PICTURE OF ORAL HEALTH 2018

DENTAL EPIDEMIOLOGICAL SURVEY OF 12 YEAR OLDS 2016-17

TECHNICAL SUMMARY OF FINDINGS

Contents

Authors

Maria Morgan, Welsh Oral Health Information Unit, Cardiff University.
Nigel Monaghan, Public Health Wales.

http://www.cardiff.ac.uk/dentl/research/themes/appliedclinicalresearch/epidemiology/oralhealth/index.html

SUMMARY

Long term trends from the late 1980s to the present day highlight a steady and consistent reduction in both the prevalence and average experience of dental caries amongst 12 year olds (school year 7) living in Wales; the average D_3MFT and the $\%D_3MFT>0$ now stand at 0.6 and 30% respectively.

Whilst this reduction in decay is encouraging 30% of 12 year olds still have experience of dental decay. These children had an average of 2.1 adult teeth decayed, missing or filled. The 2016/17 survey results suggest that there are some small signs of improvements on this characteristic and it is hoped that longer term impacts of Designed to Smile, our national oral health improvement programme will start to demonstrate a larger impact on decay levels in this age group.

Between 2004 and 2017, there have been continued reductions in the prevalence of dental caries across all deprivation quintiles, as classified by the Welsh Index of Multiple Deprivation. Despite this, the ratios of dental caries experience for the most deprived versus the middle deprived groups appear to be widening albeit slightly.

The series of surveys highlight considerable improvements in oral health amongst 12 year olds in Wales. In 2020/21 children who participated in Designed to Smile prior to their first adult teeth erupting into their mouth will be surveyed in school year 7 for the first time. The data collected in 2020/21 will inform the estimation of the full impact of Designed to Smile programme on the permanent dentition.

BACKGROUND

Dental surveys of school children in Wales are focused upon tooth decay, the commonest dental disease among children. Whenever sugar enters the mouth it is turned into acid by bacteria present in the mouth. This acid is present for about 40 minutes and removes calcium and phosphate from teeth. Calcium and phosphate are returned to the teeth at a slower rate from saliva in the periods between sugar intakes. Provided these intervals are long enough the tooth remains sound. If sugar is taken in more frequently then the gradual loss of calcium and phosphate results in tooth decay.

Decay is commoner in more deprived areas of Wales. Efforts to restrict sugar intake are competing with the marketing of sugar, and its inclusion in processed foods and drinks. Fluoride can help make the teeth more resistant to the acid attacks, but very frequent sugar intake can overcome the effects of getting teeth into contact with fluoride.

Data from surveys of tooth decay in children are used to inform targeting of interventions to prevent decay and to assess the impact of these measures. The data is also used to plan the provision of access for dental care.

A dental epidemiology survey of 12 year olds (school year 7) attending state secondary schools was carried out across Wales during the autumn and spring school terms of the 2016/17 academic year. 5,781 children were examined; this represented an 18% national sample (32,114 children in school Year 7). Details of the methodology employed are outlined in the survey protocol which can be found on the Welsh Oral Health Information Unit website.

The measures of decay in this age group are of decay in the permanent (adult) teeth which emerge into the mouth between ages 6 and 12. These are an early indication of decay trends affecting teeth meant to last the rest of our lives.

PREVENTABLE DECAY

WALES – long term trends

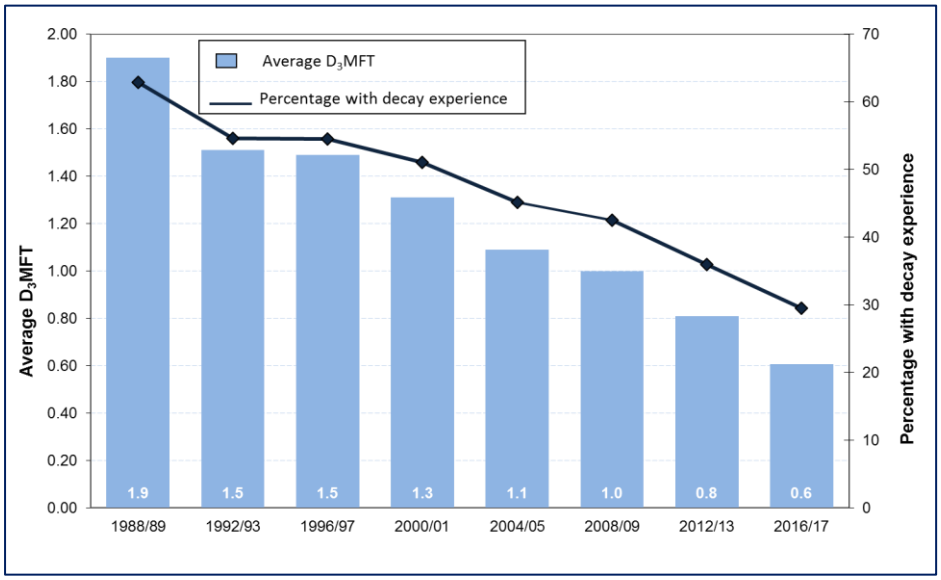
The sum of Decayed, Missing and Filled teeth (D_3MFT[1]) is a measure of the decay experience of the average child. It is therefore the burden of disease which theoretically could have been prevented and thus key data for evaluation of efforts to prevent decay.

Figure 1 shows the trends in the mean number of Decayed, Missing and Filled teeth per child and the percentage decay experience (%$D_3MFT>0$) for 12 year olds living in Wales between 1988 and 2017. Over the last 28 years the average D_3MFT has reduced by over two thirds from 1.9 in 1988/89 to 0.6 in 2016/17.

The prevalence of decay experience (%$D_3MFT>0$), that is the proportion of children with at least one decay affected tooth has fallen from 63% in 1988 to 30% in 2017.

[1] The data presented for decay (at the D3 level) relate only to dental decay that visually appears to have penetrated dentine (the inside of the tooth).

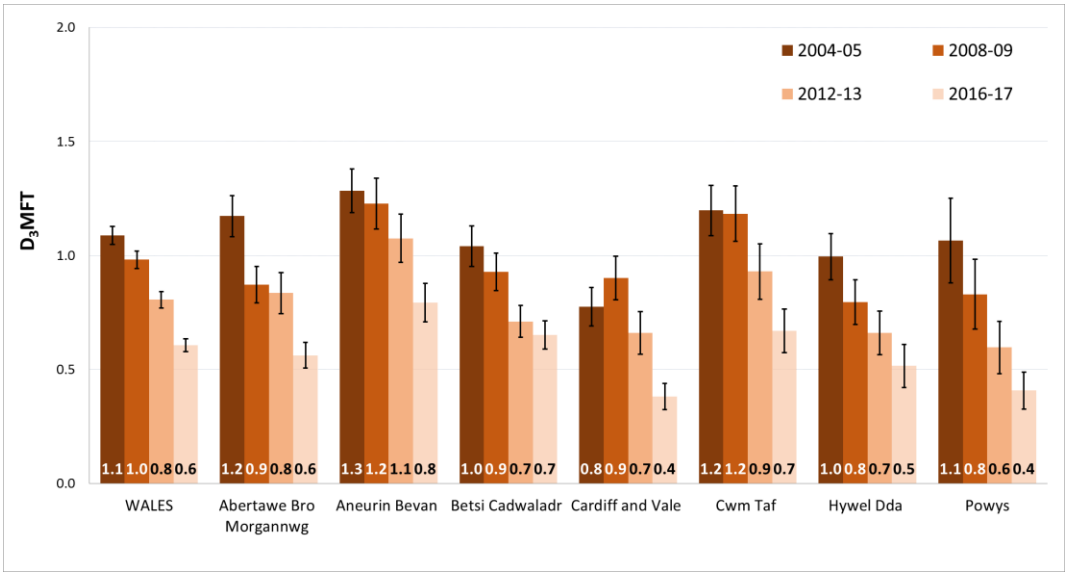
Figure 1 Trend in mean D_3MFT and $\%D_3MFT>0$ for Wales between 1988-2017



WALES and LHBs

When reviewing the four most recent surveys of 12 year olds, i.e. the surveys conducted during the winters of 2004/05, 2008/09, 2012/13 and 2016/17 it can be seen that average D_3MFT for Wales has reduced significantly from 1.1 (*CI[2]:1.0 – 1.1*) to 0.6 (*CI:0.58 - 0.63*).

Figure 2 Trend in mean D_3MFT for Wales/LHBs, 2004-2017

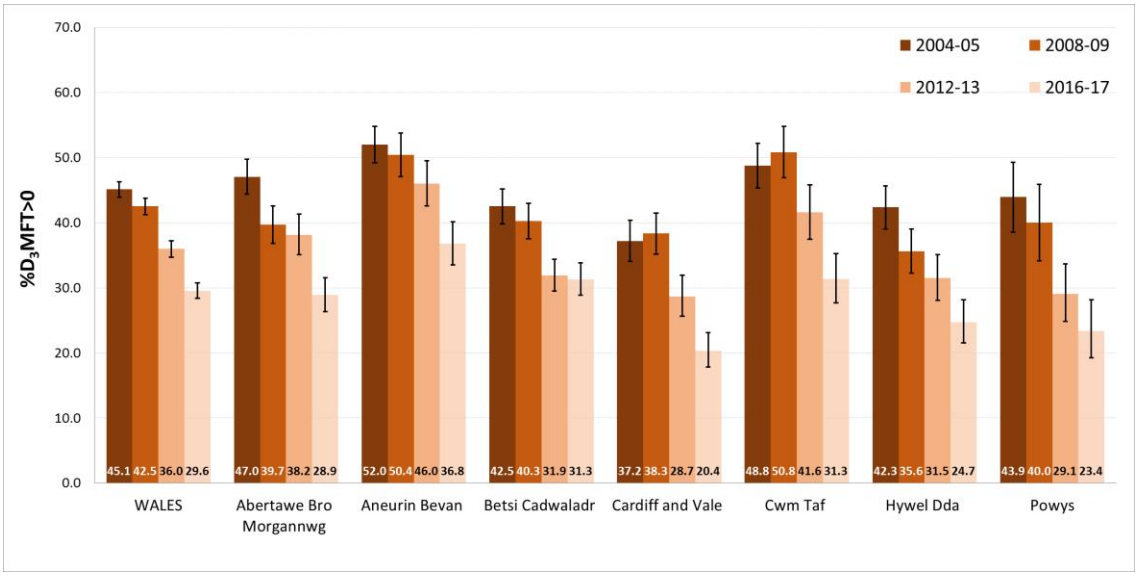


There were statistically significant reductions across all seven Welsh Health Boards on comparing the average D_3MFT recorded in 2004/05 with that recorded in 2016/17.
Not all of the children examined in Wales had decay. Figure 3 shows a sustained reduction in the proportion of children with experience of decay. Between 2004/05 (45.1%) and 2016/17 (29.6%) there has been a 16% reduction in experience of decay in school year 7

[2] All confidence intervals are reported at 95% level in this report.

children living in Wales. Approximately 2/5th (6.4%) of this reduction occurred between the 2012/13 and 2016/17 survey years. It is encouraging that more children have no obvious decay experience in their permanent dentition by age 12.

Figure 3 Percentage of children with caries (%D_3MFT>0), 2004-2017



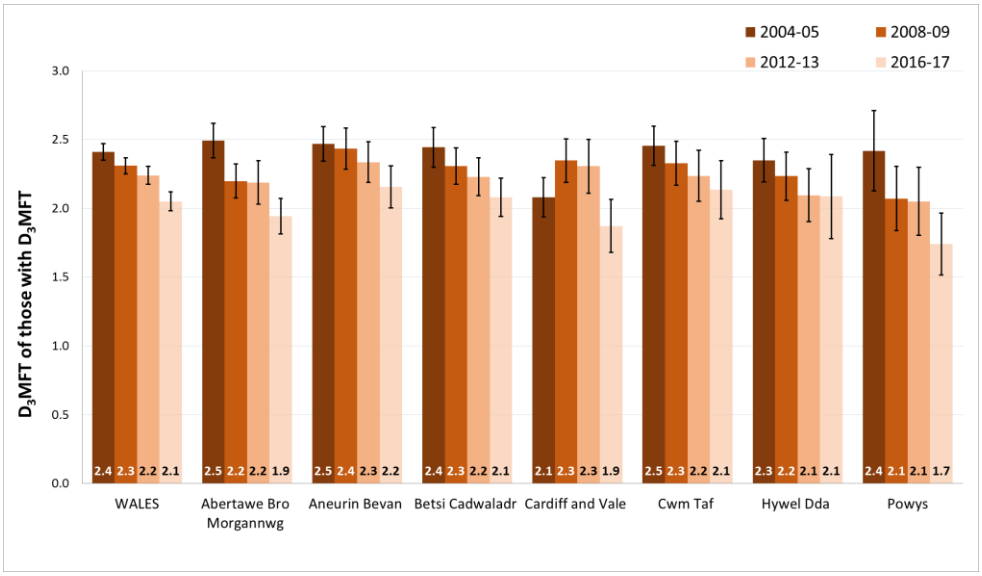
Thus in 2017 in a class of 30 children about 9 will have some decay experience in their permanent dentition compared with 14 in 2004. This represents the average position, some will be better and some worse.

There were statistically significant reductions across all seven Welsh Health Boards for %D_3MFT>0 on comparing the levels recorded in 2004/05 with those recorded in 2016/17. In 2012/13 Aneurin Bevan and Cwm Taf health boards had not recorded statistically significant reductions in prevalence; the figures recorded for 2016/17 reflect the trends experienced by the other 5 Welsh health boards.

Looking at the average decay experience of those children who have at least 1 Decayed, Missing or Filled Tooth illustrates the true magnitude of the inequalities experienced by children affected by decay. The mean D_3MFT for a child with at least one tooth so affected is shown in Figure 4. The reduction for Wales from 2.4 D_3MFT (D_3MFT>0) in 2004/05 (*CI: 2.3 – 2.5*) to 2.1 in 2016/17 (*CI: 2.0 – 2.1*) does suggest a slowly improving position. However, this underscores that the majority of the improvement in whole population D_3MFT arises from reduced proportion of children with decay experience.

In 2017 in a class of 30 children the 9 children with decay experience will each have an average of 2.1 teeth affected. This represents the average position, some will be better and some worse.

Figure 4 Mean D_3MFT of those with decay experience (mean D_3MFT of those with $D_3MFT>0$) 2004-2017



Four of the seven Welsh health boards experienced statistically significant reductions in this characteristic between 2004/05 and 2016/17 (Figure 4):

- ABMU from 2.5 (*CI: 2.4-2.6*) to 1.9 (*CI: 1.8-2.1*)
- Aneurin Bevan 2.5 (*CI*: 2.4-2.6) to 2.2 (*CI*: 2.0-2.3)
- Betsi Cadwaladr 2.4 (*CI*: 2.3-2.6) to 2.1 (*CI*: 1.9-2.2)
- Powys from 2.4 (*CI*: 2.1-2.7) to 1.7 (*CI*: 1.5-2.0)

Despite these reductions in the average D_3MFT of those with caries experience, the main improvements in school year 7 children's oral health relate to fewer children experiencing decay (Figure 3).

Preventable decay by Unitary Authority

As Unitary Authorities have smaller populations than LHBs the sample size for the survey is smaller, confidence intervals are wider, and findings from the survey are therefore less likely to demonstrate statistically significant changes. With smaller sample sizes there is more potential for bias within sampling associated with random effects.

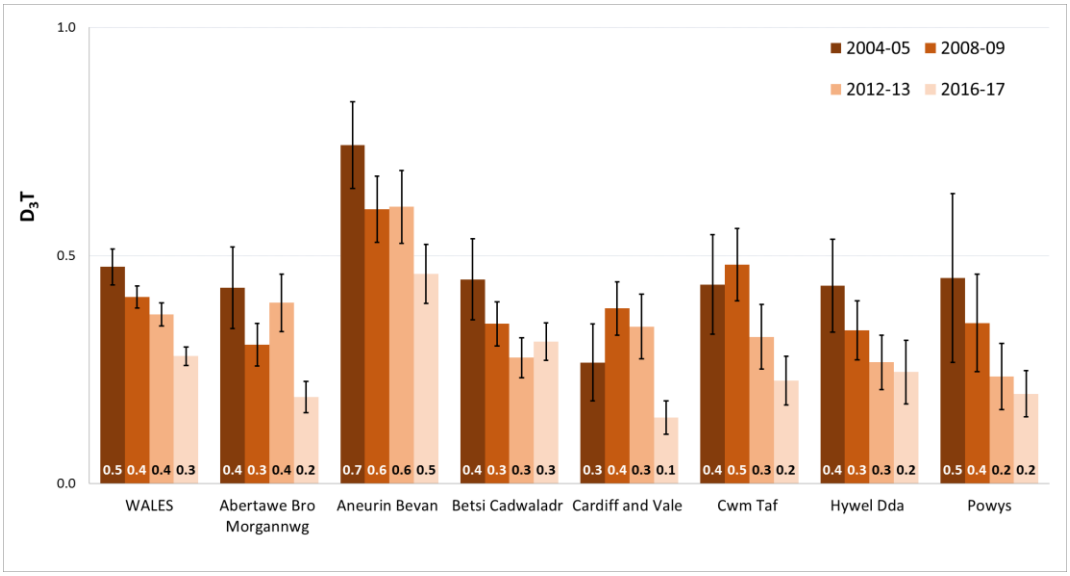
Data on mean D_3MFT scores, caries prevalence and untreated decay experience by unitary authority are presented in Appendices 1-5.

The mean D_3MFT by Unitary Authority is shown graphically in Appendix 5 for surveys commencing 2004/05 through to 2016/17. Of the twenty two unitary authorities eighteen showed statistically significant reductions between 2004/05 and 2016/17 (Appendix 5). For fourteen unitary authorities there was a statistically significant fall in the proportion of children with decay experience.

ACTIVE DECAY IN WALES

The decayed teeth (D_3T) component as collected by dentists measures decay which the examining dentist believes to be active. Hard discoloured lesions are not included in the data reported here. Active decay puts the child at risk of pain, infection and further loss of tooth tissue as well as looking unsightly. Twelve year old children in Wales experienced a statistically significant reduction in average D_3T between 2004/05 from 0.5 (*CI: 0.4 - 0.5*) to 0.3 in 2016/17 (*CI: 0.26 - 0.3*) equating to a $1/5^{th}$ of a tooth (Figure 5).

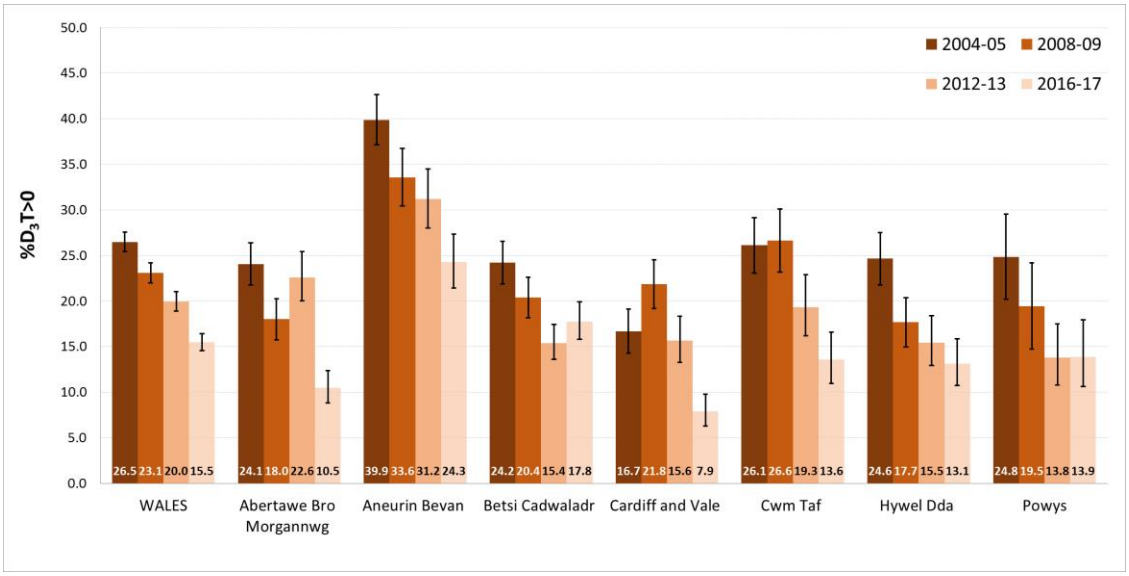
Figure 5 Average D_3T 2004-2017



Up until the 2012/13 survey there were small fluctuations for this characteristic at health board level. But now there are four data points, all seven health boards have experienced statistically significant reductions in average D_3T between 2004/05 and 2016/17 (Figure 5).

Prevalence of untreated decay (%D_3T>0) has fallen across Wales steadily and consistently over the past four surveys (Figure 6). In 2004/05 the percentage of Welsh 12 year olds with at least one decayed tooth was 26.5% (*CI: 25.4% - 27.5%)* and in 2016/17 this figure had fallen to 15.5% (*CI: 14.6% - 16.4%*).

Figure 6 Percentage of children with decay (%$D_3T>0$), 2004-2017



This means that in 2017 in a class of 30 Welsh 12 year olds there were on average 5 children with at least one untreated decayed tooth in their permanent dentition. This compares with 8 children in a class of 30 in 2004/05. These represent average positions, some will be better and some worse.

On reviewing the health board data for this characteristic in Figure 6 it can be seen that all seven health boards experienced significant reductions when comparing the 2004/05 data with that collected in 2016/17 (Figure 6). Some have experienced steady and consistent falls in %$D_3T>0$ during this time period, e.g. Aneurin Bevan, others have experienced fluctuations, e.g. Cardiff and the Vale.

INEQUALITIES IN DECAY EXPERIENCE

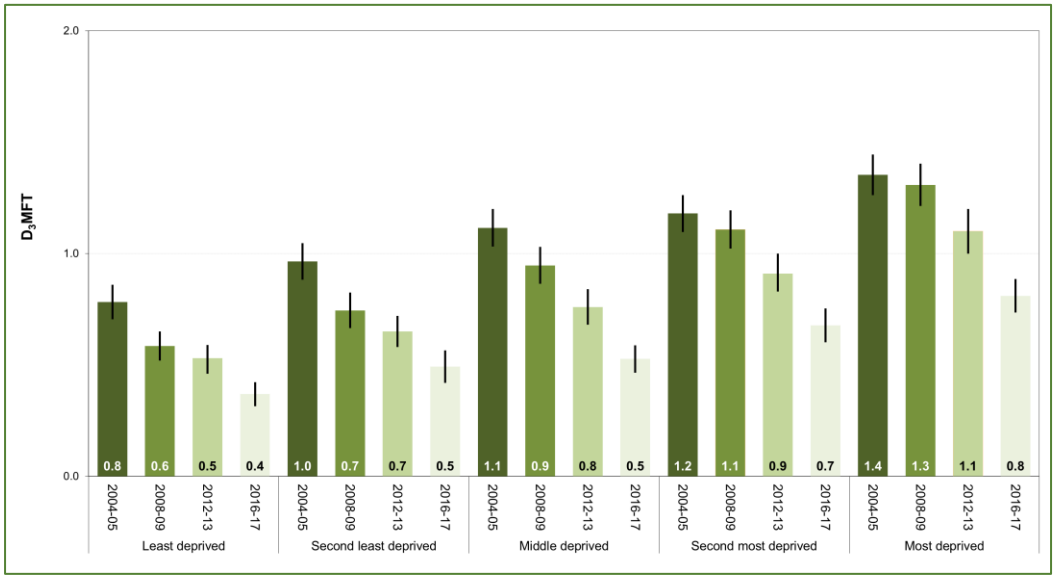
Looking at inequality from a socio-economic perspective, there is still a strong relationship between mean decay levels and quintile of deprivation as shown in Figures 7 and 8. These illustrate the relationship between D_3MFT and %$D_3MFT>0$ and the Welsh Index of Multiple deprivation (WIMD) for the four survey years commencing 2004/05 through to 2016/17.

A progress report on the 2008/09 survey results produced by the WOHIU in 2010 documented an overall reduction in the mean D_3MFT and the %$D_3MFT>0$ for Welsh 12 year olds when compared with the Child Poverty Target baseline year of 2004/05. This report also highlighted concern that at that time most of the reduction appeared to have taken place in the least deprived groups.

On reviewing the data from the 2016/17 surveys in parallel with the previous surveys it can be seen that there have been statistically significant reductions in both average D_3MFT and

%D_3MFT>0 for the two most deprived quintiles between 2008/09 and the current survey (Figures 7 and 8).

Figure 7 Average D_3MFT in Wales by quintile of deprivation (WIMD) for surveys of 12 year olds from 2004-2017



When improvements in health are seen it is common for them to be associated with increased inequality of disease experience unless special; measures are taken to improve health in the most deprived groups (proportionate universalism). The following findings should be interpreted with an awareness that few large scale interventions have been undertaken across Wales to specifically address tooth decay in 6-12 year olds in deprived areas.

Between 2004/05 and 2016/17 when considering the ratios of the most deprived quintile to the middle deprived quintile it can be seen that the inequality gap has widened in relative (i.e. ratio) terms (Table 1). For example, for %D_3MFT>0 the ratio of the most deprived to the middle deprived quintiles were 1.2, 1.2, 1.2 and 1.3 in 2004/05, 2008/09, 2012/13 and 2016/17 respectively. However the picture in absolute terms is more complex. The most deprived quintile have seen a larger reduction (16.7%) than the least deprived quintile (15.3%) and second least deprived quintile (16.4%), but a smaller reduction than the other two quintiles (17.7% and 17.2 %).

The next survey of school year 7 children (age 11-12) in Wales is planned for 2020/21. That cohort of children will be the first by age 12 to have participated in Designed to Smile from age 5 onwards. If there is long term benefit from participation in Designed to Smile then we should see that impact in decay data for the deprived quintiles in the 2020/21 survey.

Figure 8 %D_3MFT>0 in Wales by quintile of deprivation (WIMD) for surveys of 12 year olds from 2004-2017

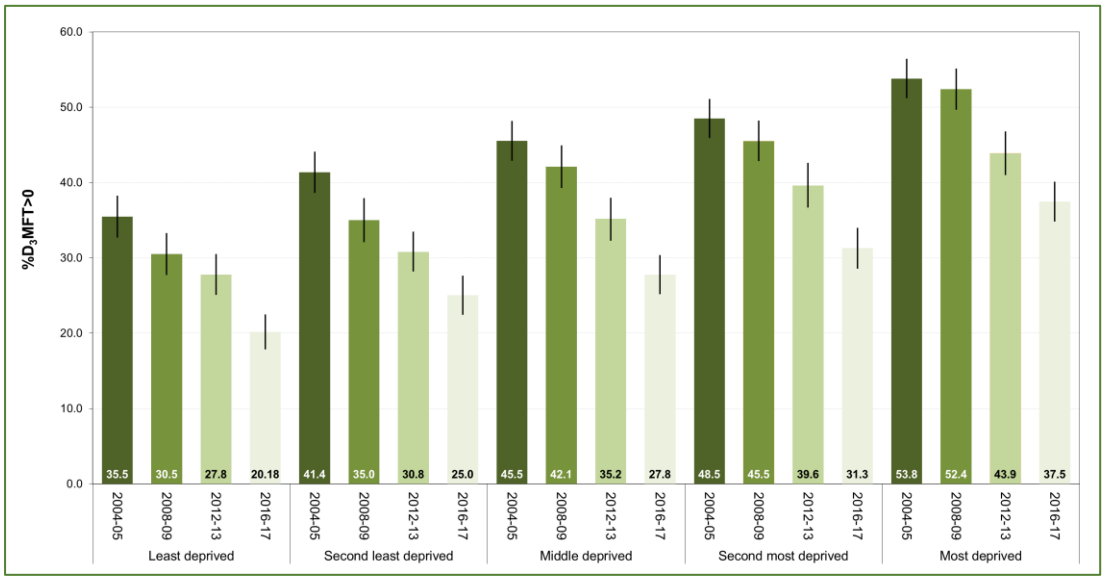


Table 1 Mean D_3MFT, %D_3MFT>0 & Mean D_3MFT of those with D_3MFT for 12 year olds from 2004-2017 by quintiles of deprivation index, highlighting ratio of most deprived: middle deprived – Wales

	2004-05			2008-09			2012-13			2016-17		
	mean D_3MFT	%D_3MFT>0	Mean D_3MFT of those with D_3MFT	mean D_3MFT	%D_3MFT>0	Mean D_3MFT of those with D_3MFT	mean D_3MFT	%D_3MFT>0	Mean D_3MFT of those with D_3MFT	mean D_3MFT	%D_3MFT>0	Mean D_3MFT of those with D_3MFT
Least deprived	0.8	35.5	2.2	0.6	30.5	1.9	0.5	27.8	1.9	0.4	20.2	1.8
Second least deprived	1.0	41.4	2.3	0.7	35.0	2.1	0.7	30.8	2.1	0.5	25.0	2.0
Middle deprived	1.1	45.5	2.5	1.0	42.1	2.3	0.8	35.2	2.2	0.5	27.8	1.9
second most deprived	1.2	48.5	2.4	1.1	45.5	2.4	0.9	39.6	2.3	0.7	31.3	2.2
Most deprived	1.4	53.8	2.5	1.3	52.4	2.5	1.1	43.9	2.5	0.8	37.5	2.2
All within area	1.1	45.1	2.4	1.0	42.5	2.3	0.8	36.0	2.2	0.6	29.6	2.1
Ratio - most deprived: middle deprived	**1.2**	**1.2**	**1.0**	**1.4**	**1.2**	**1.1**	**1.4**	**1.2**	**1.2**	**1.5**	**1.3**	**1.1**

Appendix 1: Dental Caries data from the survey of 12 year olds 2016-17

Local Health Board	Unitary Authority	D_3MFT	$\%D_3MFT$	Mean D_3MFT of those with caries experience	D_3T	$\%D_3T>0$	Mean D_3T of those with caries experience
Abertawe Bro Morgannwg	Bridgend	0.47	25.1	1.86	0.15	8.6	0.58
Abertawe Bro Morgannwg	Neath & Port Talbot	0.70	36.2	1.93	0.23	11.2	0.64
Abertawe Bro Morgannwg	Swansea	0.52	25.8	2.01	0.19	11.2	0.72
Aneurin Bevan	Blaenau Gwent	1.10	51.0	2.15	0.80	43.1	1.58
Aneurin Bevan	Caerphilly	0.95	39.6	2.39	0.60	29.1	1.50
Aneurin Bevan	Monmouthshire	0.50	25.9	1.93	0.24	12.9	0.93
Aneurin Bevan	Newport	0.63	29.8	2.11	0.27	15.9	0.91
Aneurin Bevan	Torfaen	0.94	49.2	1.92	0.61	33.6	1.23
Betsi Cadwaladr	Anglesey	0.84	41.5	2.02	0.39	23.6	0.94
Betsi Cadwaladr	Conwy	0.52	24.3	2.13	0.21	11.4	0.87
Betsi Cadwaladr	Denbighshire	0.71	36.0	1.97	0.39	23.8	1.09
Betsi Cadwaladr	Flintshire	0.60	27.3	2.21	0.20	11.3	0.75
Betsi Cadwaladr	Gwynedd	0.63	34.3	1.83	0.31	20.8	0.90
Betsi Cadwaladr	Wrexham	0.70	29.6	2.35	0.42	20.0	1.43
Cardiff and Vale	Cardiff	0.41	21.6	1.88	0.15	8.7	0.71
Cardiff and Vale	Vale of Glamorgan	0.32	17.3	1.83	0.12	5.9	0.70
Cwm Taf	Merthyr Tydfil	0.72	36.4	1.98	0.25	15.5	0.68
Cwm Taf	Rhondda Cynon Taf	0.66	30.1	2.18	0.22	13.1	0.73
Hywel Dda	Carmarthenshire	0.45	22.4	2.03	0.22	11.3	0.97
Hywel Dda	Ceredigion	0.49	28.3	1.74	0.23	17.5	0.82
Hywel Dda	Pembrokeshire	0.63	26.3	2.38	0.29	13.4	1.11
Powys	Powys	0.41	23.4	1.74	0.20	13.9	0.84
	Abertawe Bro Morgannwg	0.56	28.9	1.94	0.19	10.5	0.66
	Aneurin Bevan	0.79	36.8	2.16	0.46	24.3	1.25
	Betsi Cadwaladr	0.65	31.3	2.08	0.31	17.8	0.99
	Cardiff and Vale	0.38	20.4	1.87	0.14	7.9	0.71
	Cwm Taf	0.67	31.3	2.13	0.23	13.6	0.72
	Hywel Dda	0.52	24.7	2.09	0.24	13.1	0.99
	Powys	0.41	23.4	1.74	0.20	13.9	0.84
	WALES	**0.61**	**29.6**	**2.05**	**0.28**	**15.5**	**0.94**

Appendix 2: Dental caries data from the survey of 12 year olds 2012-13

Local Health Board	Unitary Authority	D_3MFT	$\%D_3MFT>0$	Mean D_3MFT of those with caries experience	D_3T	$\%D_3T>0$	Mean D_3T of those with caries experience
Abertawe Bro Morgannwg	BRIDGEND	0.77	39.3	1.95	0.36	23.0	0.92
Abertawe Bro Morgannwg	NEATH & PORT TALBOT	0.86	37.8	2.28	0.48	26.5	1.26
Abertawe Bro Morgannwg	SWANSEA	0.86	37.7	2.28	0.36	19.6	0.96
Aneurin Bevan	BLAENAU GWENT	1.42	57.7	2.47	1.03	44.2	1.78
Aneurin Bevan	CAERPHILLY	1.11	45.2	2.47	0.71	33.7	1.58
Aneurin Bevan	MONMOUTH	0.60	28.6	2.10	0.15	13.3	0.53
Aneurin Bevan	NEWPORT	0.88	43.2	2.05	0.33	21.6	0.76
Aneurin Bevan	TORFAEN	1.39	56.3	2.46	0.86	44.5	1.52
Betsi Cadwaladr	ANGLESEY	0.66	33.1	2.00	0.33	17.9	1.00
Betsi Cadwaladr	CONWY	0.61	24.5	2.49	0.16	9.5	0.65
Betsi Cadwaladr	DENBIGHSHIRE	0.75	31.2	2.40	0.24	11.8	0.78
Betsi Cadwaladr	FLINTSHIRE	0.67	31.7	2.12	0.23	16.2	0.74
Betsi Cadwaladr	GWYNEDD	0.80	38.6	2.08	0.45	23.5	1.18
Betsi Cadwaladr	WREXHAM	0.75	32.2	2.33	0.26	13.8	0.80
Cardiff and Vale	CARDIFF	0.90	36.5	2.47	0.55	24.7	1.51
Cardiff and Vale	VALE	0.32	17.6	1.84	0.05	2.9	0.30
Cwm Taf	MERTHYR	0.94	45.3	2.07	0.44	28.1	0.97
Cwm Taf	RCT	0.93	40.5	2.29	0.29	16.7	0.71
Hywel Dda	CARMARTHENSHIRE	0.68	31.2	2.17	0.26	16.1	0.84
Hywel Dda	CEREDIGION	0.59	28.6	2.06	0.29	17.6	1.03
Hywel Dda	PEMBROKESHIRE	0.67	33.5	2.00	0.25	13.3	0.75
Powys	POWYS	0.60	29.1	2.05	0.23	13.8	0.81
	Abertawe Bro Morgannwg	0.83	38.2	2.19	0.40	22.6	1.04
	Aneurin Bevan	1.08	46.0	2.34	0.61	31.2	1.32
	Betsi Cadwaladr	0.71	31.9	2.23	0.28	15.4	0.86
	Cardiff and Vale	0.66	28.7	2.31	0.34	15.6	1.20
	Cwm Taf	0.93	41.6	2.24	0.32	19.3	0.77
	Hywel Dda	0.66	31.5	2.10	0.27	15.5	0.84
	Powys	0.60	29.1	2.05	0.23	13.8	0.81
	WALES	**0.81**	**36.0**	**2.24**	**0.37**	**20.0**	**1.03**

Appendix 3: Dental caries data from the survey of 12 year olds 2008-09

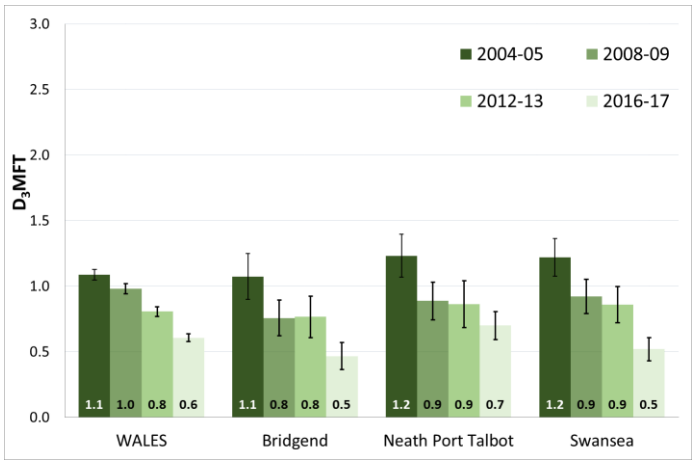
Local Health Board	Unitary Authority	D_3MFT	$\%D_3MFT$	Mean D_3MFT of those with caries experience	D_3T	$\%D_3T>0$	Mean D_3T of those with caries experience
Abertawe Bro Morannwg	Bridgend	0.76	34.8	2.17	0.30	18.0	0.87
Abertawe Bro Morannwg	Neath & Port Talbot	0.89	41.3	2.15	0.30	18.6	0.72
Abertawe Bro Morannwg	Swansea	0.92	41.3	2.23	0.31	17.8	0.75
Aneurin Bevan	Blaenau Gwent	1.61	58.8	2.74	0.91	41.7	1.54
Aneurin Bevan	Caerphilly	1.19	52.3	2.28	0.64	37.9	1.22
Aneurin Bevan	Monmouthshire	1.07	43.7	2.45	0.59	31.8	1.34
Aneurin Bevan	Newport	1.07	46.5	2.31	0.45	26.7	0.97
Aneurin Bevan	Torfaen	1.39	51.9	2.67	0.55	32.2	1.05
Betsi Cadwaladr	Anglesey	0.66	33.0	2.00	0.30	16.8	0.90
Betsi Cadwaladr	Conwy	1.20	40.9	2.94	0.61	29.3	1.50
Betsi Cadwaladr	Denbighshire	0.95	43.0	2.20	0.38	23.8	0.89
Betsi Cadwaladr	Flintshire	0.77	35.9	2.13	0.19	13.5	0.52
Betsi Cadwaladr	Gwynedd	0.90	40.2	2.23	0.34	18.9	0.84
Betsi Cadwaladr	Wrexham	1.03	43.1	2.38	0.30	18.4	0.69
Cardiff and Vale	Cardiff	0.89	37.5	2.38	0.42	23.4	1.13
Cardiff and Vale	Vale of Glamorgan	0.93	40.8	2.28	0.32	19.6	0.78
Cwm Taf	Merthyr Tydfil	0.87	42.7	2.05	0.37	20.7	0.87
Cwm Taf	Rhondda Cynon Taff	1.23	51.4	2.38	0.49	27.1	0.96
Hywel Dda	Carmarthenshire	0.78	35.8	2.17	0.36	20.7	1.00
Hywel Dda	Ceredigion	0.61	31.0	1.95	0.15	10.1	0.49
Hywel Dda	Pembrokeshire	0.87	35.6	2.44	0.37	16.5	1.05
Powys	Powys	0.84	40.2	2.10	0.35	19.3	0.87
Abertawe Bro Morgannwg	Abertawe Bro Morgannwg	0.87	39.7	2.20	0.30	18.0	0.77
Aneurin Bevan	Aneurin Bevan	1.23	50.4	2.43	0.60	33.6	1.19
Betsi Cadwaladr	Betsi Cadwaladr	0.93	40.3	2.31	0.35	20.4	0.87
Cardiff and Vale	Cardiff and Vale	0.90	38.3	2.35	0.38	21.8	1.00
Cwm Taf	Cwm Taf	1.18	50.8	2.33	0.48	26.6	0.94
Hywel Dda	Hywel Dda	0.80	35.6	2.23	0.34	17.7	0.94
Powys	Powys	0.83	40.0	2.07	0.35	19.5	0.88
WALES	**WALES**	**0.98**	**42.5**	**2.31**	**0.41**	**23.1**	**0.96**

Appendix 4: Dental caries data from the survey of 12 year olds 2004-05

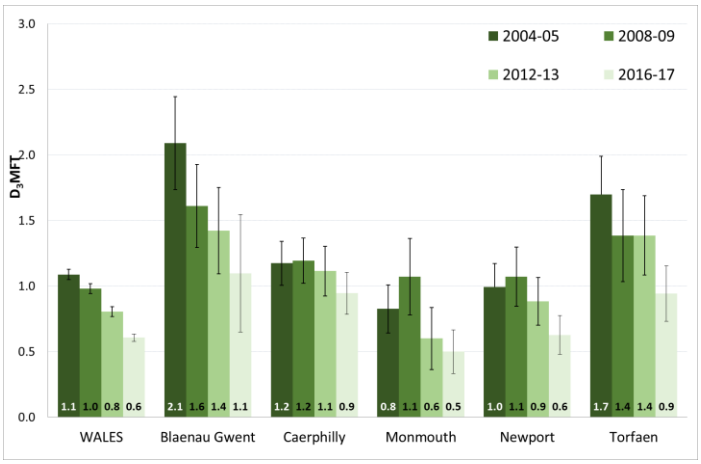
Local Health Board	Unitary Authority	D_3MFT	$\%D_3MFT$	Mean D_3MFT of those with caries experience	D_3T	$\%D_3T>0$	Mean D_3T of those with caries experience
Abertawe Bro Morannwg	Bridgend	1.07	41.8	2.58	0.51	24.9	1.22
Abertawe Bro Morannwg	Neath & Port Talbot	1.23	49.5	2.47	0.47	28.7	0.94
Abertawe Bro Morannwg	Swansea	1.22	48.5	2.51	0.37	20.0	0.76
Aneurin Bevan	Blaenau Gwent	2.09	68.6	3.03	1.36	58.0	1.98
Aneurin Bevan	Caerphilly	1.17	48.5	2.44	0.62	35.6	1.29
Aneurin Bevan	Monmouthshire	0.83	45.3	1.94	0.54	36.9	1.26
Aneurin Bevan	Newport	0.99	46.2	2.13	0.53	33.6	1.15
Aneurin Bevan	Torfaen	1.70	61.5	2.76	0.96	46.6	1.55
Betsi Cadwaladr	Anglesey	1.15	47.6	2.39	0.53	27.3	1.09
Betsi Cadwaladr	Conwy	0.87	35.6	2.43	0.49	23.7	1.38
Betsi Cadwaladr	Denbighshire	0.94	38.6	2.40	0.35	22.9	0.90
Betsi Cadwaladr	Flintshire	1.04	41.7	2.50	0.33	18.8	0.79
Betsi Cadwaladr	Gwynedd	1.05	45.1	2.33	0.49	26.6	1.09
Betsi Cadwaladr	Wrexham	1.24	48.3	2.56	0.57	29.1	1.18
Cardiff and Vale	Cardiff	0.82	38.1	2.13	0.33	19.7	0.85
Cardiff and Vale	Vale of Glamorgan	0.69	34.6	1.97	0.14	9.6	0.39
Cwm Taf	Merthyr Tydfil	1.22	51.7	2.43	0.34	22.8	0.68
Cwm Taf	Rhondda Cynon Taff	1.18	47.9	2.45	0.47	27.0	0.98
Hywel Dda	Carmarthenshire	0.84	36.6	2.30	0.26	16.4	0.70
Hywel Dda	Ceredigion	1.08	49.0	2.21	0.51	32.2	1.05
Hywel Dda	Pembrokeshire	1.13	46.5	2.44	0.61	31.7	1.31
Powys	Powys	1.07	43.9	2.42	0.45	24.9	1.02
Abertawe Bro Morgannwg		1.17	47.0	2.49	0.43	24.1	0.91
Aneurin Bevan		1.28	52.0	2.47	0.74	39.9	1.43
Betsi Cadwaladr		1.04	42.5	2.44	0.45	24.2	1.05
Cardiff and Vale		0.77	37.2	2.08	0.27	16.7	0.71
Cwm Taf		1.20	48.8	2.46	0.44	26.1	0.90
Hywel Dda		0.99	42.3	2.35	0.43	24.6	1.02
Powys		1.07	43.9	2.42	0.45	24.8	1.02
WALES		**1.09**	**45.1**	**2.41**	**0.48**	**26.5**	**1.05**

Appendix 5 - D_3MFT BY UA, 2004-2017

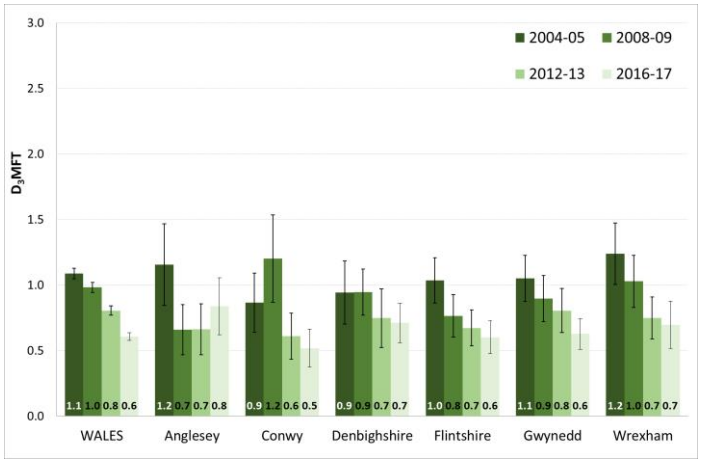
ABMU



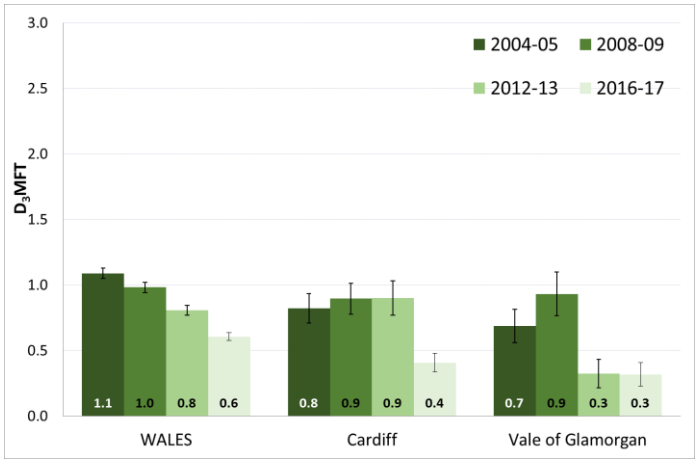
ANEURIN BEVAN



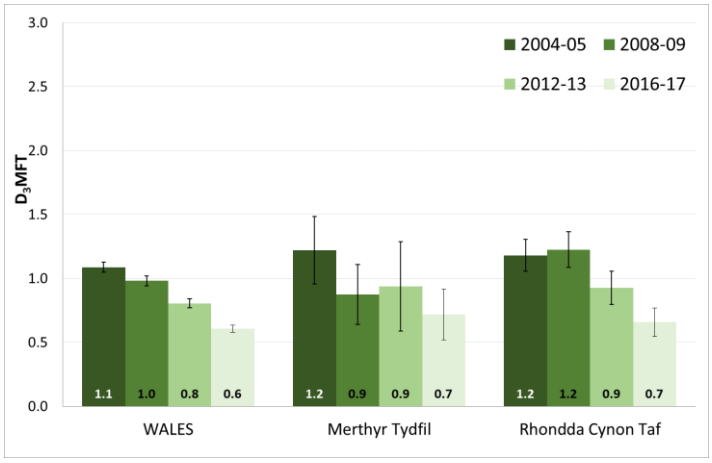
BETSI CAWALADR



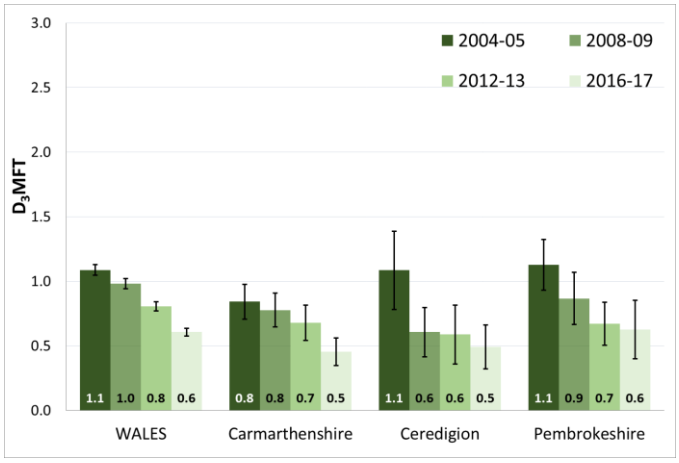
CARDIFF AND VALE



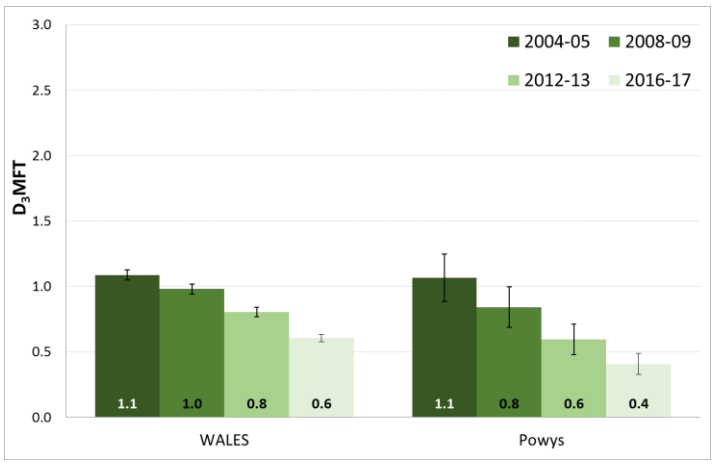
CWM TAF



HYWEL DDA



POWYS


3.0
2.5
2.0
1.5
1.0
0.5
0.0
D3MFT
2004-05
2008-09
2012-13
2016-17
1.1
1.0
0.8
0.6
1.1
0.8
0.6
0.4
WALES
Powys