An Oral Health Needs Assessment for Swindon

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Acknowledgements

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Executive summary

Oral health encompasses the health of the population's mouth and teeth, enabling people to perform essential functions, such as eating, breathing and speaking. It affects people of all backgrounds but disproportionately affects those from deprived backgrounds and those who are more at risk.

Oral disease is almost entirely preventable. However, it remains the highest cause of hospital admissions and exposure to general anaesthetic in children aged 5-9. Furthermore, it costs the NHS £3.6 billion per year with a similar amount estimated to be spent privately. Finally, it also has productivity impacts for all ages, with losses due to associated ill health or treatment estimated to be £260 billion globally.

NHS England currently commissions dental services, however commissioning responsibility is due to transfer to Integrated Care Boards this year. Local authorities have a statutory responsibility to improve the oral health of communities, to commission oral health improvement services and to reduce health inequalities.

This Oral Health Needs Assessment (OHNA) aims to summarise the standard of oral health in Swindon, with a particular focus on at risk groups, in order to guide Swindon's upcoming Oral Health Strategy. As well as incorporating quantitative data from national epidemiological surveys and service data, this OHNA contains the results of interviews, focus groups and surveys with representatives of at risk groups and those involved in oral healthcare services.

Swindon's population has grown 11.6% in the last decade to 233,410 and is projected to continue to grow with significantly higher growth in the older age groups. It has a diverse population with 11.6% identifying as "Asian, Asian British or Asian Welsh" and 5.7% of households not speaking English as a main language. There are areas of Swindon with high deprivation with Penhill and Upper Stratton; Walcot and Park North; Gorsehill; and Pinehurst Liden, Eldene and Park South wards being among the 10% most deprived neighbourhoods in the country. These factors are important as older age, Asian ethnic groups and deprivation are all associated with worse oral health outcomes and could impact how oral health promotion activities are planned.

The most up to date data for oral health in Swindon shows that 28.9% of five year olds have experience of dental decay, which is substantially worse than the South West average of 20.4%. Swindon also has substantially higher rates of hospital teeth extractions in its children and young people. For example, the rate of hospital tooth extractions in Swindon's 6-10 year olds is 1,045.5 per 100,000 population compared to only 367 per 100,000 for the South West region. The majority of these occur under general anaesthetic, which poses additional health risks.

There is less quantitative data available for adults. Oral cancer data shows that Swindon has comparatively less oral cancer registrations with 13.7 per 100,000 (South West being 15.4), but a higher rate of oral cancer mortality at 4.6 per 100,000 (South West being 4.3). The

higher mortality rate may suggest that there are missed opportunities for early identification and treatment.

In addition to reviewing prevalence of oral health conditions, the prevalence of risk factors for poor oral health can indicate likelihood of need. Risk factors of particular interest are smoking, alcohol, diet and weight and HPV vaccination (HPV is associated with increased rates of oral cancer). The proportion of adults smoking (12.5%) is similar to the South West and has been declining in the past decade. The percentage of Swindon residents that drink more than 14 units a week (17.5%) is less than the England average (22.8%). However, the standardised rates of hospital admission for all ages due to intentional poisoning or exposure to alcohol is much higher (80.2 per 100,000 in comparison to 43.1 per 100,000). The rates of obesity in Swindon is one of the worst in the South West; in reception children, in year 6 children and in adults. The proportion of residents usually eating the recommended "5 a day" of fruit and vegetables is also lower than both the South West and England averages. Finally, only 13.8% of females aged 13-14 years have had two doses of HPV vaccination, which is much lower than the target of 90% and the England average of 60.6%. Swindon residents are therefore exposed to significant risk factors in relation to their oral health.

Access and availability of NHS dentists is a key issue that has been raised widely and was highlighted by all the at risk groups explored. Within 10 miles of Swindon only one dental practice is currently accepting new NHS dentists. This is important as it means residents are less able to access preventative advice and early identification and treatment of problems. The Covid-19 pandemic, a lack of dental workforce issues and concerns with the current NHS dental contract all play a part in the lack of availability of NHS dental appointments. However, there are also modifiable local barriers such as having easily accessible information on the availability of local NHS dental practices.

There's a lack of recent or local quantitative data available for at risk groups known as being at higher risk of poor oral health. The clearest trend is that those who are most deprived suffer considerably worse oral health than the least deprived, for all indicators of oral health. People from Asian ethnicities were also found to suffer much worse oral health. Qualitative research from the included at risk groups identified a range of barriers to good oral health. Common themes included financial barriers, apprehension of having less teeth due to recommended dental management, access to the right type of dentist (e.g. specialist care) and having more pressing priorities, such as having enough food or accessing shelter rather than oral health.

Current oral health promotion activity in Swindon is integrated into hospital and care home care guidelines as well as general health improvement activities in early years and education settings. There are also a range of general health improvement activities in Swindon targeting smoking, alcohol and healthy eating, which will also benefit oral health. Though currently there is not much oral health specific health improvement activity in the community in Swindon, there are a range of planned health promotion programmes. For example, a regional supervised toothbrushing programme that went out to tender in January 2023.

The recommendation of this needs assessment is for the development of an oral health strategy for Swindon that considers the findings of this report.

Key Points

Key Points of Introduction

- Oral health encompasses the health of the population's mouth and teeth, enabling people to perform essential functions, such as eating, breathing and speaking.

- It affects people of all backgrounds but disproportionately affects those from deprived backgrounds and those who are more at risk.

- It costs the NHS £3.6 billion per year to treat oral disease. There are additional productivity losses attributed to time off from school and education due to ill health or treatment of oral disease which are globally estimated at £260 billion.

- Oral disease is almost entirely preventable. However, hospital tooth extractions are the highest cause of hospital admissions and exposure to general anaesthetic in children aged 5-9 years old.

- The risk factors for oral disease are shared with many non-communicable diseases and include alcohol, smoking, diet and socio-economic background. By improving these risk factors there will be benefit to many aspects of health and well-being, not just oral health.

- Local authorities have a statutory responsibility to improve the oral health of communities, to commission oral health improvement services and to reduce health inequalities.

- The aim of the OHNA is to summarise to stakeholders the standard of oral health and its contributing factors in Swindon residents. Furthermore, from the perspective of known at risk groups, it aims to explore barriers and facilitators of good oral health and to identify groups with increased need, in order to shape future oral health strategy.

- The OHNA will include both quantitative data, retrieved from national epidemiological dental studies and service data, and qualitative data, consisting of interviews, focus groups and surveys from representatives of at risk groups and those involve in oral health services.

Key Points about Swindon

- Swindon's population is 233,410, which is a growth of 11.6% in the last decade.

- The population growth is expected to continue with significantly higher growth in the older age groups.

- Swindon has an ethnically diverse population including 11.6% of residents identifying as "Asian, Asian British or Asian Welsh".

- 5.7% of Swindon households have no people speaking English or Welsh as a main language.

- Swindon has areas of high deprivation. Penhill and Upper Stratton; Walcot and Park North; Gorsehill; and Pinehurst Liden, Eldene and Park South wards are among the 10% most deprived neighbourhoods in the country.

- Oral health has a prominent position in Swindon's 2022 JSNA with a particular focus on children's start in life.

- A South West OHNA in 2021 highlighted the importance in exploring the needs of at risk groups and highlighted 4 key priorities:
  1. Issues in the access to NHS dentistry but with particular variability between more affluent and deprived areas
  2. A need to support dental care services for older people, due to a projected increase in the older adult age groups
  3. A need to support the recruitment and retention of dentists providing NHS services
  4. Evidence that there is difficulty being experienced by dentists in meeting their contractual targets and therefore a risk for future service provision because of the commercial viability of certain contracts.

Key points for Oral Health and Risk Factors in Swindon

Children

Three year old survey:

- The survey of three-year-olds was not conducted in Swindon in the 2020 dental survey due to the Covid-19 pandemic. However, the national picture shows similar levels of decay when compared to the previous survey in 2013. It also highlights large oral health inequalities in which the most deprived experience over double the prevalence of dental decay compared to the least deprived.

Five year old survey:

- The survey of five-year-olds in 2019 provides the most up to date information for children's oral health in Swindon and it was the first survey to be updated again, with publication due in the Spring of 2023.

- The survey of five-year-olds shows that the prevalence of experience of dental decay in Swindon at 28.9% is substantially worse compared to the South West (20.4%) or England (23.4%). This is also true for several markers of severity of decay including the proportion with experience of tooth extractions (2.9% vs 1.9% for the South West)), the proportion with teeth decayed into pulp (4.0% vs 2.2%) and the mean number of teeth with experience of dental decay (0.9 vs 0.6).

- In contrast to the South West and England where the prevalence of decay in five-year-olds has declined and then plateaued in recent years, Swindon's rates of decay have been increasing.

- Once again data across the South West highlights inequalities in oral health in five year olds in which the most deprived suffer over double the prevalence of decay compared to the least deprived.

- There are also inequalities between ethnic groups. This is particularly noticeable in the Asian/Asian British groups in which across the South West the prevalence of experience of decay in five year olds is 42.2%, over double the estimate for their White counterparts. Furthermore the severity of decay is also worse amongst the Asian/Asian British groups with the mean number of teeth with experience of dental decay among those with any experience of dental decay being 4.3 in comparison to 3.0 for the White ethnic group. This is therefore particularly significant for Swindon, where we have a relatively large proportion of residents from Asian and Asian British backgrounds.

Twelve year old survey:

- The last survey of 12 year olds occurred in 2009. A survey of year 6 children is currently being carried out over 2022-2023.

Hospital tooth extractions:

- Swindon has substantially higher rates of hospital tooth extractions in children per 100,000 than both the South West and England. In 2020-2021 the rate of hospital tooth extraction per 100,000 for all 0-19 year olds was 516.9 compared to 220.8 for the West, 169.2 for all of England and 114.2 for Swindon's closest CIPFA neighbours. This is particularly high in the 6-10 year old category where Swindon has 1,045.5 per 100,000 population in comparison to 367 for the South West, 256.3 for all of England and 105.9 for Swindon's closest CIPFA neighbours.

- Across England 30,000 children were admitted to hospital because of tooth decay.

- In addition to the high cost of treatment it is estimated that 60,000 days of school are missed during the year due to hospital teeth extractions, which will have a further impact on parents and carers, who may also have to take time off work.

- Across England the number of hospital tooth extractions in 0-19 year olds being carried out in 2020-2021 is less than half the number in 2019-2020, due to the Covid-19 pandemic. Subsequently there is a backlog of patients awaiting hospital tooth extraction with the waiting list for the extraction of teeth at the Great Western Hospital at 7 months from referral to treatment. Nationally, it has been recognised that tooth extraction under General Anaesthetic is the slowest to recover of all paediatric surgical specialties, following the pandemic.

- Across England the most deprived communities experience three times the rate of hospital tooth extractions than the least deprived.

Adults

Adult Dental Health Survey

- The decennial Adult Dental Survey due in 2021 was replaced by an analysis of the impact of Covid-19 on access to dental care.

- 35% of adults in England reported having a need for dental treatment or advice during periods of national lockdown. 16% of those adults did not seek treatment or advice. The most common reasons for this were due to fear of catching Covid-19, they were shielding or that they couldn't afford the associated costs.

- The 2009 adult survey showed that the South West was the region with the second highest proportion of adults having any decay at 36% in comparison to the English average of 30%.

Adults Attending Dental Practices Survey

- Across England a higher proportion of the most deprived people were found to be suffering from oral health problems compared to the lease deprived (28% vs 11%).

Health Survey for England

- Across England 84% of adults have enough teeth (>20) for functional dentition, though there are inequalities between the most deprived (75%) and the least deprived(89%).

- Across England 4% of mothers and 3% of fathers reported they had taken time off work in the last six months because of problems with their child's teeth, mouth or gums.

Oral Cancer

- Standardised oral cancer registrations in Swindon were 13.7 per 100,000, which is lower than the South West (15.4) and England (15.4).

- Standardised mortality rates from oral cancer in Swindon were 4.6 per 100,000, which is inline with England (4.7) but higher than the South West (4.3).

- Across England there are inequalities in oral cancer linked to deprivation with the incidence and mortality rate being almost twice as worse in the most deprived regions compared to the least deprived.

Oral Health Risk Factors

Tobacco

- 12.5% of adults in Swindon currently smoke, this is similar to the proportion for the South West and has been declining over the past decade. However this rate almost doubles amongst those in routine and manual occupations.

- The successful quit rate after 4 weeks in Swindon is significantly lower than that of the South West and England.

Alcohol

- 17.5% of Swindon residents drink more than 14 units a week. This is lower than the England average of 22.8%. However, there is a much higher rate of hospital admission through intentional self-poisoning by and exposure to alcohol. The rate in Swindon is 80.2 per 100,000 population in comparison to 43.1 and 55.7 per 100,000 for England and the South West respectively.

Diet

- The rates of obesity in Swindon is one of the worst in the South West in reception children, in year 6 children and in adults. The proportion of residents usually eating the recommend "5 a day" of fruit and vegetables is also lower than both the South West and England averages.

Human Papilloma Virus (HPV)

- Oral HPV infection, transmitted through mouth kissing or orogential contact, is a cause of head and neck cancer. The HPV vaccination is provided to 13-14 year olds in two separate doses.

- In Swindon only 13.8% of females aged 13-14 years have had two doses of HPV vaccination, which is much lower than the target of 90% and the England average of 60.6%. This is thought to be contributed to by national lockdowns and the suspension of school immunisation programmes as rates have previously been >90%.

Key points from Local At risk Groups

- Previous OHNAs and work by the former PHE on inequalities in oral health have identified at risk groups who are at greater risk of oral health problems

- There is generally a lack of quantitative data available for these at risk groups. This is true at a national level as well as a local level.

People with Learning Disability

- There are a similar proportion of people with learning disability registered at GP practices in Swindon to the rest of England (0.5%)
- Local research found the following themes in this group:
    - Behavioural challenges preventing regular oral hygiene and worsening oral health
    - Unhealthy diets
    - Importance of creating healthy habits in early life - challenges to change longstanding behaviours
    - Challenges communicating oral problems
    - Expectation of poor oral health amongst healthcare staff
    - Accessibility and Availability of NHS dental services, including specialist services
    - Requiring more time than a standard NHS appointment
    - Financial Barriers

Children with SEND

- 4.7% of children in Swindon have SEND or documented additional needs.
- Across England it has been found that those with SEND who have decay on average have more severe decay
- Local research found the following themes in this group:
    - Behavioural challenges preventing regular oral hygiene and worsening oral health -“Picking Battles”
    - Communication challenges
    - Importance of creating healthy habits in early life
    - Regular toothbrushing not being viewed as a priority
    - Anxiety of the dentist
    - Diet and Health Related Behaviours

    - Reliance on others to support oral hygiene
    - Accessibility and Availability of NHS dental services, including specialist services
    - Requiring more time than a standard NHS appointment– differences between general and specialist dentists
    - Financial Barriers

Looked after children and care experienced young people

- There were 332 CLA in Swindon in 2022. Though the total number has remained fairly constant there has been an increasing proportion (now 10% of all CLA in children) of unaccompanied asylum seeking children.
- CLA are more likely to have oral health issues and less likely to seek dental care.
- Local research found the following themes in this group:
    - Higher rates of oral problems
    - Foster carers building trust – "Picking Battles"
    - Regularly moving so challenges registering with NHS dentists
    - Increasing unaccompanied asylum seekers and refugees
    - Higher rates of LD and ASD
    - Financial Barriers
    - Health Related Behaviours

Older People Dependent on Care

- In 2022 1,600 Swindon residents aged over 65 were accessing long term care, 46% of these were accessing this care in nursing or residential homes and 54% were accessing this support in the form of community care. The proportion of older people in Swindon is projected to grow.
- The majority of residents with teeth in care homes have active dental caries. However care home residents face practical issues in accessing dental care.
- The Mouth Care in Care Homes report in BSW identified 3 key themes: a request for face to face training; a request for a review of current practices and approach; and updates on mouth care information as they become available.
- Local research found the following themes in this group:
    - Oral health monitoring is in place
    - Communication challenges
    - Ill-fitting dentures common
    - Reliance on staff for oral hygiene
    - Diet and Health Related Behaviours
    - Requests for staff training
    - Accessing NHS dentists
    - A preference for domiciliary dentists

Asylum Seekers, Refugees and Migrants

- In Swindon 84 children and 53 adult asylum seekers and refugees were screened. Of which 17.9% of children and 24.5% of adult asylum seekers required urgent dental care.

- Local research found the following themes in this group:
    - High prevalence of oral problems
    - Language as an accessibility barrier to dental services
    - Financial Barriers
    - Concerns about their dental management in NHS dentists e.g. tooth extractions
    - Dental differences in culture and clinical practice, including an aversion to tooth extraction and higher expectations from nationally provided services.
    - Knowledge of oral hygiene practices
    - Smoking as a tool to manage stress
    - Diet
    - Communication through the group
    - Accessing NHS dentists

People affected by substance misuse:

- Swindon has higher rates of hospital admissions for 15-24 year olds for substance misuse than the England and South West averages.
- In comparison with the general population, people with drug and alcohol misuse disorders tend to have poorer oral health.
- Local research found the following themes in this group:
    - Accessing NHS Dentists
    - Concerns about their dental management in NHS dentists e.g. tooth extractions
    - Higher priorities than oral health must be attained first
    - Methods for engaging with health promotion

People experiencing Homelessness

- In 2022 382 households were determined to be at risk of homelessness or homeless in Swindon, this is proportionally higher than average rates in the South West and England.
- This group experiences higher levels of untreated decay and periodontal disease, and poorer oral health related quality of life.
- Local research found the following themes in this group:
    - High prevalence of oral problems
    - Smoking and Alcohol as tools for managing stress
    - Financial barriers
    - Higher priorities than oral health must be attained first
    - Accessing NHS dentists
    - Concerns about their dental management in NHS dentists e.g. tooth extractions
    - Methods for engaging with health promotion

Gypsy and Travellers

- In July 2022 there were 51 caravan pitches across two sites in Swindon
- This group has a low prevalence of brushing twice a day (40%) and a high prevalence of a highly cariogenic diet (95%).
- Local research found the following themes in this group:

    - Accessing NHS dentists
    - Perceived good oral health

People Experiencing Poverty

- For all indicators of oral health there is a significant inequality between the most deprived and the least.
- Local research found the following themes in this group:
    - Perceived Financial Barriers
    - Financial Barriers – Affording or Prioritising Resources
    - Financial Barriers – non-dental costs to access services
    - Financial Barriers – Private Dental Care
    - Awareness of good oral hygiene
    - Diet
    - Smoking and Alcohol as tools for managing stress

Key points from Dental Services

- NHS dentists are paid based upon Units of Dental Activity (UDAs) linked to a national banding system according to the type of service delivered.

- Reforms have been suggested to modify the dental contract so that complexity of patients is more fairly compensated.

- Geographically dental practices in Swindon are located in the central urban areas, with apparent accessibility from many of the more deprived wards in Swindon.

- Despite geographic accessibility there is a lack of availability of NHS dentist appointments throughout Swindon and England.

- Swindon has a lower number of dentists per 10,000 population at 1.16 compared to the England average of 1.37. The dental workforce is recognised as an issue in the lack of NHS dentists.

- Dental activity has decreased due to the Covid-19 pandemic which has also contributed to the lack of availability of dental appointments.

- Patient satisfaction in those receiving dental services has declined in Swindon post-pandemic.

- Regular fluoride varnish application in children and at risk adults is an evidence-based method for reducing tooth decay by 33% in baby teeth and 46% in adult teeth. The proportion of the population receiving this has declined from 11.4% prior to the pandemic to 9.1% in 2022.

- The number of domiciliary NHS visits declined from 782 in 2018-2019 to 136 in 2021-2022.

- In contrast to the above, the percentage of courses of treatment marked as urgent in Swindon has raised from 7.0% prior to the pandemic to 14.2% in 2021.

Key Points for Oral Health Improvement Activity

- Current oral health promotion activity in Swindon is integrated into hospital and care home care guidelines as well as general health improvement activities in early years and education settings. There are a range of health improvement activities in Swindon targeting smoking, alcohol and healthy eating.

- Though currently there is not much oral health specific health improvement activity in the community in Swindon, there are a range of planned health promotion programmes. Most notably a supervised toothbrushing programme that has just gone out to tender across the South West region, targeting Early Years and School settings in the most deprived neighbourhoods.

- Water fluoridation has a strong evidence base and has been shown to reduce health inequalities. However the responsibility of this lies with the secretary of state and currently there are no water fluoridation schemes in the South West despite in almost all areas, including Swindon, the water fluoride levels being lower than target levels.

- Fluoride varnishing is another evidence based oral health promotion scheme that could be considered to target communities in increased need.

Recommendations

- Develop an oral health strategy for Swindon that considers the findings from this report.

Introduction

Oral health encompasses the health of the population's mouth and teeth, enabling people to perform essential functions, such as eating, breathing and speaking. In addition to its mechanical functions it contributes to psychosocial factors, such as self-confidence, well-being and the ability to socialise and work without pain, discomfort or embarrassment(1).

Oral health also has large economic impacts. The cost to the NHS in treating oral health conditions is around £3.6 billion per year(2) and a similar amount is estimated to be spent in the private sector. In addition to the cost of treatment, oral health can cause time off from work or education due to disease or treatment. The WHO estimates that globally productivity losses due to oral health total around £260 billion(1).

Oral disease affects all people regardless of age, gender or background. However the distribution and severity of disease, as well as the access to treatment, has clear inequities at all stages of the life course(3). More at risk, disadvantaged and socially excluded groups experience worse oral health and suffer from the physical and psychosocial impacts of untreated oral disease.

Importantly, poor oral health is almost entirely preventable. It is preventable by addressing social and behavioural determinants together with risk factors—such as tobacco, alcohol, and sugars—that are shared with many other non-communicable diseases. As highlighted by, the former, Public Health England (PHE): "reducing oral health inequalities is a matter of social justice, an ethical imperative and for public bodies across the health sector, a legal duty"(3).

An Oral Health Needs Assessment (OHNA) is required to guide future oral health strategy for Swindon.

Purpose and Scope

Aims

The aim of the Oral Health Needs Assessment (OHNA) is to summarise to stakeholders the standard of oral health and its contributing factors in Swindon residents. Furthermore, from the perspective of known at risk groups, it aims to explore barriers and facilitators of good oral health and to identify groups with increased need, in order to shape future oral health strategy.

Objectives

- To summarise the prevalence of oral health disease in Swindon across all ages, including key conditions and performance against previous strategic targets.

- To summarise and describe the prevalence and distribution of risk factors for poor oral health in Swindon.

- To understand the barriers and facilitators to good oral health from the perspectives of at risk groups, specifically: people experiencing poverty; looked after children; young people leaving care; children with SEND; people with LD; older people dependent on care; asylum seekers and refugees; migrants; people experiencing homelessness; gypsies and travellers; and people with a background of substance misuse.

- To summarise primary and secondary dental services available to Swindon residents.

- To summarise current health promotion activity that impacts on oral health in Swindon.

Aspects not included

1. It will not include an in-depth review of oral health service utilisation, service provision, or user experience of oral health services.
2. For practical reasons, including time and capacity, a number of at risk groups that have previously been identified as at risk of poor oral health will not be explored in depth, for example: prisoners and those in the criminal justice system; those with severe mental health illness; those who are socially isolated.

Target Audience

Stakeholders from SBC

- SBC Health and Wellbeing Board
- Director of public health
- The SBC public health team
- Elected local councillors

Stakeholders with involvement in commissioning or delivery of oral health services

- NHS England
- BSW ICB
- Regional Oral Health Working Group
- Swindon based oral health service providers

Stakeholders from the general public

- Healthwatch
- Community and voluntary groups
- Dental service users
- Early years providers
- Care homes

Methodology

This OHNA includes both quantitative and qualitative information.

Quantitative elements were retrieved from national resources including NHS digital and OHID, who provide service activity and regularly conducted national dental epidemiological surveys.

Qualitative elements consisted of questionnaires, focus groups and interviews from members and representatives of groups known to be at risk of poor oral health as well as stakeholders involved in oral health services.

Oral Health Context

Legal Responsibilities

The Health and Social Care Act 2012 outlines the following:

> *"A local authority shall provide, or shall make arrangements to secure the provision of, the following within its area—*
>
> *(a)to the extent that the authority considers appropriate for improving the health of the people in its area, oral health promotion programmes;*
>
> *(b)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, and*
> *(iv)where there are water fluoridation programmes affecting the authority's area, the monitoring and reporting of the effect of water fluoridation programmes.*
>
> *The local authority shall participate in any oral health survey conducted or commissioned by the Secretary of State under paragraph 13 of Schedule 1 to the 2006 Act (powers in relation to research etc) so far as that survey is conducted within the authority's area."*

It should be noted that since 2022 the responsibility to propose and manage water fluoridation schemes lies with the Secretary of State not the local authority. This has been done due reported difficulties local authorities were facing in establishing these schemes, including water flows not being coterminous with local authority boundaries.

NHS England is responsible for the commissioning of dental services across England, having taken over from primary care trusts when the NHS was reorganised in 2013. NHS England's offices in the South West region manage these contracts in Swindon. Note that from April 2023 the responsibility for the commissioning of dental services will move from NHS England to Integrated Care Boards (ICB) i.e. the Bath and North East Somerset, Swindon and Wiltshire (BSW) ICB.

Important Diseases and Indicators

Dental Caries (Tooth Decay)

Dental caries, also known as tooth decay, is one of the most prevalent non-communicable diseases nationally and globally(4). The disease is caused by dietary sugars that are broken down by micro-organisms in the biofilm on a tooth surface, which produces acids that, over time, demineralise tooth enamel (the thin outer covering of the tooth).

In the early stages of the disease, dental caries can be reversed. However, when factors promoting demineralisation exceed those favouring remineralisation, dental caries progresses (unless checked) into dentine to a point where the tooth surface breaks down and ultimately a cavity forms.

Effective patient care involves first diagnosing the presence and recording the extent of disease, encouraging a reduction of factors that cause demineralisation, notably sugar consumption; and, enhancement of those favouring remineralisation, particularly the availability of fluoride(4).

The main modifiable risk factors for dental caries are diet, consuming too much cariogenic sugar too often, and lack of optimal fluoride.

-$d_3$mft index

The d3mft index is the standard severity index for teeth with experience of dental decay. It includes teeth with visually obvious decay into dentine (the layer of teeth immediately beneath the enamel)(d_3t), missing teeth due to decay (mt) and filled teeth due to decay (ft). Visually obvious decay into dentine is the measurement threshold that is widely accepted in the literature for dental surveys, but it provides an underestimate of the true prevalence and severity of disease.

This index is also used to indicate the percentage of children with any decay experience. This is commonly written as “% d3mft > 0”.

-mean number of teeth with experience of dental decay in children with any decay

This is measure of the severity of dental decay in those experiencing dental decay.

Periodontal (gum) disease

The periodontium or gums are tooth-supporting tissues in the mouth. The most common forms of periodontal disease are 'gingivitis' (inflammation of the gums that can be reversed) and 'periodontitis' (inflammation that results in loss of periodontal attachment)(5). The early stages of disease may be symptom-free, but the impact on peoples' lives of later stage disease are more serious, particularly as the disease is irreversible.

Gingivitis is a risk factor for periodontitis, although not all people or sites with gingivitis go on to develop periodontitis(5). Because both conditions are initiated by plaque (a bacteria containing deposit that continually forms on tooth surfaces), the primary prevention of periodontitis will also prevent gingivitis.

Tobacco smoking and use of smokeless tobacco products have a profound effect on the risk of developing periodontitis and also impair the treatment response(5).

Oral cancer

Oral cancer includes cancers of the mouth, throat and lip. Incidence and mortality rates for oral cancer have risen in recent years, and most cases present with advanced disease, which reduces prognosis. Risk factors for oral cancer include smoking, other ways of using tobacco such as chewing, drinking alcohol and infection with the human papilloma virus (HPV)(6). Treatment may be with surgery, radiotherapy, chemotherapy or a combination of these.

Oral cancer is strongly related to socioeconomic deprivation, with the highest rates occurring in the most disadvantaged groups. This pattern is independent of health related behaviours(7). Oral cancer is more common in older adults (60+), although numbers are increasing in younger adults. Oral cancer is more common in men due to a higher prevalence of tobacco chewing, excessive alcohol intake and smoking in men. Oral cancer is more common in people from some black and minority ethnic groups.

Hospital Tooth Extractions

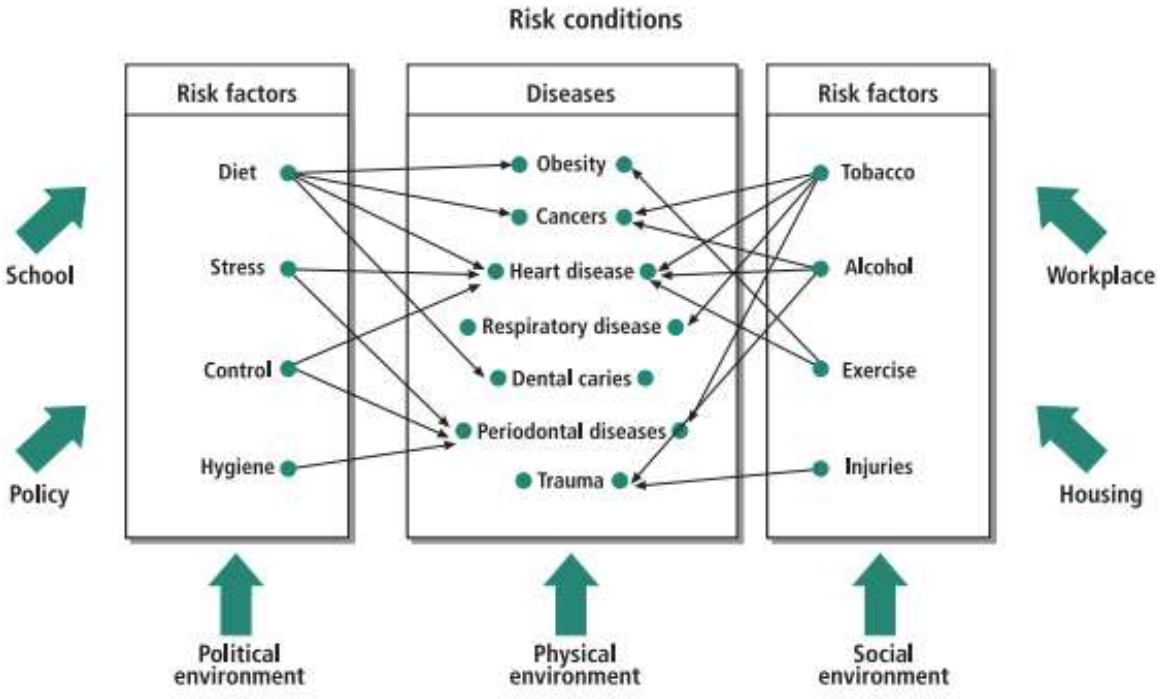
Children have tooth extractions carried out in hospital mainly because they need general anaesthetic for the procedure. They may be very young or uncooperative, have multiple teeth requiring extraction or have very broken down teeth or infection. It is the most common reason 5-9 year olds are admitted to hospital and require anaesthetic(8). This comes with both risk to the children receiving treatment and at great cost to the NHS for an issue which is almost entirely preventable.

Oral health is recognised as a key clinical area of health inequality in NHSE's "Core20PLUS5" for children and young people(9). Specifically it targets the backlog of tooth extraction in hospital for under 10s.

Risks and Determinants of Poor Oral Health

The common risk factor approach is depicted in Figure 1(10). It recognises that chronic non-communicable diseases such as obesity, heart disease, stroke, cancers, diabetes, mental illness and oral diseases share a set of common risk conditions and factors driven by the socio-economic environment. Targeting these common risk factors and the socio-economic environment has potential to benefit a range of chronic conditions, including oral disease. Furthermore it highlights why some at risk groups with worse rates of risk factors may suffer from worse disease and could therefore benefit from targeted public health intervention. Some of these risk factors are explored in more detail below.

Figure 1 – the common risk factor approach
Source: Strategies and approaches in oral disease prevention and health promotion by Richard Watt(10)



Tobacco

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, delaying healing, increasing tooth loss and strongly increasing the risk of gum disease(11).

Alcohol

Alcohol is a key risk factor for oral cancer, particularly in combination with tobacco use. For alcohol, frequency of consumption is more important than duration in years – higher consumption over a few years has a higher risk for oral cancer than a lower intake over many years, although duration is still important as a risk factor for other chronic diseases like cardiovascular disease(12).

Alcoholic drinks can also worsen dental caries and alcohol intoxication increases the likelihood of facial trauma which can damage teeth.

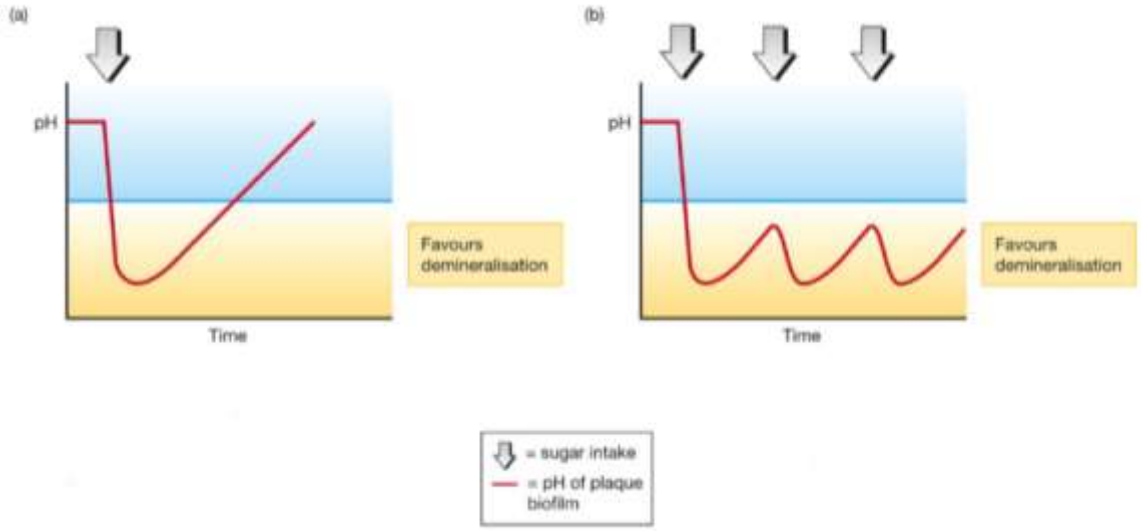
Diet

Poor diet is a significant driver of dental decay, with sugars being the most important dietary factor contributing to dental caries. Acidic foods and drinks also contribute to dental erosion.

The frequency of intake of sugars is particularly relevant for dental caries. The Stephan curve of pH in the oral cavity demonstrates why frequency is important (Figure 2)(13). It illustrates how demineralisation of tooth surfaces occurs after every sugar intake and the subsequent drop in pH that takes place in the mouth as oral bacteria convert sugar to acid. This process stops as the buffering action of saliva returns the pH to normal (20 to 40 minutes). Saliva production varies across a 24-hour day, being stimulated at mealtimes whereas it is much reduced during sleep.

The impact of frequent sugar intakes is illustrated in Stephan’s curve in Figure 2. In this case sugar intakes are experienced on many occasions during the day, so demineralisation occurs more often and the time between drops in pH is not long enough for effective remineralisation to take place. When sugar intakes are spaced some hours apart, there is a good opportunity for remineralisation, which is also more effective in the presence of fluoride.

Figure 2 – The Stephen Curve of pH in the mouth.
(a) The pH of fluid in the plaque biofilm falls rapidly on eating sugar (within one minute). Slowly recovers over 20 to 40 minutes as pH rises due to buffering and washing effect of saliva, sugar used up.
(b) Repeated intakes of sugar mean that pH remains for prolonged period below the point which favours demineralisation.
Source: Chapter 10: Healthier Eating. Oral Health: An evidence-based toolkit for prevention(13)



Human Papilloma Virus (HPV) Infection

Oral HPV infection transmitted through mouth kissing or orogential contact is a cause of head and neck cancer. Children aged 12-13 years and some other targeted groups are offered a HPV vaccine as part of the NHS vaccination programme which will help to protect against HPV related cancers.

Oral hygiene practices

The most prevalent oral diseases, tooth decay and gum diseases, can be prevented by regular tooth brushing with fluoride toothpaste. The fluoride in toothpaste is the important element of tooth brushing to control, prevent and arrest tooth 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.

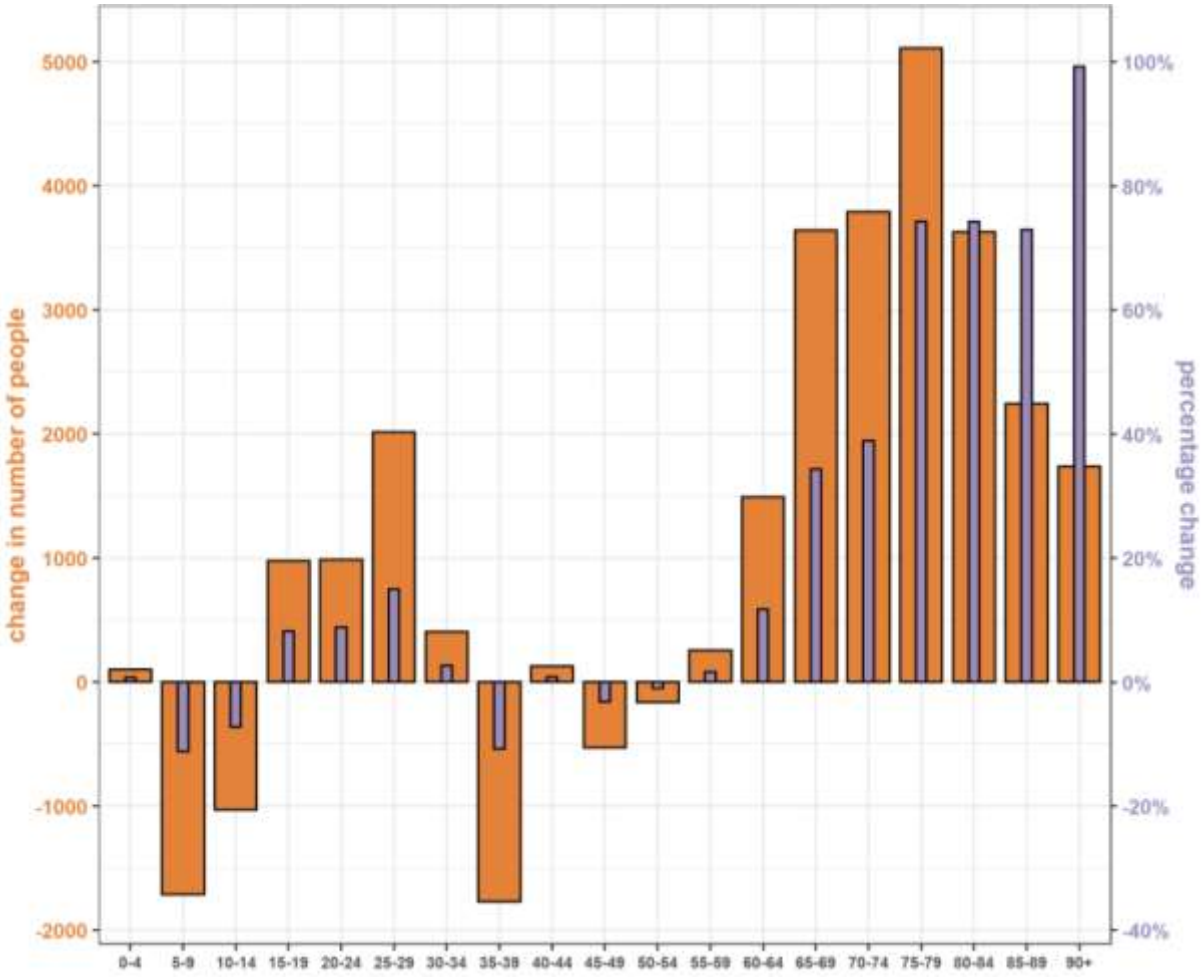
Regular dental check-ups allow oral problems to be detected and treated earlier, which limits the harm they cause.

Swindon

The 2021 Census estimates Swindon's population to be 233,410. 49.7% are male and 50.3% are female, roughly similar to the regional and national average. 21.4% of people are in the 35-49 years age bracket, which is higher than the South West and England at 17.9% and 19.4% respectively. 19.8% of the population is under 15 years of age, which is also higher than 17% for the South West and 18.5% for England. Currently only 35.6% of the population is 50 or over, in comparison to the South West and England average of 42.8% and 37.7% respectively.

The population has grown by 11.6% since 2011 – higher than the South West and England average of 7.8% and 6.6% respectively. The population is expected to continue to grow with significantly higher growth in the older age groups than the younger groups, as can be seen in Figure 3. The Office for National Statistics (ONS) estimates Swindon's population to increase by 5% between 2020 and 2030 and by a further 4% by 2040(14).

Figure 3 – Projected population change in Swindon by age group from 2020 to 2040.
Including the change in number of people and the percentage change for each age group
Source: This graph was extracted from Swindon's 2022 Joint Strategic Needs Assessment(15). The original data source was the ONS 2018 local authority population projections(14).



Swindon has a diverse population. 11.6% of the population identify ethnically as “Asian, Asian British or Asian Welsh”, in comparison to only 2.8% in the South West or 9.6% across England. At least 13.6% of Swindon’s population have a non-UK national identity, in contrast to only 6.1% in the South West and 10.0% in England. 5.7% of households have no people speaking English or Welsh as a main language, which is higher than the South West and England, at 2.5% and 5.0% respectively.

The 2019 Index of Multiple Deprivation (IMD), a common measure of deprivation that considers multiple factors, show that Swindon is ranked 98th out of 151 Upper Tier Local Authorities in the deprivation table across England, and 10th in the South West. 9% of its individual neighbourhoods are in the highest 10% of deprived areas. Penhill and Upper Stratton; Walcot and Park North; Gorsehill; and Pinehurst Liden, Eldene and Park South wards are among the most deprived areas in the country.

Previous Oral Health Needs Assessments

Oral health has a prominent position in Swindon’s 2022 Joint Strategic Needs Assessment, having its own subsection in the “Starting Well” chapter - focusing on children’s start in life(15). However, this report does not explore oral health needs in detail.

The last detailed oral health needs assessment produced by Swindon was in 2016(16) after which a 5 year (2016-2021) oral health strategy was created(17). The strategy outlined five priority outcomes:

1. Ensure oral health is a health and wellbeing priority,
2. Tackle social and lifestyle determinants of oral disease,
3. Embed oral health into commissioning,
4. Commission oral health improvement interventions,
5. Ensure shared ownership of the oral health agenda.

It also included two strategic targets:

1. Increase the proportion of 5-year-old children free from dental decay to the same level or higher than the England average.
2. Reduce admissions rates for tooth extraction in children and young people (0-19 years) to the same rate or less than the England average.

More recently, a Oral Health Needs Assessment was completed for the whole of the South West in 2021 by NHSE/I. It does include an analysis in the appendix specific to the Bath and North East Somerset, Swindon and Wiltshire Sustainability and Transformation Partnership (STP). In which it highlights four oral health key priorities:

1. Issues in the access to NHS dentistry but with particular variability between more affluent and deprived areas. They highlight areas of Swindon being among the most deprived in the country so at high risk of this inequality.

2. A need to support dental care services for older people, due to a projected increase in the older adult age groups and subsequent increase in demand.

3. A need to support the recruitment and retention of dentists providing NHS services due to a lack of this currently in these areas.

4. Evidence that there is difficulty being experienced by dentists in meeting their contractual targets and therefore a risk for future service provision because of the commercial viability of certain contracts.

It also identifies the importance of a more detailed exploration of the oral health needs of at risk groups.

Though there will be an overlap in the quantitative data sources used between this OHNA and the South West OHNA from 2021, this OHNA had additional benefits due to its focus on specifically Swindon and on at risk groups.

Oral Health in Swindon

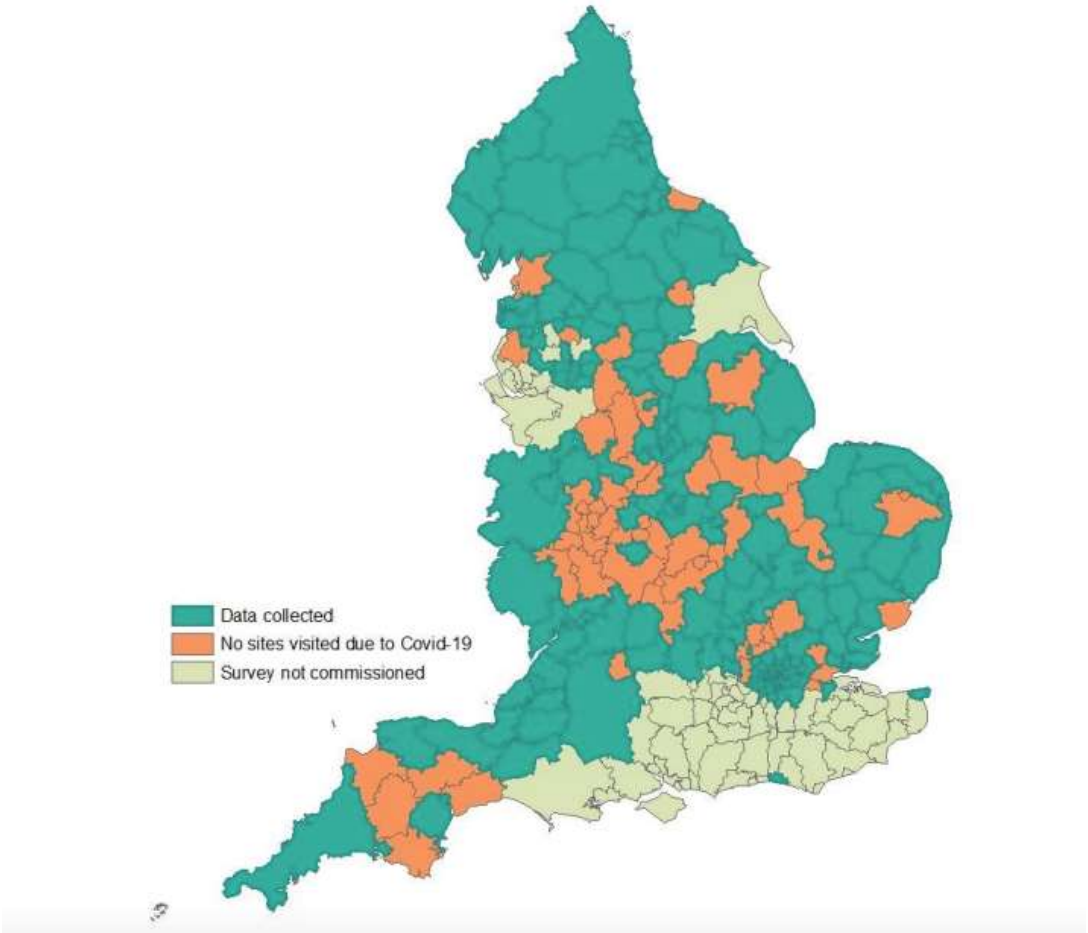
This section summarises the quantitative data for Swindon's oral health and oral health related risk factors.

Oral Health in Swindon's Children

Survey of three year olds

The most recent national survey for 3 year olds was conducted in 2020(18). However, it was heavily impacted by the Covid-19 pandemic. Many regions were not surveyed as shown in Figure 4, including Swindon. In total almost 20,000 children were surveyed across England in contrast to over 50,000 who were surveyed in the 2013 survey.

Figure 4 – Map showing areas by lower-tier local authority that data was collected for the 2020 national dental epidemiology programme oral health survey of 3-year old children.
Source: 2020 national dental epidemiology programme oral health survey of 3-year old children(18).



Though local Swindon data was not used for this study it does highlight some important trends.

The national and regional prevalence of experience of dental decay in 3-year-olds is shown in Figure 5. The previously mentioned limitations of the data mean that caution has to be taken when interpreting subnational regions however national conclusions can be reliably drawn. At a national level there has not been significant change in the prevalence of dental decay from 2013 to 2020 (11.7% and 10.7% respectively).

Figure 6 – Prevalence of experience of dental decay in 3-year-olds in England by region, 2020.
Source: 2020 national dental epidemiology programme oral health survey of 3-year old children(18).

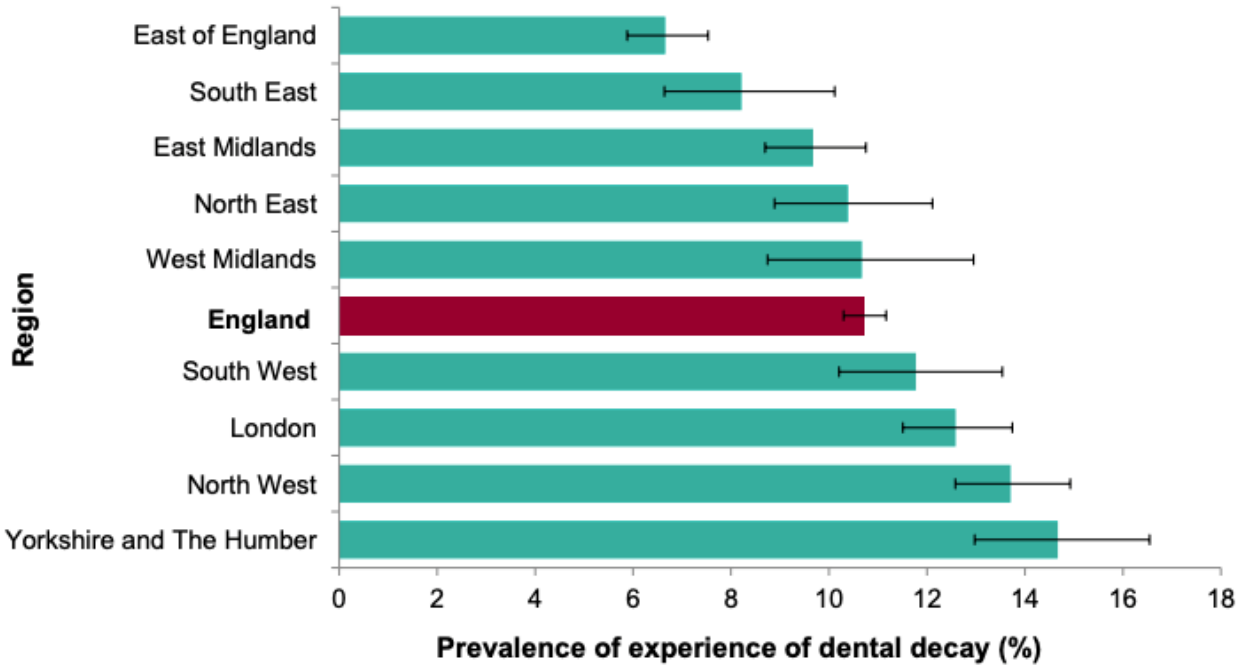
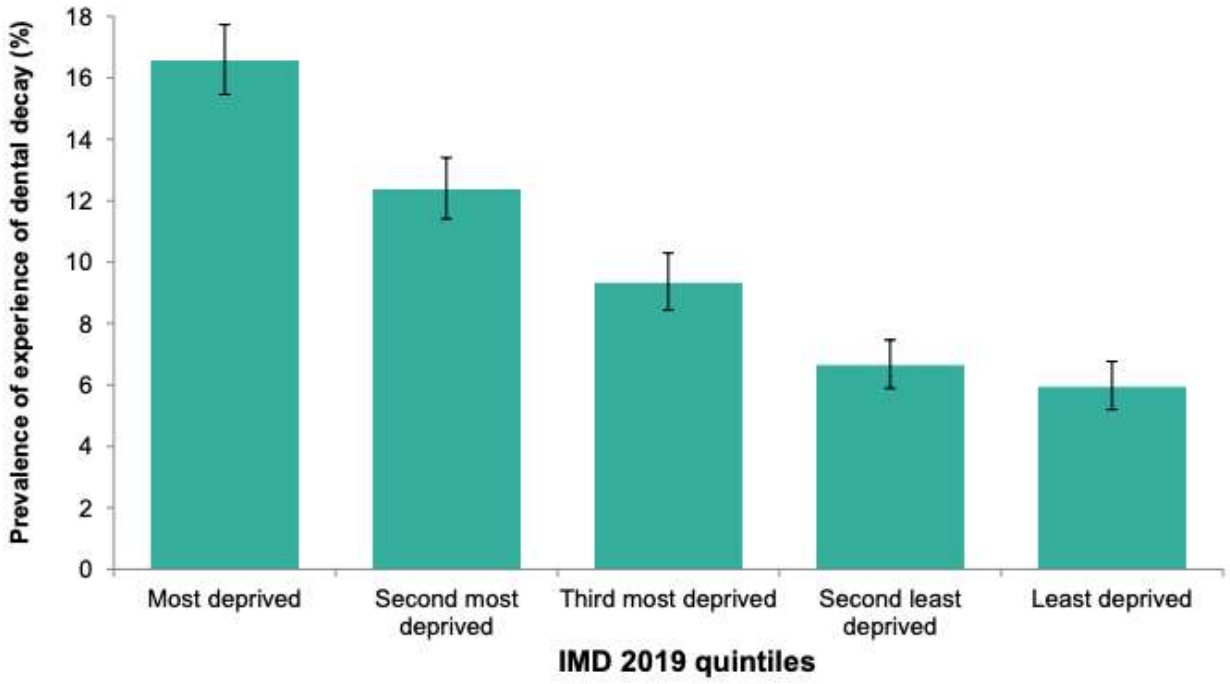


Figure 6 clearly shows the inequalities in the prevalence of the experience of dental decay between the least and most deprived across the country. With the most deprived having over double the prevalence when compared to the least deprived.

Figure 6 – Prevalence of experience of dental decay in 3-year-olds in England in 2020 by national Index of Multiple Deprivation 2019 quintiles.
Source: 2020 national dental epidemiology programme oral health survey of 3-year old children(18).

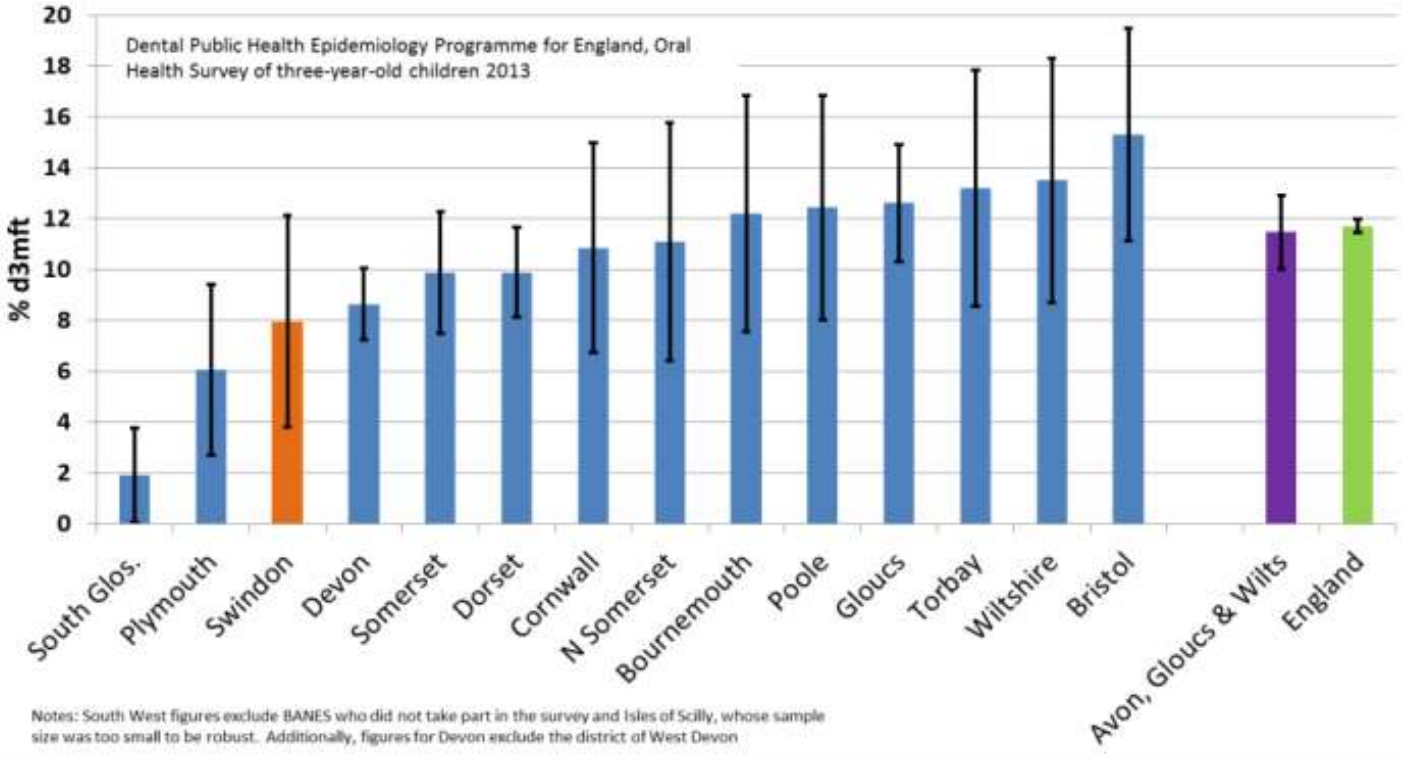


Note: error bars represent 95% confidence limits.

The previous survey of three year olds occurred in 2013(19). Though more outdated, Swindon data was collected for this survey.

In 2013 the Swindon specific results showed that 7.9% (CI: 3.8-12.1%) of 3 year-olds examined had experienced dental decay i.e. decayed, missing of filled teeth (d3mft). On average, these children had 2.21 (CI: 0.44-3.97) teeth that were decayed, missing or filled (at age three most children have all 20 primary teeth). This was better than the national average for England in which 11.7% (CI: 11.4-12.0%) had experienced dental decay. On average, these children had 3.07 (CI: 3.01-3.14) teeth that were decayed, missing or filled.

Figure 7 – Percentage of 3-year old children with decayed, missing or filled teeth (d3mft), 2013.
Source: Graph extracted from Swindon's 2016 OHNA(16).
Data from 2013 national dental epidemiology programme oral health survey of 3-year old children(19).



Survey of five year olds

As part of the national dental epidemiological programme's survey of five year olds(20), 238 5-year-olds in Swindon were surveyed by trained and calibrated examiners.

The estimated prevalence of experience of dental decay in 5-year-olds in Swindon is 28.9%. That is substantially worse than the estimates for England (23.4%) and the South West (20.4%). In comparison to three areas with the most similar statistical characterisitcs, Swindon's estimate prevalence is higher than both Warrington (24.3%) and Bedford (24.7%) but lower than Bury (35.25) as shown in Table 1. Table 2 highlights that this is the worst estimate for all the local authorities in the South West.

The estimates for the mean number of teeth with experience of dental decay in all examined children is 0.9 (CI:0.59-1.27) – the wider confidence intervals due to the lower number of children examined should be noted. However this mean is one of the highest in the South West, where the average is 0.6 (CI:0.59-0.70), and is slightly higher than the England average of 0.8 (CI:0.78-0.81).

The mean number of teeth with experience of dental decay in children experiencing any decay, a marker of severity, is 3.2 (CI:2.33-4.08). This is more inline with the South West average 3.2 (CI2.99-3.34) and slightly lower than the England average 3.4 (3.34-3.44). Though once again the wider confidence intervals for the Swindon values should be noted.

Table 1 includes several other markers of oral health including the proportion with experience of tooth extractions, proportion with dental abscesses and the proportion with teeth decayed into the pulp (an inner layer of teeth indicating severe dental decay) all of which Swindon performs substantially worse than both the South West and England.

Interestingly one of the only measures Swindon scores better than the South West and England for is the proportion with high levels of plaque present on the upper front teeth, which is indicative of poor tooth brushing habits. For this measure Swindon is estimated at 0.7% (95%CI:0.17-2.80%) whereas the South West and England are estimated at 1.9% (95%CI:1.59-2.36%) and 1.2% (95%CI:1.08-1.23%) respectively, though the wide 95% confidence intervals for Swindon should be noted.

Table 1 – Measures of oral health among 5-year olds in Swindon, Swindon's closest statistical neighbours, the South West and England.
Source: Table modified from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)

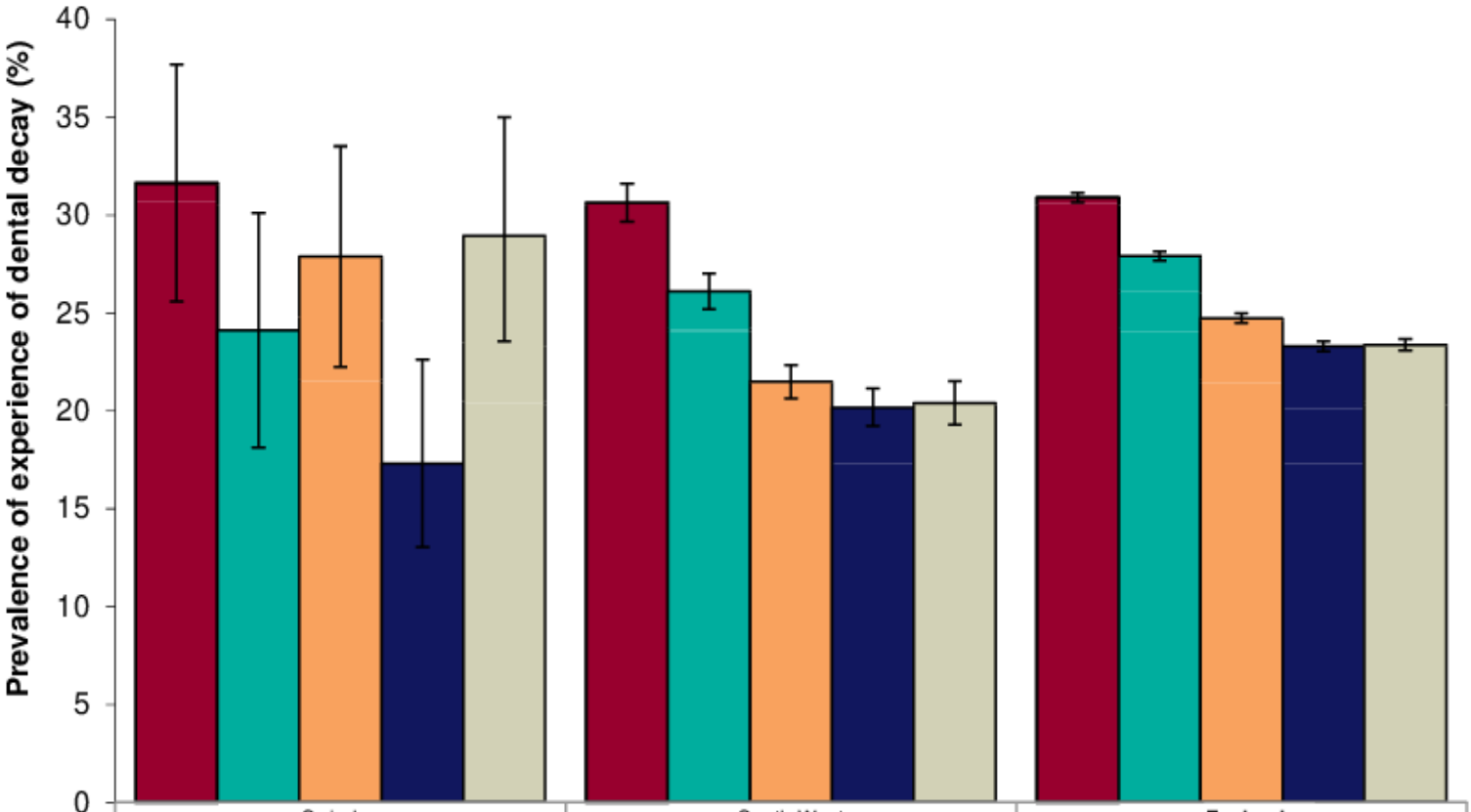
	Swindon	Statistical Neighbour 1: **Warrington**	Statistical Neighbour 2: **Bedford**	Statistical Neighbour 3: **Bury**	**South West**	**England**
Prevalence of experience of dental decay	28.9%	24.3%	24.7%	35.2%	20.4%	23.4%
Mean number of teeth with experience of dental decay	0.9	0.8	1	1.4	0.6	0.8
Mean number of teeth with experience of decay in those with experience of dental decay	3.2	3.1	4.2	3.9	3.2	3.4
Mean number of decayed teeth in those with experience of dental decay	2.3	2.8	3	3	2.5	2.7
Proportion with active decay	24.7%	22.6%	20.7%	31.1%	17.3%	20.4%
Proportion with experience of tooth extraction	2.9%	1.0%	4.4%	3.8%	1.9%	2.2%
Proportion with dental abscess	1.3%	1.6%	1.6%	0.4%	1.0%	1.0%
Proportion with teeth decayed into pulp	4.0%	9.9%	7.3%	4.3%	2.2%	3.3%
Proportion with decay affecting incisors	10.6%	5.5%	7.3%	11.3%	4.0%	5.2%
Proportion of high levels of plaque present on upper front teeth	0.7%	1.0%	0.5%	2.9%	1.9%	1.2%

Table 2: Experience of dental decay in 5-year-olds in Swindon, other local authorities in the South West and England.
Source: Table extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)

Local authority	Prevalence of experience of dental decay (%)	Mean number of teeth with experience of dental decay in all examined children n (95% confidence intervals)	Mean number of teeth with experience of dental decay in children with any decay experience n (95% confidence intervals)
Swindon	28.9	0.9 (0.59 - 1.27)	3.2 (2.33 - 4.08)
Torbay	28.2	1.1 (0.77 - 1.34)	3.7 (3.01 - 4.44)
Devon	25.7	0.8 (0.65 - 0.91)	3.0 (2.69 - 3.41)
ENGLAND	23.4	0.8 (0.78 - 0.81)	3.4 (3.36 - 3.44)
Plymouth	22.6	0.6 (0.36 - 0.81)	2.6 (1.82 - 3.36)
Bath and North East Somerset	20.8	0.5 (0.32 - 0.70)	2.5 (1.86 - 3.04)
SOUTH WEST	20.4	0.6 (0.59 - 0.70)	3.2 (2.99 - 3.34)
Gloucestershire	19.5	0.7 (0.56 - 0.78)	3.4 (3.02 - 3.85)
Somerset	17.5	0.6 (0.47 - 0.66)	3.2 (2.84 - 3.63)
Bristol, City of	15.5	0.5 (0.22 - 0.74)	3.1 (1.91 - 4.31)
South Gloucestershire	14.3	0.3 (0.15 - 0.47)	2.2 (1.36 - 2.99)
North Somerset	13.9	0.3 (0.11 - 0.56)	2.4 (1.77 - 3.09)
Wiltshire	13.1	0.4 (0.23 - 0.56)	3.0 (2.24 - 3.8)

Unlike the South West and England, where there has been a steady decline and plateau in the prevalence of experience of dental decay in 5-years, in Swindon we can see from this Figure 8 that in 2019 the percentage in Swindon was increasing.

Figure 8: Prevalence of experience of dental decay in 5-year-olds in Swindon, the South West and England, by year.
Source: Graph extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)



	Swindon	South West	England
2008	31.6	30.6	30.9
2012	24.1	26.1	27.9
2015	27.9	21.5	24.7
2017	17.3	20.2	23.3
2019	28.9	20.4	23.4

Error bars represent 95% confidence limits

Figure 9 highlights the clear trend of decreasing prevalence of dental decay with decreasing deprivation in the South West. The difference in the experience of dental decay in 5-year-olds in the South West in the most deprived to the least is 17.8% - over twice as worse for the most deprived. This trend is not as clear when reviewing the Swindon only data in Figure 10. This is likely due to a small sample size rather than these inequalities not existing, as shown by the very large error bars.

Recognising these inequalities in oral health is important. A limitation of this data set, which is important to recognise is that those who are examined have to give their permission. However the proportion of those that give permission is lower amongst those from more deprived regions. Therefore, the overall values given underrepresent deprived communities and therefore may underestimate the true prevalence of oral disease in both deprived communities and across the population as a whole.

Figure 9: Prevalence of experience of dental decay in 5-year-olds in the South West in 2019 grouped by 2019 Index of Multiple Deprivation decile, including the Slope Index of Inequality.
Source: Graph extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)

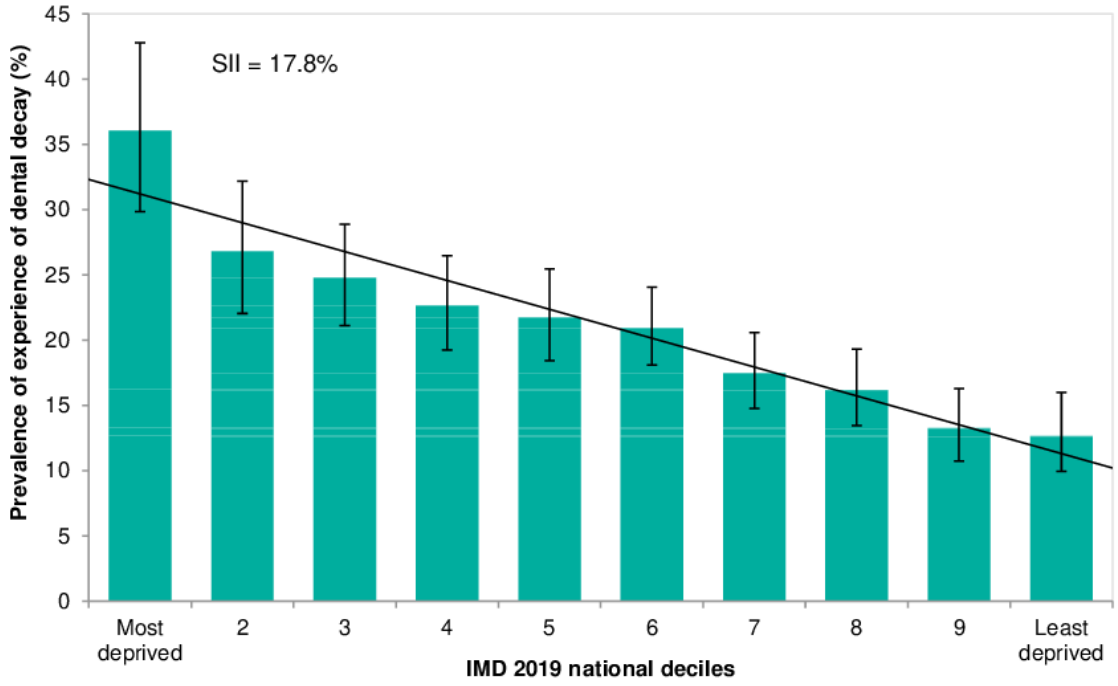
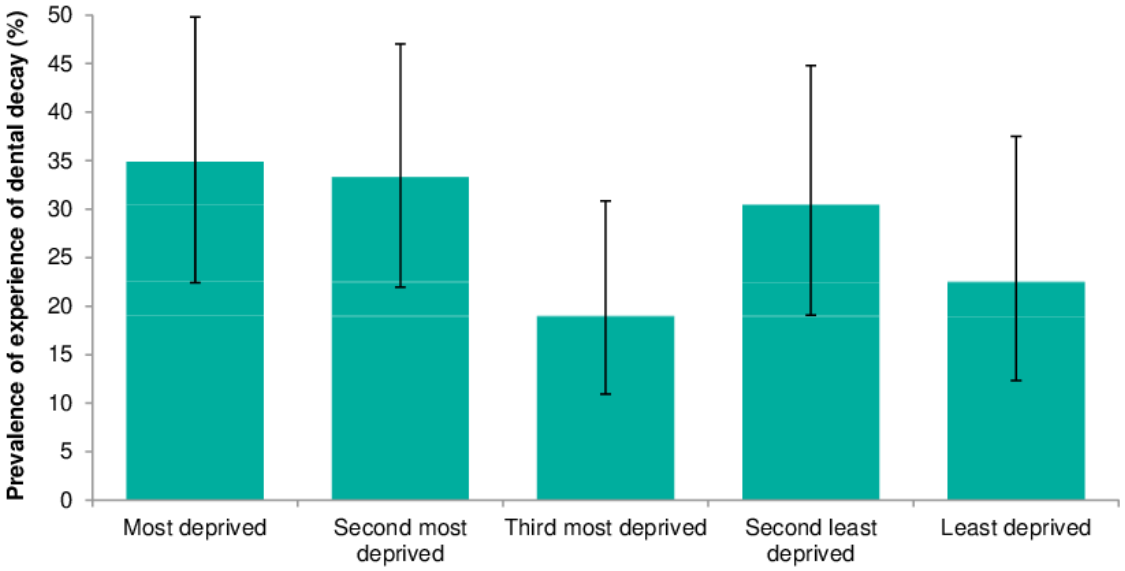


Figure10: Prevalence of experience of dental decay in 5-year-olds in Swindon in 2019 grouped by 2019 Index of Multiple Deprivation quintiles.
Source: Graph extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)

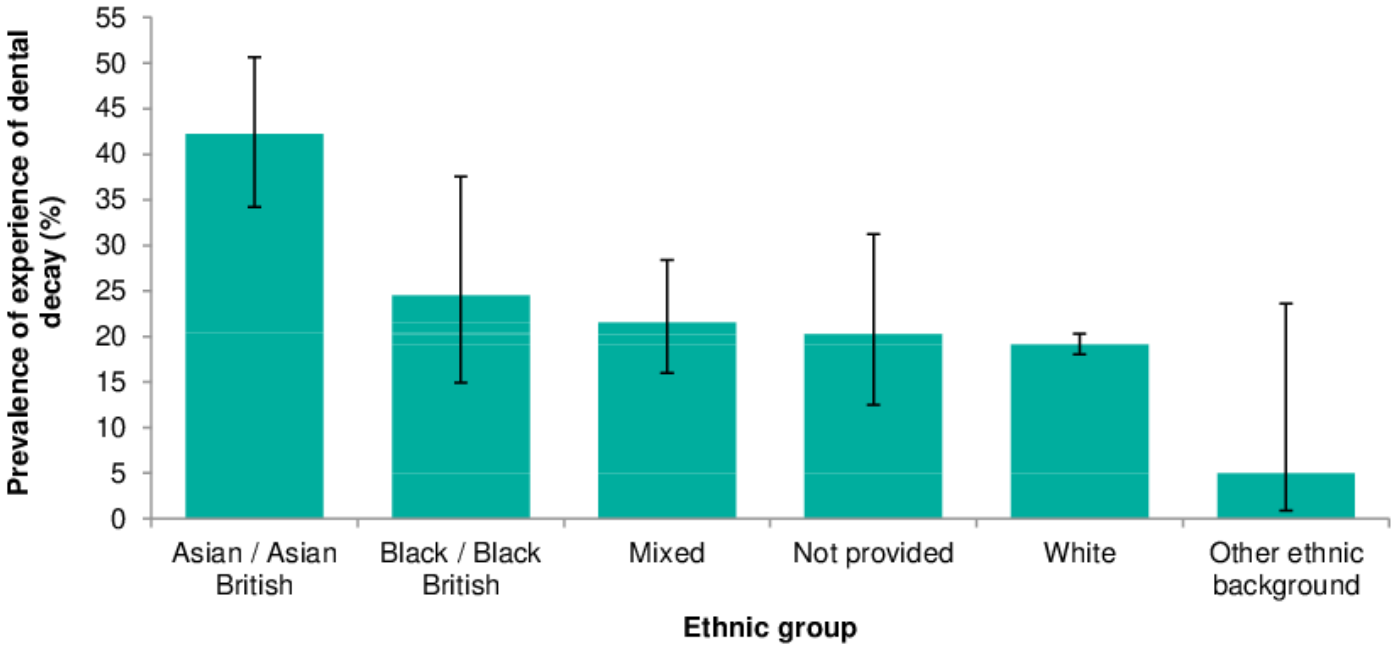


Though referring to the South West, rather than just Swindon in order to have an appropriate sample size, further analyses show a disparity in several markers of oral disease depending on ethnic group. Shown in Table 3 and Figure 11. The Asian/ Asian British group had significantly worse outcomes compared to their white counterparts. The Asian/ Asian British ethnic group had a prevalence of experience of dental decay in 5-year-olds of 42.2% and 24.4% when specific to incisors. In comparison the White ethnic group prevalence of experience of dental decay in 5-year-olds was 19.1% and 3.2% when specific to incisors. This is particularly important for Swindon in which there is a large Asian/British Asian population. However, this is a complex association that is likely to be confounded to some degree by deprivation.

Table 3: Experience of dental decay in 5-year-olds in the South West, by ethnic group.
Source: Graph extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)

Ethnic group	Number of children examined (N)	Prevalence of experience of dental decay (%)	Mean number of teeth with experience of dental decay among children with any experience of dental decay n (95% CI)	Prevalence of dental decay affecting incisors (%)
Asian / Asian British	135	42.2	4.3 (3.39 - 5.21)	24.4
Black / Black British	53	24.5	2.2 (1.34 - 3.12)	3.8
Mixed	167	21.6	3.7 (2.72 - 4.72)	4.8
Not provided	69	20.3	3.2 (2.14 - 4.29)	5.8
White	4,577	19.1	3.0 (2.85 - 3.21)	3.2
Other ethnic background	20	5.0	2.0 (2.0 – 2.0)	0.0
South West	5,021	20.4	3.2 (2.99 - 3.34)	4.0

Figure 11: Prevalence of dental decay in 5-year-olds in the South West, by ethnic group
Source: Graph extracted from PHE Swindon Oral Health Profile(21).
Data from 2019 national dental epidemiology programme oral health survey of 5-year old children(20)



Note that an update of the 5-year-old survey is due for release in the Spring of 2023.

Survey of 12 year olds

The last national dental epidemiological programme survey of 12-year-olds occurred in 2009(22). The results of the 2009 survey estimated that 28.1% (CI: 22.6-33.6%) of 12-year-olds in Swindon had experienced dental decay. On average, these children had 2.18 (CI: 1.84-2.53) teeth that were decayed, missing or filled. This was better than the national average for England. Overall, of the 12-year-old children in England 33.4% (CI: 33.1-33.7%) had experienced dental decay. On average, these children had 2.21 (CI: 2.19-2.23) teeth that were decayed, missing or filled (d3mft).

Note that a national survey of year 6 children (age 10-11) is being collected over 2022-2023 and due to be released in Spring 2024.

Figure 12: Percentage of 12 year old children with decayed, missing or filled teeth (d3mft)in 2009
Source: Graph extracted from Swindon 2016 OHNA(16)
Data from the 2009 national dental epidemiological programme survey of 12-year-olds(22)

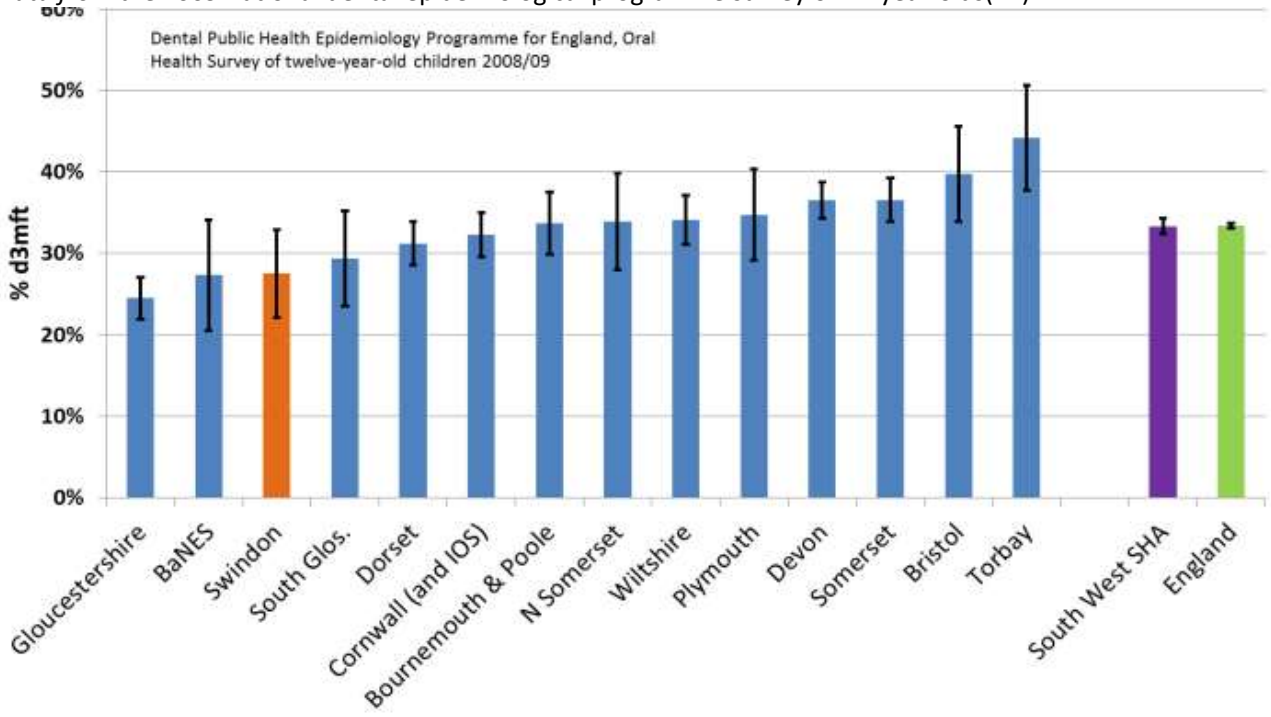
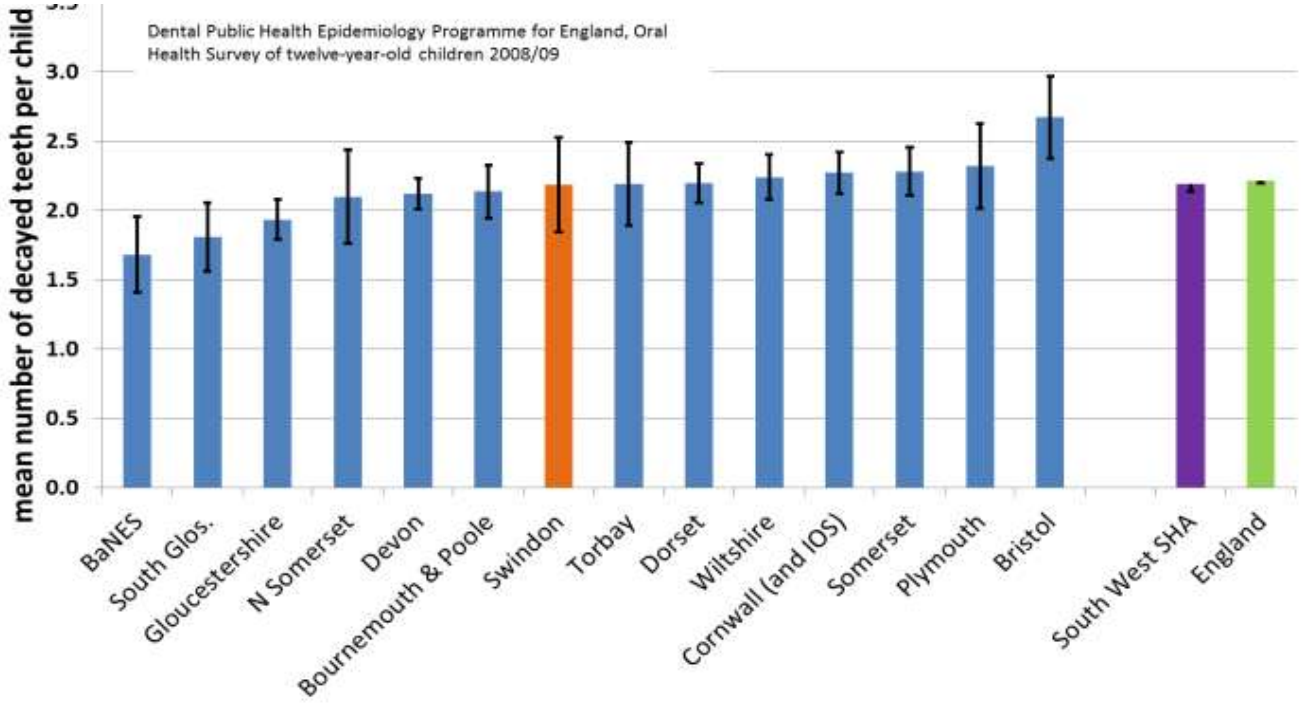


Figure 13: Mean number of decayed, missing or filled teeth (d3mft)in 12-year old children with decay in 2009
Source: Graph extracted from Swindon 2016 OHNA(16)
Data from the 2009 national dental epidemiological programme survey of 12-year-olds(22)



Hospital Teeth Extractions 0-19 year olds

Tooth extraction due to decay are the most common reason for elective hospital admissions in children aged 5 to 9 years old (nationally and locally) with admissions over double that of tonsilitis – the second most common reason. Dental treatment under general anaesthesia (GA), presents a small but real risk of life-threatening complications for children. In total, almost 30,000 children and young people aged between 0-19 were admitted to hospital because of tooth decay in 2021-22(23). Tooth extractions under GA are not only potentially avoidable for most children but also costly. For the financial year 2020 to 2021 the estimated costs of hospital admissions in 0 to 19 year olds for all tooth extractions was £21.8 million and for extractions due to tooth decay was £13.8 million. In addition to the costs of treatment, Public Health England data indicates that at least 60,000 days of school are missed during the year for hospital tooth extractions; parents and carers may also have to take time off work(24).

As shown in Figure 14, there has been a 58.4% reduction in the number of episodes of caries-related tooth extractions in hospital for 0 to 19 year olds compared to the previous year, despite a 0.4% increase in the estimated population of this age group. This is likely due to the continued impact of the COVID outbreak on non-COVID related hospital episodes, rather than a sudden reduction in need or demand.

Figure 14: Hospital episodes of tooth extractions 0-19 year olds for England, 2011-2021. Separated by those due to caries or not and the percentage of extractions due to caries shown.
Source: Graph and Data from OHIDs Hospital tooth extractions of 0 to 19 year olds 2021(25).

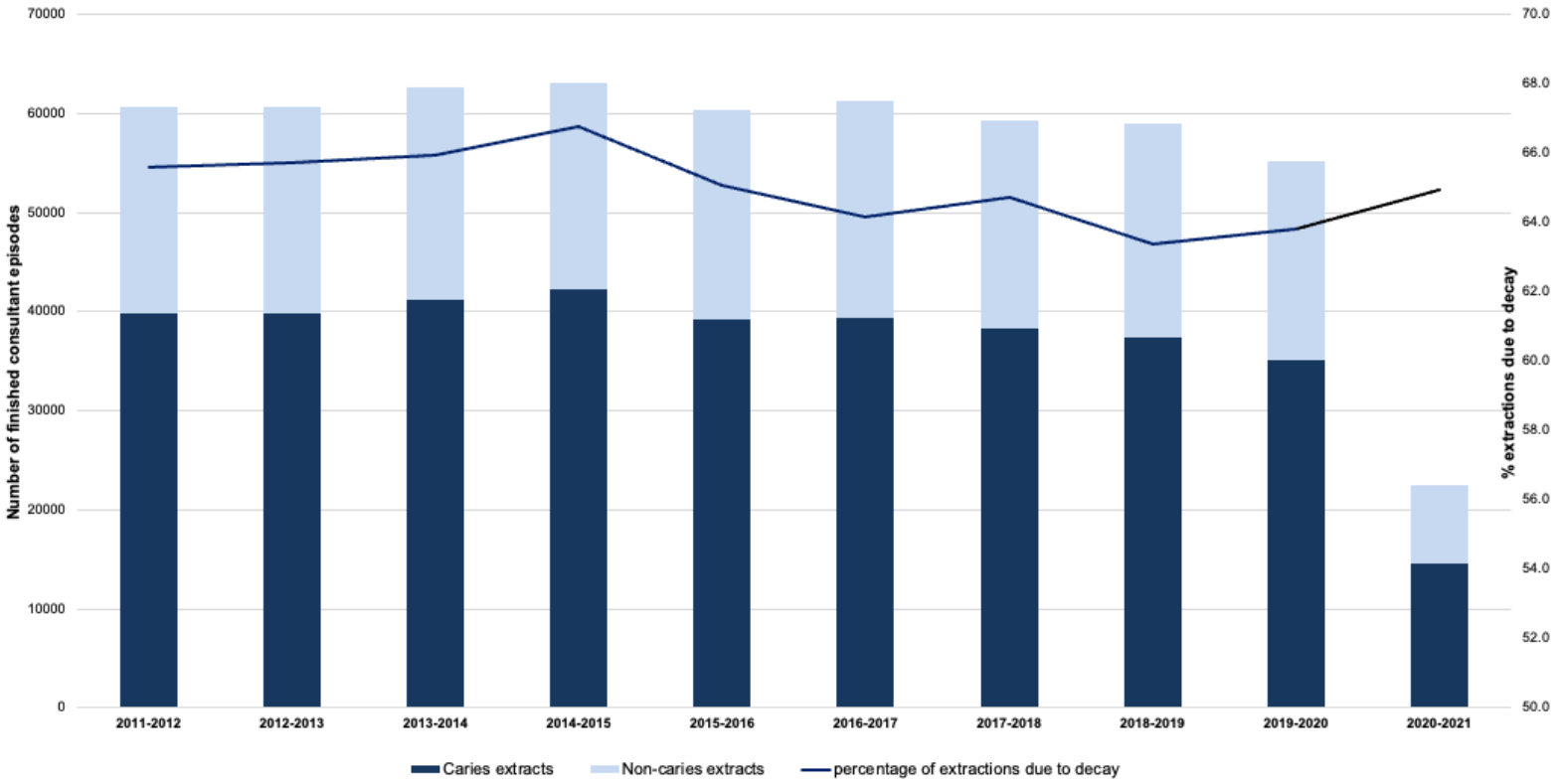


Figure 15 shows that across England the episode rates for caries related hospital tooth extraction for children and young people living in the most deprived communities was three times that of those living in the least deprived communities.

Figure 15: Episode rate per 100,000 IMD quintile population of caries related tooth extraction in hospital 0-19 years, 2020-2021.
Source: Graph and Data from OHIDs Hospital tooth extractions of 0 to 19 year olds 2021(25).

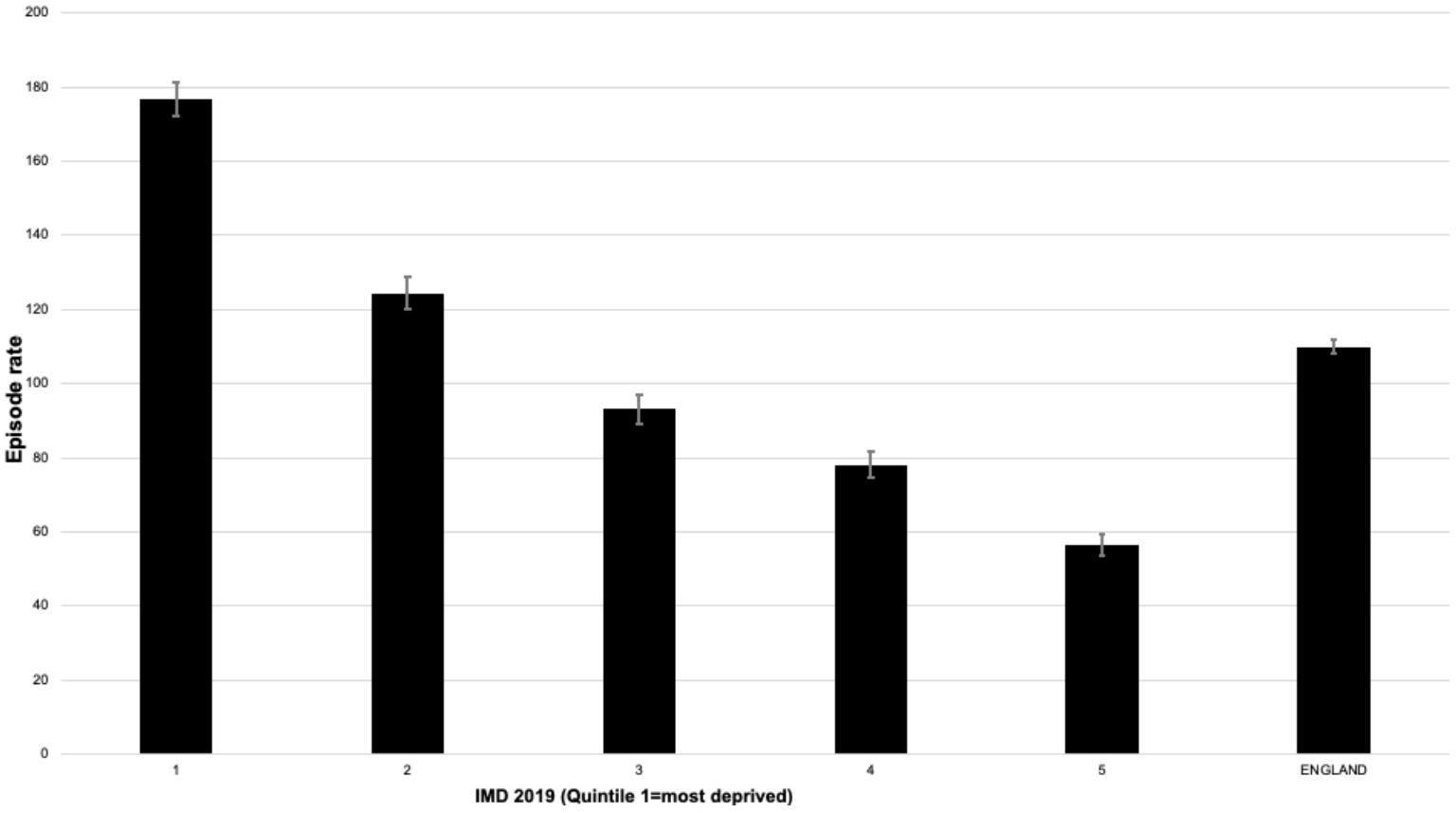


Table 4 and Figure 16 show the rate of hospital tooth extractions per 100,000 population for different age groups between the years 2018 to 2021. Swindon consistently has a higher rate of hospital tooth extractions compared to the South West and England average. Most recently 516.9 per 100,000 population compared to 220.8 and 169.2 per 100,000 population for the South West and England. Table 4 also includes the average of Swindon's three closest CIPHA neighbours (Warrington, Bedford and Bury) who are statistically similar and comparable to Swindon.

Notably in the 6-10 year olds age bracket Swindon's rate of hospital tooth tractions (1,045.5 per 100,000) is almost three times the South West average (367 per 100,000) and four times higher than the England average (256.3 per 100,000).

A limitation of this dataset is that hospital coding practices can vary across the country and this can account for some variation across local authorities. Additionally, the data can not distinguish between sedation and a general anaesthetic being used. However, it is commented in the provided data that the majority of the episodes are likely to involve general anaesthetic.

Tooth extractions specifically due to decay for children admitted as inpatients to hospital, aged 10 years and under is a NHS Outcomes Framework Indicator as set by the Department of Health and Social Care(26). In Swindon in 2018-2019 this was 946.6 (CI:843.8-1058.4) per 100,000 population and in 2020-2021 this had declined to 616.8 (CI:533.9-709.0) per 100,000 population. In the same period in England it had declined from 409.4 (CI: 404.9-414.0) to 161.3 (158.4 – 164.2).

The covid-19 pandemic related decline in provision of hospital tooth extractions is a concern as there is now expected to be a large backlog cases. The importance of this backlog of cases has been highlighted by its inclusion in NHSE Core20PLUS5 for children and young people as part of the 5 key clinical areas to reduce health inequalities. The national estimated backlog of hospital tooth extractions is shown in Figure 17. For under 18 year old treatment at the Great Western Hospital (GWH) in Swindon in November 2022 there were 503 under 18's waiting for a first appointment for a hospital based tooth extraction. The average wait for some categories of patient is approximately 7 months from referral to treatment. The longest wait on the list being 56 weeks. It should be noted that more urgent patients are able to be seen more quickly. No exact comparison of waiting times is available prior to the Covid-19 pandemic, it is recognised that previously the majority were treated inside an 18 week target.

An oral health professional at the Great Western Hospital in Swindon commented: "We are seeing significantly increased referrals since the pandemic and primary care dentists are clearly under great pressure. Many of the patients we see tell us they haven't had the enhanced prevention that is recommended by Delivering Better Oral Health. Referral for general anaesthesia should not be a transfer of care – it should be treated as a red flag indicator of the need for dietary advice, regular application of fluoride varnish and reduced recall intervals.".

Table 4: Rate of hospital tooth extractions per 100,000 population by age group in Swindon, the South West, England and the average of Swindon's 3 closest statistical CIPFA neighbours, between 2018-2021. Source: Data from OHIDs Hospital tooth extractions of 0 to 19 year olds 2021(25).

		Age				
Year	**Area**	**0-5yrs**	**6-10yrs**	**11-14yrs**	**15-19yrs**	**Total 0-19yrs**
2018-2019	**Swindon**	700	1400	600	500	800
	South West	381.7	952.7	573.2	397.7	574.2
	England	323.9	674.9	470.5	324.2	445.7
	Statistical Neighbours	233.3	566.7	633.3	466.7	433.3
2019-2020	**Swindon**	379.4	1192.4	507.6	339	619.7
	South West	343.4	829.5	460.8	327.2	492.1
	England	306.1	634.8	417.9	302	415.1
	Statistical Neighbours	120.4	328.1	497.6	335.1	296.3
2020-2021	**Swindon**	297.7	1045.5	490.9	169.1	516.9
	South West	174.5	367	196.3	135.5	220.8
	England	136.2	256.3	151.8	126.7	169.2
	Statistical Neighbours	50.9	105.9	174.7	127.4	114.2

Figure 16: Rate of hospital tooth extractions per 100,000 population by age group in Swindon, the South West and England, between 2018-2021.
Source: Data from OHIDs Hospital tooth extractions of 0 to 19 year olds 2021(25).

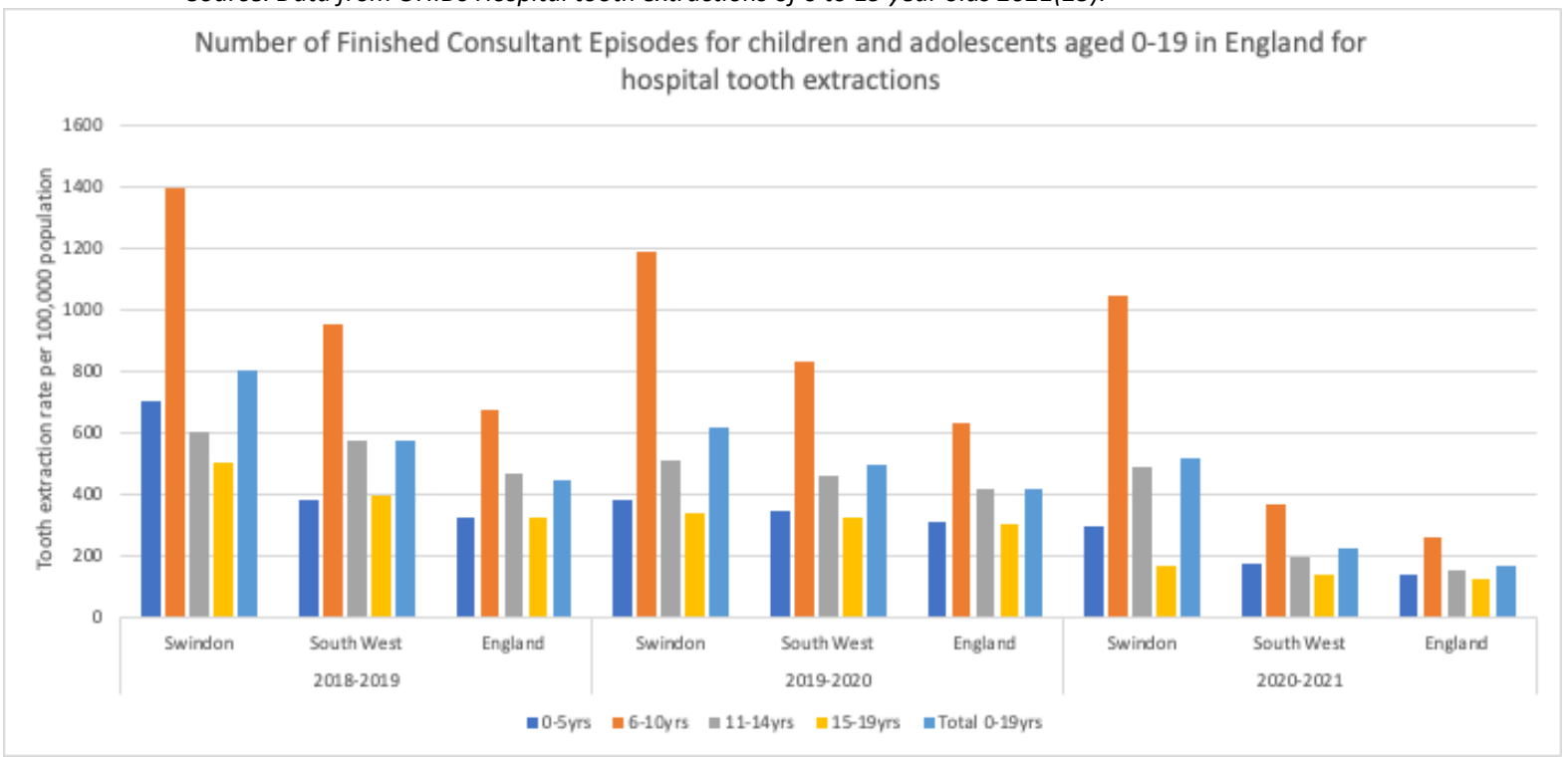
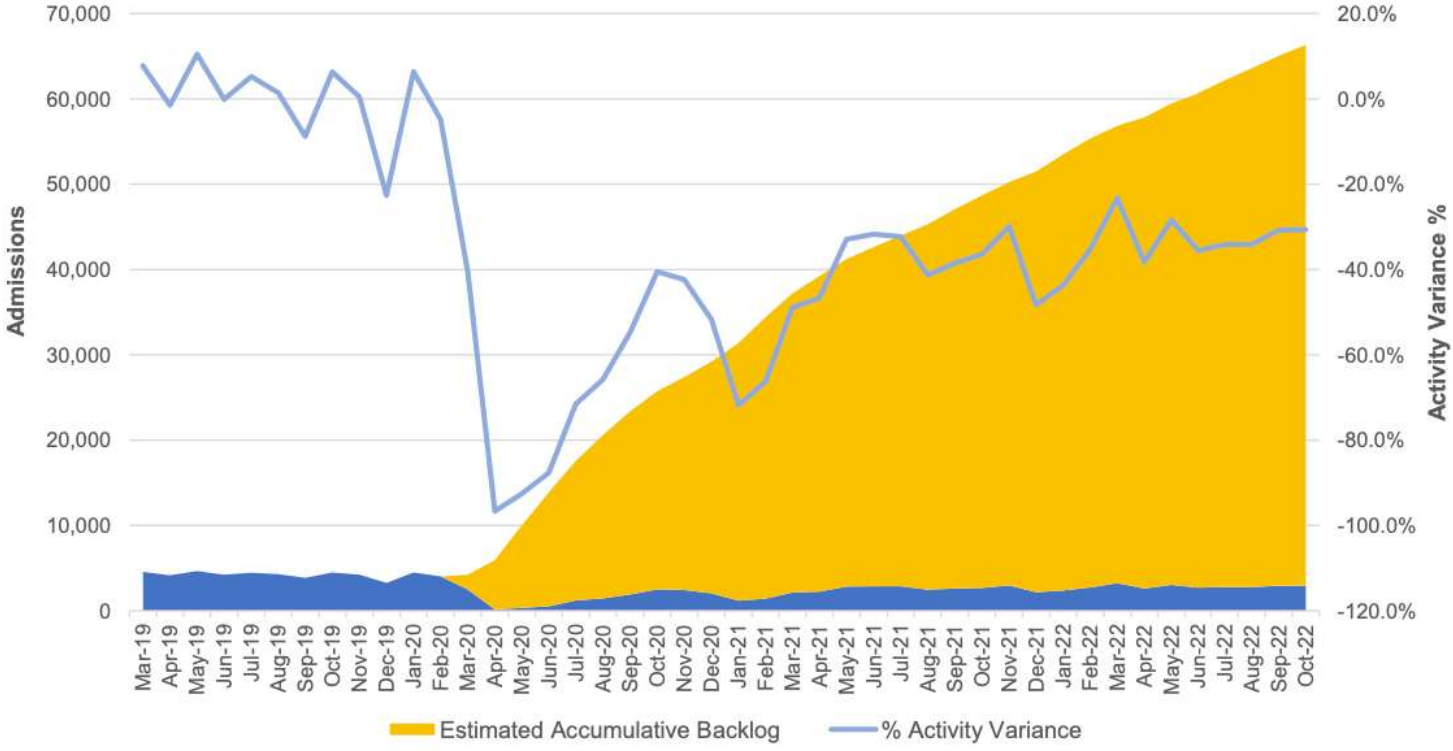


Figure 17: Hospital admissions for tooth extractions, the estimated accumulative backlog of cases and the variance in tooth extraction activity variance in England from March 2019 to October 2022.
Source: The figure is from the 16/12/2022 NHSE Webinar "Core20PLUS5 for Children and Young People" which uses data from secondary uses services (SUS)



Adult Oral Health Survey

2021 impact of Covid-19 on access to dental care

Approximately every 10 years a National Adult Oral Health Survey is carried out. The continuation of this occurred in 2021 and focused on the impact of COVID-19 on access to dental care(27). In contrast to previous surveys it was conducted remotely with no dental examination of participants. The survey was collated at the national level and does not provide local or regional comparisons.

It found approximately a third (35%) of adults in England reported having a need for dental treatment or advice between March 2020 and March 2021, when access to dental services was limited because of the COVID-19 pandemic. The most common reasons for needing treatment or advice were because of a broken or decayed tooth (36%) or toothache or mouth pain (31%).

Two thirds of survey participants (68%) who needed advice contacted their usual dental practice. Less than 1 in 10 tried other approaches, for example contacting a new practice, searching the internet or social media or dialling 111. One in 6 (16%) of them did not seek any advice or treatment.

The most common outcome for those who had sought treatment or advice was that the problem was completely treated by a dental professional (48%). One in 10 (10%) did not receive any advice or treatment.

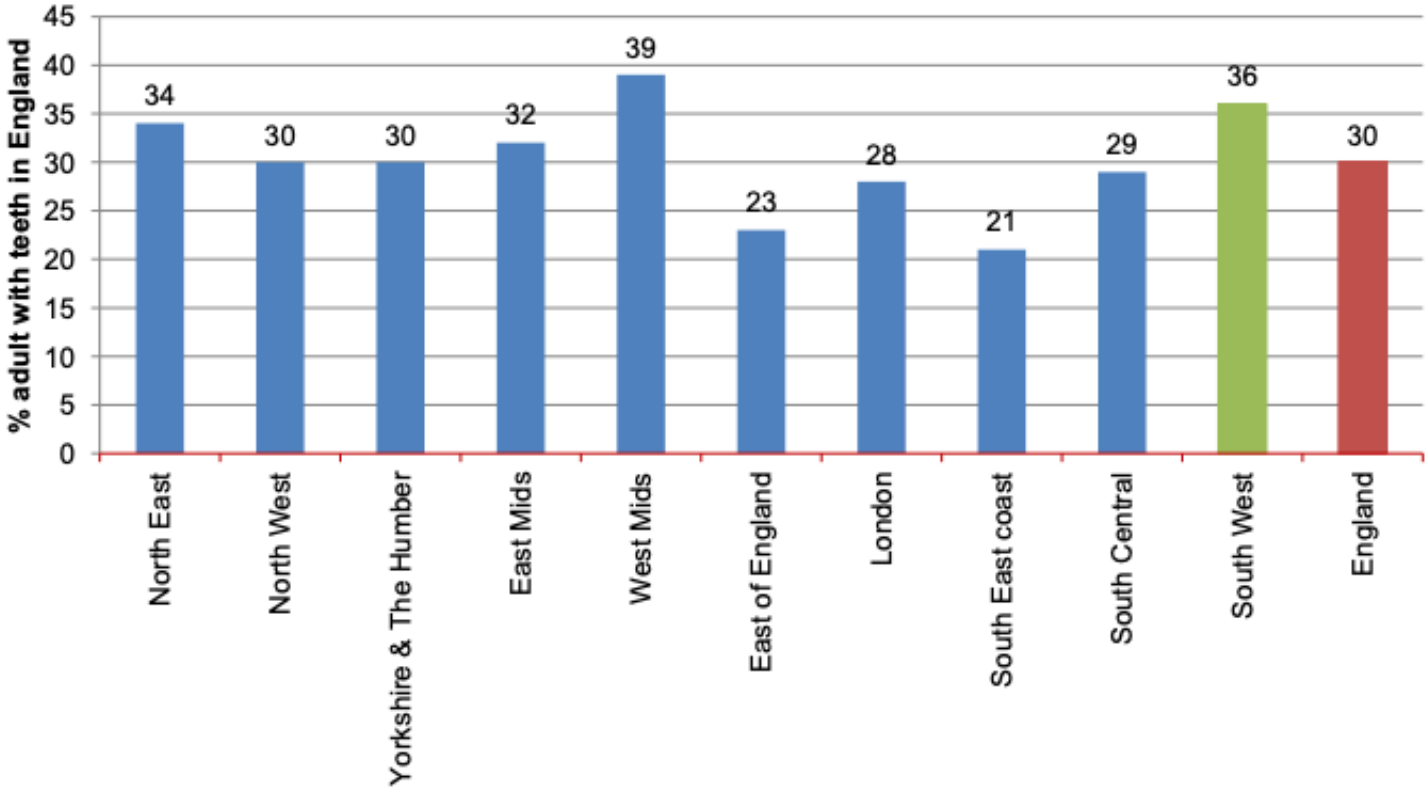
The most common reasons for not seeking help were that participants were worried about catching COVID-19 or were shielding (23% of those who did not seek help), or because they could not afford to pay for treatment or advice (13%).

2009 Survey

The previous National Adult Oral Health Survey was carried out in 2009. Data from this survey was not collected locally, however data for the South West is provided.

36% of those examined in the South West were found to have any decayed teeth. This was the second highest of any region and higher than the English average of 30%,as seen in Figure 18. The mean number of decayed teeth in the South West for adults was 1.1, which was the highest of any region and higher than the English average of 0.8.

Figure 18: Proportion of adults with any decayed teeth by region, 2009.
Source: Graph extracted from Swindon's 2016 OHNA(16)
Data from NHS Digital's Adult Oral Health Survey 2009(28)



Adults attending General Dental Practices

A 2018 National Dental Epidemiology Programme surveyed adults (>16 years old) attending general dental practices in England(29) – including a mix of NHS and private practices. Over 15,000 people were included in the survey, however only 42 people from Swindon had completed the questionnaire and examination. Therefore the Swindon specific data is not representative of the resident population and should be interpreted with caution.

In Swindon 25.6% of those examined had active decay, in comparison to 31.5% and 26.8% in the South West and England respectively. Of those with decay the average number of decayed teeth in Swindon was 1.5, compared to 2.0 and 2.1 for those in the South West and England respectively. In Swindon 22.8% of those examined were suffering from any oral health impacts fairly or very often, compared to 15.4% and 17.7% for the South West and England respectively.

The survey highlighted across England that the most deprived suffered more oral problems than the least deprived, 28% versus 11% respectively.

A limitation of this survey is uncertainty in whether oral health problems are overrepresented, as it's only capturing those attending a dental practice, or underrepresented, as it is also capturing those who regularly attend dental practices for check-ups and are thus less likely to have oral problems.

Health Survey for England

The 2019 Health Survey for England has a supplementary analysis of dental health(30). However, the provided data is only available at the national level, and therefore local or regional comparisons are not available. They found that 84% of adults have enough teeth for functional dentition (over 20 teeth). People from more deprived backgrounds were less likely to have functional dentition (25%) compared to those in the least deprived (17%).

6% of children aged under 16 had time off nursery or school in the last six months because of problems with their teeth mouth or gums, but for most (4%) this was on only one occasion.

4% of mothers and 3% of fathers reported they had taken time off work in the last six months because of problems with their child's teeth, mouth or gums.

Oral Cancer

Oral cancer registrations from 2017-2019, as provided by OHID from the National Cancer Registration and Analysis Service show a directly standardised rate per 100,000 for Swindon of 13.7 (CI:10.9-17.0)(31). In comparison the average for the South West is 15.4 (CI:15.0-16.2) and for England is 15.4 (CI:15.2-15.6).

The directly standardised mortality rate from oral cancer per 100,000 population in Swindon is 4.6 (CI:3.0-6.8). In comparison the average for the South West is 4.3 (CI:4.0-4.6) and for England is 4.7 (CI:4.6-4.8).

As with other oral problems there are stark inequalities by deprivation. Across England the standardised incidence (19.70 versus 11.39 per 100,000) and mortality rate (7.33 versus 3.00 per 100,000) of oral cancers is approximately twice as worse for the most deprived.

Figure 19: Standardised incidence rate of oral cancer per 100,000 in England by 2015 Index of Multiple Deprivation quintiles, 2012-2016
Source: Graph and data extracted from PHEs Oral Cancer in England 2016(32)

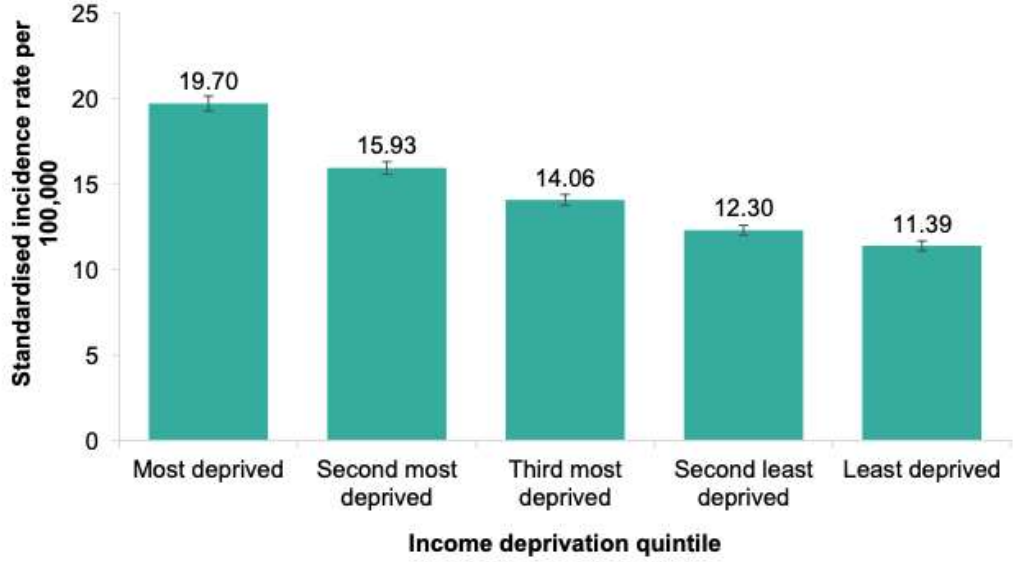
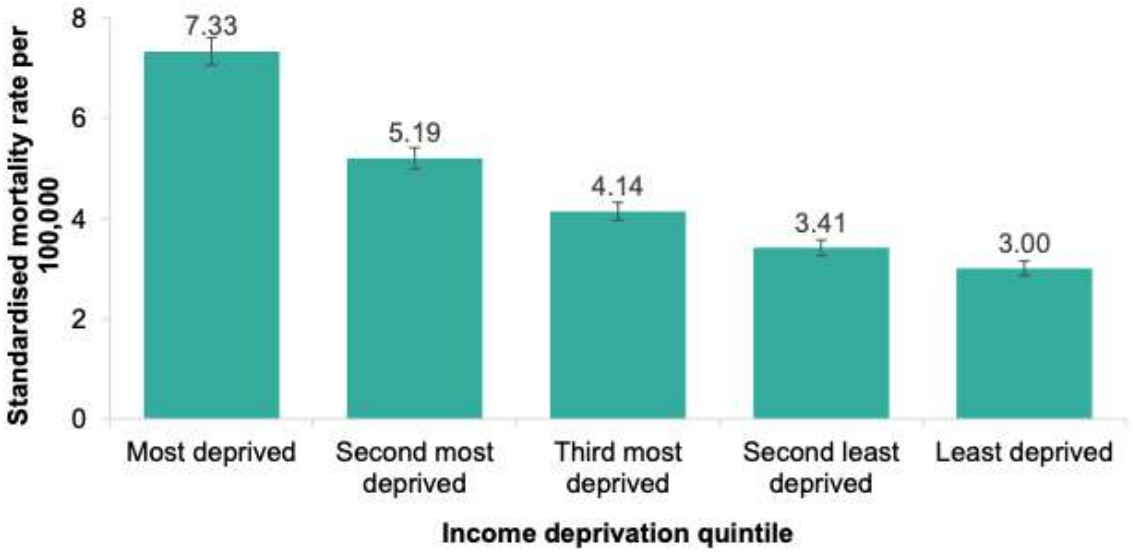


Figure 20: Standardised mortality rate per 100,000 of oral cancer in England by 2015 Index of Multiple Deprivation quintiles, 2012-2016
Source: Graph and data extracted from PHEs Oral Cancer in England 2016(32)



Oral Health Risk Factors in Swindon

Tobacco

In Swindon, in 2021, 12.5% of adults currently smoke, 26.4% were ex-smokers and 61.1% never smoked(33). Similar proportions were reported across the South West. The percentage of current smokers has been declining over the past decade to its current low. However the prevalence of smoking nearly doubles to 21.4% amongst adults in routine and manual occupations, this is also similar across the South West.

In 2019/2020, 212 (916 per 100,000 population aged 16+ years) smokers successfully quit after 4 weeks(34). The rate for Swindon is significantly lower than the rate reported for the South West and England at 1412 and 1808 per 100,000 population respectively.

Alcohol

According to weighted estimates from the Health Survey for England for the period 2015-2018 combined, 17.4% of adults are abstinent in Swindon, similar to England at 16.2%(15). 17.5% of adults drink more than 14 units a week – lower than the England average at 22.8%.

In 2020/21 Swindon showed a much higher rate of hospital admission through intentional self-poisoning by and exposure to alcohol(35) compared to other regions. For Swindon, the rate was 80.2 per 100,000 population, compared with the rate for England of 43.1 and a South West rate of 55.7. 296 people were in treatment for alcohol use in Swindon in 2020/21. Of those, 57% were men and 43% female which was similar to the England average.

Diet

In 2019/2020 the proportion of Swindon adults usually eating the recommended “5-a-day” of fruit and vegetables was 52.1% (CI:48.5-57.7%). This is lower than the South West average of 60.1% (CI:59.4-60.9%) or the England average of 55.4% (CI:55.2-55.7%).

In the Swindon resident’s Health and Wellbeing Survey, Autumn 2021, residents were asked what, if any, positives there were as a result of the Covid-19 pandemic. The top second most common theme was that of health – residents reported having more time to focus on their health such as cutting down on alcohol consumption, exercising as a family, getting outside more for walking or cycling etc., and eating healthier/less processed foods.

Obesity can also give an indication of healthy diet. The estimated prevalence of obesity in children in reception in 2021/2022 in Swindon is 12.2% (CI:10.9-13.4). This is the highest prevalence in the South West in which the average prevalence is 8.9% (CI:8.7-9.1%)

and is higher than the English average of 10.1% (CI10.0-10.2%). The prevalence of obesity in year 6 children in Swindon is 22.8% (21.1-24.4%). This is still one of the worst in the South West where the average is 19.8% (CI:19.4-20.1%), though it is in line with the English average of 23.4% (CI:23.3-23.6%). Similarly for adults (aged 18+) the Swindon prevalence of obesity is 28.5% (CI:24.3-32.8%), which is again worse than both the South West (23.8% CI:23.0-24.5%) and England (25.3% CI:25.1-25.5%).

Human Papilloma Virus (HPV) Infection

OHID provides a traffic light system to benchmark against regarding HPV vaccination in which >=90% of the target population is green, 80-90% is amber and <80% red. In Swindon only 13.8% (CI:12.0-15.9%) of females aged 13-14 years have had two doses of HPV vaccination in 2020/2021(36). This is not only much lower than the benchmarked targets but significantly lower than the South West average of 46.4% (CI:45.9-47.0) and the England average of 60.6% (CI:60.5-60.8%). This is thought to be due to national lockdowns and the suspension of school immunisation programmes as rates have previously been >90%.

Notably the HPV vaccination coverage for one dose for females aged 13-14 years in 2020/2021 is 76.0% (CI:73.7-78.2%) is more in line with the South West (75.0% CI:74.5-75.5%) and England (76.7 CI76.5-76.8%) average.

At risk Groups in Swindon

Many at risk groups were targeted for qualitative data collection. There are more at risk groups not mentioned here however this list was chosen guided by prior literature and for pragmatic reasons in the time scale available.

These groups have been described separately however there is overlap between groups, for example many of these groups may be more likely to be more deprived which can exacerbate the health inequalities being faced.

For each at risk group the wider literature and quantitative data will be summarised first. Subsequently the qualitative findings from the interviews, focus groups and surveys will be summarised in themes. Note that some themes are common throughout multiple groups.

People with Learning Disabilities

People with multiple learning disabilities (LD) may experience more problems with their oral health than the general population for a number of reasons. These may include oral and facial developmental abnormalities, various medical conditions, the effects of medication and the consequences of challenging behaviour(37).

Across Bath and North East Somerset, Swindon and Wiltshire the percentage of people registered with their GPs as having a learning disability is 5,228 which is 0.5% of the population and in line with the England average of 0.5%(38). It should be noted that for England the percentage registered as having a learning disability with their GP is different to the percentage of adults that themselves report a learning disability which is notably higher at 1.9%.

In 2010/2011 supplementary surveys to support the 2009 national Adult Dental Health Survey were performed to provide oral health information about adults with learning disabilities in England(39). The report found that for many oral health measures there was an apparent comparability between the results of the general population and those with learning disabilities. In older age there appeared to a lower average number of teeth for those with learning disability, 14, in comparison to the general population, 19, however at younger ages this measure was relatively similar in value. One disparity of note was that a lower proportion of those with learning disability brushed their teeth twice daily (63%) compared to the general population (75%).

Swindon specific oral disease prevalence data or quantitative data about risk factors in this at risk group is not available.

Local Qualitative Information

Interviews and focus groups were carried out with healthcare staff who focus on people with LD in GWH, social workers with experience of people with LD, local authority (LA) colleagues who manage supported living arrangements for people with LD and families/carers of people with LD.

The following themes were identified for this at risk group:

- Behavioural challenges preventing regular oral hygiene and worsening oral health
- Unhealthy diets
- Importance of creating healthy habits in early life - challenges to change longstanding behaviours
- Challenges communicating oral problems
- Expectation of poor oral health amongst healthcare staff
- Accessibility and Availability of NHS dental services, including specialist services
- Requiring more time than a standard NHS appointment
- Financial Barriers

Behavioural challenges preventing regular oral hygiene and worsening oral health
Staff and carers commented that an aversion to the sensation of brushing teeth, particularly in those with Autism Spectrum Disorders (ASD) as well, and that some not understanding the impacts of poor oral hygiene has lead to a high proportion not wanting to brush teeth.

Staff had seen some people with LD become physically violent and scary when attempting to brush their teeth.

Oral health is further impacted for some people with LD due to behaviours like teeth grinding or self-inflicted dental trauma.

Unhealthy diets
Colleagues working with people in supported living environments commented how unhealthy food and drink were often used as a tool to pacify or distract clients from unwanted behaviours.

The healthiness of foods is not considered a high priority by many clients who prioritise taste. Furthermore for those who have meals cooked for them the healthiness can be somewhat dependent on how busy staff are, and the quick and easy meals they provide are often less healthy. Due to this they are in the process of consulting with dieticians to help guide quick, easy, tasty foods that are also healthy for residents.

Importance of creating healthy habits in early life - challenges to change longstanding behaviours

Carers and staff working with this community commented that people with LD that came to their services in adulthood already had habits and routines that weren't all conducive to good oral health. At this stage of life for some of these people it is very hard to change these behaviours. Some staff feel that there is no point in trying to change these behaviours in some people late on in life and that this can feel disheartening.

One carer mentioned that this sort of behavioural change in adulthood repeatedly takes a lot of time, effort and persistence, without this their health can decline.

The importance of building healthy habits and routines in early years to normalise good oral hygiene, such as brushing teeth or going to the dentist, was commented by multiple people.

Social stories, short descriptions of particular situations designed for people with autism, were mentioned as a method to support health promotion and behaviour change in these groups.

Challenges communicating oral problems

All people interviewed commented that ability to communicate can be very variable between different people with LD. Some may be non-verbal. It can therefore be challenging to understand when oral health problems are occurring. Non-specific changes in behaviour may be the only sign and these can sometimes be physical in nature and risk injury to carers or individuals themselves. These delays in communication can cause oral problems to worsen before being diagnosed and treated.

A colleague work with people in supported living settings commented there is a lack of communication tools across the public sector to aid these communication challenges. They mentioned that in some private sector facilities bespoke communication aids are made and used e.g. a DVD with tractors that communicated the benefits of going to the dentist.

Expectation of poor oral health amongst healthcare staff

A member of the hospital team commented that they felt that some hospital staff had an expectation of poor oral health amongst people with LD and therefore wouldn't raise or manage oral health problems as they would do with others.

Though poor oral health is common amongst some, colleagues that work with people in LD in supported living settings commented that many were self-aware of their poor oral health and that it negatively impacted their confidence.

Accessibility and Availability of NHS dental services, including specialist services

Social workers commented that several people with LD that had been admitted to hospital under the Mental Health Act were found to require extensive dental work on arrival due to dental needs not being met in the community. They commented that in addition to the

common struggles in getting NHS appointments that even those on an NHS dental practice register can sometimes be unregistered for missing multiple appointments. However they report adults with LD are more likely to forget to attend appointments, be frightened of dentists or dislike activities outside of a normal routine and so can be more likely to miss appointments.
They also commented that accessing the specialist dentist was a difficult process and was challenging to find and submit the correct form. They felt that the process would be a barrier to accessing this service if the person was not already familiar with it.

Colleagues working with those in supported living commented that accessing or organising transport to dental appointments can also be a barrier to access dental services. They said previously dentists provided remote check-ups but that this no longer happened. They also commented that the availability of specialist dentists was not enough to meet the need.

Requiring more time than a standard NHS appointment
A carer of a person with LD commented that they were unable to qualify for the specialist dental service. Having recently changed care location they were not registered with an NHS dentist. Despite repeatedly trying to access NHS dental services they were unable to find an appointment and their oral health was worsening. In the end they paid over £600, using money from their universal income and Personal Independence Payment (PIP) to pay for it. They were upset as they felt the situation forced them to have to pay for the dental care. However, they also mentioned that the private dentist was able to spend more time with them so they felt that they had received better treatment than if they had gone to an NHS dentist who may not have been able to give him the additional time he may need as a person with LD.

They highlighted that there are many people who don't meet the full requirements for specialist dentist treatment but that a standard NHS dental appointment may not be sufficient.

Several people also commented that they felt that some dentists did not understand the needs of people with LD. That some did not take the time to understand and comfort individuals, or take the time to ensure that individuals understood them. It was recognised that many of these factors may be contributed by a limited amount of time available for appointments. Though some factors were not simply time related, as some commented that advice or management given by dentists sometimes did not recognise the healthcare and behavioural requirements challenges for some people with LD and was therefore not realistic.

Financial Barriers
It was commented that higher levels of deprivation was common amongst people with LD. This was particularly an issue if they are old enough that their parents who were becoming more elderly were less able to support them. Financial barriers could then prevent them from accessing healthy foods or in some cases private dental care.

Children with SEND

Children and young people with special educational needs and disabilities (SEND) have learning difficulties or disabilities that can make aspects of life, such as education, harder for them than most people of the same age. These children and young people may need extra or different help from that given to others. They can need extra help with a variety of things including communicating and interacting, cognition and learning, social, emotional and mental health difficulties or sensory and/or physical needs.

An increasing percentage of pupils in Swindon have a SEND or Education, Health and Care Plan (EHCP-statutory document for a child with SEND outlining the provisions needed). In 2021/22 this was 4.7% (1,707 children). This is higher than the comparable values for the South West (4.1%) and England (4.0%).

In 2014 the Dental Public Health Epidemiology Programme delivered a national survey of five and 12-year old children attending special support schools(40) . For the five-year-old group across England severity and prevalence of decay was slighter lower that those children attending mainstream schools. However, those that did have decay had more teeth affected on average. Furthermore, this age group were twice as likely to have had one or more teeth extracted than their mainstream-educated peers. Similarly, for 12-year olds across England severity and prevalence of decay was slighter lower that those children attending mainstream schools. However, those that did have decay had more teeth affected on average.

At the time of the national survey the South West was the region with the lowest prevalence (10%) and severity (0.33 teeth affected by d3mft)) of dental decay in five-year olds in contrast to the highest in the North West (33% and 1.49). In contrast the prevalence (32.5%) and severity (2.88 teeth affected by d3mft) of 12-year olds in the South West was higher than that of the English average (29.2% and 2.37).

The Inequalities in Oral Health in England report(41) investigated the impact disability had on oral health outcomes and oral health related behaviours. However the findings were sparse and often had mixed results which were attributed to the term disability involving many different diseases with different severities. The report does identify some organisational barriers to accessing dental care in those with disability including: a shortage of dentists with adequate training or confidence to manage those with disability; lack of awareness of legal responsibility of service providers to overcome barriers; a perception amongst dental professionals that the additional time and effort is not fairly compensated by the renumeration system and lack of domiciliary care equipment.

Swindon specific oral disease prevalence data or quantitative data about risk factors in this at risk group is not available.

Local Qualitative information

Interviews, focus groups and surveys were conducted with local charities the provide supportive environments for young people with SEND, with community groups made up of families of children with SEND and with colleagues and healthcare staff who work with children with SEND.

The following themes were identified for this at risk group:

- Behavioural challenges preventing regular oral hygiene and worsening oral health - "Picking Battles"
- Communication challenges
- Importance of creating healthy habits in early life
- Regular toothbrushing not being viewed as a priority
- Anxiety of the dentist
- Diet and Health Related Behaviours
- Reliance on others to support oral hygiene
- Accessibility and Availability of NHS dental services, including specialist services
- Requiring more time than a standard NHS appointment– differences between general and specialist dentists
- Financial Barriers

Behavioural challenges preventing regular oral hygiene and worsening oral health - "Picking Battles"

All groups interviewed commented that some people could have great aversion to teeth brushing or dental visits. This was contributed by anxiety (discussed further below), an aversion to sensations in the mouth, personal preferences and adverse physiological responses. One family commented that electric toothbrushes triggered seizures for their child and another said that the physical resistance and distress caused by brushing teeth was a seizure trigger for their child. Another said that their child thought anything coming to their mouth was a suction machine and would instantly become physically defensive.

The families interviewed were in agreement that there was a great importance in "picking battles". If their child did not like having their teeth brushed then they wouldn't want to cause trouble and risk having them "being off" with them all day after trying to get them to brush teeth. They described many scenarios in which oral health would not be the priority.

Colleagues with interests in oral health and children with additional needs commented there was a need for structured pathways and options for those people who struggle to brush their teeth. They envisage pathways may work to manage phobias or by desensitisation but they could also provide best alternatives if teeth brushing is not feasible.

Communication challenges

The charities focus group commented that autism and sensory processing disorders are common amongst the children. Therefore communicating can be challenging – they may be non-verbal or struggle to communicate when they're in pain. This can manifest as non-

specific violent behaviours which can take a long time to interpret the cause of i.e. whether it's tooth pain or some other issue.

Importance of creating healthy habits in early life

The community family group commented that once unhealthy habits and behaviours had manifested it was very difficult to overcome them. They highlighted the importance of a lot of time and effort invested early on in order to have the long-term health benefits. Though they also cautioned that the hard work was very easy to reverse with bad oral experiences.

Regular toothbrushing not being viewed as a priority

In addition to the above theme, in which ingrained challenging behaviours prevent regular oral hygiene, several children with SEND from a local charity commented that they made active cognizant choices to not engage in regular oral hygiene. They commented that despite all having access to a toothbrush and toothpaste, that it wasn't a priority to them. Some simply said they did not like the process and that "it feels funny". Another commented that they preferred to use only mouth wash and said "that was better than nothing". Others said they regularly just forgot, didn't care or had more interesting things to do. When some of their bedtime routines were explored it was highlighted that the focus and priority of the bedtime routine was getting them into bed and not on brushing teeth.

Anxiety of the dentist

Many from the local charity and from the family's community group commented that there was a great anxiety amongst many in going to the dentist. Some children commented that they would refuse to go to the dentist until they were "in pain". Others stated they would rather take painkillers than go to the dentist. Many different reasons for the anxiety were given:

- Some disliked the dentists invading their personal space
- Some found the change from normal routine, such as missing school, and the fear of the unknown challenging to deal with. One person suggested that if regular check-ups were done as part of their normal routine, e.g. taking place at school, then it would not be so fearful and their problems would not get so bad.
- Some had had previous negative experiences and were now anxious to go again
- It was commented that general dentists get "freaked out" by patients with SEND, especially those with ASD/Attention Deficit Hyperactivity Disorder (ADHD) as they "don't know how to manage the behaviours that come with it". This made people feel like the dentists don't want to treat them, which made them feel anxious.
- Some said, even with specialist dentists, they often see a different person every time which makes them anxious. They said they'd rather build up trust with the same dentist and know that they understand their needs.

One of the families commented that years of work at home, for example praising children when they regularly brush their teeth, can be reversed by a single bad experience at the dentist. One mother explained how her child went from regularly brushing their teeth to not

opening their mouth for several years due to pain caused during a dental check-up by a dentist.

Social Stories, which are short descriptions of particular situations designed for people with autism, were suggested by several groups as a method of educating children about the benefits of having clean teeth, asking for help with oral problems and going to a dentist.

Diet and Health Related Behaviours

Several people commented that pain and missing teeth due to poor oral health from an aversion to tooth brushing and dentists had lead to a change to softer diets that don't cause pain. Additionally it was mentioned that many had Avoidant/Restrictive Food Intake Disorder (ARFID), in which they may have little interest in eating and a limited variety of preferred food which lead to poor growth and nutrition. In these situations nutrition is prioritised over oral health. Even those without the condition can be more selective with foods and not factor in oral health.

To get foods which are both healthy and they are willing to eat can be difficult and can also be financially burdensome. It was recognised that many came from deprived backgrounds and that they could be reliant on foodbanks for food, which could limit the healthy options.

Excess alcohol or smoking were not recognised by the children and young people in the focus group as risk factors for oral disease.

Reliance on others to support oral hygiene

Members of the focus group with the local charity commented that even in older age there can be a reliance on carers to motivate and promote oral health but also carry out activities such teeth brushing. If carers are busy, for their own reasons or for reasons connected to the young person, teeth brushing can be performed inadequately or skipped completely.

Some commented that there was little information about oral health coming from schools. Others commented that in their specialist schools they had found it supportive. That their school had sessions in which they talked about and encouraged oral sensory activities which helped children become less averse to teeth brushing.

There were queries about how information trickles down to families, for example having access to specialist dentists. They suggested that signposting from schools might be effective, though many are home schooled. Some would look to the Swindon Local Offer website, though mentioned that there's not much on there to refer to.

Accessibility and Availability of NHS dental services, including specialist services

One of the families from the community group commented that they go to a general NHS dentist every year but that each time they are unable to examine in the time available due to their child's behavioural challenges so don't get properly checked. They therefore don't feel like they are receiving a benefit from attending the dentist for check-ups. When other

families mentioned the existence of specialist dentists this family said they had never been told about them before and their general dentist had never suggested referring despite the recurrent inability to examine due to their conditions. Other families mentioned they were unaware of specialist dentists, despite perceived inadequacy of treatment from general dentists.

Those on general NHS dental practice registers raised concerns that they are often at risk of being removed from the practice register if they didn't frequently have appointments. However due to school, the many other health and well being related appointments and the often long daily care requirements it was often difficult to find appropriate appointment times. Furthermore, the young person's additional needs made it more likely that a reason to miss an appointment may arise.

During the charities focus group it was commented that for those who qualify for the specialist dentist it can be hard to get an appointment as there are less available.

In contrast to other interviewees/focus groups it was highlighted that emergency dental care can be particularly challenging. With practical issues in trying to get to emergency dentists when transportation may be challenging normally but is made more difficult due to the child being in pain.

One family mentioned that they were preparing for a general anaesthetic operation to treat a self-inflicted cracked tooth. They were happy to be treating the issue but mentioned that it had taken several years to get to this point and in the meantime their child hadn't been eating or brushing as normal due to the pain.

Requiring more time than a standard NHS appointment – differences between general and specialist dentists

A family commented the proficiency at which different general dentists manage SEND children was variable. It was perceived that some didn't appear to be trained in managing children with SEND. Some of the families that that use general dentists say they do so as it's easier to get appointments but that they feel like it's a "gamble" whether you get a dentist that can appropriately manage children with SEND. They felt that more dentists needed some sort of SEND and autism awareness training. The factors that enable dentists to manage the children well were described as: being gentle and calm towards the children; taking the time to understand them; and explaining what will happen so they also understand. On exploration of this issue it did seem that a key factor was how long the children had for appointments – general dentists who could take a longer time with the children were perceived to be better than those who had shorter appointments. Another important factor seems to be continuity of dentists in order to build trusts with the children.

Additional factors suggested for improvement included making the dentist surgery more colourful and friendly as a way of reducing anxieties. Another family suggested that at the hospital children can have a "hospital passport" which explains their needs, likes and dislikes. This made it much easier for clinicians to understand the children and they wondered whether ta similar feature could be implemented for dentists

Financial Barriers

The families commented that there are financial barriers as alternative and more palatable flavours of toothpaste and mouthwash are needed due to a common aversion to mint flavouring. These alternate flavours are less common (so were particularly hard to purchase in lockdowns) and can cost between 2-4 times as much.

Looked after children and young people leaving care

Children Looked After (CLA) refers to children in care and to those that live with foster parents, at home with their parents under the supervision of social services, in residential children's homes, or other residential settings like schools or secure units. In Swindon in 2022 there were 332 CLA(42). This number has been relatively constant in recent years, and though the percentage (0.65%) is slightly higher than the South West average (0.6%) it is lower than the England average (0.7%). 10% of the CLA in Swindon were unaccompanied asylum-seeking children, which is a higher proportion than the South West and England average and has been rising in recent years.

Care Experienced Young People (CEYP) refers to those currently in care or have previously been in care between the ages 16-25. This can also be a particularly at risk group who may benefit from additional support.

CLA were found to be more likely to have dental treatment needs and less likely to access dental services, even after accounting for sociodemographic factors(43). Although CLA suffer from the same health problems as children living in other family settings, they often enter the care system in a poorer state of health because of poverty, abuse and neglect(44).

Local authorities are responsible for making sure an Initial Health Assessment of physical, emotional and mental health needs is carried out for every child they look after. In this assessment teeth are checked for any signs of decay or poor oral hygiene. The recommendation by the Government is that all children are seen by a dentist as soon as possible after being accommodated. Children who remain in care are offered Review Health Assessments, every 6 months up to five years old and annually after that.

90% of CLA in Swindon had their teeth checked by a dentist in 2021-2022, which is one of the highest percentages in England in which the mean for all unitary authorities is 72%. No local quantitative data on oral disease was available.

Local Qualitative information

Interviews were conducted with colleagues working with CLA and CEYP and individuals with experience of care.

The following themes were identified for this at risk group:

- Higher rates of oral problems
- Foster carers building trust – "Picking Battles"
- Regularly moving so challenges registering with NHS dentists
- Increasing unaccompanied asylum seekers and refugees
- Higher rates of LD and ASD
- Financial Barriers
- Health Related Behaviours

Higher rates of oral problems

Colleagues identified common issues in this group included dental neglect, not having a dentists and poor oral hygiene. In part due they attributed this to a common fear of dentists and oral hygiene habits not always being developed throughout early years.

They commented that regular health assessments do occur for those in care and guidance for oral health is provided to carers.

Foster carers building trust – "Picking Battles"

Its noted that brushing teeth may not have been a habit prior to entering care and it can be challenging to initiate these behaviours if they haven't been doing them before.
The importance of foster carers having to build trust was highlighted. They went on to say that carers "pick their battles" and it's more important to build and maintain trust than to have perfect oral health. They mentioned that dentists can be critical of this to carers without necessarily recognising the full picture and additional challenges being faced. .

Regularly moving so challenges registering with NHS dentists

Colleagues commented that many children repeatedly change areas and therefore need to find and register with a local NHS dentist. Some reportedly struggle to get appointments, though there has been promotion to prioritise CLA in NHS dentists. Most do not have the financial backing to afford access to private dental care if they are struggling to find NHS dentists.

It was commented that Swindon had relatively good levels, 90%, of CLA regularly seeing the dentist. This was attributed to the associated nursing and administrative team being effective at reminding and engaging with foster carers on the issue.

Increasing unaccompanied asylum seekers and refugees

Colleagues mentioned that unaccompanied children who are seeking asylum are a particularly at risk group. They commented that since 2015/16 the number of asylum seekers being dispersed to Swindon has substantially increased. In this group it's commented that dental trauma as well as decay is a prevalent issue.

Higher rates of LD and ASD

Colleagues also commented that there were a higher than average number of people with LD and ASD, and therefore the dental challenges associated with this group (see section "People with LD" and "Children with SEND")

Financial Barriers

Colleagues commented that many children in care come from deprived backgrounds, however once in care there shouldn't be financial barriers to accessing oral health resources. However, CEYP can face financial challenges. Though they get advice and support from personal advisors for a period after leaving care they may not have the same social or financial support network others may have at that age and be unaware of the dental services available to them.

A recent care leaver commented that though he was looked after whilst in the system he was not prepared well for leaving, so was unaware how to register for dentists. He said this was particularly difficult for him as he changed regions of the country.

There are additional risks to CEYP as delays in care for any of the reasons above can result in young people not receiving treatment before 18 and therefore missing out on receiving free dental treatment.

Health Related Behaviours

Colleagues commented that smoking is noted to be common in these groups. Furthermore that an unhealthy diet can also be common and for some is driven by prior neglect in which food may have been scare. They commented that excessive consumption of energy drinks was common.

Older people dependent on care

Older people can be dependent on care in different environments including residential and nursing care homes or in more independent but supported living environments.

The 2021 census showed that 15.9% of the Swindon population was over 65(45) and population projections suggest this older age group is going to grow the most in Swindon. In 2022 1,600 Swindon residents aged over 65 were accessing long term care, 46% of these were accessing this care in nursing or residential homes and 54% were accessing this support in the form of community care(46). The projected increase in the older adult age groups may result in an increase in demand for fillings and bridges (restorative treatments). Many may already have a heavily restored dentition and treatment may be complex especially if they are taking multiple medications or require domiciliary care.

In 2016 a review of existing oral health surveys of older people was conducted by Public Health England(47). They found older adults living in residential and nursing care homes are more likely to be edentulous, and less likely to have a functional dentition. Furthermore they found that the majority of dentate care home residents had active caries. Severe untreated caries was most common in the oldest age groups. It was found that care home managers experience much more difficulty in accessing dental care for residents than household residents. This was concerning as approximately half of resident in care homes would find it difficult or impossible to receive emergency treatment in a general dental practice due to medical or psychological complications. There is little prior information about the oral health of older people receiving supported care in their home.

In 2016 a National Dental Epidemiology Programme oral health survey of over 65 year olds living in supported housing was conducted in England(48). Poorer oral health tended to be found among participants who were older and those who reported an increased length of time since the last dental visit, being restricted in their ability to attend a dental practice, or being in receipt of various services in their home. Those with a reduced cognitive recall and those with a lower level of education also tended to have worse oral health.

Previous research has suggested barriers to dental care utilisation in the older population include lack of awareness of dental care pathways and difficulties finding transport or an appropriate escort(41).

There was a lot of regional variation in oral health outcomes in this study however the South West consistently scored better than the English average in all oral health outcomes assessed apart from worse than average levels of visible calculus and plaque. There were higher rates of certain accessibility measures such as people saying they could not find a dentists, it was difficult to get to the dentists or they couldn't afford the NHS charges.

Some Swindon level data was available. On many oral health markers Swindon performed better than the English average, including: those having seen a dentist in the past 2 years (21.3% vs 34.0%), percentage edentulous (21.3% vs 27.0%) and percentage with current pain in their mouth (7.7% vs 9.5%). For some measures Swindon performed more poorly than the English average, including the percentage with visible plaque (88.5% vs 69.9%) and

the percentage with one or more PUFA (an index of conditions resulting from untreated caries) conditions (17.3% vs 7.8%).

Mouth Care in Care Homes surveys were carried out across the South West(49). In the Bath and North East Somerset, Swindon and Wiltshire region 3 key themes were identified including: a request for face to face training; a request for a review of current practices and approach; and updates on mouth care information as they become available. Active support was recommended but there was also a recognition that many resources already exist, such as the Oral Health Toolkit for Adults in Care Homes, that needed to be signposted.

Local Qualitative information

Interviews were conducted with staff working in care homes and supported living environments.

The following themes were identified for this at risk group:

- Oral health monitoring is in place
- Communication challenges
- Ill-fitting dentures common
- Reliance on staff for oral hygiene
- Diet and Health Related Behaviours
- Requests for staff training
- Accessing NHS dentists
- A preference for domiciliary dentists

Oral health monitoring is in place

Staff commented that oral health is regularly monitored in care homes and residents undergo oral health risk assessments on arrival. Oral health audits ensure that high quality oral health provision is maintained even during busy periods.

Communication challenges

Staff said some residents, for example those with dementia, may be unable to communicate their problems. Therefore, staff may rely on softer signs and management may be generic at first, e.g. painkillers, rather than specific.

Ill-fitting dentures common

Ill-fitting dentures was described as a common problem. This was particularly problematic as they frequently fall out and are lost, taking up staff time.

Reliance on staff for oral hygiene
Some residents can find the sensation of brushing teeth agitating and therefore not want to do it. Most need some sort of support to engage in brushing teeth.

Diet and Health Related Behaviours
Staff commented that diet can be an issue for some resident's oral health. They said that maintaining adequate nutrition is a bigger priority so they may consume less typically healthy food, e.g. milkshakes and mars bars, in order to meet their nutritional needs. Furthermore, it was mentioned that in many of the dementia patients sweet taste was preferred. They described one resident regularly pouring juice over a savoury meal in order to have a sweeter taste. They did comment that healthy foods are always available and there are not financial barriers to obtaining healthy foods.

They said that some residents are forced to have softer diets due to their dental problems, some of which are due to not being able to access dental care.

Risk factors such as alcohol or smoking were not felt to be a common issue in this community.

Requests for staff training
It was mentioned that staff were very interested in learning about oral health. However, they commented that Swindon, in comparison to other areas, did not provide as much oral health training about the latest knowledge and techniques to care staff in their care homes. They mentioned that Hampshire provided access to a training plan which they could access as of and when they needed. As a result of this they had invested in new equipment (e.g. 3 sided and softer toothbrushes).

Care staff commented that "oral health doesn't have a slogan" that was memorable and promoted good oral health to staff and residents.

Accessing NHS dentists
Accessing NHS dentists was again identified as problem. However, it was reported that this was worse for issues such as ill-fitting dentures (a common problem in the care home). They mentioned one practice had quoted a 2 year wait list for missing dentures.

It was reported that many can't afford private dental treatment on top of their care home costs.

It was mentioned that the emergency dental services provided effective support, but that it was disappointing that some residents had to get to that stage.

A preference for domiciliary dentists

They highlighted that there are additional challenges in transporting residents with many health comorbidities to dentists for treatment. For this reason residents don't get regular check-ups and only attend the dentists when they need treatment.

They said that approximately 10 years ago a service called "Denpro" used to come to care homes, provide routine check-ups and treat those who needed it. However, these services haven't been available since then.

Asylum seekers, refugees and migrants

The UK has seen an influx of refugees and asylum seekers, as a result of multiple international crises, including events in Syria, Afghanistan, Hong Kong and Ukraine. Upon arrival in the UK, all individuals undergo an initial health check, however these standard medical checks do not include clinical oral health assessments.

Swindon is a “dispersal town”, it therefore supports asylum seekers and refugees with basic necessities in Swindon who had initially arrived into the country in other regions. They are housed either in one of three hotels or in smaller accommodation including flats and houses of multiple occupancy. The Harbour Project is a charitable organisation in Swindon providing “advice, support, practical and friendship” for asylum seekers and refugees.

A scoping review of the Oral Health needs of asylum seekers and refugees resettling in the South West was recently conducted by Health Care Public Health Directorate of NHS England South West. It highlighted that globally oral disease burden in this at risk group is one of the leading health problems experienced by them and that oral disease prevalence is consistently higher than the host population. It highlighted that in December 2021 there were 1,437 asylum seekers being supported by local authorities in the South West. Of those that were screened in the study in Swindon 17.9% of children and 24.5% of adults required urgent dental care.

Swindon also has a large and growing migrant population with 20.4% of residents in the 2021 census being non-UK-born(50). Swindon has particularly strong Goan, Nepalese and Polish communities.

Local Qualitative information

Interviews, focus groups and surveys were conducted with staff at The Harbour Project, a local charity that provide supportive environments for asylum seekers and refugees, council colleagues working with these groups throughout the community, families hosting Ukranian refugees and from members of the groups at different locations including The Harbour Project, The Hub in Swindon and at Pattern Church. Unfortunately information from established migrant communities was not successfully obtained.

The following themes were identified for these at risk groups:

- High prevalence of oral problems
- Language as an accessibility barrier to dental services
- Financial Barriers
- Concerns about their dental management in NHS dentists e.g. tooth extractions
- Dental differences in culture and clinical practice
- Knowledge of oral hygiene practices
- Smoking as a tool to manage stress
- Diet
- Communication through the group
- Accessing NHS dentists

High prevalence of oral problems

Colleagues in daily contact with asylum seekers and refugees highlighted their concern that many had black teeth, decay and were experiencing tooth pain. They were particularly concerned with how common this was in children.

Language as an accessibility barrier to dental services

All groups that were spoken to commented that language barriers made accessing NHS dentists an issue. During dental appointments it is often possible to get translator services, however the booking of appointments is often only in English. This makes it harder to keep calling back to look for vacancies. Several dental practices use automated messaging services which were found to be particularly challenging to navigate.

As they may require an English speaking person to make the call for them they become dependent on staff from whichever institution, e.g. The Harbour Project, to make the calls for them. This can be a recurrent and inefficient use of staff time.

It was suggested that online webpages, even without translation, were easier to manage than telephone calls and automated messaging services.

Financial Barriers

Most are not currently in a financially stable position and are reliant on government support.

It was commented by individuals that the Hotels provide a small travel toothpaste once a week. However, this is felt not to be enough by some but they have been declined access to more.

It was repeatedly expressed that the £8 a week received is not enough to cover other needs as well as purchasing toothpaste. The Harbour Project does receive donations but not regularly enough to provide everyone with their regular oral hygiene needs.

Some of the Ukranian refugees mentioned that in the past they had more money and so were able to eat more healthily. Now they do not have the disposable income they feel it's cheaper to eat unhealthily at times.

Most do not have the financial ability to pay for private services when they are struggling to access NHS services.

Concerns about their dental management in NHS dentists e.g. tooth extractions

Members of this group from the hotels and the Ukrainian refugees commented that when they were getting NHS appointments they were being told to have their teeth extracted too often. They mentioned this was happening in children as well as adults and that they didn't feel it was in their best interest despite there being a clear need for some treatment.

Some had been told that the treatment to keep their teeth was only available if they were to pay for private dental care.

Some commented that they had had so many teeth extracted that they had to only eat soft foods and they were worried about taking further teeth out.

Another commented that they had attended an NHS appointment and required treatment but were told that none of the treatments needed were covered by the NHS (they commented that part of the treatment was orthodontic but not all).

One gentlemen said he suffered a complication of a procedure he had from a dentist here in which he came away with worse pain. However, the uncertainty from the language barrier, the developed lack of trust in dentists and the fear of losing more teeth has caused him to avoid engaging with further dentists despite his issues worsening.

Dental differences in culture and clinical practice

One of the host families acknowledged that the medical and dental expectations from the Ukrainian refugees was different to the norm in England. They commented that some of the perceived lack of treatment could be due to different expectations of healthcare services

between the two countries, particularly with NHS dental provision. A similar discussion with staff working with asylum seekers and refugees from other backgrounds highlighted uncertainties about whether clinical dental practice differed between their home country and the NHS provision. This was most notable when discussing how hesitant some members of this group were to having teeth extracted in which this was often not perceived as acceptable management. This perception was accentuated when members were offered alternative management, but only if they purchased private dental care.

Knowledge of oral hygiene practices

It was commented that depending on their background many from the group had good knowledge of oral hygiene practice, however staff working with the hotels same that some weren't familiar with good brushing technique or frequently brushing teeth. They did say that most seemed open to learning new things and were open to advice. Oral health promotion posters have been created and put up around hotels with translation to improve this knowledge gap.

Smoking as a tool to manage stress

It was identified that many residents in the hotels smoke. However, it was also highlighted that not only had they been through an immensely stressful period to get here but were also living in the hotel which was an uncertain and stressful environment. Therefore, there was a recognition that for some smoking was one of the few stress releases they had. It was therefore felt that those that do smoke in this environment were perceived to be unlikely to change their habits.

It was commented that the lifestyle changes may be easier to influence once permanent housing was found for them rather than in this period of uncertainty.

Diet

Many members of the hotels complained about the food provided and it was an emotive topic for many. Diet is dictated by what is available at the hotels and many felt it unenjoyable and repetitive. Some commented that many meals are Indian curries. They felt that they were being served this as they were being misidentified as Indian, whereas most were from other regions with very different diets. They felt the curry stained and was bad for their teeth and was giving them bad breath.

Staff commented that at one hotel kids regularly only eat chips for meals as this is the only food they enjoy that is offered.

Methods of communication through the group

Several members of this group commented that they didn't know how to access dental services or where they would go for information. They mentioned a large reliance on The Harbour Project in which they receive a lot of support. Despite the services provided by the Hotels they did not feel the same support from some of the Hotels.

Some people stay in houses separatee to the hotels. It was mentioned that they feel more isolated and sometimes struggle to access the same information (health related or not) that spreads around the communities in the hotels.

Amongst the Ukrainian refugees Telegram, a messaging platform, is the main platform of communication amongst many. On this platform people have been sharing NHS dentists who are accepting people in order to help other refugees find practices to join. The Warm Welcome team has also been providing information about dental practices accepting NHS patients. Pattern Church also acts as a hub of information for many of the Ukrainian refugees. Additionally many Ukrainian refugees are staying with host Swindon residents. These hosts have facilitated their settling into the area and are a vital source of information for them. For example, explaining how to register with dentists and assisting in the registration process

Accessing NHS dentists

It was a common complaint that people were unable to get NHS dental appointments. Some commented that they previously took great pride in their teeth, attending the dentist multiple times a year for check-ups. However that had stopped since being here.

The issues in accessing NHS dentists and the high cost of private dental care has caused some of the Ukrainian refugees to fly abroad to receive their required dental care. With locations flown to receive treatment including Spain, Poland and back to Ukraine.
Some were advised to utilise dental services in other countries on their way here, as they were informed about the challenges in accessing dental care and the potential costs in accessing private care.

People affected by substance misuse

People who are affected by substance misuse are intoxicated by (or regularly consume and/or depend on or previously depended on) psychoactive substances. This leads to social, psychological, physical or legal problems. This includes problematic use of both legal (including alcohol) and illegal drugs.

Swindon performs poorly on the number of hospital admissions per 100,000 population in those 15-24 years old due to substance misuse at 105 compared to 101.1 and 81.2 for the South West and England respectively. For admissions related to alcohol specific conditions per 100,000 population, Swindon again performs poorly with 687 in comparison to 601 and 687 for the South West and England respectively. Estimates suggest that in 2018/19 there were just over 2,000 people with an alcohol dependency and in 2021 nearly 300 people accessed alcohol only treatment(15).

There is limited local data on the prevalence of oral disease in drug misusers. In comparison with the general population, drug and alcohol misusers tend to have poorer oral health(51). It's suggested this could be due to a range of factors including poverty; self-neglect and poor oral hygiene; and a decay-promoting diet.

There is an increased level of dental decay, tooth erosion, gum disease and oral cancer in people who misuse alcohol. When alcohol is used in conjunction with tobacco, the risk of developing oral cancer increases by a factor of 38(52).

Local Qualitative information

Interviews and focus groups were conducted with those with a background of substance misuse.

The following themes were identified for this at risk group:

- Accessing NHS Dentists
- Concerns about their dental management in NHS dentists e.g. tooth extractions
- Higher priorities than oral health must be attained first
- Methods for engaging with health promotion

Accessing NHS Dentists

Accessing NHS dental appointments is a problem for many members of this group. Motivation can be an issue in some people and therefore the barrier of having to keep calling up NHS dental practices to find one that is accepting can be enough of a deterrent to prevent people searching

Concerns about their dental management in NHS dentists e.g. tooth extractions

There were was a perception that they received worse treatment than others, for example being offered tooth extractions rather than the long term treatment and maintenance of a

tooth. There was uncertainty whether this was because of their background of substance misuse, whether it was due to differences in private vs NHS treatment or whether dental treatment had changed over time.

Higher priorities than oral health must be attained first

Many people that contributed agreed that in challenging times oral health was not a priority. Furthermore, that in the peak of their addictions it would not even be considered. Once recovering, food, shelter and stopping addiction were the most important things. Only once they felt more stable would oral health become a priority, despite often severe oral health problems. They therefore highlighted the importance of the timing of offering information and support i.e. ensuring accessibility once sober.

Some, but not all, were aware of the harm alcohol and certain drugs could cause to oral health. However, those that were aware acknowledged that it would not be a strong driver to stop the addiction.

Methods for engaging with health promotion

Some commented that they didn't think people would respond to oral health promotion, particularly when struggling with addiction. Though they did feel access to free toothbrushes and toothpaste, which some centres provide, would be one way that would be more likely to get engagement. Community hubs or pharmacies were mentioned as locations that could provide information or equipment to support oral health promotion. They mentioned the success of a previous health promotion scheme in this community, for HepC vaccination, through financial incentives. It was felt that something like this could work for encouraging dental check-ups.

People experiencing homelessness

PHE's report inequalities in oral health in England(41) highlighted that there was a high level of oral health need amongst this at risk group, compared to the general population such as higher levels of untreated decay and periodontal disease, and poorer oral health related quality of life. It suggested that they mainly attended dentists only when symptomatic, for example with pain.

As of July 2022 382 households were determined to be at risk of homelessness or homeless in Swindon(53). This gives a rate of 3.94 per 1,000 households to be at risk of homelessness or homeless, this is notably higher than the South West (2.71 per 1,000 households) and England (2.90 per 1,000 households).

A London based study found that of members of this group interviewed a large proportion had lost teeth following acts of violence (17%) or in accidents (12%)(54). They also found a large overlap with other risk factors such as 33% experiencing drug misuse issues and stating that 27% had used alcohol to help them deal with dental pain. The study stated that oral care had suffered: that only 35% were able to clean their teeth twice a day and a quarter had not been to the dentist for over five years. This was complicated by the fact that only 58% were unclear what they were entitled to with NHS dentists.

Swindon specific oral disease prevalence data or quantitative data about risk factors in this at risk group is not available.

Local Qualitative information

Interviews were conducted with those experiencing homelessness and staff at a local shelter.

The following themes were identified for this at risk group:

- High prevalence of oral problems
- Smoking and Alcohol as tools for managing stress
- Financial barriers
- Higher priorities than oral health must be attained first
- Accessing NHS dentists
- Concerns about their dental management in NHS dentists e.g. tooth extractions
- Methods for engaging with health promotion

High prevalence of oral problems

Many commented that they suffered from untreated poor oral health including decay, lost teeth, gum disease and pain.

Smoking and Alcohol as tools for managing stress

Smoking and excess alcohol intake was recognised as common amongst those interviewed. They were viewed as a way of managing stress. The harm to oral health was widely recognised but often not viewed as important in their current situation. Therefore reduction in smoking or alcohol was viewed as unlikely and particularly not for oral health reasons.

Financial barriers

Toothbrushes and toothpaste are often available from the shelter however not always. Lack of money can be a barrier to oral hygiene, however some choose not to brush teeth frequently despite access to free resources.

A member commented that he didn't think many in the community were aware that dental services could be free. He mentioned that the potential cost was enough to deter people from wanting to engage. He was made aware through the shelter.

Higher priorities than oral health must be attained first

Many interviewed said they were aware and self-conscious about having poor teeth or bad breath. However, some feel it is an issue that can't be fixed. Others feel it is not a priority when they have other more important factors to deal with such as seeking food, shelter or employment.

For example a lot of food received is from donations but it was commented that members from this community would not turn down offered food for oral health or obesity reasons.

Accessing NHS dentists

The challenges in finding an NHS dentist have stopped several from searching for dental care. This has resulted in some living with oral problems such as pain or lack of teeth and adapting by avoiding eating any hard food.

It was felt that sometimes registering for things can be challenging if you don't have an address, though it was also recognised that most would use the shelter's address if they needed to.

Similarly, some felt not having an ID could be a barrier to getting a dentist. Whether these limitations were true for all practices or not, it is enough to deter some from trying to get NHS dentists.

However, it was mentioned by staff that a lack of ID or address is not a common issue.

Concerns about their dental management in NHS dentists e.g. tooth extractions

Some that have already have multiple teeth lost or removed were apprehensive to see a dentists as they felt they would pull more teeth out, which was not what they wanted.

Methods for engaging with health promotion

It was commented that many don't have phones and are unable to access the news or TV for information. Therefore, information comes either through hubs (such as the shelter, accommodation or where they receive universal allowance) or through word of mouth. It was commented that there is a strong community spirit, so word of mouth works well. However, it was also commented that not all people come to the hubs or join the larger communities.

Gypsies and Travellers

The term 'traveller' or 'gypsy' refers to 'persons who wander or travel for the purpose of making or seeking their livelihood (not persons who move from place to place without any connection between their movements and their means of livelihood)' and includes those who live permanently or temporarily in settled housing. There are many different socio-cultural groups within this broad definition, including Romany Gypsies, Irish Travellers, Scottish Travellers and Eastern European Roma Communities.

Some suffering from social exclusion and marginalisation from mainstream society have led some Gypsy or Travelling families to experience poor health when compared to other minority ethnic groups in the UK.

Barriers to accessing healthcare do include mobile lifestyles, however this does not account for poor health in settled Travellers. Cultural barriers include normalisation of ill health and pride in self-reliance(55).

Providers of healthcare have traditionally struggled to engage with Traveller Communities, as there exists a fundamental mistrust of health services and healthcare personnel by the communities(56).

In July 2022 it was estimated that there were 51 caravan pitches across two sites in Swindon(57).

PHE's exploration of inequalities in oral health(41) highlighted a low prevalence of brushing twice a day (40%) and a high prevalence of a highly cariogenic diet (95%) amongst this group. However overall there was very limited data available for this group. As such no local oral health data is available for this group.

Local Qualitative information

Unfortunately in-depth interviews, focus groups or surveys for this group were unsuccessfully completed, in part due to a mistrust of newcomers and the local council. However, colleagues who have built trust and are more often in contact with this group did manage to have short conversations to highlight the following issues:

- Accessing NHS dentists
- Perceived good oral health

Accessing NHS dentists
Multiple families were unable to register with dental practices. Some had been told that they should just call in an emergency if they ever needed treatment.

Perceived good oral health
They felt that generally their teeth were in good health, despite not having regular check-ups.

People experiencing poverty

A government report estimated that around one in five people in the UK were in relative low income in 2020/21 and predicted that factors such as the cost of living crisis would cause these numbers to increase(58).

This at risk group has been highlighted in the previous sections in which examples of each measure of oral health, including decay at 3, 5 and 12 years old and hospital tooth extractions, were all shown to worsen with increasing deprivation. Furthermore the PHE Inequalities in Oral Health Report shows that for all their indicators of oral health we see a worsening with increased deprivation(41). In addition to their own risks, most of the at risk groups already discussed also suffer from higher rates of deprivation and it's associated impacts on oral health.

Adequate quantitative data at the local level for this group is not available.

Local Qualitative information

People experiencing deprivation have been included throughout the other at risk group's qualitative data gathering.

The Swindon Healthwatch are engaging with those experiencing poverty. They have had repeated general feedback about the lack of NHS dental access across Swindon, however no detailed response are currently available.

The Live Well team's Community Navigators have also been engaging with members of this at risk group to discuss oral health.

The following themes were identified for this at risk group:

- Perceived Financial Barriers
- Financial Barriers – Affording or Prioritising Resources
- Financial Barriers – non-dental costs to access services
- Financial Barriers – Private Dental Care
- Awareness of good oral hygiene
- Diet
- Smoking and Alcohol as tools for managing stress

Perceived Financial Barriers

It was commented that there was an expectation it was going to be expensive to go to the dentist, so they wouldn't want to risk that expense. This was true for some even if they were receiving government income support and so would be eligible for free NHS dental care.

Financial Barriers – Affording or Prioritising Resources
For some, due to the cost of regular dental care, a choice had to be made whether to spend limited resources on oral health. Whether this was a priority varied and was influenced by many other factors including the importance of having good teeth to individuals and other financial priorities. It was noted that some were able to access free toothpaste and toothbrushes in some locations.

Financial Barriers – non-dental costs to access services
It was commented that regardless of the NHS dental costs there would be time and money costs for transport and for missed work due to dental appointments. It was suggested that if check-ups were available in commonly accessed places such as community centres or GP practices then it may make them more accessible.

Financial Barriers – Private Dental Care
It was commented that private dental care was not viewed as a feasible option. That if they could not access NHS dental care than they would not seek dental care. It was suggested that if no NHS appointments were available that they could receive vouchers for private practices.

Awareness of good oral hygiene
It was commented that some people may not be aware of best practice for oral hygiene. Furthermore, that this can be hard to overcome if people have poor literacy skills and therefore health information may not reach them as well.

Diet
It was commented that there was not always a choice available to eat healthily. This may be because typically unhealthy food was cheaper and more affordable. It could also be that their choices were limited by donations which were not always healthy.

Smoking and Alcohol as tools for managing stress
In some smoking and alcohol was a method for relaxing during stressful times and took priority over oral health. It was commented that “depression, anxiety and access to information” can also be barriers to stopping behaviours that can be harmful to oral health such as smoking and alcohol. It was also suggested that younger people are influenced by older people in their community who may drink and smoke.

Dental Services

Primary Care

General dental practices are independent businesses that operate under NHS dental contracts. A general dental service provided is contracted for an annual agreed number of Units of Dental Activity (UDA).

Dental practices provide services according to four different bands of care with the provider awarded different numbers of UDAs for each band. Costs fee paying adults pay at NHS dentists are based on the banding. UDAs for each band and cost to fee paying adults are in brackets below:

- **Band 1 (1 UDA) (£23.80)**
  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

- **Band 2 (3UDAs) (£65.20)**
  Includes all treatment covered by Band 1, plus additional treatment, such as fillings, root canal treatment, gum treatments and removal of teeth

- **Band 3 (12UDAs) (£282.80)**
  Includes all treatment covered by Bands 1 and 2, plus more complex procedures, such as crowns, dentures and bridges

- **Band 4 (Urgent Care) (1.2 UDAs) (£23.80)**
  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

Following multiple discussions with NHS and private dentists in preparation for this report, it was repeatedly criticised that the above band system in general dental practice in its current format may not recognise clinical complexity effectively. They commented that complex cases, as might be expected with some of the at risk groups covered in this report, were reimbursed the same amount as uncomplicated patients. This can mean that the costs to the dental practice can vary considerably depending on the patient - this perceived payment gap was an issue for many dentists. This was also highlighted in a recent South West dental healthcare workshop(59) which reported the contract creates a “perverse incentive to either increase the proportion of private complex care to subsidise the shortfall in NHS related income or prioritise people whose dental needs are least great so that a greater number can be seen in a day”. In the situation described by the workshop people who can’t afford private care and have more complex needs may find it harder to access dental care.

Proposed reforms– the first in 16 years – have been suggested to the dental contract which intend for NHS dentists to be paid more for treating more complex cases, such as people who need three fillings or more(60). Dental therapists will also be able to accept patients for

NHS treatments, providing fillings, sealants, preventative care for adults and children, which will free up dentists' time for urgent and complex cases.

Primary care also incorporates orthodontics, which is a dentistry specialty that addresses the diagnosis, prevention, and correction of mal-positioned teeth and jaws, and misaligned bite patterns.

Dental Access, Availability and Activity

Access

There are 21 dental practices in Swindon providing general dental services, with a further 97 in BANES and Wiltshire. Note that NHS dental practices can also provide private dental services. Data from private practice is not available.

Figure 21a Figure 21b and Figure 22 show the locations and accessibility of general dental practices in Swindon alongside the IMD quintile ranking of different wards, as provided by SHAPE Atlas(61). Figure 21a shows that the dental practices as well as the wards with higher deprivation are clustered towards the central urban areas. Figure 21b zooms in and shows that areas of high deprivation throughout the centre of Swindon are within a 2km radius NHS dental practices. Figure 22 takes this one step further highlighting areas up to 30 minutes travel time by public transport away from the dental practices included. This does show a good geographic spread and accessibility of dental practices across the central deprived areas of Swindon. More rural and less deprived areas of Swindon are not as well connected to dental practice locations. However it should be noted that all locations within Swindon are less than 30 minute car drive away from a dental practice (not shown on these Figures).

Figure 21a: Map showing the location of general dental practices and the quintile of the 2019 IMD for different wards across the whole of Swindon. Dental practices in close proximity have been replaced with the number of dental practices in that area in green circles. Individual dental practices labelled DSe in white. Dental practices have blue circles around them showing a distance of 2km. Ward shading in purple indicates deprivation, the darker the purple the higher the deprivation.
Source SHAPE Atlas(61).

Figure 21b: Zoomed in map showing the location of general dental practices and the quintile of the 2019 IMD for different wards across the centre of Swindon. Dental services labelled in white with "DSe". Dental practices have blue circles around them showing a distance of 2km. Ward shading in purple indicates deprivation, the darker the purple the higher the deprivation.
Source SHAPE Atlas(61).

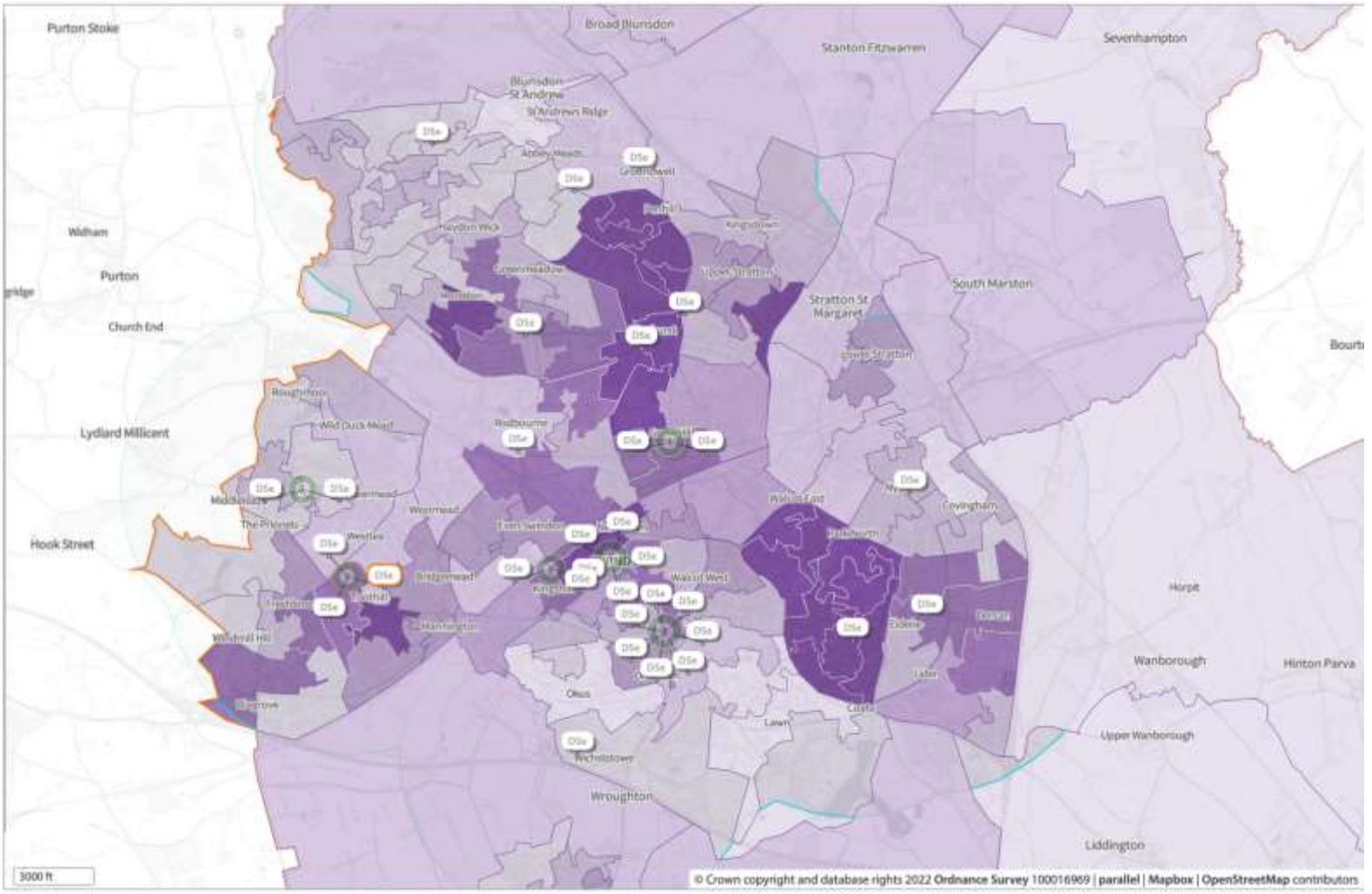
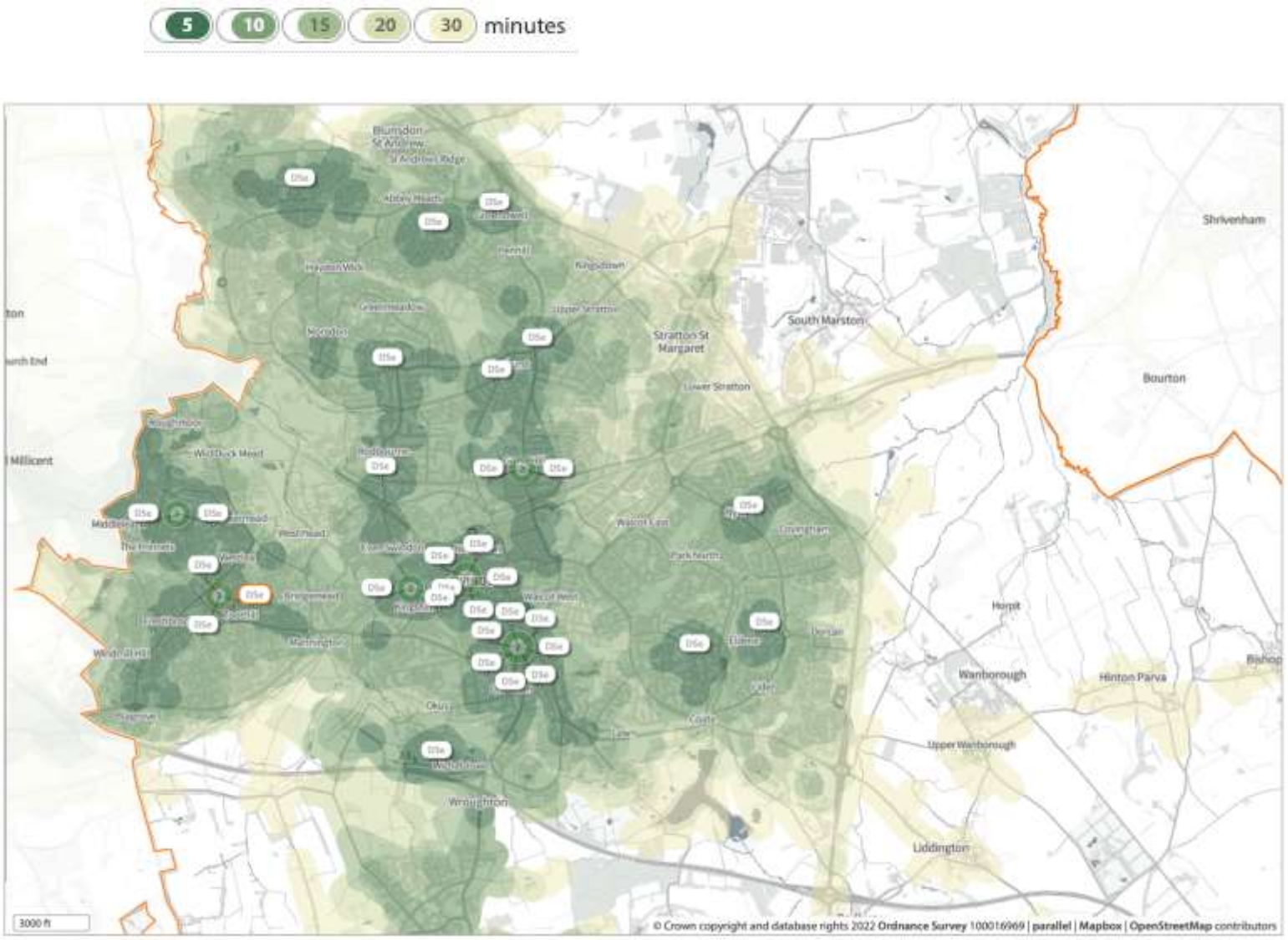


Figure 22: Zoomed in map showing the location of general dental practices and the travel times by public transport to the dental practices. Dental services labelled in white with "DSe". Dental practices in close proximity have been replaced with the number of dental practices in that area in green circles. The lighter the green shading the longer the travel time by public transport to the dental practice, up to a travel time of 30 minutes.
Source SHAPE Atlas(61).



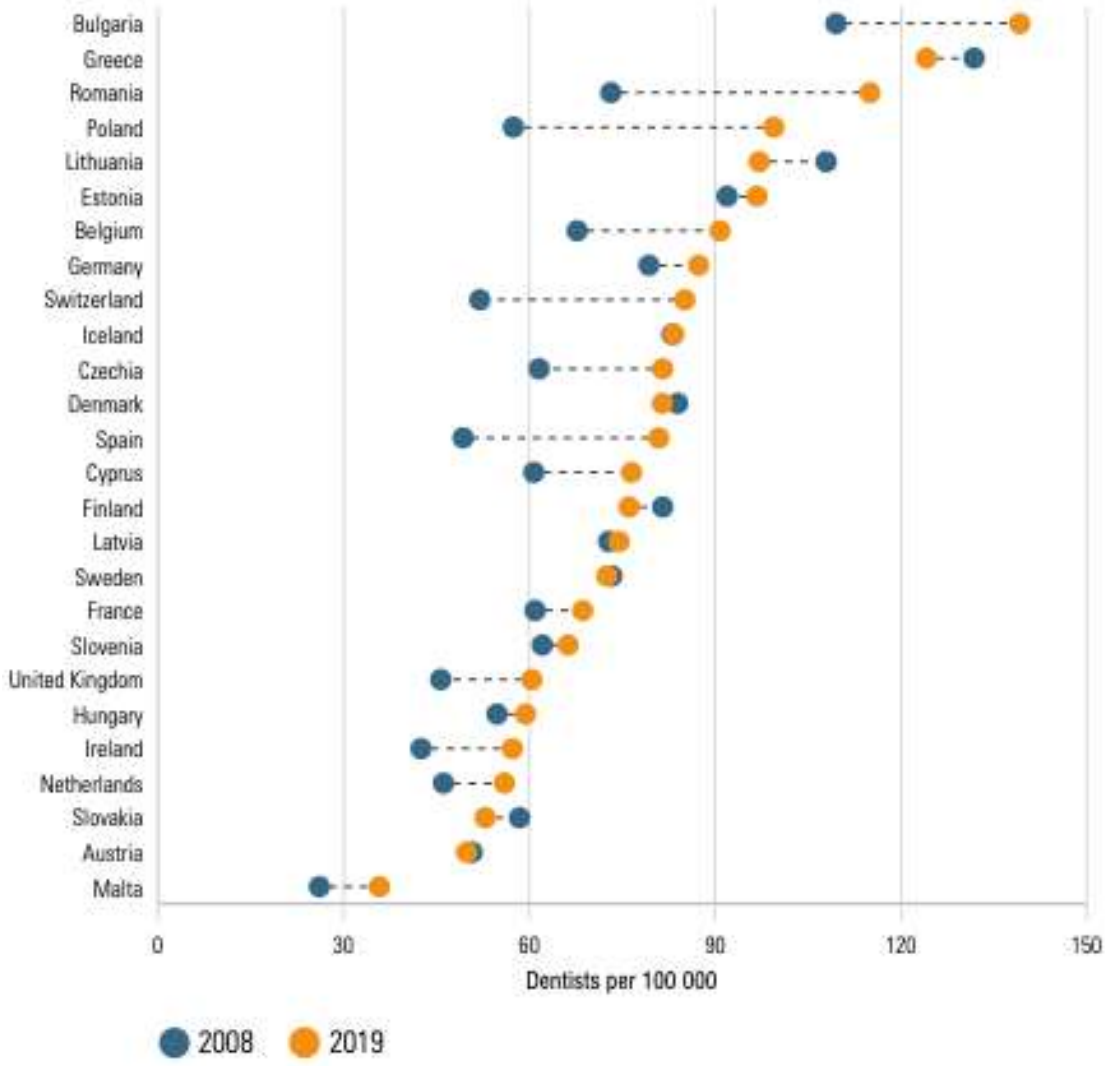
Availability

However geographic access to NHS dental practices does not equate to availability of NHS dentists. Availability of NHS dentistry is now a common issue, not just in the at risk groups examined, and has been raised recently by Healthwatch Swindon(62). This has worsened since the start of the pandemic (see section below) and is a stark contrast to Healthwatch reports in 2017 in which it was commented that broadly speaking Swindon people can get an appointment when they want to(63).

The NHS website's "find a dentist" webpage finds no dental practices accepting new NHS patients up to 16 miles away from Swindon. It's important to note that many of the practices listed haven't had their availability status updated for several years. Due to recurrent reports of challenges finding NHS dentists and the ineffectiveness of the NHS webpage a Community Researcher in the Live Well team produced a summary of practices in Swindon that were accepting patients, last updated in December 2022. At which point of 53 dentists listed by the Care Quality Commission within 10 miles of Swindon only 1 was taking on new adult NHS patients.

A South West workshop of professionals involved in the delivery of dental care (59) highlighted three areas to improve oral health in the region: workforce, access and oral health improvement. Dental practices are having difficulties in recruiting and retaining NHS dental practitioners, which has created longstanding access issues and delays for dental services that has increased demand for 111, minor injury units, special dental care units, emergency departments and general practices in and out of hours. Lack of capacity also has a financial cost in addition to the clinical cost to the people who are unable to access the right level of care when they need it. Swindon is reported to have 1.16 dentists per 10,000 people which is lower than the English average of 1.37 dentists per 10,000 people(64). The number of dentists per population in the UK is one of the lowest in Europe as shown by Figure 23. Dental access issues also create additional workload for the wider system as well as negatively impacting on the wellbeing of dental practitioners. Safety procedures introduce due to the Covid-19 pandemic further limited the number of patients being seen, limiting the dental practices ability to meet demand. Dentists are now working through a backlog of patients that built up whilst services were limited.

Figure 23: Number of active dentists per 100,000 population by European country, 2008 and 2019. Source: Graph extracted from Oral Health Care in Europe: Financing, Access and Provisions 2022(65) which sourced data from the CECDO database



Activity

In the quarter preceding March 2022 general NHS dental practices in Swindon provided 30,600 courses of treatment worth 62,200 UDAs(66). Of the courses of treatment 55.12% were for paying adults, 12.93% were for non-paying adults and 31.96% were for children. According to NICE guidance, 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. The proportion of the population in Swindon who have been seen by a dentist in the past year for children (46.5%) or 24 months for adults (34.3%) is similar to the English average. Prior to the Covid-19 pandemic in December 2019 the proportions in Swindon were 57.7% for children and 46.4% for adults. Dental attendance does not necessarily prevent dental disease, but it is important in terms of assessing patient risk to oral diseases and giving appropriate evidence-based advice.

Services during and following the Covid-19 Pandemic

[this section is an extract from the Leicester 2022 OHNA(67) and gives good national context to dental services during and following the Covid-19 pandemic]

"During the pandemic, contractual responsibilities changed, and practices were required to prioritise urgent care; vulnerable patients (including children) and those at higher risk of dental health issues. In many practices, there was not sufficient capacity to be able to offer routine dental check-up appointments to those who generally have good oral health.

Over the last two years, NHS dental services have faced major challenges. Infection prevention control guidelines aimed at combating COVID-19 reduced dental capacity across both public and private sectors, largely due to the introduction of post aerosol generating procedure (AGP) "downtime" between patients. AGPs are procedures that create a higher risk of respiratory infection transmission and are defined as any medical, dental, or patient care procedure that can result in the release of airborne particles. Dentists regularly use high velocity air and water streams that are considered a high risk of creating aerosols. Practices had to leave a "downtime" between appointments of between 10 and 30 minutes after an AGP procedure to allow particles to settle, and so reduce the spread of COVID. These necessary rules and others such as social distancing in waiting rooms meant that in a working day practices were not able to see the same number of patients as pre-COVID-19.

As there is no patient registration within dentistry patients had to be prioritised regardless of whether the member of public was on a practice's business list or not – the NHS made this a condition of ongoing financial support. However, there were limited routine appointments available as this was dependent on the capacity of each practice, following treating any urgent patients. This can mean that even patients who (before the pandemic) would regularly attend a dental practice, were only able to be seen in practice if they meet the criteria for safely accessing an urgent face to face appointment.

NHSE has recently set out the expectations for provision of primary care dental services as recovery continues. The latest guidance published states that providers should prioritise patients with an urgent need for intervention, and also prioritise care for patients that are considered at highest clinical risk/vulnerable groups including children. However, as recent Healthwatch reports have shown it is clear more action must be taken to increase access and dental activity for our patients, who are struggling to get appointments."

Patient Satisfaction

As part of the NHS Outcomes Framework the Department of Health and Social Care monitor patient's experience of NHS dental services(68). Since the covid-19 pandemic there has been a notable decline in patient satisfaction in Swindon. Pre-lockdown the percentage of people rating services as "very good" or "fairly good" was 85.6% (CI:83-87.9%), however the most recent results in January 2021 were 76.8% (CI:73.8-79.5%). This is similar to the decline seen in the rest of the South West of 73.9% (CI:73.3-74.4) and England of 76.8% (CI76.7-77.0%) from 82.5% (CI:82.0-83.1) and 84.2% (84.084.4%) respectively.

Fluoride applications

Evidence-based guidance recommends application of fluoride every six months for all children aged 3 years and above and more frequently at risk of decay. Fluoride varnish application is also recommended twice a year for at risk adults. Fluoride varnish application two-three times a year can reduce tooth decay by 33% in baby teeth and 46% in adult teeth(69).

Prior to the pandemic in 2018-2019 in Swindon there were 25,914 fluoride applications representing 4.3% of the regional applications(70). 9.6% were for adults and 90.4% were for children. This represented 11.4% of the population, 1.4% of adults which is slightly above the South West proportion and 45.2% of children which is also above the South West proportions (1.2% and 42.8%). Since then in the year 2021-2022 activity has decreased to 21,264 fluoride applications performed in Swindon(71). 7.9% were for adults and 92.1% were for children. This represents approximately 9.1% of the population.

Domiciliary Services

Domiciliary oral healthcare is provided 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. Adequate provision of these services will ensure the facilitation of a reasonable alternative route for older people and at risk groups in accordance with the Equality Act 2010.

Prior to the pandemic in the year 2018-2019 782 domiciliary NHS dental visits were claimed in Swindon, with only 4 visits being for children(71). In contrast in the year 2021-2022 only 136 domiciliary NHS dental visits were claimed in Swindon, only one being for a child and the remaining 135 for adults.

Urgent Activity

Access to urgent care is critical to support the relief of pain and for accidental damage. Patients' use of urgent care services is more complex than just a failure to access preventive or routine care.

Great Western Hospital NHS Trust host the Community Dental Services that manage in-hours appointments for patients with an urgent dental need who do not have access to an NHS dentist for patients in Swindon.

In the quarter preceding December 2021 14.2% of all courses of treatment in Swindon were urgent care, in comparison to 14.7% for all of England(71). In contrast prior to the pandemic in the quarter preceding December 2019 the percentage of courses of treatment that were urgent were only 7.0% for Swindon and 9.7% for all of England.

Secondary Care

The Great Western Hospitals Foundation Trust is the main provider of acute care for dentistry for Swindon residents including oral surgery and orthodontic treatments.

Community Services and Special Care Dentistry

Great Western Hospitals NHS Trust is commissioned by NHS England to provide a range of community services.

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, more often, a combination of these factors. Special care dental services provide a range of urgent and routine dental care. Some are also linked to other services such as oral surgery.

Healthwatch Swindon reviewed special care dentistry in the South West in 2020(72). Although people commented favourably on the quality of the service, they also highlighted issues in accessibility, variations in waiting times and a need for home visits.

Current or Potential Oral Health Improvement activity in Swindon

Programmes Currently Happening

Mouth Care Matters
Mouth Care Matters is a Heath Education England (HEE) initiative to improve the oral health of patients in hospital through education and training(73). Supporting patients with regular mouth care is a fundamental part of care that has frequently been identified as neglected and needing improvement. Hospitalisation is associated with a deterioration of oral health in patients. This in turn has been linked to an increase in hospital-acquired infections (such as hospital-acquired pneumonia), poor nutritional uptake, longer hospital stays and increased care costs. A health economics report into Mouth Care Matters at East Surrey Hospital found that, for every £1 invested, there was a saving of £2.66 in terms of fewer hospital bed days, reduced number of prescriptions and GP visits.

The project is based upon staff requiring knowledge about oral health, skills to assess and care for oral health, access to tools to provide effective mouth care and support when necessary from those with enhanced mouth care skills. A series of video training sessions are accessible online.

Mini Mouth Care Matters
A new arm of the above initiative funded by HEE. Mini Mouth Care Matters aims to empower medical and allied medical healthcare professionals to take ownership of the oral health care of any paediatric in-patient with a hospital stay of more than 24 hours(74). The principles are very similar to that of the original programme.

They have developed an oral health screening tool to identify patients who may be at a high risk of developing dental decay, which has been shown to lead to long-term detrimental effects in children leading to pain, sepsis and compromised growth and development.

Mini Mouth Care Matters aims to encourage all nursing, medical and health care professionals to “lift the lip” and identify common oral health and dental conditions and to include oral health care as part of basic general health care needs for all in-patients. There are a range of e-learning resources available.

Swindon Healthy Early Years and Healthy Schools Programme
The Swindon Healthy Early Years and Healthy Schools Programme is open to all early years’ and school settings. It focuses on the whole child and gives settings a framework for their activities with children, parents, carers, staff and the wider community. The programme is designed to recognise the achievements of the individual centres and how they support the health and wellbeing of the children and the families that are linked to their settings. The programme takes a whole setting approach to improving health and wellbeing including physical activity, nutrition, emotional wellbeing, safety, immunisations and oral health.

The programme supports schools with improving children's and their families oral health. Including classroom activities, evidence based messages for teachers, printable resources for classroom activities and information for parents.

NICE oral health guidelines in care homes

NICE oral health guidelines (NG48) are embedded in care home providers service specifications. This has been promoted following a CQC report in 2019(75) that highlighted that nationally too many people in care homes were not being supported to maintain and improve their oral health and not following NICE guidance. In addition to modifications to the commissioning framework, since the report the former PHE developed an oral health toolkit for adults in care homes, which is a live document that provides information and training resources for care homes.

Toothpaste and toothbrush provision

NICE estimates a modest cost saving with targeted provision of toothbrushes and paste by post, this increases considerably if provided by health visitors as shown in Figure 24(76). Toothpaste and toothbrushes are sometimes available from some locations such as homeless shelters or from The Harbour Project.

Reducing Smoking

NICE provides strong recommendations that at every contact professionals should ask if patients smoke and support quit attempts, which has been shown to improve oral health(77).

In Swindon, smokers can access stop smoking services through participating GPs and pharmacies. In addition, a stop smoking advisor has been specifically recruited to target at risk populations in an effort to reduce health inequalities. The Local Maternity and Neonatal System includes a specialist smoking in their pregnancy team to support pregnant smokers and their families to quit. To reduce the availability of illegal tobacco, local teams continue to work with the South West Illegal Tobacco network to promote and raise awareness of illegal tobacco and conduct test purchasing exercises in response to intelligence received. Smoking remains one of Swindon’s key Public Health priorities and the local Tobacco Control Strategy will be revised in early 2023.

Reducing Alcohol

NICE provides strong recommendations that at every professional contact a patients risk of alcohol harm should be assessed and appropriately guided to improve oral health(77).

Alcohol brief interventions are being introduced with a number of partners across Swindon to accommodate individuals who are worried about their alcohol use. This will provide people with the tools to reduce and control their use and determine whether structured treatment is an option for them.

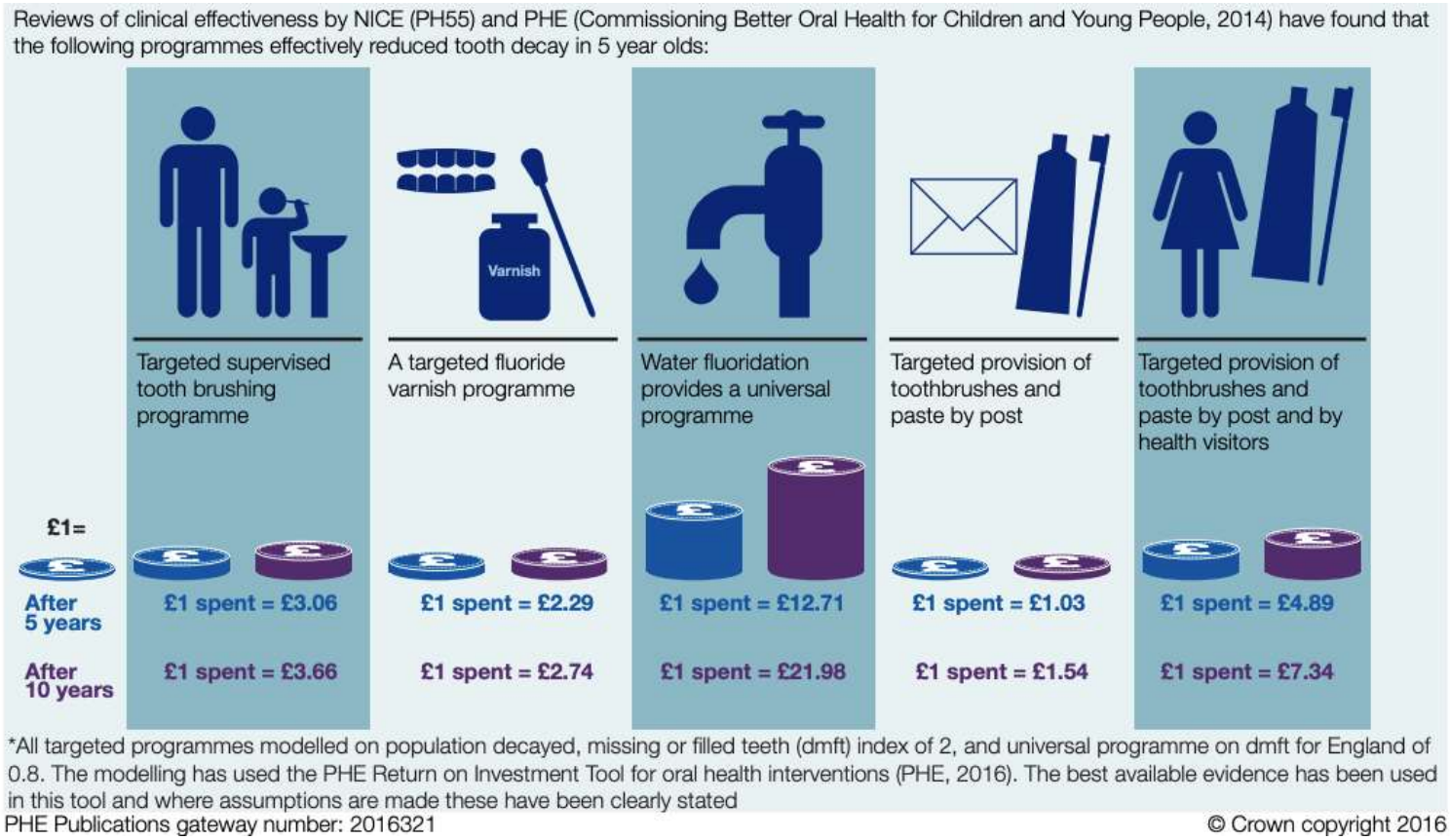
Healthy Weight, Healthy Eating and Physical Activity

It's considered good practice to maintain good dietary practice in line with the Eatwell Guide including avoiding or minimising sugar sweetened drinks (especially carbonated) and fruit juice and/or smoothies (limited to 150ml per day)(77).

In Swindon there are a range of programmes for adults and children to help reduce obesity, including implementing whole systems approach to obesity using PHE (now Office for Health Improvement and Disparities) guidance, provision of programmes in early years and schools settings, and a range of weight management offers for children and adults.

Figure 24: Return on investment of oral health improvement programmes for 0-5 year olds from PHE 2016.

Source: Data and figure extracted from PHEs A rapid review of evidence on the cost-effectiveness of interventions to improve the oral health of children aged 0-5 years(76).



Planned Programmes

Supervised tooth brushing
In 2019, the NHS England South West Dental team commissioned a two-year pilot running a supervised tooth brushing scheme in 54 primary schools across Devon. Supervised tooth brushing schemes for nursery and reception age children are evidence-based and are endorsed by NICE as a priority oral health improvement initiative for areas where children are at high risk of poor oral health. They have been shown to reduce tooth decay and can establish life-long behaviours to promote oral health. In January 2023 NHS England opened tender applications to expand this scheme across the whole of the South West(78). The intention is to reach the children who attend nursery (aged 3-4 years) in the final year before starting school and reception classes (aged 4-5 years), in the 50% most deprived areas across the South West.

First Dental Steps
A regionally commissioned programme that's due to start in Swindon in Spring 2023. The programme includes providing the Health Visiting workforce with training in oral health, integrating oral health advice in contacts with the Health Visiting team, and the timely provision of an oral health pack (including fluoride toothpaste, a tooth brush and a free flow cup) at their 9-12 month review.

Child Friendly Dental Practices
A practice in Swindon is included in a pilot scheme being run throughout the country that aims to redirect paediatric patients to General Dental Practices, to be managed by dentists and therapists with enhanced paediatric skills.

Great Western Hospital Health Promotion
The Great Western Hospital Foundation Trust Community Dental Service previously provided oral health promotion to children through Early Year and Schools and to older adults through Care Homes in Swindon. This service is currently paused. There is an opportunity to commission oral health promotion in the future, which will be considered as part of the Oral Health Strategy.

Programmes to be considered

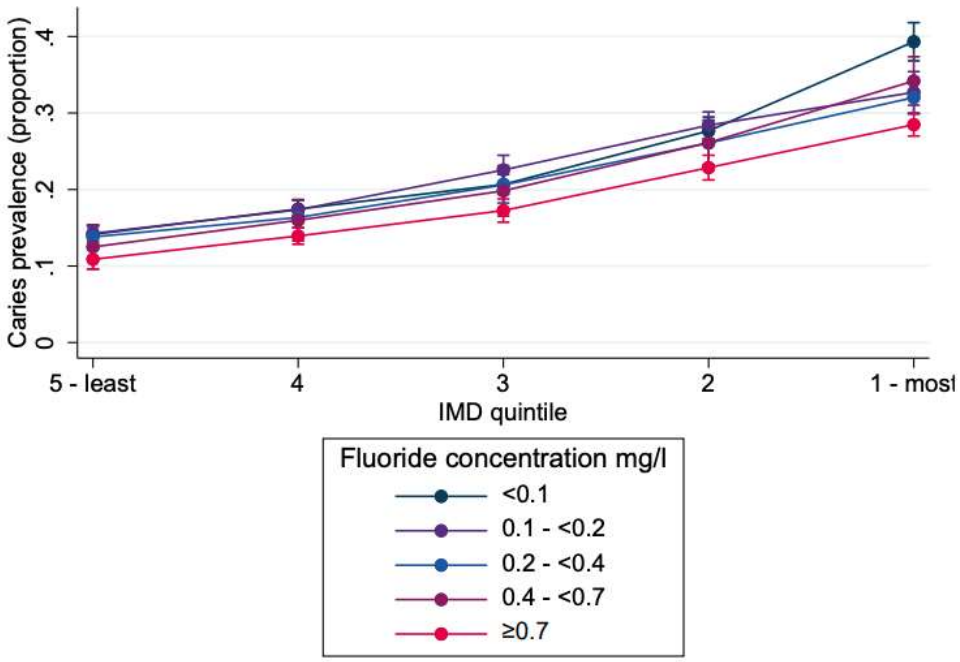
Community Water Fluoridation

Community water fluoridation is considered as a whole population approach to improving oral health and is associated with reductions in tooth decay in populations. It was also found to have an effect over and above that of other sources of fluoride, particularly toothpaste. It does not require behaviour change and therefore particularly effective for children and at risk groups. In contrast to some health interventions it has the benefit of having greater impact in deprived areas and thus reducing oral health inequalities. "Various authoritative expert evaluations from different international organisations all agree that there is no convincing evidence that fluoride in drinking water at levels used in fluoridation schemes or at concentrations below the regulatory drinking water limit is harmful to general health"(79).

Children and young people in areas with higher fluoride concentration are 57 to 63% less likely to be admitted for hospiral tooth extraction than in areas with low fluoride concentrations. Figure 25 shows that increasing levels of water fluoridation reduce dental decay. Furthermore, with increasing water fluoridation there is a reduction in inequality gap between the between the most and least deprived.

Figure 25: Mean dental caries prevalence in 5-year-olds by 2019 IMD quintile, stratified by water fluoride concentration in England.
Source: Graph from OHID's 2020 Water Fluoridation Health Monitoring Report(80)

Figure 4 - Mean dental caries prevalence (proportion) in 5-year-olds surveyed in the OHS 2017 and 2019 by IMD quintile, stratified by fluoride concentration, standard errors adjusted for 315 local authority clusters



Water fluoridation schemes aim to achieve a level of 1mg of fluoride per litre of water. There is a natural variation in the levels of fluoride in water throughout the country with some areas having naturally fluoridated water. However the natural levels in Swindon are less than 0.2mg/l, as seen in Figure 26.

There are no water fluoridation schemes in the South West, as shown by Figure 27. The power to initiate community water fluoridation schemes lies with the secretary of state.

Figure 26: Mean fluoride concentration in England in 2020.
Source: Graph from OHID's 2020 Water Fluoridation Health Monitoring Report(80)

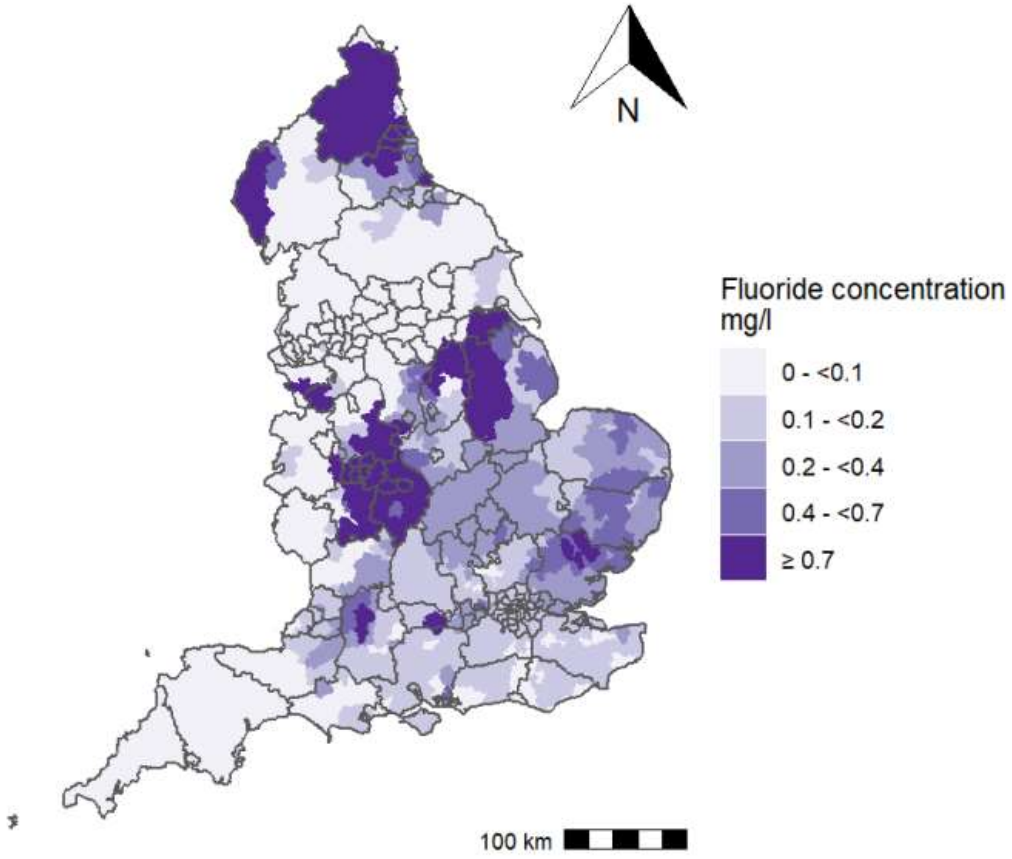
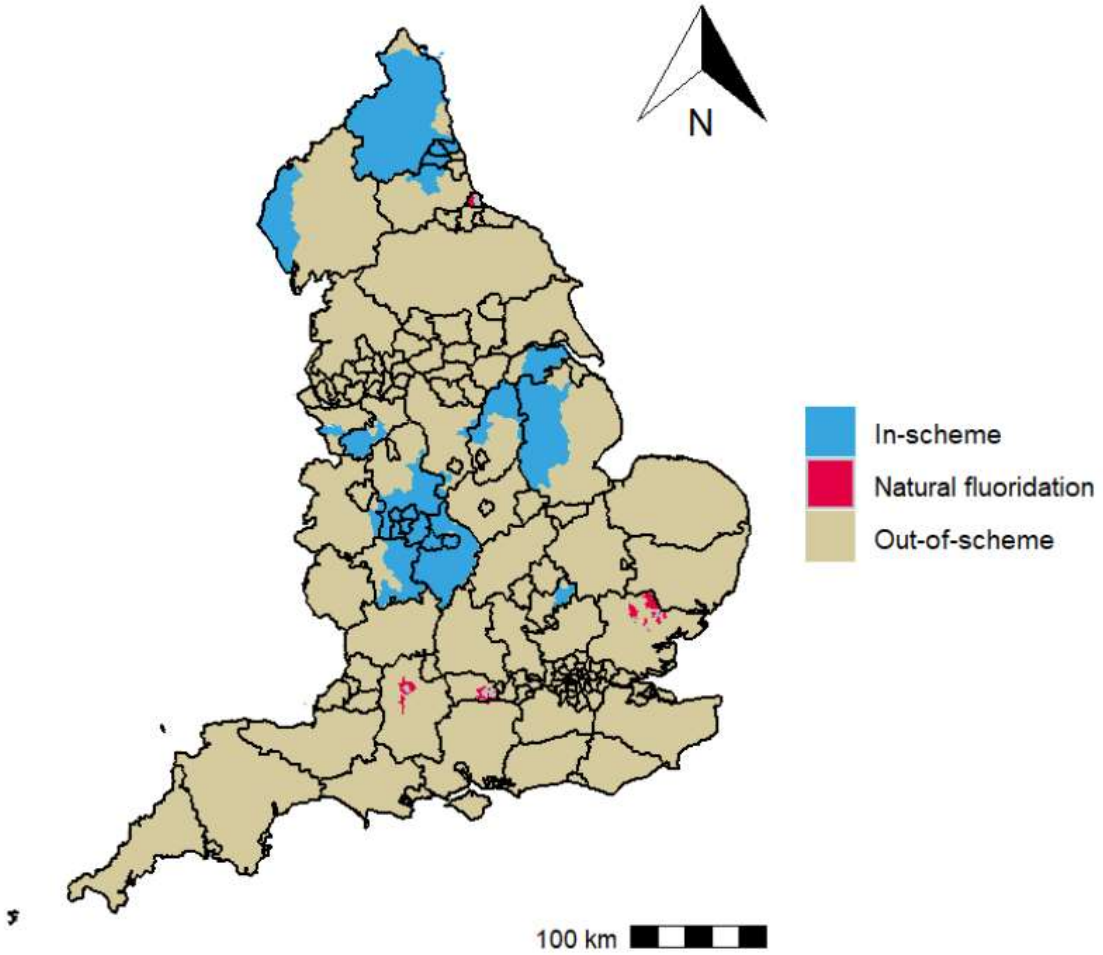


Figure 27: Map of areas in England with a water fluoridation scheme, with a fluoride concentration naturally >0.7mg/l or with no fluoridation
Source: Graph from OHID's 2020 Water Fluoridation Health Monitoring Report(80)



Fluoride Varnishing
For all those under 18 and adults with a risk of caries it is strongly recommended for dental professionals to apply fluoride varnish twice yearly to teeth to prevent dental caries(77).

NICE recommend that if supervised tooth brushing is not feasible, that deprived areas would benefit from community-based fluoride varnish programmes at nurseries and schools. It is also suggested that if resources are available that both supervised tooth brushing and a fluoride varnishing programme should be considered.

Discussion

Swindon scores poorly on key indicators of oral health in comparison to other regions. Though not specific to Swindon, it's clear that deprived communities and certain ethnic groups are at high risk of poor oral health outcomes. Targeting interventions at children and young people could improve key indicators and help instil important oral hygiene habits. There are a range of oral health or wider health promotion interventions that could be considered to improve oral health, though health promotion activity should consider the potential barriers highlighted by the different at risk groups in this report.

Financial barriers to good oral health were raised by almost all at risk groups and the health inequalities seen for all measures of oral health when comparing the least to the most deprived are clear and present across all indicators of oral health. This is particularly relevant due to there being several areas of high deprivation throughout Swindon. Therefore, when considering access and availability of dental care and oral health promotion programmes a reduction in this health inequality needs to be factored in to plans. Upcoming oral health promotion schemes, such as the targeted supervised toothbrushing schemes, will aim to reduce these inequalities. However additional programmes could also be considered. Targeted community fluoride varnishing is another method local authorities can use to minimise this gap. Alternatively programmes such as water fluoridation, now under the responsibility of the secretary of state, will have universal benefit but can benefit deprived communities more, thus decreasing the health inequality gap. Targeting the risk factors for oral health, such as tobacco, alcohol or cariogenic (causing tooth decay) diet, can also be an effective method of decreasing inequalities as the most deprived communities are more likely to be exposed to these risk factors.

The Asian community, which is particularly large in Swindon, are one of several ethnic groups also at higher risk of worse oral health outcomes. This again needs to be considered when planning services and health promotion activity to avoid unnecessary barriers and thus exclusion. From the research with the at risk groups in this report it was commonly stated that it was challenging to book NHS appointments if English wasn't a main language and this often prevented access to dentists. The wider literatures is inconsistent and inconclusive as to why these communities suffer worse oral health outcomes, though confounding with deprivation is thought to contribute to some extent(41).

The most recent data for children shows poor oral health in Swindon's 5-year-olds compared to the rest of the country, which appears to be worsening. Targeting oral health promotion in children would align with Swindon's 2022 JSNA, in which oral health was a priority in the "Starting Well" section. It was also highlighted to be an important target by several of the at risk groups researched, including people with LD and children with SEND, in which creating good oral health habits in early life makes oral healthcare in later life more manageable. Though the update to the oral health in 5-year-old survey is expected this spring and will be of great interest, the progression of the oral health strategy should not be delayed as throughout the Covid-19 pandemic the levels of oral health are unlikely to have improved and therefore this group remains a priority.

There is a lack of recent quantitative data available for adults and older people. However, as recognised by the South West 2021 OHNA, Swindon has a growing older population and this

group has additional oral health needs. There have been recent advances in oral health promotion in care homes with integration of NICE standards into care home commissioning frameworks and the provision of the oral health for adults in care homes toolkit. Additional health promotion considered locally has included care home oral health accreditation schemes, as has been done with the early years settings.

There is also a lack of quantitative data available for at risk groups, not just at the local level. There should be support and encouragement for future research and collection of this data for at risk groups, for example the ongoing Swindon Healthwatch survey, however this should not prevent action on the qualitative data raised in this report. Furthermore, for groups in which qualitative assessment of need was not available in this report, for example in established migrant communities, instead of continuing to investigate level of need it may be more useful to research how specific health promotion programmes can be modified to best target the communities. Additionally, even if the prevalence of oral health conditions is not frequently reported in some groups, the high levels of risk factors in Swindon, such as the hospital admission rates due to alcohol, obesity levels and low HPV vaccination rates, can be an indicator of increased oral health need.

Issues in the availability of NHS dentists was raised by all at risk groups, is a known issue nationally and is exemplified by only a single dental practice currently accepting new NHS patients within 10 miles of Swindon. There are workforce and contract issues that are being considered by NHSE and with the move of dentistry commissioning to ICBs there is an opportunity for Swindon to work collaboratively to address health inequalities in terms of access, experience and outcomes. However there are also modifiable local barriers such as having easily accessible information on available NHS dental practices which was raised by many of the at risk groups. Monitoring of the number of dental practices accepting new NHS patients should be considered in the upcoming oral health strategy.

Information barriers also exist for many as to how to access the right type of dental services. This was particularly an issue for people with LD, children with SEND and older people dependent on care. For many they may require reasonable adjustments for more time with NHS dentists, though the current dental contract may not incentivise this action. For others it was a lack of awareness of the existence of or the process to access specialist care dentistry or domiciliary dental care.

A common concern raised by multiple at risk groups was an apprehension to engage in dental care due to a fear of further tooth extractions. This was viewed by many as sub-standard care, which may be reinforced by the frequent option to access alternative care that doesn't require tooth extraction if willing to pay privately.

A common sentiment raised by multiple at risk groups, including asylum seekers and refugees, people experience homelessness, people affected by substance misuse and people experiencing poverty, was that improving oral hygiene practices and limiting oral health risk factors, such as smoking and drinking alcohol, was not a priority whilst in challenging situations such as struggling to find shelter, battling addiction or managing their stress. The wider-determinants of health had to take priority in these situations before specifically tackling oral health.

Challenging behaviours preventing oral hygiene was a commonly raised issue amongst those representing people with LD and children with SEND, and is recognised in the wider literature(41). It was suggested that a way to manage this could be an oral hygiene management pathway for these groups, with step by step advice on how to improve oral hygiene or access additional support. Another common suggestion was for social stories, which are short descriptions of particular situations designed for people with autism, of situations like visiting the dentist. The evidence of the effectiveness of social stories is not strong, partly due to challenges in study design in which it's hard to separate the benefit of the social story from that of another intervention(81). However, there are a range of free dental social stories available online which people could be directed to if they felt it would help.

The perspectives of the local community were key to this report. However, for several of the at risk groups engaged with it was clear that representatives of these groups had frequently been contacted for their perspective on public health and wider council issues. Though many were happy to be contacted it was also clear that some had become fatigued with the repeated contact and were perhaps less forthcoming with their perspectives because of this. It may be appropriate to consider consolidating public engagement across areas of the council to prevent fatigue and potentially losing the perspectives of some of these people.

The oral health promotion activities in Swindon are currently growing, with several upcoming new regional programmes starting shortly. It is important that the evaluations of these programmes are reviewed locally so that locally driven oral health promotion can be refined. For example, the consideration of the feasibility of community fluoride varnishing in addition to supervised tooth brushing.

The previous Swindon strategy outlined 5 priorities:
1. Ensure oral health is a health and wellbeing priority,
2. Tackle social and lifestyle determinants of oral disease,
3. Embed oral health into commissioning,
4. Commission oral health improvement interventions,
5. Ensure shared ownership of the oral health agenda.

There has been progress in all of these areas, for example oral health's prominent inclusion in the 2022 JSNA, the array of wider health promotion activities already mentioned and the initiation of local and regional oral health working groups. However, these are ongoing priorities and some should be considered taking forward into the upcoming strategy. For example, with the move of dental service commissioning from NHSE to the ICB there is opportunity to engage with those involved, ensuring shared ownership of the oral health agenda, and potentially increasing SBC's influence in future local dental services.

The previous Swindon strategy also outlined two strategic targets, neither of which have been achieved:

1. Increase the proportion of 5-year-old children free from dental decay to the same level or higher than the England average.

2. Reduce admissions rates for tooth extraction in children and young people (0-19 years) to the same rate or less than the England average.

The proportion of 5-year-old children free from decay remains a useful indicator of oral health in Swindon. It is an age group that is a priority in Swindon and an indicator that is relatively frequently updated.

Admission rates for tooth extraction in 0-19 years old is still a relevant and important indicator. High rates of hospital teeth extractions in Swindon's children are a preventable economic burden and anaesthetic health risk, and "should be treated as a red flag indicator of the need for dietary advice, regular application of fluoride varnish and reduced recall intervals.". However, with the current backlog due to the pandemic, in which more activity is needed to resolve it, in the short term we would expect this indicator to increase to return to pre-pandemic levels. Following the resolution of the backlog of cases it will again be an appropriate target to reduce this indicator.

Recommendations

- Develop an oral health strategy for Swindon that considers the findings from this report.

Conclusion

Swindon's children have poorer oral health outcomes for key indicators in comparison to other regions, including comparatively high rates of tooth decay in five-year-olds and high rates of hospital admissions for tooth extractions in 0-19 year olds. Swindon also has large groups who are at higher risk of worse oral health, including people from areas of high deprivation and a large Asian community. Barriers to good oral health are variable are dependent on the at risk group, however lack of availability of NHS dentists is common issue raised amongst all groups. There are a range of new oral health improvement programmes starting in Swindon and the upcoming oral health strategy will provide a plan to target those most in need.

References

1. Global oral health status report: towards universal health coverage for oral health by 2030 [Internet]. [cited 2023 Jan 6]. Available from: https://www.who.int/publications-detail-redirect/9789240061484

2. Adult oral health: applying All Our Health [Internet]. GOV.UK. [cited 2023 Jan 6]. Available from: https://www.gov.uk/government/publications/adult-oral-health-applying-all-our-health/adult-oral-health-applying-all-our-health

3. Inequalities in oral health in England: summary [Internet]. GOV.UK. [cited 2023 Jan 6]. Available from: https://www.gov.uk/government/publications/inequalities-in-oral-health-in-england/inequalities-in-oral-health-in-england-summary

4. Chapter 4: Dental caries [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-4-dental-caries

5. Chapter 5: Periodontal diseases [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-5-periodontal-diseases

6. Chapter 6: Oral cancer [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-6-oral-cancer

7. Conway DI, Petticrew M, Marlborough H, Berthiller J, Hashibe M, Macpherson LMD. Socioeconomic inequalities and oral cancer risk: A systematic review and meta-analysis of case-control studies. International Journal of Cancer. 2008;122(12):2811–9.

8. RCS. The state of children's oral health in England. London: The Faculty of Dental Surgery, Royal College of Surgeons, 2015. Report on the State of Children's Oral Health [Internet]. Royal College of Surgeons. 2015 [cited 2023 Jan 20]. Available from: https://www.rcseng.ac.uk/library-and-publications/rcs-publications/docs/report-childrens-oral-health/

9. NHS England » Core20PLUS5 infographic – Children and young people [Internet]. [cited 2023 Jan 18]. Available from: https://www.england.nhs.uk/long-read/core20plus5-infographic-children-and-young-people/#key-clinical-areas-of-health-inequalities

10. Watt RG. Strategies and approaches in oral disease prevention and health promotion. Bull World Health Organ. 2005 Sep;83(9):711–8.

11. Chapter 11: Smoking and tobacco use [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-11-smoking-and-tobacco-use

12. Chapter 12: Alcohol [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-12-alcohol

13. Chapter 10: Healthier eating [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-10-healthier-eating

14. Population projections for local authorities: Table 2 - Office for National Statistics [Internet]. [cited 2023 Jan 9]. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2

15. Joint Strategic Needs Assessment Swindon 2022 [Internet]. [cited 2023 Jan 6]. Available from: https://www.swindonjsna.co.uk/Files/Files/All%20JSNAs%2028_06_22_FINAL_v8.pdf

16. Joint Strategic Needs Assessment of Oral Health in Swindon 2016 [Internet]. [cited 2023 Jan 6]. Available from: https://www.swindonjsna.co.uk/Files/Files/Swindon_Oral_Health_JSNA_2016.pdf

17. Swindon Oral Health Strategy 2016- 2021 [Internet]. [cited 2023 Jan 6]. Available from: https://www.swindonjsna.co.uk/Files/Files/Swindon_Oral_Health_strategy_2016-21_final_version.pdf

18. PHE. National Dental Epidemiology Programme for England: oral health survey of 3-year-old children 2020 [Internet]. 2020 [cited 2023 Jan 20]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/987179/NDEP_for_England_OH_Survey_3yr_2020_v2.0.pdf

19. Oral health survey of 3 year old children 2013 [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/oral-health-survey-of-3-year-old-children-2013

20. PHE. National Dental Epidemiology Programme for England: oral health survey of 5-year-olds 2019 [Internet]. 2019 [cited 2023 Jan 20]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873492/NDEP_for_England_OH_Survey_5yr_2019_v1.0.pdf

21. Swindon Oral Health Profile 5 year olds 2019 Public library - UKHSA national - Knowledge Hub [Internet]. 2019 [cited 2023 Jan 20]. Available from: https://khub.net/web/phe-national/public-library/-/document_library/v2WsRK3ZlEig/view_file/447483059?_com_liferay_document_library_web_portlet_DLPortlet_INSTANCE_v2WsRK3ZlEig_redirect=https%3A%2F%2Fkhub.net%3A443%2Fweb%2Fphe-national%2Fpublic-library%2F-%2Fdocument_library%2Fv2WsRK3ZlEig%2Fview%2F395264397%3F_com_liferay_document_library_web_portlet_DLPortlet_INSTANCE_v2WsRK3ZlEig_redirect%3Dhttps%253A%252F%252Fkhub.net%253A443%252Fweb%252Fphe-national%252Fpublic-library%252F-%252Fdocument_library%252Fv2WsRK3ZlEig%252Fview%252F387050310%253F_com_lif

eray_document_library_web_portlet_DLPortlet_INSTANCE_v2WsRK3ZlEig_redirect%253Dhttps%25253A%25252F%25252Fkhub.net%25253A443%25252Fweb%25252Fphe-national%25252Fpublic-library%25252F-%25252Fdocument_library%25252Fv2WsRK3ZlEig%25252Fview%25252F387014363%25253F_com_liferay_document_library_web_portlet_DLPortlet_INSTANCE_v2WsRK3ZlEig_redirect%25253Dhttps%2525253A%2525252F%2525252Fkhub.net%2525253A443%2525252Fweb%2525252Fphe-national%2525252Fpublic-library%2525252F-%2525252Fdocument_library%2525252Fv2WsRK3ZlEig%2525252Fview%2525252F174089826

22. Oral health survey of 12 year old children 2009 [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/oral-health-survey-of-12-year-old-children-2009

23. Royal College of Surgeons. Lead dental surgeon warns 'now is not the time to scrap the sugar tax', as almost 30,000 children and young people are admitted to hospital for tooth decay [Internet]. Royal College of Surgeons. [cited 2023 Jan 16]. Available from: https://www.rcseng.ac.uk/news-and-events/media-centre/press-releases/faculty-of-dental-surgery-comments-on-hospital-admissions-data/

24. Ottaway Strategic Management ltd. South West OHNA Main Report [Internet]. 2021 [cited 2023 Jan 16]. Available from: https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2021/02/South-West-OHNA-Main-Report.pdf

25. Hospital tooth extractions of 0 to 19 year olds 2021 [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/statistics/hospital-tooth-extractions-of-0-to-19-year-olds-2021

26. 3.7.ii Tooth extractions due to decay for children admitted as inpatients to hospital, aged 10 years and under [Internet]. NHS Digital. [cited 2023 Jan 19]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/march-2022/domain-3---helping-people-to-recover-from-episodes-of-ill-health-or-following-injury-nof/3.7.ii-tooth-extractions-due-to-decay-for-children-admitted-as-inpatients-to-hospital-aged-10-years-and-under

27. The impact of COVID-19 on access to dental care [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/statistics/the-impact-of-covid-19-on-access-to-dental-care

28. Adult Dental Health Survey 2009 - Summary report and thematic series [Internet]. NHS Digital. [cited 2023 Jan 20]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/adult-dental-health-survey/adult-dental-health-survey-2009-summary-report-and-thematic-series

29. Oral health survey of adults attending dental practices 2018 [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/oral-health-survey-of-adults-attending-dental-practices-2018

30. Health Survey for England 2019: Supplementary analysis of dental health [Internet]. NHS Digital. [cited 2023 Jan 20]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2019/health-survey-for-england-2019-supplementary-analysis-on-dental-health

31. Oral Health Public health profiles - OHID [Internet]. [cited 2023 Jan 20]. Available from: https://fingertips.phe.org.uk/search/oral%20health

32. Oral cancer in England [Internet]. GOV.UK. [cited 2023 Jan 20]. Available from: https://www.gov.uk/government/publications/oral-cancer-in-england

33. Smoking habits in the UK and its constituent countries - Office for National Statistics [Internet]. [cited 2023 Jan 20]. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/datasets/smokinghabitsintheukanditsconstituentcountries

34. Quit Smoking -Public health profiles - OHID [Internet]. [cited 2023 Jan 20]. Available from: https://fingertips.phe.org.uk/search/quit%20rate#page/1/gid/1/pat/6/ati/402/are/E06000030/iid/1210/age/164/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1

35. Alcohol Admissions - Public health profiles - OHID [Internet]. [cited 2023 Jan 20]. Available from: https://fingertips.phe.org.uk/search/alcohol#page/3/gid/1/pat/6/par/E12000009/ati/402/are/E06000030/iid/93768/age/1/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1

36. HPV Vaccination - Public health profiles - OHID [Internet]. [cited 2023 Jan 20]. Available from: https://fingertips.phe.org.uk/search/hpv#page/1/gid/1/pat/15/ati/402/are/E06000030/iid/92319/age/206/sex/1/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1

37. Office of the Director of Public Health, Plymouth City Council. Oral Health Needs Assessment - Plymouth [Internet]. 2019 [cited 2023 Jan 14]. Available from: https://www.plymouth.gov.uk/sites/default/files/Oral%20Health%20Needs%20Assessment%202019%20%28v1.1%29.pdf

38. Public health profiles - OHID Learning Disability [Internet]. [cited 2023 Jan 15]. Available from: https://fingertips.phe.org.uk/search/learning%20disability#page/1/gid/1/pat/221/par/nE54000040/ati/66/iid/200/age/1/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1

39. Ali-Strayton R. Dental health among adults with learning disabilities in England. 2017; Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/773653/Adults_with_learning_disabilities_dental_summary.pdf

40. Public Health England. Dental public health epidemiology programme. Oral Health Survey for Children in Special Support Schools - 2014. [Internet]. 2014 [cited 2023 Jan 14]. Available from:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/774313/Oral_health_survey_for_children_in_special_support_schools_2014_Report.pdf

41. Inequalities in oral health in England: Full Report.

42. Government Explore Education Statistics [Internet]. [cited 2023 Jan 15]. Available from: https://explore-education-statistics.service.gov.uk/data-tables/fast-track/678da1e3-97e6-42f1-165e-08da47b0392d

43. McMahon AD, Elliott L, Macpherson LM, Sharpe KH, Connelly G, Milligan I, et al. Inequalities in the dental health needs and access to dental services among looked after children in Scotland: a population data linkage study. Archives of Disease in Childhood. 2018 Jan 1;103(1):39–43.

44. Muirhead V, Subramanian SK, Wright D, Wong FSL. How do foster carers manage the oral health of children in foster care? A qualitative study. Community Dentistry and Oral Epidemiology. 2017;45(6):529–37.

45. How life has changed in Swindon: Census 2021 [Internet]. [cited 2023 Jan 15]. Available from: https://www.ons.gov.uk/visualisations/censusareachanges/E06000030/

46. Adult Social Care Activity and Finance Report, England, 2021-22 [Internet]. NDRS. [cited 2023 Jan 15]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/adult-social-care-activity-and-finance-report/2021-22

47. Public Health England. What is Known About the Oral Health of Older People in England and Wales - A review of oral health surveys of older people [Internet]. [cited 2023 Jan 14]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/489756/What_is_known_about_the_oral_health_of_older_people.pdf

48. Public Health England. National Dental Epidemiology Programme for England: oral health survey of mildly dependent older people 2016. 2016; Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/773355/NDEP_For_England_oral_health_survey_of_mildly_dependent_older_people_2016_report.pdf

49. Hannah Muir. Improving Access to Mouth Care Training and Support for Care Homes in South West England [Internet]. 2022 [cited 2023 Jan 19]. Available from: https://static1.squarespace.com/static/5978b38b37c5810a5cf0394c/t/636a614fbed1fc603a520bd9/1667916112392/SW+Mouth+Care+Survey+Report_V1.0.pdf

50. International migration, England and Wales - Office for National Statistics [Internet]. [cited 2023 Jan 14]. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/bulletins/internationalmigrationenglandandwales/census2021#how-country-of-birth-and-passports-held-varied-across-england-and-wales

51. Johnson D, Hearn A, Barker D. A pilot survey of dental health in a group of drug and alcohol abusers. Eur J Prosthodont Restor Dent. 2008 Dec;16(4):181–4.

52. Blot WJ, McLaughlin JK, Winn DM, Austin DF, Greenberg RS, Preston-Martin S, et al. Smoking and drinking in relation to oral and pharyngeal cancer. Cancer Res. 1988 Jun 1;48(11):3282–7.

53. Live tables on homelessness [Internet]. GOV.UK. [cited 2023 Jan 15]. Available from: https://www.gov.uk/government/statistical-data-sets/live-tables-on-homelessness

54. Groundswell. Healthy Mouths Report [Internet]. 2017 [cited 2023 Jan 14]. Available from: https://groundswell.org.uk/wp-content/uploads/2017/10/Groundswell-Healthy-Mouths-Report-Final.pdf

55. Van Cleemput P. Social exclusion of Gypsies and Travellers: health impact. Journal of Research in Nursing. 2010 Jul 1;15(4):315–27.

56. McGorrian C, Frazer K, Daly L, Moore RG, Turner J, Sweeney MR, et al. The health care experiences of Travellers compared to the general population: the All-Ireland Traveller Health Study. J Health Serv Res Policy. 2012 Jul;17(3):173–80.

57. Traveller caravan count: July 2022 [Internet]. GOV.UK. [cited 2023 Jan 15]. Available from: https://www.gov.uk/government/statistics/traveller-caravan-count-july-2022

58. Brigid Francis-Devine. Poverty in the UK: Statistics. House of Commons Library [Internet]. 2022 Sep [cited 2023 Jan 15]. Available from: https://researchbriefings.files.parliament.uk/documents/SN07096/SN07096.pdf

59. Lou Farbus. Dental Transformation SPRINT Workshop 1: Output [Internet]. 2021 Aug [cited 2023 Jan 16]. Available from: https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2021/08/dental-sprint-1-output-report.pdf

60. NHS England » Better access to NHS dental services under new reforms [Internet]. [cited 2023 Jan 18]. Available from: https://www.england.nhs.uk/2022/07/better-access-to-nhs-dental-services-under-new-reforms/

61. SHAPE | Strategic Health Asset Planning and Evaluation [Internet]. [cited 2023 Jan 15]. Available from: https://shapeatlas.net/

62. Dental Access Report | Healthwatch Swindon [Internet]. [cited 2023 Jan 15]. Available from: https://www.healthwatchswindon.org.uk/report/2022-01-18/dental-access-report

63. Healthwatch Swindon oral health and dental services survey report October 2017 [Internet]. [cited 2023 Jan 15]. Available from: https://www.healthwatchswindon.org.uk/sites/healthwatchswindon.org.uk/files/Healthwatch%20Swindon%20oral%20health%20and%20dental%20services%20survey%20summary%20report_October%202017_Final.pdf

64. Association LG. Dentists per 1000 people in Swindon [Internet]. Local Government Association, Local Government House, Smith Square, London, SW1P 3HZ, 020 7664 3000, http://www.local.gov.uk, info@local.gov.uk; [cited 2023 Jan 16]. Available from: https://lginform.local.gov.uk/reports/lgastandard?mod-metric=10283&mod-period=4&mod-area=E06000030&mod-group=AllUnitaryLaInCountry_England&mod-type=namedComparisonGroup

65. Oral health care in Europe: Financing, access and provision [Internet]. [cited 2023 Jan 21]. Available from: https://eurohealthobservatory.who.int/publications/i/oral-health-care-in-europe-financing-access-and-provision

66. Dentistry - NHS Digital [Internet]. NHS Digital. [cited 2023 Jan 15]. Available from: https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/general-practice-data-hub/dentistry

67. Oral Health Needs Assessment 2022 Leicester City Council. 2022; Available from: https://www.leicester.gov.uk/media/1ucbbapq/oral-health-needs-assessment-2022.pdf

68. 4a.iii Patient experience of NHS dental services [Internet]. NHS Digital. [cited 2023 Jan 18]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/march-2022/domain-4---ensuring-that-people-have-a-positive-experience-of-care-nof/4a.iii-patient-experience-of-dental-services

69. Marinho VC, Worthington HV, Walsh T, Clarkson JE. Fluoride varnishes for preventing dental caries in children and adolescents. Cochrane Database of Systematic Reviews [Internet]. 2013 [cited 2023 Jan 15];(7). Available from: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002279.pub2/full

70. Ottaway Strategic Management ltd. South West Oral Health Needs Assesment. Appendix-6-BaNES-Swindon-and-Wiltshire. NHSE/I [Internet]. [cited 2023 Jan 15]. Available from: https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2021/02/SW-OHNA-Appendix-6-BaNES-Swindon-and-Wiltshire-STP.pdf

71. NHS Dental Statistics [Internet]. NHS Digital. [cited 2023 Jan 15]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-dental-statistics

72. Review of Special Care Dentistry in the South West | Healthwatch Swindon [Internet]. [cited 2023 Jan 16]. Available from: https://www.healthwatchswindon.org.uk/report/2020-06-26/review-special-care-dentistry-south-west

73. Mouth Care Matters [Internet]. elearning for healthcare. [cited 2023 Jan 19]. Available from: https://www.e-lfh.org.uk/programmes/mouth-care-matters/

74. Mini Mouth Care Matters [Internet]. elearning for healthcare. [cited 2023 Jan 19]. Available from: https://www.e-lfh.org.uk/programmes/mini-mouth-care-matters/

75. Smiling matters: oral health care in care homes - Care Quality Commission [Internet]. [cited 2023 Jan 28]. Available from: https://www.cqc.org.uk/publications/major-report/smiling-matters-oral-health-care-care-homes

76. PHE. A rapid review of evidence on the cost-effectiveness of interventions to improve the oral health of children aged 0-5 years [Internet]. 2016 [cited 2023 Jan 17]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/560972/Rapid_review_ROI_oral_health_5_year_old.pdf

77. Chapter 13: Evidence base for recommendations in the summary guidance tables [Internet]. GOV.UK. [cited 2023 Jan 18]. Available from: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention/chapter-13-evidence-base-for-recommendations-in-the-summary-guidance-tables

78. NHS England South West - Procurement for the provision of Supervised Tooth Brushing across the South West (Lots 1-7) - Contracts Finder [Internet]. [cited 2023 Jan 16]. Available from: https://www.contractsfinder.service.gov.uk/Notice/a661ac7a-8009-45b4-93e9-b1f9d40c0592

79. Health and Care Bill: water fluoridation [Internet]. GOV.UK. [cited 2023 Jan 17]. Available from: https://www.gov.uk/government/publications/health-and-care-bill-factsheets/health-and-care-bill-water-fluoridation

80. OHID. Water fluoridation health monitoring report 2022. 2022; Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1060471/water-fluoridation-health-monitoring-report-2022.pdf

81. Leaf JB, Ferguson JL, Cihon JH, Milne CM, Leaf R, McEachin J. A Critical Review of Social Narratives. J Dev Phys Disabil. 2020 Apr 1;32(2):241–56.