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Welsh Oral Health
Information Unit

Uned Gwybodaeth
Iechyd Geneuol Cymru

PICTURE OF ORAL HEALTH 2023

DENTAL EPIDEMIOLOGICAL INSPECTION
OF SCHOOL YEAR ONE (5-YEAR-OLD)
CHILDREN IN WALES 2022/23

Technical report

This report presents the analysis of the NHS Wales Dental Epidemiology Programme's national inspection of school year one children (five-year-olds) in Wales conducted during the 2022-23 academic year. The inspection was co-ordinated by Oral Health Intelligence at Public Health Wales and the Welsh Oral Health Information Unit at the School of Dentistry, Cardiff University. Data were collected by the NHS Community Dental Service teams.

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Table of abbreviations

BASCD	British Association for the Study of Community Dentistry
CDS	Community Dental Service
CI	Confidence interval
d3t	Number of teeth with untreated dentinal decay in primary teeth
d3mft	Number of decayed, missing, and/or filled primary teeth
ft	Number of filled primary teeth
mt	Number of primary teeth that have been extracted due to dental caries
PHW	Public Health Wales
PUFA	Evidence of open pulp, ulceration, fistula, and/or abscess
THB	Teaching Health Board
UHB	University Health Board
WHC	Welsh Health Circular
WOHIU	Welsh Oral Health Information Unit

Summary

This report presents the analysis of the NHS Wales Dental Epidemiology Programme national inspection of school year one children (five-year-olds) in Wales conducted during the 2022/23 academic year. This was the first national inspection of child oral health conducted in Wales since 2015/16. A total of 9,376 children from state-funded schools were examined as part of this inspection.

The prevalence and severity of dental caries (tooth decay) in school year one children (typically those aged 5-6 years of age) continues to fall in Wales. In 2007/08, 14 out of a class of 30 children would have dental caries (tooth decay) experience, and these 14 children would have an average of 4.16 teeth affected. In 2022/23 this had fallen to 10 children out of a class of 30 with dental caries experience, with an average of 3.38 teeth affected. However, the reduction in prevalence of dental caries appears to be plateauing, with no difference between the inspections conducted in 2015/16 and 2022/23 (this inspection) at a national level (34.2% vs. 32.4%). Whilst there has been a small decrease in the overall number of teeth affected by dental caries between 2015/16 and 2022/23, there have also been small increases in untreated disease.

Dental caries can negatively affect the quality of life of children and their caregivers. School year one children in Wales who have experience of dental caries were more likely to report oral health-related quality of life impacts than children without dental caries experience. The most common impact was pain, which affected almost one in four children (23.6%) with dental caries experience.

There is a clear social gradient in the prevalence and severity of dental caries experience amongst children in Wales. Individuals from the most deprived communities are more likely to experience dental caries and also have more teeth affected. The gap between the most and least deprived communities, as measured by the slope index of inequality of dental caries prevalence, has not changed between 2007/08 and 2022/23.

The 2022/23 inspection was the first since the coronavirus (COVID-19) pandemic. Children examined as part of this inspection were born in the 2016/17 academic year and so would have been two-to-three years of age in March 2020. To fully assess the impact of the COVID-19 pandemic on the prevalence and severity of dental caries in Wales, another inspection of school year one children is recommended for the academic year 2024/25.

Introduction

Inspections of school year one (5-year-old) children provide detailed data on oral health need for surveillance, service planning and evaluation purposes.

The NHS Wales Dental Epidemiological Programme is the responsibility of Public Health Wales, Welsh Oral Health Information Unit (WOHIU) at Cardiff University and Local Health Boards. Welsh Government requires Public Health Wales to conduct the programme under *Welsh Health Circular (WHC) (2021) 32: Role and Provision of Dental Public Health in Wales*. All-Wales co-ordination of the programme is undertaken by the Dental Epidemiology Co-ordinator in Public Health Wales. The sampling frame, data cleaning, analysis and reporting is undertaken by the WOHIU at Cardiff University. Community Dental Services in Local Health Boards are required to conduct the data collection for the programme under *WHC (2022) 22: Role of the Community Dental Service*.

The objectives of the inspection of school year one (5-year-old) children were to:

1. Record data from a sample of school year one children in Wales during the 2022/2023 academic year
2. Obtain valid estimates of dental caries prevalence and severity in school year one (5-year-old) children using methodology which will be comparable with previous inspections.

Coronavirus (COVID-19) pandemic

This was the first inspection of children's teeth conducted in Wales since the coronavirus (COVID-19) pandemic. Children examined as part of this inspection were born during the 2016/17 academic year and would have been two-to-three years of age in March 2020.

Children in Wales are entitled to a minimum of 10 hours per week of funded, part-time, Foundation Phase nursery from the term following their third birthday. Children can start primary school full time in the September following their fourth birthday (September 2021 for the children in this inspection).

Designed to Smile is the national targeted oral health improvement programme to prevent dental caries in children in Wales. It is delivered by the Community Dental Services in partnership with education and childcare settings and early years health professionals. *Designed to Smile* was paused from March 2020 during the COVID-19 pandemic and staff were redeployed. Early attempts to restart *Designed to Smile* faltered in the latter half of 2021 due to the Omicron variant. Restoration of the programme began at-pace in late Spring 2022. Data for this inspection were collected between September 2022 and May 2023.

Method

The conduct of the inspection followed guidance from the British Association for the Study of Community Dentistry (BASCD) (Pitts et al. 1997, Pine et al. 1997a, Pine et al. 1997b) according to a pre-specified protocol.

The inspection population were children in school year one (the school year in which the sixth birthday is achieved). The sampling frame were all children in Wales in school year one attending state-funded mainstream primary schools. Special educational needs schools were not included in the sampling frame. The sampling unit was Upper Super Output Areas (USOAs). Sampling followed the guidance described in Pine et al. (1997a). A stratified random sampling method was used.

Since 2006, written positive parental consent has been required to examine children during oral health inspections in Wales. This is the fifth inspection of school year one children using positive consent. Comparisons with inspections conducted in Wales prior to 2007/08 should not be made. Previous research suggests that children who are not consented to participate in dental inspections are likely to have more decay than those participating (Monaghan et al. 2011)

Data were collected by trained and calibrated clinicians employed by Community Dental Services. A visual examination method was used. Radiographs were not taken. Visually obvious decay into dentine (d3t) was the minimal clinical threshold for caries reporting, in line with the BASCD criteria (Pitts et al. 1997). Visually obvious dentinal decay is a widely accepted threshold for dental inspections; however, it is likely to be an underestimate of the true prevalence and severity of dental caries as it does not measure decay confined to the dental enamel.

Dental caries experience (d3mft) was defined as one or more teeth with visually obvious dentinal decay (d3t); a tooth judged to have been extracted due to caries (mt); or a tooth with a restoration (ft). The presence or absence of pathology due to dental caries was recorded using the PUFA-index as described by Monse et al. (2010). This records visible pulpal involvement (p), ulceration caused by dislocated tooth fragments (u), fistula (f) and abscess (a) associated with carious teeth. Oral health-related quality of life of children and their caregivers was recorded using the Early Childhood Oral Health Impact Scale (ECOHIS) (Pahel et al. 2007) which was completed by a parent or carer (see Appendix 1). A positive impact was recorded if the parent/carer had responded 'occasionally', 'often', or 'very often' to an ECOHIS domain and negative if they had responded 'never' or 'hardly ever'.

Data were collected using Microsoft Access. Data were collated, checked and cleaned. Welsh Index of Multiple Deprivation (WIMD) 2019 ranks, the official measure of relative deprivation for small areas in Wales, were assigned using school postcode as a proxy for residential location for the examined children. Data were weighted using small area populations obtained from Local Education Authorities.

Weighted data were analysed according to a pre-determined statistical analysis plan. The 95% confidence intervals applied a finite population correction using STATA (version 17). Error bars indicate 95% confidence limits on figures in this report. Confidence intervals were used to assess statistical significance. Comparisons are made, where feasible, with previous inspections of school year one cohorts in Wales which employed the same methodology. In the interpretation of these comparisons, particularly those presenting trends at Local Health Board level, readers should be cognisant of the Bridgend County Borough Council area change which

occurred on 1st April 2019 and affects the following health boards: Cwm Taf University Health Board (UHB) (pre-1st April 2019); Abertawe Bro Morgannwg UHB (pre-1st April 2019); Cwm Taf Morgannwg UHB (post-1st April 2019) and Swansea Bay UHB (post-1st April 2019) (see Appendix 2).

Results

Participation

A total of 9,376 children from 612 state-maintained mainstream schools were examined during the inspection (Table 1). This represents 29.0% of the total school year one population in mainstream state-maintained schools in Wales in 2022/23. In total, 8,463 ECOHIS questionnaires were completed, representing 90.3% of the sample for whom clinical data were collected.

There was sufficient data collected in 21 out of 22 Unitary Authorities. Insufficient examinations were conducted in Ceredigion County Council area, and therefore estimates for Hywel Dda University Health Board should be interpreted with caution (further information in Appendix 3).

The deprivation profile of the sample is shown in Table 2.

Local Health Board	Estimated school year one population	Number of schools visited	No. of children sampled	No. of examinations	Proportion of sampled children for whom an examination was completed
Aneurin Bevan University Health Board	6,566	97	2,964	1,667	56.2%
Betsi Cadwaladr University Health Board	7,012	179	3,127	2,128	68.1%
Cardiff and Vale University Health Board	5,585	78	3,342	1,681	50.3%
Cwm Taf Morgannwg University Health Board	4,848	82	2,609	1,446	55.4%
Hywel Dda University Health Board	3,115	80	1,024	701	68.5%
Powys Teaching Health Board	1,247	38	631	426	67.5%
Swansea Bay University Health Board	3,925	58	2,071	1,327	64.1%
TOTAL	32,298	612	15,768	9,376	59.5%

Table 1: Summary of inspection population, number of schools visited, sample size and number of examinations undertaken.

Local Health Board	Welsh Index of Multiple Deprivation (WIMD) 2019 Distribution of the examined population ¹ (n=9,376)				
	Most deprived quintile	Second most deprived quintile	Middle deprived quintile	Second least deprived quintile	Least deprived quintile
Aneurin Bevan UHB	23.8%	27.5%	15.7%	21.8%	11.2%
Betsi Cadwaladr UHB	13.4%	17.6%	20.0%	26.6%	22.3%
Cardiff and Vale UHB	17.1%	9.2%	11.0%	21.0%	41.7%
Cwm Taf Morgannwg UHB	17.4%	34.7%	13.8%	16.9%	17.2%
Hywel Dda UHB	1.0%	28.1%	23.1%	42.2%	5.6%
Powys THB	6.1%	8.7%	30.8%	36.6%	17.8%
Swansea Bay UHB	26.7%	24.3%	11.1%	15.9%	22.0%
TOTAL	17.2%	21.8%	16.1%	23.4%	21.5%

¹ WIMD (2019) quintile was based on the postcode of the school where the child was inspected, not the home postcode of the child

Table 2: Summary of the Welsh Index of Multiple Deprivation (WIMD) 2019 distribution of the examined population.

Prevalence of dental caries experience

There has been a reduction in the prevalence of dental caries experience (%d3mft>0) in school year one children from 47.6% (95% CI 46.4% to 48.7%) in 2007/08 to 32.4% (95% CI 31.5% to 33.2%) in 2022/23 (this inspection). However, no difference was observed between the 2015/16 and 2022/23 inspections (Figure 1, [Supplementary table 1](#)).

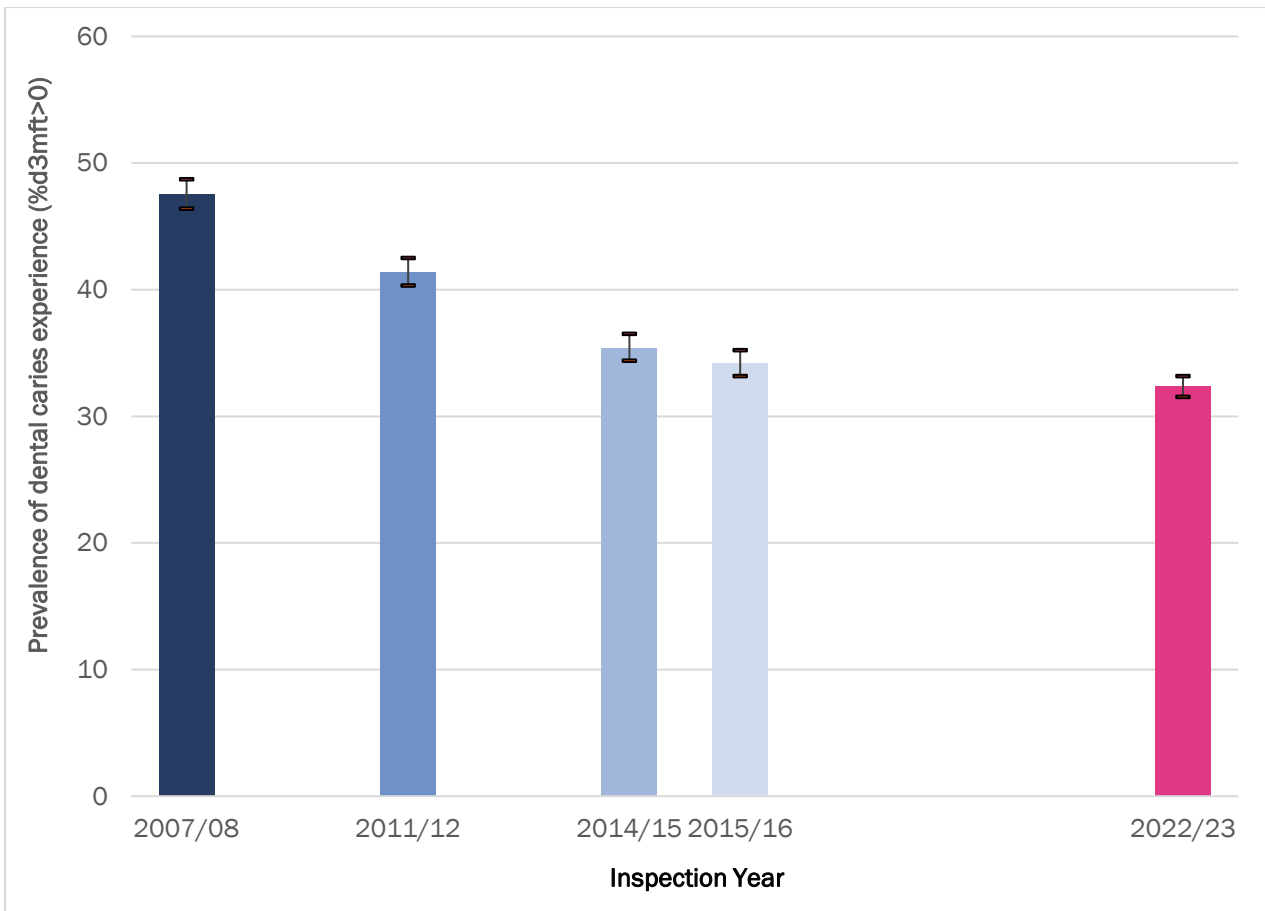


Figure 1: Prevalence of dental caries experience (%d3mft>0) in school year one children in Wales 2022/23

Severity of dental caries experience

There has been a reduction in the average number of teeth affected by dental caries (d3mft) from 1.98 (95% CI 1.89 to 2.07) in 2007/08 to 1.11 (95% 1.07 to 1.15) in 2022/23 (this inspection) (blue bars Figure 2, [Supplementary table 2](#)). There has been a decrease of 0.11 (95% CI 0.02 to 0.20) between the 2015/16 and 2022/23 inspections (a 9.0% absolute reduction).

When only the children with disease experience (d3mft>0) are considered, whilst there has been a general reduction in the number of teeth affected (d3mft) between 2007/08 and 2022/23, no difference were observed between the 2015/16 and 2022/23 inspections (green bars, Figure 2, [Supplementary table 2](#))

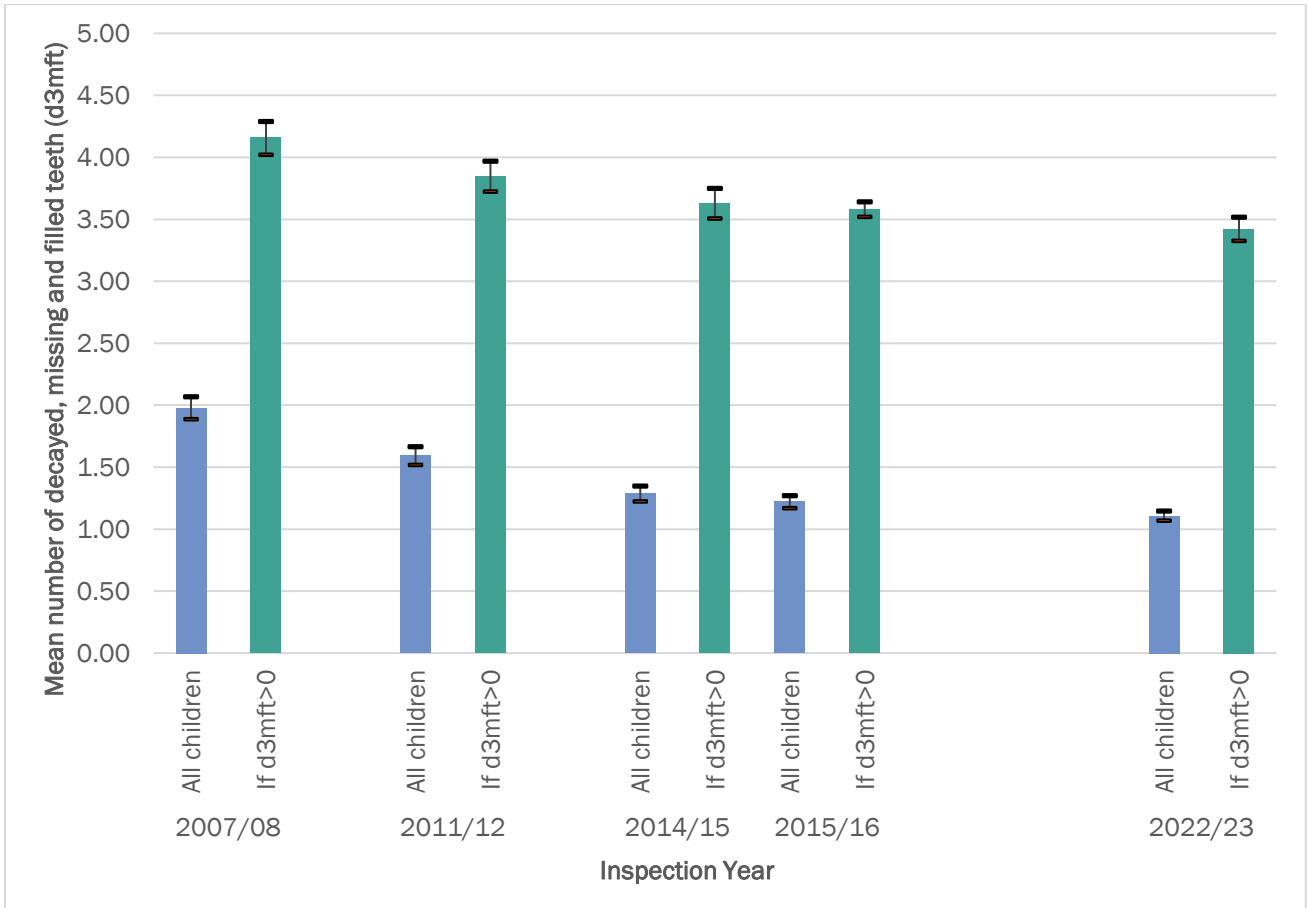


Figure 2: Mean number of teeth with dental caries experience (d3mft) and the mean number of teeth affected in those with dental caries experience (d3mft if d3mft>0) in school year one children in 2022/23

Untreated dental caries

The largest component of dental caries experience is untreated dental caries (d3t). The prevalence of untreated dental caries (%d3t>0) has decreased from 42.5% (95% CI 41.4% to 43.7%) in 2007/08 to 29.3% (95% CI 28.5% to 30.1%) in 2022/23 (Table 3). However, small increases in the average number of teeth with untreated dental caries between 2015/16 and 2022/23 (Figure 3 and [Supplementary table 3](#)), indicate that the burden of untreated dental caries is worsening in affected children.

Inspection year	Prevalence of untreated dental caries (%d3t>0) (%)		
	Mean	95% CI Low	95% CI High
2007/08	42.5	41.4	43.7
2011/12	36.5	35.4	37.5
2014/15	30.0	29.0	31.0
2015/16	28.2	27.3	29.2
2022/23	29.3	28.5	30.1

Table 3: Prevalence of untreated dental caries (%d3t>0) 2007/08 to 2022/23 in school year one children

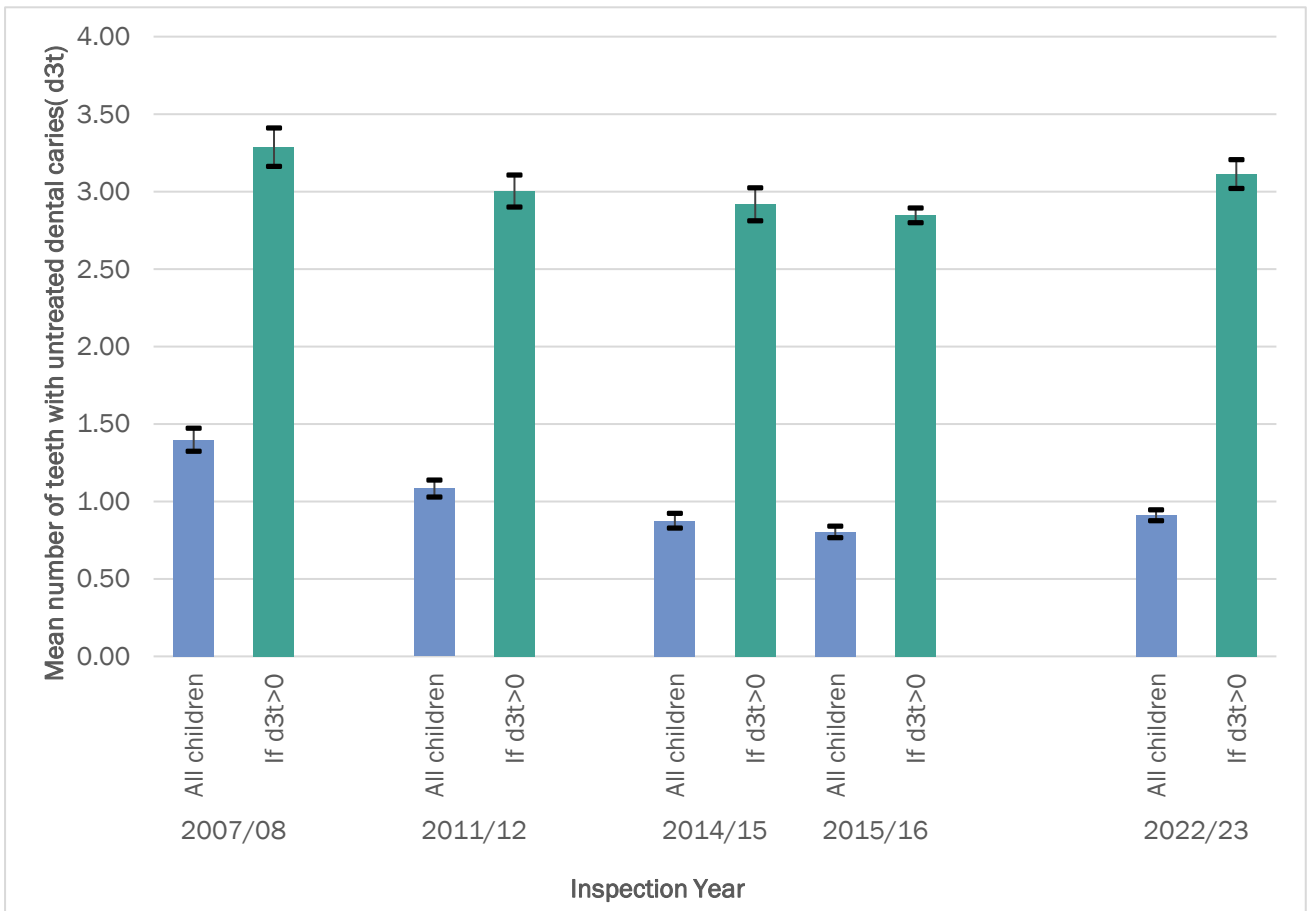


Figure 3: Mean number of teeth with untreated dental caries (d3t) and the mean number of teeth affected in those with untreated dental caries (d3ft if d3t>0) in school year one children in 2022/23

Consequences of untreated dental caries

The presence or absence of pathology due to dental caries was recorded using the PUFA-index (Monse et al. 2010). The prevalence of PUFA signs across Wales was 2.1% (95% CI 1.8% to 2.3%).

Impact of dental caries experience

Almost a fifth of parents/carers (18.4%) reported that their child's oral health had impacted on the quality-of-life impact of their child or family. In children with dental caries experience (d3mft>0), over a third of parents/carers (35.1%) reported an impact. The most common oral health-related quality of life impact was pain (11.5% of all children and 23.6% of those with dental caries experience).

ECOHIS oral health-related quality of life impacts		Prevalence of one or more oral health-related quality of life impacts in the last year (%)	
		All children (%)	In those with dental caries experience (d3mft>0) (%)
Child impacts	Pain	11.6	23.6
	Difficulty drinking hot or cold beverages	2.4	5.9
	Difficulty eating some foods	4.9	12.2
	Difficulty pronouncing any words	2.5	3.9
	Missed preschool, day-care or school	2.3	6.2
	Had trouble sleeping	3.2	7.4
	Been irritable or frustrated	4.6	10.4
	Avoided smiling or laughing	1.2	2.6
	Avoided talking	0.6	1.4
Family impacts	Been upset	4.9	12.2
	Felt guilty	6.7	16.5
	Taken time off from work	2.7	6.7
	Financial impact on the family	1.3	2.8
ANY DOMAIN		18.4	35.1

Table 4: Prevalence of ECOHIS oral health-related quality of life impacts in the last year in all children and just those with dental caries experience (d3mft>0) in school year one children in 2022/23

Deprivation and dental caries experience

There is a clear social gradient in the prevalence and severity of dental caries experience amongst children in Wales. Individuals from the most deprived communities were more likely to experience dental caries (Figure 4, [Supplementary table 4](#)) and also have more teeth affected (Figures 5 and 6, [Supplementary table 5](#) and [Supplementary table 6](#)).

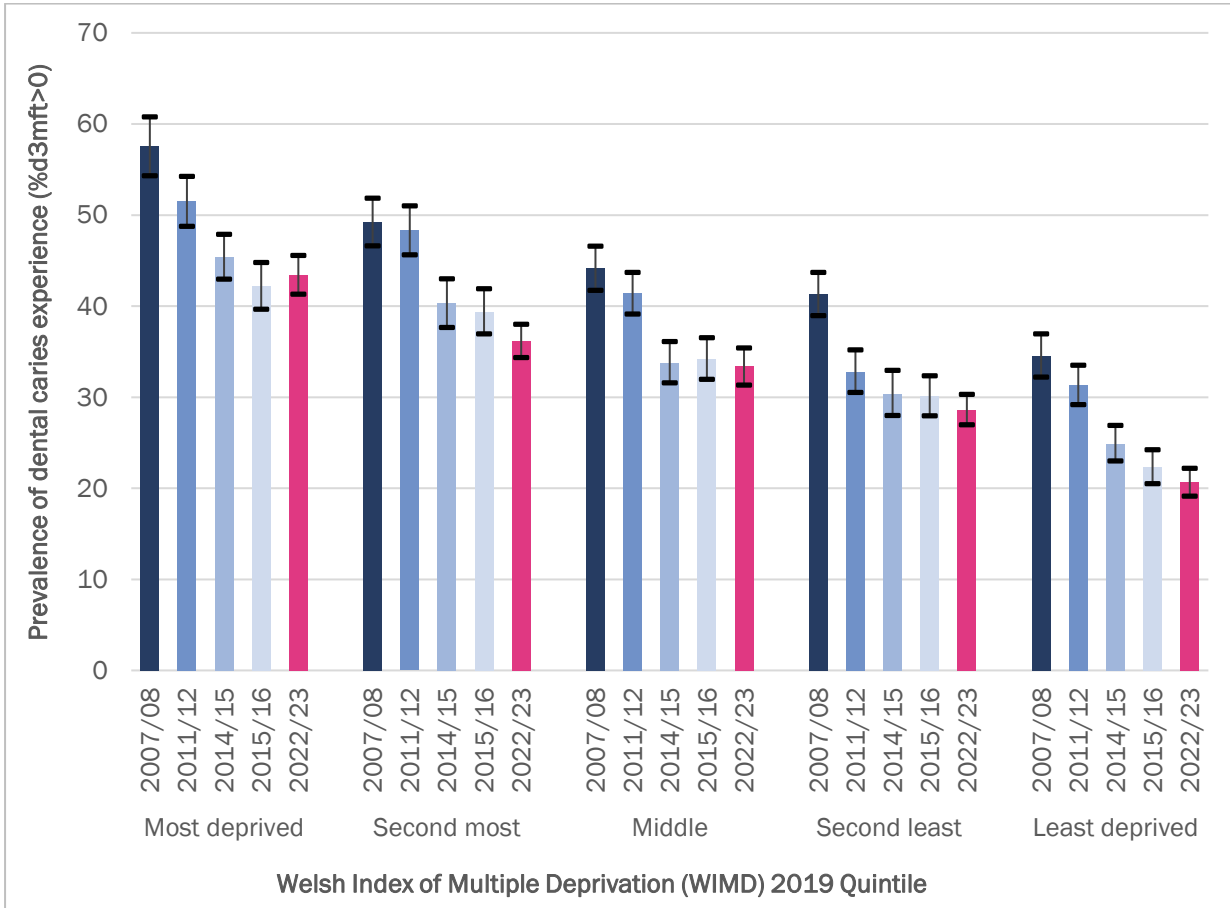


Figure 4: Prevalence of dental caries experience (>0) by Welsh Index of Multiple Deprivation (WIMD) 2019 quintile in school year one children 2007/08 to 2022/23

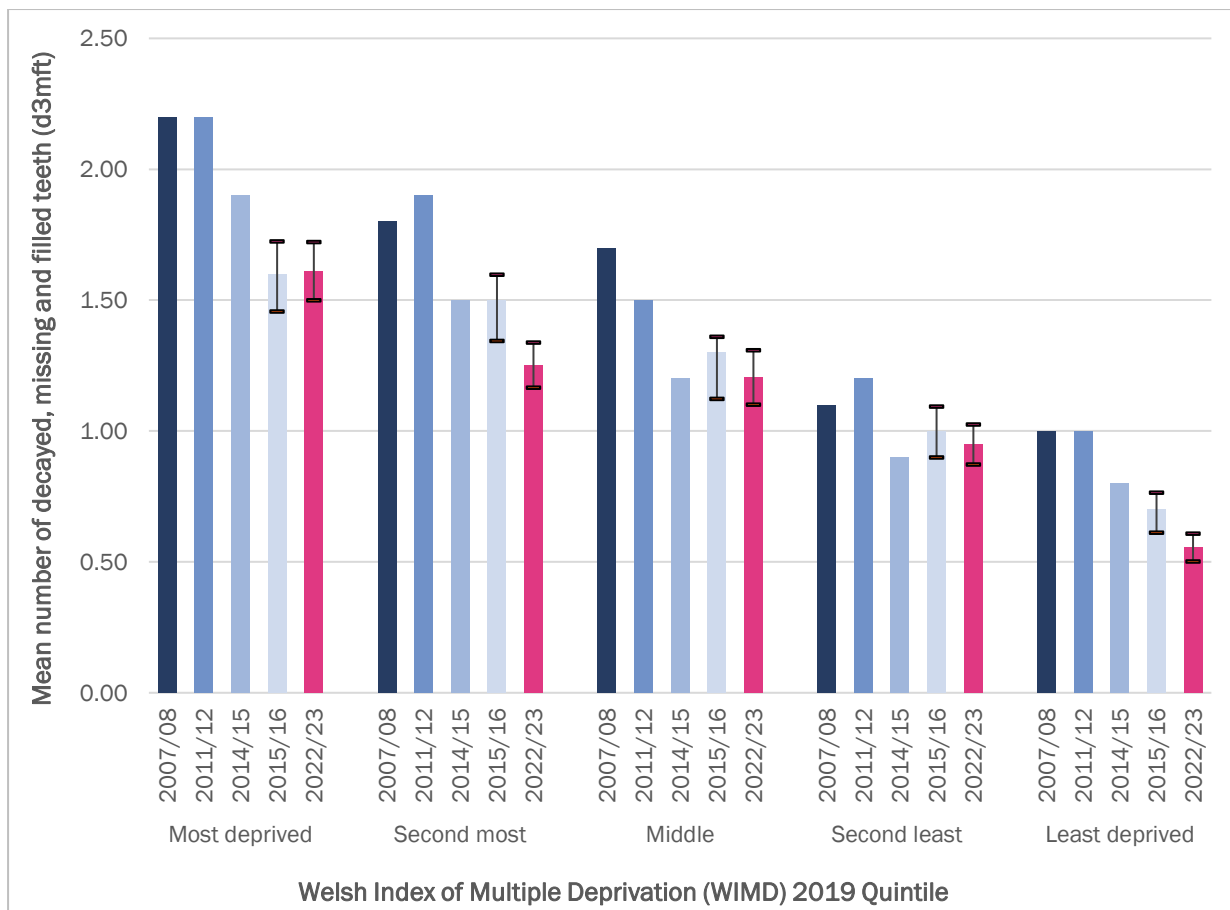


Figure 5: Mean number of decayed, missing and filled teeth (d3mft) by Welsh Index of Multiple Deprivation (WIMD) 2019 quintile in school year one children 2007/08 to 2022/23.¹

¹ Owing to historic differences in reporting, confidence interval data is not available for the first three cohorts

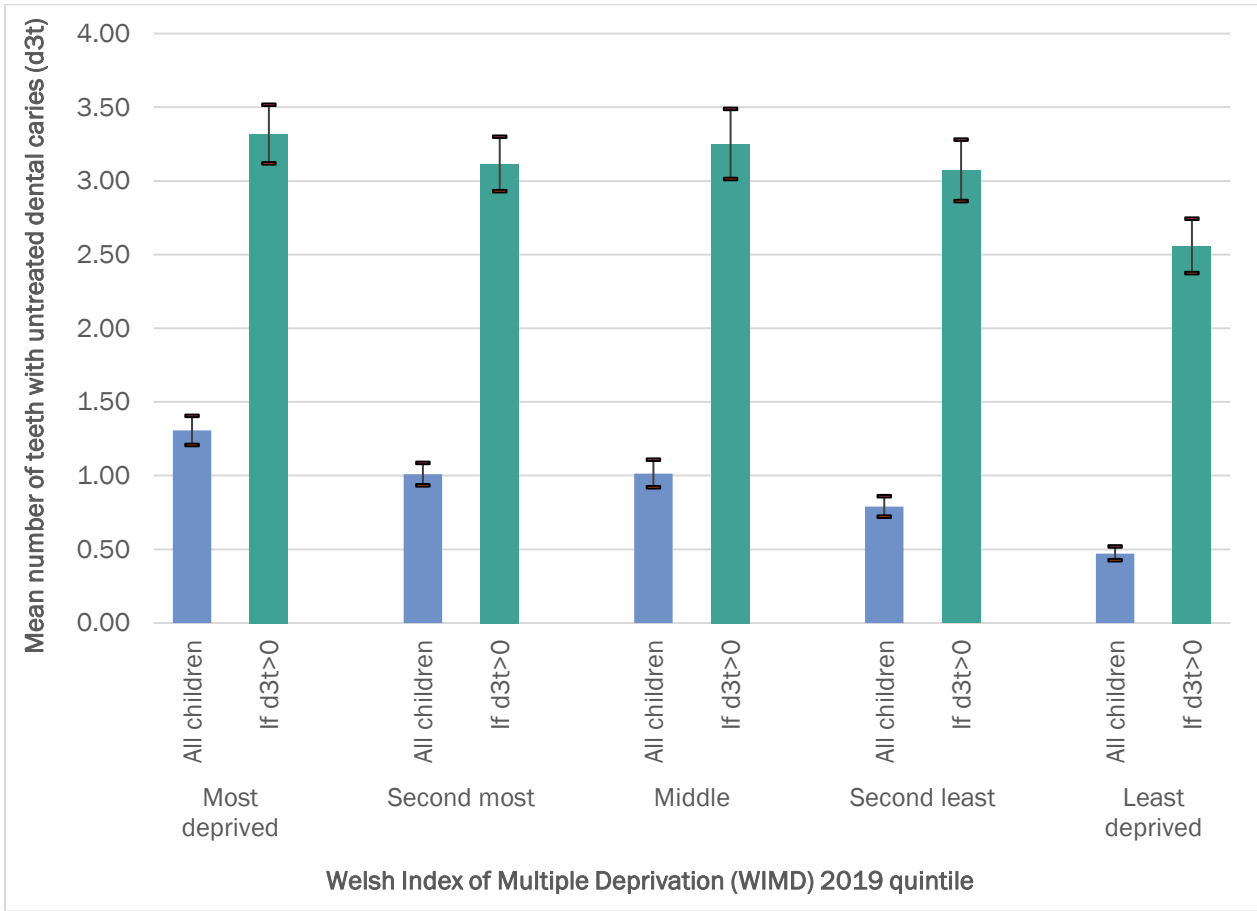


Figure 6: Mean number of teeth with untreated dental caries (d3t) and the mean number of affected teeth in those with untreated dental caries (d3t if d3t>0) in by WIMD (2019) quintile in school year one children 2022/23

The difference in the prevalence of a disease or condition between people living in the most deprived and the least deprived areas is measured by the slope index of inequality. This is a measure of absolute inequalities. The slope index of inequality of dental caries prevalence does not appear to have changed between 2007/08 and 2022/23 (Figure 7, [Supplementary table 7](#)).

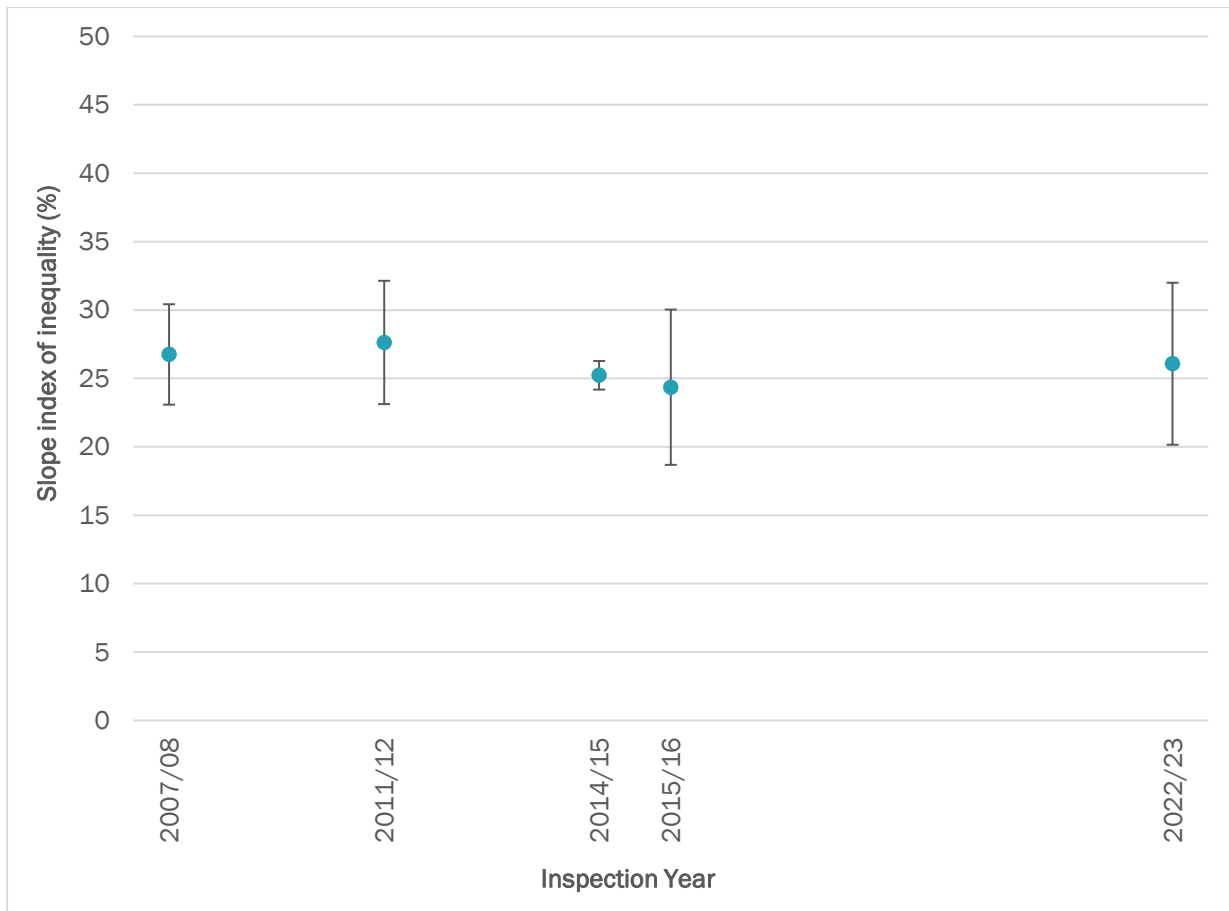


Figure 7: Slope index of inequality in the prevalence of dental caries experience in school year one children in Wales, 2007/08 to 2022/23

The social gradient was also apparent in oral health-related quality of life measures. Families in the in the most deprived WIMD (2019) quintiles were more likely to report one or more oral-health related quality of life impacts on their child or family than those in the least deprived areas. However, when only children with dental caries experience ($d3mft > 0$) were considered, the prevalence of one or more oral health-related quality of life impacts was the same across the social spectrum (Figure 8, [Supplementary table 8](#) & [Supplementary table 9](#)).

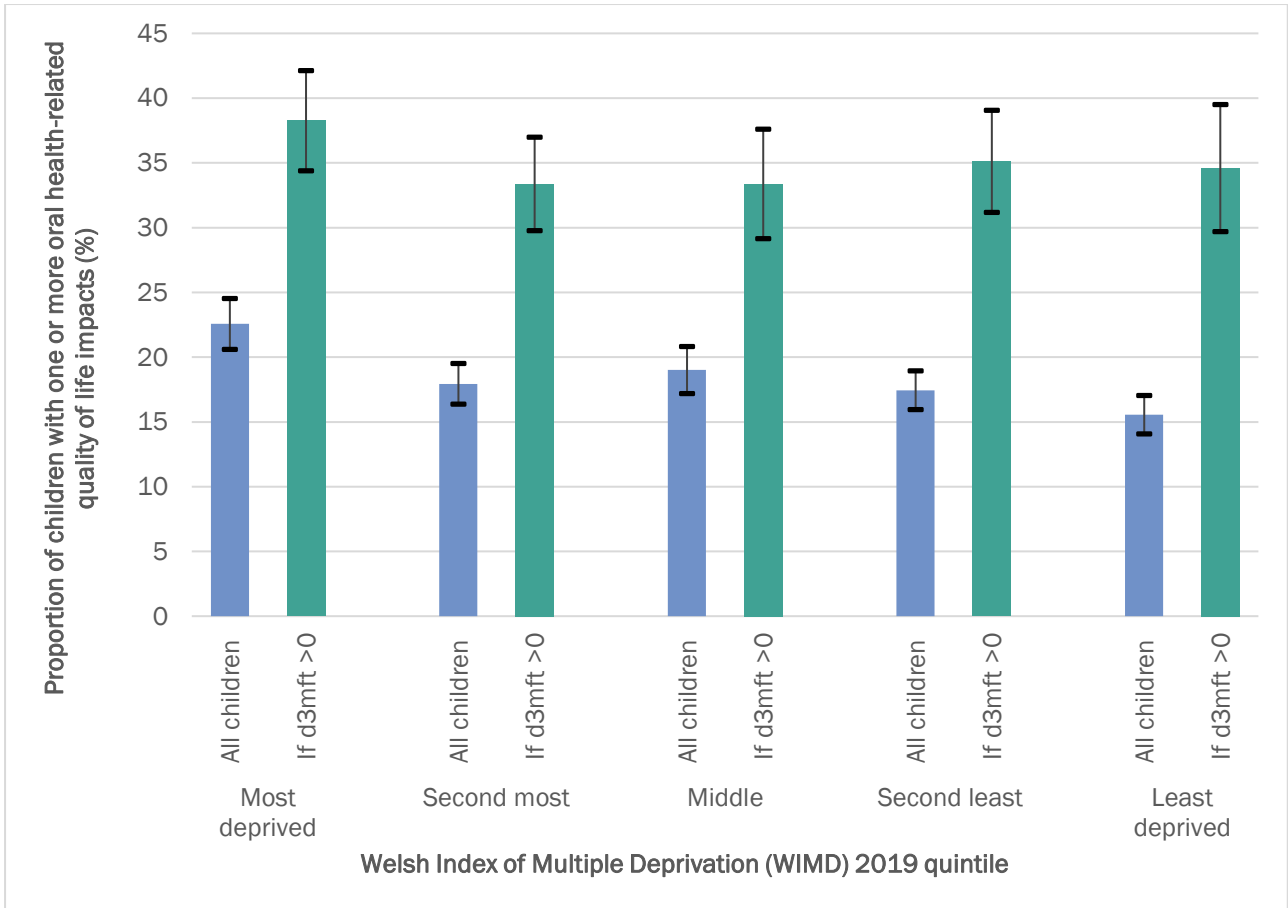


Figure 8: Proportion of children with one or more oral health-related quality of life impacts in all children and those with dental caries experience (d3mft>0), by WIMD (2019) quintile 2022/23

Management of dental caries

Both the mean number of missing (mt) and the mean number of filled (ft) teeth have decreased between 2015/16 and 2022/23 inspections (Figure 9, [Supplementary table 10](#)).

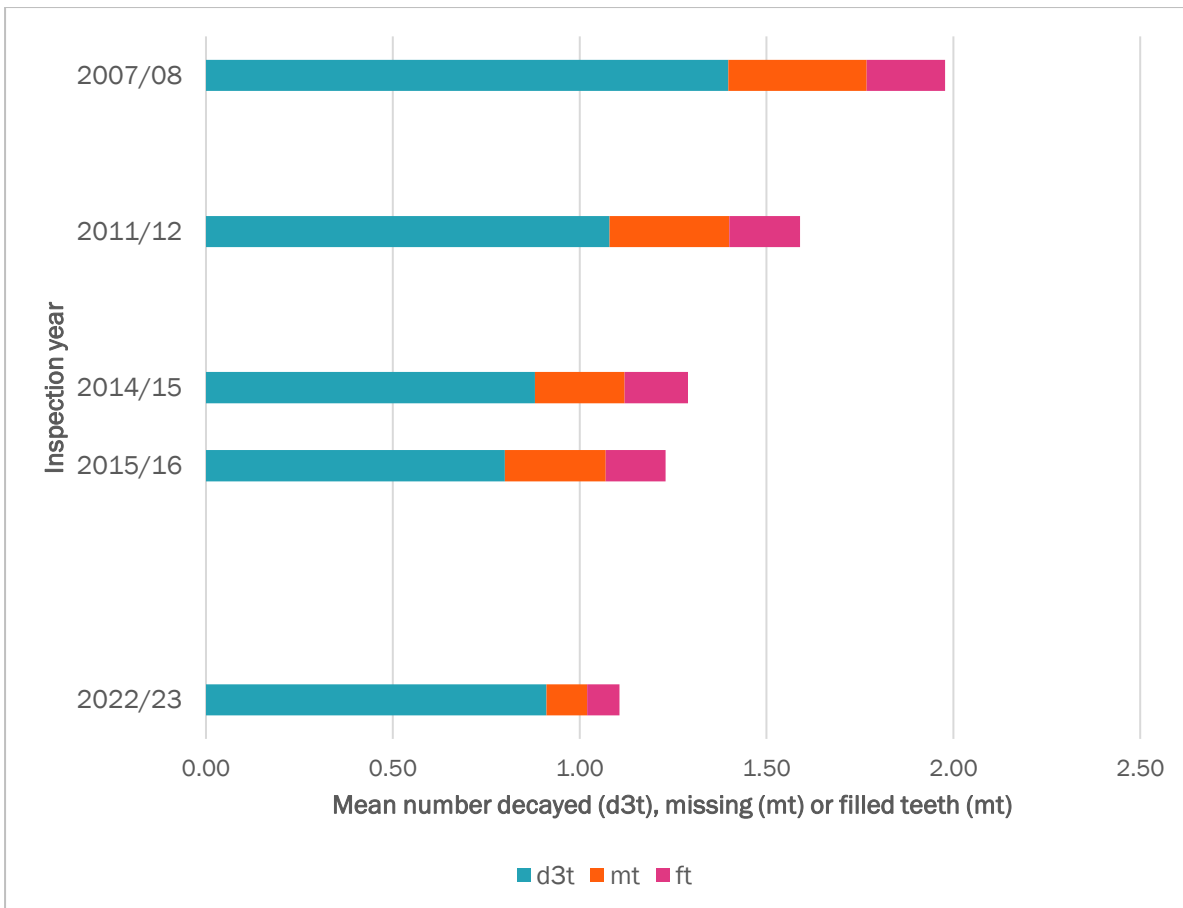


Figure 9: Mean number of decayed (d3t), missing (mt) and filled teeth (ft) in school year one children 2007/08 to 2022/23

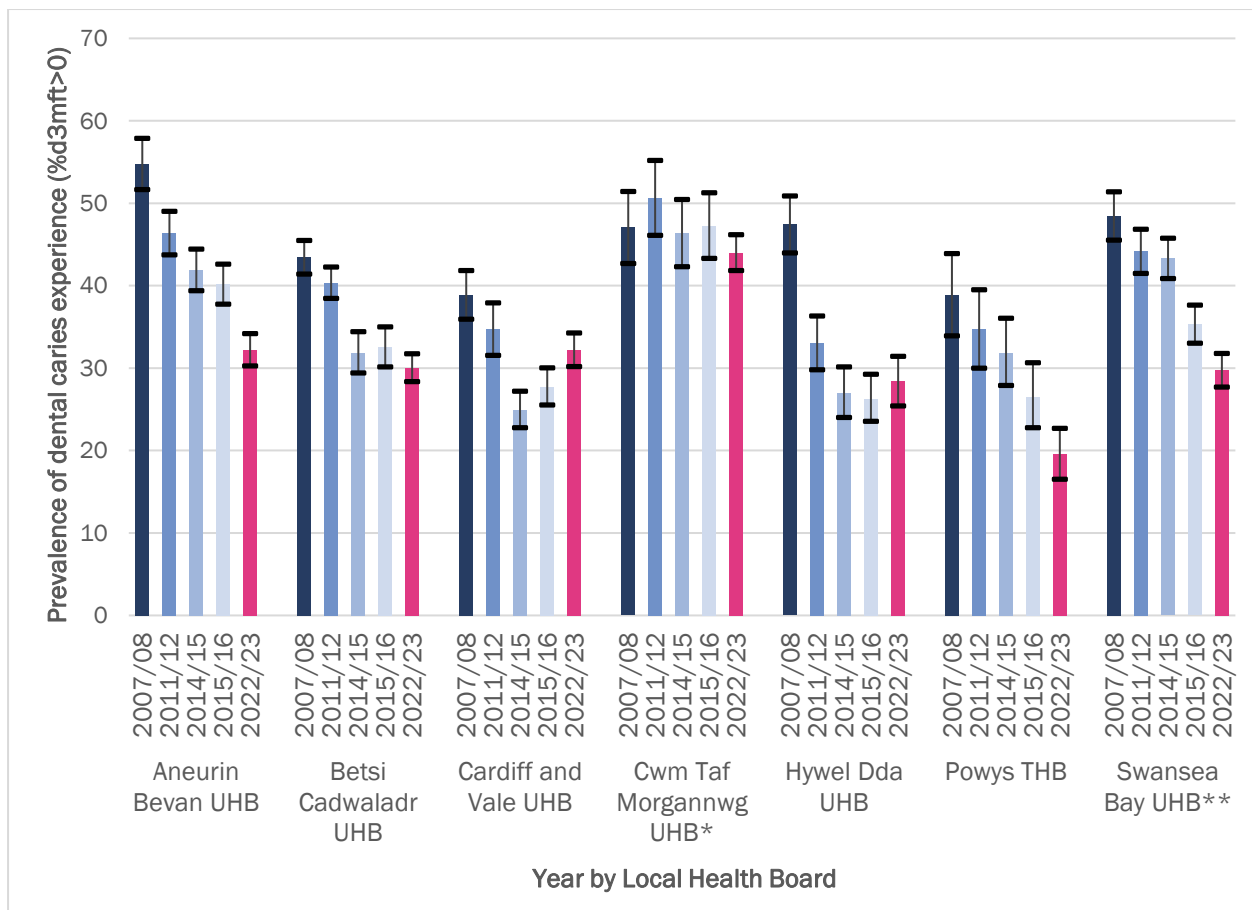
Regional differences in dental caries experience

Prevalence of dental caries experience

The prevalence of dental caries experience (%d3mft>0) ranges from 19.6% (95% CI 16.5% to 22.7%) in Powys THB to 44.0% (95% CI 41.8% to 46.2%) in Cwm Taf Morgannwg UHB (Figure 10, [Supplementary table 11](#)).

Since 2015/16 there has been a reduction in the prevalence of disease in two Local Health Boards (Aneurin Bevan UHB, Powys THB), no change in two (Betsi Cadwaladr UHB, Hywel Dda UHB) and an increase in one (Cardiff and Vale UHB). Due to the Bridgend County Borough Council area change, it is not possible to interpret changes in disease prevalence in Cwm Taf Morgannwg UHB (formerly Cwm Taf UHB) and Swansea Bay UHB (formerly Abertawe Bro Morgannwg UHB).

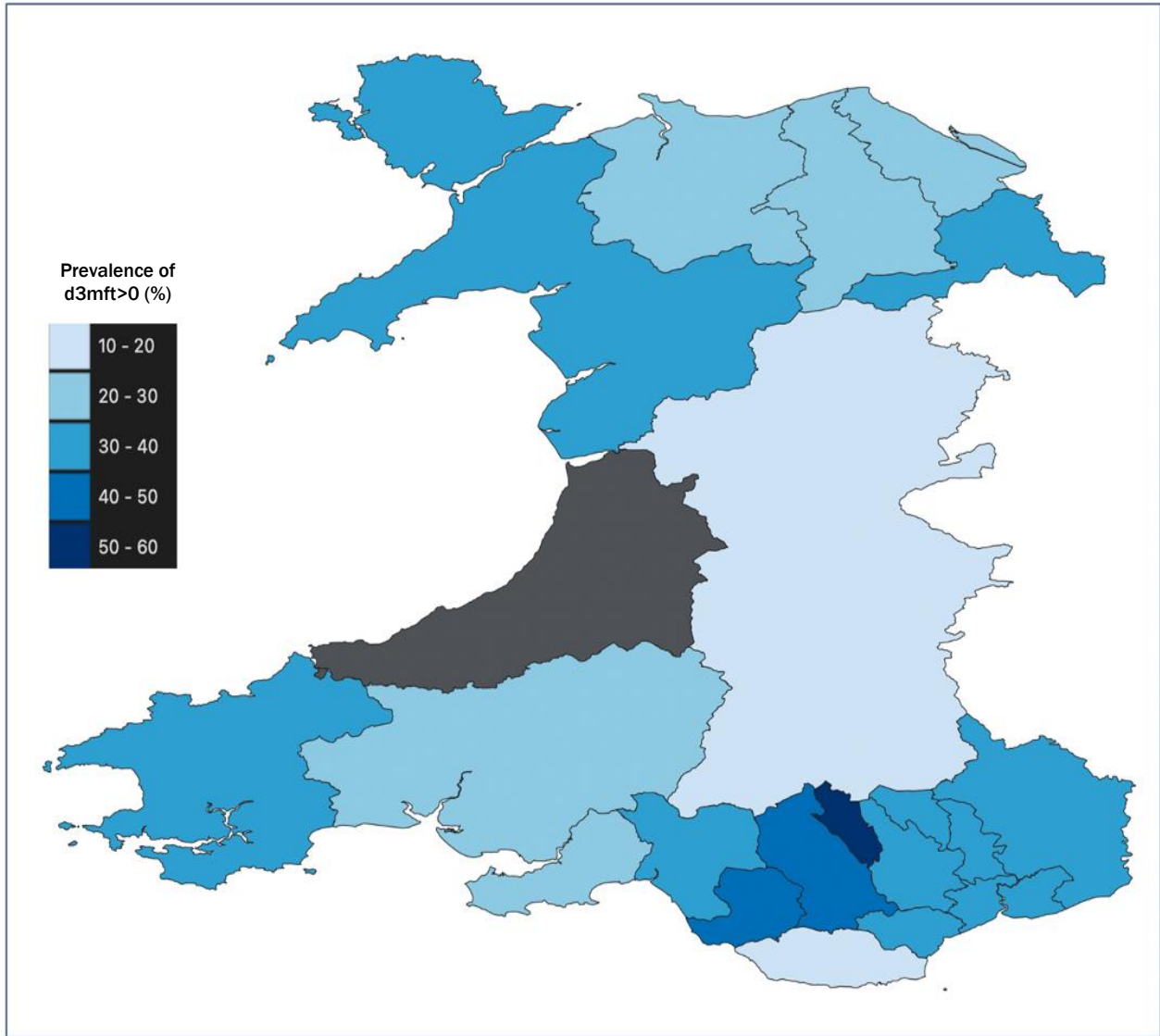
At a Unitary Authority-level, dental caries prevalence (%d3mft>0) ranges 17.8% (95% CI 14.8% to 20.7%) in the Vale of Glamorgan to 50.2% (95% CI 44.6% to 55.8%) in Merthyr Tydfil (Figure 11, [Supplementary table 12](#)).



* Cwm Taf UHB prior to 1st April 2019

** Abertawe Bro Morgannwg UHB prior to 1st April 2019

Figure 10: Prevalence of dental caries experience (%d3mft>0) in school year one children by Local Health Board, 2007/08 to 2022/23



¹ Ceredigion County Council area is grey-out to denote absence of data

Figure 11: A choropleth of prevalence of dental caries experience (%d3mft>0) in school year one children by Local Health Board, 2007/08 to 2022/23

Severity of dental caries experience

The average number of teeth with dental caries experience (d3mft) ranges from 0.64 (95% CI 0.51 to 0.78) in Powys THB to 1.54 (95% CI 1.44 to 1.65) in Cwm Taf Morgannwg UHB (Figure 12, [Supplementary table 13](#)).

When only the children with disease experience (d3mft>0) are considered, the average number of teeth with dental caries experience (d3mft) ranges from 3.03 (95% CI 2.68 to 3.38) in Hywel Dda UHB to 3.63 (95% CI 3.37 to 3.88) in Cardiff and Vale UHB (Figure 13, [Supplementary table 14](#)).

Since 2015/16 there has been a reduction in the severity of disease (in all children, as well as only those with dental caries experience) in one Local Health Board (Aneurin Bevan UHB) and no

change in a further four (Betsi Cadwaladr UHB, Cardiff and Vale UHB, Hywel Dda UHB, Powys THB) (Figures 12 and 13, [Supplementary table 13](#) and [Supplementary table 14](#)). Due to the Bridgend County Borough Council area change, it is not possible to interpret changes in disease severity in Cwm Taf Morgannwg UHB (formerly Cwm Taf UHB) and Swansea Bay UHB (formerly Abertawe Bro Morgannwg UHB).

At a Unitary Authority-level disease severity ranges from mean number of decayed, missing or filled teeth (d3mft) of 0.42 (95% 0.34 to 0.50) in the Vale of Glamorgan to 1.90 (95% CI 1.60 to 2.19) in Merthyr Tydfil (Figure 14, [Supplementary table 12](#)).

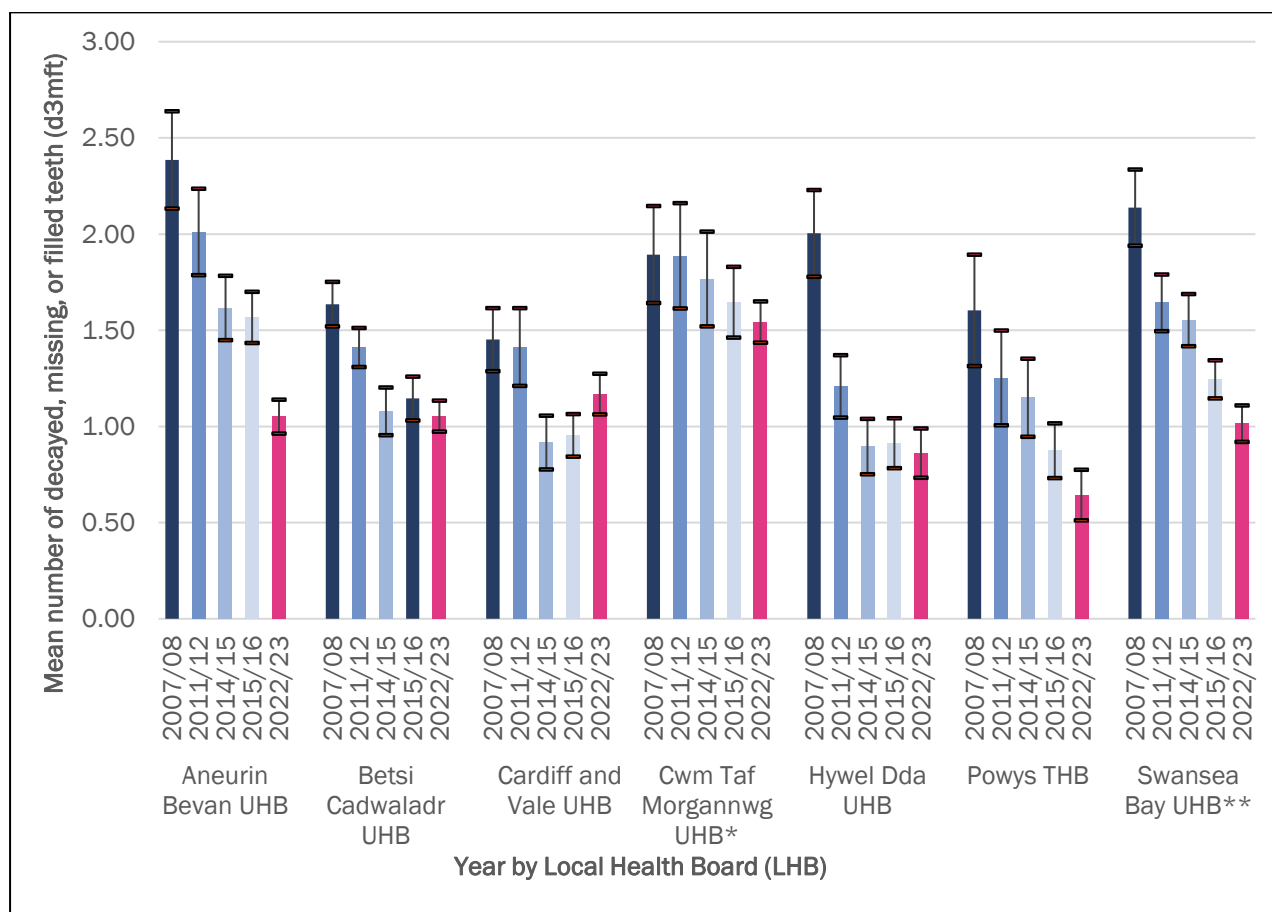


Figure 12: Mean number of decayed, missing or filled teeth (d3mft) in Local Health Boards, 2007/08 to 2022/23

* Cwm Taf UHB prior to 1st April 2019

** Abertawe Bro Morgannwg UHB prior to 1st April 2019

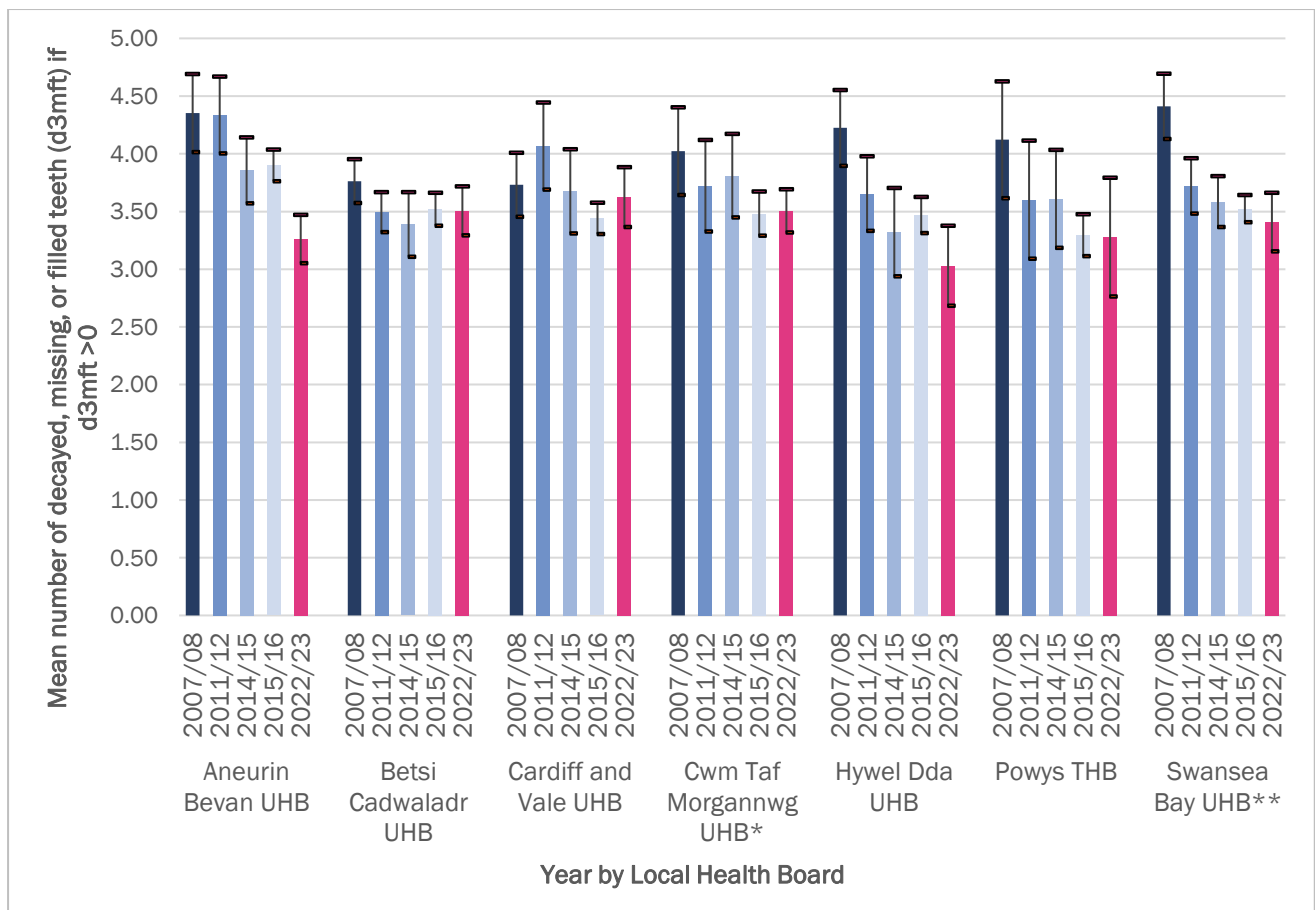
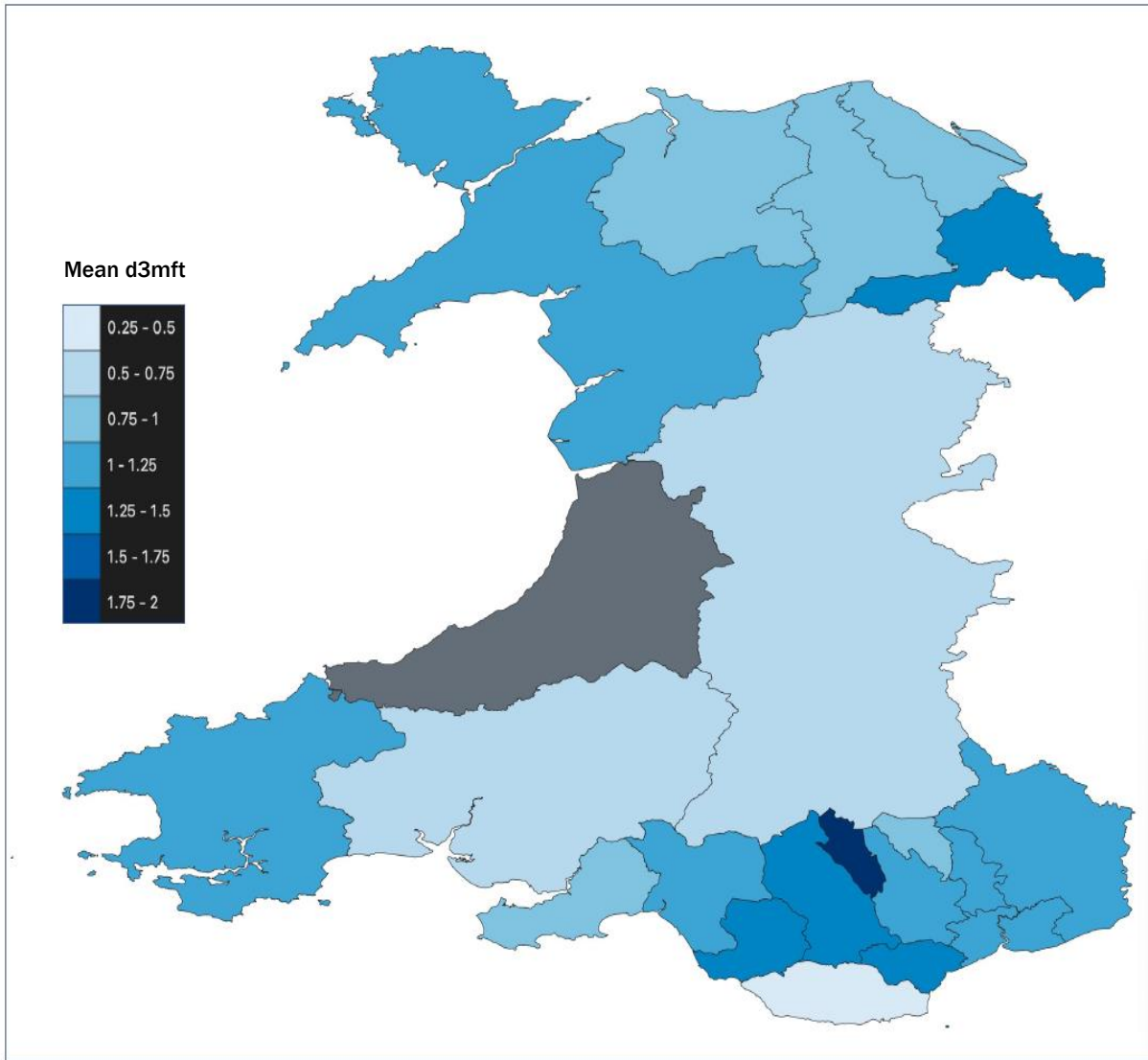


Figure 13: Mean number of decayed, missing or filled teeth (d3mft) in children with dental caries experience (d3mft>0) in Local Health Boards, 2007/08 to 2022/23

* Cwm Taf UHB prior to 1st April 2019

** Abertawe Bro Morgannwg UHB prior to 1st April 2019



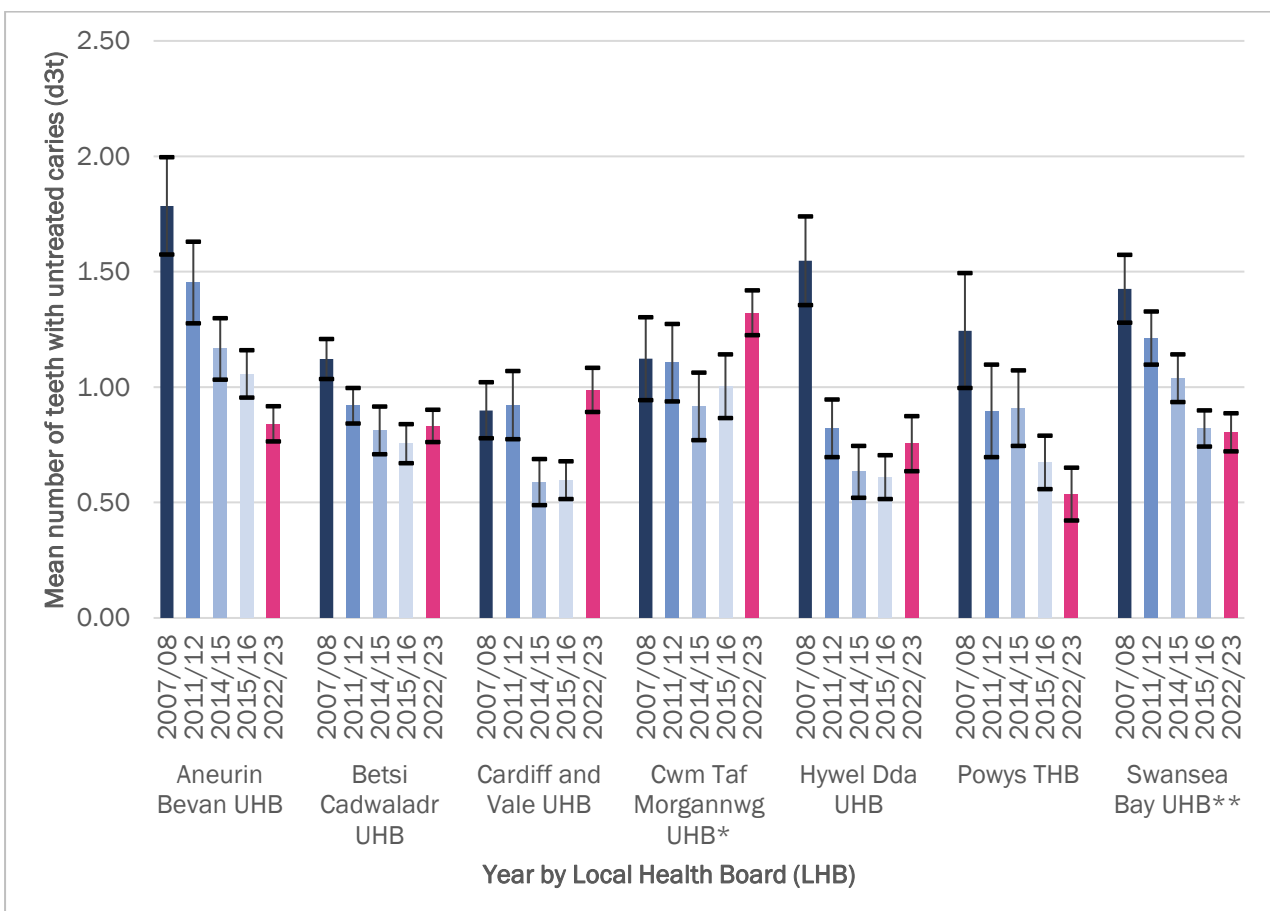
¹ Ceredigion County Council area is grey-out to denote absence of data

Figure 14: A choropleth of mean number of decayed, missing, or filled teeth (d3mft) per Unitary Authority in school year one children 2022/23¹

Untreated dental caries

The prevalence of untreated dental caries (%d3t>0) ranges from 17.4% (95% CI 14.5% to 20.4%) in Powys THB to 41.5% (95% CI 39.3% to 43.6%) in Cwm Taf Morgannwg UHB (Figure 15, [Supplementary table 15](#)).

Since 2015/16 there have been reduction in the prevalence and severity of untreated dental caries in one Local Health Board (Aneurin Bevan UHB), no change in three (Betsi Cadwaladr UHB, Hywel Dda UHB, Powys THB) and an increase in one (Cardiff and Vale UHB) (Figure 15, [Supplementary table 15](#)). Due to the Bridgend County Borough Council area change, it is not possible to interpret changes in untreated disease prevalence or severity in Cwm Taf Morgannwg UHB (formerly Cwm Taf UHB) and Swansea Bay UHB (formerly Abertawe Bro Morgannwg UHB).



* Cwm Taf UHB prior to 1st April 2019

** Abertawe Bro Morgannwg prior to 1st April 2019

Figure 15: Mean number of teeth with untreated dental caries (d3t) in Local Health Boards, 2007/08 to 2022/23

Impact of dental caries

The prevalence of one or more oral health-related quality of life impacts varies between 14.6% (95% CI 12.2% to 17.1%) in Hywel Dda UHB to 19.6% (95% CI 18.0% to 21.2%) in Betsi Cadwaladr UHB (Table 5).

	Prevalence (%)								
	One or more child impacts			One or more family impacts			One or more child or family impacts		
	Mean	95% Confidence interval		Mean	95% Confidence interval		Mean	95% Confidence interval	
		Low	High		Low	High		Low	High
Aneurin Bevan UHB	15.7%	14.1%	17.4%	9.8%	8.5%	11.2%	19.2%	17.4%	21.0%
Betsi Cadwaladr UHB	16.4%	14.9%	17.9%	10.0%	8.8%	11.3%	19.6%	18.0%	21.2%
Cardiff and Vale UHB	16.7%	14.9%	18.4%	8.5%	7.2%	9.9%	19.5%	17.7%	21.4%
Cwm Taf Morgannwg UHB	14.4%	12.7%	16.0%	7.9%	6.6%	9.1%	17.0%	15.3%	18.7%
Hywel Dda UHB	11.9%	9.6%	14.1%	7.9%	6.0%	9.7%	14.6%	12.2%	17.1%
Powys THB	12.4%	9.7%	15.1%	8.8%	6.5%	11.1%	17.0%	14.0%	20.1%
Swansea Bay UHB	16.5%	14.7%	18.2%	7.9%	6.6%	9.2%	18.6%	16.8%	20.5%
WALES	15.4%	14.7%	16.1%	8.9%	8.3%	9.4%	18.4%	17.6%	19.1%

Table 5: Prevalence of child and family oral health-related quality of life impacts in Local Health Boards

Management of dental caries

The number of missing teeth is highest in Cwm Taf Morgannwg UHB and Swansea Bay UHB and lowest in Powys THB. The number of filled teeth is highest in Betsi Cadwaladr UHB and lowest in Cardiff and Vale UHB and Hywel Dda UHB (Figure 16, [Supplementary table 16](#)).

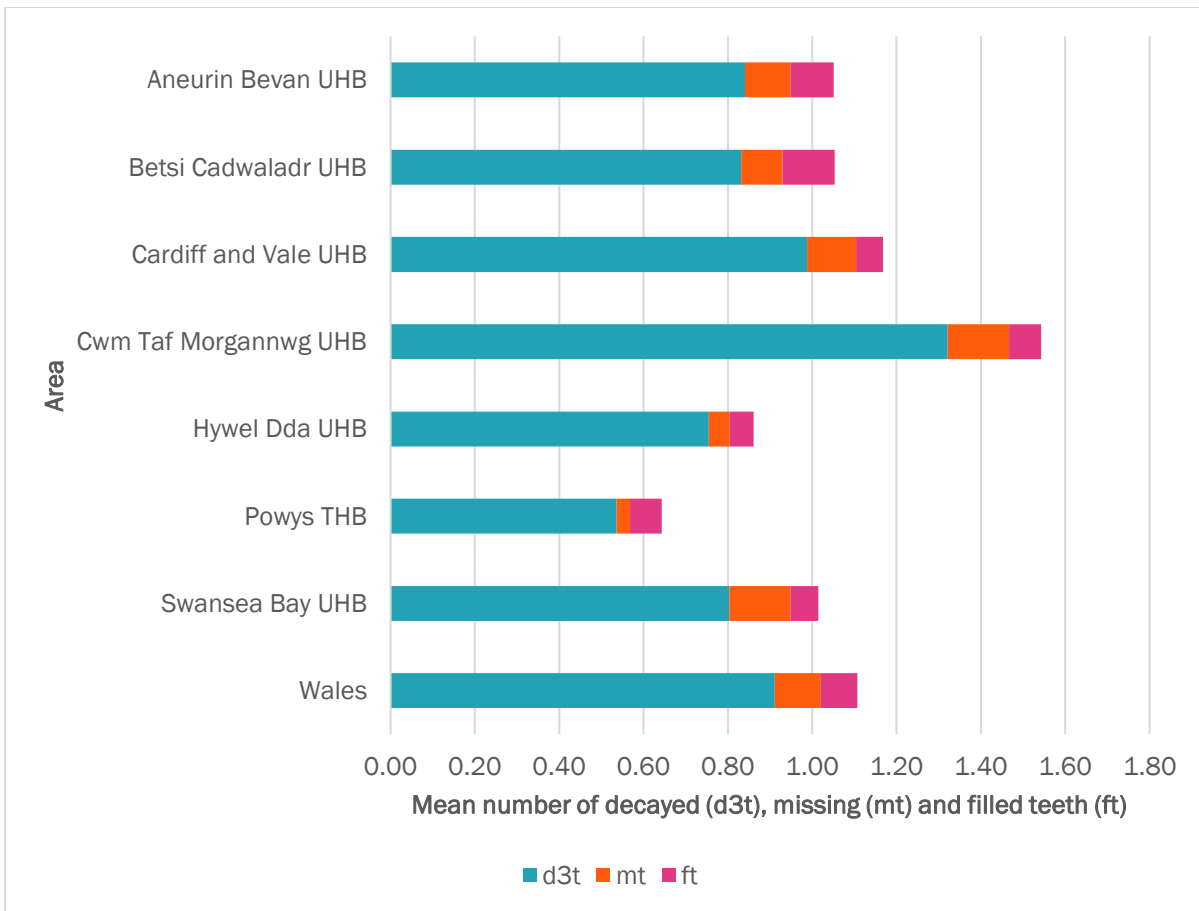


Figure 16: Mean number of decayed (d3t) missing (mt), and filled teeth (ft) in Wales and per Local Health Board 2022/23

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Supplementary Tables

Supplementary table 1: Prevalence of dental caries experience (%d3mft>0) in school year one children in Wales 2022/23

Inspection Year	Prevalence of dental caries experience (%d3mft>0)		
	Mean	95% CI Low	95% CI High
2007/08	47.56	46.40	48.72
2011/12	41.40	40.32	42.51
2014/15	35.40	34.38	36.52
2015/16	34.20	33.17	35.23
2022/23	32.40	31.52	33.18

Supplementary table 2: Mean number of teeth with dental caries experience (d3mft) and the mean number of teeth affected in those with dental caries experience (d3mft if d3mft>0) in school year one children in 2022/23

Inspection Year		Number of teeth with dental caries experience (d3mft)		
		Mean	95% CI Low	95% CI High
2007/08	All children	1.98	1.89	2.07
	If d3mft>0	4.16	4.02	4.29
2011/12	All children	1.59	1.52	1.67
	If d3mft>0	3.85	3.72	3.97
2014/15	All children	1.29	1.22	1.35
	If d3mft>0	3.63	3.51	3.75
2015/16	All children	1.22	1.17	1.27
	If d3mft>0	3.58	3.52	3.64
2022/23	All children	1.11	1.07	1.15
	If d3mft>0	3.42	3.33	3.52

Supplementary table 3: Mean number of teeth with untreated dental caries (d3t) and the mean number of teeth affected in those with untreated dental caries (d3ft if d3t>0) in school year one children in 2022/23

Inspection Year		Number of teeth with untreated dental caries (d3t)		
		Mean	95% CI Low	95% CI High
2007/08	All children	1.40	1.32	1.47
	If d3t>0	3.29	3.16	3.41
2011/12	All children	1.08	1.03	1.14
	If d3t>0	3.00	2.90	3.11
2014/15	All children	0.88	0.83	0.92
	If d3t>0	2.92	2.81	3.02
2015/16	All children	0.80	0.77	0.84
	If d3t>0	2.85	2.80	2.89
2022/23	All children	0.91	0.88	0.95
	If d3t>0	3.11	3.02	3.21

Supplementary table 4: Prevalence of dental caries experience (%d3mft>0) by Welsh Index of Multiple Deprivation (WIMD) 2019 quintile

WIMD (2019) Quintile	Inspection Year	Prevalence of dental caries experience (%d3mft>0) (%)		
		Mean	95% CI Low	95% CI High
Most deprived	2007/08	57.56	54.29	60.76
	2011/12	51.50	48.76	54.23
	2014/15	45.40	42.95	47.87
	2015/16	42.20	39.65	44.79
	2022/23	43.40	41.30	45.55
Second most deprived	2007/08	49.22	46.61	51.83
	2011/12	48.30	45.62	50.99
	2014/15	40.30	37.66	43.00
	2015/16	39.40	36.96	41.89
	2022/23	36.20	34.34	38.01
Middle deprived	2007/08	44.14	41.74	46.57
	2011/12	41.40	39.13	43.71
	2014/15	33.80	31.56	36.12
	2015/16	34.20	31.94	36.53
	2022/23	33.40	31.32	35.42
Second least deprived	2007/08	41.30	38.96	43.69
	2011/12	32.80	30.51	35.18
	2014/15	30.40	27.98	32.93
	2015/16	30.10	27.96	32.33
	2022/23	28.60	26.96	30.31
Least deprived	2007/08	34.54	32.19	36.96
	2011/12	31.30	29.19	33.49
	2014/15	24.90	23.00	26.91
	2015/16	22.30	20.49	24.22
	2022/23	20.70	19.11	22.20

Supplementary table 5: Mean number of decayed, missing and filled teeth (d3mft) per Welsh Index of Multiple Deprivation (WIMD) 2019 quintile¹.

WIMD (2019) Quintile	Inspection Year	Number of decayed, missing or filled teeth (d3mft)		
		Mean	95% CI Low	95% CI High
Most deprived	2007/08	2.20	-	-
	2011/12	2.20	-	-
	2014/15	1.90	-	-
	2015/16	1.60	1.46	1.72
	2022/23	1.61	1.50	1.72
Second most deprived	2007/08	1.80	-	-
	2011/12	1.90	-	-
	2014/15	1.50	-	-
	2015/16	1.50	1.34	1.60
	2022/23	1.25	1.17	1.34
Middle deprived	2007/08	1.70	-	-
	2011/12	1.50	-	-
	2014/15	1.20	-	-
	2015/16	1.30	1.12	1.36
	2022/23	1.20	1.10	1.31
Second least deprived	2007/08	1.10	-	-
	2011/12	1.20	-	-
	2014/15	0.90	-	-
	2015/16	1.00	0.90	1.09
	2022/23	0.95	0.87	1.02
Least deprived	2007/08	1.00	-	-
	2011/12	1.00	-	-
	2014/15	0.80	-	-
	2015/16	0.70	0.61	0.76
	2022/23	0.55	0.50	0.61

¹ 95% confidence intervals not available for 2014/15 and earlier

Supplementary table 6: Mean number of teeth with untreated dental caries (d3t) and the mean number of affected teeth in those with untreated dental caries (d3t if d3t>0) by WIMD (2019) quintile in 2022/23

WIMD (2019) quintile		Number of teeth with untreated dental caries (d3t)		
		Mean	95% CI Low	95% CI High
Most deprived	All children	1.31	1.21	1.40
	If d3t>0	3.32	3.12	3.52
Second most deprived	All children	1.01	0.93	1.09
	If d3t>0	3.12	2.93	3.30
Middle deprived	All children	1.01	0.92	1.11
	If d3t>0	3.25	3.01	3.49
Second least deprived	All children	0.79	0.72	0.86
	If d3t>0	3.07	2.86	3.28
Least deprived	All children	0.47	0.42	0.52
	If d3t>0	2.56	2.37	2.74

Supplementary table 7: Slope index of inequality in the prevalence of dental caries experience in school year one children in Wales, 2007/08 to 2022/23

Inspection Year	Slope index of inequality (SII) in dental caries experience prevalence (%)		
	SII	95% CI Low	95% CI High
2007/08	26.8	23.1	30.4
2011/12	27.6	23.1	32.1
2014/15	25.2	24.2	26.3
2015/16	24.4	18.7	30.0
2022/23	26.1	20.2	32.0

Supplementary table 8: Prevalence of one or more oral health-related quality of life impacts by Welsh Index of Multiple Deprivation (WIMD) 2019 quintiles in school year one children in 2022/23

WIMD (2019) Quintile		Prevalence of one or more oral health-related quality of life impacts (%)		
		Mean	95% CI Low	95% CI High
Most deprived	All children	22.6	20.6	24.5
	If d3mft>0	38.3	34.4	42.1
Second most deprived	All children	17.9	16.4	19.5
	If d3mft>0	33.4	29.8	37.0
Middle deprived	All children	19.0	17.2	20.8
	If d3mft>0	33.4	29.1	37.6
Second least deprived	All children	17.4	16.0	18.9
	If d3mft>0	35.1	31.2	39.1
Least deprived	All children	15.6	14.1	17.0
	If d3mft>0	34.6	29.7	39.5

Supplementary table 9: Mean ECOHIS oral health-related quality of life impact by WIMD (2019) quintile

WIMD (2019) Quintile		ECOHIS oral health-related quality of life impact score		
		Mean	95% CI Low	95% CI High
Most deprived	All children	2.66	2.39	2.93
	If d3mft>0	4.62	4.04	5.19
Second most	All children	2.01	1.84	2.18
	If d3mft>0	3.97	3.52	4.42
Middle	All children	1.95	1.75	2.15
	If d3mft>0	3.75	3.21	4.29
Second least	All children	1.70	1.55	1.85
	If d3mft>0	3.74	3.26	4.22
Least deprived	All children	1.37	1.25	1.48
	If d3mft>0	3.11	2.65	3.57

Supplementary table 10: Mean number of decayed (d3t), missing (mt) and filled teeth (ft) in school year one children 2007/08 to 2022/23

Inspection Year	Teeth with untreated decay (d3t)			Missing teeth (mt)			Filled teeth (ft)		
	Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High
2007/08	1.40	1.32	1.47	0.37	0.32	0.42	0.21	0.19	0.23
2011/12	1.08	1.03	1.14	0.32	0.28	0.36	0.19	0.17	0.20
2014/15	0.88	0.83	0.92	0.24	0.21	0.27	0.17	0.15	0.18
2015/16	0.80	0.77	0.84	0.27	0.24	0.29	0.16	0.14	0.17
2022/23	0.91	0.88	0.95	0.11	0.09	0.12	0.09	0.08	0.09

Supplementary table 11: Prevalence of dental caries experience (%d3mft>0) by Local Health Board 2007/08 to 2022/23

Local Health Board	Inspection Year	Prevalence of dental caries experience (%d3mft>0) (%)		
		Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	2007/08	54.77	51.66	57.87
	2011/12	46.39	43.74	49.03
	2014/15	41.90	39.40	44.44
	2015/16	40.17	37.78	42.61
	2022/23	32.22	30.26	34.19
Betsi Cadwaladr UHB	2007/08	43.44	41.42	45.47
	2011/12	40.36	38.46	42.27
	2014/15	31.85	29.40	34.41
	2015/16	32.54	30.16	35.02
	2022/23	30.04	28.36	31.73
Cardiff and Vale UHB	2007/08	38.88	35.93	41.83
	2011/12	34.73	31.55	37.92
	2014/15	24.92	22.79	27.19
	2015/16	27.73	25.52	30.04
	2022/23	32.22	30.17	34.27
Cwm Taf Morgannwg UHB ¹	2007/08	47.06	42.70	51.43
	2011/12	50.65	46.10	55.21
	2014/15	46.35	42.31	50.44
	2015/16	47.28	43.32	51.27
	2022/23	44.01	41.82	46.20
Hywel Dda UHB ²	2007/08	47.43	43.97	50.89
	2011/12	33.06	29.79	36.33
	2014/15	26.96	24.01	30.13
	2015/16	26.30	23.55	29.24
	2022/23	28.42	25.39	31.44
Powys THB	2007/08	38.90	33.92	43.88
	2011/12	34.75	30.01	39.50
	2014/15	31.84	27.89	36.06
	2015/16	26.54	22.78	30.67
	2022/23	19.61	16.53	22.70
Swansea Bay UHB ³	2007/08	48.46	45.51	51.41
	2011/12	44.16	41.47	46.85
	2014/15	43.30	40.86	45.77
	2015/16	35.30	33.03	37.63
	2022/23	29.75	27.72	31.79

¹ Cwm Taf UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

² Does not include Ceredigion County Council area

³ Abertawe Bro Morgannwg UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

Supplementary table 12: Prevalence of dental caries experience (%d3mft>0) and number of teeth with dental caries experience (d3mft) at Unitary Authority Area

Local Health Board	Unitary Authority Areas	Prevalence of dental caries experience (%d3mft>0) (%)			Number of teeth with dental caries experience (d3mft)		
		Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	Blaenau Gwent	34.5	29.0	39.9	0.95	0.75	1.15
	Caerphilly	33.2	29.9	36.6	1.11	0.95	1.26
	Monmouthshire	31.8	26.0	37.5	1.04	0.79	1.29
	Newport	31.4	27.6	35.2	1.03	0.86	1.20
	Torfaen	31.4	26.7	36.1	1.04	0.83	1.25
Betsi Cadwaladr UHB	Conwy	20.5	17.3	23.7	0.88	0.71	1.05
	Denbighshire	27.9	23.7	32.2	0.96	0.77	1.16
	Flintshire	26.8	23.4	30.2	0.82	0.67	0.96
	Gwynedd	36.2	31.8	40.5	1.24	1.04	1.44
	Isle of Anglesey	35.6	30.2	41.0	1.25	0.98	1.52
	Wrexham	34.9	30.6	39.2	1.28	1.05	1.51
Cardiff and Vale UHB	Cardiff	38.0	35.4	40.6	1.47	1.33	1.62
	The Vale of Glamorgan	17.8	14.8	20.7	0.42	0.34	0.50
Cwm Taf Morgannwg UHB	Bridgend	44.2	40.1	48.2	1.44	1.25	1.64
	Merthyr Tydfil	50.2	44.6	55.8	1.90	1.60	2.19
	Rhondda Cynon Taff	42.2	39.3	45.1	1.50	1.36	1.64
Hywel Dda UHB	Carmarthenshire	26.7	22.7	30.7	0.74	0.59	0.90
	Ceredigion	¹	¹	¹	¹	¹	¹
	Pembrokeshire	31.1	26.4	35.8	1.04	0.83	1.26
Powys THB	Powys	19.6	16.5	22.7	0.64	0.51	0.78
Swansea Bay UHB	Neath Port Talbot	30.7	27.3	34.1	1.08	0.92	1.24
	Swansea	29.2	26.6	31.7	0.97	0.86	1.09

¹ no data from Ceredigion County Council area

Supplementary table 13: Mean number of teeth with dental caries experience (d3mft) by Local Health Board 2007/08 to 2022/23

Local Health Board	Inspection Year	Number of teeth with dental caries experience (d3mft)		
		Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	2007/08	2.38	2.13	2.64
	2011/12	2.01	1.79	2.24
	2014/15	1.62	1.45	1.78
	2015/16	1.57	1.43	1.70
	2022/23	1.05	0.96	1.14
Betsi Cadwaladr UHB	2007/08	1.64	1.52	1.75
	2011/12	1.41	1.31	1.51
	2014/15	1.08	0.95	1.20
	2015/16	1.15	1.03	1.26
	2022/23	1.05	0.97	1.13
Cardiff and Vale UHB	2007/08	1.45	1.29	1.62
	2011/12	1.41	1.21	1.61
	2014/15	0.92	0.78	1.06
	2015/16	0.95	0.84	1.06
	2022/23	1.17	1.06	1.27
Cwm Taf Morgannwg UHB ¹	2007/08	1.89	1.64	2.15
	2011/12	1.89	1.61	2.16
	2014/15	1.77	1.52	2.01
	2015/16	1.65	1.46	1.83
	2022/23	1.54	1.44	1.65
Hywel Dda UHB ²	2007/08	2.00	1.78	2.23
	2011/12	1.21	1.05	1.37
	2014/15	0.90	0.75	1.04
	2015/16	0.91	0.78	1.04
	2022/23	0.86	0.73	0.99
Powys THB	2007/08	1.60	1.31	1.89
	2011/12	1.25	1.01	1.50
	2014/15	1.15	0.95	1.35
	2015/16	0.87	0.73	1.02
	2022/23	0.64	0.51	0.78
Swansea Bay UHB ³	2007/08	2.14	1.94	2.34
	2011/12	1.64	1.50	1.79
	2014/15	1.55	1.42	1.69
	2015/16	1.24	1.14	1.34
	2022/23	1.01	0.92	1.11

¹ Cwm Taf UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

² Does not include Ceredigion County Council area

³ Abertawe Bro Morgannwg UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

Supplementary table 14: Mean number of teeth with dental caries experience (d3mft) in children with dental caries experience (d3mft>0) by Local Health Board 2007/08 to 2022/23

Local Health Board	Inspection Year	Mean number of teeth with dental caries experience (d3mft) in children with dental caries experience (d3mft>0)		
		Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	2007/08	4.35	4.02	4.69
	2011/12	4.34	4.00	4.67
	2014/15	3.86	3.57	4.14
	2015/16	3.90	3.76	4.04
	2022/23	3.26	3.05	3.47
Betsi Cadwaladr UHB	2007/08	3.76	3.57	3.95
	2011/12	3.49	3.32	3.67
	2014/15	3.39	3.11	3.67
	2015/16	3.52	3.38	3.66
	2022/23	3.51	3.29	3.72
Cardiff and Vale UHB	2007/08	3.73	3.45	4.01
	2011/12	4.07	3.69	4.44
	2014/15	3.68	3.31	4.04
	2015/16	3.44	3.30	3.58
	2022/23	3.63	3.37	3.88
Cwm Taf Morgannwg UHB ¹	2007/08	4.02	3.64	4.40
	2011/12	3.72	3.33	4.12
	2014/15	3.81	3.45	4.17
	2015/16	3.48	3.29	3.67
	2022/23	3.51	3.32	3.69
Hywel Dda UHB ²	2007/08	4.22	3.90	4.55
	2011/12	3.66	3.33	3.98
	2014/15	3.32	2.94	3.70
	2015/16	3.47	3.31	3.63
	2022/23	3.03	2.68	3.38
Powys THB	2007/08	4.12	3.61	4.63
	2011/12	3.60	3.09	4.11
	2014/15	3.61	3.19	4.03
	2015/16	3.29	3.11	3.48
	2022/23	3.28	2.76	3.79
Swansea Bay UHB ³	2007/08	4.41	4.13	4.69
	2011/12	3.72	3.48	3.96
	2014/15	3.59	3.36	3.81
	2015/16	3.53	3.41	3.64
	2022/23	3.41	3.16	3.66

¹ Cwm Taf UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

² Does not include Ceredigion County Council area

³ Abertawe Bro Morgannwg UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

Supplementary table 15: Prevalence of untreated dental decay (d3t) and mean number of affected teeth by Local Health Boards 2007/08 to 2022/23

Local Health Board	Inspection Year	Prevalence of untreated dental caries (%d3t>0)			Teeth with untreated dental caries (d3t)			Teeth with untreated dental caries (d3t) in those with untreated decay (d3t>0)		
		Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	2007/08	-	-	-	1.78	1.57	2.00	3.26	2.95	3.57
	2011/12	43.23	40.60	45.86	1.45	1.28	1.63	2.74	2.55	2.94
	2014/15	36.78	34.35	39.28	1.17	1.03	1.30	2.41	2.22	2.59
	2015/16	34.79	32.48	37.17	1.06	0.95	1.16	3.04	2.90	3.17
	2022/23	28.66	26.76	30.56	0.84	0.76	0.92	2.93	2.73	3.13
Betsi Cadwaladr UHB	2007/08	-	-	-	1.12	1.03	1.21	2.58	2.43	2.73
	2011/12	33.29	31.46	35.12	0.92	0.84	1.00	3.13	2.86	3.41
	2014/15	27.03	24.71	29.48	0.81	0.71	0.92	2.78	2.54	3.03
	2015/16	26.30	24.08	28.65	0.75	0.67	0.84	2.87	2.74	2.99
	2022/23	25.90	24.30	27.50	0.83	0.76	0.90	3.21	3.00	3.42
Cardiff and Vale UHB	2007/08	-	-	-	0.90	0.78	1.02	2.31	2.07	2.55
	2011/12	30.82	27.73	33.91	0.92	0.77	1.07	2.28	2.13	2.42
	2014/15	20.38	18.41	22.50	0.59	0.49	0.69	2.55	2.30	2.80
	2015/16	22.86	20.81	25.05	0.60	0.51	0.68	2.61	2.48	2.74
	2022/23	30.09	28.07	32.10	0.99	0.89	1.08	3.28	3.03	3.54
Cwm Taf Morgannwg UHB ¹	2007/08	-	-	-	1.12	0.94	1.30	2.39	2.08	2.69
	2011/12	43.18	38.67	47.69	1.11	0.94	1.27	2.65	2.37	2.94
	2014/15	37.83	33.96	41.87	0.92	0.77	1.06	2.36	2.08	2.63
	2015/16	39.84	36.00	43.80	1.00	0.87	1.14	2.52	2.34	2.69
	2022/23	41.45	39.27	43.62	1.32	1.22	1.42	3.19	3.01	3.37
Hywel Dda UHB ²	2007/08	-	-	-	1.55	1.36	1.74	3.26	2.96	3.56
	2011/12	27.69	24.58	30.80	0.82	0.70	0.95	2.18	1.92	2.45
	2014/15	22.94	20.16	25.97	0.63	0.52	0.75	1.98	1.73	2.22
	2015/16	21.48	18.94	24.25	0.61	0.51	0.70	2.84	2.70	2.97
	2022/23	26.46	23.51	29.41	0.75	0.64	0.87	2.85	2.50	3.21
Powys THB	2007/08	-	-	-	1.24	1.00	1.49	3.20	2.72	3.68
	2011/12	29.39	24.86	33.93	0.90	0.70	1.10	2.48	2.19	2.77
	2014/15	29.82	25.96	33.98	0.91	0.74	1.07	2.35	2.02	2.67
	2015/16	23.47	19.89	27.47	0.67	0.56	0.79	2.87	2.68	3.06
	2022/23	17.44	14.49	20.39	0.54	0.42	0.65	3.07	2.58	3.57
Swansea Bay UHB ³	2007/08	-	-	-	1.43	1.28	1.57	2.94	2.70	3.17
	2011/12	40.54	37.88	43.20	1.21	1.10	1.33	2.58	2.12	3.04
	2014/15	35.79	33.45	38.20	1.04	0.94	1.14	2.85	2.49	3.22
	2015/16	27.32	25.23	29.52	0.82	0.74	0.90	3.00	2.88	3.13
	2022/23	26.27	24.31	28.23	0.80	0.72	0.89	3.06	2.81	3.31

¹ Cwm Taf UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

² Does not include Ceredigion County Council area

³ Abertawe Bro Morgannwg UHB prior to 1st April 2019 move of Bridgend Council Borough Council area

Supplementary table 16: Mean number of decayed (d3t), missing (mt) and filled teeth (ft) in school year one children by Local Health Board 2007/08 to 2022/23

Local Health Board	Teeth with untreated decay (d3t)			Missing teeth (mt)			Filled teeth (ft)		
	Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High	Mean	95% CI Low	95% CI High
Aneurin Bevan UHB	0.84	0.76	0.92	0.11	0.08	0.14	0.10	0.08	0.12
Betsi Cadwaladr UHB	0.83	0.76	0.90	0.10	0.07	0.13	0.12	0.10	0.14
Cardiff and Vale UHB	0.99	0.89	1.08	0.12	0.08	0.15	0.06	0.05	0.08
Cwm Taf Morgannwg UHB	1.32	1.22	1.42	0.15	0.11	0.19	0.08	0.06	0.09
Hywel Dda UHB	0.75	0.64	0.87	0.05	0.02	0.08	0.06	0.04	0.08
Powys THB	0.54	0.42	0.65	0.03	0.01	0.05	0.07	0.03	0.12
Swansea Bay UHB	0.80	0.72	0.89	0.15	0.10	0.19	0.07	0.05	0.08
Wales	0.91	0.88	0.95	0.11	0.09	0.12	0.09	0.08	0.09

Appendix 1 – Early Childhood Oral Health Impact Scale (ECOHIS) (Pahel et al. 2007)

Problems with the teeth, mouth or jaws and their treatment can affect the well-being and everyday lives of children and their families. For each of the following questions please circle the number next to the response that best describes your child's experiences or your own. Consider the child's entire life from birth until now when answering each question. If a question does not apply, circle 'Never'.

		Never	Hardly ever	Occasionally	Often	Very often	Don't know
1	How often has your child had pain in the teeth, mouth or jaws?	1	2	3	4	5	6
2	How often has your child had difficulty drinking hot or cold beverages because of dental problems or dental treatments?	1	2	3	4	5	6
3	How often has your child had difficulty eating some foods because of dental problems or dental treatments?	1	2	3	4	5	6
4	How often has your child had difficulty pronouncing any words because of dental problems or dental treatments?	1	2	3	4	5	6
5	How often has your child missed preschool, day-care or school because of dental problems or dental treatments?	1	2	3	4	5	6
6	How often has your child had trouble sleeping because of dental problems or dental treatments?	1	2	3	4	5	6
7	How often has your child been irritable or frustrated because of dental problems or dental treatments?	1	2	3	4	5	6
8	How often as your child avoided smiling or laughing when around other children because of dental problems or dental treatments?	1	2	3	4	5	6
9	How often as your child avoided talking with other children because of dental problems or dental treatments?	1	2	3	4	5	6
10	How often have you or another family member been upset because of your child's dental problems or dental treatments?	1	2	3	4	5	6
11	How often have you or another family member felt guilty because of your child's dental problems or dental treatments?	1	2	3	4	5	6
12	How often have you or another family member taken time off from work because of your child's dental problems or dental treatments?	1	2	3	4	5	6
13	How often has your child had dental problems or dental treatments that had a financial impact on your family?	1	2	3	4	5	6

Appendix 2 – Bridgend Boundary Change

On the 1st April 2019 the responsibility for providing healthcare services for people in the Bridgend County Borough Council area moved from Abertawe Bro Morgannwg UHB to Cwm Taf UHB. The two Local Health Boards became Swansea Bay UHB and Cwm Taf Morgannwg UHB respectively.

The result of this boundary change is an increased school year one population size in Cwm Taf Morgannwg UHB (Table A1).

Historically the Bridgend County Borough Council area had been an area of comparatively better oral health in Abertawe Bro Morgannwg UHB (Table A2). Similarly, the two Unitary Authorities areas in Cwm Taf UHB (Merthyr Tydfil and Rhondda Cynon Taf) both typically had higher prevalence and severity of dental caries than in the Bridgend County Borough Council. As a result of these changes this report does not draw conclusions about changes in disease prevalence and severity for these Local Health Boards between the 2022/23 inspection and those conducted prior to this point.

Local Health Board	Mean estimated school year one population 2011/12-2015/16	Estimated year 1 population 2022/23
Abertawe Bro Morgannwg UHB/Swansea Bay UHB	5,704	3,925
Cwm Taf UHB/Cwm Taf Morgannwg UHB	3,311	4,848

Table A1: Population and number of examinations of two University Health Boards pre- and post-Bridgend boundary changes

		Cwm Taf UHB		Abertawe Bro Morgannwg UHB		
		Merthyr Tydfil	Rhondda Cynon Taf	Bridgend	Neath Port Talbot	Swansea
2011/12	Mean d3mft	1.93	1.87	1.13	2.2	1.57
	%d3fmt>0	51.8	50.4	35.5	51.7	44.2
	Mean d3mft if d3mft>0	3.73	3.72	3.20	4.27	3.56
	Mean d3t	0.89	1.16	0.68	1.62	1.25
2014/15	Mean d3mft	2.59	1.54	1.61	1.36	1.64
	%d3fmt>0	58.6	43.1	46.2	39.6	43.9
	Mean d3mft if d3mft>0	4.43	3.58	3.49	3.44	3.74
	Mean d3t	1.32	0.81	1.01	0.86	1.18
2015/16	Mean d3mft	2.08	1.54	1.09	1.29	1.32
	%d3fmt>0	56.5	44.9	33.9	37.0	35.0
	Mean d3mft if d3mft>0	3.68	3.42	3.20	3.49	3.76
	Mean d3t	1.21	0.95	0.66	0.87	0.89
		Cwm Taf Morgannwg UHB			Swansea Bay UHB	
2022/23	Mean d3mft	1.90	1.50	1.44	1.08	0.97
	%d3fmt>0	50.2	42.2	44.1	30.7	29.2
	Mean d3mft if d3mft>0	3.78	3.56	3.27	3.53	3.34
	Mean d3t	1.50	1.28	1.30	0.88	0.76

Table A2: Clinical profiles of Cwm Taf Morgannwg UHB (formerly Cwm Taf UHB) and Swansea Bay UHB (formerly Abertawe Bro Morgannwg UHB) for 2007/08 to 2022/23

Appendix 3 – Ceredigion County Council Area and Hywel Dda University Health Board

Insufficient data were collected in the Ceredigion County Council Area of Hywel Dda UHB.

Ceredigion is the least populous Unitary Authority area in Hywel Dda University Health Board (Table A3). Both Hywel Dda UHB as a whole, and the constituent Unitary Authority areas (Carmarthenshire, Pembrokeshire and Ceredigion), have historically had a lower prevalence and severity of dental caries compared to Welsh averages (Table A3, Supplementary Tables 10 and 11). Typically, the oral health of school year one children in Ceredigion has been more similar to that of Pembrokeshire (lower prevalence and severity) than Carmarthenshire.

	Inspection Year	Estimated school year one population	Number of children examined	% d3mft>0	Mean d3mft	Mean d3mft if d3mft>0	Mean d3t
Hywel Dda UHB	2011/12	3,760	796	33.1	1.21	3.66	0.82
	2014/15	3,782	803	27.0	0.90	3.32	0.63
	2015/16	4,007	917	26.3	0.91	3.47	0.61
	2022/23*	3,115	701	28.4	0.86	3.03	0.75
Carmarthenshire	2011/12	1,888	322	30.6	0.97	3.18	0.59
	2014/15	1,918	352	25.6	0.83	3.25	0.53
	2015/16	1,929	368	29.6	1.08	3.63	0.71
	2022/23	1,896	400	26.7	0.74	2.79	0.64
Pembrokeshire	2011/12	1,272	273	38.8	1.55	3.99	1.14
	2014/15	1,276	289	30.9	1.05	3.39	0.80
	2015/16	1,354	366	22.8	0.75	3.29	0.53
	2022/23	1,219	301	31.1	1.04	3.35	0.94
Ceredigion	2011/12	600	201	28.7	1.23	4.27	0.86
	2014/15	588	162	22.8	0.76	3.35	0.60
	2015/16	724	183	23.9	0.78	3.25	0.50
	2022/23	-	-	-	-	-	-

*Carmarthenshire and Pembrokeshire only

Table A3: Population and examination data of Hywel Dda and component Unitary Authorities