GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales

Dental Public Health Team

CHILD DENTAL GENERAL ANAESTHETICS IN WALES

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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 2018-19 and to compare this with data collected since 2011-12. This information should be helpful for health boards in their local dental service planning and inform Welsh Government's dental policy on dental services and oral health.

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.*

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 under the care of and 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. Recent implementation of E-referral system should support health boards to establish appropriate triage, assessment and treatment planning which should reduce the number of children who require treatment under general anaesthesia.

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 2018-19 and to compare this with data collected annually since 2011-12.

1.1 Method

The data has been collated by making direct contact with dental service managers in Health Boards requesting the 2018-19 information. This collation of data did not include dental treatment under conscious sedation.

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

1.2 Findings

A total of 6,582 dental GAs were performed in Wales during 2018-19. These are presented by LHB of provider in Table 1 and LHB of patient's residence in Table 3. This equates 0.98% of the under 18 population receiving a dental GA in Wales during 2018-19 (Table 4). Or *one in every 111 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, 2018-19

LHB of Provider/ Commissioner	Provider	0-2yrs	3-17yrs	Total
Abertawe Bro Morgannwg	CDS/Parkway Clinic	0	884	884
	Morriston Hospital	8	166	174
	Princess of Wales			0
Aneurin Bevan	Kensington Court	0	1144	1144
Aneurin Bevan	Royal Gwent Hospital	6	209	215
Betsi Cadwaladr	CDS	36	1098	1134
Cwm Taf	Prince Charles	58	369	427
Cardiff and Vale	University Dental Hospital	37	820	857
Cardiff and Vale	Royal Glamorgan (C&V CDS via SLA)	12	524	536
Hywel Dda	Parkway Clinic	0	1115	1115
Powys	Parkway Clinic	0	96	96
WALES TOTAL		**157**	**6425**	**6582**

**Figures for Parkway Clinic in Hywel Dda and Powys 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. This is the first year that WOHIU has taken receipt of data from Parkway Clinic which relates to 96 Powys residents (Table 1). According to Powys Health Board, **26** 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 (Tables 2 & 3). Cwm Taf Health Board (Prince Charles) for example stated they treated 23 Powys residents (Tables 2 & 3) whilst Powys HB indicated that this figure was 14. However, it should be noted that the anomalous numbers involved are small and have a minimal effect on the national picture.

Table 2 Dental treatment under GA in children living in Powys – reported by Powys HB and compared with data supplied by other HBs, 2018/19

	Powys reported HB provided "x" GAs	Health Board reported "y" GAs for Powys
Aneurin Bevan	4	1
Betsi Cadwaladr	1	0
ABMU	7	4
Cwm Taf	14	23
TOTAL	**26**	**28**

Table 3 GAs for children's dental treatment by LHB of patient – 2018-19

LHB of patient's residence	Provider	Number of patients from LHB 18/19
Aneurin Bevan	Kensington Court	1144
Aneurin Bevan	C&V - UDH	45
Aneurin Bevan	Royal Gwent*	211
Aneurin Bevan	Morriston Hospital (inc PoW)	3
Aneurin Bevan	Prince Charles	45
Aneurin Bevan total		**1448**
Abertawe Bro Morgannwg	CDS/Parkway	884
Abertawe Bro Morgannwg	Morriston Hospital (inc PoW)	121
Abertawe Bro Morgannwg	Prince Charles	3
Abertawe Bro Morgannwg	C&V - UDH	9
Abertawe Bro Morgannwg total		**1017**
Betsi Cadwaladr	Prince Charles	0
Betsi Cadwaladr	CDS	1134
Betsi Cadwaladr total		**1134**
Cwm Taf	CT CDS - at the Royal Glamorgan	529
Cwm Taf	C&V - UDH	35
Cwm Taf	Prince Charles	348
Cwm Taf	Morriston Hospital (inc PoW)	2
Cwm Taf	Royal Gwent*	0
Cwm Taf total		**914**
Cardiff and Vale	C&V - UDH	763
Cardiff and Vale	CT CDS - at the Royal Glamorgan	7
Cardiff and Vale	Morriston Hospital (inc PoW)	2
Cardiff and Vale	Prince Charles	4
Cardiff and Vale	Royal Gwent*	1
Cardiff and Vale total		**777**
Hywel Dda	Parkway	1115
Hywel Dda	Morriston Hospital (inc PoW)	42
Hywel Dda	Prince Charles	0
Hywel Dda	Royal Gwent*	0
Hywel Dda	C&V - UDH	3
Hywel Dda total		**1160**
Powys	Morriston Hospital (inc PoW)	4
Powys	Royal Gwent*	1
Powys	C&V - UDH	2
Powys	Prince Charles	23
Powys	Parkway Clinic	96
Powys total		**126**
WALES TOTAL		**6576**

* Excludes 6 patients who live in England

Table 4 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 4 Rate of dental GAs amongst the under 18 population

LHB	Number of children aged <18	Number of GAs by LHB of patient's residence	Rate
Powys	27850	126	0.45
Cardiff & Vale	105416	777	0.74
Betsi Cadwaladr	148940	1134	0.76
Aneurin Bevan	133632	1448	1.08
Cwm Taf	66495	914	1.37
Hywel Dda	81028	1160	1.43
Abertawe Bro Morgannwg	110726	1017	0.92
WALES	**674087**	**6576**	**0.98**

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

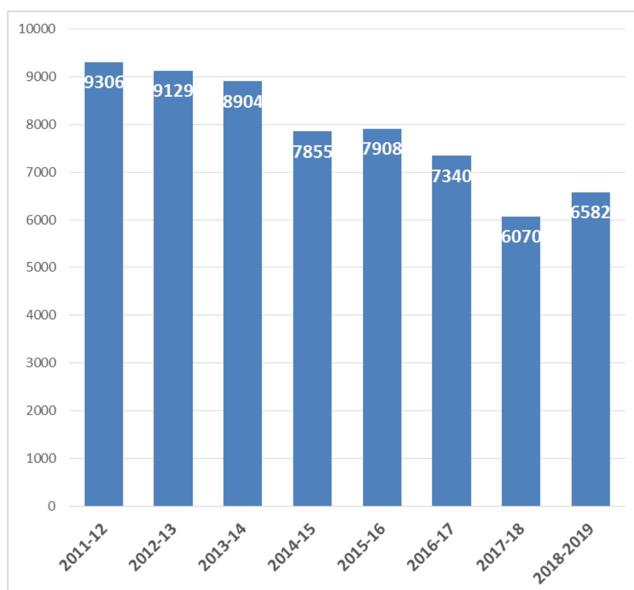
NB 1 GA does not equate 1 child. A few children may have had more than one.

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 have increased notably this year (Table 4 & Figure 2) and are out of step with findings from children's dental surveys. There is considerable room for improvement, dental GA numbers could be reduced by improving triage, assessment, treatment planning and provision of treatment under conscious sedation.

1.3 Comparison with previous years activity

Figure 1 compares the 2018-19 activity against the data for each year going back to 2011-12. The latter was the first to be collated for this exercise and acts as baseline data.

Figure 1 GA activity 2011-2019



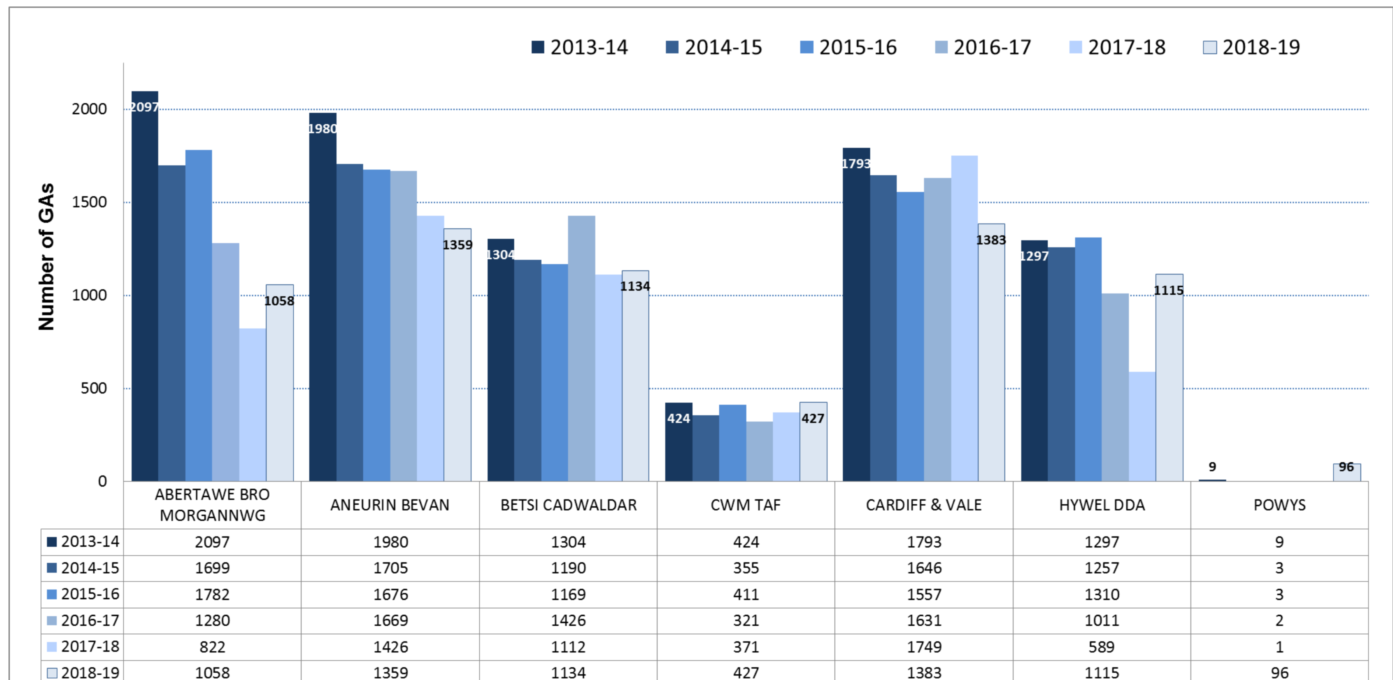
**2011-12 figure is adjusted to estimate the numbers that might have been reported by Aneurin Bevan for the Royal Gwent.*

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 2018-19 was 6,582, which is 512 more patients when compared with 2017-18 (Figure 1). This still represents a **29%** (2724) reduction in GAs in children since 2011-12 (assuming an adjusted 9,306 baseline). It is important to acknowledge that previous figures have not included all the activity in Powys. Also we believe there is some double counting across Wales – as information may relate to session activity as opposed to individual children. These factors may have contributed to the increase.

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

Figure 2 GA activity 2013-2019 by Provider LHB



	ABERTAWE BRO MORGANNWG	ANEURIN BEVAN	BETSI CADWALDAR	CWM TAF	CARDIFF & VALE	HYWEL DDA	POWYS
2013-14	2097	1980	1304	424	1793	1297	9
2014-15	1699	1705	1190	355	1646	1257	3
2015-16	1782	1676	1169	411	1557	1310	3
2016-17	1280	1669	1426	321	1631	1011	2
2017-18	822	1426	1112	371	1749	589	1
2018-19	1058	1359	1134	427	1383	1115	96

1.4 Discussion

It is important to acknowledge that there are concerns about double counting and other data anomalies – so GA data needs to be interpreted with caution. This highlights the need for a robust information system in each health board.

When reviewing the recent years' data presented by provider/commissioner it is evident that enhanced patient assessment criteria and care pathways in some health boards have started to take effect. During 2014-15 GA activity for this vulnerable group started to fall for some providers. For example, in 2013-14 Kensington Court provided GAs to 1,834 children receiving dental treatment in Aneurin Bevan. This has fallen to 1,144 in 2018/19, a reduction of 690 (Figure 4(ii)).

But, it is worrying that during 2018/19 there have been reported increases in activity by Parkway Clinic for both ABMU and Hywel Dda residents. It is thought that a change in guidelines associated with provision of conscious sedation has meant that more children are receiving GA in these localities. There should be further local reflections, on what more can be done to reduce the need and demand for dental treatment under GA.

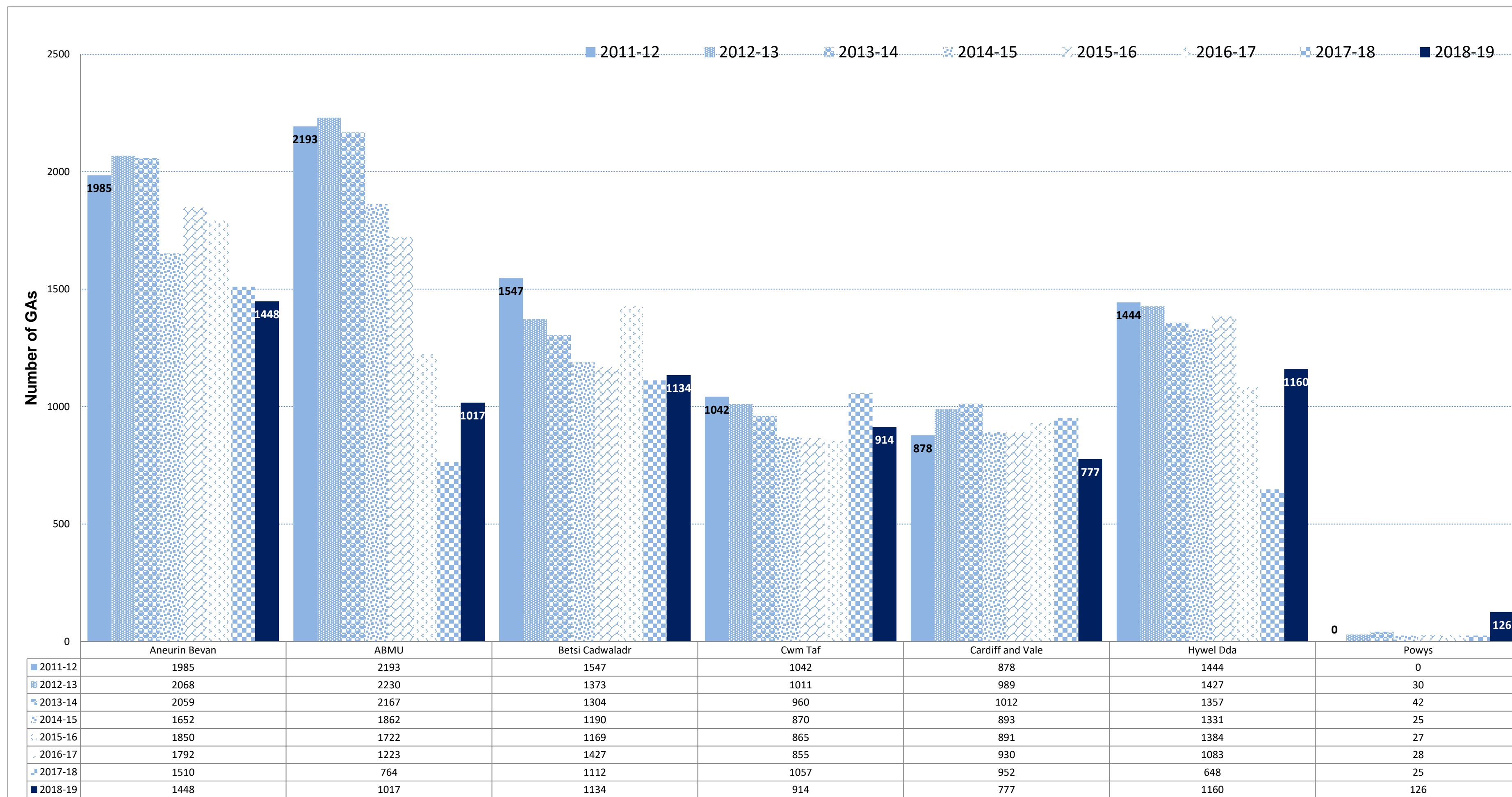
Professional opinion expressed by key stakeholders suggests that as demand and need fall the availability of GA sessions needs to be reviewed. Availability of specialist Paediatric Dental Service and conscious sedation services needs to be increased to ensure there are viable and timely alternatives available.

Considering effectiveness of triage systems and variation in provision of conscious sedation services and specialist paediatric dental services between health boards in Wales in 2018/19, 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 (e.g. dental practices) and non-clinical settings (e.g. primary schools and nurseries).

Conclusion

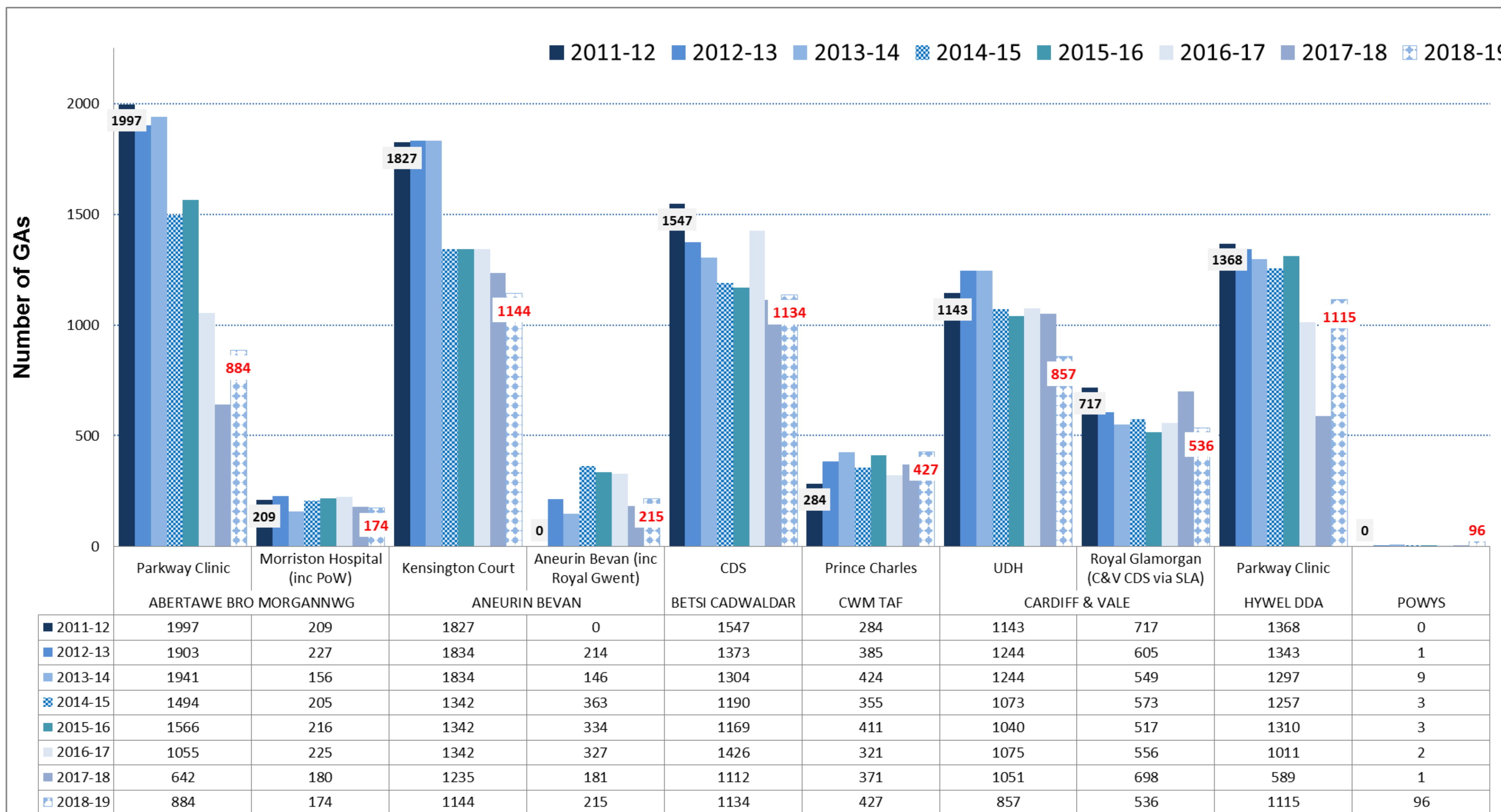
Numbers of children receiving dental treatment via general anaesthetic in Wales has increased from 6,069 in 2017/18 to 6,576 in 2018/19. But this remains considerably lower than baseline figures from 2011. Changes in care pathways and local referral processes in some Health Boards have contributed to a reduction over the past 8 years, it is envisaged that with implementation of E-referral system and establishment of triage and care pathways across all 7 health boards in Wales, the numbers of children receiving dental treatment under GA in Wales should reduce further.

Figure 4(i) GA activity 2011-2019 presented by LHB of residence



	Aneurin Bevan	ABMU	Betsi Cadwaladr	Cwm Taf	Cardiff and Vale	Hywel Dda	Powys
2011-12	1985	2193	1547	1042	878	1444	0
2012-13	2068	2230	1373	1011	989	1427	30
2013-14	2059	2167	1304	960	1012	1357	42
2014-15	1652	1862	1190	870	893	1331	25
2015-16	1850	1722	1169	865	891	1384	27
2016-17	1792	1223	1427	855	930	1083	28
2017-18	1510	764	1112	1057	952	648	25
2018-19	1448	1017	1134	914	777	1160	126

Figure 4(ii) GA activity 2011-2019 presented by provider within LHB boundaries



	Parkway Clinic	Morriston Hospital (inc PoW)	Kensington Court	Aneurin Bevan (inc Royal Gwent)	CDS	Prince Charles	UDH	Royal Glamorgan (C&V CDS via SLA)	Parkway Clinic	
	ABERTAWE BRO MORGANNWG		ANEURIN BEVAN		BETSI CADWALDAR	CWM TAF	CARDIFF & VALE		HYWEL DDA	POWYS
2011-12	1997	209	1827	0	1547	284	1143	717	1368	0
2012-13	1903	227	1834	214	1373	385	1244	605	1343	1
2013-14	1941	156	1834	146	1304	424	1244	549	1297	9
2014-15	1494	205	1342	363	1190	355	1073	573	1257	3
2015-16	1566	216	1342	334	1169	411	1040	517	1310	3
2016-17	1055	225	1342	327	1426	321	1075	556	1011	2
2017-18	642	180	1235	181	1112	371	1051	698	589	1
2018-19	884	174	1144	215	1134	427	857	536	1115	96

1.5 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. Implementation of E-referral system for dentistry should support Health Boards to implement a care pathway for children referred by Primary Care for advanced or specialist dental care. Such care pathways should include 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 implementation of E-referral for dentistry should provide an opportunity for health boards to ensure ongoing monitoring, review, develop and implement an improvement plan.

Acknowledgements

Thank you to the Health Board Dental Service Managers across Wales for providing the data which underpins this report. Thanks to Anup Karki for his support in setting the findings into context.