anston and Woodsetts (Figure 5.10).

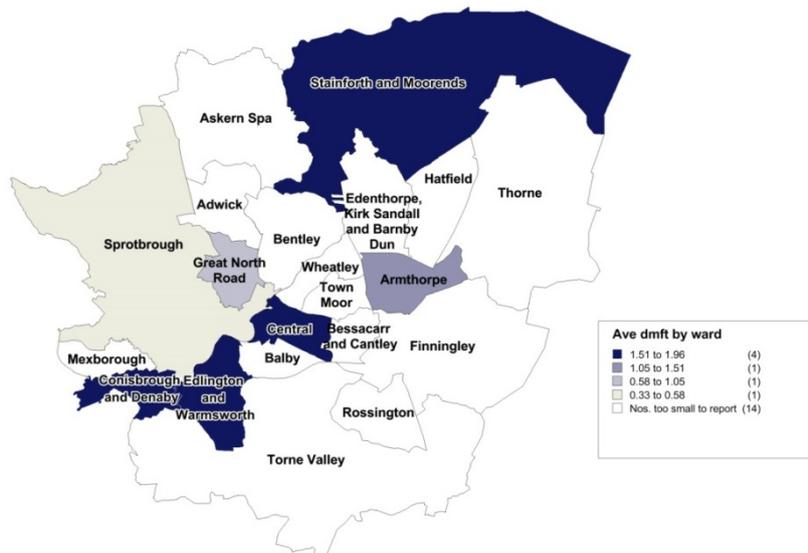
Figure 5.10 Tooth decay experience of five-year-old schoolchildren in Rotherham by ward, 2011/12



Source: PHE 2014

The wards in Doncaster in which five-year-olds had the highest levels of tooth decay with at least 1.5 decayed teeth were Stainforth and Moorends. Central. Edlington

dren in



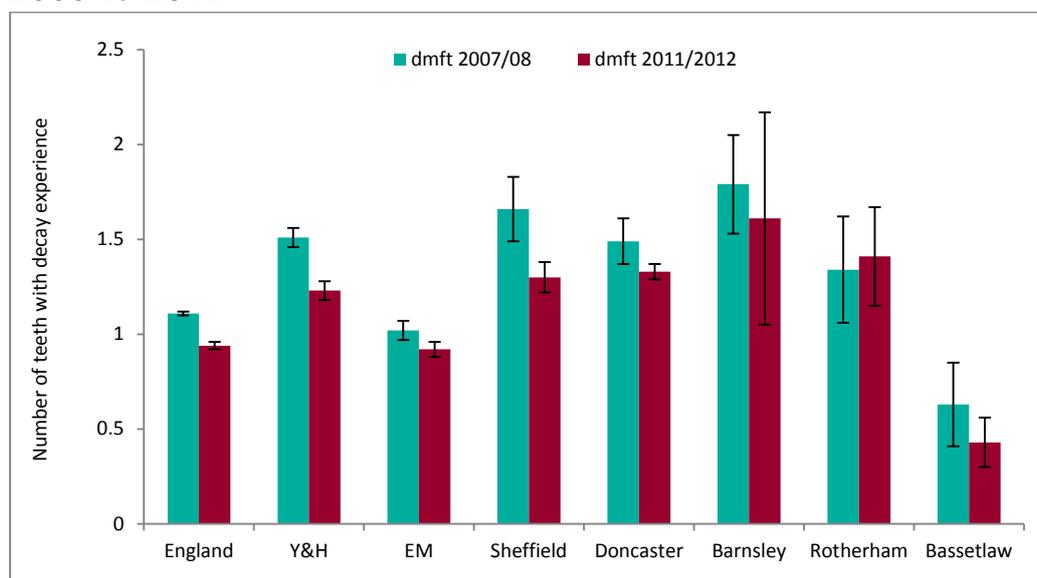
Source: PHE, 2014

A ward level tooth decay map for five-year-old schoolchildren in Bassetlaw could not be produced due to the small numbers of children examined.

In line with the national picture, there has been a decline in the prevalence and severity of tooth decay experience of five-year-old schoolchildren in Yorkshire and The Humber between 2008 and 2012. However, at local authority level, there has only been a significant decline in tooth decay in five-year-old schoolchildren in Sheffield (Figure 5.12).

Further backward comparisons of trends in tooth decay experience in five-year-old schoolchildren are not possible due to changes in the national protocol for the surveys from 2008.

Figure 5.12 Trends in tooth decay experience in five-year-old schoolchildren in South Yorkshire and Bassetlaw by local authority, 2008 to 2012

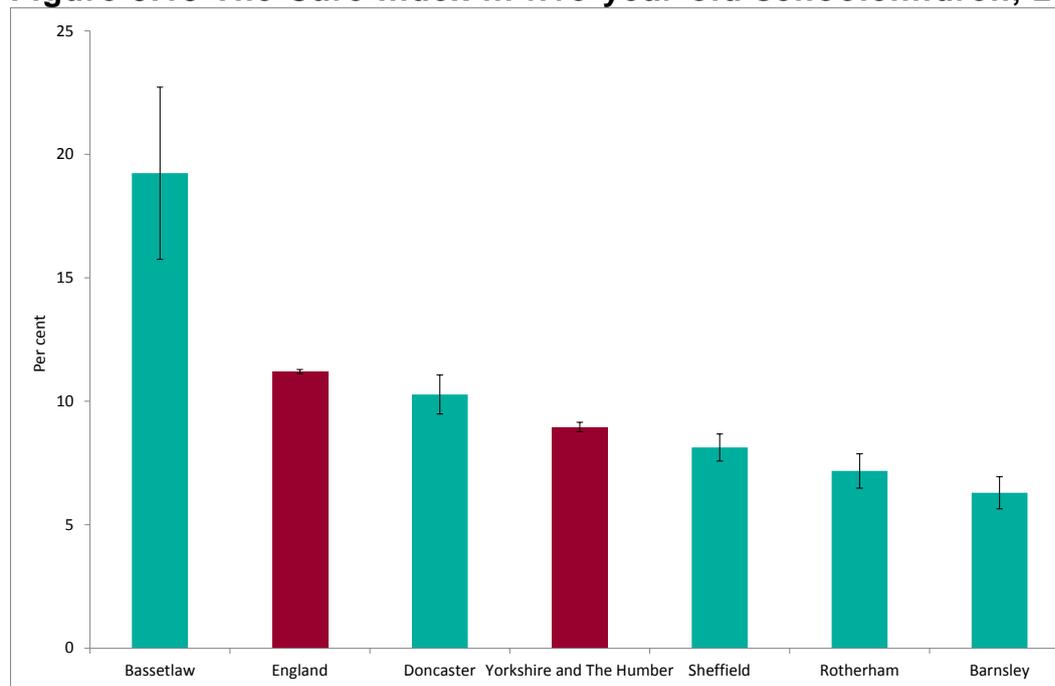


Source: PHE, 2014

Care Index in five-year-old schoolchildren

Fewer children in Yorkshire and The Humber (9.0%) had their decayed teeth filled than nationally (11.2%) hence most tooth decay in five-year-olds was untreated. Children in Bassetlaw (19%) had more of their decayed teeth treated with a filling than children at national, subnational and South Yorkshire level. However, fewer children experienced tooth decay in Bassetlaw compared to local authority areas in South Yorkshire. This may be an example of the inverse care law, where those that most need treatment have the least access to it.

Figure 5.13 The Care Index in five-year-old schoolchildren, 2011/12

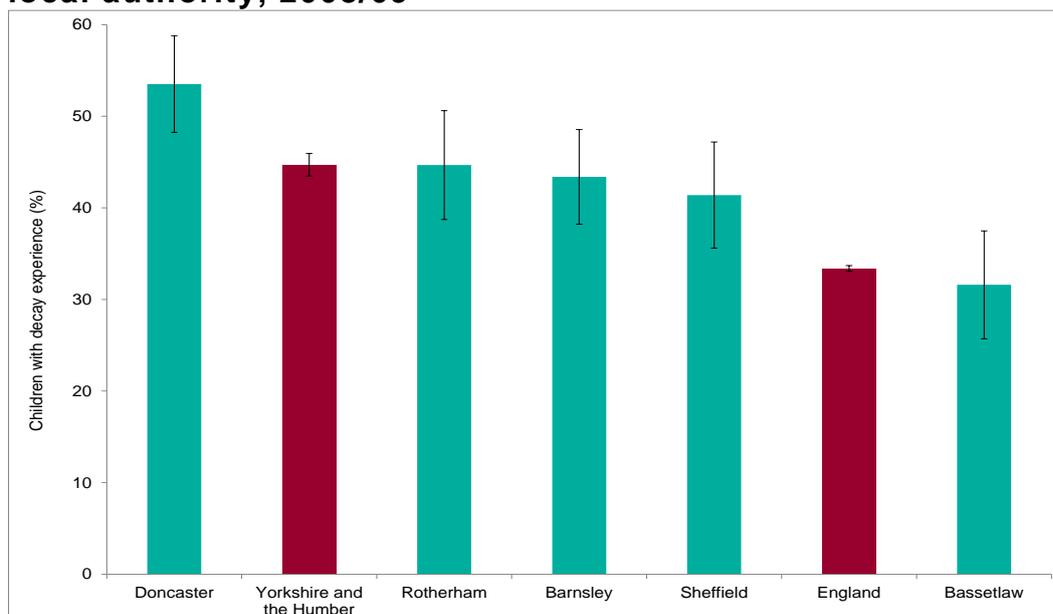


Source: PHE, 2013

Tooth decay in 12-year-old schoolchildren

In 2008/09, the prevalence of decay in twelve-year-old schoolchildren in Yorkshire and The Humber was higher than nationally. The proportion of 12-year-old schoolchildren in all South Yorkshire local authorities with experience of tooth decay was significantly higher than the England average (33.4%), ranging from 41.4% in Sheffield to 53.5% in Doncaster (Figure 5.14). The prevalence of tooth decay experience in Bassetlaw 12-year-old schoolchildren (31.6%) was significantly lower than the Yorkshire and The Humber average (44.7%).

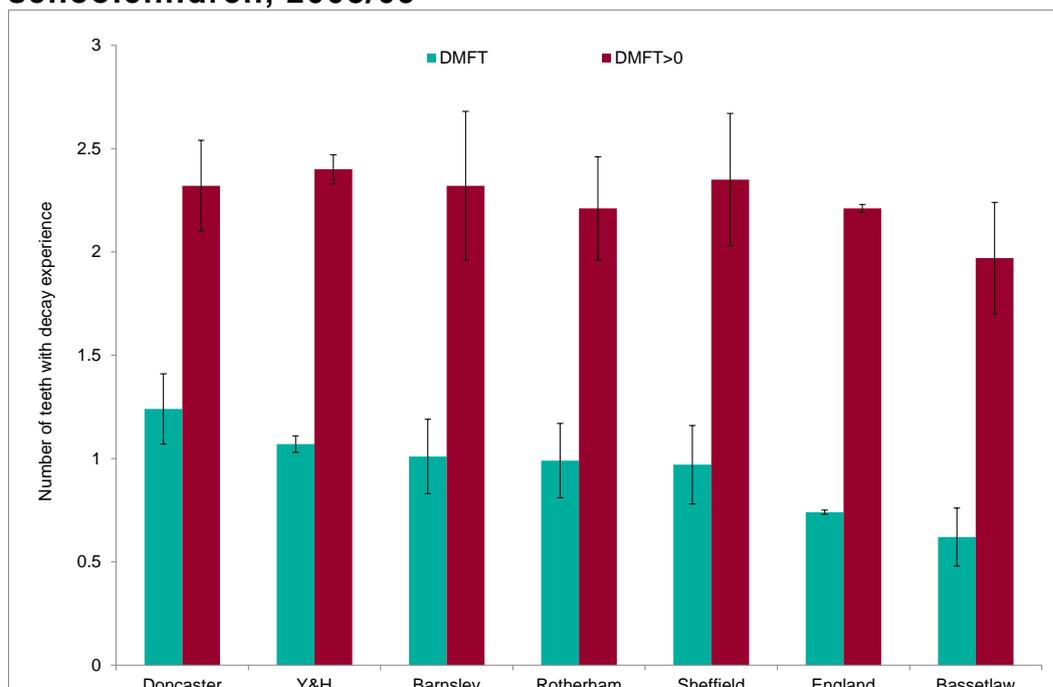
Table 5.14 Prevalence of tooth decay in 12-year-old schoolchildren by local authority, 2008/09



Source: PHE, 2012

The average number of teeth with decay experience ranged from 0.97 in Sheffield to 1.24 in Doncaster again demonstrating the inequalities in oral health across local authority areas. Children in Bassetlaw experienced relatively lower levels of decay (Figure 5.15).

Figure 5.15 Severity of tooth decay experience in 12-year-old schoolchildren, 2008/09



Source: BASCD, 2009

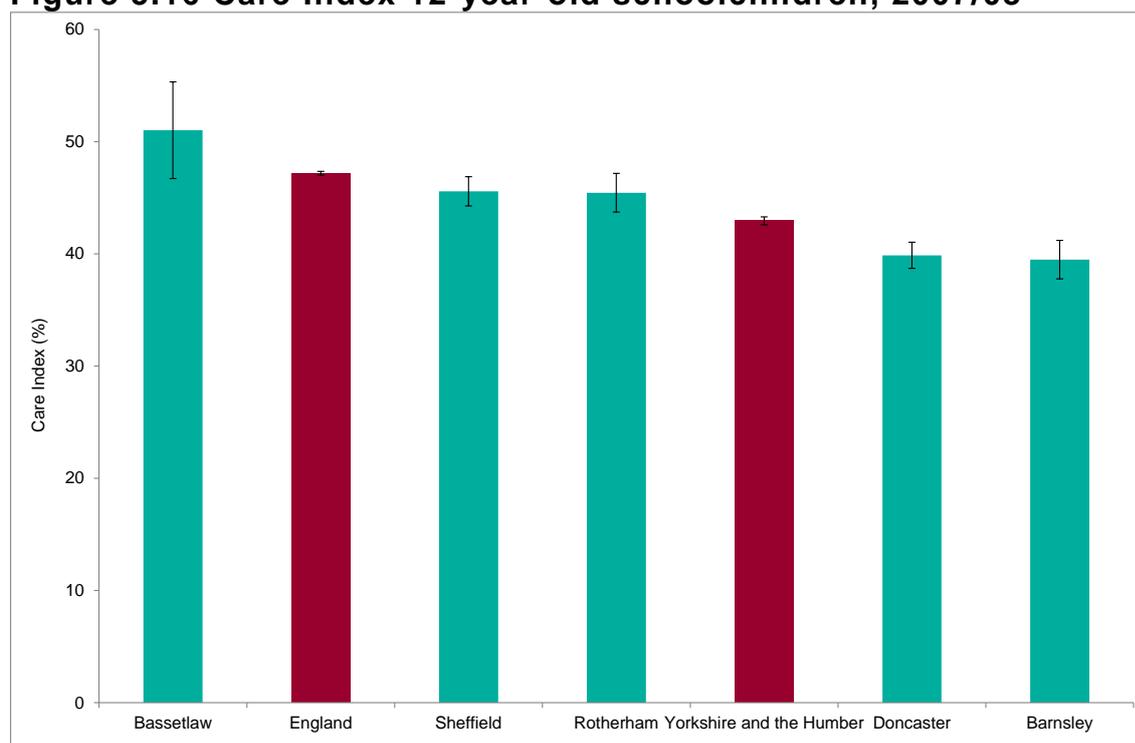
Inequalities in oral health of 12-year-old schoolchildren

As for five-year-old schoolchildren, there was significant disparity between the population average number of teeth with decay experience and the average number of teeth with decay experience in those children with any decay experience, demonstrating most tooth decay is experienced by a small proportion of children (Figure 5.15). Children living in more deprived areas were more likely to experience tooth decay and have higher levels of disease.

Care Index in 12-year-old schoolchildren

The Care Index in Yorkshire and The Humber and the South Yorkshire local authorities in 2008/09 was lower than the national average amongst 12-year-old schoolchildren (Figure 5.16). Although Bassetlaw had the lowest levels of disease, 12-year-olds living there were more likely to have had their decayed teeth filled. Even so, 50% of the decayed permanent teeth had not been filled.

Figure 5.16 Care Index 12-year-old schoolchildren, 2007/08



Source: BASCD, 2009

Oral hygiene

The 2008/09 survey of 12-year-old schoolchildren showed more children (11.9%) in Yorkshire and The Humber had substantial levels of plaque compared to England (10.5%). Oral hygiene behaviours are reported in more detail in chapter 3.

Dental conditions impacting on child quality of life

Twelve-year-old schoolchildren in the 2008/09 BASCD survey were also asked about the impact of oral diseases on their quality of life. Children in Yorkshire and The Humber were more likely to report problems with eating, speaking, smiling and socialising due to dental problems relative to children in the East Midlands and the national average (Table 5.1).

Table 5.1 Oral health impacts in 12-year-old schoolchildren, 2008/09

Area	Oral health impact							
	Eating	Speaking	Cleaning teeth	Relaxing including sleeping	Feelings	Smiling/laughing	School work	Mixing with friends/other people
	(%)							
Yorkshire and The Humber	35	6	27	8	13	13	3	5
East Midlands	32	5	24	7	13	12	3	4
England	34	5	28	8	13	12	4	4

Source: BASCD, 2011

Misaligned teeth

Stephens' formula can be used to predict the number of people needing orthodontic treatment in a population and takes into account demand for it, as some children will decline orthodontic treatment. Additional factors also taken into account include younger children needing early corrective treatment (interceptive treatment (9%)) and adults requiring treatment (4%).⁷³

Stephens' formula is expressed as:

$$\frac{\text{12-year-old population}}{3} \times \frac{100 + \text{Interceptive Factor (9)} + \text{Adult Factor (4)}}{100}$$

Orthodontic treatment need is relatively stable across populations and ethnic groups.⁷⁴ Therefore, adjustment to the formula in the more ethnically diverse Sheffield is not required.

The estimated level of need for orthodontic treatment in South Yorkshire and Bassetlaw using Stephens' formula is 6,370 people per year (Table 5.2).

Table 5.2 Orthodontic treatment need South Yorkshire and Bassetlaw

Area	12-year-olds (n)*	People with a need for orthodontic treatment (n)
Sheffield	6,040	2,275
Barnsley	2,735	1,030
Doncaster	3,489	1,314
Rotherham	3,184	1,200
Bassetlaw	1,464	551
Total	16,912	6,370

*Source: ONS, 2011

Cleft lip and palate

Cleft lip and palate is the most common facial birth defect in the UK. One in every 700 babies is born with a cleft. Approximately half of all affected babies are born with a cleft lip and palate, a third with a cleft palate only and 1 in 10 have a cleft lip only or a submucous cleft. A cleft lip or combined cleft lip and palate are more common in boys, but a cleft palate on its own is more common in girls. Clefts occur more frequently in East Asian people and less frequently in Black people.

Incidence rates of clefts in South Yorkshire match expectation from epidemiological data (Table 5.3).

Table 5.3 Annual number of cleft cases in South Yorkshire

Year	2009	2010	2011	2012	2013
Cases (n)	13	33	22	26	12

Source: Sheffield School of Clinical Dentistry, 2014

Summary of children's oral health

- the prevalence and severity of tooth decay in three-year-old children in South Yorkshire is similar to the Yorkshire and The Humber and national averages
- five and 12-year-old schoolchildren in South Yorkshire are more likely to have experienced tooth decay and have more decayed teeth than nationally
- there are inequalities in levels of tooth decay between and within local authorities in South Yorkshire and Bassetlaw
- children in deprived areas experience much greater levels of disease than those residing in more affluent areas
- children in Bassetlaw experience lower levels of tooth decay relative to the other local authority areas in South Yorkshire, possibly due to water fluoridation in the area and lower levels of deprivation

- five-year-old schoolchildren in Barnsley appeared to experience relatively high levels of tooth decay but small sample sizes prevented determining whether this difference was statistically significant
- severity of tooth decay improved in five-year-old schoolchildren in Sheffield between 2008 and 2012
- schoolchildren in Bassetlaw are significantly more likely to have their decayed teeth filled than children in South Yorkshire, Yorkshire and The Humber and nationally
- five-year-old schoolchildren in Barnsley and 12-year-old schoolchildren in Barnsley and Doncaster are significantly less likely to have their decayed teeth filled
- approximately 6,400 children in South Yorkshire and Bassetlaw each year are likely to benefit from orthodontic care
- approximately 20 children are born in South Yorkshire and Bassetlaw each year with a cleft lip and/or palate

Oral health of adults

Information on the oral health of adults has been collected nationally through the Office for National Statistics co-ordinated socio-dental surveys on a decennial basis since 1968. The survey consists of an interview schedule and a dental examination performed by trained and calibrated dental examiners. The most recent survey was undertaken in 2009.

In addition to the national decennial surveys, in 2008 a postal survey of adult oral health was carried out across Yorkshire and The Humber.⁷⁵ It aimed to provide information on the self-reported oral health of adults living in Yorkshire and The Humber to inform the commissioning of oral health services and oral health related initiatives.

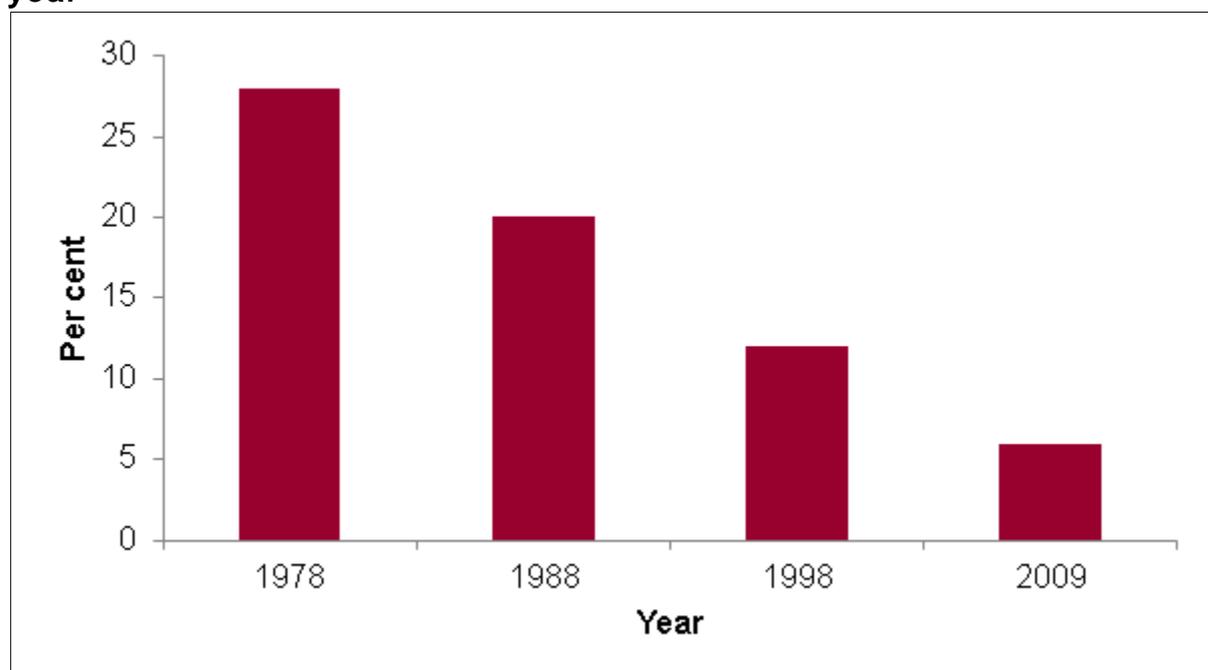
No local clinical surveys of adult oral health have been undertaken thus much of the following data is national or presented for all of Yorkshire and The Humber.

Number of teeth

In the 2009 national decennial survey only 6% of adults in England were found to be edentate (having no natural teeth) with this figure rising to 7% in Yorkshire and The Humber. Edentulousness increased with age and varied by gender (4% male, female 7%) and material deprivation (managerial/professional 2%, intermediate 4% and 10% routine/manual). There has been a profound overall decline in edentulousness over the last five decades, with the proportion of edentate adults falling from 37% in 1968 to 6% in 2009 (Figure 5.17). Trends from national and local surveys show that edentulousness is now uncommon amongst people over 65 years of age and even

half of the very old (85 and over) have retained some natural teeth. This data has important implications for the future in terms of good oral function but carries service implications related to the continued maintenance and advanced restorative needs of older adults who are likely to be increasingly frail with complex medical histories and difficulties accessing care.

Figure 5.17 Proportion of adults with no natural teeth in England by year



Source: ONS, 2010

The Steele review of NHS dentistry⁷⁶ described three distinct cohorts within the adult population. Older age groups past retirement with no teeth at all who will need denture care for many years, a young generation under the age of 30 years who have lower levels of decay than their parents and have low restorative needs and a 'heavy metal generation' aged between 30 and 65 years who have experienced high levels of disease that has been treated by fillings and other restorations and who will have complex maintenance needs as they age.

Tooth decay

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 to 34 years. The proportion with active tooth decay varied by age with those aged 25 to 34 years having the highest prevalence (36%) and those aged 65-74 years the lowest (22%).

Men were more likely than women to have untreated decay as were those from socially deprived households. The average number of decayed teeth in adults in

England was 0.8. Men experienced higher levels of tooth decay (1.0) than women (0.6).

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.⁵²

Gum disease

Periodontal diseases are assessed by measuring the depth of the pockets between the inflamed gum and the tooth. The presence of pocketing up to 3.5mm is regarded as generally healthy. It is possible to classify pocketing as mild, moderate and severe. Mild periodontal pocketing reflects pocketing between 4mm and 6mm, moderate between 6mm and 9mm and severe above 9mm.

In 2009 45% of dentate adults in England had mild periodontal pocketing, a further 9% had moderate and 1% severe pocketing. Since 1998 there has been an overall reduction in the prevalence of pocketing of 4mm or more from 55% to 45% signifying an overall reduction in disease. However for more severe forms of disease an overall increase from 6% to 9% was observed.⁵²

Proportionately more Yorkshire and The Humber adults had moderate and severe periodontal diseases relative to the national average as 10% had moderate and 2% severe pocketing. East Midlands adults had better periodontal health than the national average: 44% had only mild pocketing, 8% had moderate pocketing and 1% had severe pocketing⁽⁷⁵⁾.

Tooth wear

The prevalence of tooth wear is reported at three thresholds: any wear, wear that has exposed a large area of dentine on any surface (moderate wear) and wear that has exposed the pulp or secondary dentine (severe wear). The 2009 Adult Dental Health Survey reported more prevalent tooth wear in England from 66% in 1998 to 75%. However, only 15% had moderate and 1% severe wear. Men experienced greater levels of wear than women, however, there were no significant differences with respect to deprivation. Yorkshire and The Humber figures are comparable with national averages.⁵²

Urgent conditions

Urgent conditions include dental pain, open dental pulps, oral sepsis (infection) and untreated teeth with extensive tooth decay. In the 2009 Adult Dental Health Survey, 9% of dentate adults reported current dental pain. Older adults and those from routine and manual occupation households were more likely to report pain.

Eight per cent of dentate adults reported experiencing oral pain fairly or very often in the previous 12 months. Women were slightly more likely than men to report this pain. There was untreated or unrestorable tooth decay in 23% of those who reported current dental pain and 20% of those who reported frequent pain or discomfort in the past 12 months. In a local survey, 29% of the residents in Yorkshire and The Humber reported painful aching in the mouth in the last 12 months.

Adults had an increased likelihood of both pain and extensive tooth decay or sepsis if they did not attend a dentist for regular check-ups, never brushed their teeth or brushed less than once a day, were smokers or had high levels of dental anxiety.⁵²

Self-reported oral health and oral health impacts

Residents in Yorkshire and The Humber were asked to rate their oral health⁷⁵; 25% felt it was fair, poor or very poor. People living in Doncaster were more likely to report poorer oral health than those in other areas of South Yorkshire (Table 5.4). People living in more deprived areas were also more likely to report poorer oral health.

Twenty-nine per cent of the residents in Yorkshire and The Humber had felt self-conscious because of their teeth in the past 12 months and 33% reported occasional or more frequent discomfort in their mouths.

Table 5.4 Self-reported oral health by local authority, 2008

Area	Oral health reported as fair/poor/very poor (%)
Yorkshire and The Humber	25.3
Doncaster	25.8
Rotherham	24.7
Barnsley	24.2
Sheffield	22.6

Source: YHPHO, 2008; Data not available for Bassetlaw

Dental health inequalities

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

The average number of decayed teeth in people in managerial and professional jobs was 0.6 compared to 1.2 in those with routine and manual jobs. The average number of decayed teeth was 5.2 in people who had never visited the dentist.

Gum disease levels were so higher amongst men and in those from socially deprived backgrounds. People who had never visited the dentist were four times more likely to have severe levels of gum disease.⁵²

Perceived treatment need

People in Doncaster were more likely to perceive a need for dental treatment than people in the other local authority areas in South Yorkshire (Table 5.5). Perception of treatment need may translate into demand and uptake, consequently this has implications for planning services.

Table 5.5 Perceived treatment need by local authority, 2008

Area	People who perceived a treatment need (%)
Yorkshire and The Humber	25.4
Doncaster	27.1
Barnsley	23.7
Rotherham	23.0
Sheffield	22.1

Source: YHPHO, 2008; Data not available for Bassetlaw

Levels of restorative care

This section describes levels of commonly carried out dental treatments reported in the 2009 Adult Dental Health Survey.

Fillings and Crowns

Fillings and crowns are placed on teeth as a form of treatment after dental disease in an attempt to remove the disease and restore the tooth to function. Nationally, the average number of restored teeth fell from 8.1 in 1978 to 6.7 in 2009. However, in 2009, 85% of dentate people had restored teeth, either with a filling or a crown, out of which 26% needed some form of further treatment due to secondary disease or the restoration failing. The majority of fillings were in people aged 45-54 years, with restorations less likely in those under 45 years of age.⁵²

Dentures

People wear dentures to replace some or all of their missing teeth so that with the decline in the number of people losing all their teeth fewer people are wearing full dentures, although more may wear partial dentures replacing some missing teeth. In 2009, 19% of people in England wore a denture compared to 22% in Yorkshire and

The Humber and 18% in the East Midlands. Women were more likely than men to wear a denture, 21% and 17% respectively in England. Also, people in routine and manual jobs were more likely to wear a denture (27%) than people in professional and managerial jobs (17%).⁵²

The local postal survey in Yorkshire and The Humber reported people in Barnsley and Doncaster to be more likely to wear a denture (Table 5. 6).⁷⁵

Table 5.6 Proportion of the adult population wearing dentures in Yorkshire and The Humber by local authority, 2008

Area	Upper denture (%)	Lower denture (%)
Yorkshire and The Humber	21.1	12.1
Doncaster	24.0	13.8
Barnsley	23.3	14.0
Rotherham	21.4	12.9
Sheffield	21.1	12.1

Source: YHPHO, 2008; Data not available for Bassetlaw

Dental bridges

Dental bridges provide an often preferable alternative to dentures, if the space to be filled is small enough and the surrounding teeth are in reasonable condition. In England and in the East Midlands, 7% of adults had a dental bridge and in Yorkshire and The Humber the figure was 6%. Women were more likely to have a dental bridge than men, 8% and 7% respectively. Those in intermediate jobs were most likely to have a bridge (9%), whilst the prevalence was 8% amongst those in professional and managerial jobs and 7% in those with routine and manual jobs.

Dental implants

Dental implants are titanium screws placed into the jaws to support a crown or a denture. They are an increasingly mainstream part of dental care, but are not routinely available on the NHS. In England, Yorkshire and The Humber and the East Midlands, 1% of the population had dental implants with the prevalence being equal amongst men and women. However, those with intermediate jobs were twice as likely to have implants as those in routine and manual or professional and managerial jobs.⁵²

Mouth cancer

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

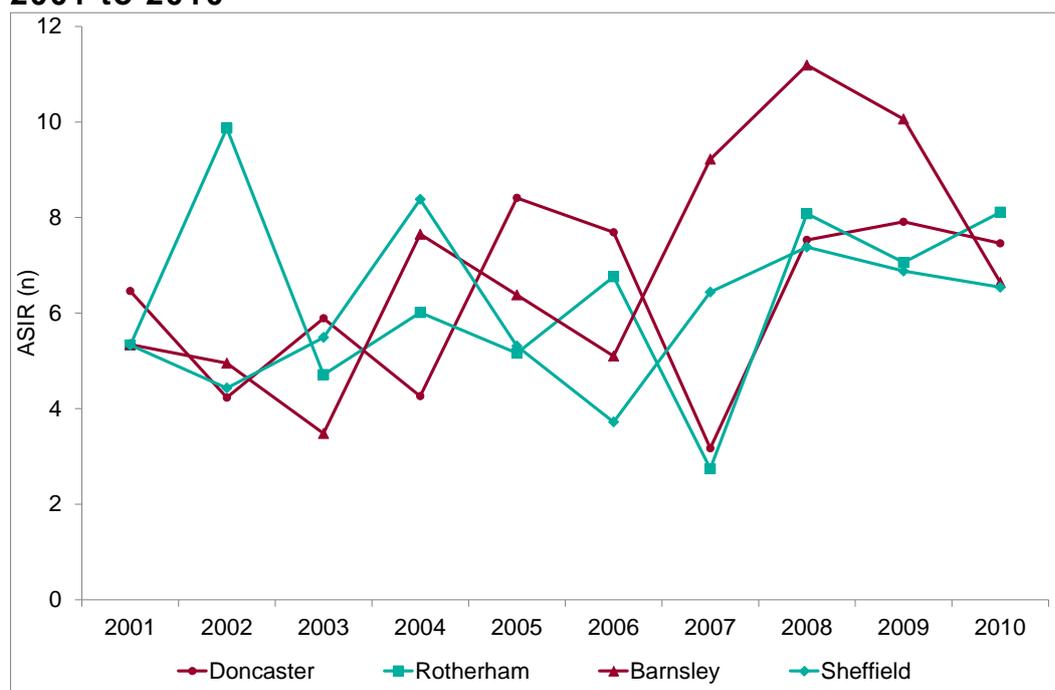
in the UK to more than 7,000. This has been attributed to HPV transmissions and increased excessive alcohol consumption and smoking amongst women. The risk of developing mouth cancer is greater in people living in areas of deprivation. This may be because people living in more deprived areas are more likely to smoke and have excessive alcohol consumption.⁷⁷

Mouth cancer rates

The age standardised incidence rates (ASIR) of mouth cancer for females and males in South Yorkshire and Bassetlaw are shown below (Figures 5.17-5.18). Age standardised rates take into account that mouth cancer is age related and allow comparison of incidence rates across areas with different age structures.

Mouth cancer age standardised incidence rates amongst females in South Yorkshire are relatively stable at between six and eight new cases per year (Figure 5.18).

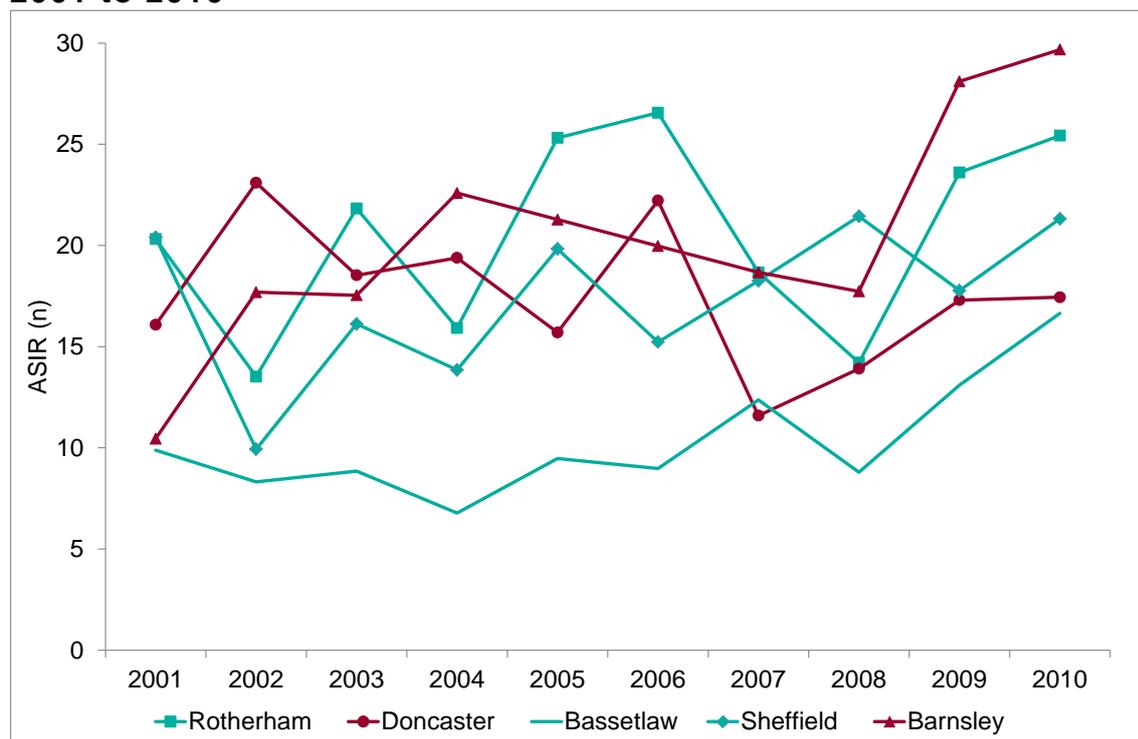
Figure 5.18 Mouth Cancer rate (ASIR) in females in South Yorkshire, 2001 to 2010



Source: PHE, 2014

The age standardised incidence rate of mouth cancer in males in 2010 varied from 17 in Bassetlaw to 30 in Barnsley. The incidence of mouth cancer in Barnsley and Bassetlaw males is increasing (Figure 5.19).

Figure 5.19 Mouth Cancer rate (ASIR) in males in South Yorkshire, 2001 to 2010



Source: PHE, 2014; Bassetlaw data includes males and females due to small numbers

The increase in Bassetlaw might be attributed to the higher than national average proportion of people in Bassetlaw at high risk of alcohol consumption (Figure 3.21).

Summary of adults' oral health

- the oral health of adults has improved significantly over the last 40 years with more of the population retaining their natural teeth throughout life
- in Yorkshire and the Humber 30% of adults had tooth decay and 2% had severe gum disease
- men from materially deprived backgrounds were more likely to experience higher levels of tooth decay and gum diseases but least likely to visit a dentist
- people in Doncaster were more likely to report poorer oral health and perceive a need for treatment
- people in Yorkshire and The Humber were more likely to wear a denture than nationally
- the incidence of mouth cancer in Barnsley and Bassetlaw is increasing

Oral health of vulnerable groups

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. It is not possible to provide a comprehensive list of all these groups but they include people:

- who are older and frail
- who have physical or mental disabilities
- who are homeless or frequently move, such as traveller communities
- who have mental health problems
- who are socially isolated or excluded
- from some black, Asian and minority ethnic groups for example, people of South Asian origin
- who have a poor diet
- who are, or who have been, in care
- who smoke or misuse substances, including alcohol
- who have dental anxiety or dental phobia
- who are medically compromised
- who live in a disadvantaged area or who are from a lower socioeconomic group¹³

These groups often require special treatment or treatment in a special setting to accommodate their needs. Epidemiological studies such as the ten yearly national dental health surveys of children and adults and the annual children's dental health surveys have not routinely gathered information from children and adults with special care needs.

Older people

The UK population is ageing. This change is predicted to continue over the coming decades with the largest increase seen in those aged 85 years and over. The proportion of the English population aged 65 years and over is expected to increase from 17% in 2010 to 23% in 2035.³³ The future oral health improvement and dental service implications for older people with complex medical and dental needs have been discussed (Section 4).

Adults in nursing homes

The care home resident population for those aged 65 and over has remained almost stable since 2001 with an increase of 0.3%, despite growth of 11.0% in the overall population at this age.

The resident care home population is also ageing. The proportion of the older care home population aged 85 and over rose from 56.5% in 2001 to 59.2% in 2011 (Table 5.7).

Table 5.7 Care home population aged 65 years and over by age group in England and Wales, 2011

Age	Care home residents (n)	Care home residents (%)
65-74	31,000	10.5
75-85	88,000	30.3
85 and over	172,000	59.2
Total 65 and over	291,000	100

Source: Office for National Statistics, 2011 Census

There are no national or local data on the oral health needs of adults in nursing homes. However a screening survey of residents in nursing and residential homes in Bradford was conducted in 1993. The screening programme indicated that 70% of residents had some treatment need, mainly a reline or remake of the upper or lower denture (16% and 22% respectively). However it was observed that naming of dentures was the main treatment need (72% of full dentures and 75% of partial dentures). Of those residents who were dentate 46% had tooth decay.⁷⁸

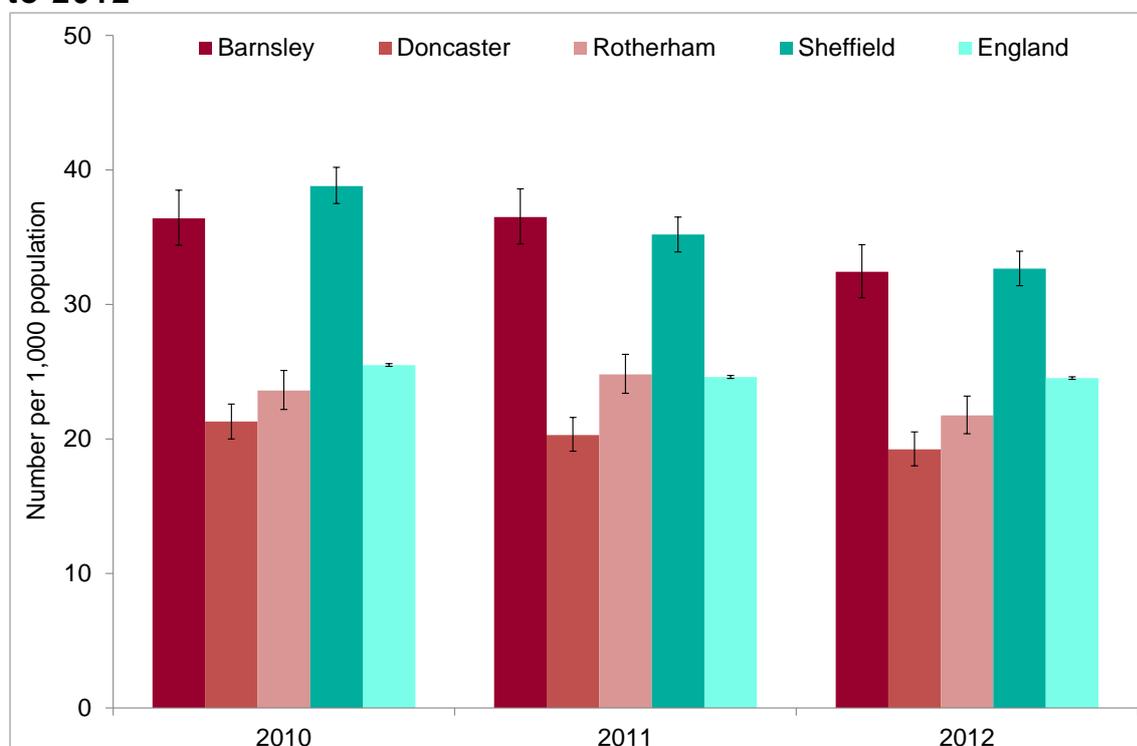
In Glasgow, telephone surveys of oral healthcare provision in nursing and residential homes indicated that people were significantly more likely to receive an oral health assessment on admission to nursing homes than residential homes (78% compared with 24%). In addition nursing homes were more likely to have a formal mouth care policy (58% compared with 8%). Oral examination of a sub sample of residents confirmed high levels of disease including oral candidiasis (oral thrush) amongst those examined. Staff confirmed at interview that although mouth care was within their remit it was often not carried out.⁷⁹

People with learning disabilities

There is a national and local increase in the number of children and adults with learning disabilities. However, this may be due to improved reporting. The prevalence of children with a learning disability in England is 24.5 per 1,000 children known to schools. Information for this indicator is reported by schools through their school census. It is based on those children attending primary, secondary and special schools and includes all those children that have a school action plus or a statement of need. Learning disabilities may be moderate, severe, profound or multiple. The following figures are not based on a medical diagnosis and some children may travel to schools outside their area of residence.

Barnsley and Sheffield have proportionately more children with learning disabilities than England or the other local authority areas (Figure 5.20). Data for Bassetlaw was not available.

Figure 5.20 Children with learning disabilities known to schools, 2010 to 2012



Source: Learning Disabilities Observatory (Improving Health and Lives), 2014

Children with additional needs, such as learning disabilities have similar tooth decay experience but are more likely to have their teeth extracted than their peers. Children with additional needs are more likely to have poorer gum health.^{80, 81}

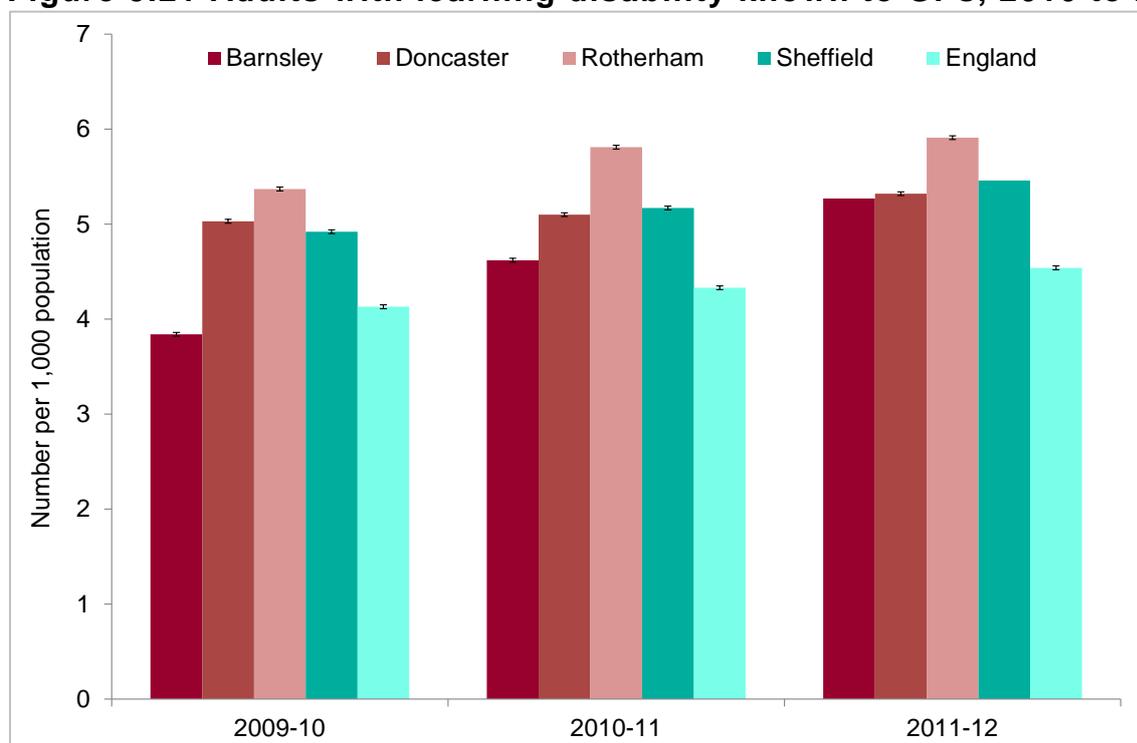
An oral health needs assessment of children in Sheffield with learning disabilities was undertaken in 2011. Children in all age groups had lower levels of tooth decay experience than children attending mainstream schools. Most children had plaque present and approximately one third of five-year-olds and 12-year-olds had inflammation of the gums. Children with learning disabilities in Sheffield had higher levels of trauma to their front upper teeth in line with the national picture.

The first national survey of children in special support schools was undertaken in 2013/14. The results are expected to be published in early 2015.

Nationally, the prevalence of adults (18-64 years) with a learning disability is 4.3 per 1,000 people registered with a general medical practitioner. The prevalence of adults with learning disabilities in South Yorkshire is higher in all the local authority areas

(Figure 5.21). As life expectancy of children with disabilities improves it is expected that these figures will increase.

Figure 5.21 Adults with learning disability known to GPs, 2010 to 2012



Source: Learning Disabilities Observatory (Improving Health and Lives), 2014

A key local concern is the median age at death of people with learning disabilities in Sheffield, which is 41 years compared with 56 years in England. This represents a significant gap, or health inequality, both between Sheffield and the rest of the country and between people with learning disabilities and the general population (Table 5.8).

Table 5.8 Median life expectancy of people with learning disabilities, 2013

Area	Sheffield	Barnsley	Doncaster	Rotherham	England
Median life expectancy (years)	41	56	58	55	56

Source: PHE, 2014; Data not available for Bassetlaw

Adults with learning disabilities are excluded from national surveys of oral health. Therefore, there are no national data on the oral health needs of this population. However, local surveys highlight the poorer oral health and different treatment patterns in adults with learning disabilities compared with the general population.

A postal survey of adults with a learning disability in Sheffield showed that whilst their reported number of teeth was similar to the national average, fewer wore a denture. People with learning disabilities reported poorer overall oral health although

specific impacts of pain, discomfort when eating, and self-consciousness, were similar to or of lower frequency than national surveys. Participants also reported difficulties with dental access due to anxiety and transport and the transitions between child and adult services were highlighted as problematic.

Homeless people

Homeless people are a diverse group comprising of the roofless and those living in temporary accommodation. Most research has focussed on the needs of single men, especially rough sleepers. There is no information regarding health problems relating to other groups such as families with children. Many of the studies conducted have used convenience samples and so the data may not be representative.

The expressed and normative dental needs and attitudes of 70 homeless people living in hostels in Birmingham were examined in 2000.⁸² Treatment needs were high. Of those who were edentulous, 68% did not wear dentures. There were high levels of decay amongst those with teeth as the average number of teeth with decay experience was 15.9. Most participants had one or more teeth with pulpal involvement and half had mobile teeth. This supports findings from earlier studies reporting a high level of normative but low levels of perceived need amongst homeless groups.⁸³

More recent studies have also considered the impact of oral diseases on the quality of life of homeless people⁸⁴. As well as high levels of dental treatment need with 76% requiring restorative work, 80% oral hygiene or gum care and 38% needing dentures, 91% experienced at least one oral health impact, with the average number of impacts being six. The most common impacts were pain (65%) and discomfort on eating (62%). Similar observations were made among homeless people using a healthy living centre in Wales. The most commonly reported impacts were toothache, discomfort, ability to relax and feeling ashamed regarding the appearance of their teeth. Rough sleepers experienced significantly higher levels of impact.⁸⁵

The incidence of many cancers is known to be higher amongst men in lower socioeconomic groups. Within the lowest deprivation group there is further excess risk. Consequently, there is a high incidence of cancers of the mouth amongst homeless men.⁸⁶

People with mental health problems

Mental health problems are very common. Approximately a quarter of the population experiences some kind of mental health problem in any one year. The classification of mental health problems remains problematic, as some diagnoses are controversial and there is concern that some people may not get the appropriate

treatment. The classification is sub-divided into neurotic and psychotic. Neurotic covers those symptoms that can be regarded as severe forms of normal emotional experiences such as depression, anxiety or panic. Conditions formerly referred to as neuroses are now more frequently called common mental health problems. Less common are psychotic symptoms, which interfere with a person's perception of reality, and may include hallucinations such as seeing, hearing, smelling or feeling things that no-one else can.

Overall someone with a severe mental health problem can expect to die almost 20 years earlier than the rest of the population. Therefore, there has been a drive to improve mental health services and improve the general health of people with mental health problems. Sheffield City Council has prioritised the needs of people with mental health problems in their Joint Health and Wellbeing Strategy.²¹ There are no national and local data on the oral health needs of people with mental health problems. However, there is a need for dental commissioners to tie oral health into any local commissioning arrangements that are set to improve the physical health of this vulnerable group.

Socially excluded people

Socially excluded people are accommodated in prisons, young offenders' institutes, secure children's homes, police custody suites or courts. They often have chaotic lifestyles and low aspirations for health, making it difficult for them to navigate systems and access healthcare.

Socially excluded people are more likely to smoke, misuse drugs and or alcohol, have mental health problems, report having a disability, self-harm, attempt suicide and die prematurely compared to the general population. Health and wellbeing needs of offenders in the community are worse than those in custody or the general population with significantly higher premature death rates.⁸⁷

There is one adult male, category B prison in Doncaster with a capacity for 1,145 people. There is also a secure children's home in Sheffield for eight people. NHS England is responsible for directly commissioning health services, including dental services for people who are detained in prison or in other secure accommodation. West Yorkshire Area Team commissions all prison dental services across Yorkshire and Humber. Prison dental services in Yorkshire and The Humber are being reviewed by the West Yorkshire Area Team to ensure cost-effective quality dental care is provided for these vulnerable groups, including orthodontic treatment provision for minors and services that focus on prevention to facilitate these vulnerable groups to make healthier lifestyle choices.

Roma Slovak people

There are an estimated 200,000 Roma people in the UK, of whom 25,000 to 30,000 live in Yorkshire and The Humber. Roma people are a culturally and linguistically diverse group as a result of their settlement across different countries. The two main countries of origin of Roma Slovak migrants to South Yorkshire are Slovakia and the Czech Republic, therefore the community are more likely to speak Slovak or Czech than Romany. Levels of education and literacy in English and Slovak/Czech are generally low, making it harder for them to engage with services.

Sheffield has a significant Roma Slovak community mainly in Fir Vale, Burngreave and Darnall and Rotherham has also received influxes of Roma people. Schools data is currently the best indicator of the distribution of Roma Slovak people and shows a steady increase in the numbers from 2004 to 2009, with larger recent year-on-year increases in school-age children.

There are no available oral health data for the Roma Slovak community. Anecdotally they are reported to have high needs.

Severely obese people

Severely obese people are those who have a body mass index (BMI) in excess of 40 or 30 with significant health problems. BMIs of 50 or more may render people housebound, requiring specialist care and support. Obesity is predicted to rise, with projections indicating that by 2050 there will be approximately 50% of the population classed as obese (with a BMI of 30+), suggesting that numbers of people with a BMI over 40 will also continue to rise.

In March 2011, 5,909 people were identified on GP practice registers in Rotherham with a BMI of over 40, and 793 people were recorded as having a BMI of over 50. However, there are likely to be additional cases as BMI is not always recorded. Data for the other local authority areas is unavailable.

There is no local data on the oral health of severely obese people but it is likely that they are at higher risk of oral diseases due to diets high in refined sugars and co-morbidities such as diabetes that can affect oral health. However, severely obese people are often unable to visit conventional dental practices because of lack of disabled access and normal dental chairs will not support their weight or facilitate their size. Dental practices do not have links with the ambulance service for transporting severely obese people.

Currently there are no dental facilities that accommodate severely obese people in South Yorkshire. The nearest service is provided by Leeds Salaried Dental Service.

Looked after children

Looked after children tend to have poorer health and well-being than their peers. Although some national data describes the health needs of looked after children, their oral health needs are not routinely monitored in South Yorkshire and Bassetlaw.

Doncaster and Rotherham have a greater proportion of children in care than Sheffield and Barnsley (Table 5.9). Sheffield's looked after children health and wellbeing needs assessment (2011) showed that fewer in Yorkshire and The Humber (81.5%) had their teeth checked by a dentist than the England average (82.4%). Only 77.6% of looked after children in Sheffield and 82.1% of looked after children in Rotherham had their teeth checked by a dentist.

Table 5.9 Looked after children, below 18-years-old, per 10,000 population, by local authority, 2013

Area	Looked after children per 10,000 population (n)
England	60
Barnsley	48
Doncaster	76
Rotherham	70
Sheffield	47

Source: PHE, 2013; Data not available for Bassetlaw

Other vulnerable groups

There are other potentially vulnerable groups such as travellers, refugees and asylum seekers, the medically compromised, as well as those with dental anxiety and dental phobia. All vulnerable groups have the right to good oral health but they are the very groups in society who are at increased risk of poor oral health and for whom access to dental services is not straight forward.

Summary

- information describing the oral health of vulnerable groups locally is limited
- vulnerable adults in residential care are more likely to have access to dental services than those in the community
- Sheffield has a higher prevalence of adults and children with learning disabilities relative to the national average
- children with learning disabilities are more likely to have teeth extracted than filled and have poorer gum health

- adults with learning disabilities are more likely to have poorer oral health than the general population
- adults with learning disabilities living in the community are more likely to have poorer oral health than their counterparts living in care
- homeless people are more likely to have greater need for oral healthcare than the general population
- approximately a quarter of the population experiences some kind of mental health problem in any one year however this is no local information on the oral health needs of this group
- Sheffield City Council has prioritised the needs of people with mental health problems. Local commissioning arrangements for people with mental health problems may not consider access to dental services
- the Roma Slovak population is increasing in Rotherham and Sheffield and this group is likely to have difficulty in accessing oral healthcare services
- severely obese people may be at higher risk of oral disease however there are currently no dental services that accommodate severely obese in South Yorkshire and Bassetlaw
- looked after children are likely to have greater oral health needs
- Doncaster and Rotherham have a significantly greater proportion of children in care than Sheffield and Barnsley
- Sheffield has the lowest proportion of children in care however, a significantly lower proportion of these children have their teeth checked by a dentist relative to the national average

Key issues for consideration

- prevention of tooth decay and identification and restoration of decayed teeth in children's permanent dentitions should be a priority for dental services
- oral health improvement strategies in Barnsley and Bassetlaw should include actions to address the increasing incidence of mouth cancer in these areas
- undertaking a more detailed oral health needs assessment of vulnerable groups should be considered by NHS England and local authorities
- dental services including urgent care should be accessible to people with learning disabilities and provide preventive and treatment services
- NHS England, local authorities, PHE and clinical commissioning groups should work together to ensure access to dental and oral health improvement services for people with mental health problems

- NHS England, Rotherham and Sheffield local authorities and PHE should work together to ensure access to dental and oral health improvement services for Roma Slovak people
- need for and access to dental services for severely obese people should be reviewed
- need for and access to dental services for looked after children should be reviewed

6. Oral healthcare services

NHS England has a statutory duty to secure all NHS dental services. Those services must reflect the improved oral health of the population with more people keeping their teeth into older age. At the same time major technical advances enable more complex care with further implications for commissioning. 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 disease.

This section describes current NHS dental service provision in South Yorkshire and Bassetlaw.

Primary care dental services

Primary care services form the first point of contact for people seeking healthcare. Primary care dental services are the main providers of oral healthcare. In South Yorkshire and Bassetlaw the cost of primary care dental services was £90,318,662 in 2013/14. This included general dental services, advanced mandatory services, community dental services, primary care based specialist services and unplanned dental care. Approximately 25% of this revenue is generated from patient charges.

Most primary dental care is provided in general dental practice. However, the community dental services play an important role providing primary dental care for vulnerable groups who may need treatment in a setting to accommodate their needs. The community dental services also deliver dental public health programmes, advanced mandatory services and some specialist dental services such as paediatric dentistry and special care dentistry.

Unplanned dental care services provide access to people who require urgent dental care in or out of hours due to dental trauma, bleeding, pain, infection and swelling.

Primary dental care is also provided by Charles Clifford Dental Hospital in Sheffield and by private dentists.

The following sections describe these services in more detail.

General dental services

The current primary care NHS dental contracts, the General Dental Service Contract and Personal Dental Service Agreement, were introduced in 2006. The contracting

currency for both contracts is the Unit of Dental Activity (UDA). A general dental service provider is contracted for an annual agreed number of units of dental activity.

Dental practices provide services according to four different bands of care with the provider awarded a number of UDAs for each band:

- **Band 1** includes an examination, diagnosis and advice. If necessary, it also includes, x-rays, scale and polish, application of fluoride varnish or fissure sealants and preventive advice and planning for further treatment (1 UDA)
- **Band 1 urgent** includes urgent care such as removal of the tooth pulp, removal of up to two teeth, dressing of a tooth and one permanent tooth filling (1.2 UDAs)
- **Band 2** includes all treatment covered by Band 1, plus additional treatment, such as fillings, root canal treatment, gum treatments and removal of teeth (3 UDAs)
- **Band 3:** includes all treatment covered by Bands 1 and 2, plus more complex procedures, such as crowns, dentures and bridges (12 UDAs)

Fee paying adults contribute towards the costs of NHS dental treatment with the contribution determined by the band (the patient contribution is the same for band 1 and band 1 urgent).

In 2013/14, 228 dental practices across South Yorkshire and Bassetlaw were contracted to provide a total of 2,904,136 UDAs. The number of dental practices, contracted activity and delivered activity is shown below (Table 6.1). The amount dentists were paid per UDA varied considerably from £17.60 to £31.80. These values were calculated by analysing historical activity data and income for each practice when the 2006 national contract was introduced but no longer reflect current practice.

Table 6.1 Primary care provision South Yorkshire and Bassetlaw, 2013/14

Locality	Contracts (n)	Practices (n)	Performers (n)	Average UDA Value (£)	UDA Range (£)	Annual contracted UDAs (n)	UDA delivered (%)
Bassetlaw	15	12	91	25.74	24.99 - 28.01	224,899	96.6
Barnsley	30	35	214	26.75	Standard rate	532,097	94.8
Doncaster	49	46	261	27.29	Standard rate	683,363	98.7
Rotherham	30	34	179	28.31	24.52 - 30.60	467,771	100.2
Sheffield	77	82	431	27.53	17.60 - 31.80	996,006	97.0
Total	309	228	1,176	-	-	2,904,136	

Source: NHS England, 2014

There was under delivery of contracted activity in Barnsley (Table 6.1). However, not all UDAs are performance managed within individual contracts so that actual level of under delivery is not clear.

Three dental practices in South Yorkshire based in Sheffield and Doncaster are participating in the national dental contract pilot scheme, the results of which will inform the development of a modified national NHS primary dental care contract.

Availability of general dental services in South Yorkshire and Bassetlaw

Barnsley and Doncaster have more commissioned UDAs per population than Sheffield, Rotherham and Bassetlaw (Table 6.2). Despite this, five-year-olds in Barnsley and 12-year-olds in Doncaster and Barnsley have the lowest care indices in South Yorkshire and Bassetlaw.

Table 6.2 Average UDAs commissioned per person, 2012/13

Area	Average UDAs per person (n)
Bassetlaw	1.99
Barnsley	2.29
Doncaster	2.26
Rotherham	1.81
Sheffield	1.80

Source: NHS England, 2013

The availability of general dental services also varies within local authority areas (Appendix I). Most UDAs in Bassetlaw are commissioned in wards such as Retford and Worksop and there are many wards with no provision. However, Bassetlaw is very rural and people are more likely to access services in towns where they work

rather than where they live. In all local authority areas wards with higher levels of tooth decay in schoolchildren tend to have the least availability of dental services in terms of commissioned UDAs. As an example, schoolchildren in Worsbrough ward experiences some of the highest levels of tooth decay in Barnsley (Figure 5.6), yet Worsbrough has the lowest levels of UDAs commissioned per capita (Appendix I). In Sheffield wards such as Manor Castle that are very deprived and experience high levels of tooth decay (Figure 5.4) have relatively low levels of commissioned UDAs (Appendix I).

The concept of patient registration was discontinued in 2006. However, most dental practices maintain a list of regular patients. As people may attend a dental practice anywhere a health equity audit of service utilisation would determine the equity of provision at ward and local authority area level.

Access to care

Access to primary care dental services has been a key issue both nationally and locally. Substantial investment has been made since March 2006 to increase access to dental care. The indicator used to assess dental access is the number of unique people accessing dental services over the previous 24 months. This metric is based upon NICE guidance, which recommends the longest interval between dental examinations for adults should be 24 months.⁸⁹ Access is measured by comparing the proportion of the population who have attended within the last 24 months against the position in April 2006 when the current dental contract was introduced.

To March 2014, there had been a 10.3% increase in dental access in South Yorkshire and Bassetlaw. This was higher than the increase seen in the North of England or nationally (5.7% and 6.3% respectively). From April 2011 to March 2014, there was very little variation in access levels.

In March 2014, proportionately more children and adults accessed a dentist in South Yorkshire and Bassetlaw than the national average (Table 6.3). Doncaster had the highest proportion of children and adults accessing a dentist. Whilst Doncaster has the greatest availability of services, access does not always reflect availability. For example Bassetlaw has the lowest access rates for children and adults despite having greater availability of services than Rotherham and Sheffield.

Table 6.3 Proportion of the population accessing a dentist in the previous 24 months, March 2014

Area	Adults (%)	Children (%)
Barnsley	65.0	77.4
Bassetlaw	59.0	69.9
Doncaster	70.1	78.8
Rotherham	60.8	73.7
Sheffield	60.0	75.9
South Yorkshire and Bassetlaw	62.9	75.9
England	52.4	69.1

Source: Health and Social Care Information Centre, 2014

Despite good overall access, there were greater inequities in access compared to the national picture. Children in the most deprived areas of South Yorkshire and Bassetlaw accessed services less than those in the least deprived, reflecting inequity in service use. Similarly, adults in the two most affluent quartiles accessed services more than adults in the more deprived quartiles (Table 6.4). The reasons for this need to be explored.

Table 6.4 Dental access by deprivation level (IMD national quartiles, 2010), March 2014

Quartiles Rank	South Yorkshire and Bassetlaw Children (%)	England Children (%)	South Yorkshire and Bassetlaw Adults (%)	England Adults (%)
25% most deprived	72.5	67.5	57.5	53.3
26-50% most deprived	76.9	69.2	59.5	52.0
51-75% least deprived	79.8	71.1	64.9	51.9
25% least deprived	82.5	72.3	62.7	51.0

Source: NHS Business Service Authority, 2014

Access also varied by age group with children aged up to two-years having much lower access than older children.

As people may visit a dental practice anywhere in the country, it is useful to explore cross border flows for two reasons. First, large numbers of people accessing services from outside an area can limit access to services for residents. Secondly, such patterns may indicate a lack of service availability or poor service quality. Almost everyone (98%) living in South Yorkshire and Bassetlaw accessed care in

the area. Approximately 5% of people accessing care in South Yorkshire and Bassetlaw lived outside the area.

It is difficult to determine the number of dental practices accepting new NHS patients. People seeking access to NHS dental care are signposted to the NHS Choices website. This is not ideal for people without internet access. Moreover, the information on NHS Choices is not always up to date. Local Healthwatch organisations provide information and signposting to help people access health and social care services and it is important that this includes dental services.

As of September 2014, practices in all local authority areas in South Yorkshire and Bassetlaw were accepting new NHS patients (Table 6.5).

Table 6.5 Practices accepting new dental patients, September 2014.

Area	Practices accepting new NHS patients (n)
Sheffield	21
Doncaster	12
Barnsley	26
Rotherham	10
Bassetlaw	10

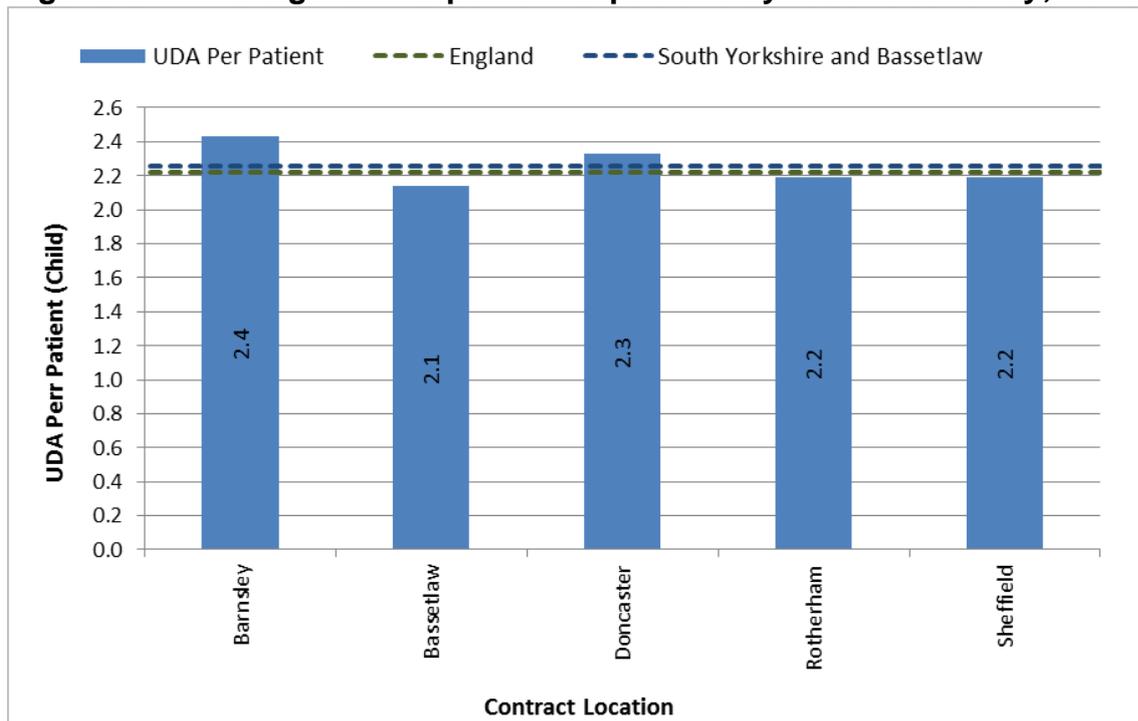
Source: NHS England, 2014

No robust data was available on access to services by ethnic group. NHS England needs to work with practices to ensure that ethnicity data is captured on dental service activity forms.

Dental service use

The average number of UDAs claimed for each patient is a measure of the intensity of resource use. More UDAs are claimed per child patient in Barnsley and fewer per child patient in Bassetlaw (Figure 6.1), which mirrors the levels of tooth decay across the area but not the levels of restorative care provided as measured by the care index (Figures 5.13 and 5.16).

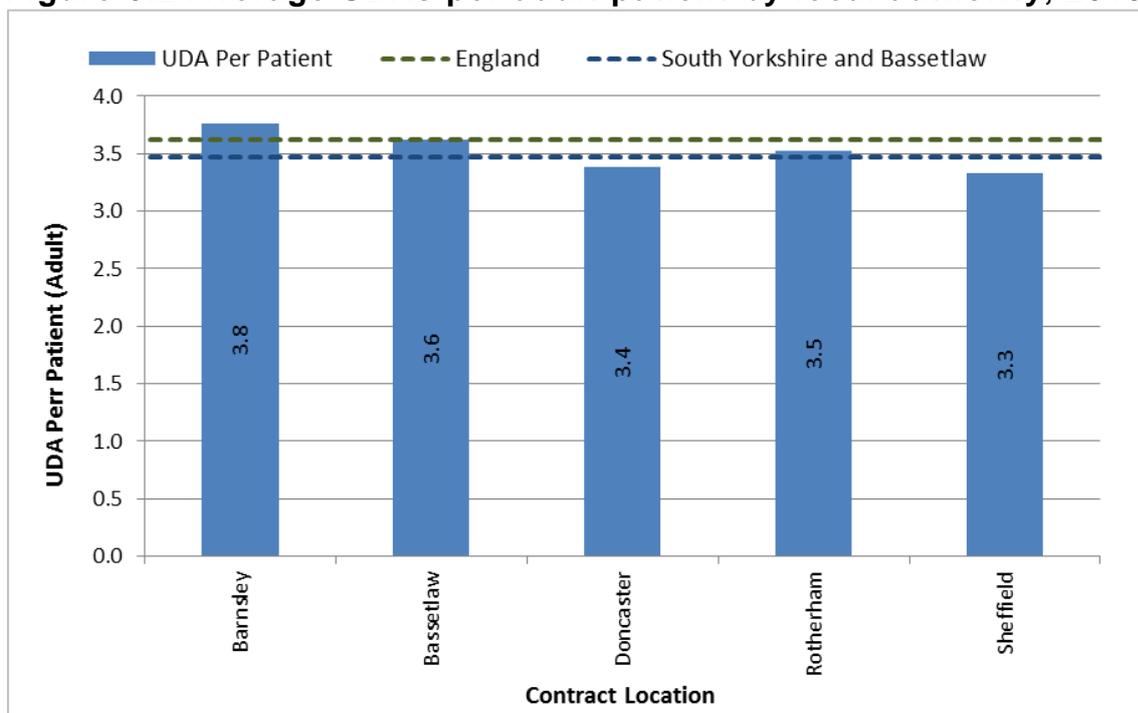
Figure 6.1 Average UDAs per child patient by local authority, 2013/14



NHS Business Service Authority, 2014

More UDAs were claimed per adult patient in Barnsley than the national average (Figure 6.2).

Figure 6.2 Average UDAs per adult patient by local authority, 2013/14



NHS Business Service Authority, 2014

Complexity of care

The proportion of courses of dental treatments provided by treatment band is shown below (Table 6.6). Most courses of treatment provided were Band 2. Bassetlaw and Barnsley had more people receiving a band 3 course of treatment, which reflects the number of UDAs used (Figure 6.2). This pattern is unsurprising in Barnsley due to greater levels of deprivation and poorer oral health. However, in Bassetlaw this warrants further exploration as this is the least deprived local authority area and has the best oral health. Doncaster, Sheffield and Bassetlaw had proportionately more urgent courses of treatment as these areas all have contracts with providers of unplanned care.

Table 6.6 Proportion of courses of treatment by treatment band, 2012/13

Area	Band 1 (%)	Band 2 (%)	Band 3 (%)	Band 1 urgent (%)
Bassetlaw	24.6	41.2	29.1	4.6
Barnsley	22.1	41.7	30.4	3.7
Doncaster	23.7	43.8	25.9	5.4
Rotherham	25.4	43.1	26.0	3.9
Sheffield	27.1	42.7	24.2	4.9

Source: NHS England, 2013

Breaking the data down by whether adult patients pay fees is a useful proxy for comparison by socioeconomic status. In all local authority areas fee paying adults were more likely to have a band 1 course of treatment, that is not need any dental treatment after the examination, than fee exempt adults. Proportionately more fee exempt adults had band 3 courses of treatment. A possible explanation is that people from more deprived backgrounds are more likely to have greater oral health needs. Fee exempt adults are also more likely to have urgent dental care, indicating they are more likely to attend a dentist with a problem rather than attending regularly for routine dental check-ups (Table 6.7).

Most children received band 1 or 2 courses of treatment. In Doncaster and Barnsley more children received a band 2 course of treatment. However, the care index in schoolchildren in these areas is low so there are still many children with untreated tooth decay (Figures 5.13 and 5.16).

Of further concern given the higher than average levels of decay and access across South Yorkshire and Bassetlaw are the number of courses of treatment including a filling in 6 to 12-year-olds, the low number of x-rays per course of treatment and the low levels of fissure sealants applied per course of treatment.

Table 6.7 Proportion of courses of treatment in each band by patient status, 2012/13

Area	Band 1 (%)			Band 2 (%)			Band 3 (%)			Band 1 urgent (%)		
	Paying adult	Exempt adult	Child	Paying adult	Exempt adult	Child	Paying adult	Exempt adult	Child	Paying adult	Exempt adult	Child
Bassetlaw	25.6	11.7	44.5	42.2	36.8	47.2	27.0	46.3	5.2	3.9	4.6	3.0
Barnsley	24.2	11.3	38.1	42.8	34.9	51.3	27.5	48.4	4.8	3.7	4.3	2.9
Doncaster	25.4	12.9	36.5	43.8	37.6	53.8	24.3	42.0	4.1	5.1	6.8	4.2
Rotherham	26.7	12.9	42.5	43.9	39.7	46.4	23.9	42.4	4.3	3.8	4.5	3.3
Sheffield	28.2	14.1	44.4	42.0	40.4	48.4	23.2	39.4	2.8	5.3	5.1	3.2

Source: NHS England 2013

Evidence based care

Fluoride varnish application

Evidence from systematic reviews shows that application of fluoride varnish two to three times a year can reduce tooth decay by 33% in baby teeth and 46% in adult teeth.^{56, 57} Evidence-based guidance recommends application of fluoride varnish every six months for all children aged three years and over and more frequently for all children at high risk of decay. Whilst the number of children receiving fluoride varnish is increasing year on year in South Yorkshire and Bassetlaw and is higher than national levels, a significant proportion of children in South Yorkshire and Bassetlaw attending a dentist do not receive it. Children in Sheffield and Rotherham have the lowest levels of application (Table 6.8).

Adults at higher risk of tooth decay should have fluoride varnish applied twice a year. Very few adults in South Yorkshire and Bassetlaw do so, but the number requiring it is unknown.

Table 6.8 Fluoride varnish application by age group, 2013/14

Area	Children (%)	Adults (%)
Bassetlaw	42.9	1.1
Barnsley	42.0	2.1
Doncaster	53.1	1.4
Rotherham	38.8	1.9
Sheffield	39.9	2.8

Source: HSCIC, 2014

Recall interval

NICE has published evidence-based guidelines for dental recall intervals. Adults should be seen for a dental recall at intervals from 3 to 24 months and children should be seen at intervals from 3 to 12 months depending on their level of risk of oral disease. Therefore, adults whose care falls under Band 1, that is those people with low levels of disease activity, should usually have a recommended recall interval

of 24 months.⁸⁸ However, most people in South Yorkshire and Bassetlaw at low risk of disease have an average dental recall interval of 8 months (Table 6.9). This may be due to the historical practice of a regular 6-monthly recall, irrespective of risk.

Extending the recall interval for people at low risk of oral diseases in line with the NICE guidance would increase the availability of dental services as fewer UDAs would be used on unnecessary recalls.

Table 6.9 Recall interval for low risk patients (previous band 1), 2012/13

Area	Recall interval (months)
Bassetlaw	8.04
Barnsley	7.73
Doncaster	8.38
Rotherham	8.32
Sheffield	8.05

Source: NHS BSA, 2013

Other primary care services in South Yorkshire and Bassetlaw

Primary care activity is also provided at Charles Clifford Dental Hospital and its associated outreach clinics, predominantly by dental students. This activity is funded primarily through service increment for teaching (SIFT) funding, which is NHS funding to offset the costs to the NHS of providing teaching to undergraduate medical and dental students in clinical placements. It covers both block grants to hospital trusts.¹¹

Activity data for these services were not available.

In addition, many NHS dental practices provide primary care dentistry on a privately funded basis and there are also several wholly private dental practices. There are no local data available on private dentistry activity and costs.

Additional services

Additional services are provided under the standard national general dental service contracts and include domiciliary care, sedation, orthodontics and dental public health services. Orthodontic services provided in primary care are described below in the specialist care section. No dental public health services are commissioned from general dental services in South Yorkshire and Bassetlaw.

Domiciliary services

Domiciliary oral healthcare reaches out to those people who cannot visit a dentist. Care is provided where the patient permanently or temporarily resides including patients' own homes, residential units, nursing homes, hospitals and day centres.⁸⁹ In accordance with the Disability Discrimination Act domiciliary services ensure that dental services are provided via a reasonable alternative route.⁹⁰

Domiciliary provision varies within South Yorkshire and Bassetlaw. In 2012/13, 3,455 courses of treatment included a domiciliary visit, the majority of which were provided in Sheffield (Table 6.10).

The Residential Oral Care Sheffield (ROCS) scheme is a comprehensive service that includes a two-yearly oral health screening and follow up care for people in almost all residential care homes in Sheffield. The service is provided mostly through the general dental services, although the Sheffield Salaried Primary Dental Care Service also provides care to some homes. In 2013/14, 2,359 people were screened, of whom 844 required oral hygiene advice, 254 had tooth decay and 196 had other conditions. General dental practitioners in Sheffield also provided 220 courses of treatment including domiciliary care to patients in their own homes in 2012/13.

In the other local authority areas, there is considerable variation in provision of domiciliary care to people in their own home and no consistent care to residential homes. Fifty-eight general dental service and two community dental service providers delivered domiciliary visits in 2013/14, equating to 0.4% of adult patients. Most of these people (75%) were aged 75 years or older. Sheffield and Barnsley had higher rates of domiciliary care provision than nationally and the other local authority areas had lower rates than nationally.

Very limited activity and no cost data were available on domiciliary care.

Domiciliary dental care provision across South Yorkshire and Bassetlaw has been highlighted as a priority area by the dental local professional network.

Sedation services

Control of anxiety is an integral part of dental care and requires practitioners to consider the range of non-pharmacological and pharmacological methods of anxiety management when planning treatment for patients. For very anxious patients sedation may be administered by inhalation or intravenously. Current national guidance includes a number of recommendations to ensure that sedation is both safe and effective. It must be provided only by those who are trained and experienced and where the appropriate equipment and facilities are available.

In conscious sedation, verbal contact and protective reflexes are maintained, whereas in general anaesthesia these are lost. Nitrous oxide/oxygen is usually the technique of choice for conscious sedation of paediatric dental patients, and should be considered as an alternative to general anaesthesia. However, intravenous sedation is a safe and effective alternative for adult dental patients. Sedation services are usually expensive and have limited capacity.

Provision of sedation services varies across South Yorkshire and Bassetlaw. A dental anxiety care pathway is provided by Sheffield Salaried Primary Dental Care Service. The pathway includes dental nurse-led cognitive behavioural therapy, acupuncture, hypnosis and sedation. A recent evaluation of the dental nurse led cognitive behavioural therapy showed the programme to be beneficial for dentally anxious patients who were willing to have their anxiety addressed and had time to commit to the programme. No sedation services are provided by the general dental services in Sheffield.

In Bassetlaw, Barnsley, Doncaster and Rotherham, inhalation sedation is provided by a very limited number of dental practices. Intravenous sedation is available through the community dental services and one dental practice in Doncaster.

The number of courses of treatment including sedation is shown below (Table 6.10). However, there are no data on the number of sedations within a course of treatment or on the type of sedation provided.

Table 6.10 Courses of treatment containing additional services by additional service type and local authority, 2013/14

Area	Sedations (n)	Domiciliary visits (n)
Bassetlaw	46	1
Barnsley	766	801
Doncaster	671	226
Rotherham	207	234
Sheffield	183	2,193
Total	1,873	3,455

Source: HSCIC, 2014

Unplanned dental care

The unplanned dental service in South Yorkshire and Bassetlaw consists of three elements; a call answering service, an appointment booking service and a clinical service. Since September 2013, all calls for unplanned dental care are triaged through NHS 111 using national protocols. The call handling service for NHS 111 is provided by the Yorkshire Ambulance Service. The personal details of people needing an urgent dental appointment are then emailed to the Doncaster Dental

Access Centre, which is provided by The Rotherham NHS Foundation Trust. A dental care professional from the dental access centre then telephones the patient to offer an appointment at their nearest provider. The clinical service is provided in hours and out of hours by the Doncaster Dental Access Centre, Taptonville House Dental Practice in Sheffield and Wright Dental Care in Worksop on occasional weekends. There are also access appointments commissioned from dental practices in Barnsley, Rotherham, Doncaster and Bassetlaw.

There are 7,022 appointment slots available at Taptonville House, 6,190 at the Dental Access Centre and 174 at Wright Dental Care. The total cost of the clinical care is £1,387,000, however, the cost per appointment slot varies across the providers. The cost of the dental component of the 111 service is unknown.

No activity data was available for the whole service although a detailed evaluation of the Taptonville House service was undertaken in 2013.

Community dental services

The community dental services are the main providers of special care dentistry and provide primary care for groups of people who cannot be treated in the general dental services. People who may need community dental services include:

- children with physical or learning disabilities or medical conditions
- children who are looked after or on the at risk register
- children with extensive untreated tooth decay who are particularly anxious or uncooperative
- adults with complex needs who have a proven difficulty in accessing or accepting care in general dental services, including adults with moderate and severe learning and physical disabilities or mental health problems and severe dental anxiety
- adults with medical conditions who need additional dental care
- housebound and homeless people

The community dental services in South Yorkshire and Bassetlaw provide services that are complementary and additional to those of other primary care providers and the hospital service. The services are provided from a variety of settings to ensure services are accessible to all. Settings include hospitals, health centres, special schools and mobile clinics as well as people's own homes and nursing and care homes.

Sheffield Teaching Hospitals NHS Foundation Trust provides community dental services in Sheffield. In 2009, the service was reviewed and refocused so that it now provides consultant led-special care dentistry and paediatric services. The service is provided under a personal dental service agreement to a detailed service

specification incorporating key performance indicators. The contract value is £2.8 million per annum and is due to end in March 2015. The service is provided from seven clinics located in Jordanthorpe, Deepcar, Heeley, Manor, Hillsborough, Firth Park and Wheata Place and three clinics in special schools. Monthly clinical sessions are also provided at Sheffield Cathedral Archer for homeless people. Outpatient care for people with medical special needs is provided at Charles Clifford Dental Hospital. Comprehensive dental treatment under consultant-led general anaesthesia is provided for adults with special care needs at the Royal Hallamshire Hospital. In addition, general dental services are provided from Jordanthorpe clinic. The service also provides the Sheffield dental anxiety service and a service to Aldine House, a secure children's centre in Sheffield.

The service is meeting the 18 week referral to treatment time for the general anaesthetic service. The waiting times as at March 2014 at Wheata Place and Firth Park was 12 weeks with 181 patients waiting. The waiting times at the other clinics was four weeks with only six patients waiting.

Activity data were unavailable for the service.

The Rotherham NHS Foundation Trust provides community dental services for Rotherham, Barnsley and Doncaster. The services are commissioned as block contracts and the total contract value is £2,696,000. The contracts end in March 2015. Information on the contract types and scope was unavailable.

There are three clinics in Barnsley, located at New Street, Cudworth and Goldthorpe; four in Doncaster located in the Flying Scotmans, Thorne, Mexborough and Tickhill Road and five in Rotherham, at Swallownest, Maltby, Wath and the Rotherham Community Healthcentre on Greasborough Road. Consultant-led general anaesthetic services are provided at Doncaster Royal Infirmary and Rotherham District General Hospital.

Activity data and waiting times for these services were also unavailable.

Community dental services in Bassetlaw are provided by two organisations, Nottinghamshire Healthcare NHS Trust at a cost of approximately £200,000 and a general dental practitioner from Sheffield at a cost of approximately £160,000 respectively. The contracts end in March 2017. Information on the contract types and scope was unavailable.

The service is provided from clinics in Worksop, Retford and Harworth. Activity data and waiting times were also not available.

The South Yorkshire and Bassetlaw Area Team is attempting to align the end dates of all the community dental service contracts. A service review would help inform need and demand for community dental services across South Yorkshire and Bassetlaw. NHS England will publish a series of commissioning guides including one for special care dentistry (due April 2015) that will inform the procurement process.

The limited activity data available for the community dental services is shown below (Table 6.11). The data gives no indication as to the complexities of the client groups of the individual services. However activity in children is much higher in Barnsley, Doncaster and Rotherham than in Sheffield and Bassetlaw, which may reflect the services' differing priorities.

Table 6.11 Community Dental Services Activity in South Yorkshire and Bassetlaw, 2013/14

Service	Adults	Children	Domiciliaries	Sedations	GAs
Bassetlaw	440	125	*	*	*
Barnsley	385	864	*	*	*
Doncaster	844	1,032	*	*	*
Rotherham	940	1,489	*	*	*
Sheffield	2,905	1,590	400	125	35

* Data not available

Source NHS England 2014

Quality assurance of primary care dental services

The Dental Assurance Framework⁹¹ is designed to provide a standardised approach for area teams to engage with providers and performers to secure and improve service quality across four domains:

- delivery, based upon the UDA/UOA currency
- patient safety, based upon discussions with the Care Quality Commission
- patient experience, using patient reported experience as measured in the BSA patient survey, complaints and other information
- quality/clinical effectiveness, including both process and outcome measures

The South Yorkshire and Bassetlaw Area Team appraises the quality of dental services against the framework. An assessment of outliers is made quarterly and a dental advisor from the area team may visit practices that are of concern. The framework may also be used by contractors and performers to reflect on their delivery of clinical care.

Dental practices are also monitored by the Care Quality Commission and must comply with any conditions of registration.

Primary care workforce

The primary care dental workforce consists of dentists and dental care professionals. Dental care professionals include dental nurses, hygienists, therapists, dental technicians including clinical dental technicians and orthodontic therapists. All dentists and DCPs must be registered with the General Dental Council to practise. The scope of practice of dental care professionals was recently reviewed and their remit expanded.⁹²

The key findings of a dental workforce review in England⁹³ recommended that reductions in dental student intake would need to be implemented to address the forecasted oversupply and demand for the dental workforce. A review of the future dentist workforce and student intake every three years together with a workforce review of dental care professionals were also recommended.

Greater emphasis on appropriate skill mix, prevention and improved oral health outcomes, suggests that increased skill mix in general dental practice should be encouraged. However, the current national general dental service contracts are not conducive to expanding skill mix.

It is also anticipated that dentists with extended skills will deliver more complex care in future primary care dental contracts. Specifications are being developed by the Royal College of Surgeons for the recognition of dentists with enhanced skills in oral surgery, paediatric and special care dentistry.

A workforce analysis in South Yorkshire and Bassetlaw has not been carried out. However the population size per dentist in South Yorkshire and Bassetlaw is lower than the national average (2,255) at 2,024 people per dentist. Doncaster and Barnsley have the lowest population size per dentist at approximately 1,680 people per dentist and Bassetlaw, Rotherham and Sheffield have approximately one dentist for every 1,825 people,⁹⁴ which reflects service availability across the area.

General anaesthetic services

Only those people who have been shown to be unable to receive dental care in any other way are considered for treatment under general anaesthetic. Comprehensive dental care under general anaesthetic is available for children and adults with special needs in South Yorkshire and Bassetlaw. In addition dental extraction services under general anaesthesia are provided for children unable to cope with removal of teeth under local anaesthesia alone or in combination with inhalation sedation. Evidence-based guidance has been published on the management of children and young people referred for dental extractions under general anaesthesia to support the care pathway from referral to discharge.^{95, 96}

There is a range of dental general anaesthetic services across South Yorkshire and Bassetlaw providing services to varying standards. In response to wide variations in waiting times across services and variable access to urgent dental care under general anaesthesia, the dental local professional network is reviewing general anaesthetic service provision with a view to improving the quality of care. A comprehensive review of service provision has been completed and has highlighted areas for service improvements.

Summary

- most dental services in South Yorkshire and Bassetlaw are primary care services provided by general dental practitioners
- the cost of a unit of dental activity varies significantly across the local authority areas
- the availability of services varies across local authority areas and does not reflect need or access to care
- access to care is better than nationally across all local authority areas but access to and use of services do not reflect need
- access to services is inequitable in terms of deprivation and age. It was not possible to assess equity by gender and ethnicity
- the average number of UDAs used per child at local authority level reflects tooth decay rates but not levels of restorative care as measured by the Care Index
- adults exempt from patient charges were more likely to have a band 3 course of treatment or urgent care
- despite the higher than average levels of tooth decay and dental access rates, the number of courses of treatment including a filling, x-rays and fissure sealants are low and there remain significant portions of children with untreated tooth decay
- fluoride varnish rates are increasing year on year and are better than nationally but significant proportions of children still do not receive it
- recall intervals in general dental practices are not in line with evidence based guidance, thus reducing service availability
- there is unequal access to domiciliary care for housebound people
- There is inconsistent sedation provision in the area in terms of quantity, type and cost of services
- little information is available on the provision of unplanned dental care
- little information is available on community dental service provision and the scope and costs of the services

- the quality assurance process includes reference to the national dental assurance framework and registration with and monitoring by the Care Quality Commission
- the primary care workforce levels across the local authority areas reflect the availability of services measured by commissioned units of dental activity
- there are a variety of providers and costs for GA services. These services are under review by NHS England

Specialist dental services

Specialist services in South Yorkshire and Bassetlaw are provided primarily in a hospital (secondary care) setting apart from orthodontics. There is also some oral surgery provision in primary care. Quantifying need for specialist care is difficult as the gateway to care is largely managed by primary care dental practitioners. There is limited opportunity for self-referral to specialist care. Currently, all secondary care based specialist activity is provided free from patient charges, whilst specialist activity in a primary care setting accrues charges in line with NHS regulations.

This section describes the different dental specialities and the provision of specialist dental services in primary and secondary care settings in South Yorkshire and Bassetlaw.

Special care dentistry

The speciality of special care dentistry is concerned with the improvement of the oral health of individuals and groups in society who have a physical, sensory, intellectual, mental, medical, emotional or social impairment or disability or often a combination of these factors, which results in them being unable to access routine dental care. It pertains to adolescents and adults.

Paediatric dentistry

Paediatric dentistry is concerned with comprehensive oral healthcare for children from birth to adolescence, including care for children who demonstrate intellectual, medical, physical, psychological and/or emotional problems. In addition, the specialty is concerned with the management of children with oral and dental developmental problems. Paediatric dentists form part of multidisciplinary teams involved in the management of children with complex problems such as cleft lip and palate and hypodontia. Services are delivered locally where possible in the community dental services. Children with more complex problems are treated at Charles Clifford Dental Hospital.

Oral surgery

Oral surgery deals with the treatment and on-going management of irregularities and pathology of the jaw and mouth that require surgical intervention. A review of oral surgery services conducted by the Dental Programme Board of Medical Education England recommended that commissioners should review how oral surgery services are provided in their area and improve their effectiveness, accessibility and cost efficiency.⁹⁷

Oral and maxillofacial surgery

Oral and maxillofacial surgery is a specialty requiring dual qualification in medicine and dentistry. Oral and maxillofacial surgeons treat people with conditions that require expertise from both medicine and dentistry such as head and neck cancers, salivary gland diseases, temporomandibular joint disorders, cysts and tumours of the jaws as well as numerous problems affecting the mouth such as mouth ulcers and infections.⁹⁸

Restorative dentistry

The specialty of restorative dentistry involves the study, diagnosis and management of people with diseases of the teeth and supporting structures including the care of those who have additional needs associated with disability. Restorative dentistry is the parent discipline for the mono specialties of prosthodontics, endodontics and periodontics. Prosthodontics involves the replacement of missing teeth and the associated soft and hard tissues by prostheses (crowns, bridges and dentures) which may be fixed or removable, or may be supported and retained by implants. Endodontics involves the diagnosis, prevention and treatment of diseases and injuries of the tooth root, dental pulp and surrounding tissue. Periodontics involves the diagnosis, treatment and prevention of disease and disorders of the gums and other structures around the teeth.

Oral medicine

The specialty of oral medicine involves the oral healthcare of people with chronic recurrent and medically related disorders of the mouth including their diagnosis and surgical management.

Oral and maxillofacial pathology and oral microbiology

Oral and maxillofacial pathology and oral microbiology are clinical specialities undertaken by laboratory-based personnel. The speciality of oral and maxillofacial pathology involves the diagnosis and assessment made from tissue changes

characteristic of disease of the oral cavity, jaws and salivary glands. The speciality of oral microbiology involves the provision of reports and advice based on the interpretation of microbiological samples following the clinical assessment of facial infection.

Dental and maxillofacial radiology

The specialty of dental and maxillofacial radiology involves all aspects of medical imaging to provide information about the anatomy, function and diseased states of the teeth and jaws.

Orthodontics

The specialty of orthodontics is concerned with the development, prevention and correction of irregularities of the teeth, bite and jaw.

Specialist services in primary care

The specialist services provided in a primary care setting in South Yorkshire and Bassetlaw are orthodontics and oral surgery. Special care dentistry services are provided in primary care by the community dental services as described above.

Oral surgery in primary care

There are five providers of oral surgery services in primary care in South Yorkshire and Bassetlaw commissioned to provide 2,972 episodes of care at a cost of £383,500 (Table 6.12). Most activity is commissioned in Doncaster. The cost per case varies by provider.

Table 6.12 Specialist primary care oral surgery provision South Yorkshire and Bassetlaw

Area	Providers (n)	Annual activity (n)	Annual cost (£)	Cost per case (£)	Waiting time
Bassetlaw	1	126	17,500	139	Over 4 weeks
Doncaster	3	1,998	239,000	120	4 weeks
Barnsley	1	848	127,000	150	Data not available

Source: NHS England, 2013

There is no primary care oral surgery service provision in Rotherham or Sheffield.

Information was not available on the number of referrals to the service, the number or types of activity, referral protocols, service specifications or contract end dates.

No information was available on the impact of the services on secondary care activity and costs and patient outcomes and experiences.

The South Yorkshire and Bassetlaw Area Team is currently procuring primary care oral surgery services in Rotherham and Sheffield and decommissioning activity from Sheffield Teaching Hospitals and Rotherham Hospital. The new services will provide 600 cases per annum in Rotherham and 1,200 cases per annum in Sheffield from two locations at a cost of £120 to £130 per case.

Orthodontics in primary care

Orthodontic treatment in primary care is commissioned using a currency of units of orthodontic activity (UOAs), usually via personal dental service agreements. A number of units of orthodontic activity are associated with courses of orthodontic treatment:

- 1 UOA - full and comprehensive orthodontic assessment
- 4 UOAs - orthodontic assessment and case treatment (patient aged below 10 years)
- 21 UOAs - orthodontic assessment and case treatment (patient aged 10-17 years)
- 23 UOAs - orthodontic assessment and case treatment (patient aged 18 years and over)

In 2013/14, 45,473 UOAs were commissioned across South Yorkshire and Bassetlaw at a cost of £4,713,000. The price for a UOA varied from £56.60 to £62.72 across the local authority areas and specialist providers often had a lower UOA rate than non-specialist providers (Table 6.13). This inconsistency may be exacerbated when it is considered that generalists may also need treatment planning and review by secondary care, which further inflates the cost of a course of treatment.

Table 6.13 Orthodontic activity in South Yorkshire and Bassetlaw, 2013/14

Area	Commissioned UOAs	Cost per UOA	Provider
Bassetlaw	2,710	£62.72	Generalist provision
Barnsley	10,076	£56.60	Specialist and generalist provision
Doncaster	40,457	£58.00 or £61.76	Specialist and generalist provision
Rotherham	8,114	£59.10 or £60.62	Specialist and generalist provision
Sheffield	37,359	£58	Specialist provision

Source: NHS England, 201/13

In Rotherham and Sheffield, key performance indicators have been included in the contracts to incentivise high quality service provision.

Most providers delivered their contracted activity in 2012/13. Providers in Bassetlaw and Doncaster under delivered on their contracts and providers in Barnsley over delivered (Table 6.14).

Table 6.14 Proportion of contracted UOA activity delivered in 2012/13

Area	Contracted UOAs delivered (%)
Bassetlaw	94.2
Barnsley	103.7
Doncaster	98.9
Rotherham	99.7
Sheffield	99.6

Source: NHS Dental Services, 2013

Based on the premise that 21 UOAs are awarded to assess and treat one person and that two case assessments are undertaken for every case start, primary care based orthodontic services in South Yorkshire and Bassetlaw should be able to provide orthodontic care to 4,487 people, which equates to 70% of its 12-year-old population estimated to be in need of treatment. However, in determining if availability of care meets demand, secondary care activity should be taken into account. Stephens' formula also includes a factor for adult orthodontics, which is not commissioned in primary care in South Yorkshire and Bassetlaw.

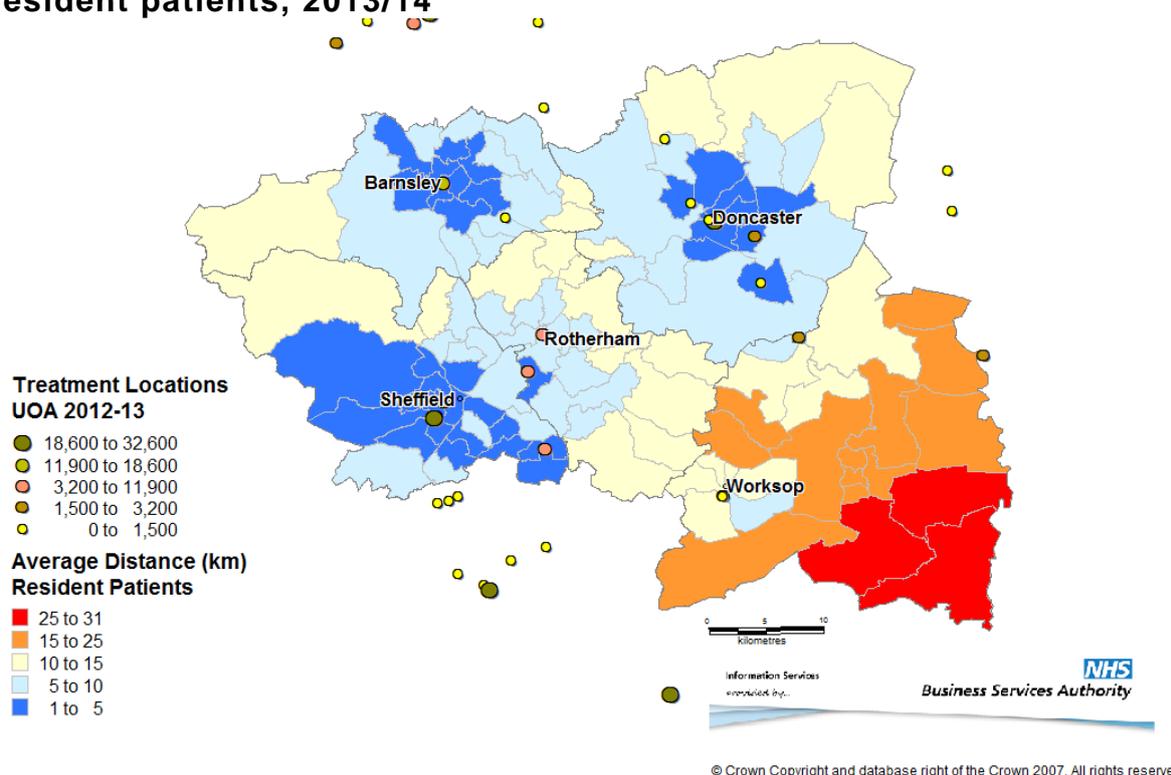
The estimated cost of a course of orthodontic treatment in primary care is £1,276, based on 22 UOAs at a cost of £58 per UOA.

Need and demand for orthodontic care is considered further in the section on hospital orthodontics.

Access to primary care orthodontic services

Residents in Rotherham travelled farther to receive orthodontic care when compared to other local authority areas in south Yorkshire and Bassetlaw (Figure 6.3). This is unsurprising given the small number of UOAs commissioned from providers in Rotherham.

Figure 6.3 Orthodontic treatment locations and distance travelled by resident patients, 2013/14



Source: NHS BSA, 2014

Patient flows will also affect access to orthodontic services. The majority (98%) of people living in South Yorkshire and Bassetlaw accessed local services. However 10% of people who accessed orthodontic services in South Yorkshire and Bassetlaw lived outside the area, which may have an impact on access for local residents. These figures should be monitored for any changes.

No further details were available for who is accessing orthodontic services and equity of service provision could not be determined.

Quality of orthodontic services

In South Yorkshire and Bassetlaw orthodontics is being provided by generalists as well as specialists, although there is no comparison of outcomes. Key performance indicators have been incorporated into contracts in Sheffield and Rotherham to try and improve quality of service provision.

The quality of services is monitored by the NHS Business Services Authority, which provides information to NHS England on whether contracts are outliers in certain areas of performance. In 2013/14 there were proportionately more assessments and reviews in South Yorkshire and Bassetlaw than the national average (Table 6.15). Training for dental practitioners in referring for orthodontic treatment may help reduce this figure.

Proportionately more contracts in South Yorkshire and Bassetlaw did not complete Peer Assessment Ratings (PAR) than the England average. The PAR score is a way of assessing the outcomes of orthodontic treatment on an individual provider basis.

Table 6.15 Flagged orthodontic areas South Yorkshire and Bassetlaw, 2013/14

Indicator	England (%)	South Yorkshire and Bassetlaw (%)
Assessments that are assess to fit appliance	42.6	35.3
Assessments that are assess and review	44.6	52.6
Contracts not meeting PAR scoring	34.2	38.1

Source: NHS England, 2014

There is a managed clinical orthodontic network in Sheffield and quality concerns are discussed within the network. No managed clinical orthodontic networks have been set up in the other local authority areas.

Hospital dental services

Specialist services in a secondary care (hospital) setting in South Yorkshire and Bassetlaw are provided by the district general hospitals and Charles Clifford Dental Hospital, part of Sheffield Teaching Hospitals NHS Foundation Trust. The district general hospitals primarily provide orthodontic and oral surgery services. Charles Clifford Dental Hospital provides the full range of dental specialties. In addition, Sheffield Children's Hospital and the Royal Hallamshire Hospital provide some services. Hospital based specialist services are accessed on referral only. A referral handbook is available for all the different specialties provided by Charles Clifford Dental Hospital, which includes referral protocols and referral forms. No information was available on referral processes for the other secondary care providers.

Care may be provided on an inpatient case, where a treatment or someone's medical condition requires a stay in hospital. Alternatively, care may be provided on an outpatient basis. The episode of care may be planned (elective) or unplanned (non-elective).

Under the terms of the Health and Social Care Act 2012, responsibility for commissioning currency and price setting rests with NHS England. Payment by results (PbR) is the payment system in England under which commissioners pay hospitals for each patient seen or treated, taking into account the complexity of healthcare needs. The two fundamental features of PbR are nationally determined currencies and tariffs. Currencies are the unit of healthcare for which a payment is made and can take a number of forms covering different time periods from an outpatient attendance or a prolonged stay in hospital for a long term condition. Tariffs

are the set prices paid for each currency. Within secondary care dentistry, oral surgery, orthodontics, maxillofacial surgery and paediatric maxillofacial surgery have nationally agreed tariffs. The tariffs for outpatient episodes of care are shown below (Table 6.16).⁹⁹ There are numerous national tariffs for inpatient care depending on the complexity of care provided. Additional factors determining the tariff include complexities in a patient's medical condition and length of stay in hospital.

Table 6.16 National tariffs for secondary care dentistry 2013/14

Speciality	First appointment (single professional)	First appointment (multi-professional)	Follow-up (single professional)	Follow-up (multi-professional)
Maxillofacial surgery	£191	£381	£135	£268
Paediatric maxillofacial surgery	£115	£181	£75	£75
Oral surgery	£120	£149	£76	£106
Orthodontics	£183	£251	£81	£115

Source: Department of Health, 2013

Despite nationally agreed tariffs, data reveals differences between secondary care providers in recording and coding of the classification of patients and the procedures. This prevents commissioners understanding the needs of the local population or the activity undertaken. Work being undertaken in Greater Manchester to develop a single operating model to code procedures and classify patients will enable informed commissioning decisions and provide robust benchmarked intelligence data.¹⁰⁰

Where there are no nationally agreed tariffs, local tariffs are used. Local health economies may use tariff flexibilities to support innovation¹⁰¹ facilitating development of new care pathways and technologies and improving quality.

Local tariff information was not available for this needs assessment.

Activity and costs of care

In 2013/14, there were 119,501 hospital episodes of care provided at a cost of £23,272, 933. Most hospital activity was carried out on an outpatient basis (Table 6.17), although the differences in tariff meant that spend on inpatient and outpatient activity was similar.

Table 6.17 Total activity South Yorkshire and Bassetlaw, 2013/14

Type	Activity (n)	Cost (£)
Inpatient	14,218	10,575,418
Outpatient	105,283	12,697,514
Total	119,501	23,272,933

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

The main provider of care was Sheffield Teaching Hospitals NHS Foundation Trust (Table 6.18).

Table 6.18 Activity and costs by provider, 2013/14

Provider	Activity (n)	Cost (£)
Barnsley Hospital NHS Foundation Trust	10,747	1,825,081
Doncaster and Bassetlaw NHS Foundation Trust	10,078	920,829
Sheffield Teaching Hospitals NHS Foundation Trust	81,615	14,430,767
Rotherham NHS Foundation Trust	13,977	3,631,139
Sheffield Children's NHS Foundation Trust	1,763	1,263,505
Other providers	1,321	1,201,612
Total	119,501	23,272,933

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

Most activity and spend was in the specialty of oral surgery (Table 6.19).

Table 6.19 Activity amongst different specialties, 2013/14

Specialty	Activity (n)	Cost (£)
Oral medicine	4,477	331,045
Maxillo-facial surgery	4,989	1,091,510
Paediatric maxillo-facial surgery	50	51,045
Paediatric dentistry	9,483	2,086,586
Restorative dentistry	29,100	4,657,083
Oral surgery	51,032	12,509,747
Orthodontics	20,370	2,545,916
Total	119,501	23,272,932

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

Inpatient care

Ideally hospital care is planned as an elective procedure. However, urgent cases may require non-elective treatment. In 2013/14, there were 14,218 inpatient episodes of care. Most inpatient activity was carried out as day case procedures. There were a significant number of non-elective cases in South Yorkshire and Bassetlaw (Table 6.20), which warrants further exploration.

Table 6.20 Inpatient activity, 2013/14

Activity type	Activity (n)	Cost (£)
Day case	11,644	6,180,599
Elective	1,227	2,484,233
Non-elective	1,347	1,910,586
Total	14,218	10,575,418

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

Most inpatient activity and spend was on oral surgery day cases (Table 6.21). It is unclear as to what activity in oral surgery is provided on an outpatient or day case basis, however the costs for the two different activity types are vastly different.

The inpatient paediatric dentistry activity is likely to be extraction of teeth under general anaesthesia. The most recent annual report from the Chief Medical Officer highlighted the high rate of dental extractions under general anaesthesia in children in South Yorkshire.¹⁰²

Table 6.21 Inpatient activity by specialty, 2013/14

Specialty	Day case (n)	Day case (£)	Elective (n)	Elective (£)	Non-elective (n)	Non elective (£)
Maxillofacial surgery	28	37,742	3	4,995	8	8,597
Paediatric maxillofacial surgery	37	40,567	2	1,888	10	8,449
Paediatric dentistry	1,495	878,545	111	64,908	164	97,892
Oral surgery	9,249	6,606,716	879	663,784	970	724,206
Orthodontics	3	6,067	0	0	0	0

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

Outpatient care

Outpatient appointments form the majority of activity in hospital dentistry. In 2013/14, there were 105,283 outpatient appointments at a cost of £12,697,515 (Table 6.22).

Table 6.22 Outpatient activity by appointment type, 2013/14

Appointment type	Activity (n)	Cost (£)
First appointment	23,191	2,263,600
Follow-up appointment	51,375	5,816,444
Follow-up procedure (when treatment carried out)	30,717	4,617,471
Total	105,283	12,697,515

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

The majority of outpatient activity was in the specialty of oral surgery, however, restorative dentistry accounted for the majority of outpatient spend.

Table 6.23 Outpatient activity by specialty, 2013/14

Specialty	First (n)	First (£)	Follow-up (n)	Follow-up (£)	Procedure (n)	Follow-up procedure (£)	Total cost
Oral medicine	1,387	9,012	2,783	196,145	307	44,778	249,935
Maxillo-facial surgery	1,647	213,855	2,878	248,370	329	43,099	505,324
Paediatric dentistry	935	39,285	2,133	58,782	4,441	839,331	937,398
Restorative dentistry	2,781	242,418	20,921	3,633,819	5,398	780,846	4,657,083
Oral surgery	15,478	1,539,536	17,074	1,255,674	6,402	928,546	3,723,756
Orthodontics	963	138,384	5,565	422,801	13,840	1,980,871	2,542,056

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

No data were available prior to April 2013 so it was not possible to analyse trends in hospital activity. Nor were data available on source of referral, waiting times or queues. Hospital activity by provider, specialty and case type for 2013/14 is summarised in Appendix II.

Hospital orthodontics

Most orthodontic cases can be treated in a primary care setting by specialists. When the orthodontic treatment or patient management is very complex, orthodontic treatment is carried out in hospital, for example children with cleft palates.

In 2013/14 most orthodontics in secondary care was carried out on an outpatient basis. The outpatient orthodontic spend across South Yorkshire and Bassetlaw was £2,542,056 (Table 6.23). This was the third highest spend within the dental specialties. Most follow-ups were provided as outpatient procedures rather than outpatient follow-ups. Outpatient procedures attract a higher tariff, the average of which was £143 compared to £81 for a follow-up

To determine whether the totality of orthodontic care in South Yorkshire and Bassetlaw meets local needs, the capacity of secondary care providers has been estimated using the following assumptions:

- it takes on average 18 months to complete orthodontic treatment
- monthly reviews are required hence 18 reviews are needed per case

Hence an approximation of the annual capacity of secondary care providers in South Yorkshire and Bassetlaw hospitals may be calculated by dividing the total number of follow-up and procedure appointments by 12, equating to 1,620 cases.

As there is an orthodontic retention phase at the completion of each treatment case, the number of retainers fabricated per year or number of cases PAR scored could be used as a more accurate proxy for the number of cases seen in secondary care in the future. This information was not available for this needs assessment.

Orthodontic need and provision in primary and secondary care

It is estimated that the annual capacity of primary care orthodontic services is 4,490 cases and of secondary care is 1,620. Thus the total capacity is estimated to be 6,110 cases.

Stephen's formula (Chapter 4) suggests that approximately 6,370 people need orthodontic treatment in South Yorkshire and Bassetlaw suggesting a possible 4% shortfall in capacity. This possible shortfall is within the bounds of acceptability as some people may travel to other areas for treatment and Stephen's formula also contains an allowance for adult treatment, which is not provided by the NHS in primary care.

Quality assurance in secondary care

Commissioning for Quality and Innovation (CQUIN) and Quality, Innovation, Productivity and Prevention (QIPP) provide frameworks to drive quality and cost effectiveness in secondary care. CQUIN funding is used to incentivise providers to deliver quality and innovation improvements above the baseline requirements set out in the standard NHS Contract. The CQUIN level for 2013/14 was set at 2.5% for all healthcare services commissioned through the NHS standard contract.^{101, 103}

NHS organisations have QIPP plans in place to address the quality and productivity challenge. Supporting these are twelve national workstreams designed to help NHS staff successfully deliver these changes. QIPP workstreams relate to running and staffing within NHS organisation as well as commissioning, contracting and digital technology.^{101, 102}

Local data on CQUIN and QIPP plans were not available and no other information was available on quality assurance of specialist services in a hospital setting.

Summary

- there is inconsistent provision of primary care specialist oral surgery services in the area with differences in tariffs amongst providers
- there are inconsistencies in the commissioning of primary care based orthodontic services including non-specialist provision
- equity of access to orthodontic services could not be established

- in respect to quality of orthodontic services, some providers are not PAR scoring sufficient cases, review rates are higher than nationally and there is unequal access to managed orthodontic networks
- the totality of orthodontic capacity is likely to meet local needs
- most hospital activity is provided on an outpatient basis and follow-ups are more likely to be coded as procedures than outpatient follow-ups in paediatric dentistry and orthodontics
- most spend is on oral surgery day cases and most activity is outpatient oral surgery; it is unclear what activity results in a day case rather than an outpatient tariff
- there are a significant number of non-elective oral surgery inpatient cases
- it is unclear what quality assurance processes are in place for secondary care specialist services

Key issues for consideration

- the feasibility of undertaking a health equity audit of access to dental services should be explored in view of variations in availability of and access to dental services across and within local authority areas and across different groups
- dental practices need to be supported to ensure that ethnicity data is captured on dental service activity forms to inform future needs assessments and health equity audits
- dental practices need to be supported to ensure that evidence-based guidance on fluoride varnish applications and recall intervals is implemented in practices. Key performance indicators to encourage evidence-based practice should be considered for inclusion in any new dental contracts
- domiciliary dental care provision has been highlighted as a priority area of work by the dental local professional network. Given the limited information on it within this oral health needs assessment, this work should be progressed to ensure equity of provision
- given the variation in provision and the limited information on activity and costs, NHS England may wish to consider commissioning or undertaking a more in-depth review of sedation services to support the development of a consistent model for anxious patients that incorporate sedation and behaviour management techniques
- given the limited information on unplanned dental care, NHS England may wish to consider a more in-depth review of unplanned dental services, which parallels the evaluation in Sheffield, to establish their cost effectiveness and equity

- given the limited information on community dental services, NHS England may wish to consider a more in-depth review of these services
- to help inform a more in-depth needs assessment for special care dental services in preparation for implementation of the national commissioning guide, robust activity indicators should be considered for incorporation into current community dental service contracts, together with the development of a managed clinical network in special care dentistry
- the review of general anaesthesia services should be completed and any findings considered by the dental local professional network to support improvements in service quality
- NHS England is developing a commissioning guide for oral surgery services. Provision and procurement in South Yorkshire and Bassetlaw should be reviewed against this framework when published in April 2015
- establishment of managed clinical networks in oral surgery and orthodontics should be considered to support improvements in and consistency of quality of service provision across the area
- a review of orthodontic services should be considered to explore ways of providing more equitable access, especially for the residents of Rotherham and to inform the development of a service model with a consistent UOA rate that incorporates key performance indicators including PAR scoring and that is delivered by specialists. This should be in line with the forthcoming commissioning guide for orthodontics
- NHS England may wish to consider working with secondary care providers to review secondary care local tariffs and develop and agree standard coding for secondary care dental activity to contain spend on secondary care and ensure value for money
- NHS England may wish to consider working with local clinical networks, PHE and providers to develop and incorporate quality assurance into secondary care contracts and in preparation for implementation of the soon to be published NHS England commissioning guides

7. Dental public health services

Prevention of oral diseases

Good oral health is essential for general health and wellbeing. Poor oral health can affect the ability to eat, speak and socialise normally. The main oral diseases are dental tooth decay, gum disease, and cancer. These are all largely preventable and are described in detail in chapter 4.

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. The risk of mouth cancer may be reduced by stopping smoking, drinking alcohol within recommended safe limits, eating a healthy diet and practising safer sex.

Approach to prevention

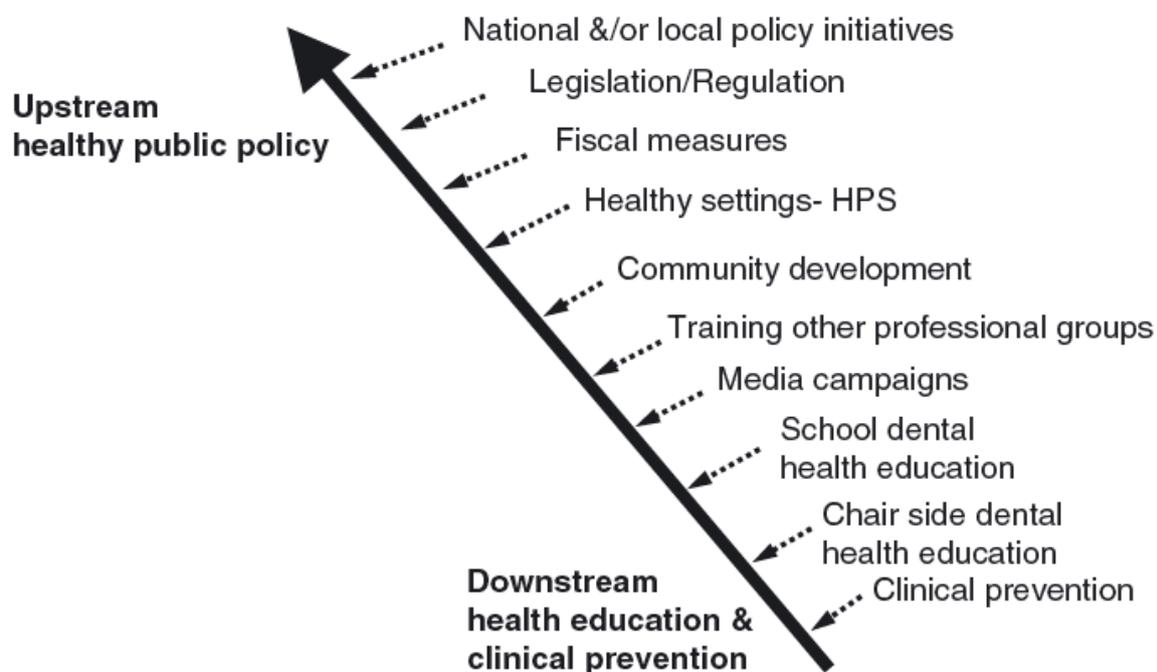
Previous government documents have highlighted inequalities in oral health^{9, 104, 105} and emphasised oral health promotion and preventive care for those perceived to be at higher risk of disease. *Choosing Better Oral Health: An Oral Health Plan for England* described a move away from a dental healthcare service focused mainly on treatment to a more preventive model.⁹ Recent thinking suggests that everyone should be given the benefit of advice regarding their general and dental health, not just those thought to be 'at risk', as not all new disease can be anticipated.¹⁰⁶

*Commissioning Better Oral Health for Children and Young People*¹² and *Oral Health Improvement for Local Authority and Partners*¹³ provide guidance for local authorities on commissioning evidence-based oral health improvement programmes. The guidance advocates a population approach with advice and actions for all with additional interventions aimed at those at higher risk of developing disease.

Population prevention can adopt many different approaches and options. Marmot suggests that focusing solely on the most disadvantaged will not reduce health inequalities sufficiently as everyone experiences some degree of health inequality and a proportionate universalism is advocated.⁵

Figure 7.1 highlights the 'upstream' actions that should complement specific 'downstream' interventions to prevent oral disease.

Figure 7.1 Upstream/downstream: options for oral disease prevention



Source: Watt, (2007)

The common risk factor approach, outlined in Chapter 4, integrates general health promotion by focusing on a small number of shared risk factors that can potentially impact a large number of chronic diseases, which includes oral health.

The Ottawa Charter⁽¹⁰⁷⁾ describes five priority areas for health promotion:

- building healthy public policy
- create supportive environments for health
- strengthen community action for health
- develop personal skills
- reorient health services

Population strategies include the whole population and targeted population approaches (risk approach).³⁵ The whole population approach assumes that everyone has some disease risk so targets interventions at the whole population. An example is water fluoridation. The targeted approach recognises that some population groups are at higher risk and targets prevention interventions accordingly, for example, supervised tooth brushing programmes in schools in more deprived areas.

Commissioning oral health improvement

Local authorities became responsible for improving the oral health of their population in April 2013. They are responsible for commissioning oral health promotion programmes and oral health surveys as part of the PHE dental public health intelligence programme. These surveys allow assessment of oral health needs, and aid the planning and evaluation of oral health programmes and monitoring of water fluoridation schemes.² Local authorities also have the power to propose water fluoridation schemes, a duty to conduct public consultations in relation to such proposals and powers to make decisions about such proposals.

It is essential that there is an integrated approach to commissioning and delivering oral health improvement programmes between local authorities, NHS England and PHE and that local oral health needs are considered in joint strategic needs assessments and joint health and wellbeing strategies.¹³ Sheffield and Barnsley have established oral health/oral health improvement advisory groups which include key stakeholder representation. The main purpose of these groups is to enable each local authority to fulfil its statutory duties with regards to oral health improvement and oral health inequalities.

Local authorities will be monitored on health improvement through the Public Health Outcomes Framework⁷ and Children's and Young People's Health Benchmarking Tool.¹²

Evidence-base for oral health improvement programmes

Smoke Free and Smiling,¹⁵ *Delivering Better Oral Health*,¹⁴ *Commissioning Better Oral Health*¹² and *Approaches for Local Authorities and their Partners to Improve the Oral Health of their Communities*¹³ provide the evidence base for oral health improvement interventions. The strategic principles described in the Ottawa Charter to tackle the wider determinants of health and reduce oral health inequalities should be the basis of oral health improvement approaches. Commissioned oral health improvement programmes should be based upon the evidence base and the needs of the population. A summary of the overall recommendations supporting the commissioning of oral health improvement interventions, based upon the strength of evaluation and research evidence, is described in Appendix III. The summary should be considered in the context of the explanatory evidence¹² and published recommendations.¹³

Commissioning oral health improvement across South Yorkshire and Bassetlaw

The resources to support commissioning of oral health improvement services in Sheffield are now part of the ring fenced public health grant held by Sheffield City Council. For 2013/14 this grant is approximately £130,000. Sheffield City Council commissions oral health improvement services from Sheffield Salaried Dental Service, part of Sheffield Teaching Hospitals NHS Foundation Trust

Sheffield's current oral health improvement strategy aims to improve the oral health of the people in Sheffield, especially children and older adults and to reduce oral health inequalities. The initiatives are described below (Tables 2 and 3, Appendix III).

Sheffield has an oral health advisory group that meets quarterly and engages with major stakeholders. The scope of this group could be widened to include representation from Sheffield City Council to ensure that oral health promotion initiatives are considered as part of this group.

The resources to support commissioning of oral health improvement services in Barnsley are now part of the ring fenced public health grant held by Barnsley Metropolitan Borough Council. The budget for 2013/14 is estimated at £60,000. The oral health improvement services are provided by Rotherham Community Dental Service, part of Rotherham NHS Foundation Trust.

Barnsley's current oral health improvement action plan focuses on 0-19 year olds and aims to widen dental access for children, increase the availability of fluoride and raise awareness about appropriate feeding habits (Tables 2 and 3, Appendix III). This plan is under review and a new strategy is being developed.

Barnsley Council has established an oral health improvement advisory group whose aim is to ensure oral health promotion initiatives are delivered and evaluated.

The resources to support commissioning of oral health improvement services in Rotherham are now part of the ring fenced public health grant held by Rotherham Metropolitan Borough Council. For 2013/14 the budget is approximately £78,000. The oral health promotion initiatives are provided by Rotherham Community Dental Service.

There is no current oral health improvement strategy in Rotherham. However, a new specification has been developed for the service and a strategy will be developed in 2014/15.

Rotherham does not currently have an oral health advisory group.

Oral health improvement services in Doncaster are commissioned by NHS England on behalf of Doncaster Metropolitan Borough Council. For 2013/14 the estimated budget is £48,000. There is no current oral health improvement strategy in Doncaster.

The responsibility for dental public health services for Bassetlaw lies with Nottinghamshire County Council, which is supported by the East Midlands PHE Centre. Therefore they are not described in this needs assessment.

Table 7.1 South Yorkshire local authority budgets for oral health improvement

Local authority	Provider	Budget (£)
Sheffield	Sheffield Salaried Dental Service	£130,000
Barnsley	Rotherham Community Dental Service	£60,000
Rotherham	Rotherham Community Dental Service	£78,000
Doncaster	Doncaster Community Dental Service	£48,000

Oral health improvement programmes in South Yorkshire

South Yorkshire local authorities commission a range of oral health improvement programmes with a particular focus on improving the oral health of children and vulnerable adult groups. Midstream interventions include oral health training for the wider professional workforce and public health events held during Oral Cancer Action Month and National Smile Month. Examples of downstream interventions include targeted supervised tooth brushing schemes and fluoride varnish schemes that focus on improving the oral health of more vulnerable young children who are at risk of poor oral health. The programmes include universal and targeted approaches most of which are supported by some, sufficient or strong evidence of effectiveness. Local authorities should ensure current approaches are complemented by upstream policies influencing national government policy and implementing local policies to improve oral health. This may include affordable healthier food and drink in libraries and leisure centres.

Oral health improvement for children and young people

Tackling inequalities requires collaborative and partnership working to improve health outcomes. Oral health pathways should be integrated and embedded in all children's services at strategic and operational levels. Oral health improvement should incorporate a suite of evidence based programmes that adopt a life course approach and are based upon the principles of proportionate universalism. Programmes should have population wide and targeted elements so from birth to school age, children should pass through each element of the programme receiving a package of evidence based preventive care. Evidence based oral health improvement programmes for children and young people aged up to 19 years are summarised in Appendix III (Table 1).

Based on the totality of evidence, health visitor led programmes like 'Brushing for Life' where young children are provided with dental packs including fluoridated toothpaste, toothbrush and a dental information leaflet are recommended and commissioned by Sheffield, Barnsley, Rotherham and Doncaster local authorities. Similarly, supervised tooth brushing with fluoridated toothpaste in targeted childhood settings to prevent tooth decay is recommended and commissioned in Sheffield. Oral health is being integrated into existing public health programmes, healthy food and drink policies in childhood settings and infant feeding policies. Oral health training of the wider professional workforce working with families and young children is also recommended and such programmes are commissioned by all local authorities in South Yorkshire.

Appendix III (Table 2) describes the range of oral health improvement programmes focusing on children and young people that are commissioned by each of the local authorities in South Yorkshire. The strength of evidence of effectiveness is included.

Oral health improvement programmes for vulnerable adults in South Yorkshire

Certain circumstances may place people at higher risk of poor oral health including:

- frail elderly and housebound
- medical conditions which have a direct effect on the oral cavity or side-effects of medications eg dry mouth.
- disabilities which affect the ability to maintain good oral hygiene
- homelessness
- traveller communities
- prison communities
- drug and alcohol abuse

Maintaining good oral and general health in later life is also important. Oral health improvement programmes for vulnerable groups should reflect the changing needs

of society including the expectations of ageing adults who retain natural teeth throughout life. Many frail or dependent adults may also have potentially complex oral healthcare needs. Improved oral health may contribute to older people enjoying independent living. Regular training for frontline health and social care professionals working with adults at high risk of poor oral health and incorporation of oral health promotion into existing services for adults at high risk of poor oral health are both recommended in new guidance.⁹ Community health and social care service specifications should ensure oral health is included in care plans and is in line with safeguarding policies.¹³ Oral health training for the wider health and social care professional workforce working with more vulnerable adult groups including older people and those with additional needs is commissioned by all the local authorities in South Yorkshire.

Currently commissioned oral health improvement programmes in South Yorkshire that place focus on improving the oral health of more vulnerable groups are summarised in Appendix III (Table 3).

Developing capacity of the oral health improvement workforce

The most efficient way to improve oral health is to embed it within existing services at strategic and operational levels. Across Yorkshire and The Humber in many local authorities, oral health promotion teams are commissioned to provide oral health promotion training, expertise and support to a range of groups including health, social care and education professionals. This enables evidence based oral health improvement programmes to be delivered through multiple interventions by non-dental professionals.

The transfer of commissioning of the Healthy Child Programme to local authorities provides opportunities to integrate oral health in local service specifications for health visitors and school nursing. Local authorities also have responsibility for commissioning residential care, which provides opportunity to integrate oral health into residents' care plans.

Dental nurses can apply fluoride varnish to teeth either on prescription from a dentist or direct as part of a structured dental health programme. Training dental nurses to apply fluoride varnish may support community programmes and dental practices to deliver this intervention and increase the availability of fluoride to priority groups. Previously, dental nursing training in fluoride application has been provided in Sheffield. Health Education England Yorkshire and The Humber have agreed to commission training in Leeds, York and Sheffield during 2015.

Reorienting dental practices towards prevention

Oral health promotion teams have been working with local general dental practices in some parts of Yorkshire and Humber to promote prevention in practice in line with *Delivering Better Oral Health*.¹⁴ This guidance describes evidence based interventions to prevent oral disease including applications of fluoride varnish and fissure sealants as well as dietary advice and advice regarding alcohol and tobacco use with signposting to relevant services when indicated. It is important that clinical care provided by primary care dental teams is underpinned by evidence based prevention.

Dental practice data demonstrates that whilst fluoride varnish rates are increasing, large proportions of children in South Yorkshire do not receive applications (Chapter 5), fissure sealant rates are low and limited data are available on dental practice referrals to NHS stop smoking services. These clinical prevention based interventions are funded by NHS England through the general dental services contracts. During 2015, Health Education England Yorkshire and The Humber are commissioning training for primary care dental teams to support the implementation of *Delivering Better Oral Health*.

Making Every Contact Count is a long-term strategy to ensure that all NHS staff take every opportunity to help people make informed choices about their health-related behaviours. In the Humber a tailored primary dental care team *Making Every Contact Count* training programme was developed. This training, now commissioned by the Humber local authorities, recognises that dental teams are well placed to help patients adopt healthier lifestyles thereby contributing to improving and reducing inequalities in health by providing healthy chats to their patients.

Taking forward local oral health improvement within local authorities

As described previously, some local authorities in Yorkshire and The Humber have developed oral health improvement advisory groups. These groups include representatives from key stakeholder groups. They provide a forum in which oral health improvement strategies and programmes can be developed and monitored. Currently there are oral health improvement advisory groups set up in Sheffield and Barnsley.

The majority of the current oral health improvement programmes in South Yorkshire follow a targeted population approach. As described previously, whole population prevention approaches are also important to further reduce inequalities in oral health in line with the Marmot principle of universal proportionality.

Water fluoridation is considered as a whole population approach to improving oral health and is associated with reductions in tooth decay in populations ^(2, 108-112). It was also found to have an effect over and above that of other sources of fluoride, particularly toothpaste. There are no water fluoridation schemes in South Yorkshire, however, in Sheffield there is an area of the south east of the city (including the neighbourhoods of Mosborough, Halfway, Beighton, Westfield, Hackenthorpe, Birley, Sothall, Waterthorpe and Owlthorpe) receiving water that is naturally fluoridated although not to the optimal level for prevention of tooth decay. This area covers approximately 10% of the population of the city. An analysis undertaken in 2008 found that neighbourhoods with above average deprivation receiving fluoridated water had significantly lower levels of tooth decay than areas of similar deprivation in Sheffield not receiving fluoridated water. Hence, even though at a sub-optimal level, fluoridated water has had a positive effect on tooth decay experience in schoolchildren living in more deprived areas in Sheffield.

In light of their statutory role and responsibilities, local authorities should consider the case for water fluoridation in the context of local needs and the range of oral health improvement programmes currently commissioned and with reference to *Commissioning Better Oral Health*. The legal aspects and the technical issues regarding the introduction of water fluoridation scheme should also be considered.

Responsibility for commissioning health visitors is moving to local authorities and it is essential that oral health is part of health visitor and school nurse programmes and included in service specifications. Similarly, specifications for care homes should ensure oral health is considered on entry to a home and is integral to the daily care of residents.

Local authorities can also influence local and national government including local fiscal policies to improve oral and general health.

Dental public health intelligence programme

Standardised and nationally co-ordinated surveys of oral health have been undertaken annually since 1985, which means that England has one of the best oral health databases in the world. The most recently completed survey (2013/14) focussed on children aged five and on 12-years-old attending special support schools. The 2014/15 survey will focus on five-year-old schoolchildren.

The *NHS Bodies and Local Authorities (Partnership Arrangements, Care Trusts, Public Health and Local Healthwatch) Regulations 2012 SI 3094* ² outlined the responsibilities of local authorities to secure the provision of oral health surveys to facilitate:

- the assessment and monitoring of oral health needs

- the planning and evaluation of oral health promotion programmes
- the planning and evaluation of the arrangements for the provision of dental services
- the reporting and monitoring of the effects of any local water fluoridation schemes

The surveys are now undertaken on an annual basis as part of the Dental Public Health Intelligence Programme to provide detailed estimates of disease prevalence and severity. Data is provided at lower tier local authority level. The surveys of five-year-old schoolchildren, undertaken every two years, provide data for the dental indicator included in the Public Health Outcomes Framework. The National Dental Public Health Intelligence Programme is coordinated by PHE, which has a national lead and the North West PHE Knowledge and Intelligence team are responsible for developing the national protocols and quality assuring the programme. The national lead for the programme is supported locally by a team of dental epidemiology coordinators at PHE centre level.

Local authorities are also required to participate in any oral health survey conducted or commissioned by the secretary of state.

All local authorities in South Yorkshire commission oral health surveys. The details are described below (Table 7.2). It is essential that service specifications are in place to support the planning and delivery of oral health surveys. Protocols recommend a minimum sample size of 250 examined children per lower-tier local authority from a minimum of 20 schools. This is unlikely to produce a sufficiently large sample to facilitate local planning for many areas, thus larger samples will be required. Discussion between local authority commissioners and consultants in dental public health on the size and type of sample required to meet local needs will be helpful. For the latest survey of three-year-old children, the sample size in some local authority areas was too small to give reliable population estimates. Service specifications should include performance indicators to ensure providers deliver the surveys in line with national protocols.

Table 7.2 South Yorkshire local authority dental survey providers.

Local authority	Provider	Contract value (£)
Sheffield	Sheffield Salaried Primary Dental Care Service	22,000
Barnsley	Rotherham Community Dental Service	Decided year on year
Rotherham	Rotherham Community Dental Service	14,750
Doncaster	Rotherham Community Dental Service	10,000

Currently, there is a limited support network available for local authorities to fulfil their statutory dental public health functions. Developing a Yorkshire and the Humber oral health improvement commissioners' network to facilitate learning and sharing of good practice across the region may improve outcomes.

Summary

- local authorities are responsible for improving the oral health of their population and for commissioning oral health improvement programmes and oral health surveys. They also have powers relating to making proposals regarding water fluoridation for their local population
- all local authorities have a specified budget for commissioning oral health improvement programmes
- a range of universal and targeted oral health improvement programmes are implemented by local authorities in South Yorkshire mostly for which there is some, sufficient or strong evidence of effectiveness
- most oral health improvement programmes are directed towards children
- Sheffield and Barnsley have oral health improvement advisory groups that ensure the delivery and evaluation of their oral health improvement programmes
- local authorities are responsible for commissioning care homes and school nursing services and will soon be responsible for commissioning health visiting services providing opportunity for integration of oral health improvement into these services
- all local authorities commission oral health surveys although samples are not always large enough to provide reliable estimates at sub local authority level

Key issues for consideration

- local authorities should consider including oral health in joint strategic needs assessments and health and wellbeing strategies
- local authorities should consider reviewing current provision of oral health improvement services and developing oral health improvement strategies that address local needs and reflect the principles of *Commissioning Better Oral Health* and NICE guidance
- local authorities should work together to explore the feasibility of jointly commissioning oral health improvement and dental epidemiology services to support the efficient management of limited resources

- local authorities should ensure that contracts for dental public health services are supported by service specifications that detail a process for assuring the quality of programmes
- a combination of evidence based universal and targeted activities are required to support reducing inequalities in oral health. Upstream interventions should be complemented by downstream interventions
- local authorities should consider the case for water fluoridation in the context of local needs, current oral health improvement initiatives and national guidance
- oral health improvement should be an integral part of the work of health visitors and school nurses and should be included in specifications for these services
- service specifications for care homes should include a responsibility for oral health that incorporates an oral health assessment on entry, daily mouth care in care plans of residents and regular access to an NHS dentist
- while most oral health improvement activities focus on children, consideration should be given to ensuring programmes support oral health improvement for more vulnerable adults
- evaluation should be an integral part of all oral health improvement programmes to guide future commissioning
- Doncaster and Rotherham may wish to consider developing oral health advisory groups to oversee the development, delivery and evaluation of oral health improvement programmes
- all local authorities should continue to commission oral health surveys, including surveys to support the public health outcomes framework
- service specifications should be in place to support the planning and delivery of the surveys. This should include robust performance monitoring arrangements to ensure that the survey is completed in line with the national protocol
- where appropriate, consideration should be given to increasing sample size together with promoting participation to provide reliable data to support the planning and evaluation of dental services and oral health improvement programmes
- PHE should explore developing a Yorkshire and The Humber Oral Health Improvement Commissioners Network to facilitate learning and sharing of good practices

8. Patient and public engagement

The views of the residents of South Yorkshire and those of patients are pivotal when assessing the need and demand for dental and oral health improvement services and also in planning such services. The Health and Social Care Act 2012 describes the legal duty of NHS England to enable both patients and carers to participate in commissioning, ensuring that health services, including dental services reflect the needs of local people.²

Using different sources of information, this chapter looks at general attitudes to dentistry and oral health, as well as access and barriers to routine dental care in South Yorkshire and Bassetlaw.

GP patient survey

The dental questions on the annual GP patient survey provides information about patients' experience of accessing primary care dental services, the results of which are provided at national, subnational and area team level.

In the 2014 GP survey, 94% of the residents of South Yorkshire and Bassetlaw who tried to get a dental appointment were successful, which was higher than Yorkshire and The Humber (93%) and national (93%) figures. Also, a greater proportion of people in South Yorkshire and Bassetlaw rated their overall experiences of NHS dental services as positive (89%) than in Yorkshire and The Humber (86%) and nationally (84%). A small proportion reported their experiences as fairly poor (3%) and very poor (3%) comparable with the national average (4% and 3% respectively).

The most common reasons cited for people in South Yorkshire and Bassetlaw for not attempting to visit an NHS dentist were that they did not need to visit a dentist (24%), stayed with a dentist who went private (12%), do not like going to the dentist (11%), did not think they could access an NHS dentist (9%) or thought dental services were too expensive (4%).¹¹³

Friends and Family Test¹¹⁴

From April 2015, dental practices will be required to implement the Friends and Family Test. This will provide an opportunity for patients to provide feedback on their experience of dental services so that this information can be used to improve services. The results will be displayed by dental practices and published on the NHS Choices website.

Patient and public engagement in Barnsley

Healthwatch Barnsley have appointed active volunteers, including 15 adult and five junior Healthwatch Champions who seek the views of the local community regarding local health and social care services, including dental services. Questionnaires to assess the accessibility of dental services and patient experiences were completed by over 900 local people between April 2013 and July 2014. Preliminary findings show that most respondents access NHS dental services. However, significant numbers of local people do not access a dentist on a regular basis and only attend for urgent care. Reasons cited for this behaviour pattern included removal from the practice list for non-attendance at appointments, difficulties in paying for treatment and long waiting times for routine appointments. Despite this, feedback included positive comments about the quality of care received.

Of the Barnsley residents who responded to the Yorkshire and The Humber Adult Oral Health Survey 2008:

- 71.3% reported that their last visit to the dentist was within the last year, which was comparable to Yorkshire and The Humber (73.4%)
- for those respondents without any natural teeth, 66.2% reported that their last visit was at least five years ago, which was higher than Yorkshire and The Humber (46.2%)
- two thirds (66.5%) reported that they visited the dentist for regular dental check-ups, which was similar to Yorkshire and The Humber (68.9%)
- while 21.1% of respondents reported visiting the dentist only when they experienced problems, (similar to the Yorkshire and The Humber figure of 19.6%), more people aged 75 years and older were symptomatic attenders (44.7%), with only 33.9% of this older age group reporting that they visited the dentist for a regular check-up
- approximately 70% had not experienced difficulties accessing routine care or when they were having problems, which was similar to the Yorkshire and The Humber figures
- three quarters (77.5%) of parents or carers of children under 18 years old did not have problems accessing NHS dental care (excluding orthodontic treatment) for their child, which was slightly higher than the Yorkshire and The Humber figure (71.4%)

Reported barriers to accessing routine dental care included no dentists taking on patients (40.7%), cost (36.0%), lack of time or inconvenient surgery opening hours (28.8%), dentists only treating privately (28.7%) and being scared of the dentist or dental treatment (21.6%).

Similar barriers were reported to accessing urgent care and included no dentists taking on patients (39.8%), cost (26.8%) and lack of time or inconvenient surgery opening hours (21.9%).

Half of those who had found it difficult to access dental care when they were having problems did not need to seek help from others. Some respondents approached a pharmacist (21.3%) or a doctor (15.6%).

Patient and public engagement in Rotherham

Healthwatch Rotherham collected qualitative views from the local population in January 2013 to June 2014 to ascertain their satisfaction with dental services. The results had not been analysed at the time of writing this report.

Of the Rotherham residents who responded to the Yorkshire and The Humber Adult Oral Health Survey 2008:

- two thirds (69.9%) reported that their last visit to the dentist was within the last year), which was slightly lower than for Yorkshire and The Humber (73.4%)
- for those respondents without any natural teeth, 48.5% reported that their last visit was at least five years ago, which was similar to Yorkshire and The Humber (46.2%)
- two thirds (66.2%) reported that they visited the dentist for regular dental check-ups, which was similar to Yorkshire and The Humber (68.9%)
- fewer people aged 75 years and older reported visiting the dentist for regular dental check-ups (55.3%)
- twenty-two per cent reported only visiting when they experienced problems, which was similar to Yorkshire and The Humber (19.6%)
- just over 70% had not experienced difficulties accessing routine care and 65.3% reported having no difficulties when accessing care when they had a problem, which were similar to Yorkshire and The Humber
- more than three quarters (79.2%) of parents or carers of children under 18-years-old reported that they did not have problems accessing NHS dental care (excluding orthodontic treatment) for their child, which was higher than Yorkshire and The Humber (71.4%)

Reported barriers in accessing routine care included no dentists taking on patients (47.1%), cost (37.8%), dentists only treating privately (36.2%), lack of time or inconvenient surgery opening hours (23.9%) and being scared of the dentist or dental treatment (20.5%).

Barriers to accessing urgent care included no dentist taking on patients (50.7%), dentists only treating privately (39.0%), treatment was too expensive (33.9%), being scared of the dentist or dental treatment (20.0%) and lack of time or inconvenient surgery opening hours (15.7%).

Approximately half of those who reported difficulty in accessing care when they were having problems did not need to seek help from others. Some respondents approached a pharmacist (28.1%), a doctor (8.1%) or an accident and emergency department (6.5%).

Patient and public engagement in Doncaster

Of the Doncaster residents who responded to the Yorkshire and The Humber Adult Oral Health Survey 2008:

- more than two thirds (70.9%) reported that their last visit to the dentist was within the last year, which was comparable to Yorkshire and The Humber (73.4%)
- for those respondents without any natural teeth, 45.5% reported that their last visit was at least five years ago, which was similar to Yorkshire and The Humber (46.2%)
- two thirds (68.2%) reported that they visited the dentist for regular dental check-ups, which was similar to Yorkshire and The Humber (68.9%)
- while 22.7% reported visiting the dentist only when they experienced problems (similar to Yorkshire and The Humber of 19.6%), more people aged 75 years and older were symptomatic attenders (33.9%), with only 43.5% of this older age group reporting that they visited the dentist for a regular check-up
- approximately 70% did not experience difficulties accessing routine care or when they were having problems (62.4%), which were similar to Yorkshire and The Humber
- three quarters (75.4%) of parents or carers of children under 18 years of age did not have a problem accessing NHS dental care (excluding orthodontic treatment) for their child, which was slightly higher than Yorkshire and The Humber (71.4%)

Reported barriers in accessing routine care included no dentists taking on patients (56.7%), cost (30.6%), dentists only treating privately (30.0%), lack of time or inconvenient surgery opening hours (17.2%) and difficulty in getting to the dentist (12.4%).

Barriers to accessing care when experiencing problems included no dentist taking on patients (39.8%), treatment too expensive (26.8%) and lack of time or inconvenient surgery opening hours (21.9%).

Approximately half of those who had found it difficult to access care when they were having problems did not need to seek help from others. Some respondents approached a pharmacist (21.8 %), accident and emergency department (12.7%) or a doctor (9.6%).

Patient and public engagement in Sheffield

Between January 2014 and March 2014 Healthwatch Sheffield conducted a questionnaire survey of 160 local people to assess experience of accessing dental services. Although detailed analysis is underway, most respondents were satisfied with local primary care dental services. Over 85% reported they were provided with an appointment when it suited them. Nearly 70% of respondents felt that services could not be improved and over 90% reported receiving the help, treatment or advice that they requested. However, some people reported the costs of dental treatment and waiting times being a problem.

Of the Sheffield residents who responded to the Yorkshire and The Humber Adult Oral Health Survey 2008:

- more than three quarters (78.2%) reported that their last visit to the dentist was within the last year, which was comparable to Yorkshire and The Humber (73.4%)
- for those respondents without any natural teeth, 48.9% reported that their last visit was at least five years ago, which was similar to Yorkshire and The Humber (46.2%)
- almost three quarters (72.3%) reported they visited the dentist for regular dental check-ups, which was higher than Yorkshire and The Humber (68.9%)
- a smaller proportion (16.9%) reported only visiting the dentist when they experienced problems, which was less than Yorkshire and The Humber (19.6%)
- while 16.9% reported visiting the dentist only when they experienced problems (similar to Yorkshire and The Humber of 19.6%), more people aged 75 years and older were symptomatic attenders (32.3%), with only 41.2% of this older age group reporting that they visited the dentist for a regular check-up
- just over 70% had not experienced difficulties accessing routine care and 64.8% reported having no difficulties when accessing care when they had a problem, which was similar to Yorkshire and The Humber

- three quarters (78.3%) of parents or carers of children under 18 years of age had not had problems accessing NHS dental care (excluding orthodontic treatment) for their child, which was higher than Yorkshire and The Humber (71.4%)⁷⁵

Reported barriers to accessing routine care included cost (38.4%), dentists only treating privately (33.9%), no dentist taking on patients (31.2%), lack of time or inconvenient surgery opening hours (24.9 %), and being scared of dentists or dental treatment (13.9%).

Barriers to accessing urgent dental care included dentists only treating privately (39.6%), no dentist taking on patients (33.2 %), cost (33.0 %), lack of time or inconvenient surgery opening hours (30.5%) and being scared of the dentist or dental treatment (12.3%).

Approximately half of those who had found it difficult to access care when they were having problems did not need to seek help from others. Some approached a pharmacist (21.2%), a doctor (14.4%) or an accident and emergency department (3.7%).

Healthwatch Sheffield, in collaboration with the University of Sheffield has collated some views of what local people consider important about access to an emergency dentist (2014). The following are some views expressed:

- the emergency dentist should be at a reasonable distance that is easily accessible with public transport
- there should be a handover process to ensure appropriate information is relayed from the emergency dentist to the person's regular dentist
- the emergency dental service should have staff trained in caring for people with learning disabilities

Summary

- the overall experience of primary care dental services of people in South Yorkshire and Bassetlaw is positive
- more than three quarters of parents and carers across South Yorkshire and Bassetlaw report adequate access to primary care dental services
- the main reported barriers to NHS dental access across the area include dentists not taking on patients, costs, lack of time and convenience of appointments
- people older than 75-years are more likely to be symptomatic attenders and not attend for routine dental check-ups

- residents in Barnsley with no natural teeth are much less likely to visit a dentist than similar people nationally. This has important consequences due to the increasing incidence of mouth cancer seen in the area (Chapter 5)
- people in Sheffield have suggested the emergency dental services should be easily accessible via public transport, be appropriate for vulnerable groups and should relay information to the necessary healthcare professional

Key issues for consideration

- NHS England, local authorities and PHE should engage with local Healthwatches to ascertain public views regarding access to and quality of dental services. Local people's views should be reflected when commissioning services and developing oral health improvement strategies
- NHS England, PHE and local Healthwatch organisations should work together to ensure people receive accurate information on how to access dental services and which practices are accepting new NHS patients
- PHE should ensure that the views of patients and the public are sought in the consultation process for this oral health needs assessment

9. Next steps

This needs assessment is an on-going shared planning resource to enable locally prioritised actions. The next stage is for NHS England, local authorities and PHE to develop a prioritised list of actions based on the evidence of effectiveness, local organisational structures and the potential for greatest impact. Review of the actions should be planned from the outset to evaluate their impacts.

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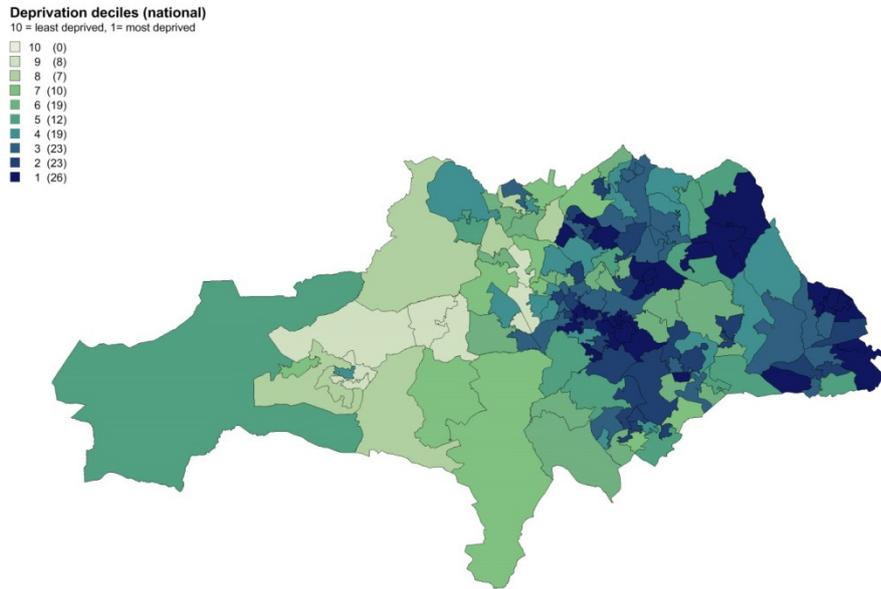
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Appendix I

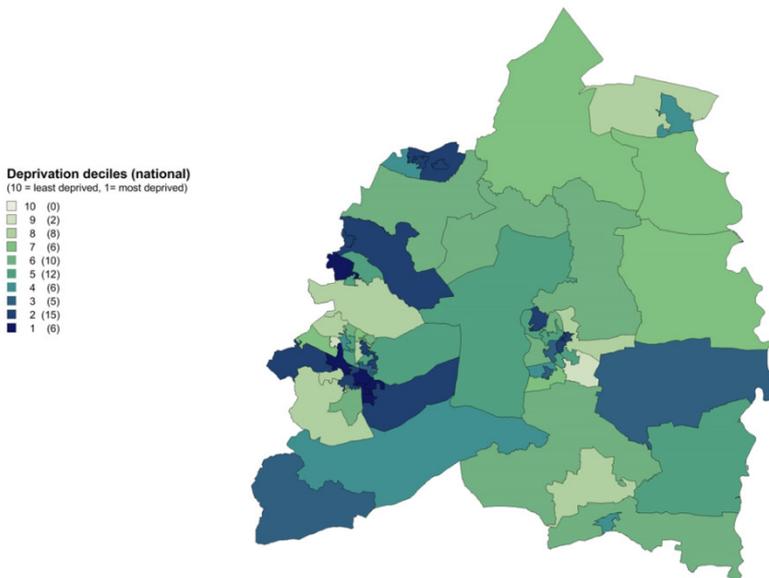
Figure I Deprivation by decile (national) by LSOA in Barnsley (IMD 2010)



Source: English indices of deprivation 2010, DCLG; Map produced by PHE Knowledge and Intelligence Team Northern and Yorkshire. © Crown copyright and database rights 2014 Ordnance Survey 100016969 Contains National Statistics data © Crown copyright and database right 2014

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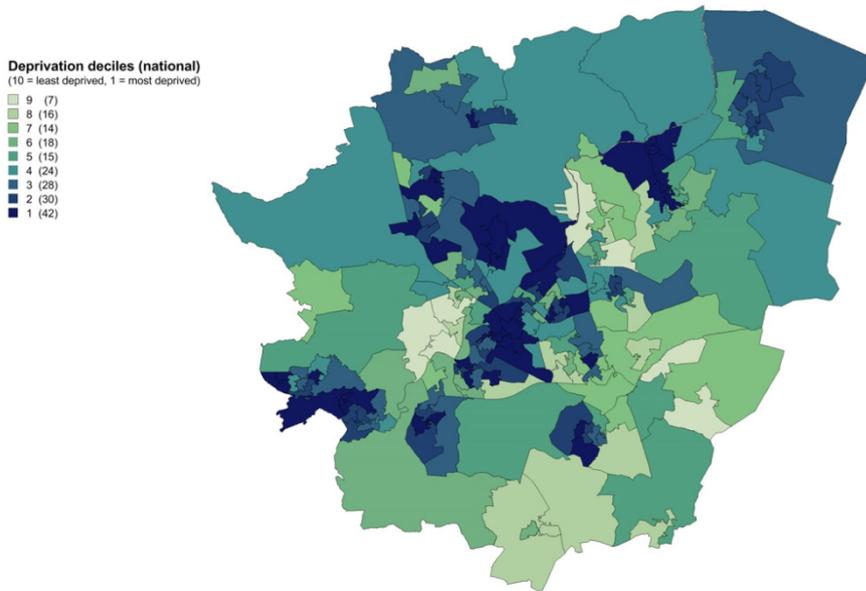


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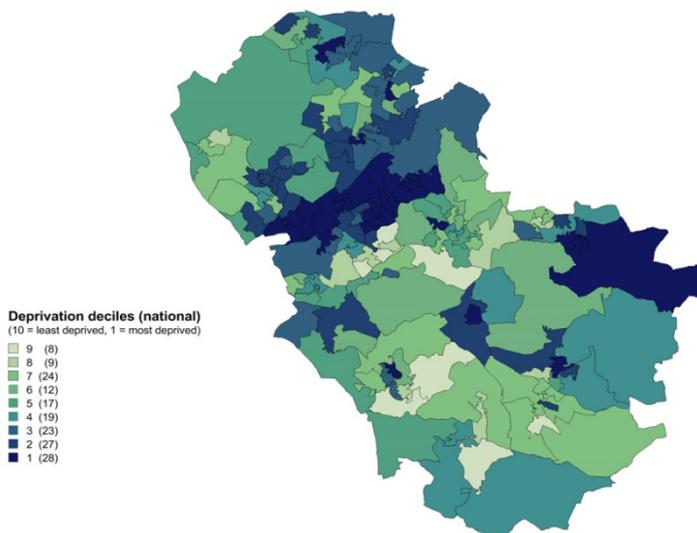
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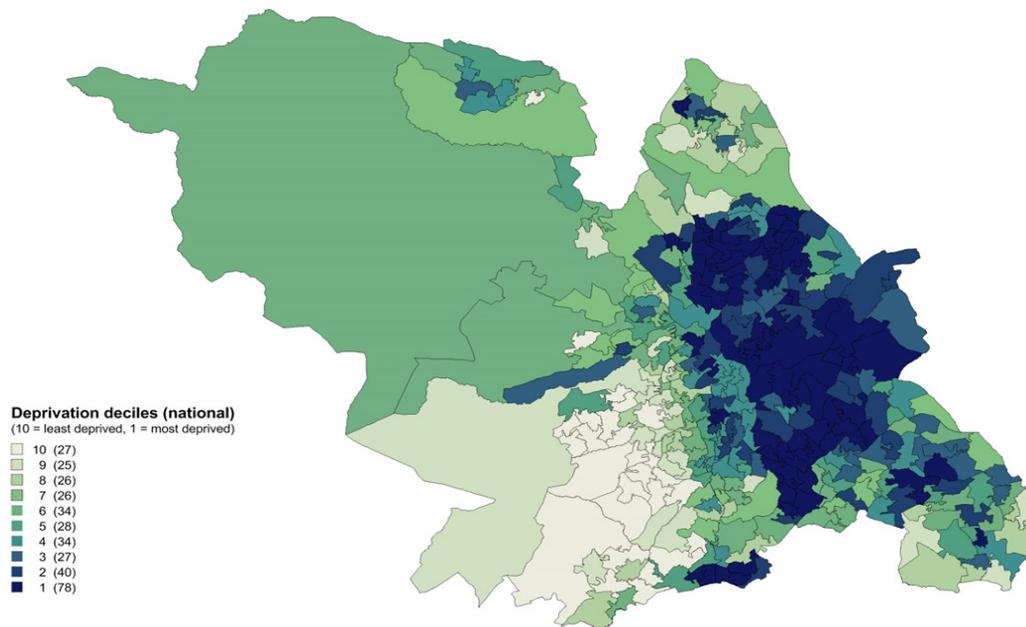


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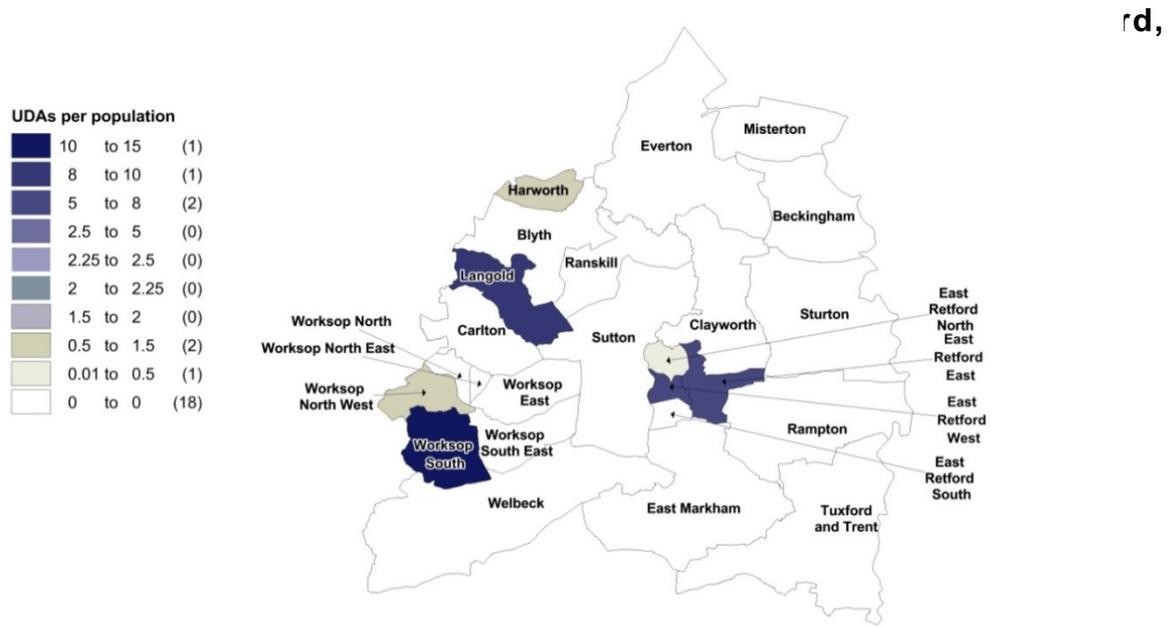
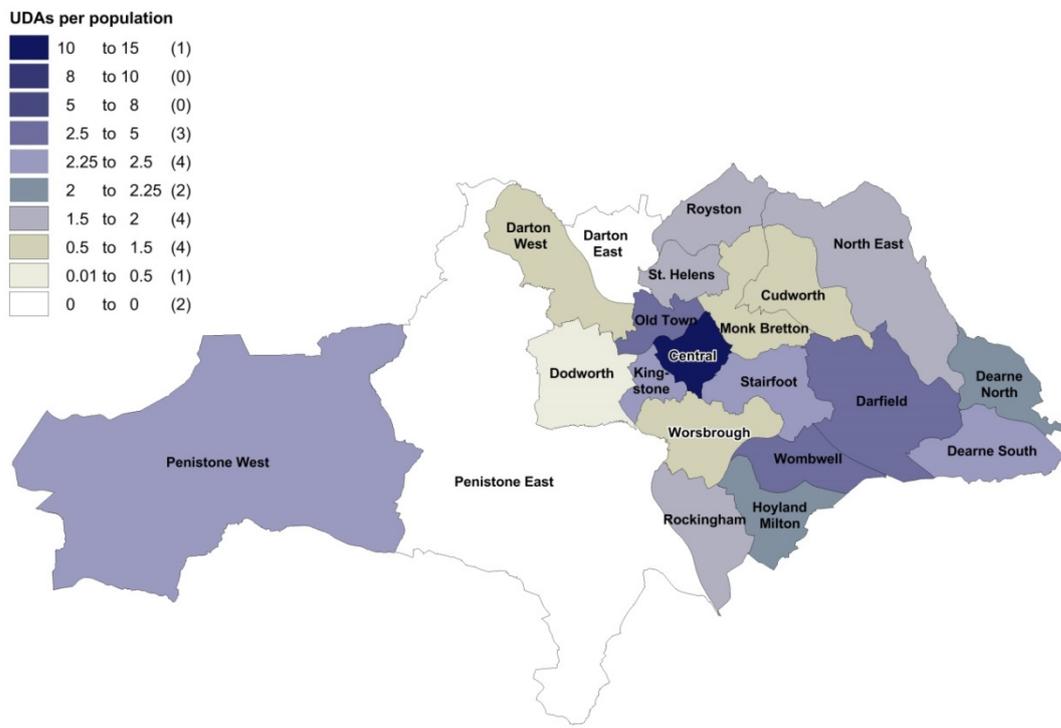
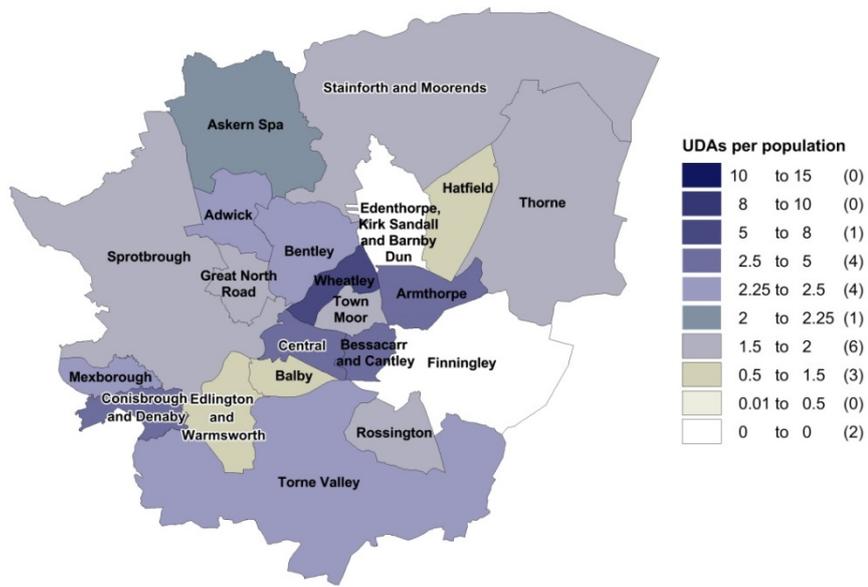


Figure II UDAs commissioned per population in Barnsley by ward, 2012/13



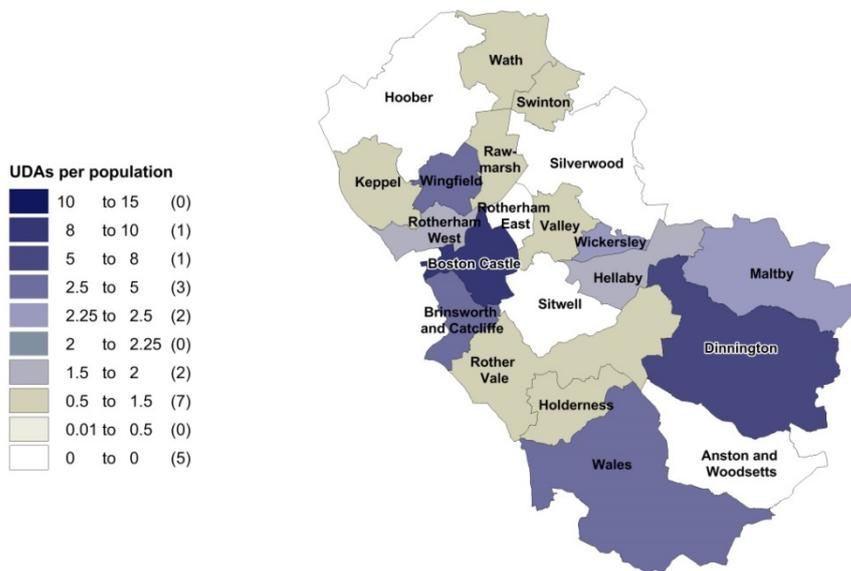
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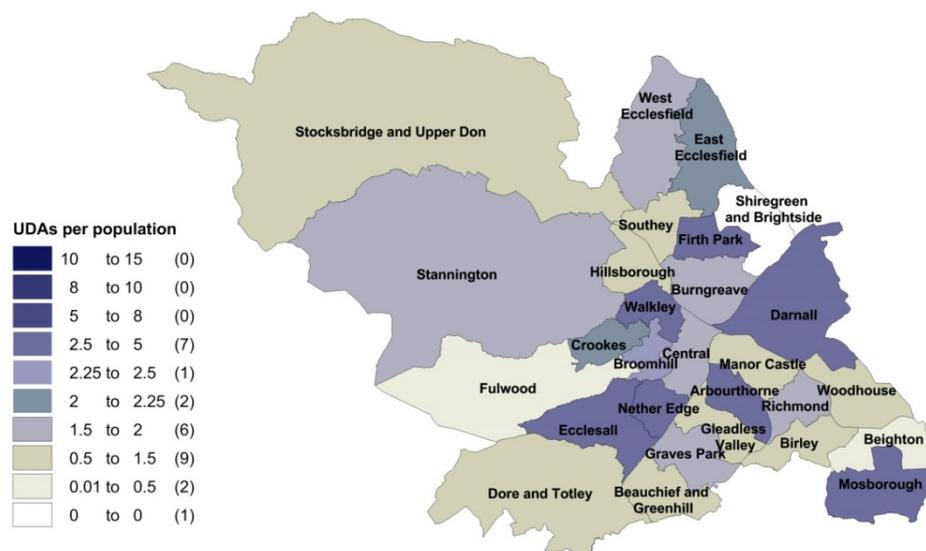
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Source: PHE, 2014

Figure V UDAs commissioned per population in Sheffield by ward, 2012/13



Source: PHE, 2014

Appendix III Provider activity and costs by speciality and case type, 2013/14

Specialty	Provider	Case Type	Activity (n)	Cost (£)
Maxillofacial Surgery	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	4,604	479,534
	Other	Outpatient	250	25,790
		Day case	29	19,921
		Elective	60	403,161
		Non-elective	46	163,104
Oral Medicine	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	4,465	329,283
	Other	Outpatient	12	1,761
Oral surgery	Barnsley NHS Foundation Trust	Outpatient	7,063	856,695
		Day case	1,012	610,386
		Elective	1	460
		Non-elective	3	7,484
	Doncaster and Bassetlaw NHS Foundation Trust	Outpatient	7,352	531,101
		Day case	925	-
		Elective	257	221,470
		Non-elective	44	60,511
	Sheffield Children's NHS Foundation Trust	Outpatient	1	78
		Day case	277	251,283
		Elective	44	45,389
		Non-elective	183	174,258
	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	15,995	1,446,285
		Day case	4,352	2,407,550
		Elective	480	1,099,303
		Non-elective	725	966,120
	Rotherham NHS Foundation Trust	Outpatient	8,316	862,344
		Day case	3,017	1,711,157
		Elective	266	321,016
		Non-elective	282	418,269
	Other	Outpatient	245	27,704
		Day case	80	43,362
		Elective	82	365,338
		Non-elective	28	81,920
Orthodontics	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	13,829	1,735,074
	Barnsley NHS Foundation Trust	Outpatient	2,668	350,056
	Doncaster and Bassetlaw NHS Foundation Trust	Outpatient	1,500	107,746
	Rotherham NHS Foundation Trust	Outpatient	2,094	314,492
		Day case	2	3,860
	Other	Outpatient	277	34,688

Paediatric dentistry	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	7,471	933,107
		Day case	752	398,184
		Elective	2	1,337
	Sheffield Children's NHS Foundation Trust	Outpatient	1	65
		Day case	1,183	723,973
		Elective	22	15,741
		Non-elective	2	1,672
	Other	Outpatient	37	4,226
		Day case	12	7,486
Elective		1	795	
Paediatric Maxillofacial Surgery	Sheffield Children's NHS Foundation Trust	Outpatient	1	139
		Day case	3	3,436
		Elective	12	102,22
		Non-elective	34	37,248
Restorative	Sheffield Teaching Hospital NHS Foundation Trust	Outpatient	28,940	4,634,990

Source: West and South Yorkshire and Bassetlaw Commissioning Support Unit, 2014

Appendix IV

**Table I Evidence-based oral health improvement interventions
(Commissioning Better Oral Health, 2014)**

Ottawa Charter Principle	Oral health improvement intervention	Overall level evidence-based recommendation
Reorienting health services	Targeted community-based fluoride varnish programmes	Recommended
	Targeted provision of toothbrushes and toothpaste (through postal schemes or through health visitors)	Recommended
	Targeted community-based fissure sealant programmes	Limited value
	Targeted community-based fluoride rinse programmes	Limited value
	Facilitating access to dental services	Limited value
	Using mouth guards in contact sports	Limited value
Developing personal skills	Oral health training for the wider professional workforce (e.g. health education)	Recommended
	Integration of oral health into targeted home visits by health/social care workers	Recommended
	Social marketing programmes to promote oral health and uptake of dental services by children	Limited value
	Person-centred (one-to-one) counselling based on motivational interviewing outside of dental practice settings	Limited value
	One off dental health education by dental workforce targeting the general population	Discouraged
Creating supportive environments	Supervised tooth brushing in targeted childhood settings	Recommended
	Healthy food and drink policies in childhood settings	Recommended
	Fluoridation of public water supplies	Recommended
	Provision of fluoridated milk in schools	Limited value
	Fluoride toothpaste and toothbrushes provided in food banks	
Build healthy public policy	Influencing local and national government policies	Recommended
	Fiscal policies to promote oral health	Emerging
	Infant feeding policies to promote breast feeding and appropriate complementary feeding practices	Emerging
Strengthening community actions	Targeted peer (lay) support group/peer oral health workers	Recommended
	School or community food cooperatives	Emerging

Table II Oral health improvement programmes children and young people in South Yorkshire

Local authority	Intervention	Strength of evidence	Target group
Sheffield	'Brushing for Life' (tooth brushing and bottle to cup scheme delivered by health visitors)	Some	Pre-school and reception children
	Supervised tooth brushing programme in nurseries	Strong/sufficient	Pre-school
	Oral health resource boxes provided or loaned to primary schools and oral health training for staff	Some	School children
	Oral Health training for wider professional workforce	Some	Pre-school, children and young people
Barnsley	Distribution of tooth brushing packs by health visitors)	Some	Preschool
	'Smiling for life' campaign to improve nutrition and oral health among 0-5 year olds	Some	Pre-school and school children
	Working with GDPs to increase application of fluoride varnish	Strong	School children
	Oral Health training for wider professional workforce	Some	Pre-school; children and young people
Rotherham	Distribution of fluoride toothpaste to children in deprived areas	Some	Preschool
	Forming partnerships with schools to promote healthy eating	Some	Schools
Doncaster	Oral Health training for wider professional workforce: infant and junior school staff, community nursery nurses, 2 year old funding staff, children's centre staff, modern apprentices, play workers and special needs nurses at hospital	Some	Pre-school; children and young people

Local authority	Intervention	Strength of evidence	Target group
	Parent group training in oral health: parent craft	Ineffective	Pre-school and parents
	Input into infant feeding steering group	No evidence	Pre-school
	Training for those on childcare course at college and child-minders.	Some	Pre-school and school
	Support local nurseries in setting up tooth brushing clubs	Strong/sufficient	Pre-school
	Loan of resource boxes	Some	School

Table III Oral health improvement programmes for adults and vulnerable groups in South Yorkshire

Local authority	Intervention	Target group
Sheffield	Improving oral health and dental access for Roma-Slovak community	Families
	Oral Health training for wider professional workforce (Health, social care and education)	Vulnerable adults
	Working with GPs to encourage brief intervention in tobacco cessation and alcohol control	Older children and adults
	Annual public health events: No Smoking Day; Mouth Cancer Action Month; National Smile Month	Wider population
	Partnerships with special schools to increase fluoride delivery to vulnerable children	Children in special schools
	Oral Health Action Teams working in deprived communities	Families
Barnsley	Oral Health Action Teams working in deprived communities	Families
	Signposting people in deprived areas to dental care to increase access	Families
Rotherham	Training for wider social care workforce around nutrition and oral health	Older adults
	Training for staff who work with children and adults with learning difficulties in oral health and nutrition	Vulnerable children and adults
Doncaster	Support for individual care plans for those with additional needs	Vulnerable children and adults
	Oral health training for family support nurses and foster carers	Vulnerable children
	Attend afterschool club for vulnerable children	Vulnerable children
	Oral health training for special schools and children with disabilities	Vulnerable children

Appendix V

Feedback from consultation on the Oral Health Needs Assessments

Feedback on the final drafts of the oral health needs assessment documents for North Yorkshire and Humber, West Yorkshire and South Yorkshire and Bassetlaw was sought through a PHE online survey of stakeholders and an online survey of the public administered by local authority Healthwatch teams between March and April 2015.

Professional consultation

The consultation feedback on the final drafts of the OHNAs fell into two themes:

- aspects that needed to be looked at in more detail
 - access and availability
 - vulnerable groups
 - service information
- accuracy of information

The feedback informed and strengthened key issues identified in the OHNAs and accuracy details have been addressed.

We are grateful to the following stakeholders for their comments:

Hull and East Riding of Yorkshire LDC, North Yorkshire and Humber Area Team, Teeth Team Limited, North Lincolnshire Council, North East Lincolnshire Council, School of Clinical Dentistry, University of Sheffield, Charles Clifford Dental Hospital, Michael and Margaret Naylor and Associates, Healthwatch Kirklees, Leeds City Council, Community Dental Service, Clinical Advisor (NHS England), Wakefield Local Dental Committee, Bradford District Care Trust and Wakefield Council.

Public consultation

The consultation feedback on the OHNAs collated by Healthwatch fell into three themes:

- difficulty in accessing up to date information about NHS dental practices taking on new NHS patients
- difficulty in accessing NHS dental care
- confusion about registration status, recall status and patient payment charges

These issues have informed and strengthened the key issues identified in the OHNAs. We are grateful to the Healthwatch teams for administering the consultation survey and reporting on the results and to members of the public who participated in the survey.