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A Comparative Picture of Orthopaedic Services

Aneurin Bevan University Health Board

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This report has been prepared on the basis of work done under the Government of Wales Act 1998 and the Public Audit (Wales) Act 2004.

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Summary report










- 1 In 2013, the Auditor General undertook a local mandated review of orthopaedic services across Wales. The review sought to answer the following question: 'Are orthopaedic services efficient, effective and economical and are they being designed and delivered in a sustainable manner?' The findings of that work are set out in the national report **A Review of Orthopaedic Services**.
- 2 As part of the methodology underpinning the review, we collected a range of data to understand the performance of current orthopaedic services within each health board. This report sets out our view of orthopaedic services in Aneurin Bevan University Health Board (the Health Board) and our view of how the service compares to the rest of Wales.
- 3 We have based our view on the efficiency, effectiveness and economy of orthopaedic services provided by the Health Board using the patient pathway. Collection of the data has been from a range of sources, which are set out in **Appendix 1**, and the data used is the most available data at the point of reporting. The findings from the data analysis are set out in the main body of this report but the high-level messages are set out in **Exhibit 1**. **Exhibit 2** is a summary assessment that uses a traffic light rating to show how the Health Board compares with the rest of Wales on each indicator, and where applicable, Welsh Government targets.



Exhibit 1: High-level messages




High demand and a range of inefficiencies are resulting in an inefficient orthopaedic service with some outcomes less positive than elsewhere in Wales:









- despite a good range of alternative services being in place, investment in primary care is low and decreasing, GP referrals are increasing and are now the highest in Wales, and the Clinical Musculoskeletal Assessment and Treatment Service (CMATS) appears to be under-resourced;
- outpatient and physiotherapy services are generally meeting demand, although waits for GP-referred radiology tests are some of the highest in Wales and there is scope to improve orthopaedic outpatient efficiency and provide self-referral to physiotherapy services;
- day surgery rates, length of stay and use of theatre capacity all need to improve; and
- patients are followed up, although some outcomes are less positive than elsewhere in Wales with higher rates of elective orthopaedic mortality and a lower rate of improvement following knee replacement surgery.


Exhibit 2: Summary assessment





Primary and community based services		
Indicator	Health board performance	Performance rating
Has the Health Board invested in primary care provision?		
Increased investment in primary care musculoskeletal provision	Spend on primary care provision for musculoskeletal problems has reduced by 1.9 per cent between 2010 and 2013.	
Total spend on primary care provision	Average spend per head of population on primary care is just below the all-Wales average at £11.40.	
Proportion of total musculoskeletal spend allocated to primary care	The proportion of total spend on primary care is below the all-Wales average at 9.7 per cent and has reduced between 2010 and 2013.	
Range of community based services available to GPs	The range of community based services available to GPs compares well to other health boards.	
Receipt of alternative intervention prior to surgery	The extent to which patients receive alternative intervention prior to surgery is above the all-Wales average.	
Is demand for secondary care services managed?		
GP referral rate	The rate of GP referrals per 100,000 head of population is now the highest across Wales.	
Trend in referrals	The number of GP referrals for orthopaedics is increasing.	
Is the CMATS operating effectively?		
CMATS in place	The Health Board introduced CMATS in 2004 covering Caerphilly, Monmouthshire, Newport and Torfaen.	
CMATS operational arrangements	CMATS comply with the key Welsh Government principles with the exception of clinic location and acting as a gateway to all GP referrals.	

Primary and community based services		
Indicator	Health board performance	Performance rating
CMATS staffing levels	The level of staff per 1,000 GP referrals is the lowest across Wales and less than one-third of the all-Wales average.	
Patients treated by CMATS	The Health Board was unable to report the proportion of patients treated by CMATS.	-
Waiting times for face-to-face assessment by CMATS	The average wait from referral to face-to-face assessment by CMATS is between two and six weeks, which is within the Welsh Government target.	






Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
Are outpatient services effective?		
Waits for first outpatient appointment	The percentage of patients waiting more than 26 weeks for first outpatient appointment is consistently lower than the all-Wales average.	
Consultant outpatient sessions	The number of consultant outpatient sessions per 1,000 GP referrals is the lowest across Wales.	Descriptor indicator
Cancelled outpatient clinics	The Health Board was unable to report the proportion of cancelled outpatient clinics.	-
Follow-up to new ratios	The ratio of follow-up to new appointments exceeds the previous Welsh Government target at 2.2 and is the third highest in Wales.	
Did Not Attend (DNA) rates	The DNA rates for both new and follow-up appointments are below the all-Wales average but remain outside the Welsh Government target.	
Patient cancellations	The Health Board was unable to report the proportion of patient cancellations.	-







Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
Co-ordination of visits	Ninety per cent of patients felt that the Health Board tried to co-ordinate the number of visits that they needed to make. This was above the all-Wales average.	
Cost per outpatient attendance	The cost of an orthopaedic outpatient attendance is above the all-Wales average at £139.21 but has reduced by 5.5 per cent from the previous year.	
Are physiotherapy services able to meet demand?		
Waits for physiotherapy services	The percentage of patients waiting less than eight weeks is higher than the all-Wales average at 85.6 per cent and very few patients, if any, wait more than 14 weeks.	
Range of settings	Physiotherapy services are provided in a range of community and acute settings, but not primary care.	
Ease of access	Patients are not yet able to self-refer directly to the physiotherapy service.	
Availability of services	The provision of outpatient physiotherapy services remains, in the main, a traditional five-day service.	
Are radiology services able to meet demand?		
Waits for all radiology tests	Waits for radiology tests increased and the percentage of GP-referred patients waiting more than eight weeks was one of the highest in Wales, but performance has now improved to the all-Wales average.	
MRI referral rates	The rate of referrals for MRI scans from GPs and consultants are lower than the all-Wales average.	







Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
Waits for MRI scans	The percentage of patients waiting more than eight weeks for MRI scans is lower than the all-Wales average.	

Inpatient services		
Indicator	Health board performance	Performance rating
Is there evidence that arrangements relating to surgical procedures are effective?		
Pre-operative assessment arrangements	Pre-operative assessment arrangements are in place but they are inconsistent across the Health Board.	
Receipt of pre-operative assessment	All patients undergoing knee replacement surgery received a pre-operative assessment prior to admission, although one-third received it less than three weeks before surgery.	
Procedures of limited clinical effectiveness	The rate of procedures of limited clinical effectiveness is low across some localities, with the rates for Blaenau Gwent and Caerphilly residents around the all-Wales average.	
British Association of Day Surgery (BADs) day-case rates	The percentage of recommended orthopaedic procedures undertaken as a day case is below the Welsh Government target across all sites.	
Implementation of 'joint school'	It is not clear whether the Health Board has implemented a joint school ¹ .	-

¹ Joint schools provide educational sessions for patients undergoing orthopaedic surgery including an opportunity for patients to practice physiotherapy exercises and techniques that will be required post-operatively.

Inpatient services		
Indicator	Health board performance	Performance rating
Waits for surgery	The percentage of patients waiting more than 26 weeks for admission has been below the all-Wales average, although the monthly percentages are the second highest in Wales and performance is now above the all-Wales average.	
Is bed capacity used effectively?		
Day of surgery admission	The proportion of patients admitted on the day of surgery exceeds the Welsh Government target at three sites. Less than 29 per cent of patients at Royal Gwent are admitted on the same day, which is considerably below target and one of the lowest in Wales.	
Reduction in inpatient beds	The number of available beds has increased by 2.3 per cent over the last three years, with an average of 190 daily available beds across four sites.	Descriptor indicator
Bed occupancy	Occupancy rates have dropped to 76 per cent in 2013-14, which is below the optimal level of 85 per cent. There is variation across sites.	
Is operating theatre capacity used effectively?		
Theatre utilisation	Performance ranges between 69 and 83 per cent across the four sites, compared to the Welsh Government target of 95 per cent.	
Cancelled operations	The rate of cancelled operations made by the Health Board ranges between 9.3 per cent at Nevill Hall Hospital and 16.9 per cent at Royal Gwent Hospital. There is no comparison available.	

Inpatient services		
Indicator	Health board performance	Performance rating
Is length of stay kept to a minimum?		
Average length of stay for elective orthopaedic admissions	Average length of stay for an elective orthopaedic patient is 4.2 days against a Welsh Government target of four days, although there is variation across sites, with performance within target at St Woolos Hospital and Ysbyty Ystrad Fawr.	
Average length of stay for hip and knee replacements	The average length of stay for patients undergoing hip and knee replacements are within the Welsh Government target at St Woolos Hospital but outside the target at Nevill Hall and Royal Gwent hospitals.	
Cost per inpatient episode	The average cost of an elective orthopaedic hospital episode is below the all-Wales average at £3,776.	
Prosthetic cost per inpatient episode	No data is available for 2011-12, but the average prosthetic cost per inpatient episode for 2010-11 was one of the highest in Wales at £779.	
Cost per day case	The cost of an elective orthopaedic day case is in line with the all-Wales average at £1,194.	
Cost per inpatient bed day	The cost of an elective inpatient bed day is in line with the all-Wales average at £1,298.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
Are patients followed up?		
Follow-up appointment	Ninety-three per cent of patients undergoing knee replacement surgery received a follow-up appointment post-discharge. This is above the all-Wales average.	
Follow-up appointment within recommended timescales	Ninety-six per cent of patients undergoing knee replacement surgery received a follow-up within six weeks and three months after discharge.	
Are adverse complications avoided and the benefits of surgery optimised?		
Surgical Site Infections (SSIs) for hip and knee replacements	The rate of SSIs following hip surgery is lower than the all-Wales average, but rates for knee surgery are higher, particularly at Nevill Hall Hospital. The Welsh Government target for SSI is zero per cent.	
Readmission rates for hip and knee replacements	The readmission rate following elective hip replacement is lower than the all-Wales average. The readmission rate for knee replacements is in line with the all-Wales average.	
Mortality rates for elective orthopaedic patients	The mortality rates for elective orthopaedic patients in hospital and within 30 days of discharge are above the all-Wales average.	
Revision rates	The rate of revision for hips and knees varies between localities, with the rates for the Torfaen and Newport population among the lowest across Wales. The revision rate for hip replacements for the Monmouthshire population is above the all-Wales average.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
Improvement of symptoms	Seventy-seven per cent of patients reported that surgery had partially or significantly improved their symptoms. This is below the all-Wales average and the second lowest in Wales.	

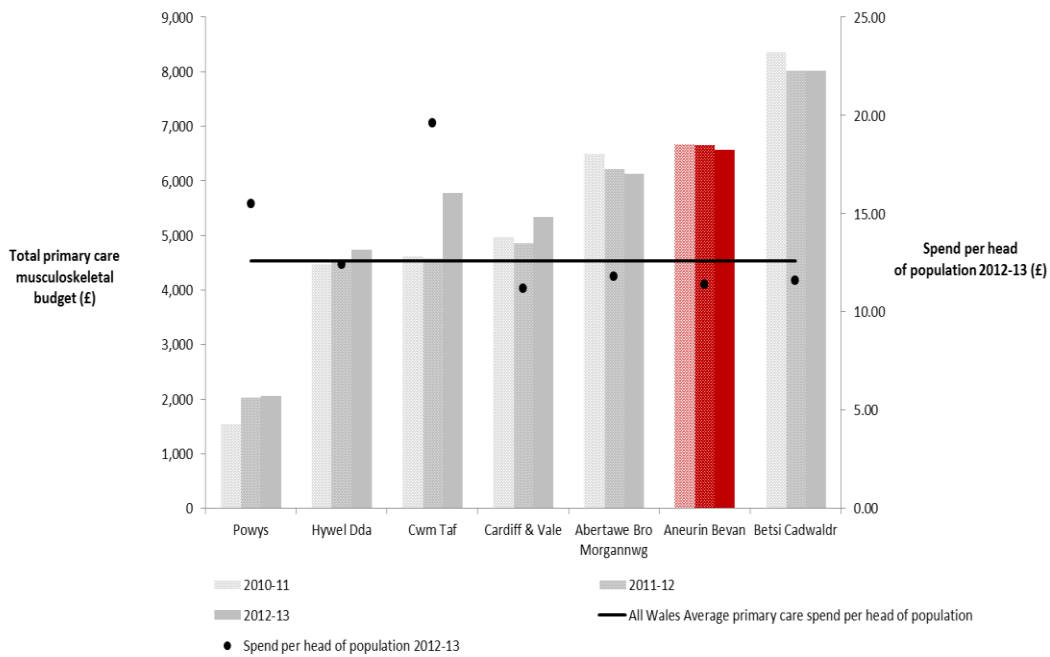
Part 1

1 Primary and community based services

Primary care provision

1.1 Over the three years between 2010 and 2013, the Health Board has reduced its primary care spend on musculoskeletal services by 1.9 per cent (Exhibit 3). The Health Board spend per head of population on primary care musculoskeletal services was just below the all-Wales average at £11.40 (Exhibit 3). This level of spending is one of the lowest in Wales.

Exhibit 3: Musculoskeletal programme budget spend on primary care between 2010 and 2013



Source: Stats Wales

1.2 The proportion of musculoskeletal monies spent on primary care by the Health Board has also fallen between 2010-11 and 2012-13 ([Exhibit 4](#)). This performance has been consistently below the all-Wales average and, for 2012-13, is the lowest in Wales. This would suggest that musculoskeletal services have been potentially focused predominantly more towards secondary care provision.

Exhibit 4: Proportion of musculoskeletal programme budget spent on primary care between 2010-11 and 2012-13

Health board	% of MSK programme budget spent on primary care		
	2010-11	2011-12	2012-13
Abertawe Bro Morgannwg	11.3	9.8	10.8
Aneurin Bevan	10.2	10.2	9.7
Betsi Cadwaladr	10.7	9.3	9.9
Cardiff and Vale	11.9	10.6	12.0
Cwm Taf	16.0	15.1	15.4
Hywel Dda	9.3	9.0	10.3
Powys Teaching	9.9	14.0	17.1
All Wales	11.1	10.4	11.2

Source: Stats Wales

1.3 As part of our work, we reviewed the level of direct access by GPs to primary and community based services, which could prevent an unnecessary referral to secondary care orthopaedic services. This would include such services as community pain services, self-management programmes, community based life-style programmes, community physiotherapy and chiropractic therapy. The Health Board reported having a number of services in place, which allow direct access by GPs, which compares positively with other health boards across Wales ([Exhibit 5](#)).

Exhibit 5: GP direct access to primary and community based services

	Abertawe Bro Morgannwg	Aneurin Bevan	Betsi Cadwaladr	Cardiff and Vale	Cwm Taf	Hywel Dda	Powys
Physiotherapy	✓	✓	✓	✓	✓	-	✓
Extended role physiotherapist	✓	✓	✓	✓	✓	-	✓
Community pain service	✓			✓	✓	-	✓
GP with special interest in orthopaedic conditions/complaints	✓	✓	✓	✓		-	
Enhanced services relevant to orthopaedic conditions/complaints		In part				-	
Enhanced access to diagnostics		✓	In part			-	✓
Chiropractic therapy						-	
Community based lifestyle/weight loss programmes		✓	✓	✓	✓	-	✓
Self-management programmes	✓					-	

Source: Wales Audit Office Health Board Survey

1.4 As part of our Survey of Patients Undergoing Knee Replacement Surgery, we asked patients whether they had received a range of alternative interventions prior to receiving surgery. With the exception of receiving pain relief before surgery, the extent to which patients had received other interventions such as weight management advice was above the all-Wales average ([Exhibit 6](#)).

Exhibit 6: Percentage of patients who received alternative intervention prior to knee replacement surgery

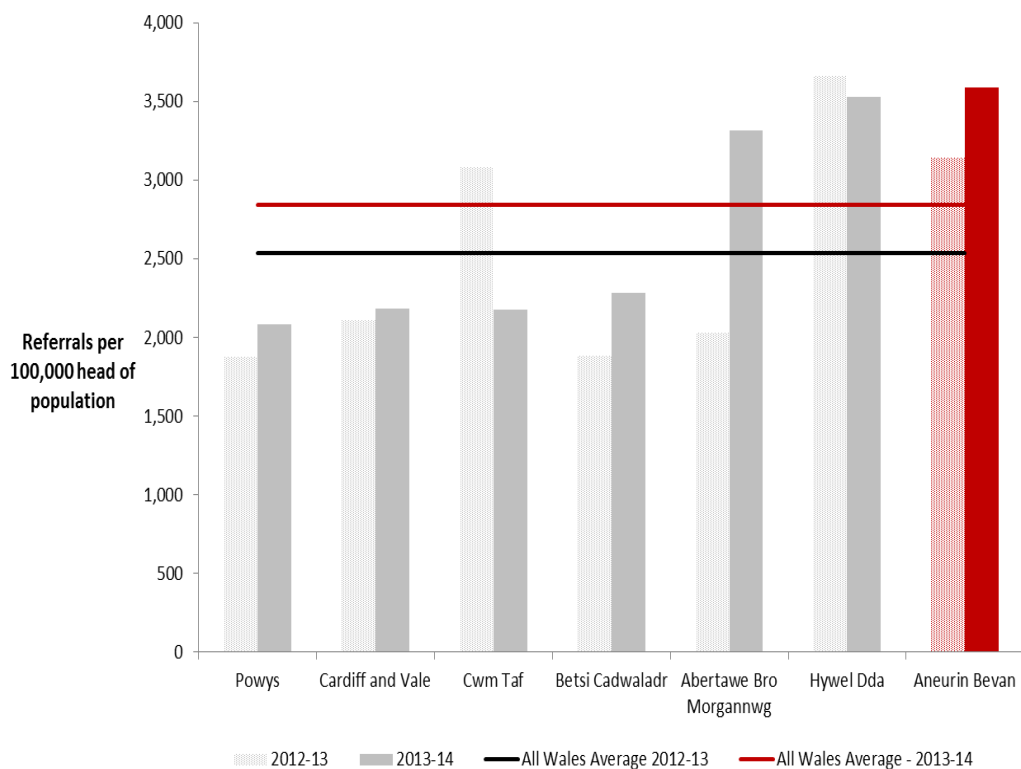
	Aneurin Bevan	All-Wales average
Percentage of patients receiving pain relief before surgery	73.8	74.9
Percentage of patients receiving physiotherapy advice or treatment before surgery	29.5	26.1
Percentage of patients receiving an exercise programme before surgery	31.2	23.4
Percentage of patients receiving weight management advice before surgery	9.8	9.1

Source: Wales Audit Office Survey of Patients Undergoing Knee Replacement Surgery

GP referrals

1.5 The Health Board now has the highest rate of GP referrals for orthopaedics per 100,000 head of population in Wales, following an increase in referrals from 2012-13 to 2013-14 ([Exhibit 7](#)). With the exception of the Monmouthshire area, the proportion of residents aged 65 and over for the Health Board catchment area is in line with the average for Wales. The age of the population would therefore not appear to be a contributory factor to the high referral rate. This would suggest that there is a higher rate of inappropriate referrals than elsewhere in Wales, which may be due to a lack of clear referral criteria and GP behaviours. A lack of alternative services can also be a contributory factor, although as previously discussed in [Paragraph 1.3](#), there is a range of alternative services in place and patients appear to be accessing those services.

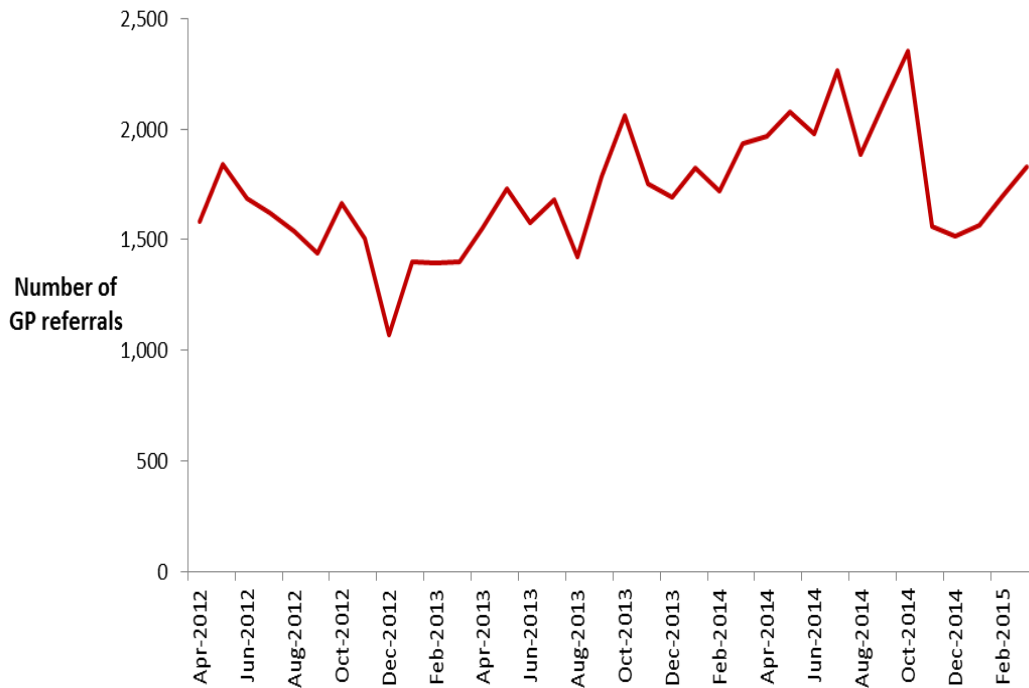
Exhibit 7: GP referrals per 100,000 head of population 2012-2014



Source: Stats Wales

1.6 Typically, the Health Board used to receive around 1,500 GP referrals per month. However, since December 2012 the number of GP referrals for orthopaedics has been steadily increasing, reaching 2,351 GP referrals by October 2014 (Exhibit 8).

Exhibit 8: Number of GP referrals received April 2012 – March 2015



Source: Stats Wales

Community musculoskeletal assessment and treatment services

1.7 In 2012, the Welsh Government introduced the concept of the CMATS. The aim of the CMATS is to provide a first point of contact for GP referrals for assessment and treatment of musculoskeletal-related pain and conditions as a way of ensuring that the right referrals for orthopaedic services are filtering through to secondary care. The Health Board introduced CMATS in 2004. The Welsh Government set out clear guidance as to how CMATS should operate. Local compliance with some of the key principles set out in the Welsh Government guidance, however, is variable (Exhibit 9).

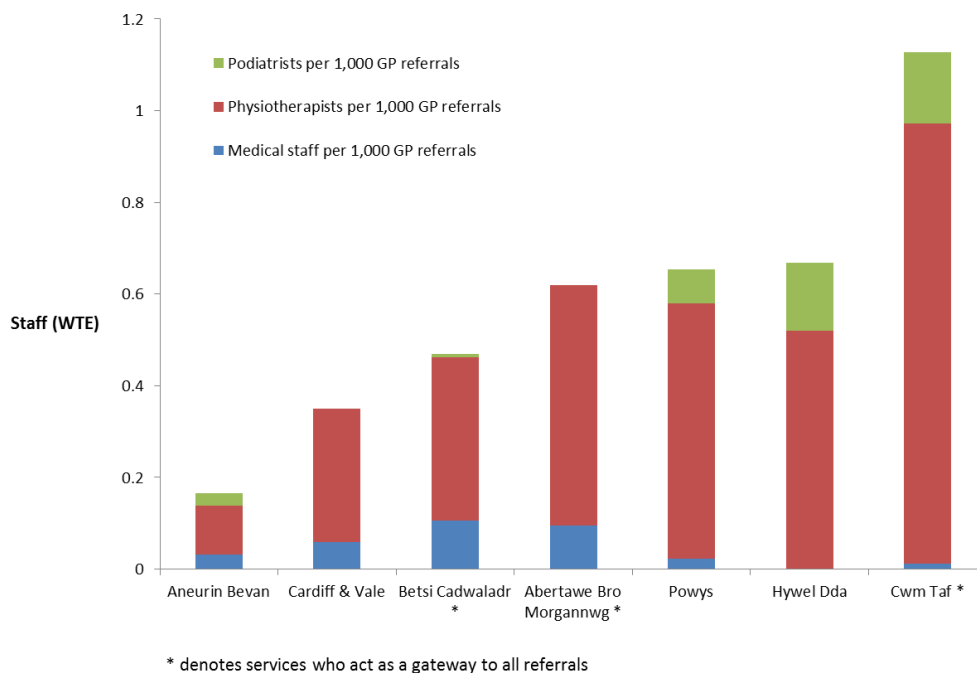
Exhibit 9: Compliance with the key principles set out in the Welsh Government guidance on CMATS

Principle	Compliance by this health board	Number of health boards across Wales complying
Clinics held in a combination of locality and secondary care centres	✘ (Clinics held within local physiotherapy departments and general outpatient departments across four sites)	All except Aneurin Bevan and Cwm Taf
All musculoskeletal referrals (with the exception of specific exclusions) will go to the CMATS	✘ (Physiotherapy referrals and some GP referrals)	Three (Abertawe Bro Morgannwg, Betsi Cadwaladr and Cwm Taf)
Staff have direct access to diagnostics	✓	All except Powys
The service consists of:		
Advanced practice physiotherapists	✓	All
Advanced practice podiatrists	✓	All except Abertawe Bro Morgannwg and Cardiff and Vale
GPs with knowledge, skills and interest in MSK	✓	Four (Abertawe Bro Morgannwg, Aneurin Bevan, Betsi Cadwaladr and Cardiff and Vale)

Source: Wales Audit Office Health Board Survey

1.8 The staffing levels for the CMATS at the Health Board are the lowest across Wales and less than one-third of the average ([Exhibit 10](#)). The redirection of some patients through physiotherapy can help to ease the workload on the CMATS. However, the progressive rise in monthly referrals will be placing the service's limited staff under increasing pressure.

Exhibit 10: CMATS staffing levels



Source: Wales Audit Office Health Board Survey

1.9 One of the principles of CMATS is to assess, diagnose and treat patients whose treatment is applicable to the specialists within CMATS and where it is deemed possible that the patient can be seen and treated in a maximum of two visits (face to face assessments). Those patients who need treatment that is more intensive should be referred on to more appropriate services at the point of referral. In line with Welsh Government guidance, waiting times to see the CMATS for a face-to-face assessment are not included in the referral to treatment pathway. The Health Board was unable to report the proportion of patients seen and treated by CMATS. The wait from referral to face-to-face CMATS assessment at the Health Board, however, is between two and six weeks, which is within the Welsh Government target of eight weeks.

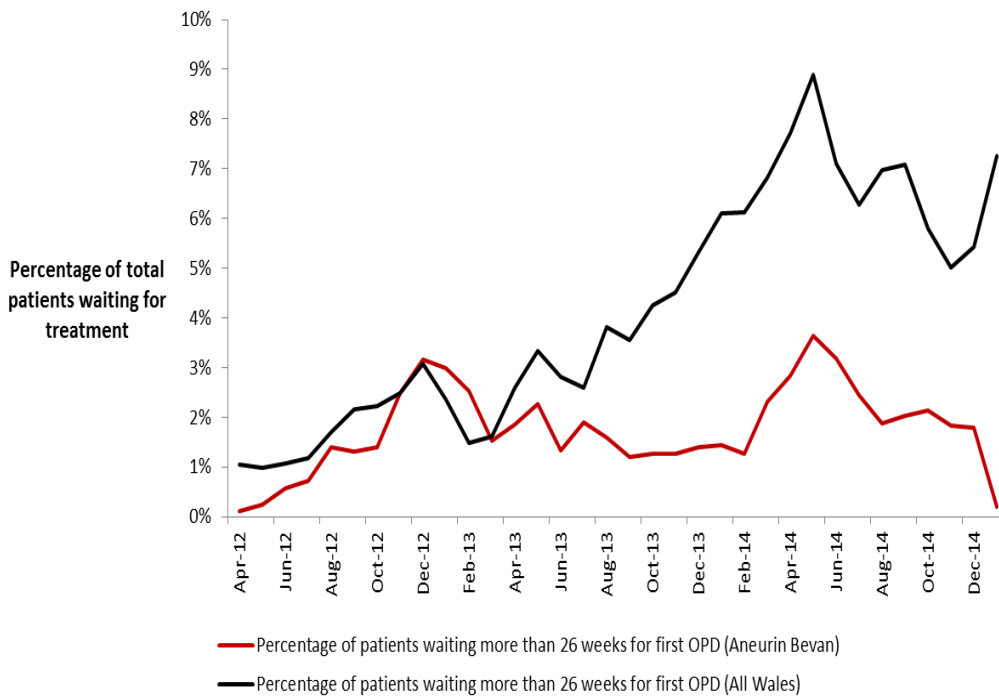
Part 2

2 Outpatients and diagnostic services

Outpatient services

2.1 In order to meet the Welsh Government target of 95 per cent of patients treated within 26 weeks of referrals, health boards should be working to an internal target of between 12 to 14 weeks for first outpatient appointment. The Health Board is currently working to an internal target of 16 weeks for first appointment, which places greater pressure on the diagnostic and inpatient element of the referral to treatment pathway to meet the 26-week-wait target. The percentage of patients waiting more than 26 weeks for their first outpatient appointment at the Health Board, however, has been lower than that across Wales for the last two years, averaging 1.6 per cent over the period (Exhibit 11). This performance would indicate that there is sufficient outpatient capacity to meet demand.

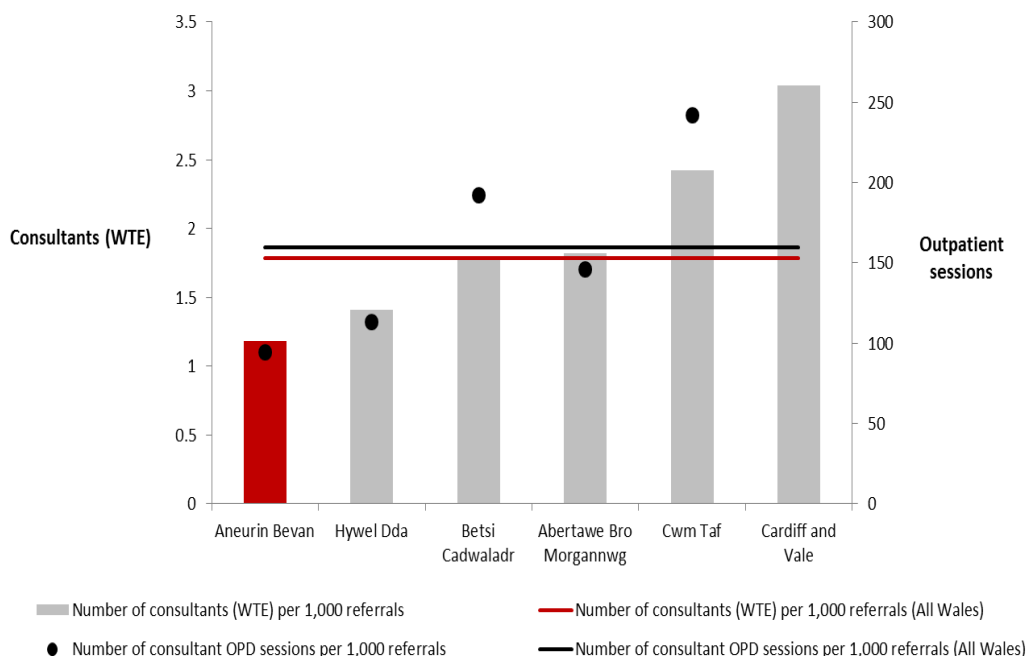
Exhibit 11: Percentage of patients waiting more than 26 weeks for first outpatient appointment



Source: Welsh Government Delivery Unit

- 2.2 The ability to meet outpatient demand is dependent on the extent to which health boards have the right level of medical staffing. Within the consultant capacity, it is also important to consider whether there is an appropriate balance within individual job plans between outpatient direct clinical care sessions and theatres. Despite the waiting times position indicating that there is enough capacity within the outpatient department to meet demand, the number of consultants per 1,000 referrals and the number of consultant sessions dedicated to outpatient activity are the lowest in Wales (Exhibit 12).
- 2.3 Both of these indicators would suggest that there is not enough consultant capacity to deal with the current outpatient demand. The Health Board appears, however, to be making greater use of non-medical staff to run outpatient clinics, with it being the only one to report non-medical-led outpatient attendances for orthopaedics. The Health Board's planning assumption for the length of a new outpatient appointment is also shorter than all other health boards at 10 minutes per appointment compared to 20 minutes per appointment across the rest of Wales. This would increase throughput but may be detrimental to the quality of the consultation session.

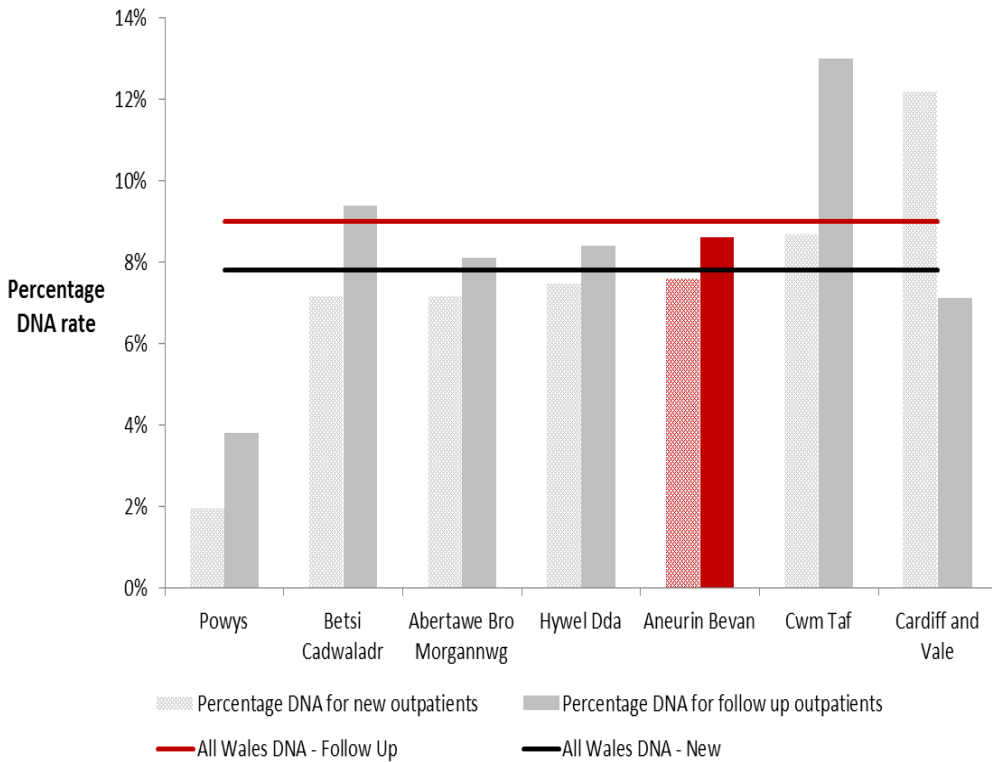
Exhibit 12: Consultant staffing and outpatient sessions per 1,000 referrals for 2013-14



Source: Stats Wales and Wales Audit Office Health Board Survey

- 2.4 Once an outpatient session is planned, it is important that the session is not cancelled because health boards are still obliged to treat those patients within 26 weeks. The Health Board was unable to report its rate of cancelled outpatient clinics for 2012-13. Many health boards are unable to report this data and, therefore, there is no comparison available.
- 2.5 Clinics consist of a mix of new and follow-up appointments based on demand for the service. Some patients may require follow-up appointments before professionals can make a clinical decision, while for other patients a single visit to outpatients is sufficient. Some patients who require follow-up appointments do not necessarily need to be seen by a doctor, or to be seen in the hospital setting. It is therefore important that patients are asked to return only when necessary and to the appropriate setting. This will help to avoid unnecessary follow-up attendances, which could displace patients who urgently need first appointments.
- 2.6 For the period 2013-14, the ratio of follow-up to new appointments in the Health Board was the second highest in Wales at 2.2 follow-up appointments to every new appointment. This exceeded the previous Welsh Government target of 1.9 and could indicate that many follow-up appointments are inappropriate.
- 2.7 Changes to the provision of outpatient services can help to reduce the number of times patients have to come to hospital. This could include hot clinics, or virtual clinics, whereby patients are consulted with using modern technology. In our survey of patients who underwent knee replacement surgery, 90 per cent of patients felt that the Health Board tried to co-ordinate the number of visits that they needed to make. This is just above the all-Wales average of 88 per cent.
- 2.8 The DNA rate and patient cancellation rate can provide an indication as to whether appointments are appropriate. The DNA rate for both new and follow-up outpatient appointments in the Health Board is below the all-Wales average at 7.6 per cent and 8.6 per cent respectively. However, this performance is outside the Welsh Government target of five per cent for new appointments and seven per cent for follow-up appointments, indicating that there is scope to improve efficiency within the system ([Exhibit 13](#)). The Health Board was unable to report the rates of patient cancellation for new and follow-up outpatient appointments. Not all health boards were able to report cancellation rates and therefore there is no comparison available.

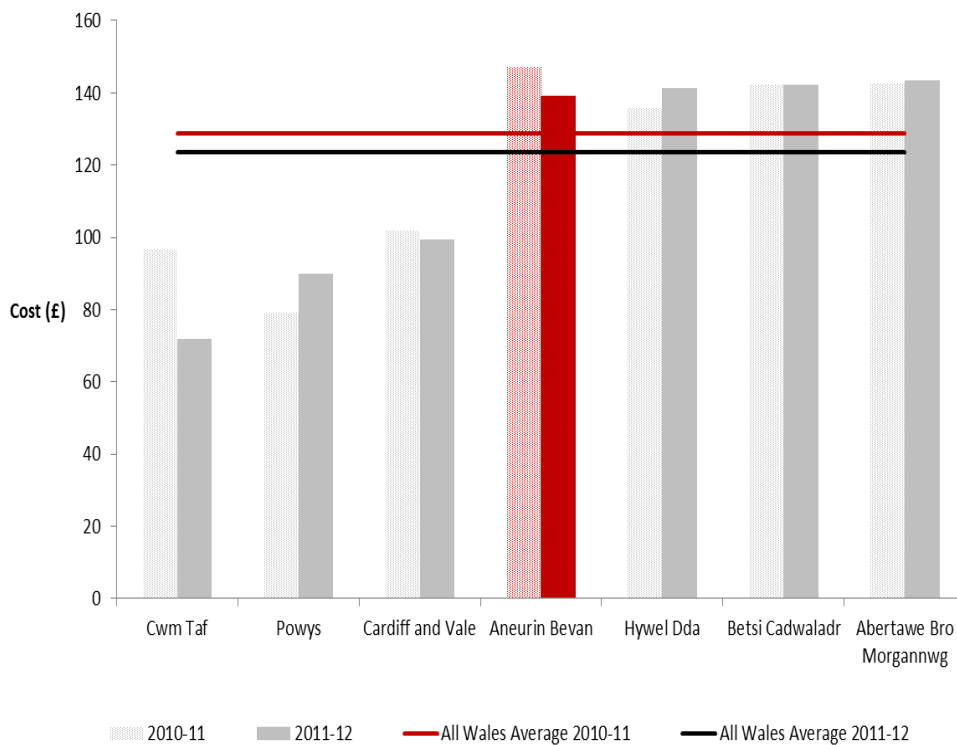
Exhibit 13: DNA rates for new and follow-up outpatients 2013-14



Source: Stats Wales

2.9 Using financial information submitted by the Health Board to the Welsh Government on an annual basis, we identified that the cost of an orthopaedic outpatient attendance in the Health Board was higher than the all-Wales average in 2011-12 (**Exhibit 14**) at £139.21, although it had reduced by 5.5 per cent from the previous year. The level of activity that goes through the outpatient departments will influence the cost of an outpatient attendance, along with the proportion of follow-up to new attendances, although other costs associated with staff will also be important factors.

Exhibit 14: Cost of an orthopaedic outpatient attendance for 2010-11 and 2011-12

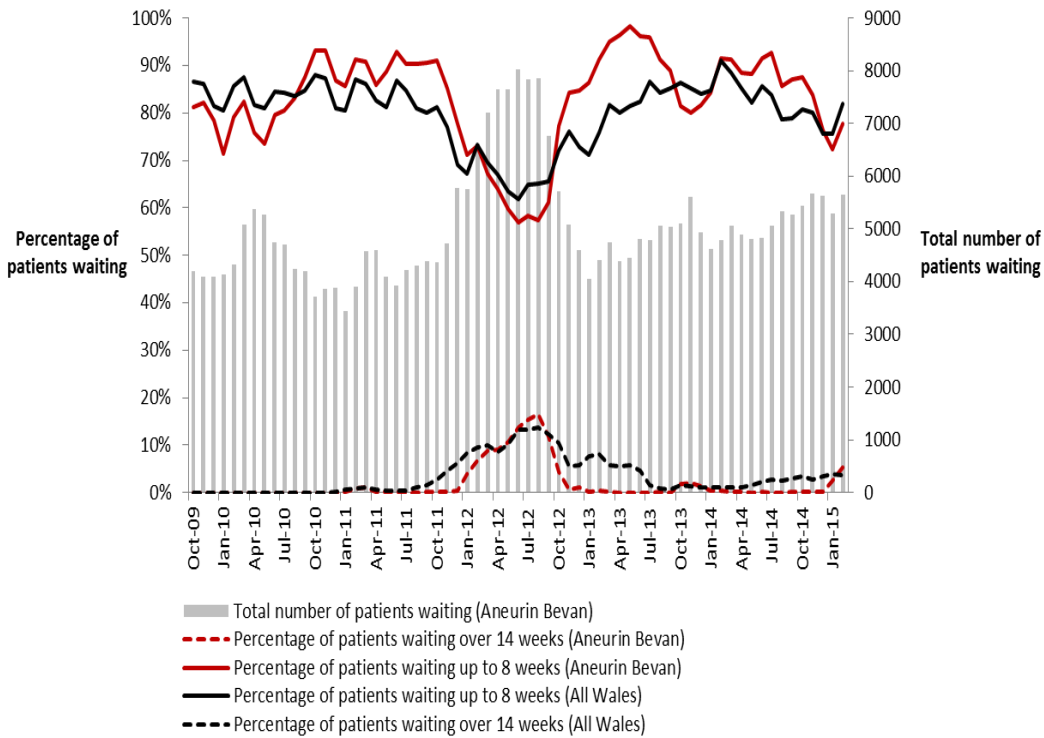


Source: Welsh costing returns

Physiotherapy services

- 2.10 The Health Board generally sees patients requiring physiotherapy to treat musculoskeletal problems quicker than in other parts of Wales. The percentage of patients waiting less than eight weeks averaged around 85.6 per cent compared to the all-Wales performance of 82.3 per cent between January 2014 and February 2015 (Exhibit 15).
- 2.11 The Welsh Government target is that no patient should wait more than 14 weeks for therapy services. With the exception of a brief period in 2012, very few patients have waited more than 14 weeks in the Health Board compared to the all-Wales position (Exhibit 15) which is good performance. Performance within the Health Board however is variable, with patients generally waiting longer for physiotherapy at Royal Gwent Hospital.

Exhibit 15: Waiting times for physiotherapy (adults)



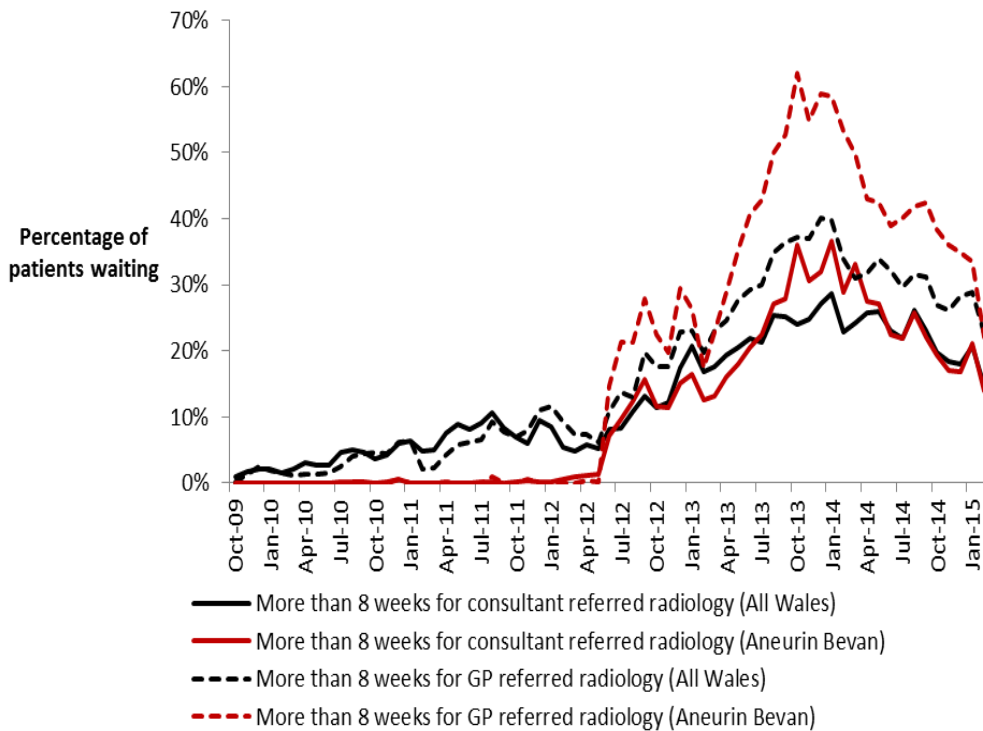
Source: Stats Wales

2.12 Outpatient physiotherapy services are provided in a wide range of settings across the Health Board although unlike other health boards across Wales, there is no physiotherapy provision in GP surgeries. The Health Board has not yet implemented a process of self-referral and patients who need physiotherapy continue to require a referral to the department by a health professional. Other health boards have implemented self-referral and this has provided the opportunity for patients to contact the department for advice prior to making a referral, or to be signposted to other more appropriate services. In common with the rest of Wales, the provision of physiotherapy services remains, in the main, a traditional five-day service within a working week.

Radiology services

2.13 In the main, patients with musculoskeletal problems will require access to radiological tests. Access to all radiology tests requested by GPs and consultants in this Health Board was consistently better than the all-Wales average until 2012 (Exhibit 16). Since then, performance has deteriorated, particularly for GP referrals to the radiology service (Exhibit 16). Since 2012, the percentage of GP-referred patients waiting more than eight weeks for radiological tests has been consistently higher than the all-Wales average, with the performance since August 2013 one of the highest in Wales.

Exhibit 16: Percentage of patients waiting more than eight weeks for radiology tests



Source: Stats Wales

2.14 Across Wales, requests for MRI scans in 2013-14 accounted for 23 per cent and 39 per cent of all GP-referred radiology requests and consultant-referred radiology requests respectively. The proportions of MRI referrals in the Health Board are significantly lower at 12 per cent and 32 per cent of all GP-referred radiology requests and consultant-referred radiology requests respectively. This pattern of referral, however, is variable across the four main hospital sites (Exhibit 17).

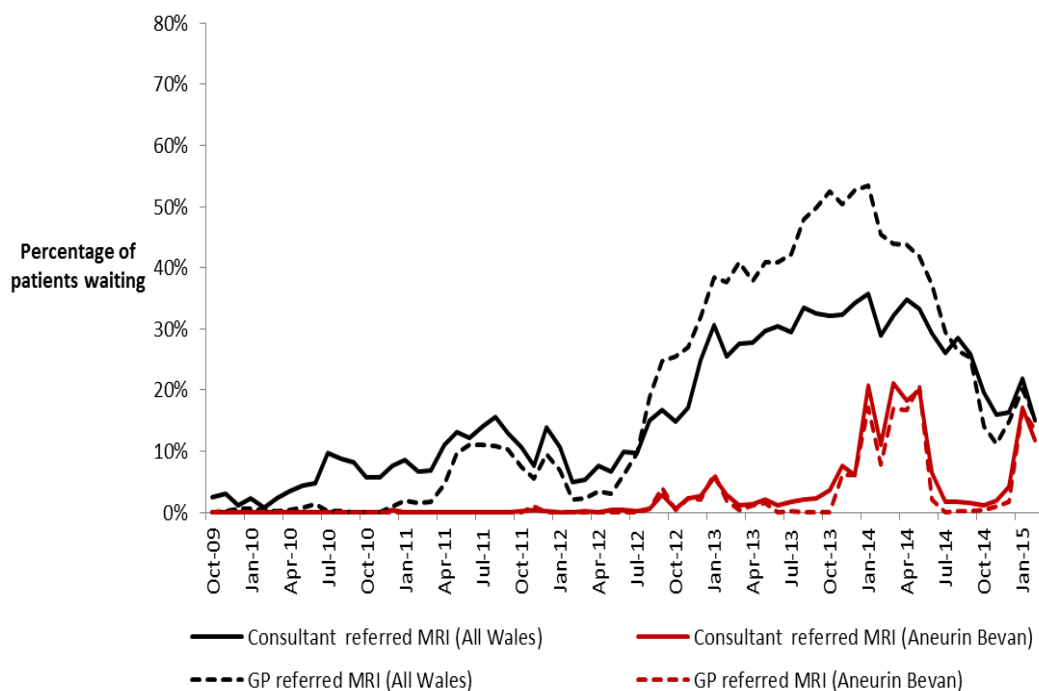
Exhibit 17: Proportion of radiology requests for MRI scans

Hospital site	Proportion of GP referrals for MRI scans	Proportion of consultant referrals for MRI scans
Community	7	22
Nevill Hall	31	33
Royal Gwent	31	37
Ysbyty Ystrad Fawr	35	52
All-Wales average	23	39

Source: Stats Wales

2.15 The increased rate of demand, particularly for GP-referred MRI scans, can place pressure on health boards' radiology departments. Waiting times for MRI scans remained favourable at the Health Board until the latter part of 2013. However, since October 2013, the percentage of patients waiting more than eight weeks has started to increase, dipping only between July and November 2014. This performance, however, remains more favourable than the all-Wales position (Exhibit 18).

Exhibit 18: Percentage of patients waiting more than eight weeks for an MRI scan



Source: Stats Wales

Part 3

3 Inpatient services

Waits and preparation for admission

3.1 Once the clinician has made the decision that the most appropriate course of action to deal with musculoskeletal problems is a surgical intervention, health boards should list the patient for surgery and arrange a date for pre-operative assessment to make sure that the patient is clinically fit. Pre-operative assessment arrangements are in place across the Health Board although the delivery of these services differs slightly by locality (Exhibit 19).

Exhibit 19: Pre-operative assessment arrangements

	South locality	North locality
Dedicated department	✓	✗
Nurse led	In part	In part
Available five days per week	✓	✓
Orthopaedic specific	✓	✓
Co-ordination of booking appointments	Dedicated scheduling staff	Medical secretaries

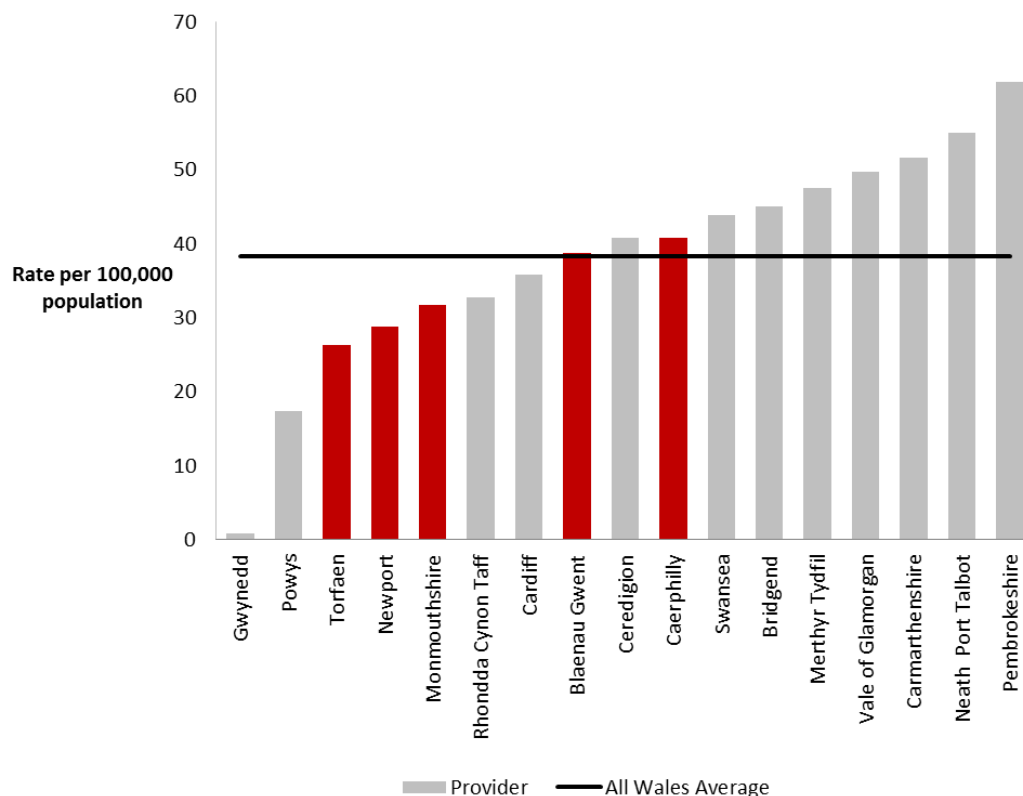
Source: Wales Audit Office Health Board Survey

3.2 Our survey of patients undergoing knee replacement identified that all patients received a pre-operative assessment prior to admission. One-third of these patients were assessed less than three weeks before surgery. Pre-operative assessments should be carried out with reasonable notice to minimise unexpected cancellations if a patient requires further intervention prior to surgery.

3.3 When listing a patient, it is important that the benefits of surgery are considered and that patients are not listed for procedures that research has demonstrated have limited clinical effectiveness². For the period 2012-13, we identified that the rate of procedures of limited clinical effectiveness was low across the majority of Health Board localities, with the rates for Blaenau Gwent and Caerphilly residents being around the average across Wales (Exhibit 20).

² The procedures reviewed include decompression on lumbar spine, excision of lumbar intervertebral disc, fusion of other joint of spine, extirpation of lesion of spine, biopsy of spine, denervation of spinal facet joint of vertebra and exploration of spine.

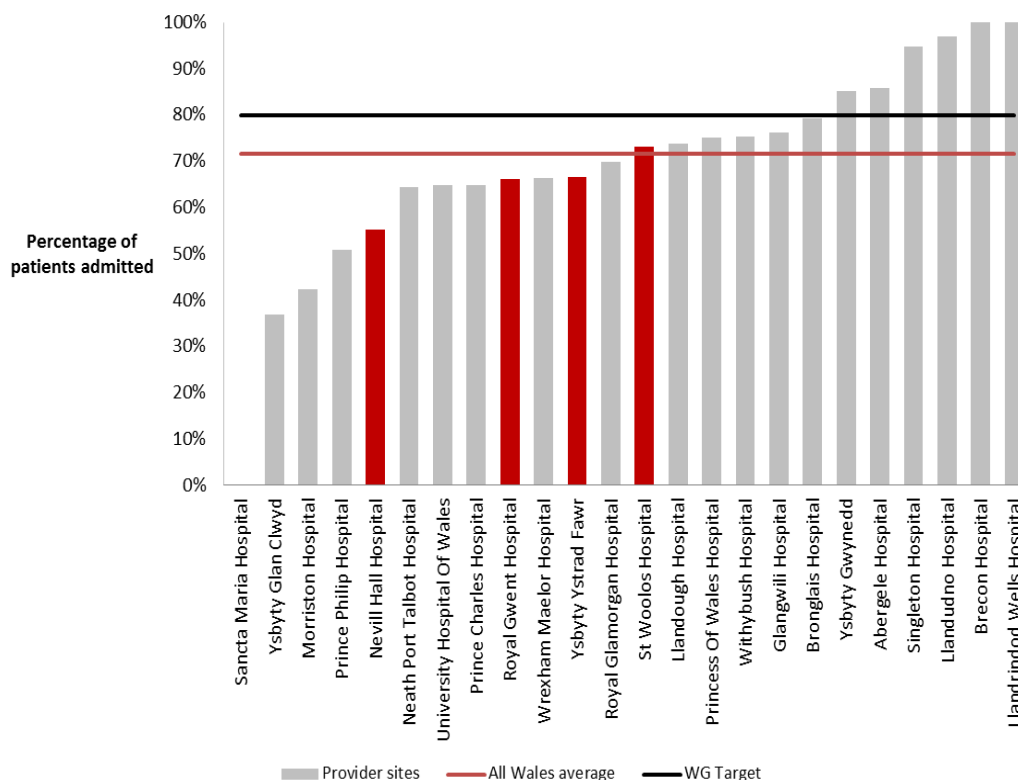
Exhibit 20: Rate of procedures of limited clinical effectiveness per 100,000 head of population 2012-13



Source: Patient Episode Database Wales

3.4 When listing a patient, it is also important that there is consideration of the potential for providing surgery on a day-case basis so that patients are not kept in hospital unnecessarily. The BADS has recommended a number of orthopaedic procedures which are suitable as day case. These have previously formed part of the Welsh Government performance management framework with a target of 80 per cent. For the financial year 2012-13, the percentage of recommended orthopaedic procedures undertaken as a day case at the Health Board’s hospital sites fell below the Welsh Government target, although performance at St Woolos Hospital was in line with the all-Wales average at 73 per cent. Performance at Nevill Hall Hospital was significantly lower with 56 per cent of BADS-recommended procedures undertaken as a day case (Exhibit 21).

Exhibit 21: Percentage of BADS-recommended orthopaedic procedures undertaken as a day case 2012-13



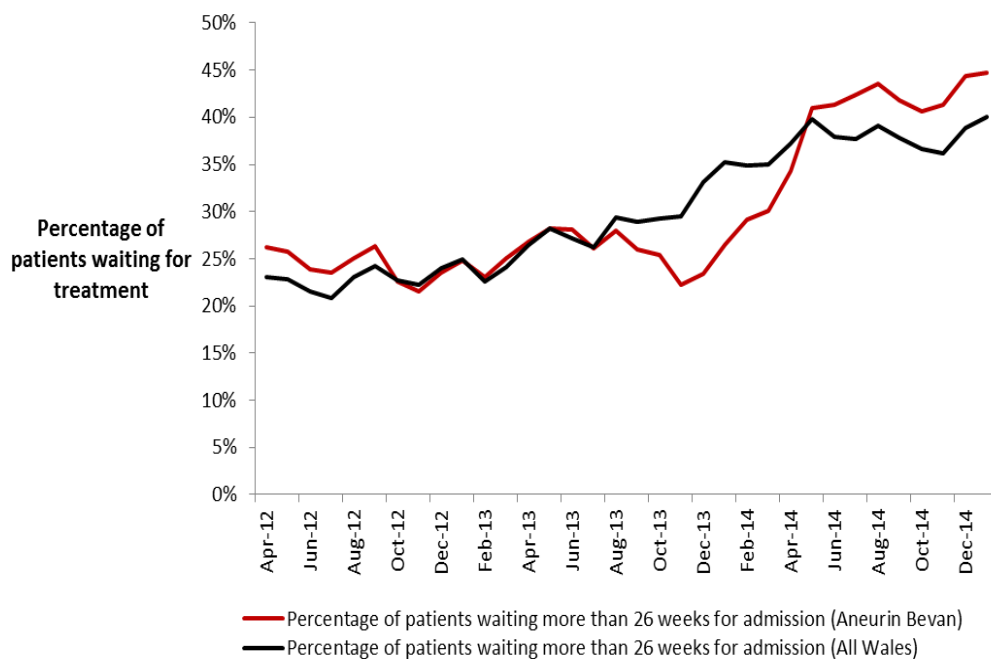
Source: Patient Episode Database Wales

Note: Private hospital facilities that carried out activity on behalf of the NHS are included.

3.5 To ensure that patients receive the optimal outcome from surgical intervention, health boards have adopted the Enhanced Recovery After Surgery (ERAS) programme. This includes the establishment of a ‘joint school’ to provide educational sessions for patients about to undergo hip or knee replacement surgery. Support includes an opportunity for patients to practice physiotherapy exercises and techniques that will speed recovery post-operatively. The ‘joint school’ is held prior to hospital admission and research indicates that the ‘joint school’ principle results in quicker recovery post-surgery and a reduced hospital stay. It is unclear whether the Health Board has implemented the ‘joint school’ principle as no information was provided to us.

3.6 The percentage of patients waiting more than 26 weeks for an inpatient or day-case admission at the Health Board remained around the all-Wales average until mid-2013 (Exhibit 22). Between July 2013 and February 2014, the proportion of patients waiting more than 26 weeks held between 20 per cent and 30 per cent while the average across Wales rose to 35 per cent; however, performance deteriorated and since May 2014, performance has been above the all-Wales average. The longer internal target wait for outpatient appointment, followed by increasing waits for diagnostics, will have a knock-on effect on the ability of the Health Board to treat those who require admission within 26 weeks.

Exhibit 22: Percentage of patients waiting more than 26 weeks for inpatient or day-case admission between April 2012 and January 2015

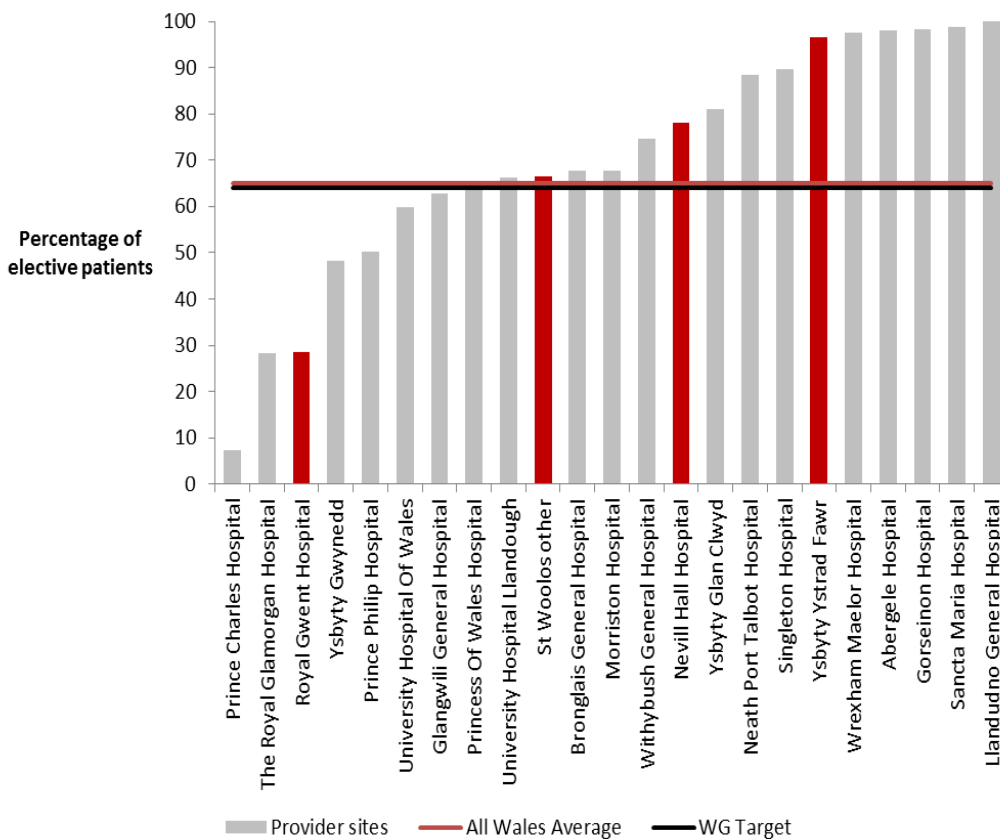


Source: Welsh Government Delivery Unit

Admission

3.7 To prevent any unnecessary overnight stays in hospital and to make best use of the bed capacity available, it is good practice for patients to be admitted on the day of surgery. Performance varies across the Health Board, with three hospitals exceeding the Welsh Government target of 64 per cent for this indicator (Exhibit 23). At Royal Gwent Hospital, less than 29 per cent of patients are admitted on the same day, which is significantly below the Welsh Government target and one of the lowest in Wales.

Exhibit 23: Percentage of elective orthopaedic patients admitted on the day of surgery 2012-13



Source: Patient Episode Database Wales

3.8 The Health Board has dedicated wards for elective orthopaedic activity. The number of available trauma and orthopaedic beds has increased by 3.8 per cent over the last four years, with an average of 192.7 daily available beds across the Health Board in 2013-14. The occupancy rate for these beds has fluctuated between 77 per cent in 2010-11, to 76.3 per cent in 2013-14. This is compared to an optimal occupancy rate of 85 per cent. This would indicate that there are opportunities to increase throughput or to reduce the available bed capacity. There is variation across sites, the higher occupancy rates being in the larger units. Occupancy rates range from 20 per cent at Ysbyty Ystrad Fawr to 89 per cent at Royal Gwent Hospital ([Exhibit 24](#)).

Exhibit 24: Available beds and occupancy rates 2013-14

	Available beds	Occupancy rate (%)
Nevill Hall Hospital	75.2	76.1
Royal Gwent Hospital	87.6	88.7
Ysbyty Ystrad Fawr	5.8	19.7

Source: Stats Wales

During admission

3.9 Operating theatres play an important part in the hospital stay of an elective orthopaedic patient, and any delays in surgery or cancellations can result in poor patient experience and inefficient use of resources. Cancellations on the day of surgery can also result in underutilisation in theatre capacity. The Health Board provided comprehensive information on the utilisation of its orthopaedic theatres for both day-case and inpatient theatres. Theatre utilisation over a three-month period January 2013 to March 2013 ranged between 45 and 79 per cent of available capacity for day surgery across Royal Gwent and Nevill Hall hospitals. Utilisation of inpatient theatres ranged between 69 and 94 per cent across Royal Gwent, Nevill Hall, St Woolos and Ystrad Fawr hospitals ([Exhibit 25](#)). The Welsh Government target for theatre utilisation is 95 per cent. Not all health boards provided us with theatre utilisation performance and therefore there is no comparison available.

Exhibit 25: Theatre utilisation

	January 2013	February 2013	March 2013
Nevill Hall – Day Surgery Unit	64%	70%	79%
Nevill Hall – Main Theatres	72%	82%	83%
Royal Gwent – Day Surgery Unit	45%	59%	66%
Royal Gwent – Main Theatres	74%	83%	82%
St Woolos	94%	93%	84%
Ysbyty Ystrad Fawr	72%	69%	80%

Source: Wales Audit Office Health Board Survey

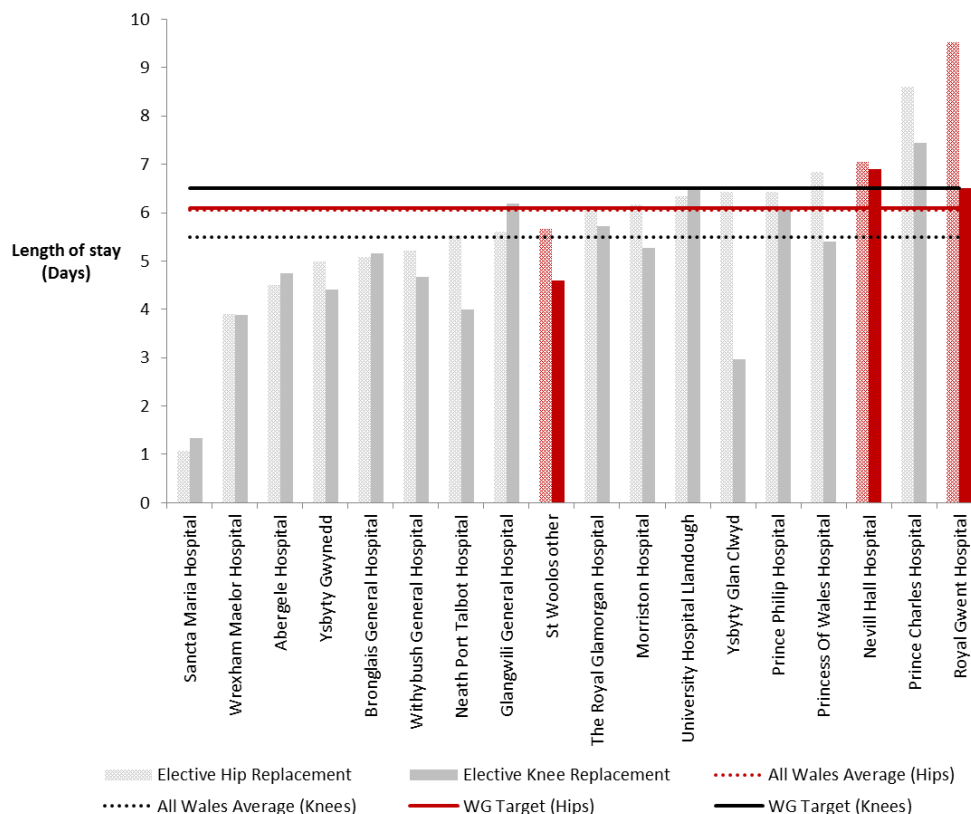
3.10 The Health Board was unable to report the rate of cancelled orthopaedic theatre sessions for the period 2012-13. Across sessions that were held, the rate of cancelled operations on the day of surgery made by the Health Board during this period, however, ranged from 9.3 per cent at Nevill Hall Hospital to 16.9 per cent at Royal Gwent Hospital. The Welsh Government has previously set a target for cancelled operations on the day of surgery at two per cent. Although the cancelled operations rate for the Health Board are not just cancellations on the day of surgery, these higher rates need to be explored to understand the reasons why patients are being cancelled. Not all health boards were able to report cancellation rates and therefore there is no comparison available.

Discharge

3.11 The average length of stay for an elective orthopaedic patient in the Health Board is 4.2 days, which is above the Welsh Government target of four days. There is variation across the four sites within the Health Board. The shortest average length of stay is in Ysbyty Ystrad Fawr (1.3 days), and the average length of stay at St Woolos Hospital is 3.6 days. Nevill Hall and Royal Gwent hospitals fall outside of the Welsh Government target at 4.6 days and 5.5 days respectively.

3.12 The average length of stay for patients undergoing hip and knee replacements are also outside the Welsh Government targets set for these procedures at Nevill Hall and Royal Gwent hospitals (**Exhibit 26**), with the average length of stay for hip replacements at Royal Gwent Hospital the longest in Wales at 9.5 days. Average length of stay following these procedures at St Woolos Hospital is within the Welsh Government targets.

Exhibit 26: Average length of stay for elective hip and knee replacements between April 2012 and October 2013

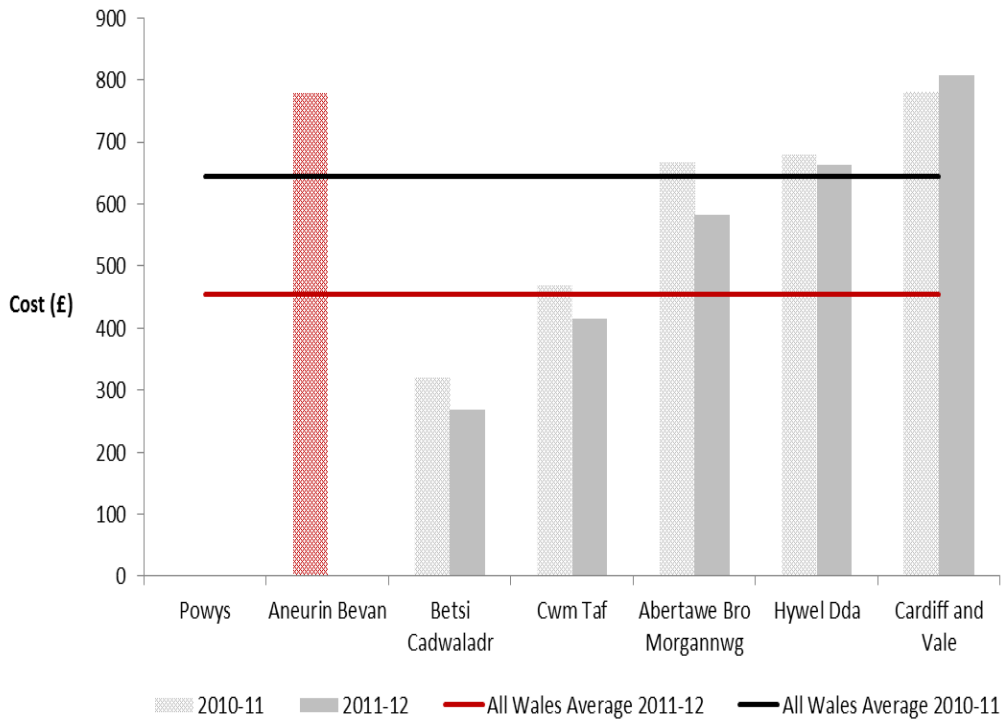


Source: Patient Episode Database Wales

3.13 The average cost of an elective orthopaedic hospital episode in the Health Board for 2012-13 was £3,776, which was below the all-Wales average of £4,239 and the lowest in Wales. Length of stay will influence the cost of a hospital episode, but other costs associated with staff and equipment will also be important factors. Given that the average length of stay for elective orthopaedics in the Health Board is above the all-Wales average, the lower average cost is therefore likely to be affected by lower costs associated with such aspects as staffing, equipment or drugs.

3.14 One factor that influences the cost of treatment is the cost associated with prostheses. The average cost of prostheses per episode for the Health Board was above the all-Wales average in 2010-11 and the second highest in Wales. The Health Board's 2011-12 finance submission did not segregate prosthetic costs (Exhibit 27).

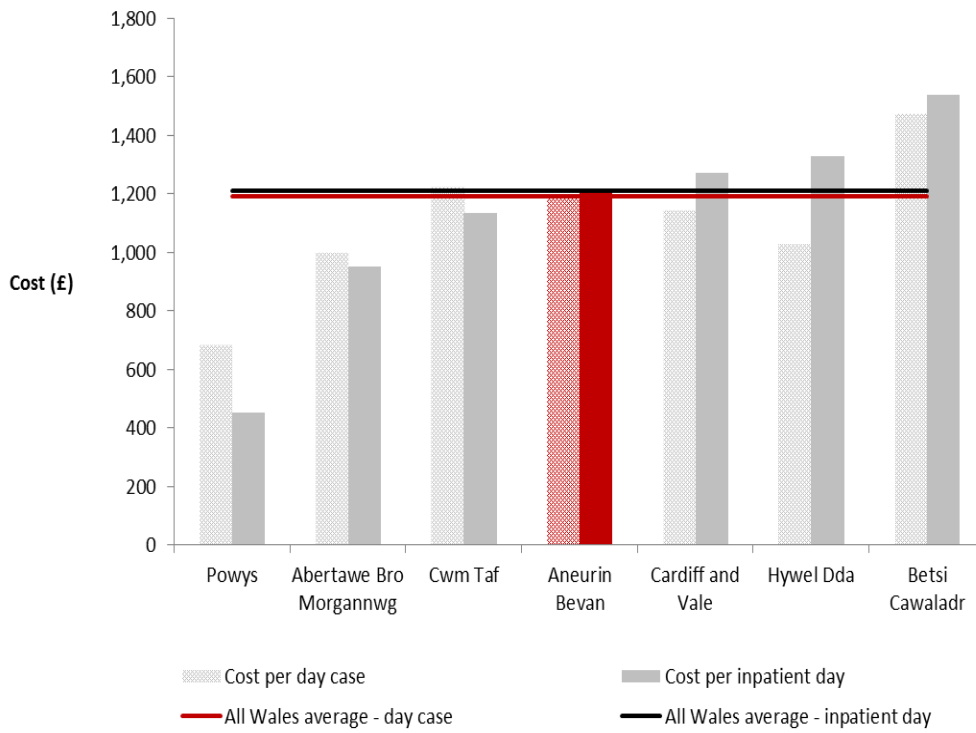
Exhibit 27: Average prosthetic cost per admission for 2010-11 and 2011-12



Source: Welsh costing returns

3.15 The costs of both an elective inpatient bed day and an orthopaedic day case for 2012-13 were £1,298 and £1,194 respectively. These figures were in line with the all-Wales averages (Exhibit 28). If performance against the BADS orthopaedic procedures at Nevill Hall Hospital improved to the recommended level of 80 per cent, the difference between the cost of a day case and the cost of an inpatient bed day could potentially release approximately £34,000 per year. In addition, if the average length of stay for elective orthopaedic procedures in the Royal Gwent Hospital reduced to the Welsh Government target of four days, this could potentially release resources in the region of £2.7 million, or free up capacity to increase throughput.

Exhibit 28: Average cost per elective orthopaedic day case and inpatient bed day 2012-13



Source: Welsh costing returns

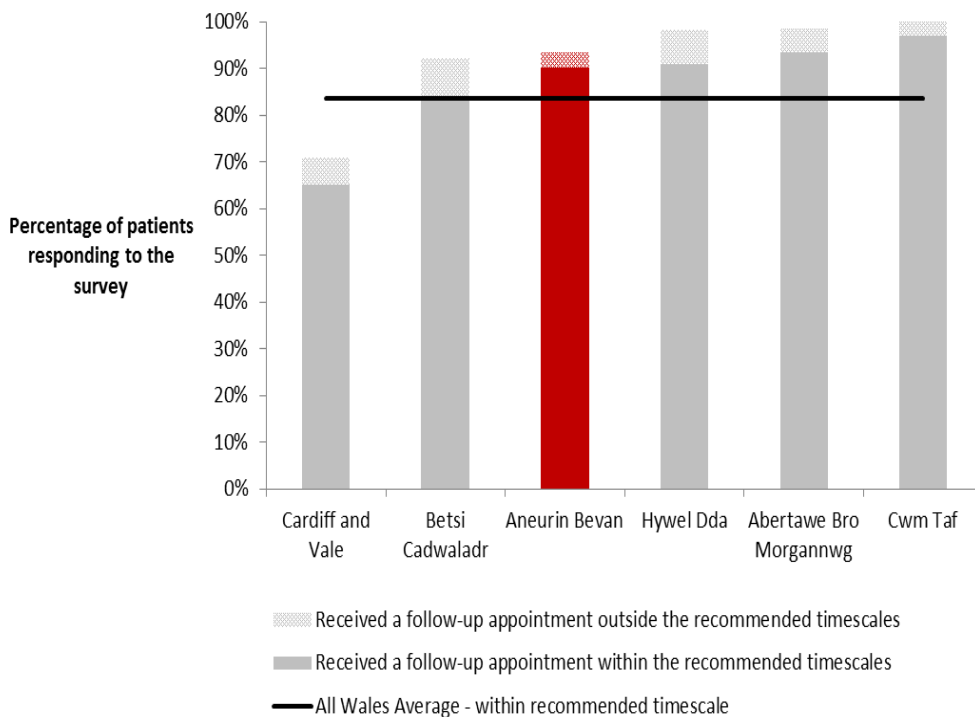
Part 4

4 Follow-up and outcomes

Follow-up arrangements

4.1 Following discharge, patients undergoing a hip or knee replacement should receive a follow-up appointment between six weeks and three months of discharge. The Health Board was unable to report how many patients had received their follow-up appointment within the specified timescales. However, our patient survey identified that 93 per cent of the patients undergoing knee replacement surgery who responded to our survey had received a follow-up post-discharge (Exhibit 29), which is above the all-Wales average. Of those, 96 per cent of patients had received the follow-up appointment within the specified timescales.

Exhibit 29: Percentage of patients responding to the knee replacement survey who received a follow-up appointment post-discharge



Source: Wales Audit Office Survey of Patients Undergoing Knee Replacement Surgery

Patient outcomes and experience

- 4.2 For many patients, surgery can be a positive life-changing experience, which can significantly improve their quality of life, but occasionally things can go wrong. As part of our work, we reviewed a range of indicators to understand the extent to which there are adverse experiences for patients both short and long term.
- 4.3 Acquiring an SSI during admission can extend the length of time a patient stays in hospital. For the period 2012-13, we reviewed the rate of SSI for hip and knee replacements. The rates of SSI following hip surgery are lower at the Health Board than the all-Wales average, but rates for knee surgery are higher, particularly at Nevill Hall Hospital ([Exhibit 30](#)). The Welsh Government target is zero per cent.

Exhibit 30: SSI rates for hip and knee arthroscopy 2012-13

Hospital	SSI rate (hips)	SSI rate (knees)
Nevill Hall	0.4	3.2
Royal Gwent	1.2	1.9
All-Wales average	1.5	1.8

Source: Public Health Wales Observatory

- 4.4 For the same period, we identified that readmission rates following elective hip and knee replacements were in line with the all-Wales average. Mortality rates for orthopaedic patients within hospital and up to 30 days after discharge are, however, above the all-Wales average ([Exhibit 31](#)). These rates are the second highest across Wales.

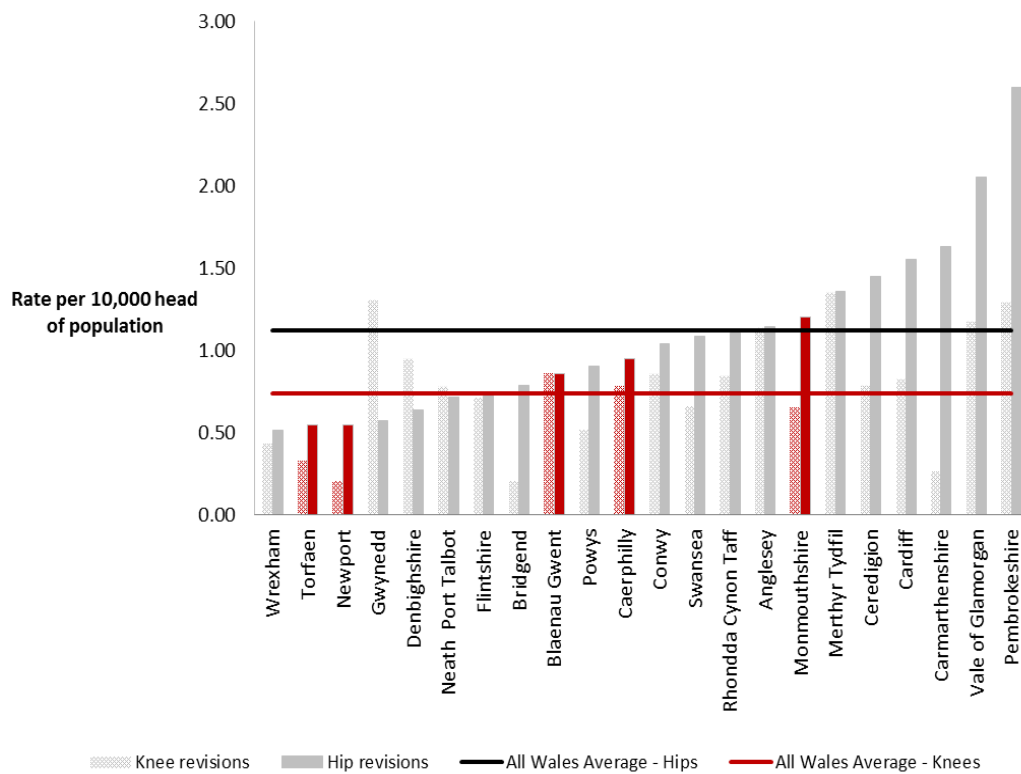
Exhibit 31: Readmission and mortality rates for elective orthopaedics 2012-13

Indicator	Aneurin Bevan	All-Wales average
Percentage of patients readmitted within 28 days following a hip replacement	0.8	0.9
Percentage of patients readmitted within 28 days following a knee replacement	0.1	0.1
Death in hospital per 100 elective orthopaedic admissions	0.10	0.06
Death within 30 days of discharge following an elective orthopaedic admission, per 100 elective orthopaedic admissions	0.14	0.10

Source: Patient Episode Database Wales

4.5 The lifespan of an artificial hip or knee varies based on a number of factors, but on average can last for more than 20 years. However, as the average age of the population increases, the likelihood of patients having to undergo a secondary joint replacement (or 'revision') also increases. Revisions, however, can be an indication of where the original joint replacement may not have been effective. The rate of revision for hips and knees varies across the Health Board's localities, with the rates for residents of Newport and Torfaen among the lowest in Wales. Hip revision rates are highest for Monmouthshire residents at 1.2 per cent (Exhibit 32).

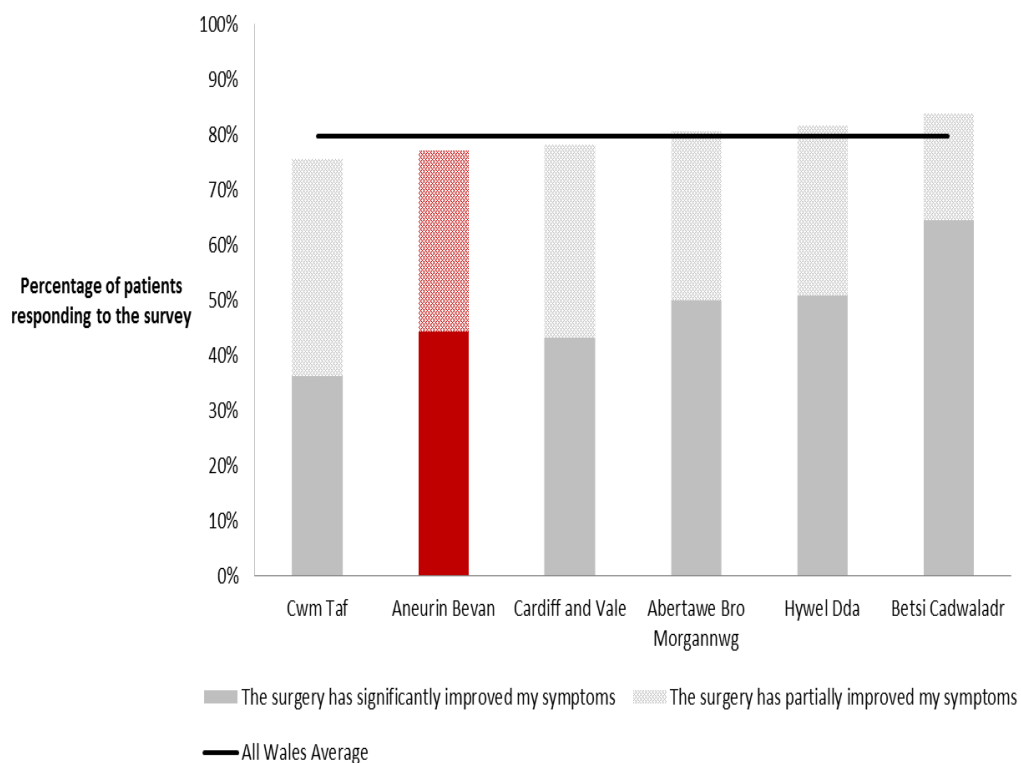
Exhibit 32: Rate of revision per 10,000 head of population 2012-13



Source: Patient Episode Database Wales

4.6 In our survey of patients who underwent knee replacement surgery, we asked patients whether their surgery had improved their symptoms. Seventy-seven per cent of patients noticed an improvement. This was just below the all-Wales average of 80 per cent. Forty-four per cent of the Health Board's patients reported that surgery had significantly improved their symptoms, and a further 33 per cent stated that surgery had partially improved their symptoms (Exhibit 33). There is variation however between sites, with 82 per cent of patients from St Woolos Hospital reporting improvements compared to 72 per cent across Royal Gwent and Nevill Hall hospitals.

Exhibit 33: Percentage of patients who identified that their knee replacement surgery partially or significantly improved their symptoms



Source: Wales Audit Office Survey of Patients Undergoing Knee Replacement Surgery

- 4.7 The Health Board reported that it monitors the outcomes of patients undergoing orthopaedic treatment through clinical audit and governance meetings, along with submission of patient data to the National Joint Registry. Other health boards report using the Oxford Hip and Knee scores to assess outcomes. The Health Board does record outcomes for shoulder surgery with plans in place to extend this to other orthopaedic sub-specialties.
- 4.8 The Health Board reported undertaking patient satisfaction surveys during the last 12 months to gather the views of orthopaedic patients. During the period 2012-13, the Health Board recorded 136 complaints relating to orthopaedic services. This equates to 1.9 per cent of elective orthopaedic inpatient admissions. Many health boards are unable to report the number of complaints specifically relating to orthopaedic services, and therefore there is no comparison available.

Appendix 1

Sources of data

The sources of data used to inform the mandated review of orthopaedic services include:

- Wales Audit Office Health Board Survey which requested a range of data relating to:
 - GP referrals
 - CMATS
 - Orthopaedic outpatients
 - Therapy services
 - Radiology services
 - Pre-operative assessment
 - Orthopaedic beds
 - Operating theatres
 - Medical staffing
 - Patient experience
 - Financial information
- Patient Episode Database for Wales
- Stats Wales (www.statswales.wales.gov.uk)
- Public Health Observatory
- Wales Audit Office Survey of Patients Undergoing Knee Replacement Surgery
- Welsh costing returns

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