

AN ATLAS OF ORAL HEALTH IN WALES

Volume I

**Survey of *rising* 12 year
olds 2008/09**

**WELSH ORAL HEALTH
INFORMATION UNIT**

PUBLIC HEALTH WALES

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SUMMARY

This was the second survey of 'rising' twelve year olds undertaken in Wales, the first was undertaken in 2004-05. Subjects taking part were from school year 7 and became 12 during the school year, hence '*rising 12 year olds*'.

The survey took place between during the winter of 2008/2009. A total of 5,808 children in school year 7 (17% year 7 population) participated.

Key findings from the survey include:

- Four out of ten (42.5%) 12 year olds in Wales now have obvious dental decay (they have one or more adult teeth which are decayed, missing due to decay or filled).
- The percentage of 12 year old children affected by tooth decay (i.e. those with at least one tooth decayed, missing due to decay or filled teeth) has fallen from 51% in 2001 to 42.5% in this latest survey.
- Levels of decay vary across Welsh health boards, 51% of 12 year olds living in Cwm Taf have experience of decay compared with 36% of those living in Hywel Dda.
- There are wide differences between local areas in Wales ranging from 31% of 12 year olds being affected by decay in Ceredigion unitary authority (Hywel Dda HB) to 59% being affected in Blaenau Gwent unitary authority (Aneurin Bevan HB). This represents a two fold difference.
- Across the whole of the population examined, 12 year old children in Wales have an average of 0.98 decayed, missing or filled adult teeth (DMFT).
- However, among those children affected by tooth decay they had, on average, two teeth (2.31) that are either filled, extracted or with obvious lesions in them.
- The highest average DMFT was seen in Aneurin Bevan Health Board (1.23). The lowest average DMFT was seen in Hywel Dda Health Board (0.80).
- Within each health board area, there are variations in average DMFT between unitary authorities and the largest range is seen in Betsi Cadwaladr. The average value of 1.2 for Conwy is approximately twice the value of 0.66 for Anglesey.

The report was prepared by the Maria Morgan at the Welsh Oral Health Information Unit together with Nigel Monaghan from Public Health Wales, with help in data analysis and presentation from Mr Timothy Pickles and Dr Nigel Blewitt.

1. Average number of untreated decayed teeth (mean DT)

Map 1

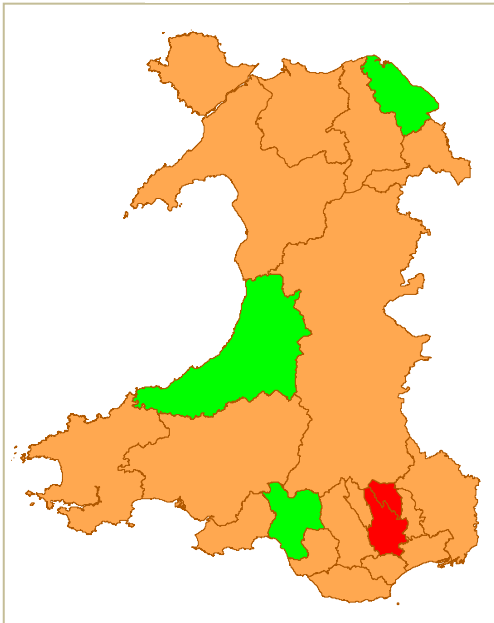
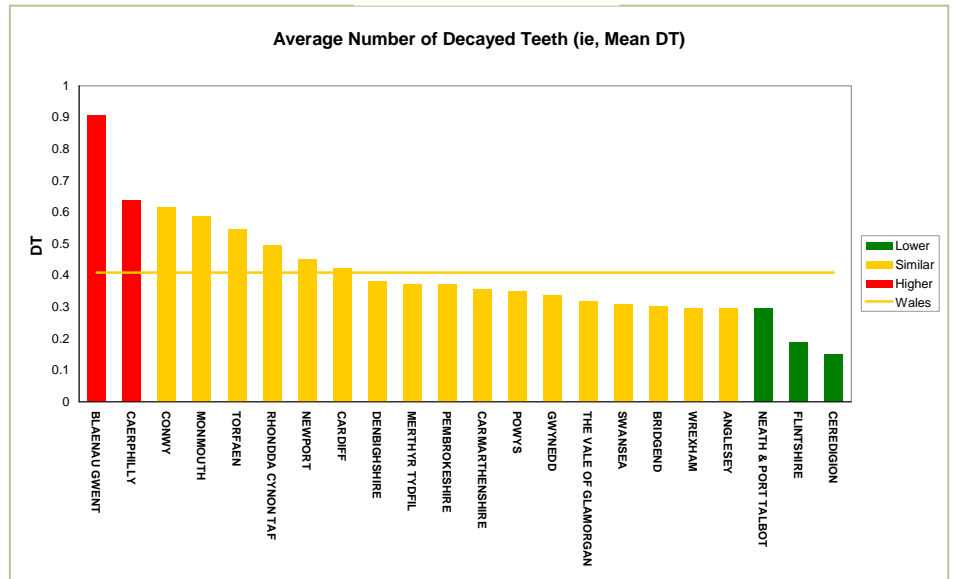


Chart 1



- Significantly higher than Wales
- Within average range
- Significantly lower than Wales
- Wales

Map 1 and charts 1-8 show the average number of decayed teeth (DT) for twelve year old children surveyed in the winter of 2008/09, by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The average DT for Wales was 0.41 (95% LCI 0.38; 95% UCI 0.43).

Unitary Authority

Blaenau Gwent experienced the highest average decayed teeth (DT=0.91), followed by Caerphilly. Both these Unitary Authorities recorded significantly higher levels compared with the Welsh average. Conversely, Ceredigion experienced the lowest average decayed teeth (DT=0.15), a further two Unitary Authorities (namely Flintshire and Neath and Port Talbot) experienced significantly lower average decayed teeth when compared with Wales as a whole.

Local Health Board

Aneurin Bevan experienced the highest average decayed teeth (DT=0.60), recording significantly higher levels when compared with the Welsh average. This was not a surprise as both Blaenau Gwent (DT=0.91) and Caerphilly (DT=0.64) unitary authorities had recorded high levels of DT amongst this age group. Whilst Abertawe Bro Morgannwg University LHB (DT=0.3) experienced DT levels which were significantly lower than the Welsh average. The five remaining LHBs had DT levels which were within the average range for Wales.

Average number of untreated decayed teeth (mean DT) – by LHB and UA within LHBs

Chart 2

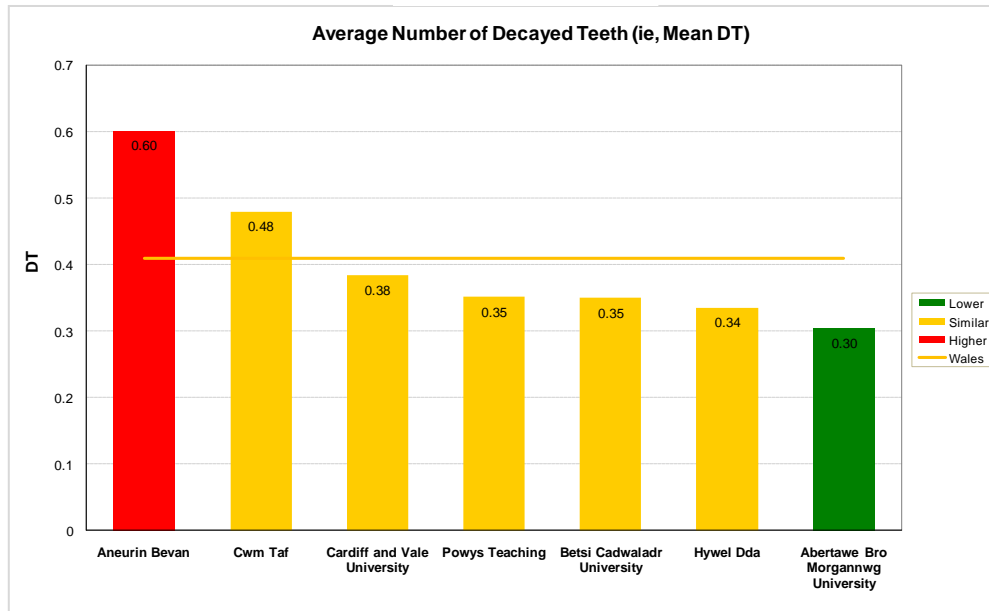


Chart 3

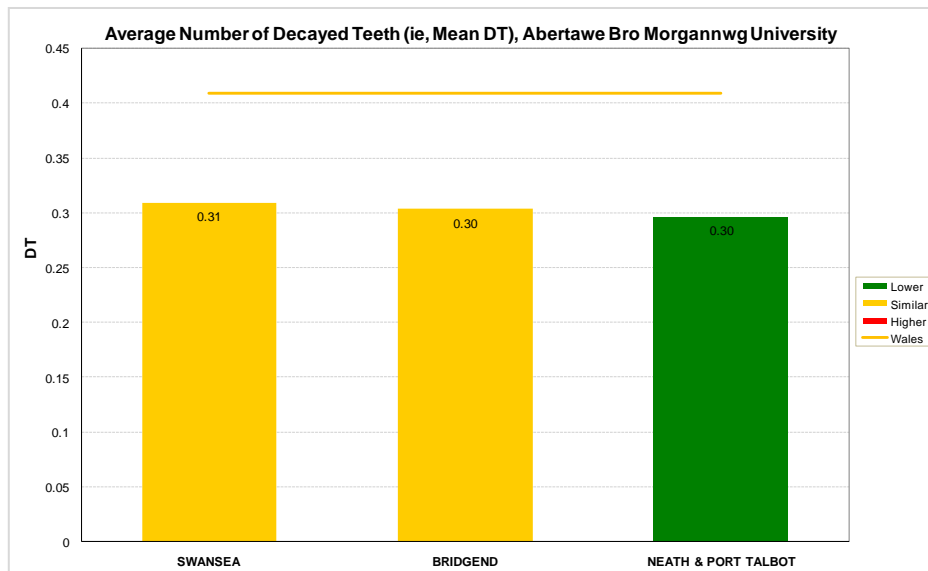
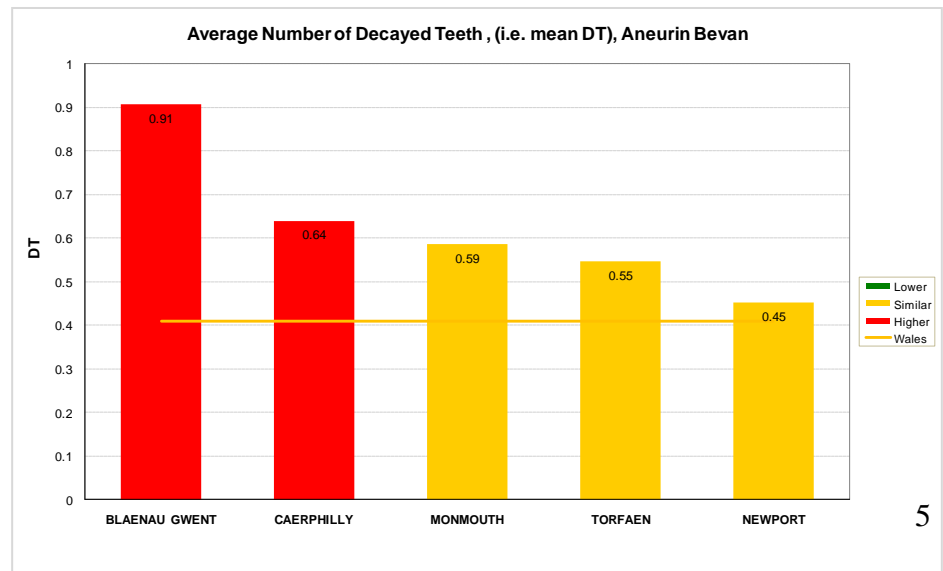


Chart 4



Average number of untreated decayed teeth (mean DT) – by LHB and UA within LHBs

Chart 5

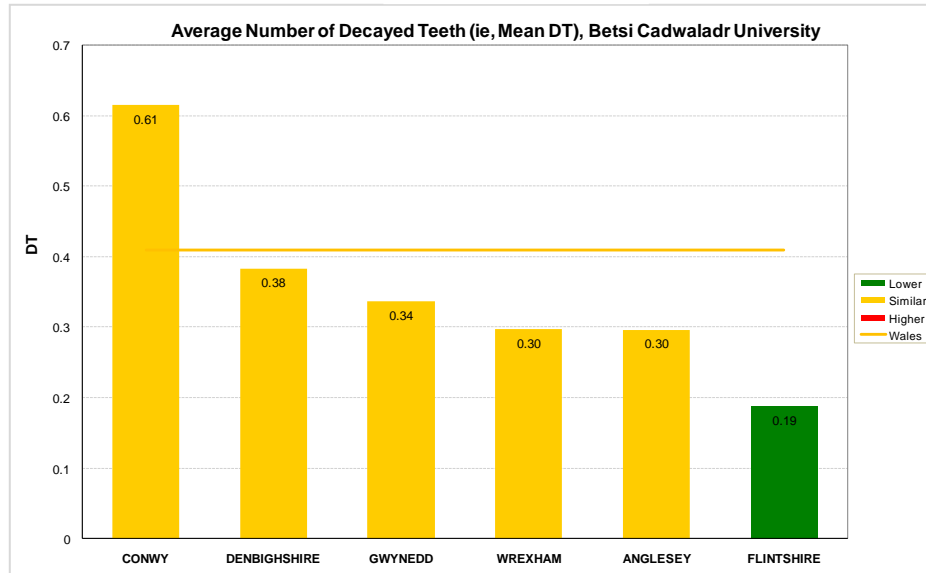


Chart 6

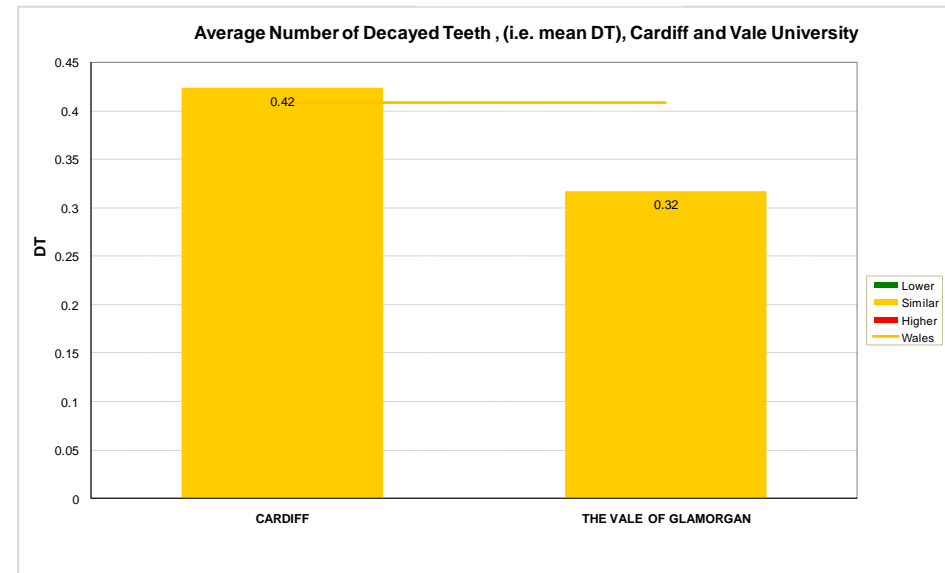


Chart 7

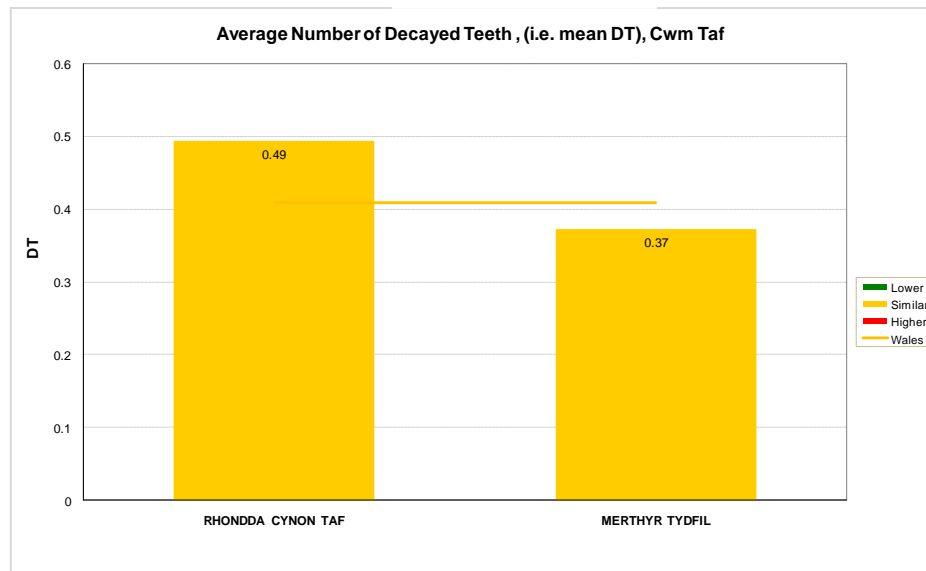
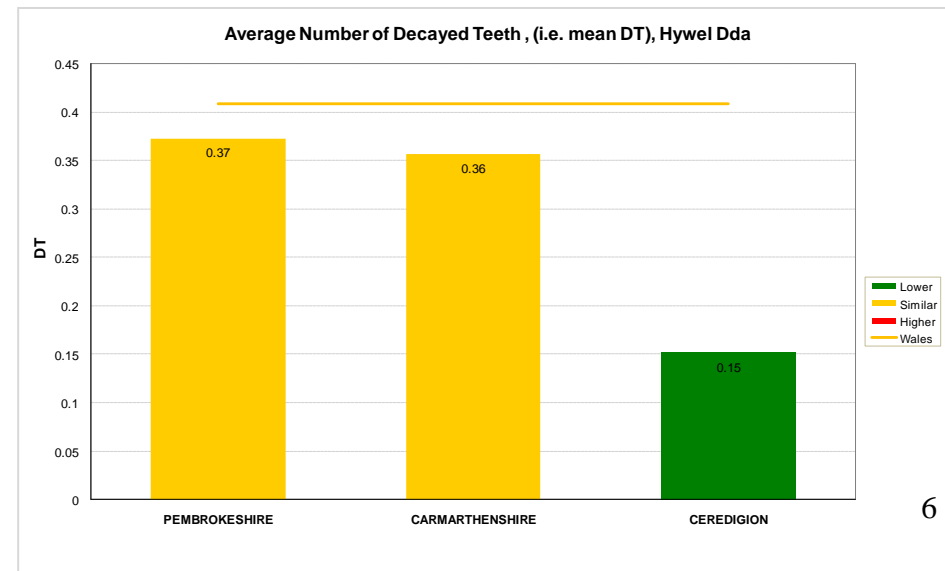


Chart 8



2. Percentage children with untreated decayed teeth

Map 1

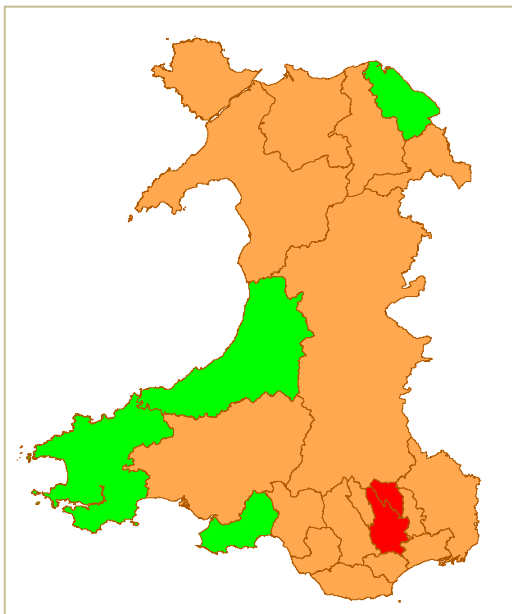
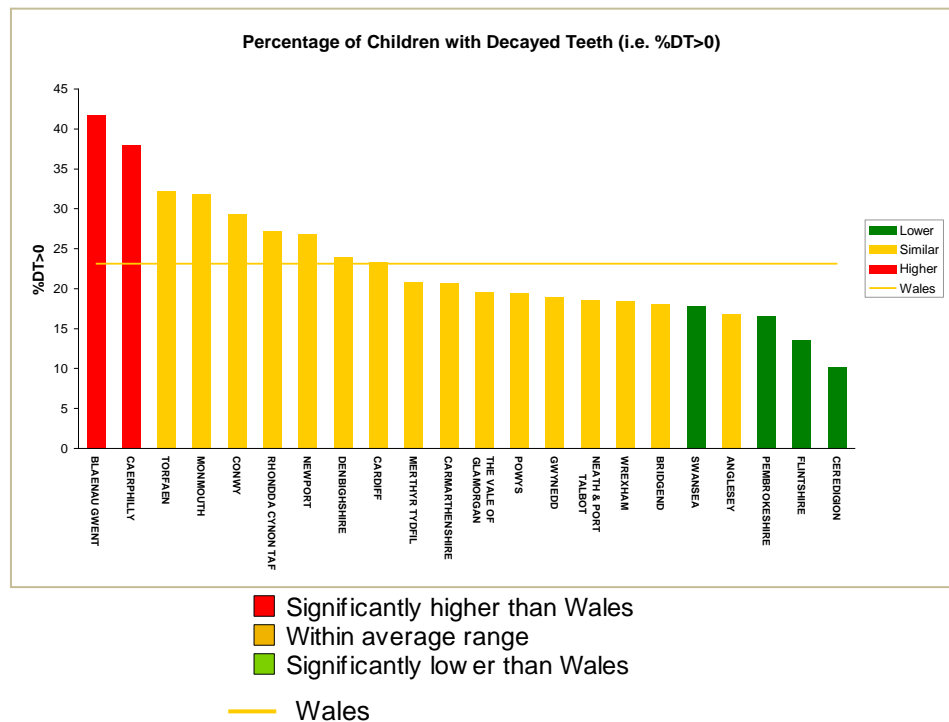


Chart 9



Map 2 and charts 9-16 show the percentage of twelve year old children surveyed in the winter of 2008/09 with one or more decayed teeth (%DT>0) by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The percentage for Wales was 23.1% (95% LCI 22.0%; 95% UCI 24.2%).

Unitary Authority

Blaenau Gwent experienced the highest levels of decayed teeth (%DT>0 = 41.7%), followed by, Caerphilly which also recorded significantly higher levels compared with the Welsh average. Conversely, Ceredigion experienced the lowest levels of decayed teeth (%DT>0 = 10.1%) when compared with for all Welsh Unitary Authorities, followed by Flintshire, Pembrokeshire and Swansea who also experienced significantly lower levels of DT when compared with Wales as a whole.

Local Health Board

Aneurin Bevan (%DT>0 = 33.6%) experienced significantly higher levels of decayed teeth when compared with the Welsh average. As noted above both Blaenau Gwent (%DT>0 = 41.7%) and Caerphilly (%DT>0 = 37.9%) unitary authorities had recorded significantly high levels of DT amongst 12 year olds contributing to the high LHB value. Conversely, Hywel Dda (%DT>0 = 17.7%) and Abertawe Bro Morgannwg University LHBs (%DT>0 = 18.0%) both experienced DT levels which were significantly lower than the Welsh average. The four remaining LHBs had DT levels which were within the average range for Wales.

Percentage children with untreated decayed teeth by LHB and UA within LHBs

Chart 10

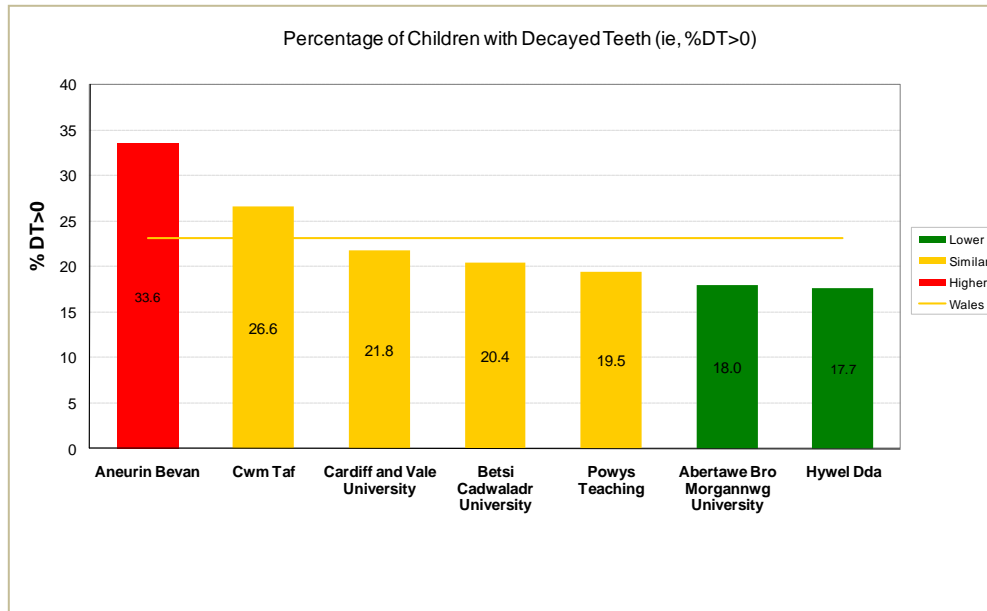


Chart 11

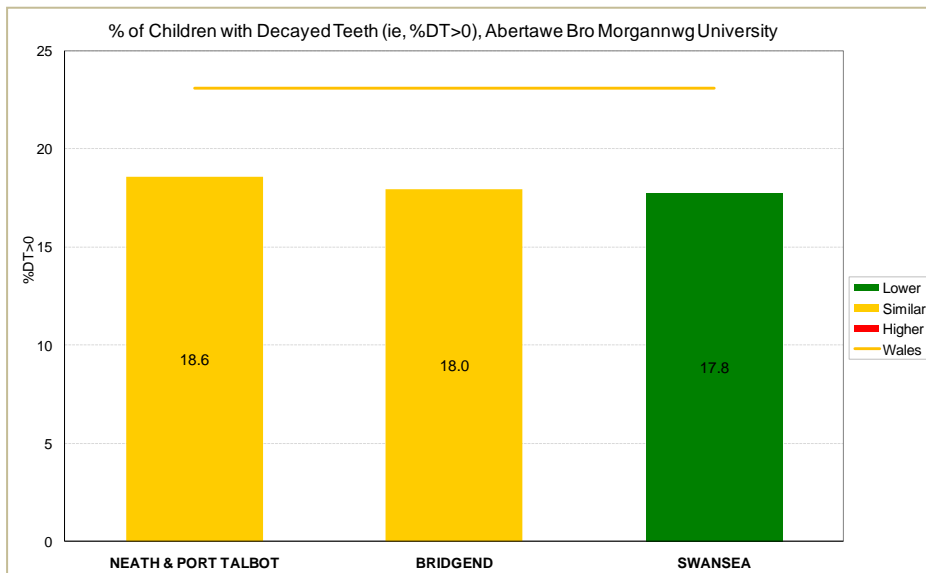
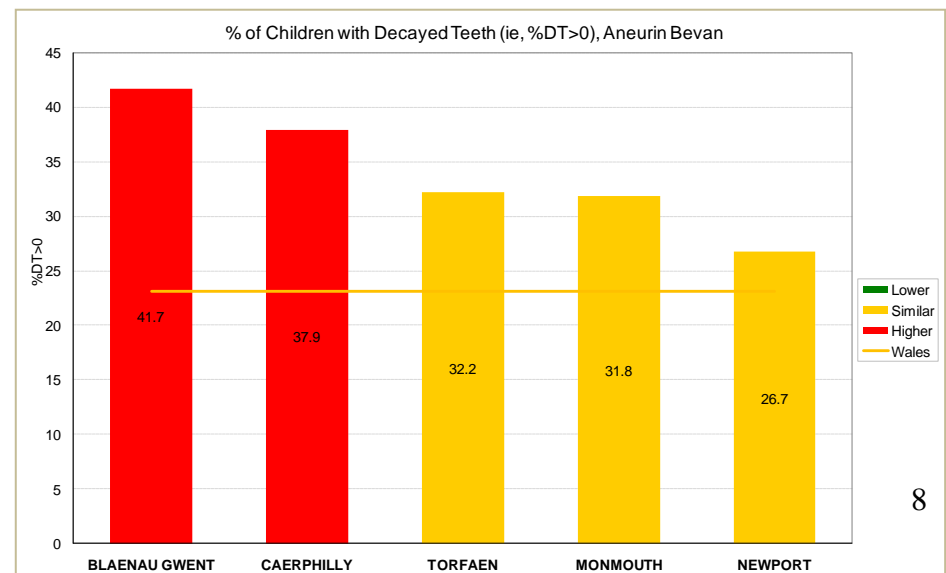


Chart 12



Percentage children with untreated decayed teeth by LHB and UA within LHBs

Chart 13

% of Children with Decay: University

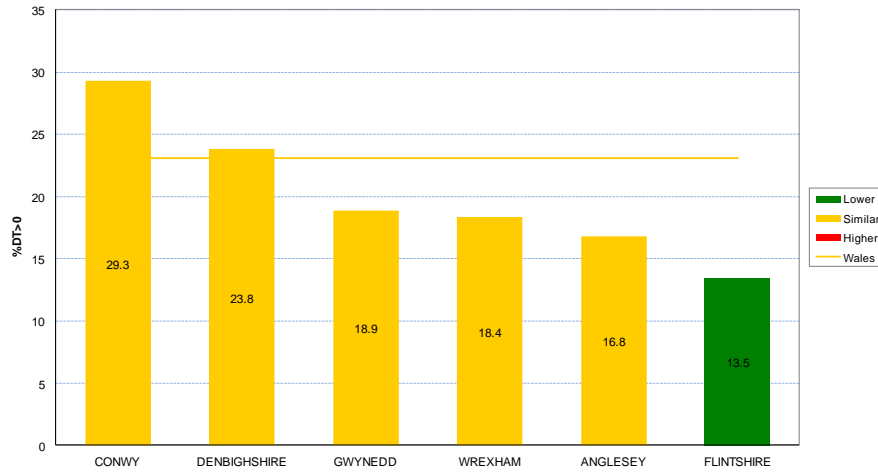


Chart 14

Percentage of Children with Decayed Teeth (ie, %DT>0), Cardiff and Vale University

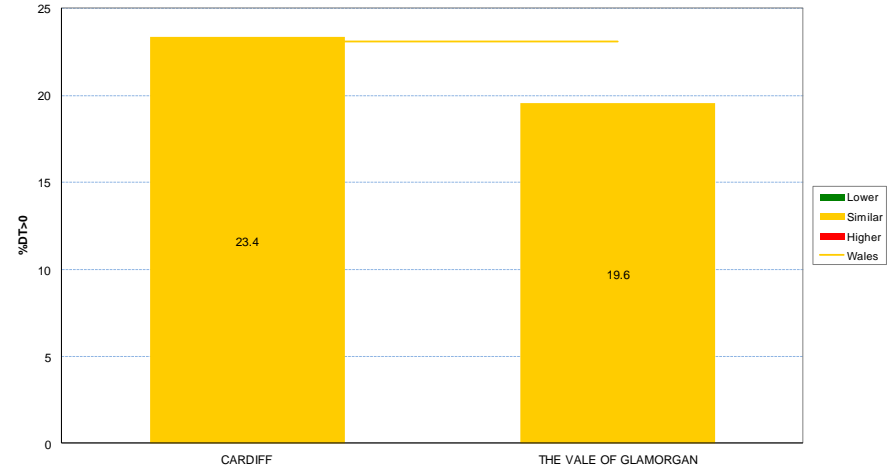


Chart 15

Percentage of Children with Decayed Teeth (ie, %DT>0), Cwm Taf

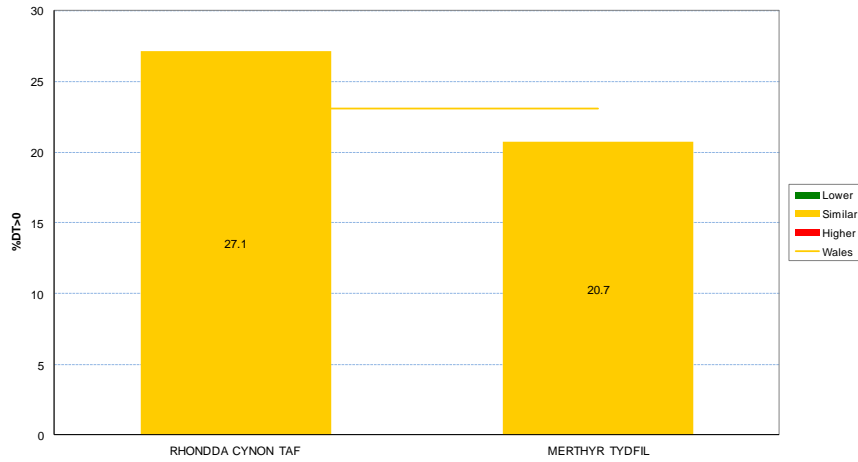
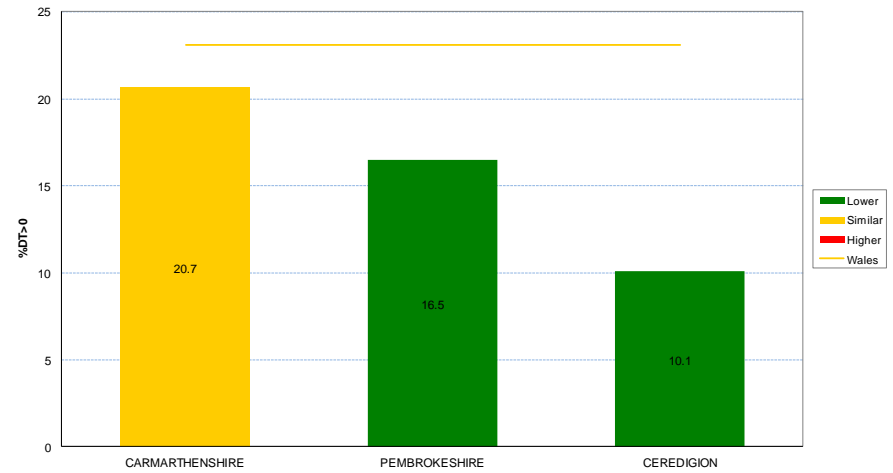


Chart 16

Percentage of Children with Decayed Teeth (ie, %DT>0), Hywel Dda



3. Average untreated decayed teeth of those with untreated decayed teeth

Map 3

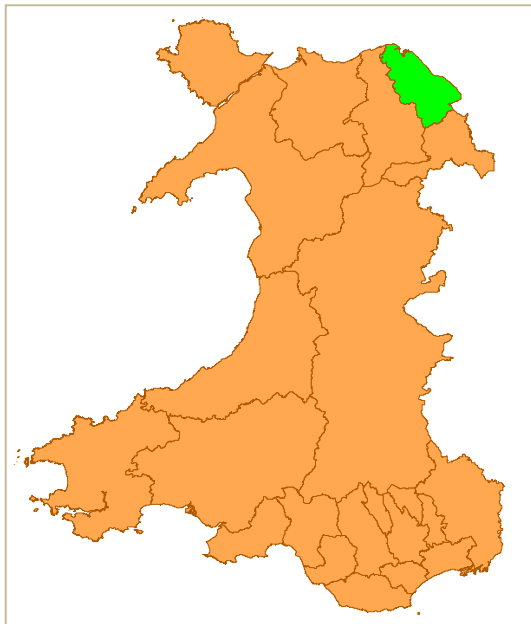
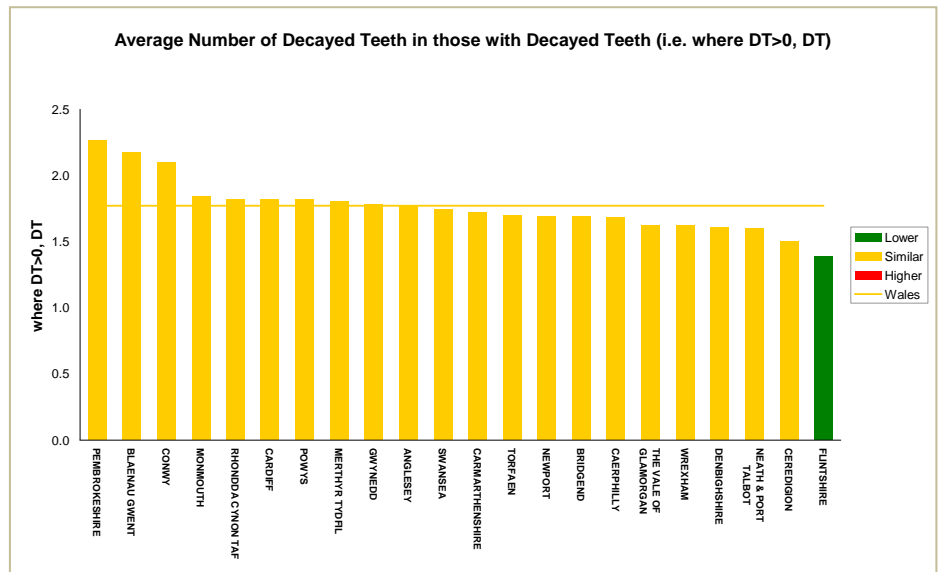


Chart 17



- Significantly higher than Wales
- Within average range
- Significantly lower than Wales
- Wales

Map 3 and charts 17-24 show the average number of decayed teeth for those with experience of decay (average DT for those with DT>0), for twelve year old children surveyed in the winter of 2008/09 by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The average DT of those with decay experience for Wales was 1.77 (95% LCI 1.71; 95% UCI 1.83).

Unitary Authority

Pembrokeshire experienced the highest levels of decayed teeth amongst those with decay (DT for those with DT>0=2.26), followed by Blaenau Gwent, and Conwy, however none of these UAs had decay levels which were significantly worse than the Welsh average (Appendix 1). Flintshire experienced the lowest levels of decayed teeth amongst those with decay (DT for those with DT>0=1.39). Further it was the only unitary authority to experience significantly lower levels of DT amongst those with decay when compared with Wales as a whole.

Local Health Board

The average DT for those with DT>0 for all seven LHBs were within average range when compared with the Welsh average. Values ranged from 1.9 in Hywel Dda to 1.7 in Abertawe Bro Morgannwg.

Average untreated decayed teeth of those with untreated decayed teeth by LHB and UA within LHBS

Chart 18

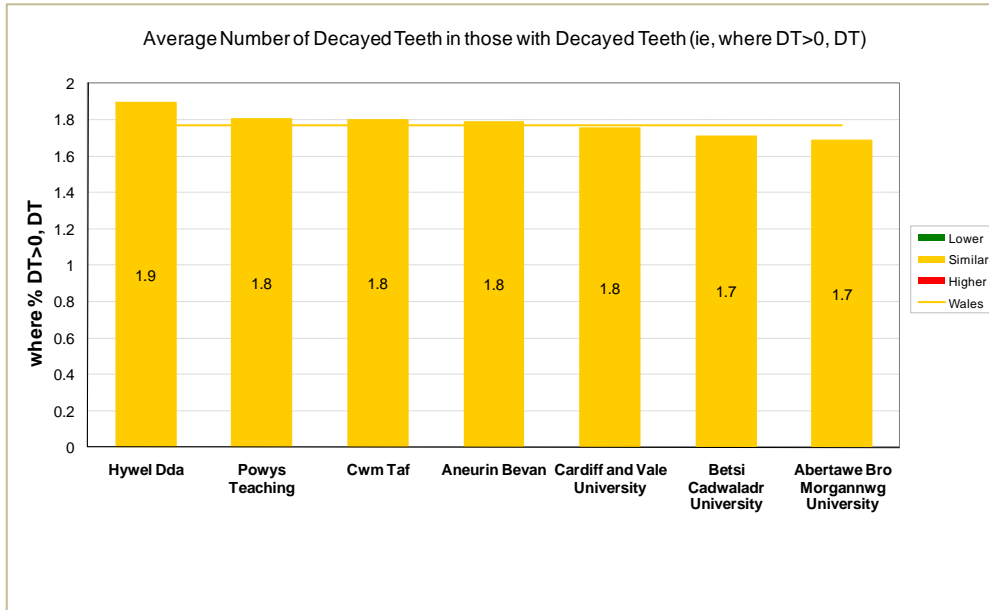


Chart 19

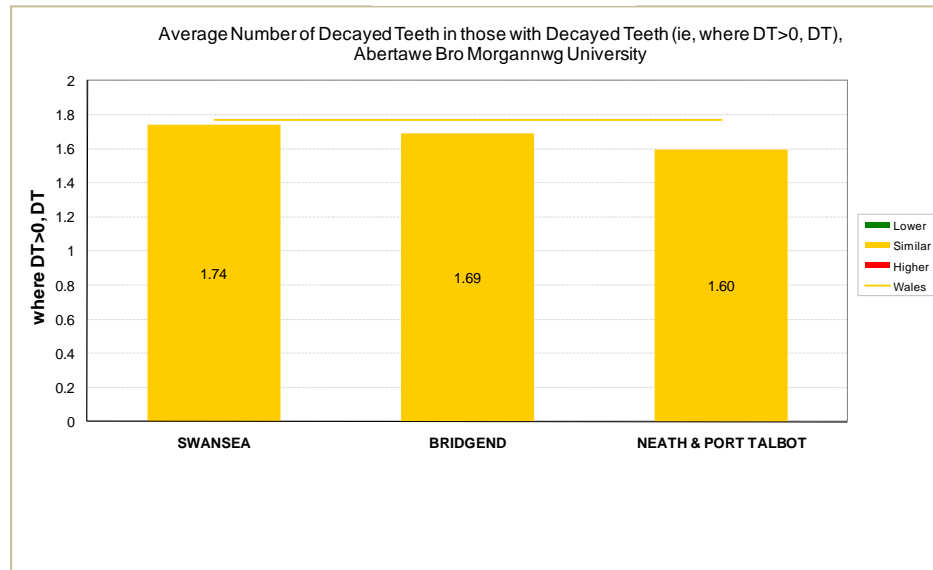
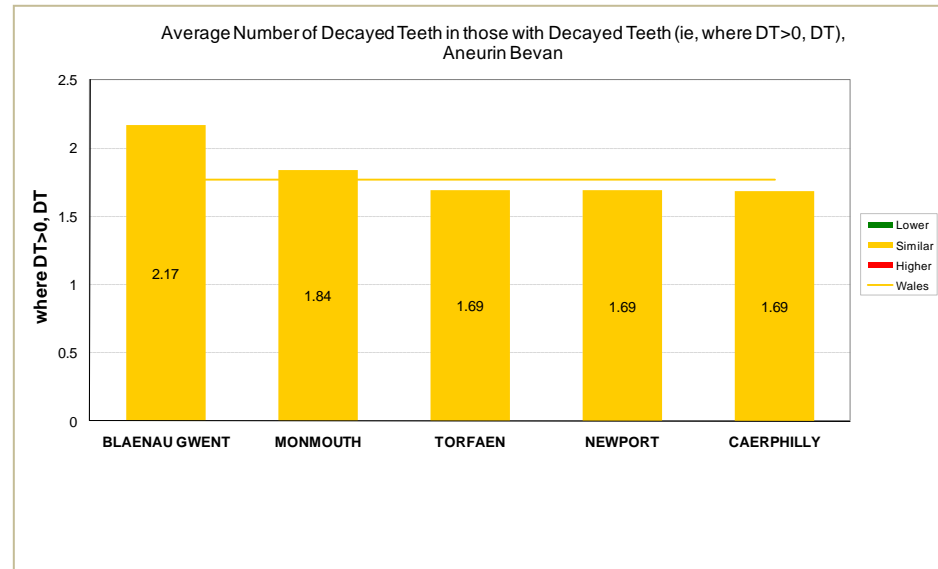


Chart 20



Average untreated decayed teeth of those with untreated decayed teeth by LHB and UA within LHBs

Chart 21

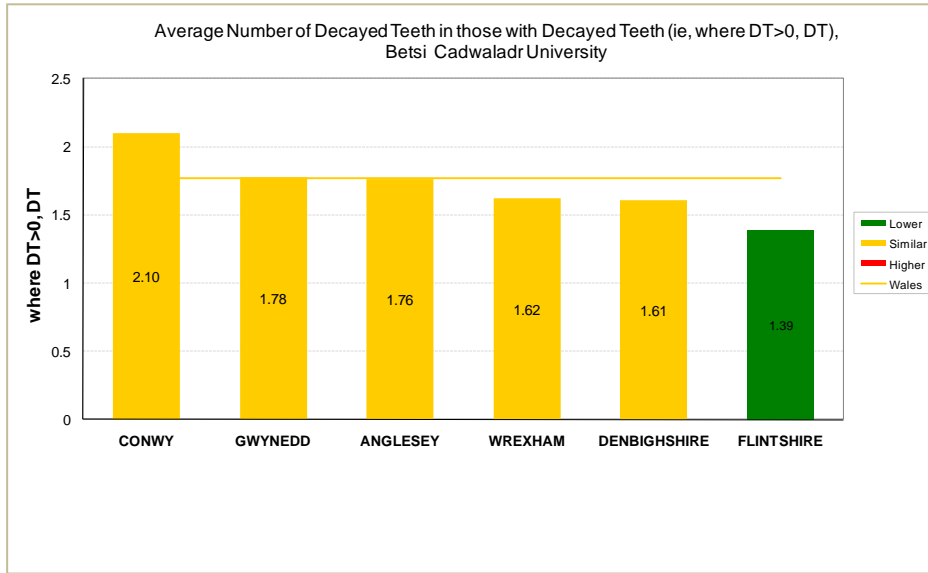


Chart 22

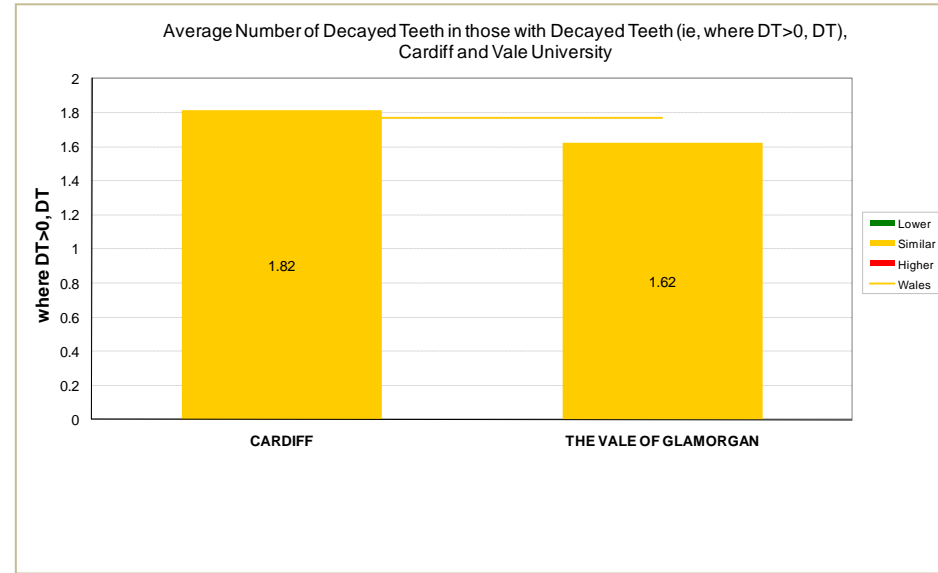


Chart 23

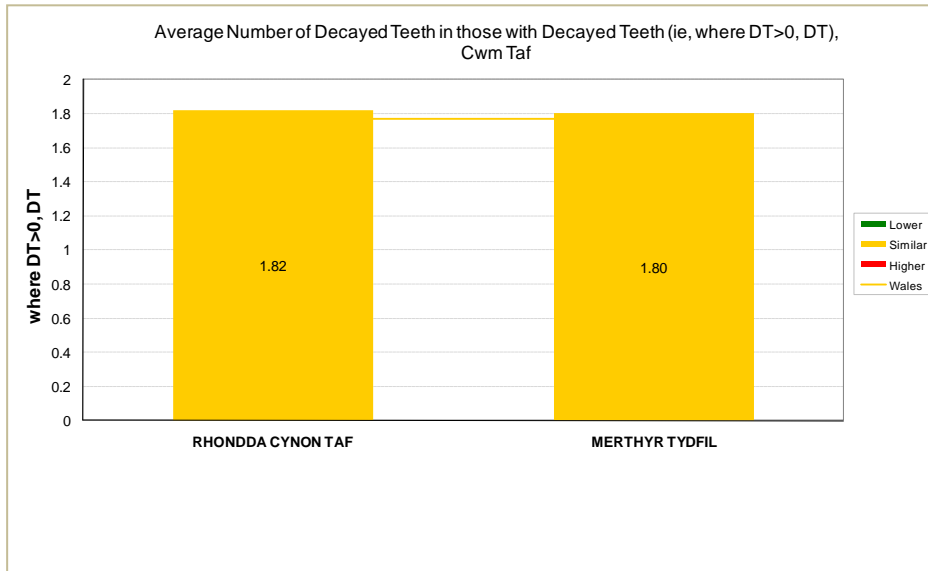
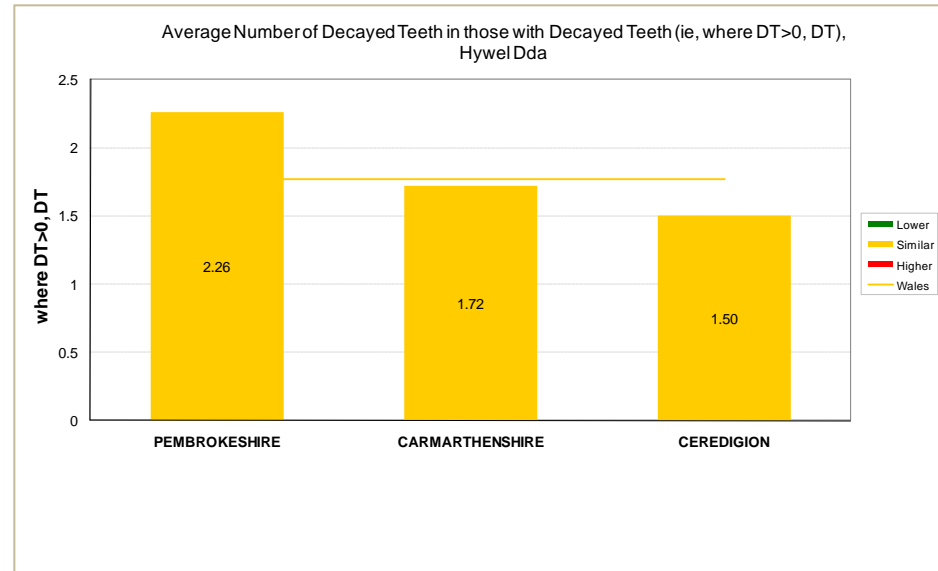


Chart 24



4. Average number of teeth decayed, missing or filled (mean DMFT)

Map 4

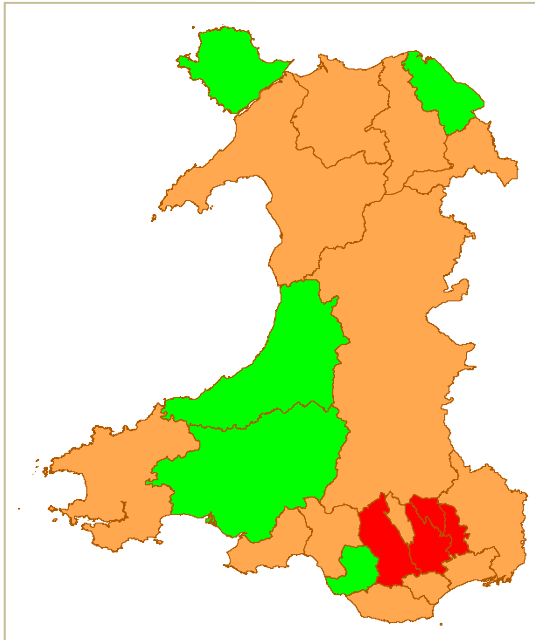
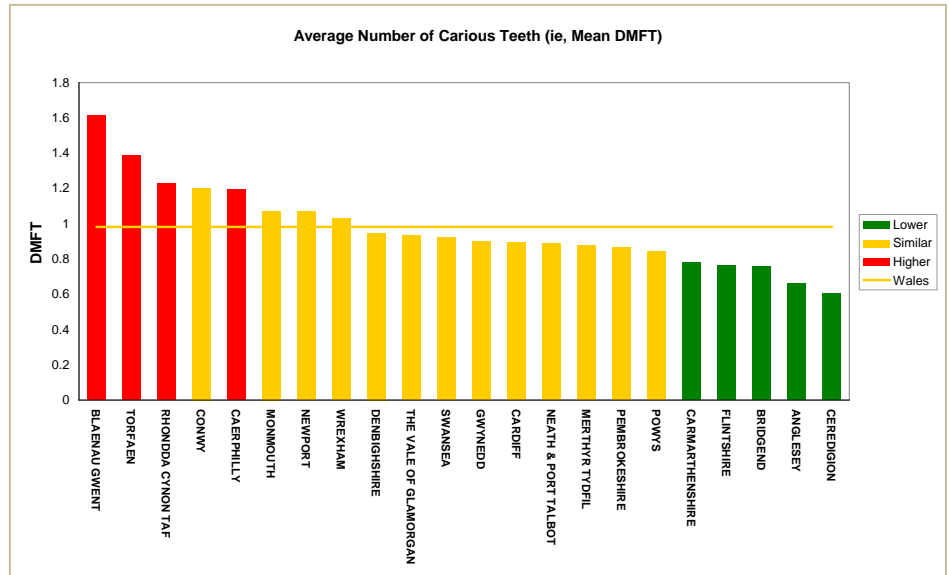


Chart 25



■ Significantly higher than Wales
■ Within average range
■ Significantly lower than Wales

— Wales

Map 4 and charts 25-32 show the average number of carious teeth (DMFT) for twelve year old children surveyed in the winter of 2008/09 by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The average DMFT for Wales was 0.98 (95% LCI 0.94; 95% UCI 1.02).

Unitary Authority

Blaenau Gwent experienced the highest average DMFT (1.61), followed by Torfaen, Rhondda Cynon Taff, Conwy and Caerphilly, all these Unitary Authorities except for Conwy recorded significantly higher levels compared with the Welsh average. Conversely, Ceredigion experienced the lowest average DMFT (0.61); Anglesey, Bridgend, Flintshire and Carmarthenshire also experienced significantly lower average DMFT when compared with Wales as a whole.

Local Health Board

Both Aneurin Bevan and Cwm Taf health boards experienced average DMFT levels which were significantly higher than the Welsh average, reflecting the high levels of DMFT experienced by constituent unitary authorities. Aneurin Bevan had the worst DMFT level (DMFT= 1.23) and Cwm Taf the second worst (DMFT=1.18) when all seven were ranked from worst to best. Hywel Dda had the lowest average DMFT (DMFT=0.8) and this was significantly lower than the Welsh average.

Average number of teeth decayed, missing or filled (mean DMFT) by LHB and UA within LHBs

Chart 26

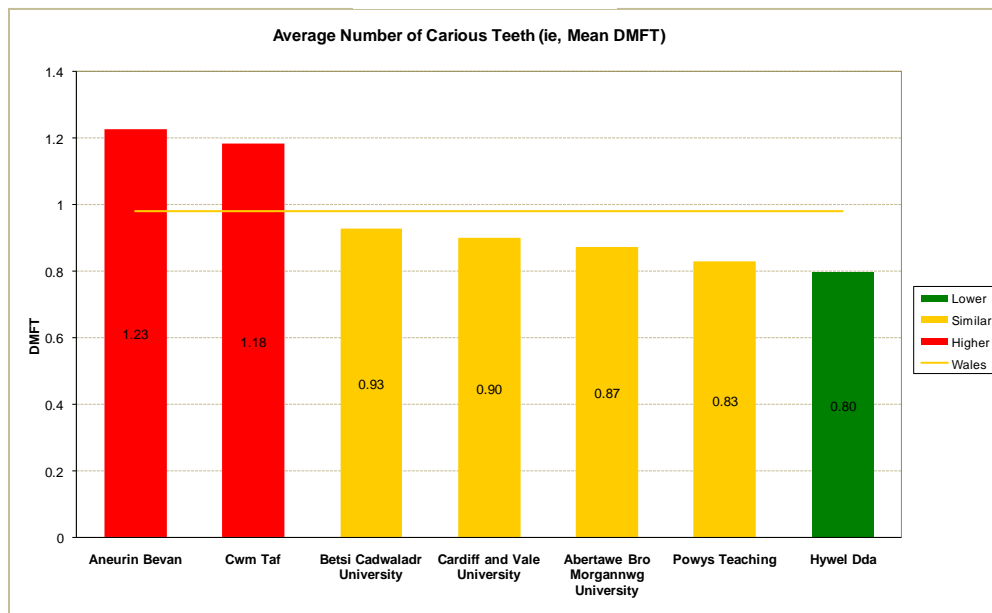


Chart 27

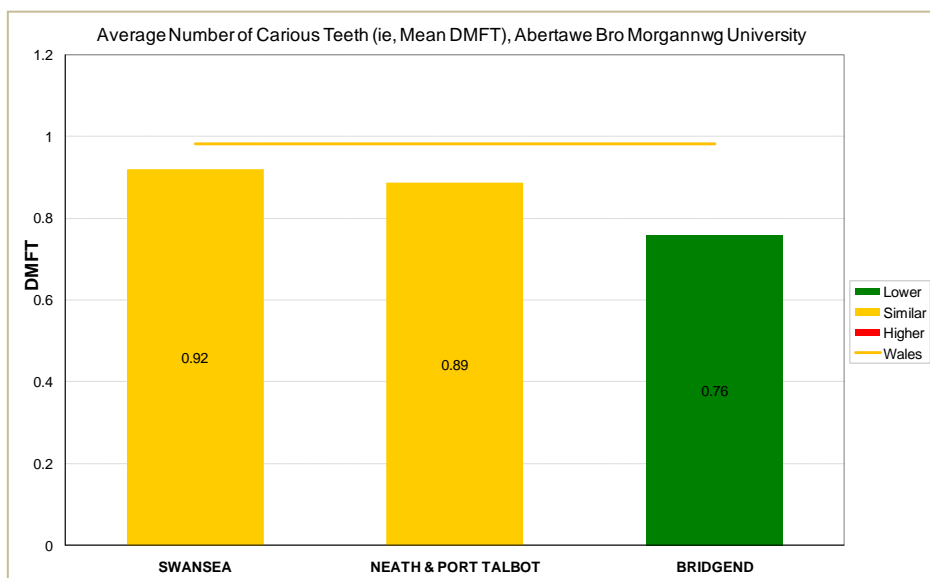
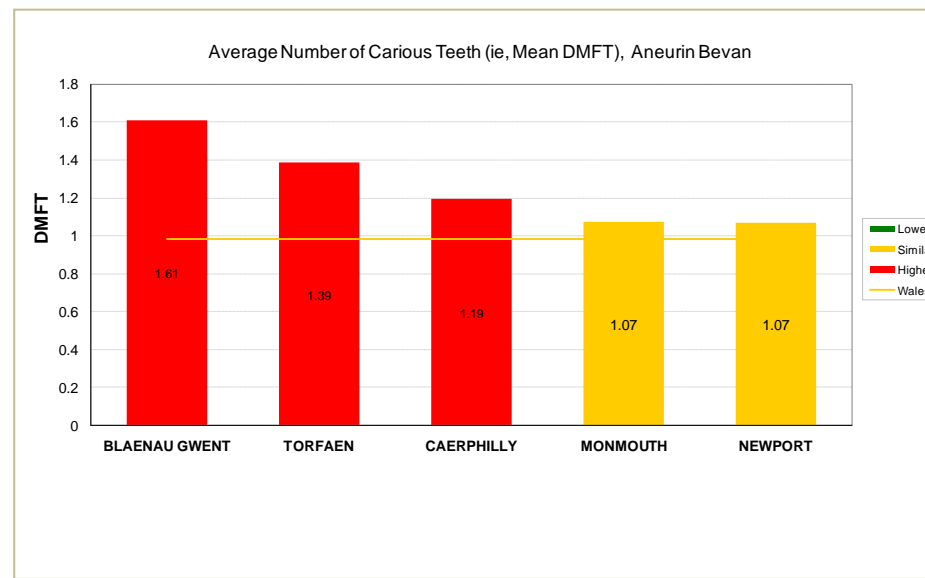


Chart 28



Average number of teeth decayed, missing or filled (mean DMFT) by LHB and UA within LHBs

Chart 29

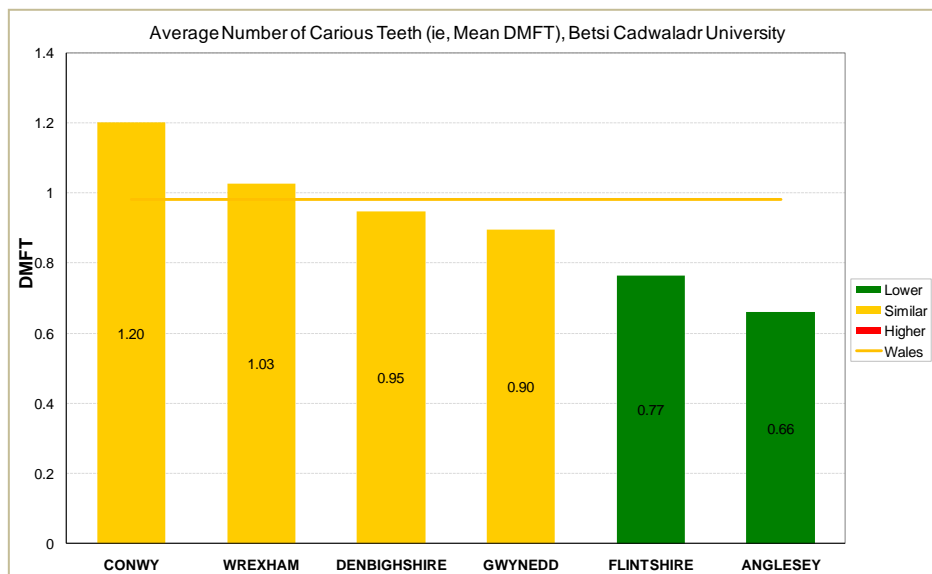


Chart 30

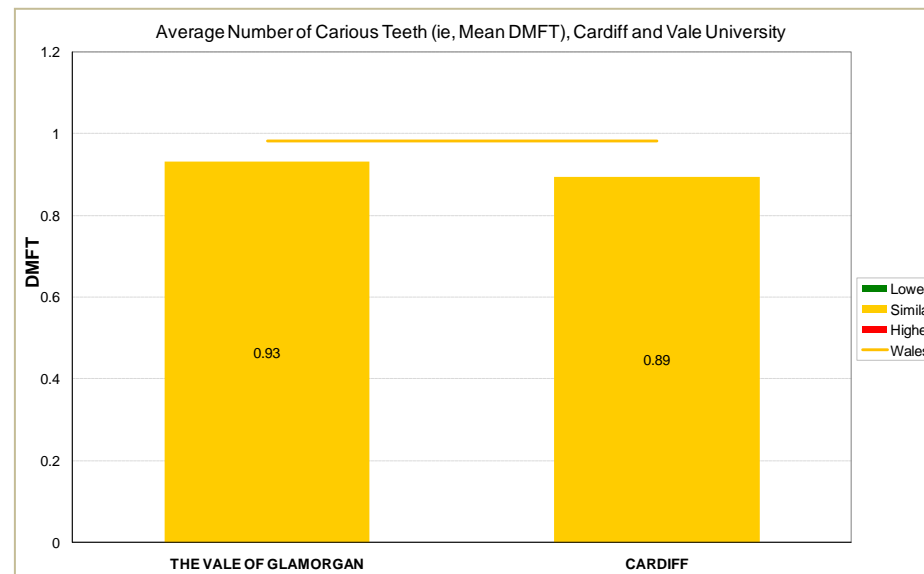


Chart 31

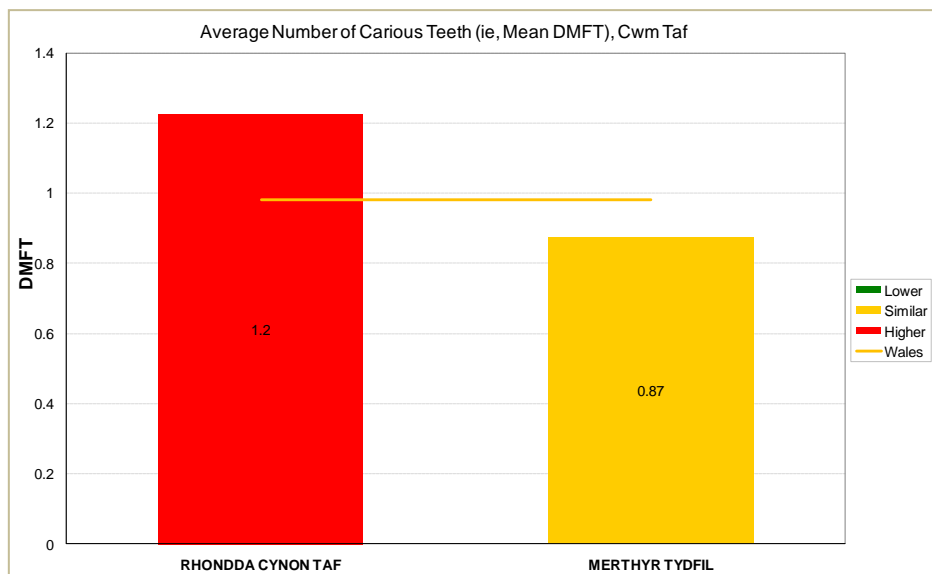
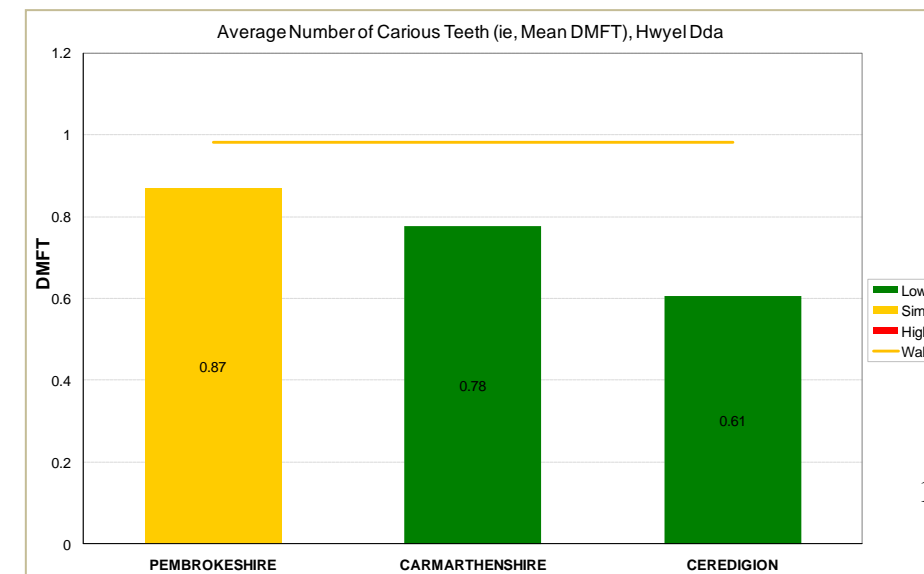


Chart 32



5. Percentage of children with teeth decayed, missing or filled (%DMFT>0)

Map 5

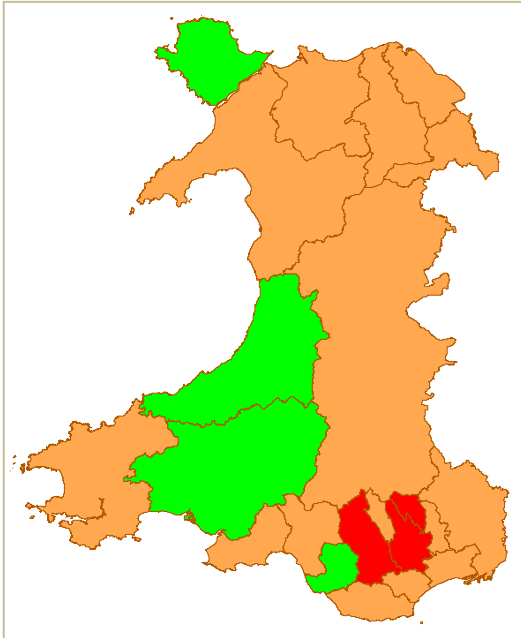
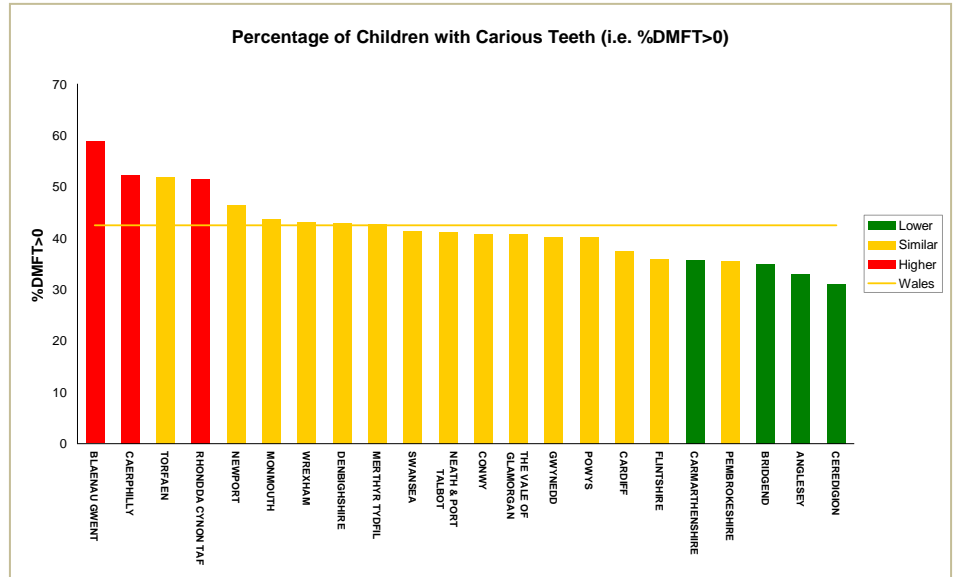


Chart 33



- Significantly higher than Wales
- Within average range
- Significantly lower than Wales
- Wales

Map 5 and charts 33-40 show the percentage of twelve year old children surveyed in the winter of 2008/09 with one or more carious teeth (%DMFT>0) by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The percentage for Wales was 42.5% (95% LCI 41.2%; 95% UCI 43.8%).

Unitary Authority

Blaenau Gwent experienced the highest levels of caries prevalence (%DMFT>0 = 58.8%), followed by Caerphilly, Torfaen and Rhondda Cynon Taff; all these unitary authorities except for Torfaen recorded significantly higher levels compared with the Welsh average. Conversely, Ceredigion experienced the lowest levels of caries experience (%DMFT>0 = 31.0%) and a further three unitary authorities experienced significantly lower levels of DMFT when compared with Wales as a whole.

Local Health Board

Prevalence of caries (%DMFT>0) in both Cwm Taf and Aneurin Bevan health boards were significantly higher than the Welsh average, reflecting the high levels of %DMFT>0 experienced by constituent unitary authorities. Cwm Taf had the highest prevalence of caries, with 50.8% of 12 year olds having at least one or more carious teeth, with Aneurin Bevan having the second highest prevalence (%DMFT=50.4%) when all seven health boards were ranked from worst to best. Hywel Dda had the lowest prevalence of DMFT (%DMFT>0= 35.6%) experiencing levels which were significantly lower than the Welsh average.

Percentage of children with teeth decayed, missing or filled (%DMFT>0) by LHB and UA within LHBs

Chart 34

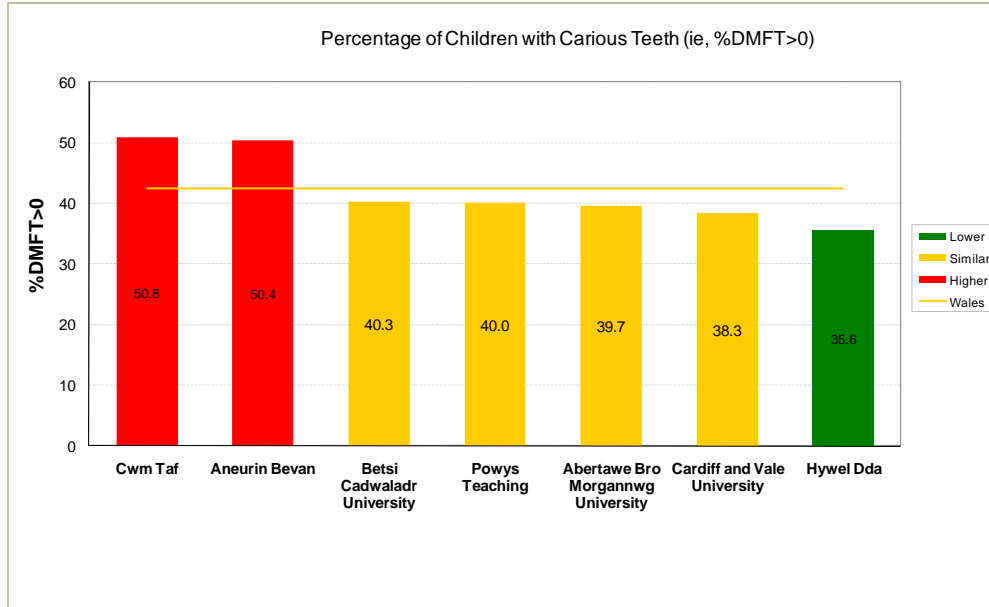


Chart 35

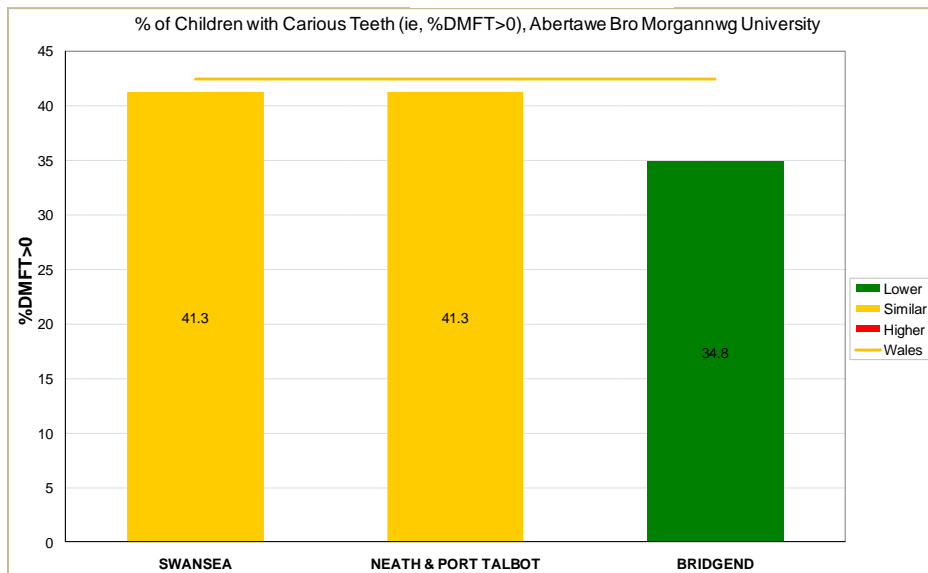
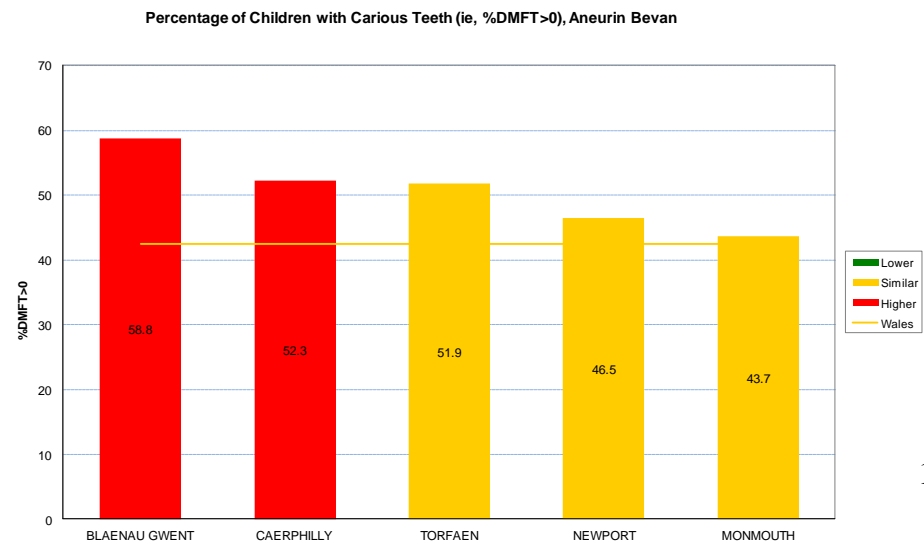


Chart 36



Percentage of children with teeth decayed, missing or filled (%DMFT>0) by LHB and UA within LHBs

Chart 37

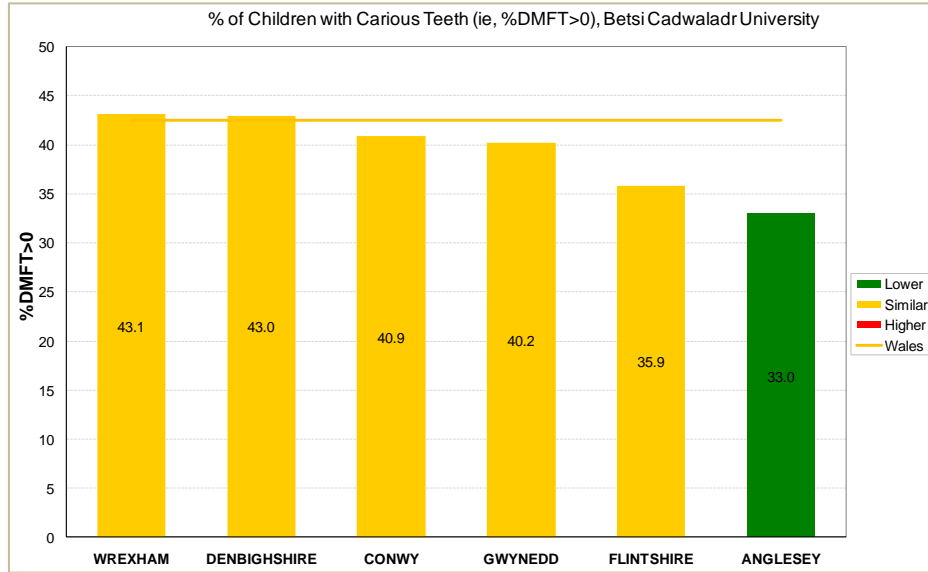


Chart 38

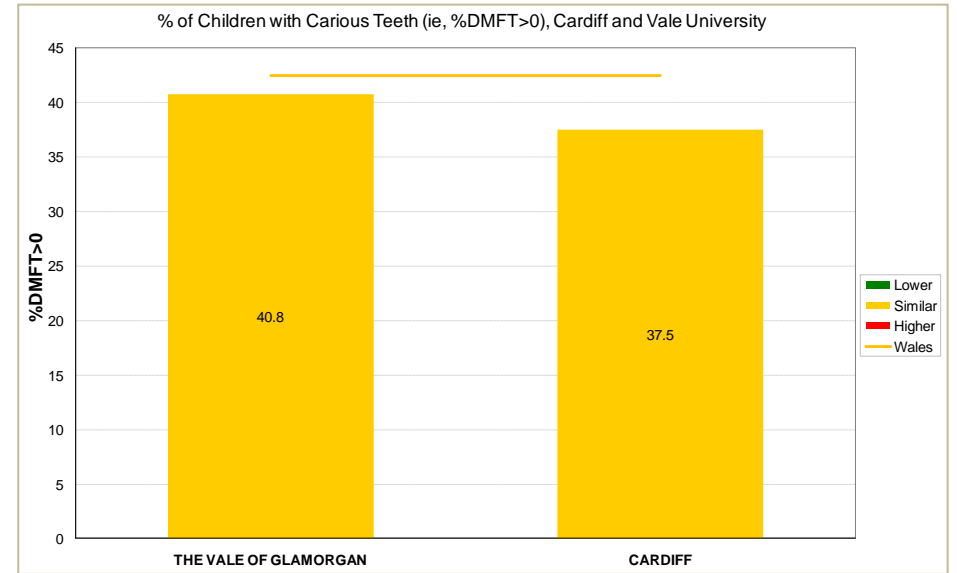


Chart 39

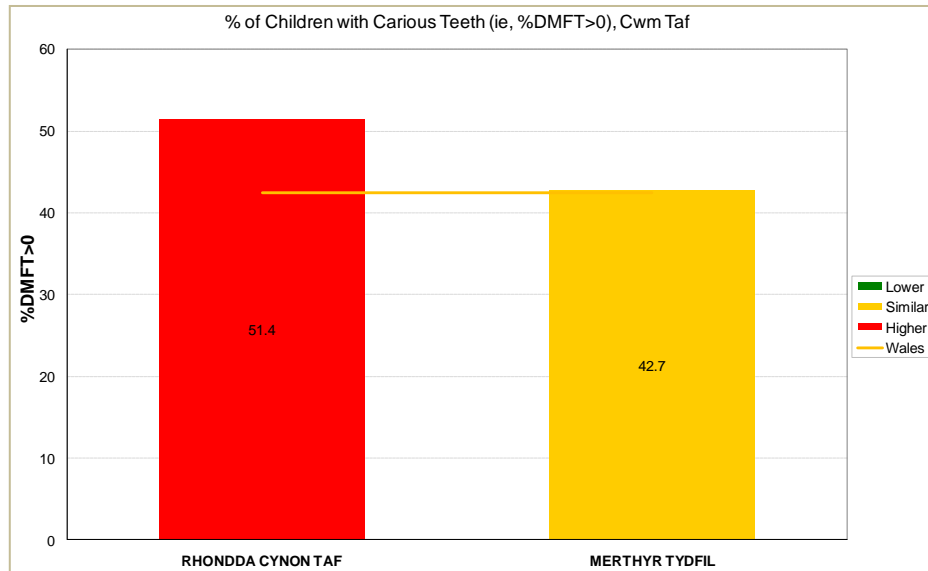
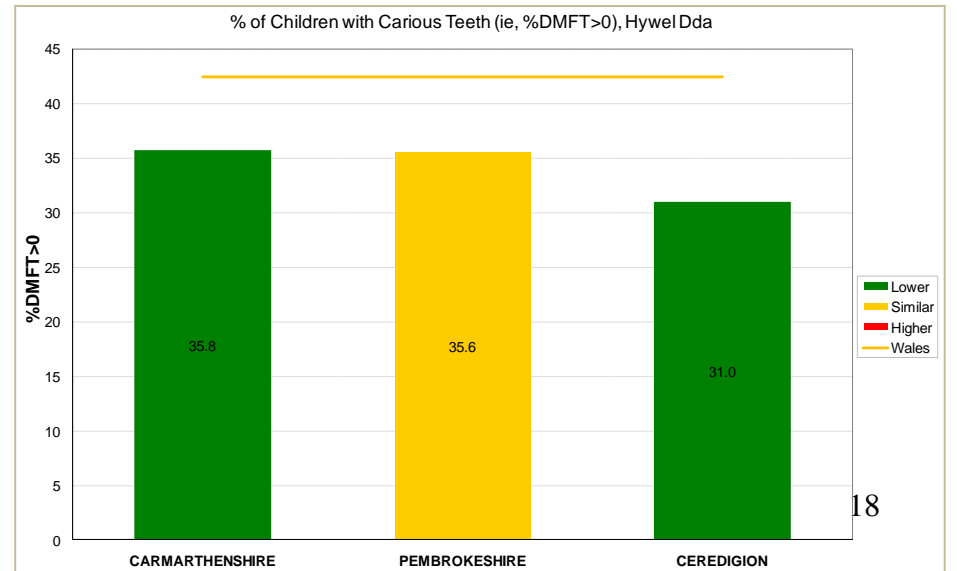


Chart 40



6. Average DMFT for those children with DMFT

Map 6

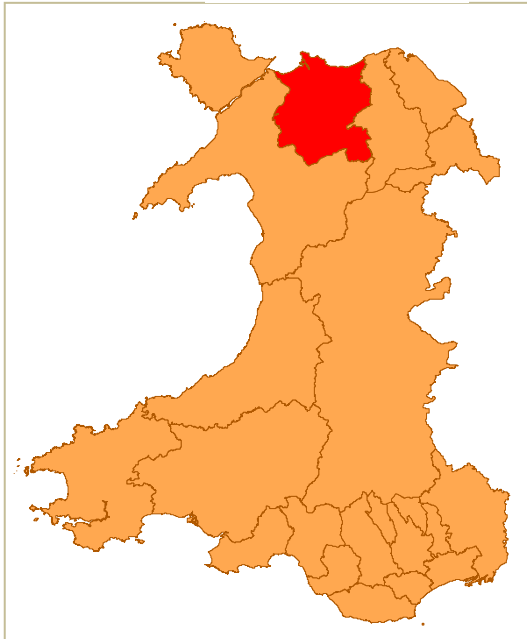
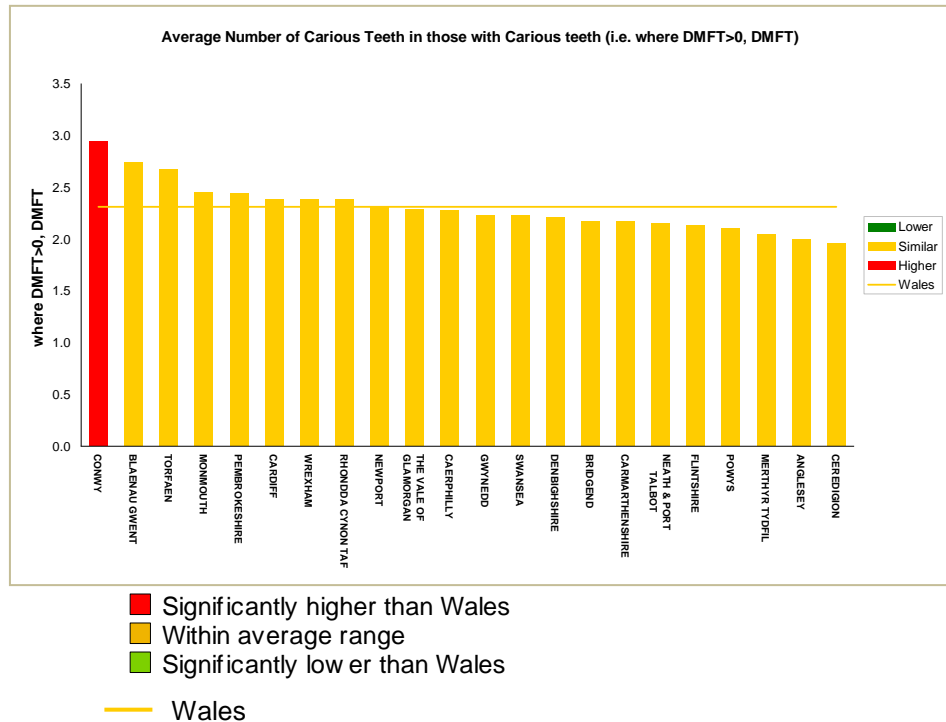


Chart 41



Map 6 and charts 41-48 show the average number of carious teeth for those with caries (average DMFT for those with DMFT>0), for twelve year old children surveyed in the winter of 2008/09 by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The average DMFT of those with caries for Wales was 2.31 (95% LCI 2.25; 95% UCI 2.37).

Unitary Authority

Conwy experienced the highest levels of carious teeth amongst those with caries (DMFT for those with DMFT>0=2.94), followed by Blaenau Gwent, Torfaen and Monmouth, but only Conwy recorded significantly higher levels when compared with the Welsh average. Whilst, Ceredigion experienced the lowest levels of carious teeth amongst those with caries (DMFT for those with DMFT>0=1.95), followed by Anglesey and Merthyr Tydfil, however the values for these unitary authorities fell within the average range for Wales, as they were not statistically significantly different from the Welsh average.

Local Health Board

The average DMFT for those with DMFT>0 for all seven LHBs were within average range when compared with the Welsh average. Values ranged from 2.4 in Aneurin Bevan to 2.1 in Powys Teaching LHB.

Average DMFT for those children with DMFT by LHB and UA within LHBs

Chart 42

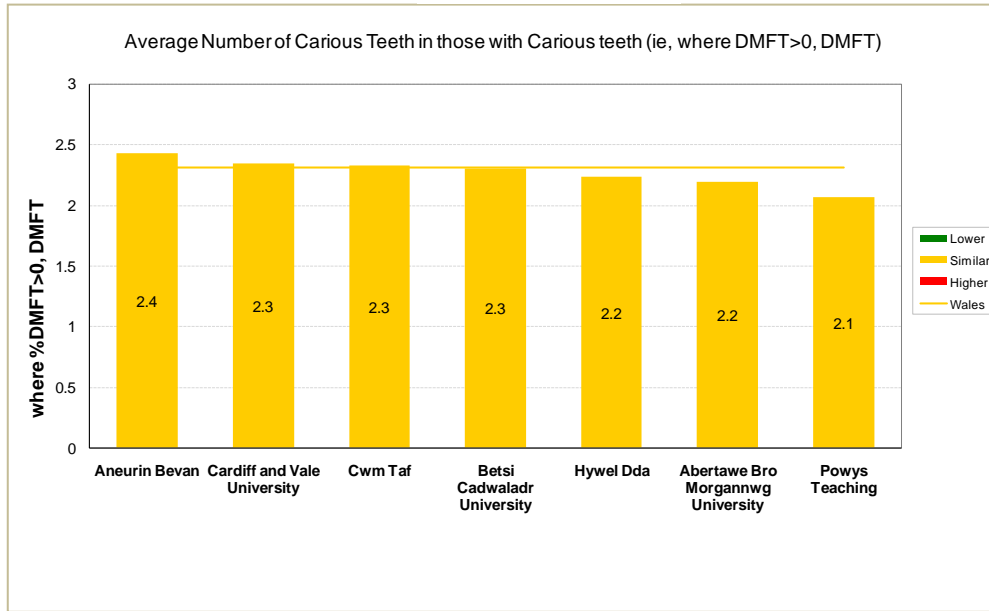


Chart 43

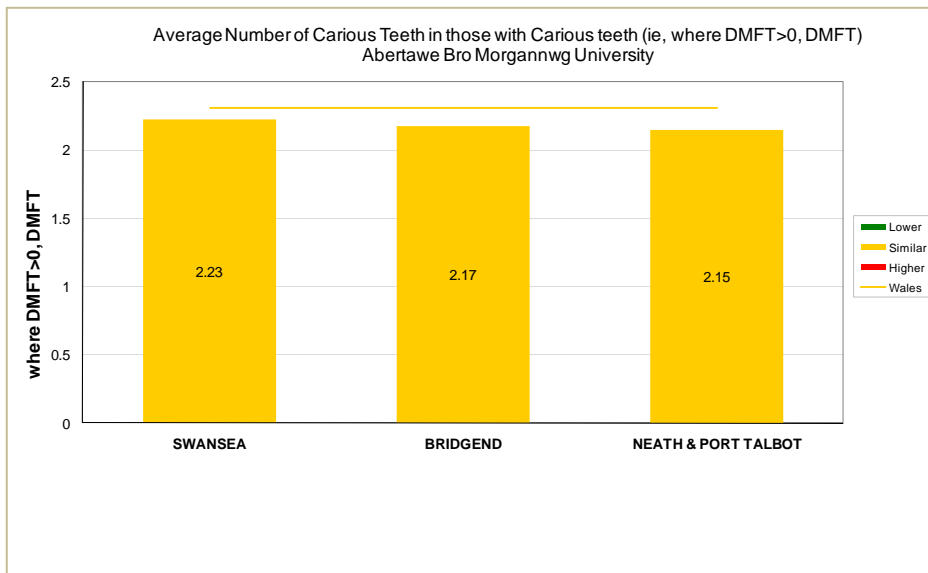
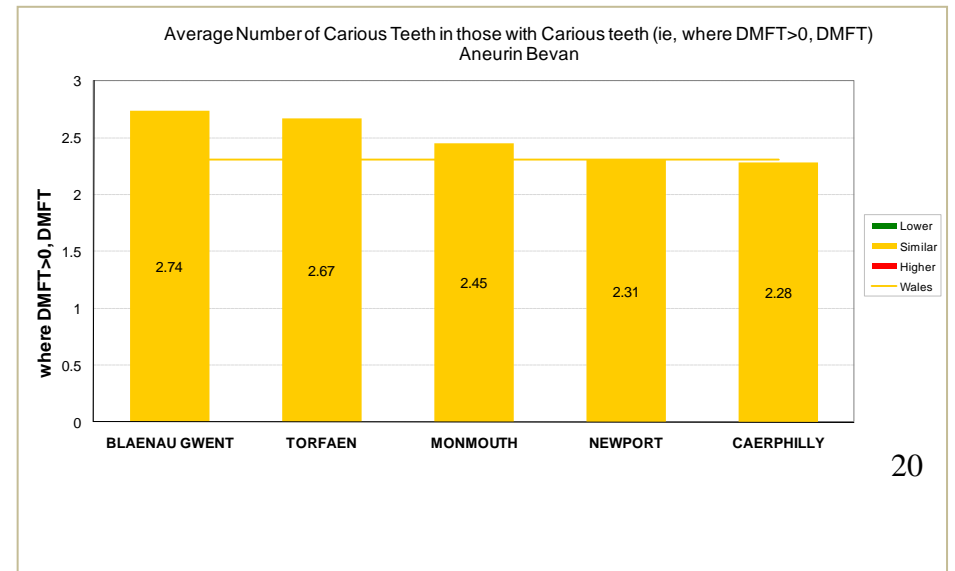


Chart 44



Average DMFT for those children with DMFT by LHB and UA within LHBs

Chart 45

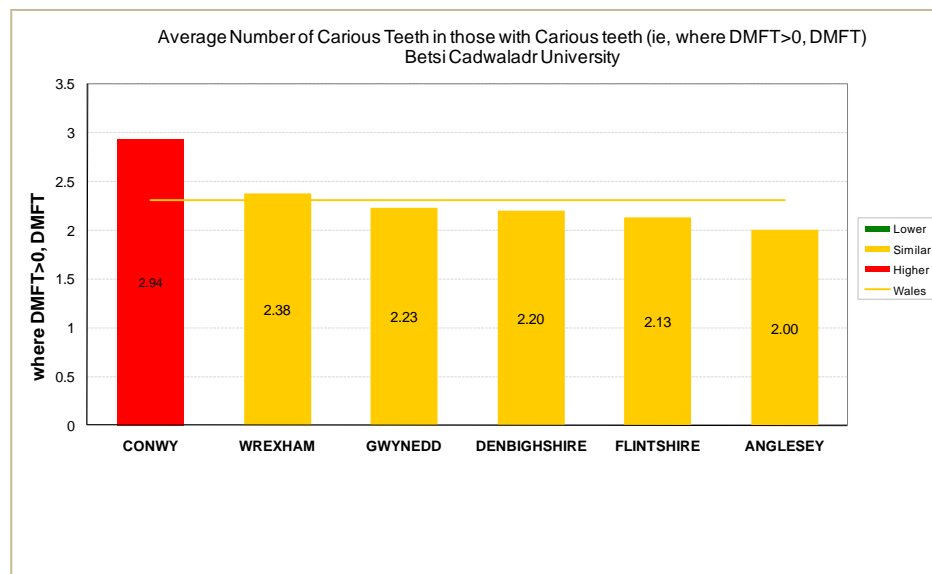


Chart 46

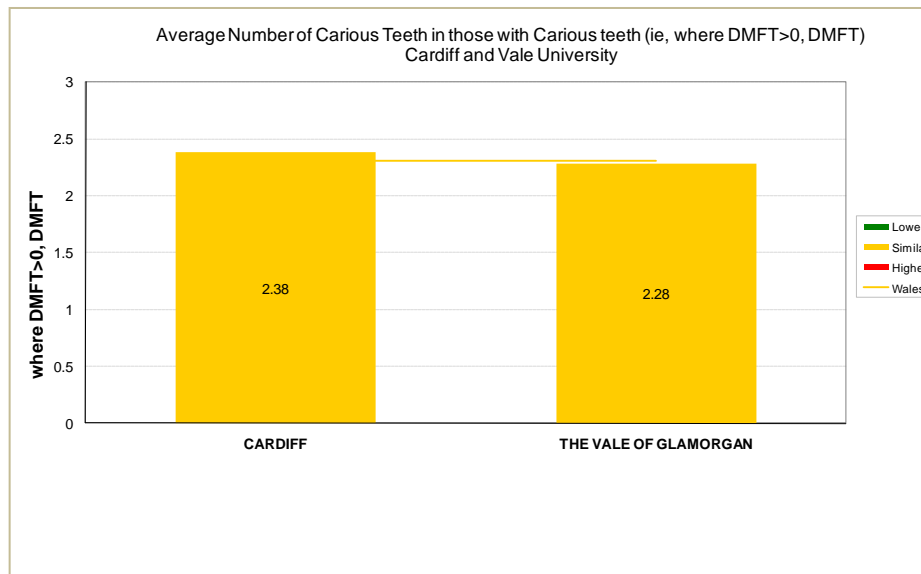


Chart 47

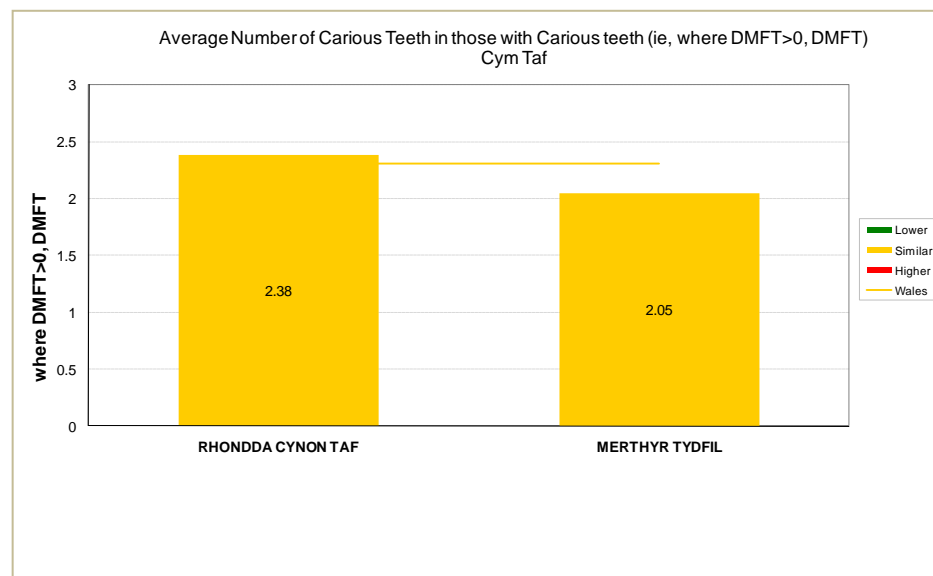
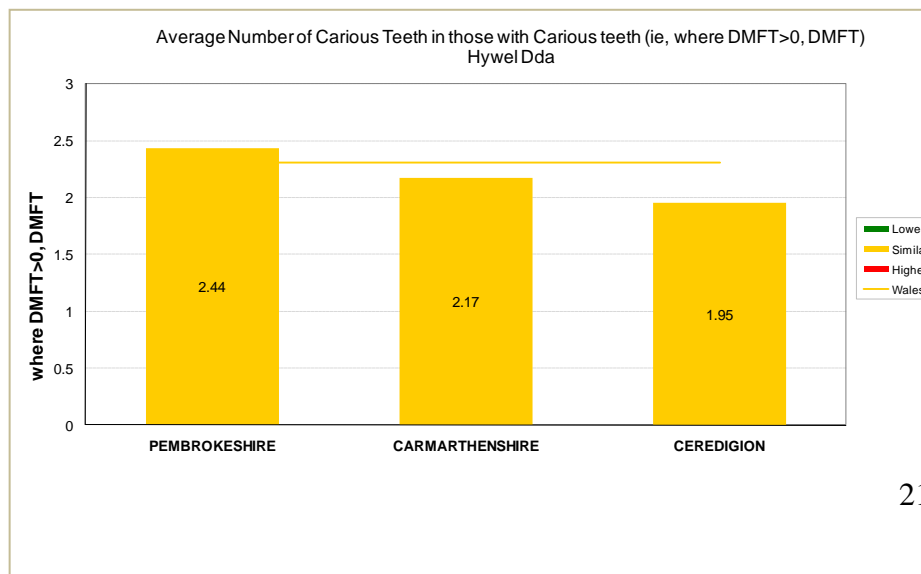


Chart 48



7. Care Index - (F/DMF)*100

Map 7

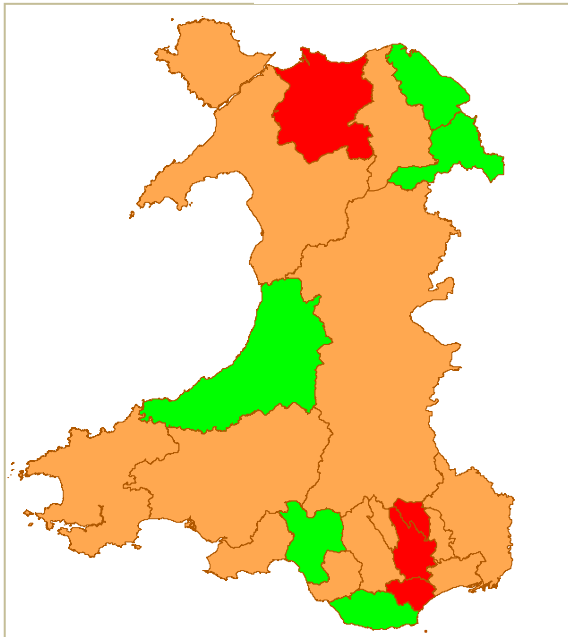
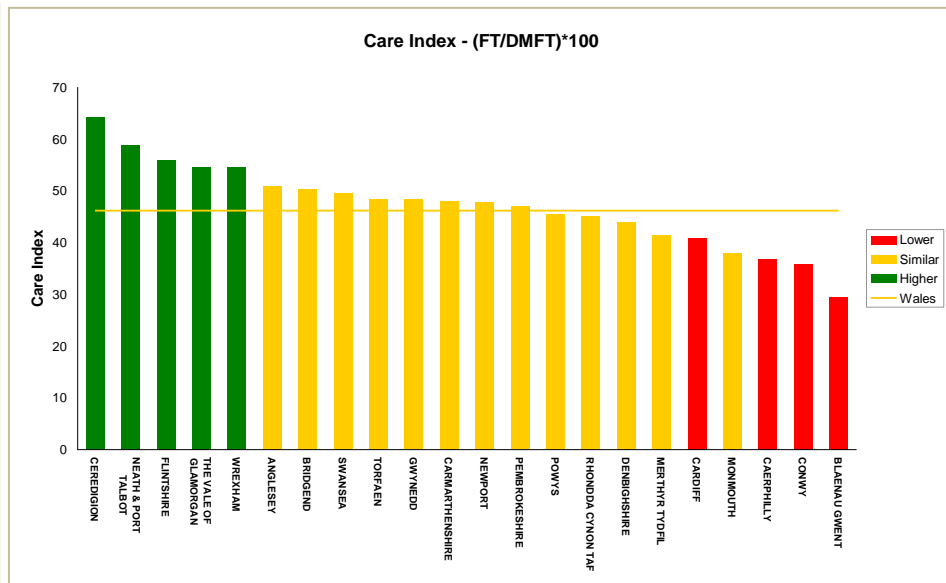


Chart 49



Care Index by Welsh Unitary Authorities

- Within average range (13)
- Significantly higher than Welsh average (5)
- Significantly lower than Welsh average (4)

— Wales

Map 7 and charts 49-56 show the Care Index for twelve year old children surveyed in the winter of 2008/09 ((F/DMF)*100) by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The Care Index expresses the proportion of the caries experience that has been treated restoratively. The care index for Wales indicates that 46% of the teeth with dentinal caries have been restored (95% LCI 45%; 95% UCI 48%).

Unitary Authority

The unitary authority values for the Care Index ranged from 30% in Blaenau Gwent to 64% in Ceredigion. Blaenau Gwent, Conwy, Caerphilly and Cardiff recorded significantly lower levels of restoration compared with the Welsh average. Conversely, Ceredigion, Neath Port Talbot, Flintshire, The Vale of Glamorgan and Wrexham experienced significantly higher levels of restoration when compared with Wales as a whole.

Local Health Board

The Care Index for Aneurin Bevan was 41%; exhibiting significantly lower levels of restoration when compared with the Welsh average which was 46%. Whilst Abertawe Bro Morgannwg University LHB had the highest Care Index, 52%, and this was significantly higher than the Welsh average. The remaining 5 LHBs had care indices which fell within the average range for Wales.

Care Index - (F/DMF)*100 by LHB and UA within LHBs

Chart 50

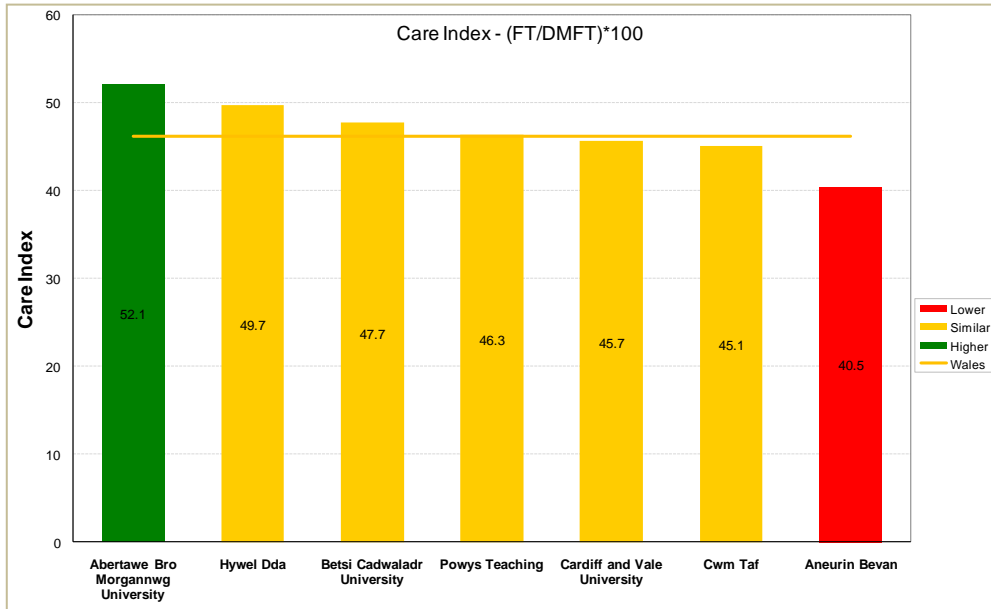


Chart 51

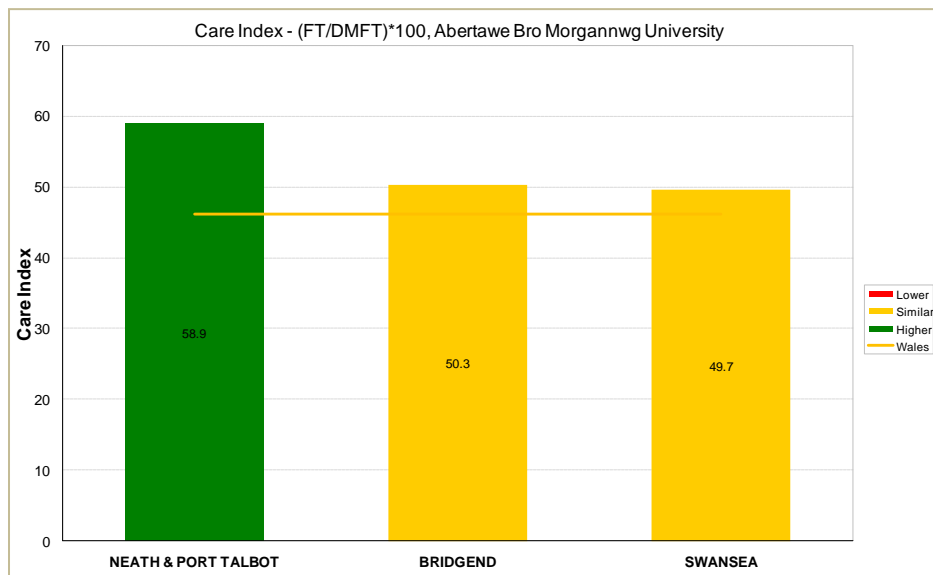
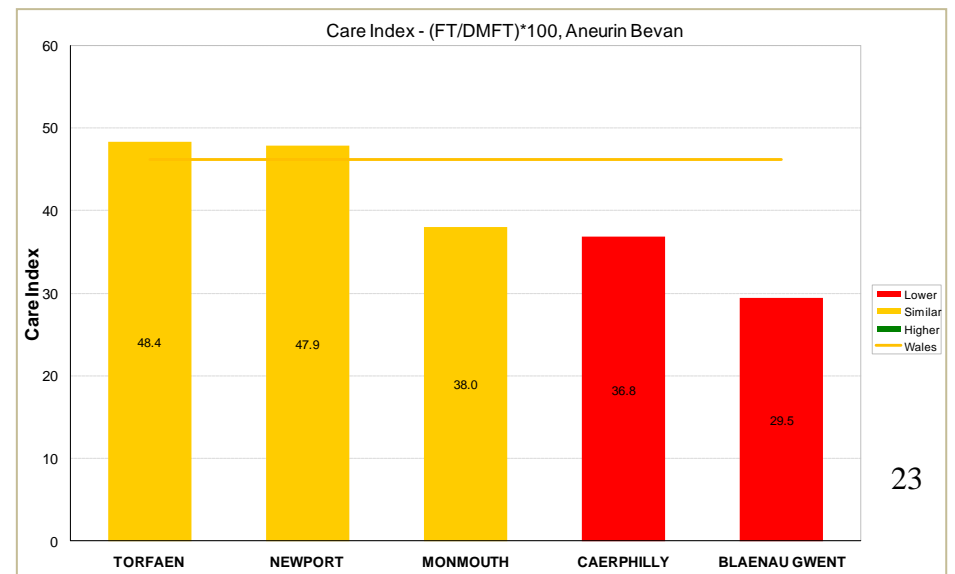


Chart 52



Care Index - (F/DMF)*100 by LHB and UA within LHBs

Chart 53

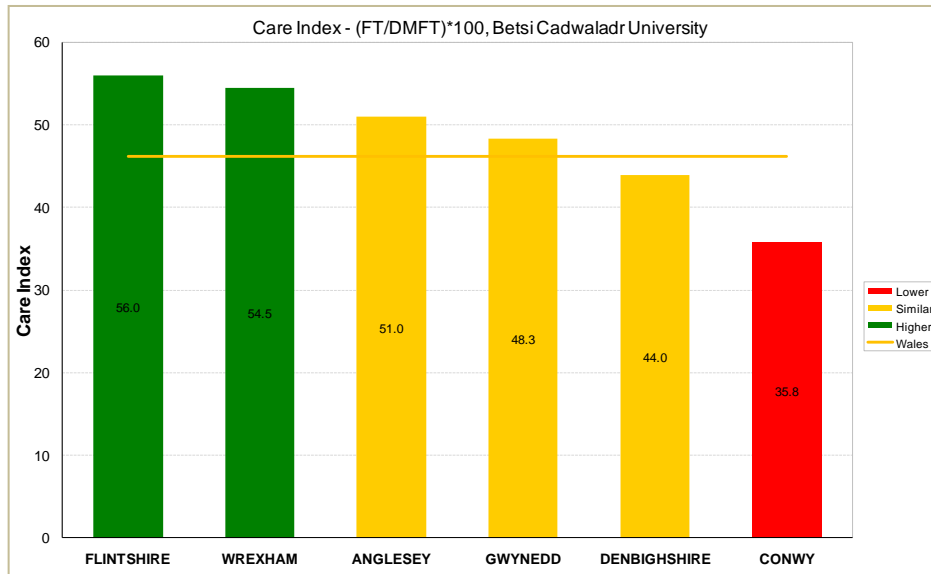


Chart 54

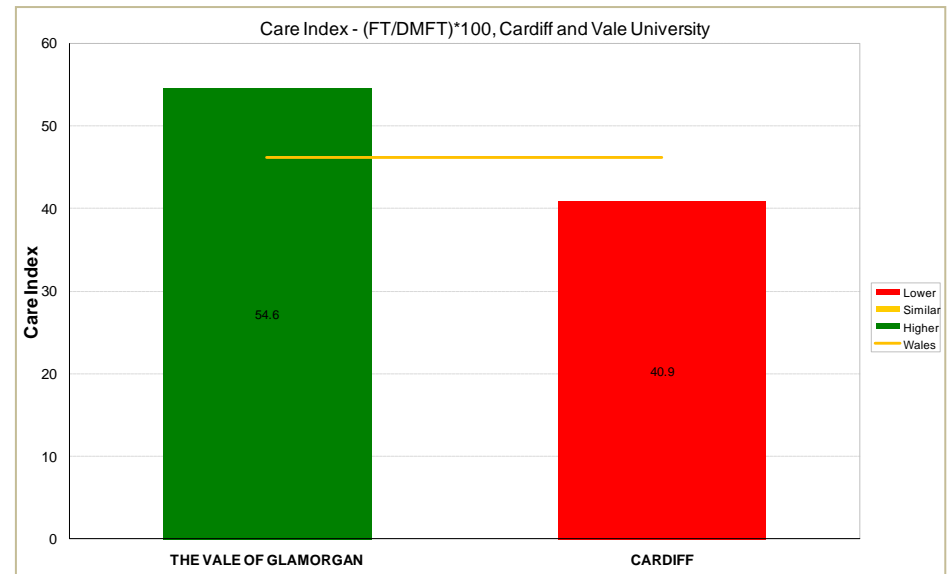


Chart 55

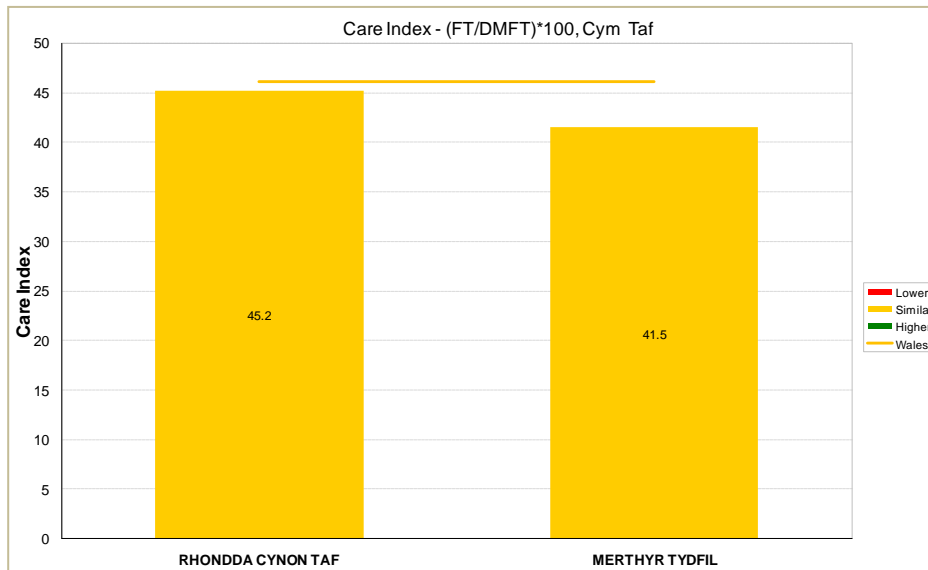
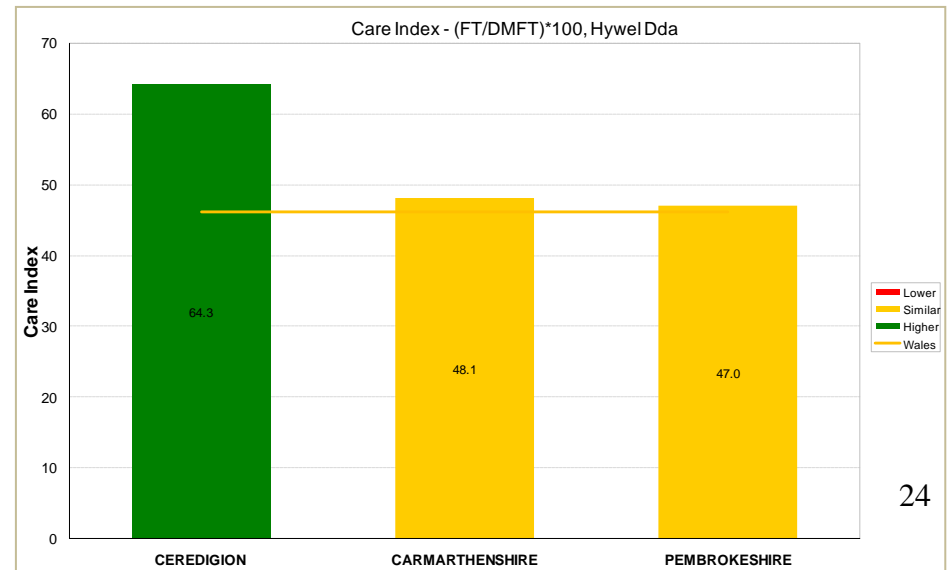


Chart 56



8. Treatment index (M+F)/DMF*100

Map 8

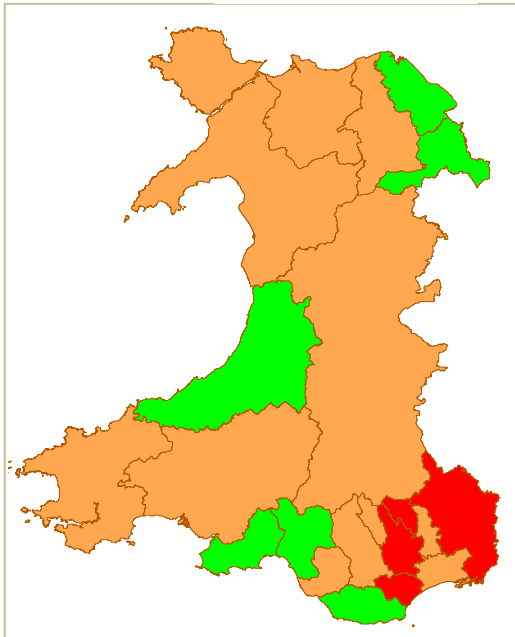
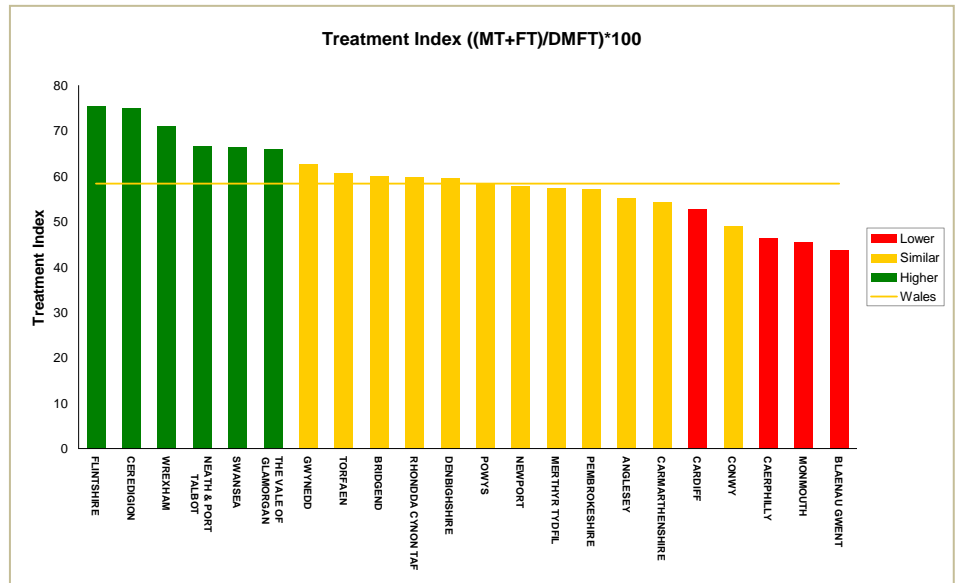


Chart 57



Treatment Index

by Welsh Unitary Authority

Within average range (12)

Significantly higher than Welsh average (6)

Significantly lower than Welsh average (4)

Wales

Map 8 and charts 57-64 show the Treatment Index for twelve year old children surveyed in the winter of 2008/09 $((M+F)/DMF)*100$ by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The Treatment Index expresses the proportion of the caries experience that is missing or has been filled. The Treatment Index for Wales indicates that 58% of the teeth with dentinal caries have been filled or are missing (95% LCI 57%; 95% UCI 60%).

Unitary Authority

The Unitary Authority values for the Treatment Index ranged from 44% in Blaenau Gwent to 75% in Flintshire. Blaenau Gwent, Monmouthshire, Caerphilly, and Cardiff recorded significantly lower treatment indices when compared with the Welsh average. Conversely, Flintshire, Ceredigion, Wrexham, Neath Port Talbot, Swansea and The Vale of Glamorgan experienced significantly higher treatment indices when compared with Wales as a whole.

Local Health Board

The Treatment Indices for Abertawe Bro Morgannwg and Betsi Cadwaladr University LHBs were significantly higher than the Welsh average, with 65% and 62% respectively of the caries experience having been filled or missing. In contrast, Aneurin Bevan exhibited the lowest Treatment Index, with only 51% of the caries being missing or filled; this value was significantly lower than the Welsh average.

Treatment index (M+F)/DMF*100 by LHB and UA within LHBs

Chart 58

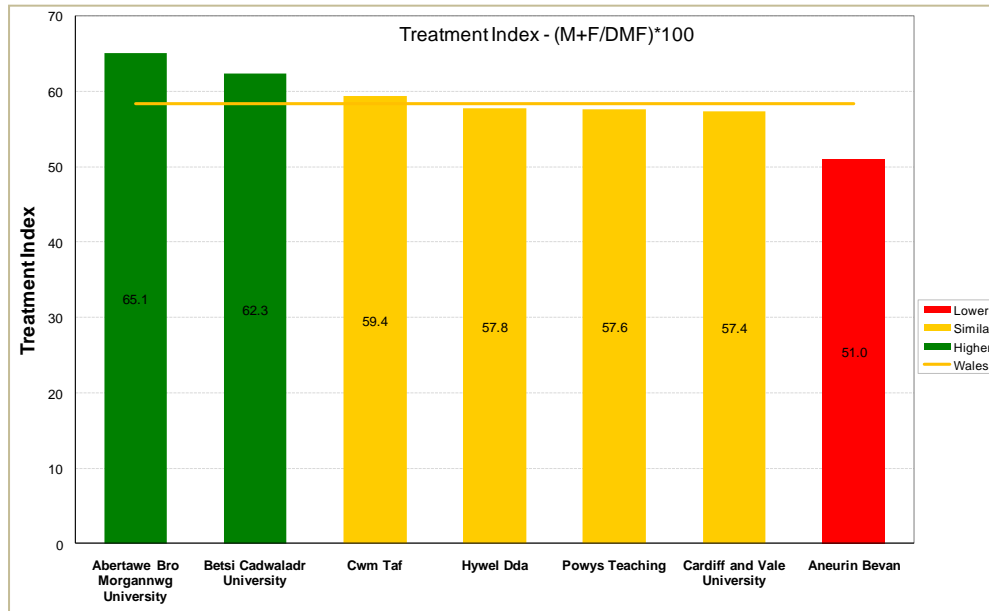


Chart 59

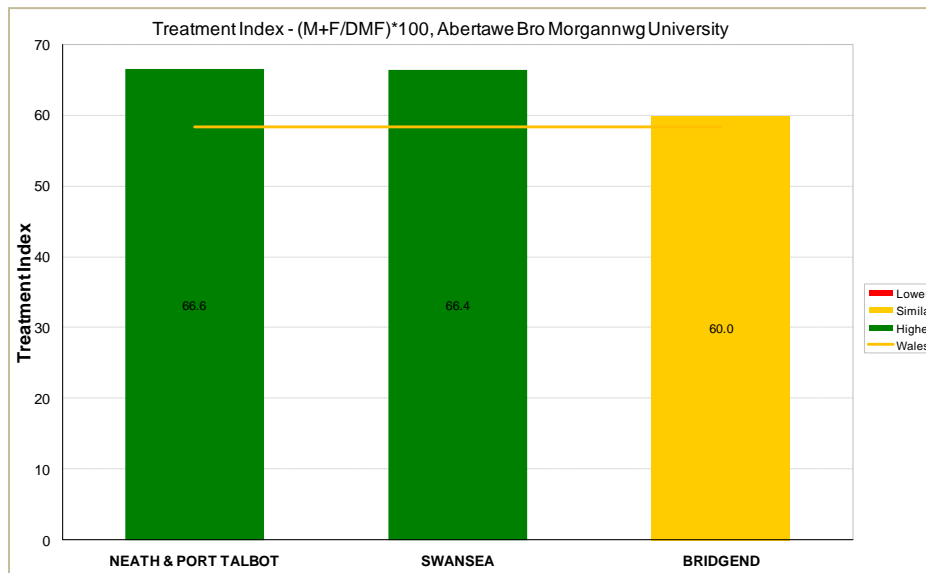
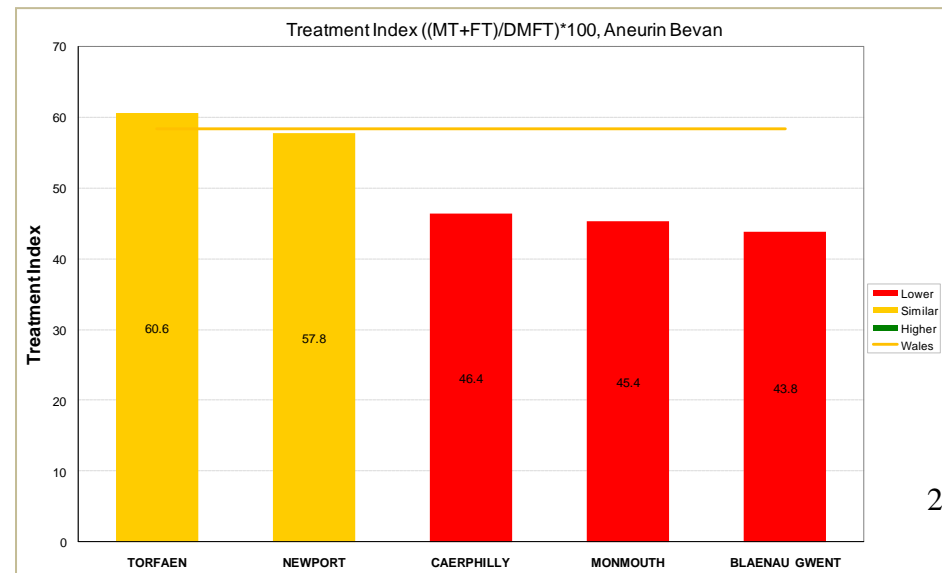


Chart 60



Treatment index (M+F)/DMF*100 by LHB and UA within LHBs

Chart 61

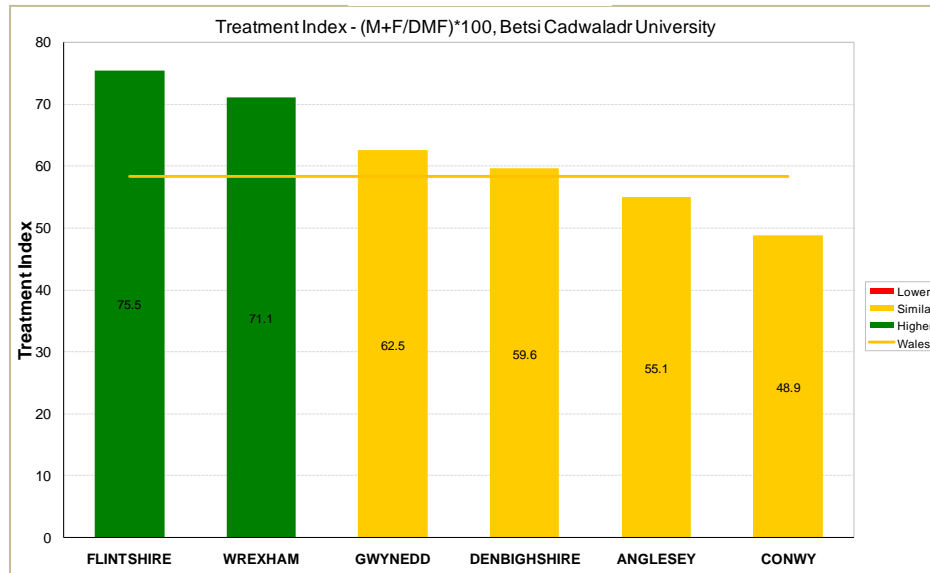


Chart 62

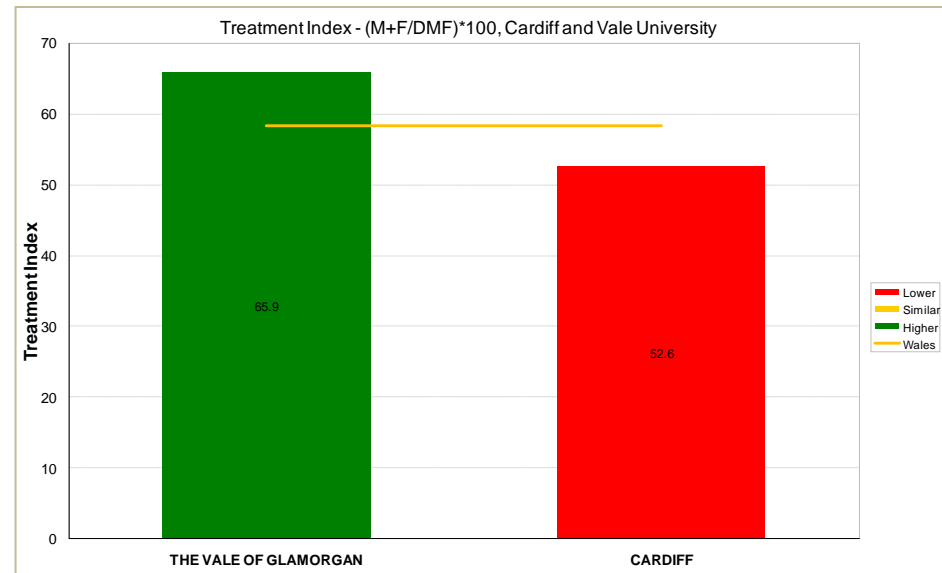


Chart 63

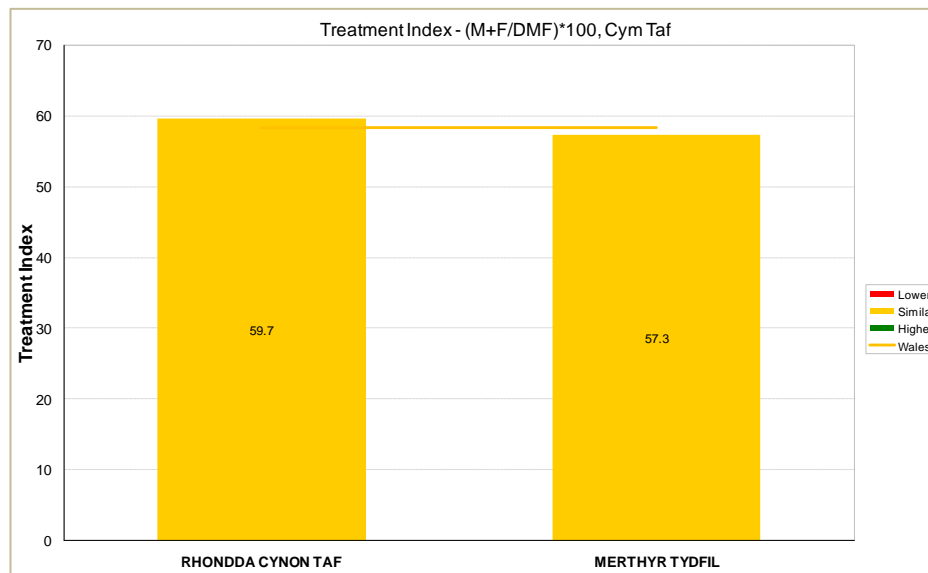
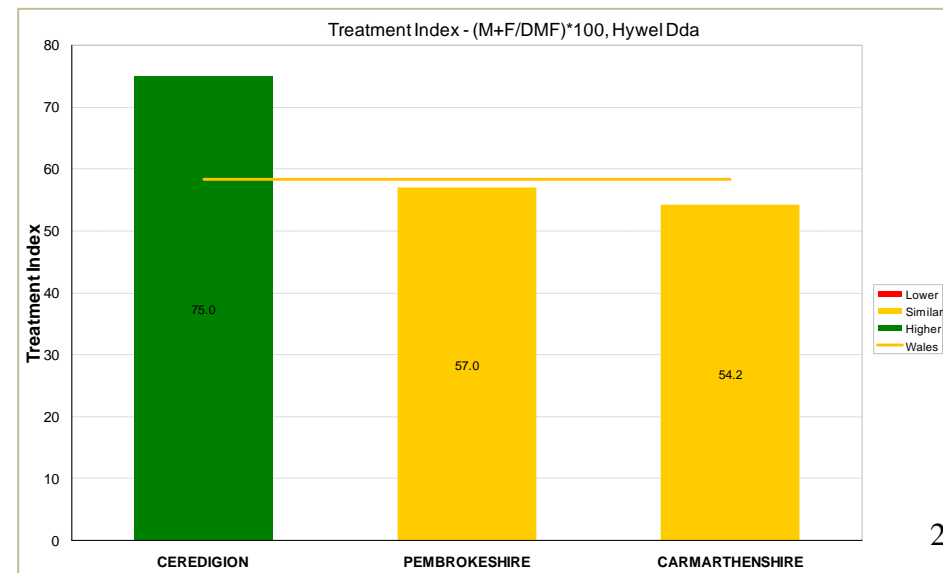


Chart 64



9. Restorative index ($F/(D+F)*100$)

Map 9

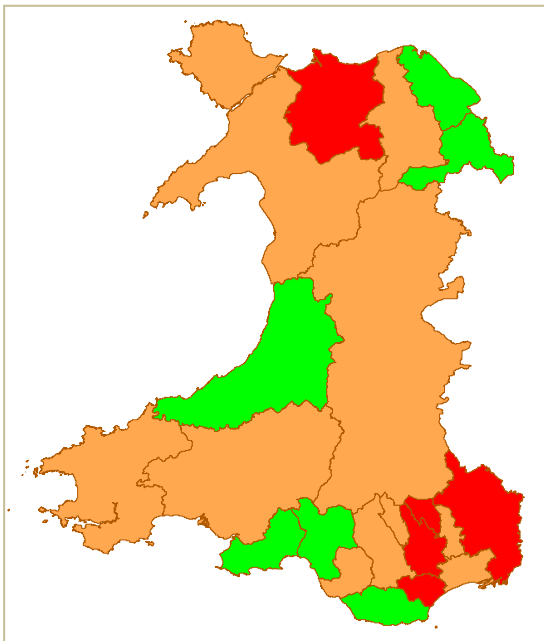
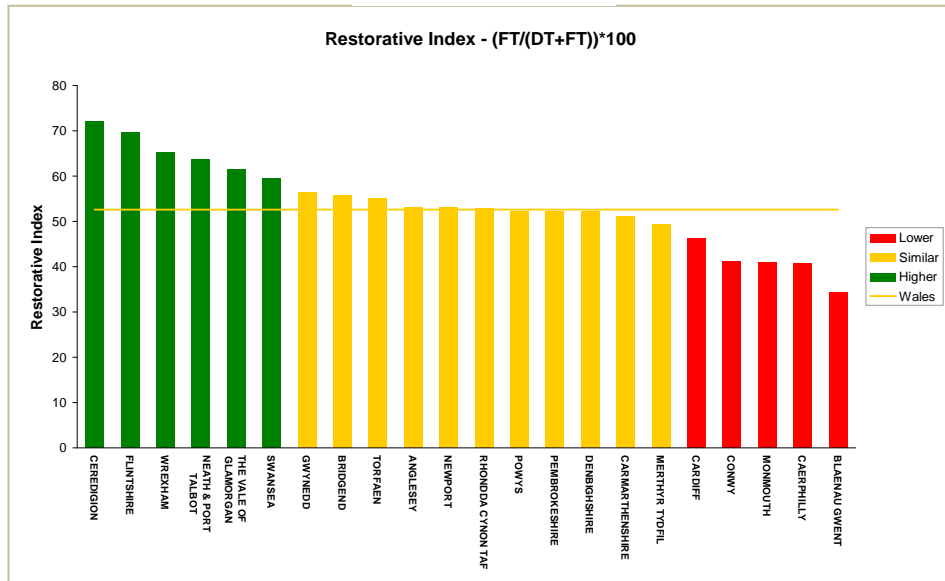


Chart 65



Restorative Index
by Welsh Unitary Authority

- Within average range (11)
- Significantly higher than Welsh average (6)
- Significantly lower than Welsh average (5)

— Wales

Map 9 and charts 65-72 show the Restorative Index for twelve year old children surveyed in the winter of 2008/09 ($F/(D+F)*100$) by unitary authority, by Local Health Board (LHB) and by unitary authority within LHBs. The Restorative Index expresses the proportion of the decayed and filled teeth that have been treated restoratively. The restorative index for Wales indicates that 53% of the teeth which are decayed or filled have been restored (95% LCI 51%; 95% UCI 54%).

Unitary Authority

The Unitary Authority values for the Restorative Index ranged from 34% in Blaenau Gwent to 72% in Ceredigion. Blaenau Gwent, Caerphilly, Monmouthshire, Conwy and Cardiff recorded significantly lower levels of restoration compared with the Welsh average. Conversely, Ceredigion, Flintshire, Wrexham, Neath and Port Talbot, The Vale of Glamorgan and Swansea experienced significantly higher levels of restoration when compared with Wales as a whole.

Local Health Board

The LHB values for the Restorative Index ranged from 45% in Aneurin Bevan to 60% in Abertawe Bro Morgannwg University LHB. The former LHB had a Restorative Index which was significantly lower than the Welsh average and the latter LHB had a Restorative Index which was significantly higher. The remaining five LHBs had restorative Indices which fell within the average range for Wales as a whole.

Restorative index (F/(D+F)*100) by LHB and UA within LHBs

Chart 66

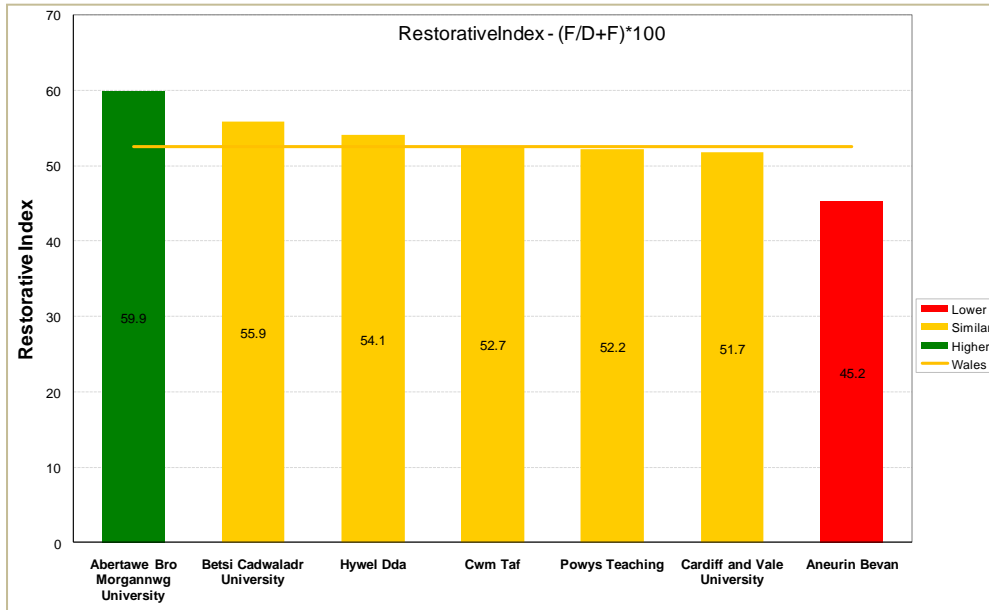


Chart 67

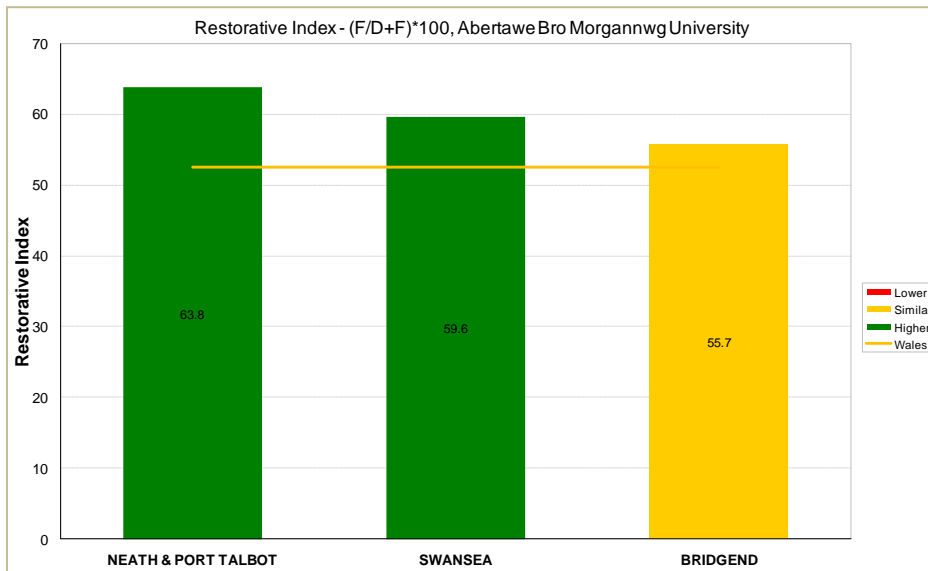
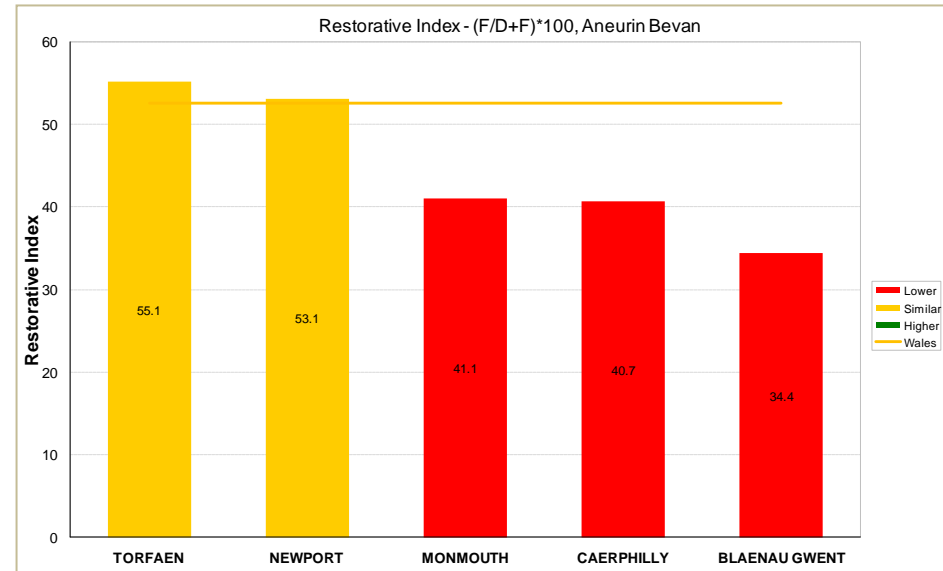


Chart 68



Restorative index (F/(D+F)*100) by LHB and UA within LHBs

Chart 69

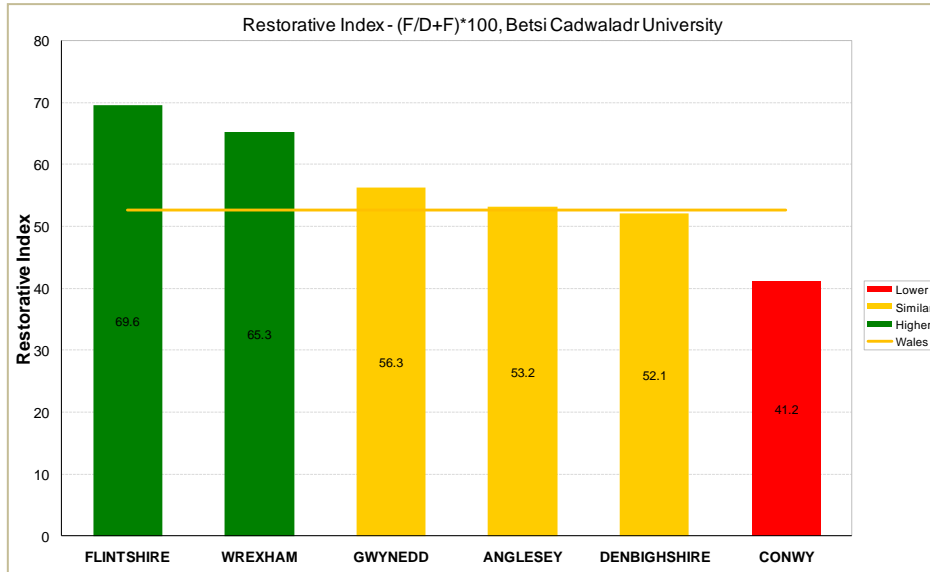


Chart 70

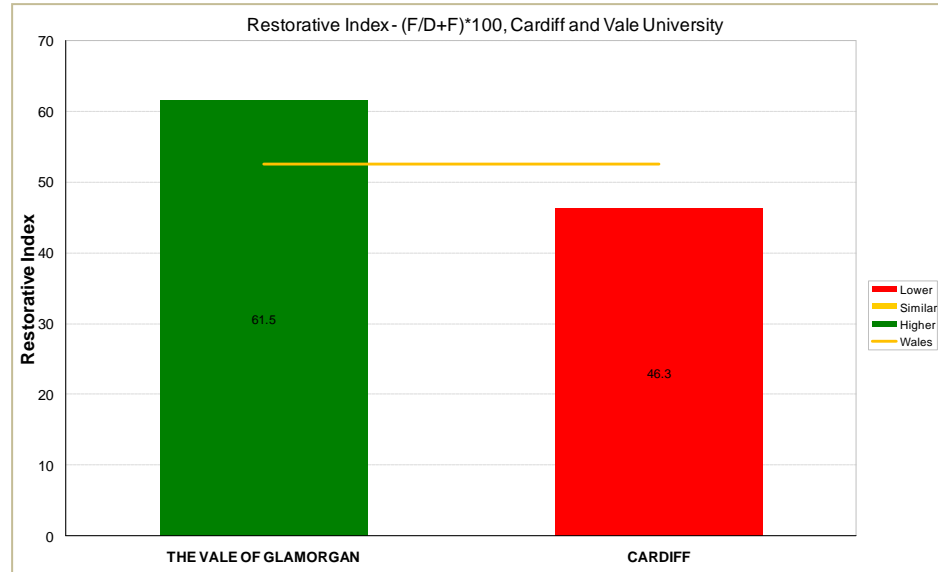


Chart 71

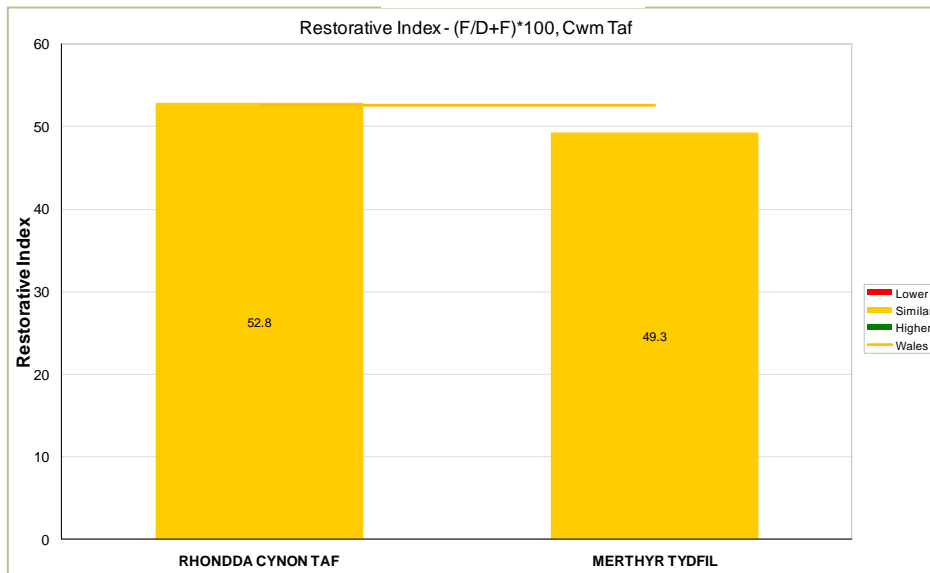
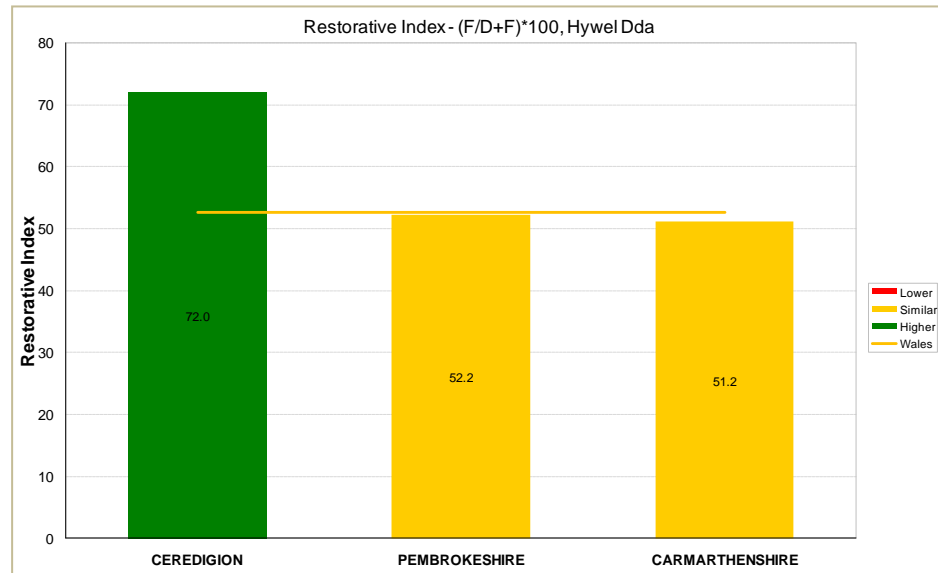


Chart 72



10. Percentage children who have been to the dentist within the previous year

Map 10

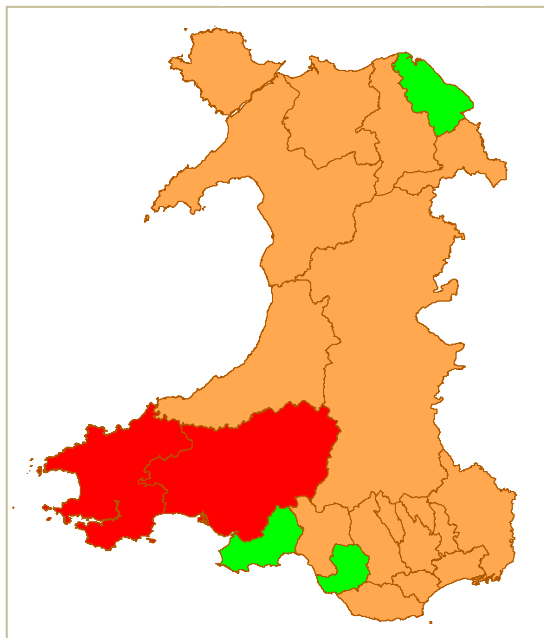
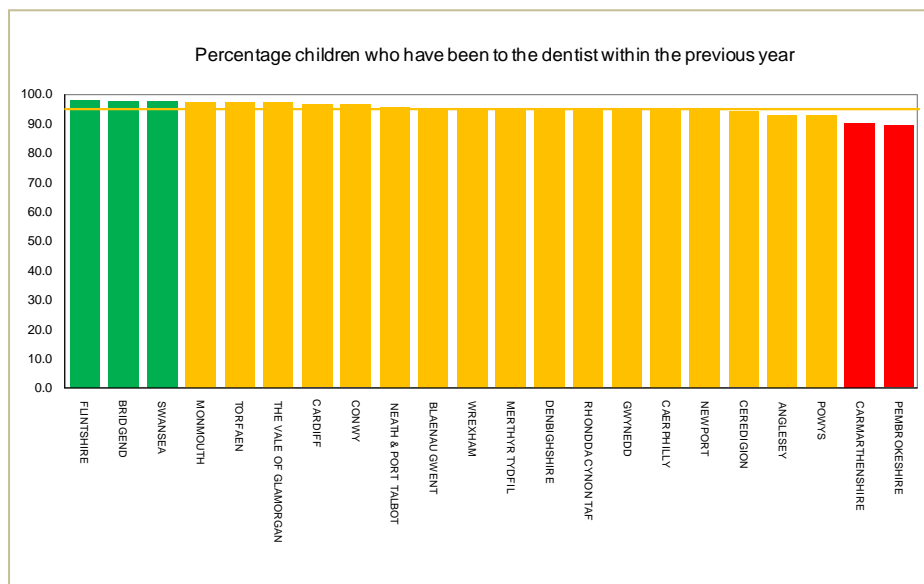


Chart 73



Map 10 and charts 73-80 show the percentage of twelve year old children who stated that they had been to the dentist within the previous year. Reported attendance rates were very good for the whole of Wales, the percentage children who had been to the dentist within the previous year was 95.1% (95% LCI 94.6%; 95% UCI 95.7%).

Unitary Authority

The Unitary Authority values for the Restorative Index ranged from 89.3% in Pembrokeshire to 98.2% in Flintshire. Pembrokeshire and Carmarthenshire recorded significantly lower levels of attendance within the previous year when compared with the Welsh average. Conversely, Flintshire, Bridgend and Swansea experienced significantly higher levels of attendance when compared with Wales as a whole.

Local Health Board

The LHB values for reported dental attendance during the previous year ranged from 90.6% in Hywel Dda University LHB to 97% in Abertawe Bro Morgannwg University LHB. The former LHB had reported attendance levels which were significantly lower than the Welsh average. The remaining six LHBs had attendance levels which fell within the average range for Wales as a whole.

Percentage children who have been to the dentist within the previous year by LHB and UA within LHBs

Chart 74

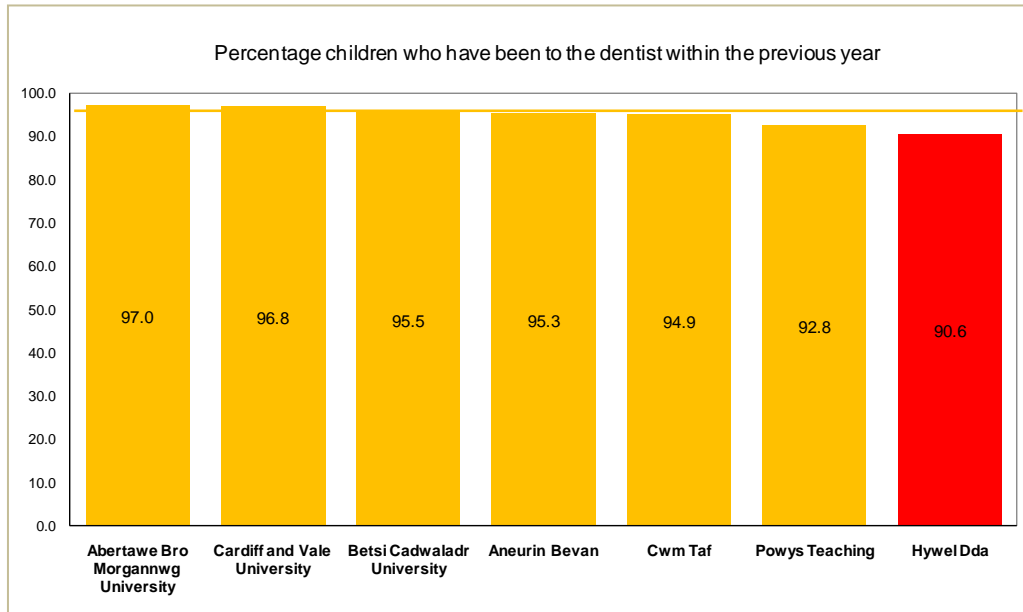


Chart 75

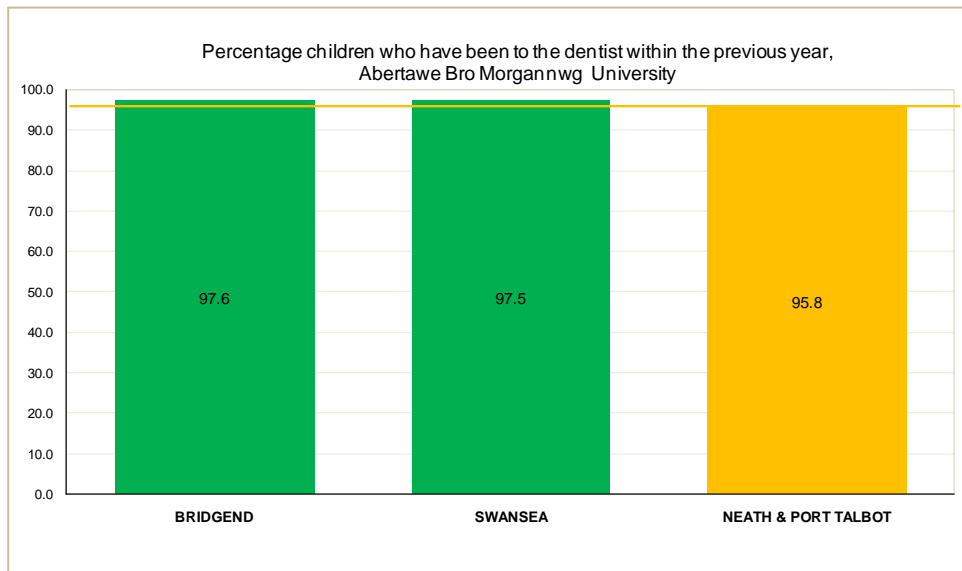
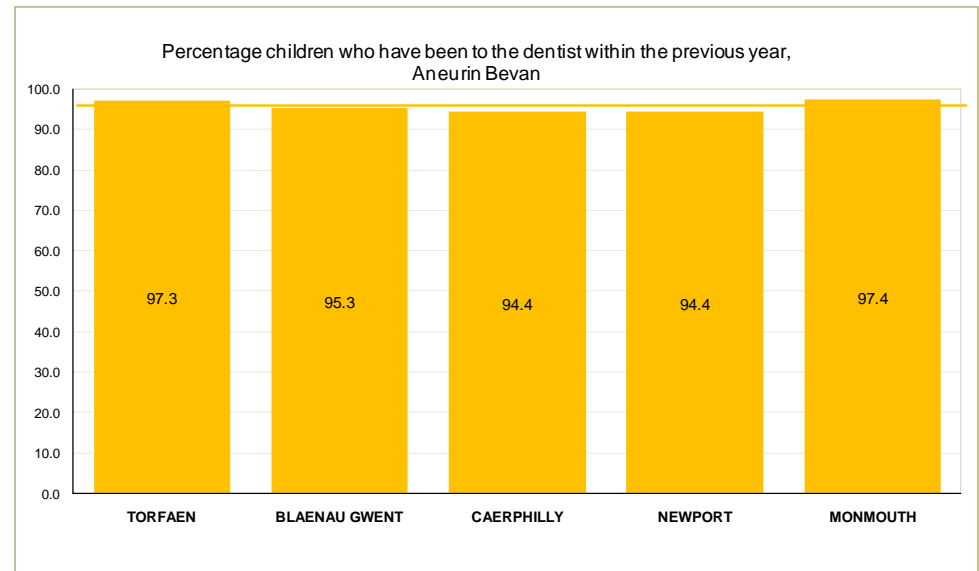


Chart 76



Percentage children who have been to the dentist within the previous year by LHB and UA within LHBs

Chart 77

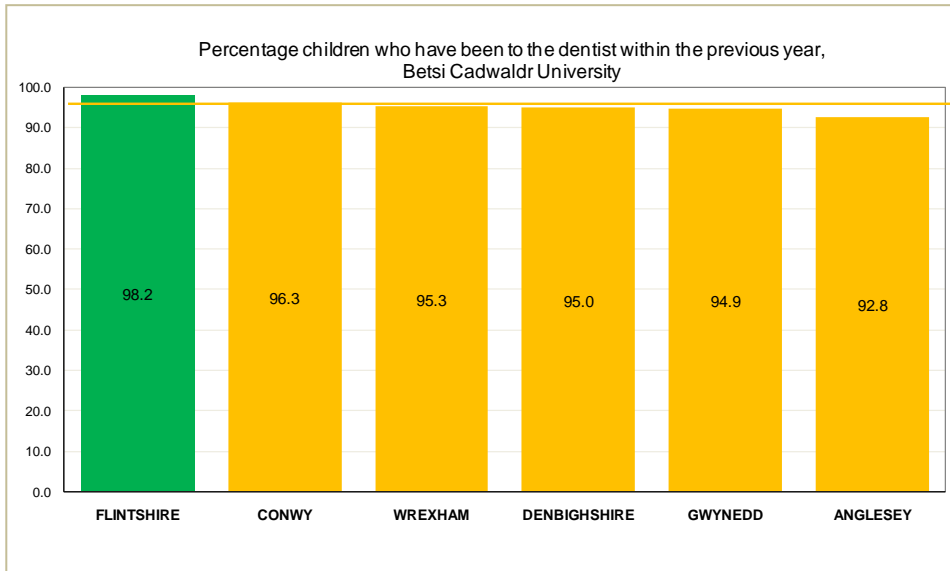


Chart 78

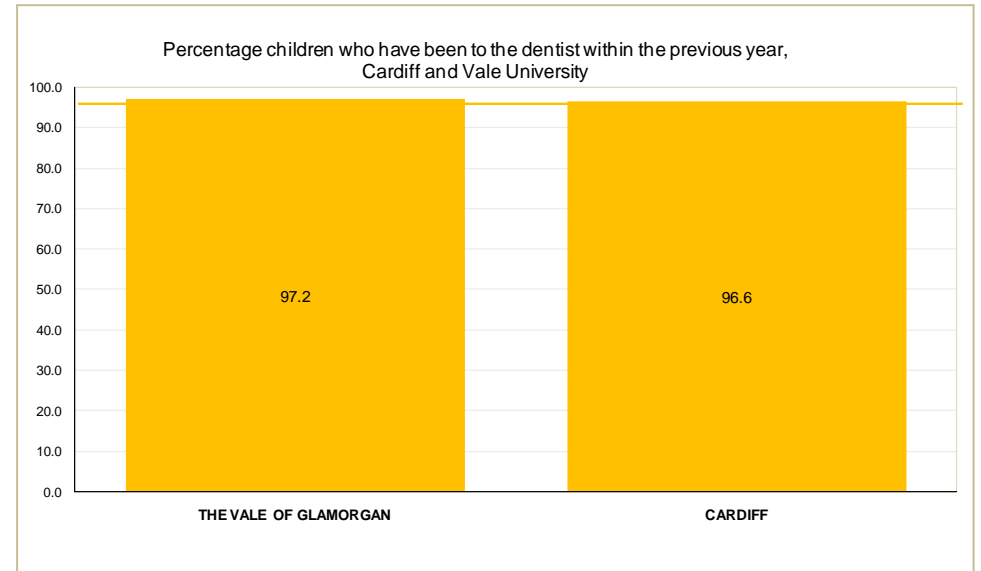


Chart 79

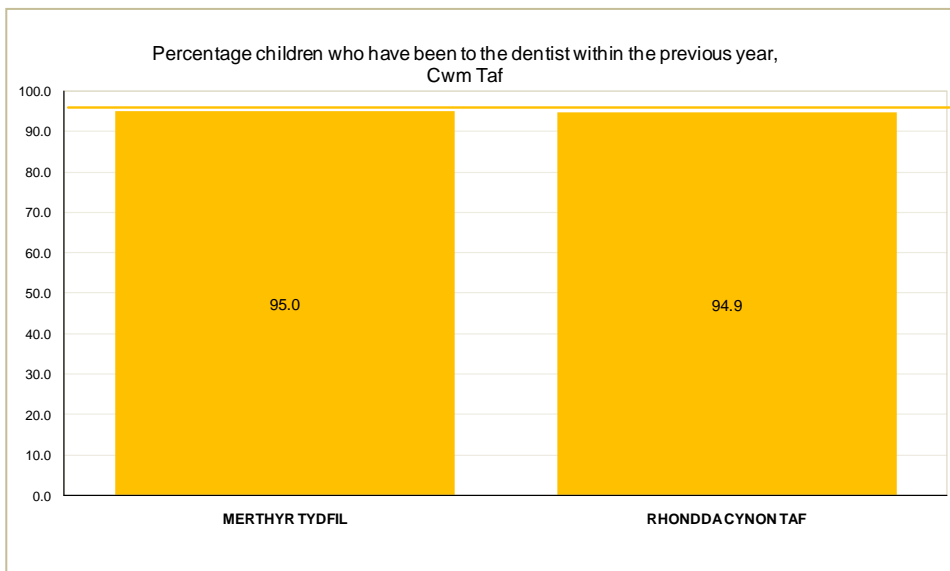
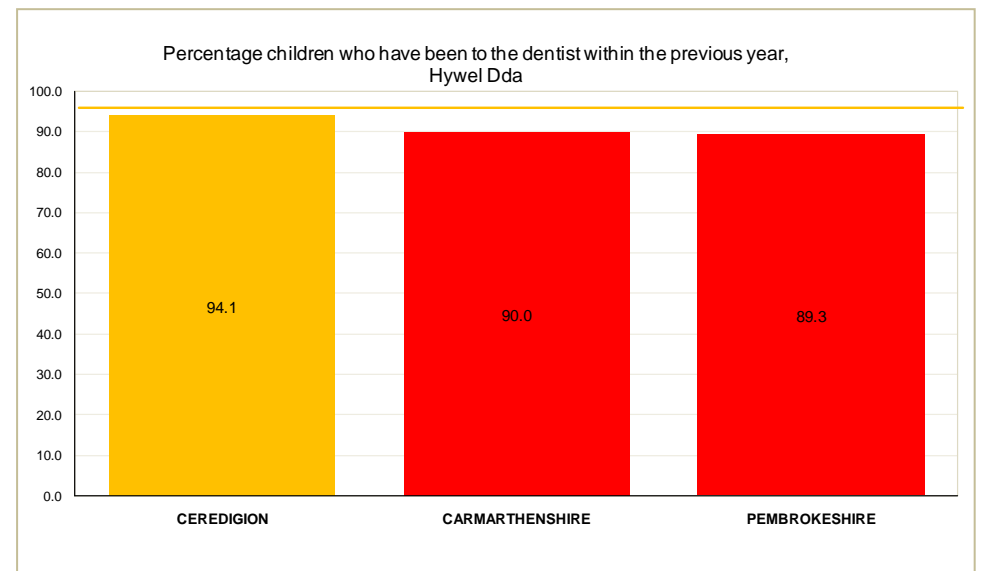


Chart 80



11. A comparison of data from the 2008-09 and 2004-05 surveys of 12 year olds

(i) Average number of teeth decayed, missing or filled (mean DMFT) 12 year olds - 2004-05 & 2008-09

In this section the average number of teeth decayed, missing or filled (mean DMFT) for Wales, LHBs and UAs, for two surveys of 12 year olds (school year 7) conducted in 2004-05 and 2008-09 are compared. Across Wales, 6,749 were examined during the former survey and 5,808 children were examined in the latter survey. Both surveys took place between September and April.

The mean DMFT for 12 year olds for the whole of Wales as recorded by the 2008-09 survey was 0.98 (95%LCI: 0.94 – 95%UCI: 1.02) which was statistically lower than the mean DMFT recorded by the 2004-05 survey which was 1.09 (95%LCI: 1.05 – 95%UCI: 1.13). This is indicative of an improvement in the mean DMFT for Welsh 12 year olds (Figure 1)¹.

Abertawe Bro Morgannwg University Health Board was the only LHB to display a statistically significant improvement in caries experience over the period; mean DMFT was 1.17 (95%LCI: 1.08 – 95%UCI: 1.26) in 2004-05 compared with 0.87 (95%LCI: 0.79 – 95%UCI: 0.95) in 2008-09. This was a reflection of the average DMFT levels in ABM's constituent UAs, all three displayed statistically significant improvements in DMFT between the two surveys (Figure 2.2).

Hywel Dda Health Board displayed a reduction in caries levels between the survey years, mean DMFT was 0.99 (95%LCI: 0.893 – 95%UCI: 1.0) in 2004-05 compared with 0.80 (95%LCI: 0.70 – 95%UCI: 0.894) in 2008-09. But because the 95% confidence intervals just overlap this difference was not statistically significant (Figure 1).

All the unitary authorities in Hywel Dda displayed reductions in mean DMFT between the surveys, but none of these were statistically significant. It is important to note, that Ceredigion displayed a reduction of approximately half a tooth; the mean DMFT was 1.08 (95%LCI: 0.78 – 95%UCI: 1.39) in 2004-05 compared with 0.61 (95%LCI: 0.42 – 95%UCI: 0.80) in 2008-09; but the 95% confidence intervals just overlapped – so it is not possible to judge whether this is a true reduction (Figure 2.6).

The caries levels for both Aneurin Bevan and Cwm Taf Health Boards remained consistent across the two surveys. The mean DMFT for the former LHB was 1.28 in 2004-05 compared with 1.23 in 2008-09 and for the latter LHB it was 1.20 in 2004-05 compared with 1.18 in 2008-09 (Figure 1).

Within Aneurin Bevan, the UAs displayed some changes in DMFT levels, for example both Blaenau Gwent and Torfaen recorded reductions in DMFT and Monmouth recorded an increase. However these changes were not statistically significant.

In Cwm Taf, Merthyr Tydfil recorded a reduction in mean DMFT between 2004-05 (1.22, 95%LCI: 0.96 95%UCI: 1.48) and 2008-09 (0.87, 95%LCI: 0.64 95%UCI: 1.11), but again this was not statistically significant (Figure 2.5).

Both Betsi Cadwaladr University and Powys teaching Health Boards displayed reductions in caries levels but these were not statistically significant improvements as evidenced by the 95% confidence intervals.

¹ Comparisons are made for LHBs and UAs across the two surveys. Differences are viewed as statistically significant if the 95% confidence intervals associated with the means do not overlap.

Figure 1 Local Health Boards and Wales, mean DMFT 12 year olds, 2004-05 and 2008-09

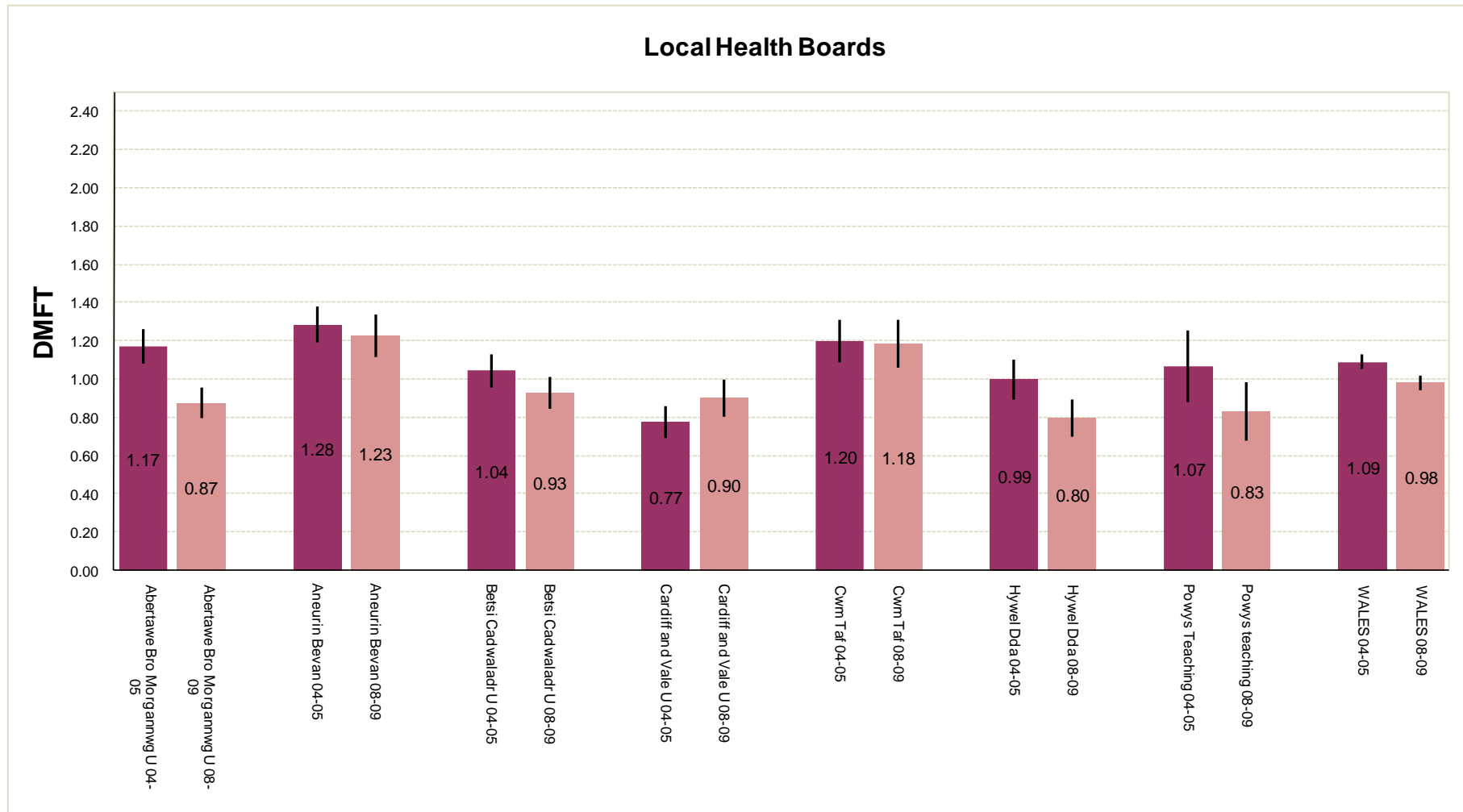


Figure 2 Unitary Authority mean values for DMFT within LHBs, 12 year olds (2004-05 & 2008-09) compared with Wales

Fig 2.1

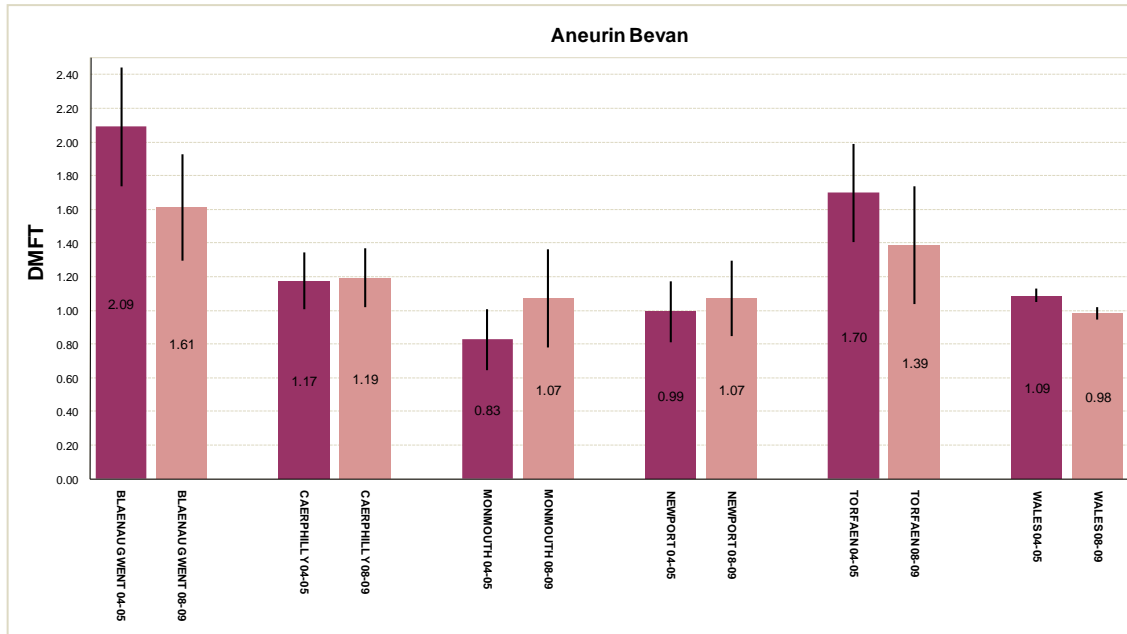


Fig 2.2

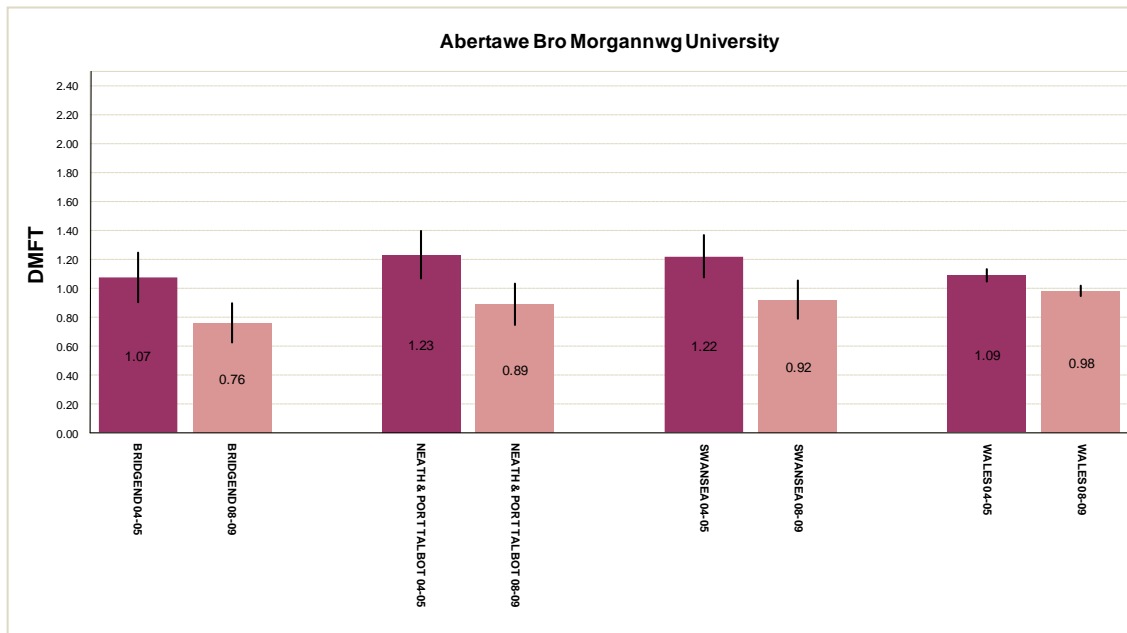


Figure 2 Unitary Authority mean values for DMFT within LHBs, 12 year olds (2004-05 & 2008-09) compared with Wales

Fig. 2.3

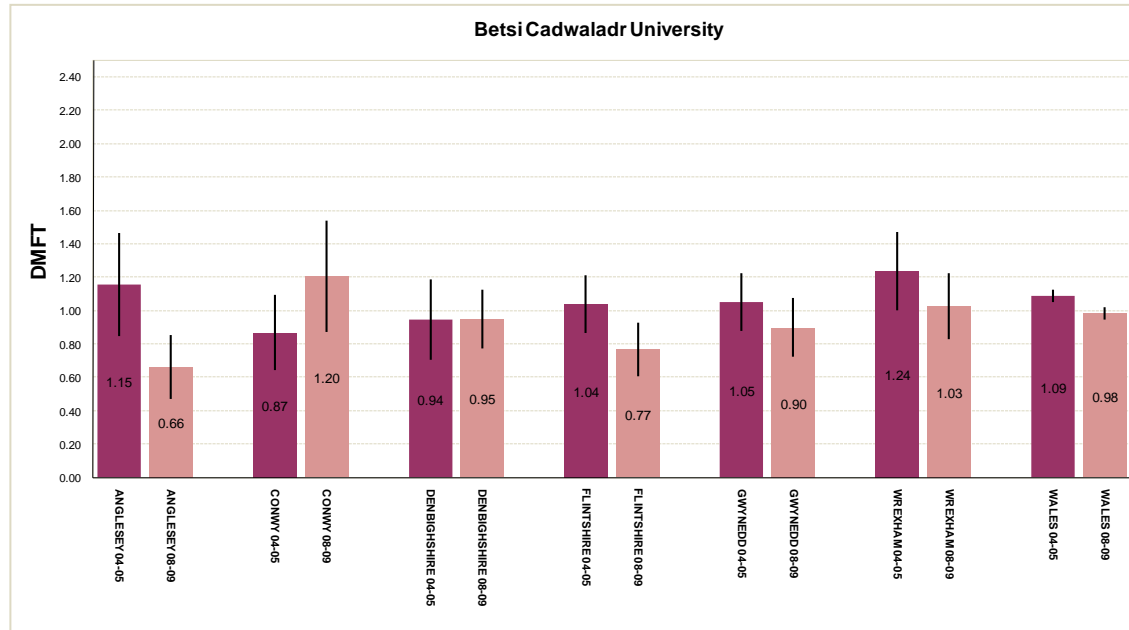


Fig 2.4

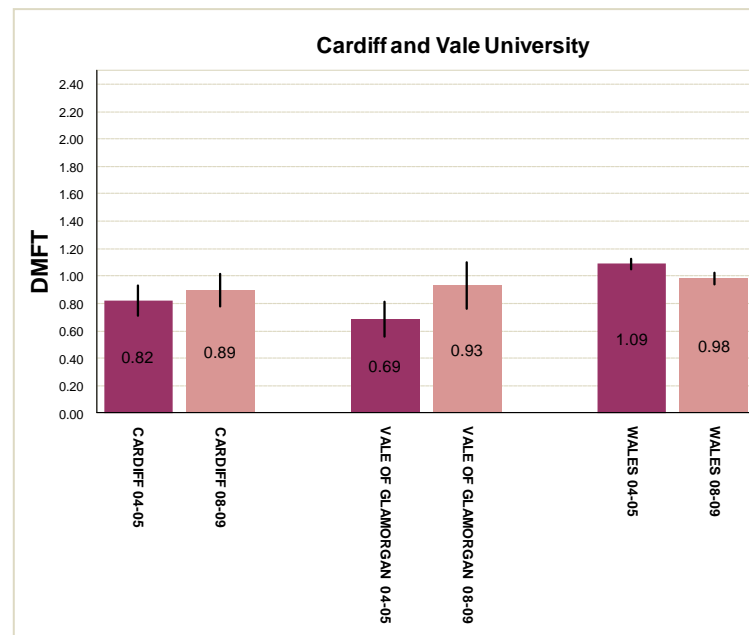


Figure 2 Unitary Authority mean values for DMFT within LHBs, 12 year olds (2004-05 & 2008-09) compared with Wales

Fig. 2.5

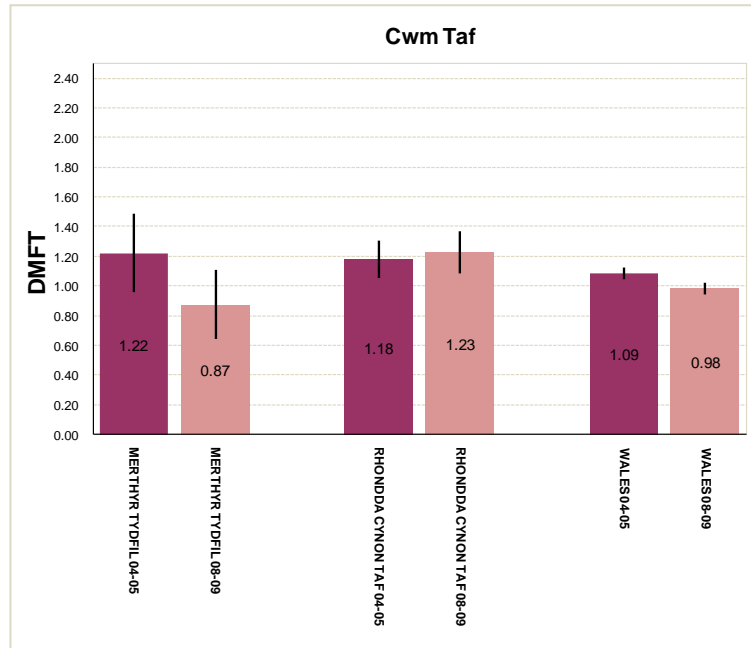


Fig. 2.6

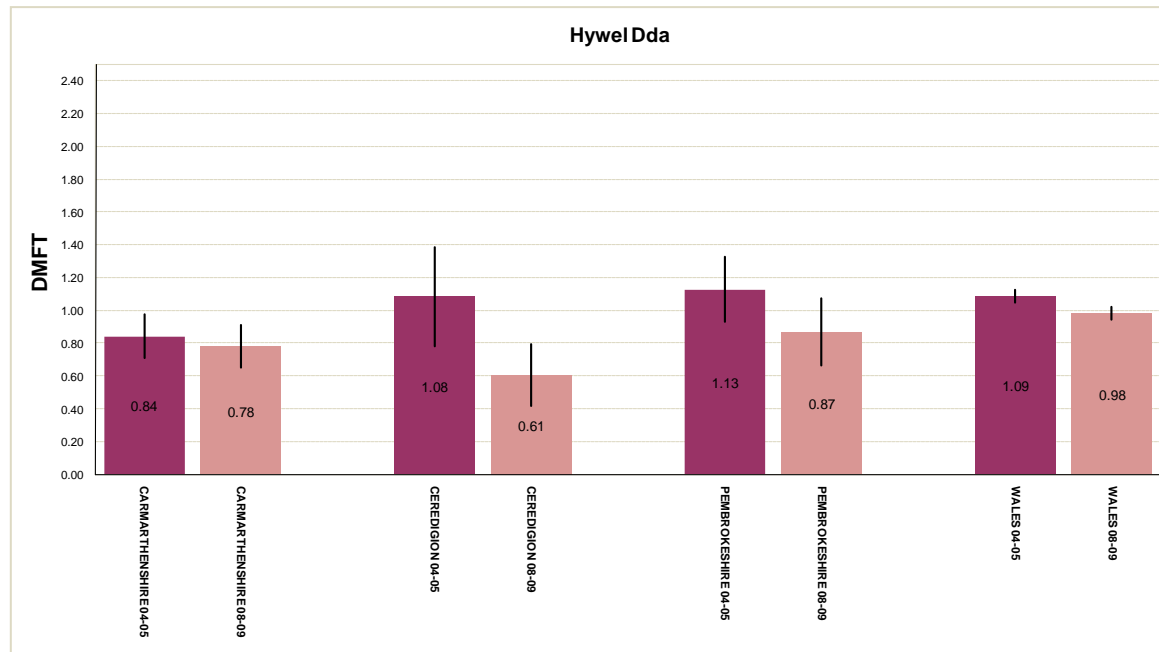
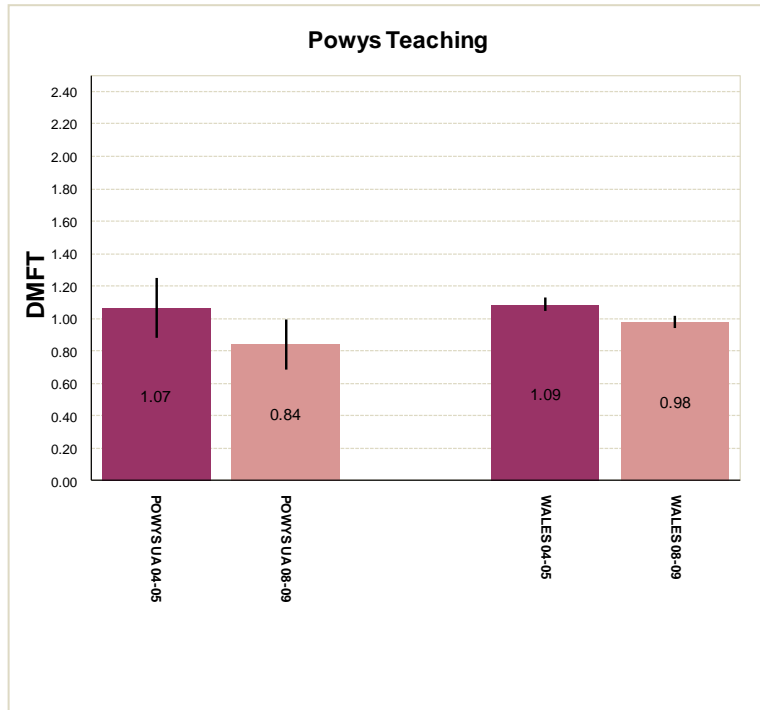


Figure 2 Unitary Authority mean values for DMFT within LHBs, 12 year olds (2004-05 & 2008-09) compared with Wales

Fig. 2.7



Within Betsi Cadwaladr University LHB, Anglesey unitary authority displayed a notable reduction in caries experience over the period; mean DMFT was 1.15 (95%LCI: 0.84 – 95%UCI: 1.47) in 2004-05 compared with 0.66 (95%LCI: 0.47 – 95%UCI: 0.85) in 2008-09. But, this difference was not statistically significant. This reduction is uncharacteristic for the Unitary Authority and needs to be monitored in future surveys. Flintshire, Gwynedd and Wrexham all displayed small reductions and Conwy experienced a small increase in DMFT between the surveys but these were not statistically significant (Figure 2.3).

It is important to note, that there are 2 values for DMFT data variables for Powys UA and then for Powys Teaching LHB. Data is weighted using the BASCD protocols and this weights according to the numbers of children examined relative to the childhood population size for the geographical boundaries being studied. This is why the values for Powys UA which is weighted according to the demography of 22 UAs is very slightly different to the values for Powys teaching LHB which is weighted according to the demography of 7 LHBs (Table 1).

Table 1 Mean DMFT for Powys UA compared with Powys Teaching LHB, 12 year olds 2008-09

	Mean DMFT	95% LCI	95% UCI
Powys UA	0.84	0.69	1.00
Powys Teaching LHB	0.83	0.68	0.98

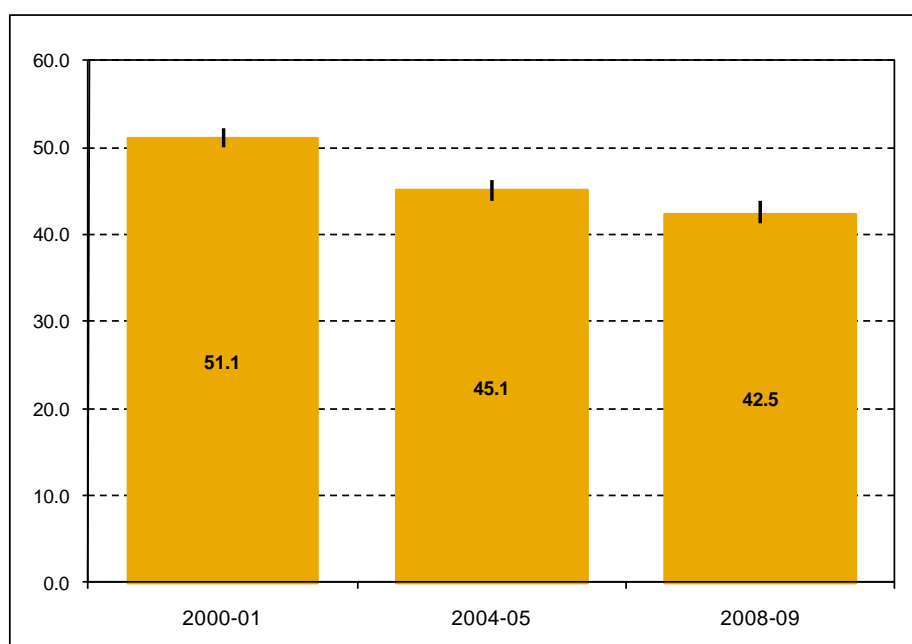
Powys Teaching LHB displayed a small, but not statistically significant, reduction in mean DMFT between (1.07 – 95%LCI: 0.88 95%UCI: 1.25) 2004-05 and (0.83 – 95%LCI: 0.68 95%UCI:0.98) 2008-09.

Cardiff and Vale University LHB displayed a small increase in DMFT between the two surveys; in 2004-05 it was 0.77 (95%LCI: 0.69 – 95%UCI: 0.86) compared with 0.90 (95%LCI: 0.80 – 95%UCI: 1.00) in 2008-09 (Figure 1). Reflecting small but not statistically significant increases in the respective unitary authority values (Figure 2.4).

(ii) CARIES PREVALENCE - Percentage of children with teeth decayed, missing or filled

Across Wales, the percentage of children with teeth decayed, missing due to caries or filled (%DMFT>0) has continued to fall, from 51.1% in 2001, to 45.1% in 2005 and it now stands at 42.5%. This represents a significant 8.6% reduction in the prevalence of caries experience in Welsh 12 year olds in the past eight years.

Figure 3 The percentage of children with teeth decayed, missing due to caries or filled (%DMFT>0) in Wales for surveys 2001-2008



	WALES		
	%DMFT>0	LCI	UCI
2000-01	51.10	49.96	52.24
2004-05	45.13	43.94	46.32
2008-09	42.50	41.20	43.80

Caries prevalence has also fallen for Welsh unitary authorities; in 2004-05 for example, the %DMFT>0 ranged from 34.6% in the Vale of Glamorgan to 69.6% in Blaenau Gwent² whereas in 2008-09 it ranged from 31.0% in Ceredigion to 59.8% in Blaenau Gwent (Chart 33).

² Dental Epidemiological Survey of rising 12 year old children in Wales 2004/05 - summary report, WOHIU <http://www.cardiff.ac.uk/dentl/research/themes/appliedclinicalresearch/epidemiology/oralhealth/index.html>

12. COMPARISON WITH ENGLAND

As in previous years the average number of decayed, missing due to caries and filled teeth (mean DMFT) and the percentage of children with caries experience (%DMFT>0) was lower in England when compared with Wales. Furthermore, these differences were statistically different (Figures 4.1 and 4.2).

Figure 4 Comparison of England and Wales for 2007-08

Figure 4.1 Average number of teeth decayed, missing or filled (mean DMFT)

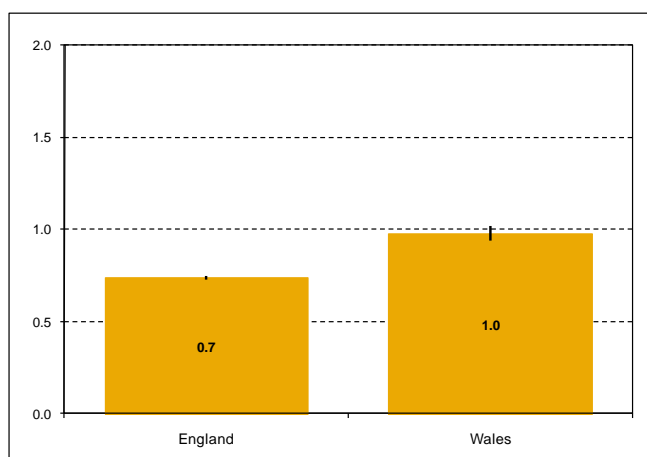
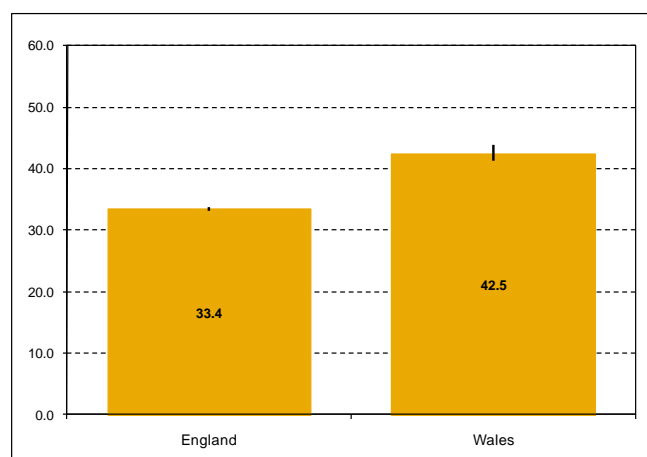


Figure 4.2 Percentage of children with teeth decayed, missing or filled (%DMFT>0)



The average DMFT was 0.74 (95% Lower Confidence Interval, 0.73; 95% Upper Confidence Interval, 0.75) in England compared with 0.98 in Wales (95%LCI 0.94; 95% UCI, 1.02). The prevalence of caries was 33.4% (95% LCI 33.1; 95%UCI 33.7%) in England compared with 42.5% in Wales (95% LCI 41.2; 95%UCI 43.8%).

Table 2 A comparison of the average number of teeth decayed, missing or filled (mean DMFT) in Welsh Health Boards compared with the best and worst PCTs and SHAs in England

	Mean DMFT	Number of times worse than:			
		Best PCT - Southwark 0.23	Worst PCT - Aston Leigh & Wigan 1.48	Best SHA - South East Coast 0.48	Worst SHA - Yorkshire & the Humber 1.07
Hywel Dda	0.80	3.48	0.54	1.13	0.51
Powys Teaching	0.83	3.61	0.56	1.17	0.52
Abertawe Bro Morgannwg University	0.87	3.78	0.59	1.22	0.55
Cardiff and Vale University	0.90	3.91	0.61	1.27	0.57
Betsi Cadwaladr University	0.93	4.04	0.63	1.31	0.59
CwmTaf	1.18	5.13	0.80	1.66	0.75
Aneurin Bevan	1.23	5.35	0.83	1.73	0.78
WALES	0.98	4.26	0.66	1.38	0.62

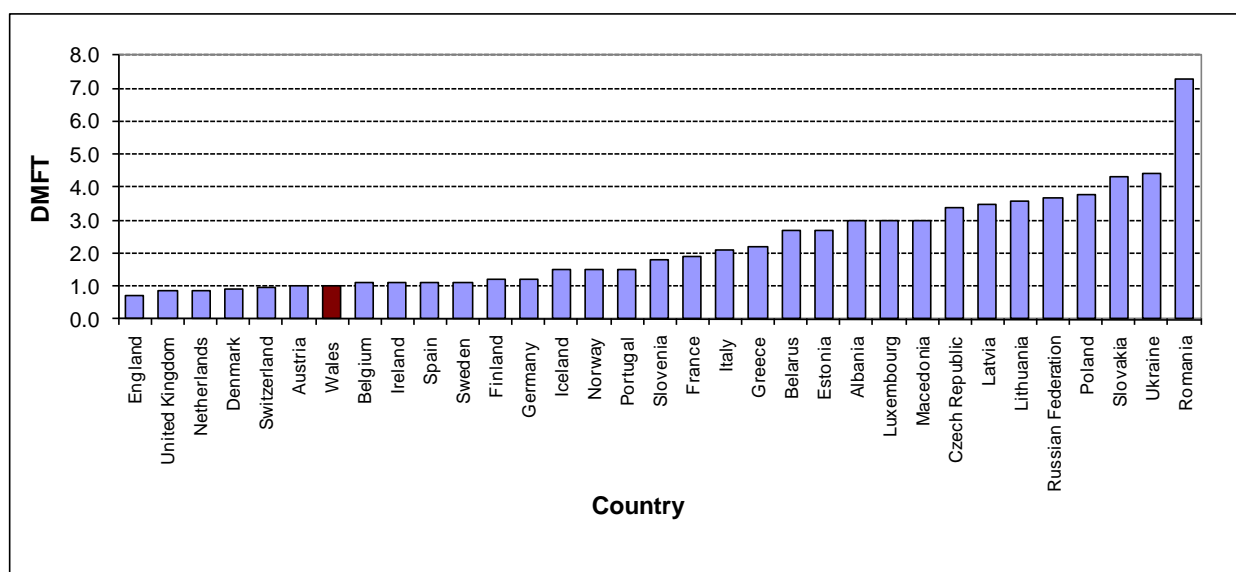
When comparing Welsh Health Boards with the best PCT in England; Hywel Dda HB has an average DMFT which is approximately 3 ½ times worse than Southwark PCT and Cwm Taf HB has an average DMFT which is over 5 times worse. However, Aston Leigh and Wigan, the PCT with the worst average caries experience (1.48) had a DMFT which was worse than all the Welsh LHBs (Table 2). Comparisons of Welsh HBs and English Strategic Health Authorities are also presented.

13. COMPARISON WITH EUROPE

It is acknowledged that the oral health of Welsh 12 year olds is worse than that of English 12 year olds and that in some areas of Wales caries experience is higher than the average experience. However, it is important to note that both England and Wales have good oral health in 12 year olds when compared with the rest of Europe.

Wales with an average of one decayed, missing due to caries or filled tooth (mean DMFT) for 12 year olds, ranks 7th out of 33 European countries. England ranks 1st with an average DMFT of 0.74 and Romania ranks 33rd with an average DMFT of 7.3.

Figure 5 Average levels of tooth decay in 12 year old children in Europe



Source: WHO Oral Health Country/Area Profile programme