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Dental Public Health Team

CHILD DENTAL GENERAL ANAESTHETICS IN WALES

Authors: Maria Morgan

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Purpose and Summary of Document:

The aim of this work is to determine an overall figure for general anaesthesia (GA) dental procedures carried out on children aged 0-17 in Wales during 2016-17 and to compare this with data collected since 2011-12. This information assists the Chief Dental Officer in monitoring GA provision and efforts to ensure it is used appropriately.

Work Plan reference:

Dental Public Health Team Work plan

1 Child Dental General Anaesthetics in Wales

Background

The 2011 inquiry into Children's Oral Health by the National Assembly for Wales Children and Young People's Committee recommended that:

The Welsh Government should ensure that data on the number of general anaesthetics administered to children and young people for dental work in Wales is collated and reported as part of the monitoring of Designed to Smile.

A written response by Welsh Government to the Committee agreed with this recommendation, acknowledging that:

This may be a useful indicator of the success of Designed to Smile but it is important to collect these data on an all-Wales basis in a robust standardised way.

As a result the Welsh Government's National Oral Health Plan prioritised this action:

Following recommendations by the Children and Young People Committee, the Welsh Government will develop and publish data about the number of children receiving dental treatment under GA each year. ([NOHAP](#), March 2013, page 28)

General anaesthesia is not without risks and therefore should only be utilised when needed. Key factors which contribute to high levels of use of general anaesthesia for dental extractions include poor oral health, lack of/inadequate triage, assessment and dental care planning for children referred by the General Dental Services and difficulty in accessing appropriate alternatives to general anaesthesia. Given the improvements seen in oral health in recent years there should be a decrease in need for use of general anaesthesia. In some parts of Wales triage systems are seeking to more appropriately refer for alternatives to general anaesthesia.

1.1 Purpose

The aim of this work is to determine an overall figure for general anaesthesia (GA) dental procedures carried out on children aged 0-17 in Wales during 2016-17 and to compare this with data collected in 2015-16, 2014-15, 2013-14, 2012-13 and 2011-12.

1.2 Method

The data has been collated by making direct contact with dental service managers in Health Boards requesting the 2016-17 information. This collation of data did not include dental treatment conducted via conscious sedation.

It is important to note that information systems are not in place across the whole of Wales to produce accurate and timely data relating to dental general anaesthesia.

1.3 Findings

A total of 7,340 dental GAs were performed in Wales during 2016-17. These are presented by LHB of provider in Table 1 and LHB of patient's residence in Table 2. This equates 1.09% of the under 18 population receiving a dental GA in Wales during 2016-17 (Table 3). Or *one in every 92 children* across Wales receives a GA for dental treatment.

Health Boards should have robust mechanisms in place to record dental general anaesthesia data on their HOSPITAL information systems. They should closely monitor data on dental general anaesthesia, including rate of repeat general anaesthesia, for the purpose of local clinical governance. The dataset should consist of individual record level data providing demographic information, details of treatment and anaesthetic type.

Table 1 GAs for children's dental treatment by LHB of provider, 2016-17

LHB of Provider/ Commissioner	Provider	0-2yrs	3-17yrs	Total
Abertawe Bro Morgannwg	Parkway Clinic			1055
	Morrison Hospital inc PoW	18	207	225
Aneurin Bevan	Kensington Court	0	1342	1342
Aneurin Bevan	Aneurin Bevan (inc Royal Gwent)	58	269	327
Betsi Cadwaladr	CDS	39	1387	1426
Cwm Taf	Prince Charles	60	261	321
Cardiff and Vale	UDH	37	1038	1075
Cardiff and Vale	Royal Glamorgan (C&V CDS via SLA)	20	536	556
Hywel Dda	Parkway Clinic			1011
Powys		0	2	2
WALES TOTAL				7340

*Figures for Kensington Court in Aneurin Bevan need to be interpreted with caution, as they may include total GA numbers rather than unique numbers of patients.

If GA data is originally collected via a provider outside the Health Board Hospital setting then this data should be entered into the Health Board's HOSPITAL information system upon receipt of that data from the provider. This information should then be readily available when requested by Public Health Wales on behalf of the Welsh Government.

There appear to be some data anomalies in the recording of GA in children for Powys residents. Only two GAs for dental treatment for children under 18 were performed by a provider in Powys (Table 1). According to Powys Health Board, **20** children from Powys received treatment via GA from other LHBs in Wales. The data that the other Welsh LHBs sent to the WOHIU totalled **28** children for Powys (Table 2). Cwm Taf Health Board (Prince Charles) for example stated they treated 23 Powys residents (Table 2) whilst Powys HB indicated that this figure was 12. However, it should be noted that the anomalous numbers involved are small and have a minimal effect on the national picture.

Table 2 GAs for children's dental treatment by LHB of patient – 2016-17

LHB of patient's residence	Provider	Number of patients from LHB
Aneurin Bevan	Kensington Court	1342
Aneurin Bevan	C&V - UDH	84
Aneurin Bevan	Royal Gwent*	327
Aneurin Bevan	Morrison Hospital (inc PoW)	3
Aneurin Bevan	Prince Charles	36
Aneurin Bevan total		1792
Abertawe Bro Morgannwg	Parkway	1055
Abertawe Bro Morgannwg	Morrison Hospital (inc PoW)	149
Abertawe Bro Morgannwg	Prince Charles	2
Abertawe Bro Morgannwg	C&V - UDH	17
Abertawe Bro Morgannwg total		1223
Betsi Cadwaladr	Prince Charles	1
Betsi Cadwaladr	CDS	1426
Betsi Cadwaladr total		1427
Cwm Taf	C&V CDS - at the Royal Glamorgan	523
Cwm Taf	C&V - UDH	72
Cwm Taf	Prince Charles	254
Cwm Taf	Morrison Hospital (inc PoW)	5
Cwm Taf	Royal Gwent*	1
Cwm Taf total		855
Cardiff and Vale	C&V - UDH	893
Cardiff and Vale	C&V CDS - at the Royal Glamorgan	33
Cardiff and Vale	Morrison Hospital (inc PoW)	2
Cardiff and Vale	Prince Charles	2
Cardiff and Vale	Royal Gwent*	
Cardiff and Vale total		930
Hywel Dda	Parkway	1011
Hywel Dda	Morrison Hospital (inc PoW)	64
Hywel Dda	Prince Charles	0
Hywel Dda	Royal Gwent*	1
Hywel Dda	C&V - UDH	7
Hywel Dda total		1083
Powys	Morrison Hospital (inc PoW)	2
Powys	Royal Gwent*	1
Powys	C&V - UDH	
Powys	Prince Charles	23
Powys	Powys Teaching LHB	2
Powys total		28
WALES TOTAL		7338

* minus 2 patients – Herefordshire

Table 3 provides a view on the number of GAs per unit child population. Given the main indication for a GA is to manage teeth affected by tooth decay we would expect higher GA provision in areas with higher decay levels.

Table 3 Prevalence of dental GAs amongst the under 18 population

LHB	Number of children aged <18	Number of GAs by LHB of patient's residence	% prevalence
Powys	27850	28	0.10
Cardiff & Vale	105416	930	0.88
Betsi Cadwaladr	148940	1427	0.96
Abertawe Bro Morgannwg	110726	1223	1.10
Cwm Taf	66495	855	1.29
Hywel Dda	81028	1083	1.34
Aneurin Bevan	133632	1792	1.34
WALES	674087	7338	1.09

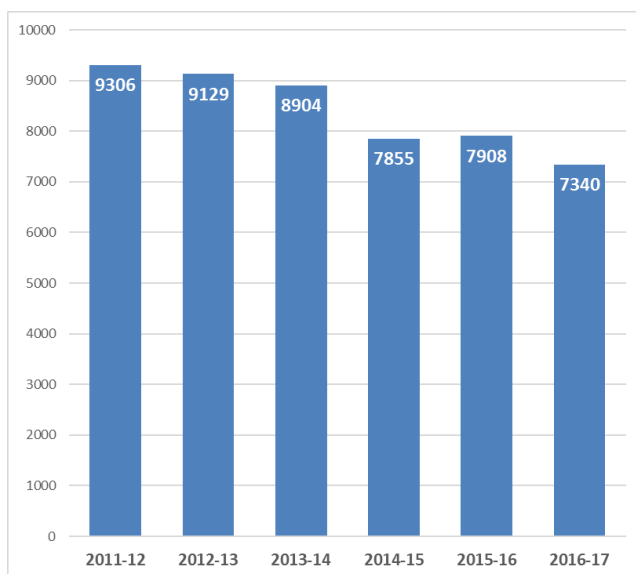
*2011 Census data (calculated from single year age groups).

NB 1 GA does not equate 1 child. A few children may have had more than one.

The highest decay levels at ages [3](#), [5](#) and [12](#) are found in Cwm Taf and Aneurin Bevan LHB areas. Reported GA rates found in Hywel Dda and ABMU LHBs are higher compared with other health boards if dental GA numbers were to reflect the decay level in the child population. This indicates that dental GA numbers in these health boards could be further reduced by improving triage, assessment, treatment planning and provision of treatment under conscious sedation.

1.4 Comparison with previous years activity

Figure 1 compares the 2016-17 activity against the 2015-16, 2014-15, 2013-14, 2012-13 and the 2011-12 data. The latter was the first to be collated for this exercise and acts as baseline data.

Figure 1 GA activity 2011-2017

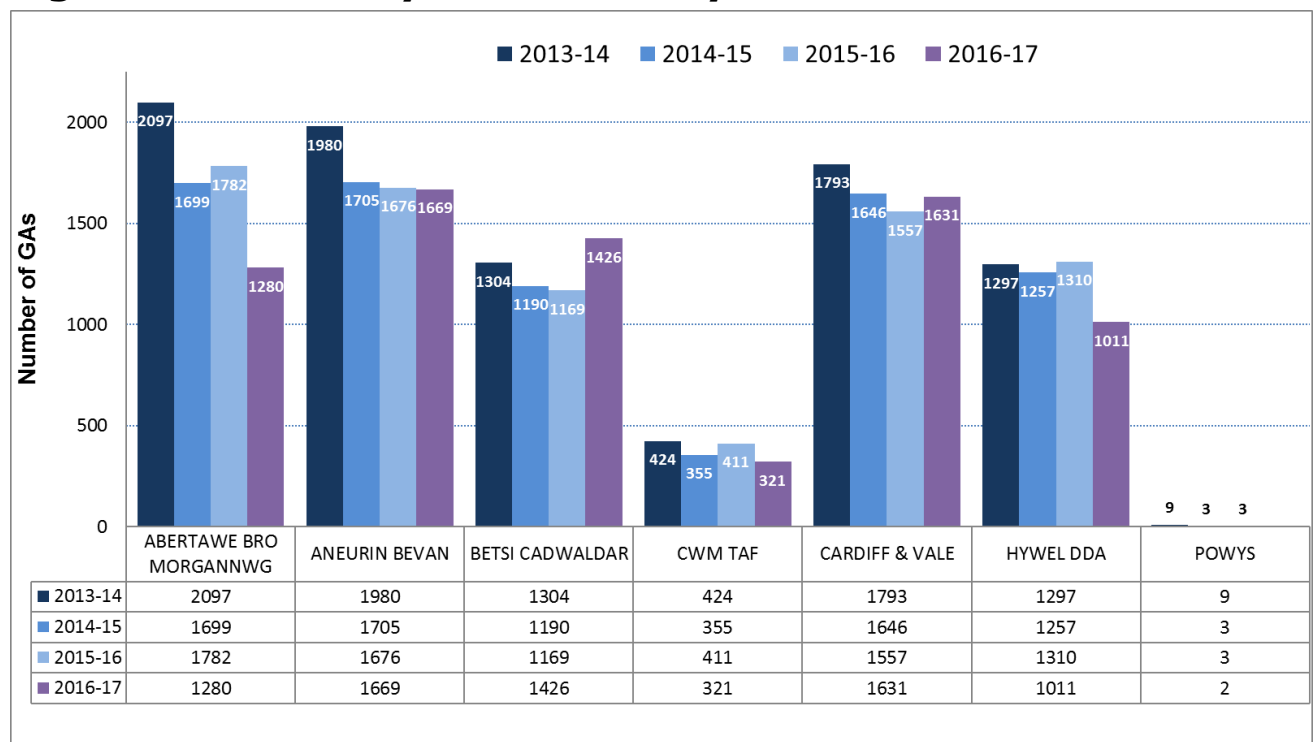
*2011-12 figure is adjusted to estimate the numbers that might have been reported by Aneurin Bevan for the Royal Gwent.

First of all it is important to note that the 2011-12 figures did not include data from the Royal Gwent in Aneurin Bevan, because it was not reported. To make a fairer comparison between the four reporting years, the 2011-12 baseline has been adjusted to include 214 GAs (which was the figure for 2012-13). If we were to assume that approximately the same number of GAs were carried out in Aneurin Bevan in 2011-12, then the **amended Wales baseline** for that year would be $9,092 + 214 = 9,306$.

The number of GAs for dental treatment in children in Wales in 2016-17 was 7,340, which is 568 less patients when compared with 2015-16 (Figure 1). Furthermore, this represents a 21% (1,966) reduction in GAs in children since 2011-12 (assuming an adjusted 9,306 baseline).

Figure 2 presents the four most recent years of activity by LHB of provider.

Figure 2 GA activity 2013-2017 by Provider LHB



1.5 Discussion

It is important to acknowledge that key stakeholders have raised concerns about evidence of double counting and other data anomalies – so GA data needs to be interpreted with caution.

When reviewing the data presented by provider/commissioner it is evident that recent innovations of enhanced patient screening criteria and new care pathways have started to take effect. During 2014-15 GA activity for this vulnerable group fell for Parkway, Kensington Court and UDH. Between

2015-16 and 2016-17 Parkway provided 299 fewer GAs for dental treatment for children in the Hywel Dda health board area (1310 in 2015-16; 1011 in 2016-17) and 511 fewer in the ABMU health board area (1566 in 2015-16; 1055 in 2017), Figure 3(ii).

The reduction in the numbers of children having GA for dental treatment in Wales is welcomed but it is most likely to be a reflection of the changes to assessment and treatment protocols rather than population level improvements in oral health.

Professional opinion expressed by key stakeholders suggested that some of this fall may reflect availability of GA sessions and longer waiting times and may not be associated with a reduction in need. Availability of specialist Paediatric Dental Service and conscious sedation services also affect the utilisation of GA for dental treatment.

Compared with other LHB areas GA provision in ABMU and particularly Hywel Dda is higher than other health boards. There are signs that dental GA numbers in these health boards are decreasing but there should be further local reflections on what more can be done to reduce the need and demand for dental treatment under GA.

Considering effectiveness of triage systems, provision of conscious sedation services and specialist paediatric dental services varied between health boards in Wales in 2016/17, there seems to be considerable room for improvement in reducing dental general anaesthesia administered to children in Wales. Further reduction in dental GA will require Health Boards making improvements in their existing dental care pathways for children. It will also require ongoing improvement of dental health of children through effective delivery of evidence based primary and secondary prevention through clinical and non-clinical settings.

Conclusion

Numbers of general anaesthetic for dental treatment in children in Wales have reduced to 7,340 in 2016/17. This remains considerably lower than baseline figures from 2011. The decrease seems to be because of changes in care pathways and local referral processes in some Health Boards.

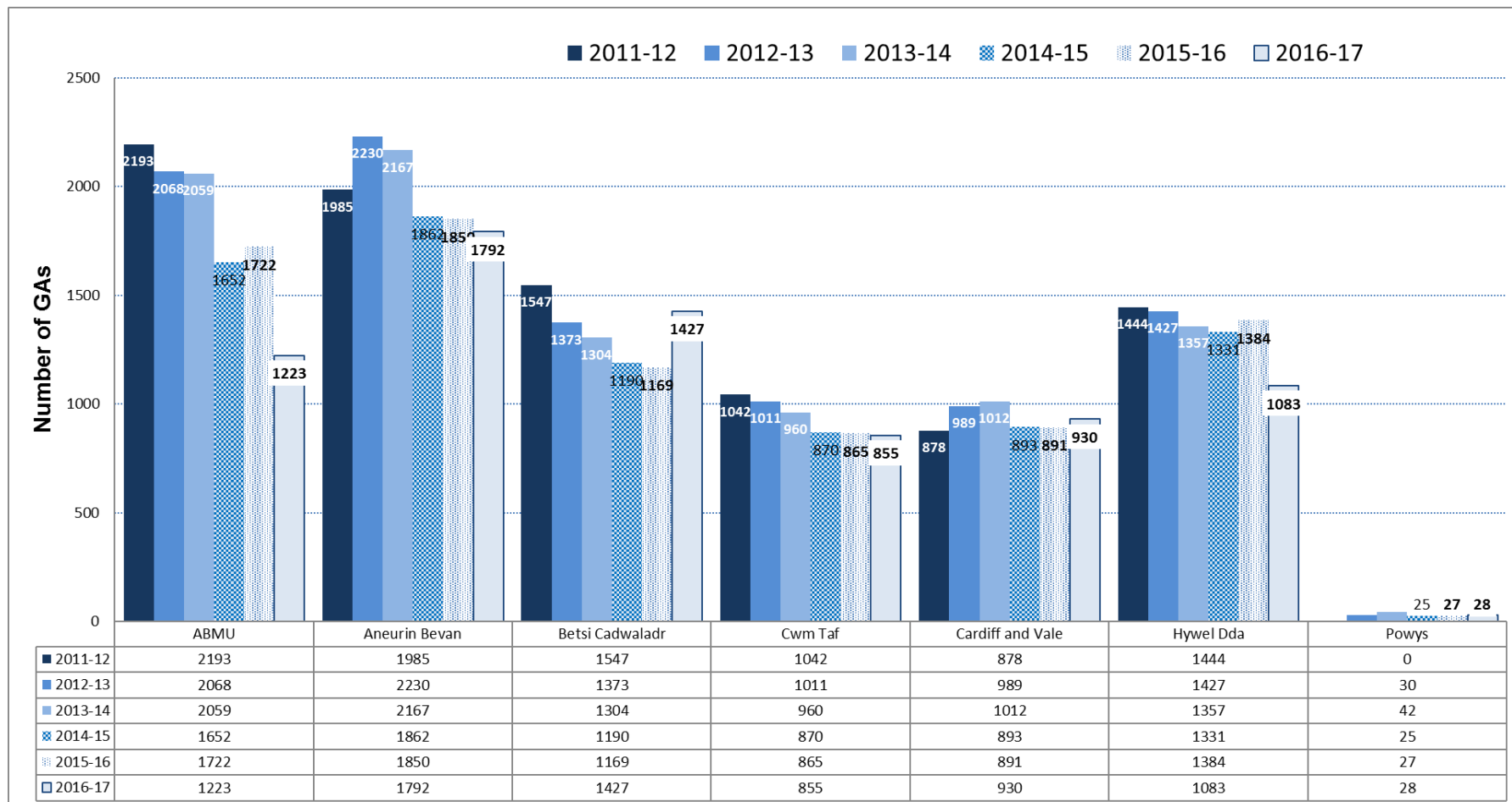
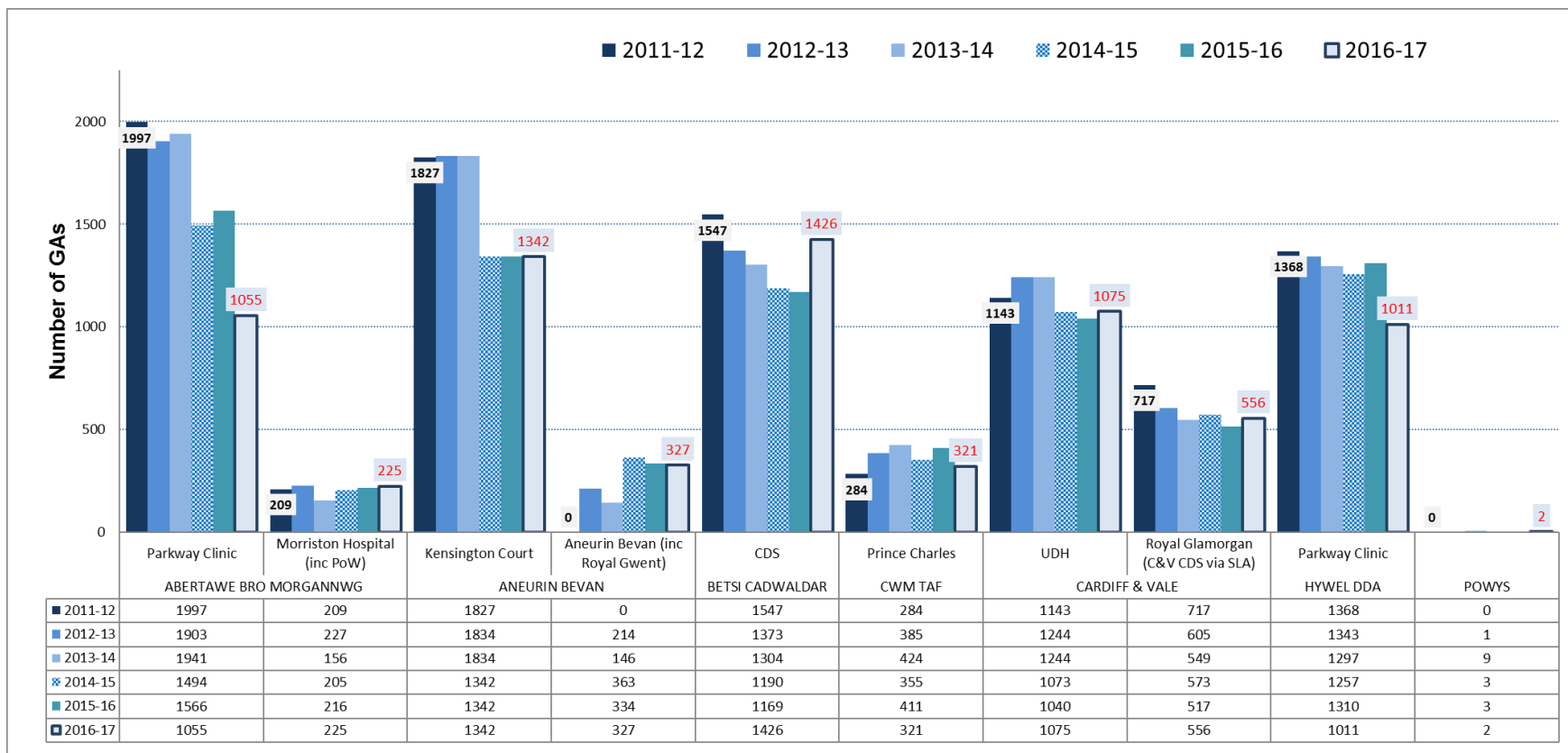
Figure 3(i) GA activity 2011-2017 presented by LHB of residence

Figure 3(ii) GA activity 2011-2017 presented by provider within LHB boundaries



1.6 Recommendations

It is recommended that the Welsh Government and Health Boards continue to monitor demand and need of GAs for children's dental treatment and make ongoing improvements to ensure children receive the most appropriate care in the most appropriate setting.

Health Boards should have computerised information systems to accurately capture the number of children who receive dental treatment under general anaesthesia. Development of such information systems within health boards will promote robustness of the dataset and support local monitoring processes in place to improve Quality and Safety. This information should then be readily available for the purpose of reporting (national/regional/local) to inform service planning.

Within their Local Oral Health Plans, all Health Boards should develop medium and long-term action plans to reduce the number of child dental GAs. Health Boards should implement a care pathway for children referred by Primary Care for advanced or specialist dental care. Such care pathways should include standardised referral proforma, triage (including full assessment and dental care planning) and delivery of the required dental care by the most appropriate team in the most appropriate setting. Integration of ongoing prevention in the care planning, provision of appropriate level of conscious sedation and specialist paediatric dental services are important to ensure effectiveness of the care pathway. The proposed introduction of E-referral for dentistry should provide an opportunity for health boards to review, develop and implement an improvement plan.

Acknowledgements

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