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A Comparative Picture of Orthopaedic Services

Cardiff and Vale University Health Board

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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 Cardiff and Vale University Health Board (the UHB) 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 UHB compares with the rest of Wales on each indicator and, where applicable, Welsh Government targets.




Exhibit 1: High-level messages


Orthopaedic services are generally coping with demand, which is consistently low, but MRI waits are long, the inpatient pathway needs to be improved to make better use of resources and although outcomes are generally positive, revision rates and missed follow-up appointments are some of the highest in Wales:









- Investment in primary care services is increasing and there is a consistently lower rate of GP referrals, although the impact of the Clinical Musculoskeletal Assessment and Treatment Service (CMATS) is unclear.
- Outpatient and physiotherapy services are generally meeting demand, although a reduction in Did Not Attend (DNA) rates for outpatient appointments and the availability of direct access to physiotherapy could further improve waiting times. Access to MRI for GP-referred patients is problematic.
- More timely pre-operative assessment, increased day surgery rates, maximised bed occupancy and a reduction in prosthetic costs could improve the use of inpatient resources.
- Patients generally have positive outcomes with the exception of revision rates, which are some of the highest in Wales and not all patients are followed up.





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 increased by eight per cent between 2010 and 2013.	
Total spend on primary care provision	Average spend per head of population on primary care is the lowest across Wales at £11.20.	
Proportion of total musculoskeletal spend allocated to primary care	The proportion of total spend on primary care has been above the all-Wales average for three years.	
Range of community based services available to GPs	The range of community based services available to GPs compares less favourably than other health boards.	
Receipt of alternative intervention prior to surgery	The proportion of patients receiving alternative intervention prior to surgery is above the all-Wales average. The proportion of patients receiving pain relief as an alternative is below the all-Wales average.	
Is demand for secondary care services managed?		
GP referral rate	The UHB has the second lowest rate of GP referrals for orthopaedics per 100,000 head of population in Wales.	
Trend in referrals	The monthly number of GP referrals has remained relatively constant in recent years. This compares well against the trend across Wales, where referrals are significantly increasing.	





Primary and community based services		
Indicator	Health board performance	Performance rating
Is the CMATS operating effectively?		
CMATS in place	The UHB introduced CMATS in April 2012, covering all localities.	
CMATS operational arrangements	CMATS comply with the key Welsh Government principles with the exception of acting as a gateway to all GP referrals, and the inclusion of an advanced practice podiatrist.	
CMATS staffing levels	The level of staff per 1,000 GP referrals within CMATS is the second lowest in Wales.	
Patients treated by CMATS	The UHB was unable to report the proportion of patients treated by CMATS.	-
Waiting times for face-to-face assessment by CMATS	The UHB was unable to report the average waiting times for face-to-face assessment.	-

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 their first outpatient appointment is now below the all-Wales average, although it is fluctuating month on month.	
Consultant outpatient sessions	The UHB was unable to report the average number of consultant outpatient sessions held, although the number of consultants per 1,000 GP referrals is the highest in Wales.	-






Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
Cancelled outpatient clinics	The percentage of outpatient clinics cancelled at University Hospital Llandough was 6.9 per cent, compared to 4.3 per cent at University Hospital of Wales. There is no comparison.	
New to follow-up ratios	The follow-up to new ratio is 3.2, which is well above the Welsh Government target of 1.9.	
DNA rates	The DNA rate for new appointments is the highest in Wales at 12.2 per cent. The DNA rate for follow-up appointments is below the all-Wales average at 7.1 per cent. Both are higher than Welsh Government targets.	
Patient cancellations	The UHB was unable to report its patient cancellation rate.	-
Co-ordination of visits	Ninety-three per cent of patients felt that the UHB tried to co-ordinate the number of visits that they need to make. This is the highest response in Wales.	
Cost per outpatient attendance	The cost of an orthopaedic outpatient attendance is below the all-Wales average at £99.35 and reducing.	
Are physiotherapy services able to meet demand?		
Waits for physiotherapy services	The percentage of patients waiting less than eight weeks was above the all-Wales average but has now deteriorated with an increasing rate in the number of patients waiting more than 14 weeks.	
Range of settings	Physiotherapy services are provided in a range of primary, community and acute settings.	
Ease of access	Patients are not yet able to self-refer directly to the physiotherapy service.	

Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
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 are increasing with the percentage of patients waiting more than eight weeks above the all-Wales average.	
MRI referral rates	The rate of referrals for MRI scans from both GPs and consultants are in line with the all-Wales average at University Hospital Llandough. Rates are higher at University Hospital of Wales, which reflects the broader case mix of patients in this hospital.	
Waits for MRI scans	The percentage of patients waiting more than eight weeks for MRI scans has been consistently higher than the all-Wales average, although performance is improving.	






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, although there is no dedicated department for assessment.	
Receipt of pre-operative assessment	All but one patient in our survey received a pre-operative assessment prior to surgery, although one-third of patients received it less than three weeks before admission.	



Inpatient services		
Indicator	Health board performance	Performance rating
Procedures of limited clinical effectiveness	The rate of procedures of limited clinical effectiveness is below the all-Wales average for Cardiff residents but above the all-Wales average for Vale of Glamorgan residents.	
British Association of Day Surgery (BADs) day-case rates	The percentage of the recommended orthopaedic procedures undertaken as a day case is below the Welsh Government target across all sites.	
Implementation of 'joint school' ¹	It is not clear whether the UHB has implemented a joint school.	-
Waits for surgery	The percentage of patients waiting more than 26 weeks for admission has remained relatively constant since April 2012 and is below the all-Wales average.	
Is bed capacity used effectively?		
Day of surgery admission	The percentage of patients admitted on the day of surgery is above the Welsh Government target at University Hospital Llandough at 66 per cent, but below the Welsh Government target at University Hospital of Wales at 60 per cent.	
Reduction in inpatient beds	The total number of orthopaedic beds has reduced by 14.7 per cent over the last four years, with an average of 153 daily available beds across the UHB.	Descriptor indicator

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
Bed occupancy	Occupancy rates are just below the optimal level of 85 per cent at 84.5 per cent. However, there is variation across sites, with occupancy at University Hospital Llandough at 63.9 per cent.	
Is operating theatre capacity used effectively?		
Theatre utilisation	No information was provided by the UHB about its theatre utilisation across orthopaedic surgery.	-
Cancelled operations	The UHB was among those unable to report its cancellation rates for orthopaedic theatre sessions.	-
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 4.3 days, which is outside the Welsh Government target of four days although there is variation across sites, with performance within target at University Hospital of Wales.	
Average length of stay for hip and knee replacements	The average length of stay for patients undergoing hip replacements is just outside the Welsh Government target at 6.3 days. Average length of stay for knee replacements is in line with the Welsh Government target at 6.1 days.	
Cost per inpatient episode	Average cost of an elective orthopaedic hospital episode is the highest across Wales at £4,795.	
Prosthetic cost per inpatient episode	The average cost of prostheses per episode is the highest in Wales at £808 and increasing.	

Inpatient services		
Indicator	Health board performance	Performance rating
Cost per day case	The cost of an elective orthopaedic day case is just below the all-Wales average at £1,144.	
Cost per inpatient bed day	The cost of an elective inpatient bed day is just above the all-Wales average at £1,273.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
Are patients followed up?		
Follow-up appointment	Only 71 per cent of patients undergoing knee replacement surgery said that they received a follow-up post-discharge. This was the lowest response in Wales.	
Follow-up appointment within recommended timescales	Ninety-two per cent of patients who received a follow-up appointment were seen between six weeks and three months after discharge.	
Are adverse complications avoided and the benefits of surgery optimised?		
Surgical Site Infections (SSIs)	The rate of SSIs for hip replacement is in line with the all-Wales average, and below the all-Wales average for knee replacements. 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 in line with the all-Wales average, and below the all-Wales average for knee replacements.	
Mortality rates for elective orthopaedic patients	Mortality rates for elective orthopaedic admissions and deaths within 30 days of discharge are below the all-Wales average.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
Revision rates	The rate of revision for hips is among the highest in Wales across the two main localities within the UHB, with the rate of knee revisions also high for Vale of Glamorgan residents.	
Improvement of symptoms	Seventy-eight per cent of patients reported that surgery had partially or significantly improved their symptoms. This is just below the all-Wales average.	

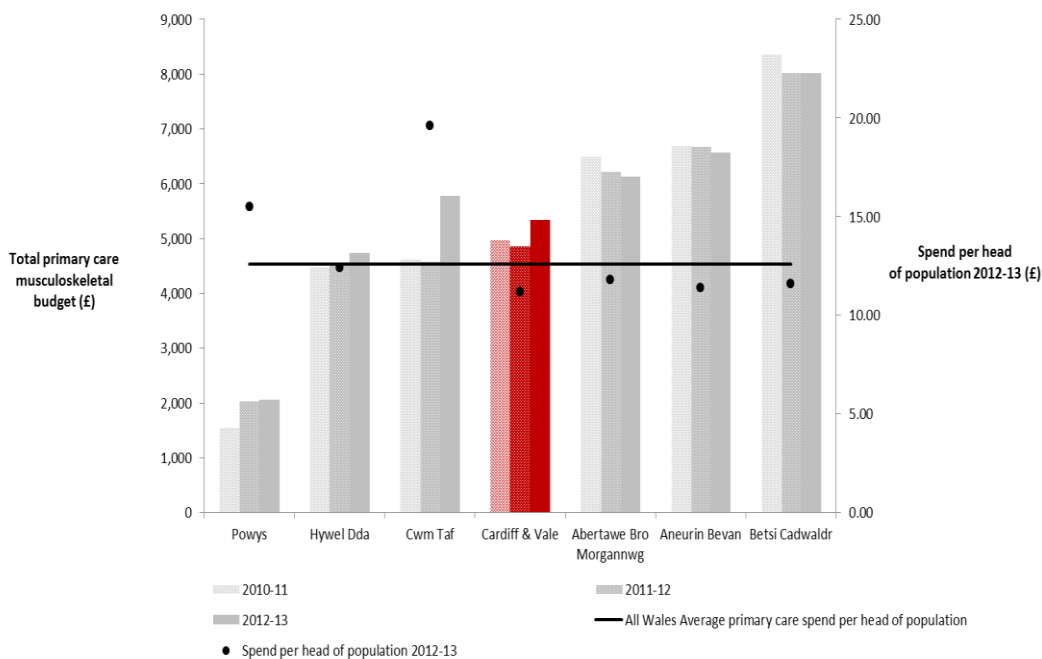
Part 1

1 Primary and community based services

Primary care provision

1.1 Over the three years between 2010 and 2013, the UHB shows a net increase in its primary care spend on musculoskeletal services of 8.0 per cent (Exhibit 3). The UHB spend per head of population on primary care musculoskeletal services, however, was below the all-Wales average at £11.20 in 2013 and the lowest in Wales (Exhibit 3).

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 UHB fell between 2010-11 and 2011-12 but rose slightly the following year (Exhibit 4). However, it has been consistently above the all-Wales average, suggesting that musculoskeletal services have been focused predominantly more on primary care provision than other health boards.

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 lifestyle programmes, community physiotherapy and chiropractic therapy. The UHB reported having a number of services in place, which allow direct access by GPs. The range of services, however, compares less favourably with many other health boards in 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. At the UHB, the proportion of patients receiving physiotherapy advice or treatment was the highest across Wales at 37.8 per cent. The proportion of patients receiving a weight management programme and exercise advice was also above the all-Wales average. The proportion of patients receiving pain relief was slightly below the all-Wales average, which is also positive as it suggests that GPs are looking at alternative treatments to prescribing medication (Exhibit 6).

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

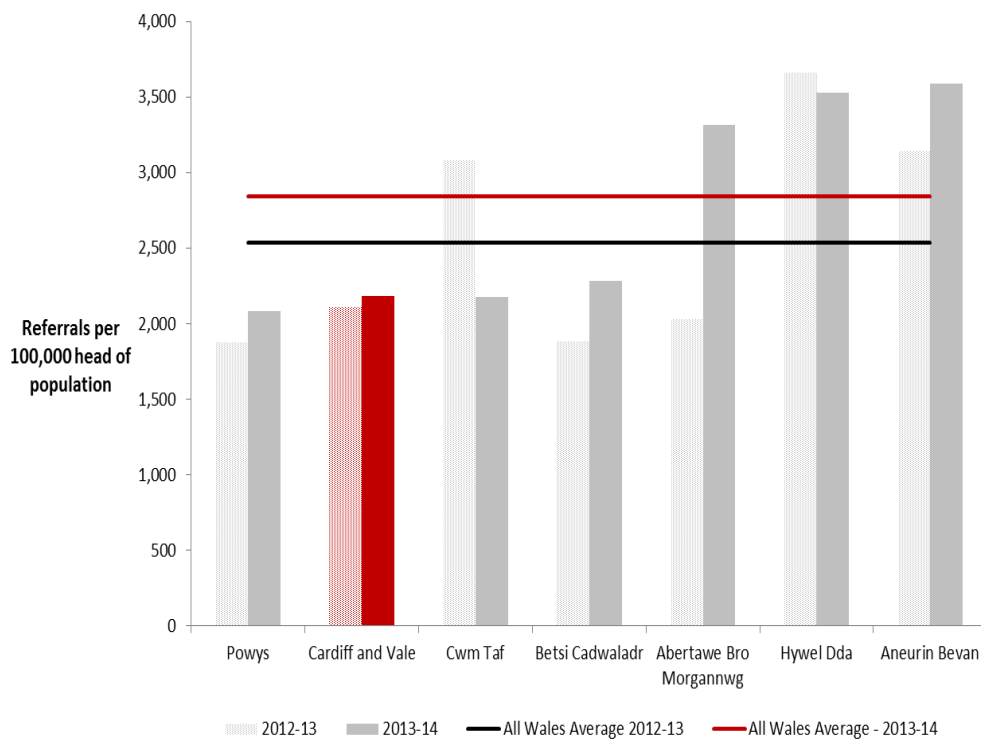
	Cardiff and Vale	All-Wales average
Percentage of patients receiving pain relief before surgery	71.6	74.9
Percentage of patients receiving physiotherapy advice or treatment before surgery	37.8	26.1
Percentage of patients receiving an exercise programme before surgery	24.3	23.4
Percentage of patients receiving weight management advice before surgery	12.2	9.1

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

GP referrals

- 1.5 The UHB has one of the lowest rates of GP referrals for orthopaedics per 100,000 head of population in Wales ([Exhibit 7](#)). The proportion of residents aged 65 plus is the lowest in Wales in Cardiff, and just above the average for Wales in the Vale of Glamorgan. This would suggest that the referral rate is largely reflective of the age of its main catchment population. The rate of referrals has risen slightly since 2012-13 ([Exhibit 7](#)), although still remains below the all-Wales average.

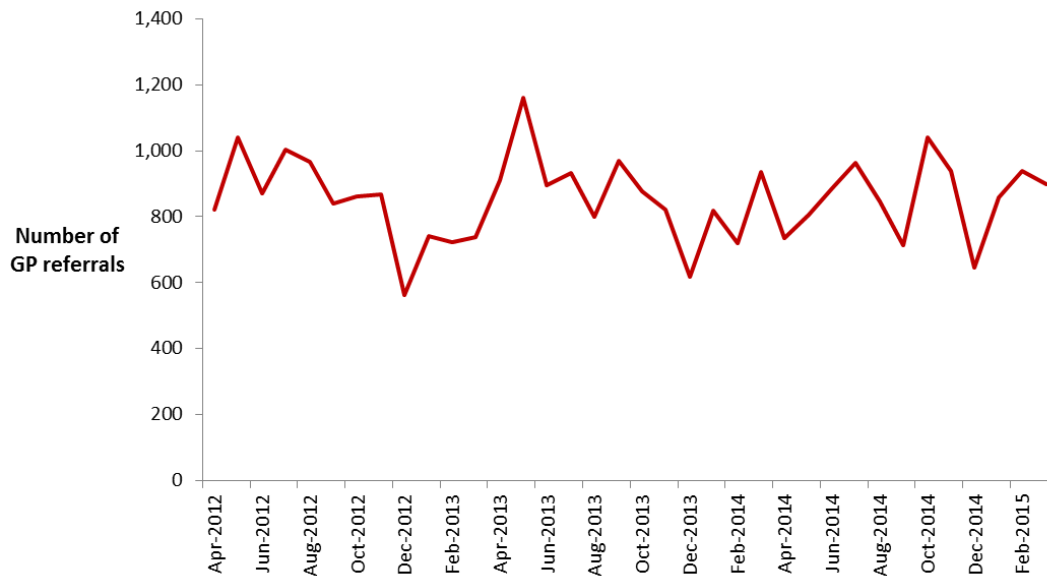
Exhibit 7: GP referrals per 100,000 head of population 2012-2014



Source: Stats Wales

1.6 The number of GP referrals into the orthopaedic service has remained reasonably constant over the last three years, with occasional peaks. Over this period, the UHB received an average of 850 GP referrals per calendar month (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 UHB introduced CMATS in April 2012, referred locally as the 'primary care musculoskeletal team'. 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](#)).

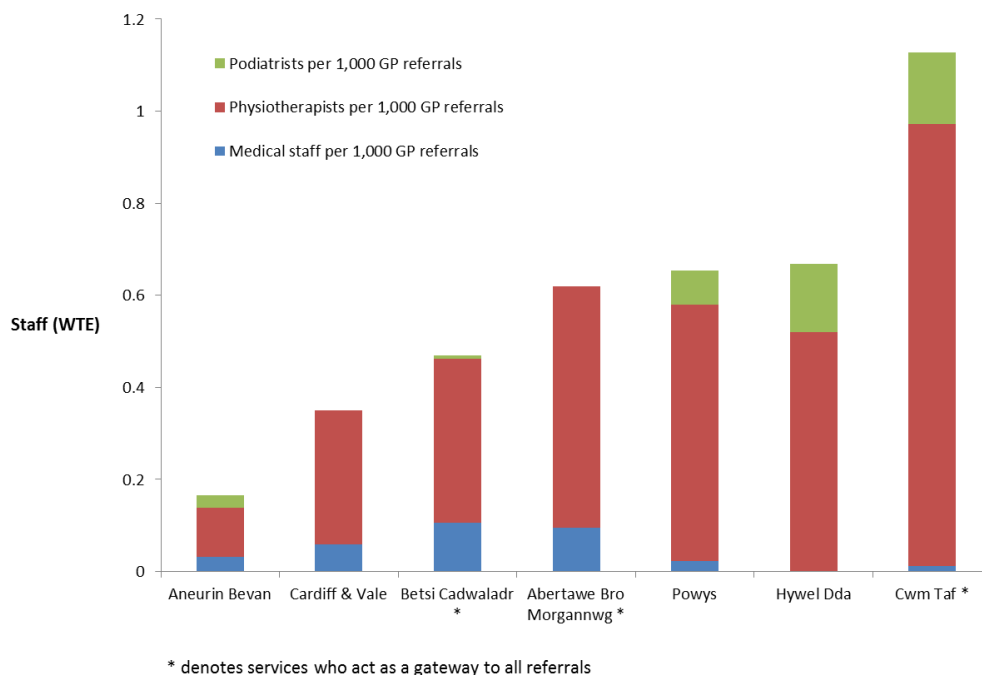
Exhibit 9: Compliance with the key principles set out in the Welsh Government guidance on CMATS

Principle	Compliance by this health board	Number of health boards across Wales complying
Clinics held in a combination of locality and secondary care centres	✓	All except Aneurin Bevan and Cwm Taf
All musculoskeletal referrals (with the exception of specific exclusions) will go to the CMATS	✗	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 conditions/complaints	✓	Four (Abertawe Bro Morgannwg, Aneurin Bevan, Betsi Cadwaladr and Cardiff and Vale)

Source: Wales Audit Office Health Board Survey

- 1.8 The staffing level for the CMATS in the UHB is one of the lowest across Wales (Exhibit 10). The UHB's CMATS does not act as a gateway to all referrals so will be under less pressure than services with similar staffing levels that do. One comparison is the CMATS within Hywel Dda University Health Board, which provides a similar service with a similar number of referrals each month.

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. The UHB was unable to report the proportion of patients who received face-to-face assessment. 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. However, the UHB was also unable to report the average waiting time from referral to face-to-face CMATs assessment.

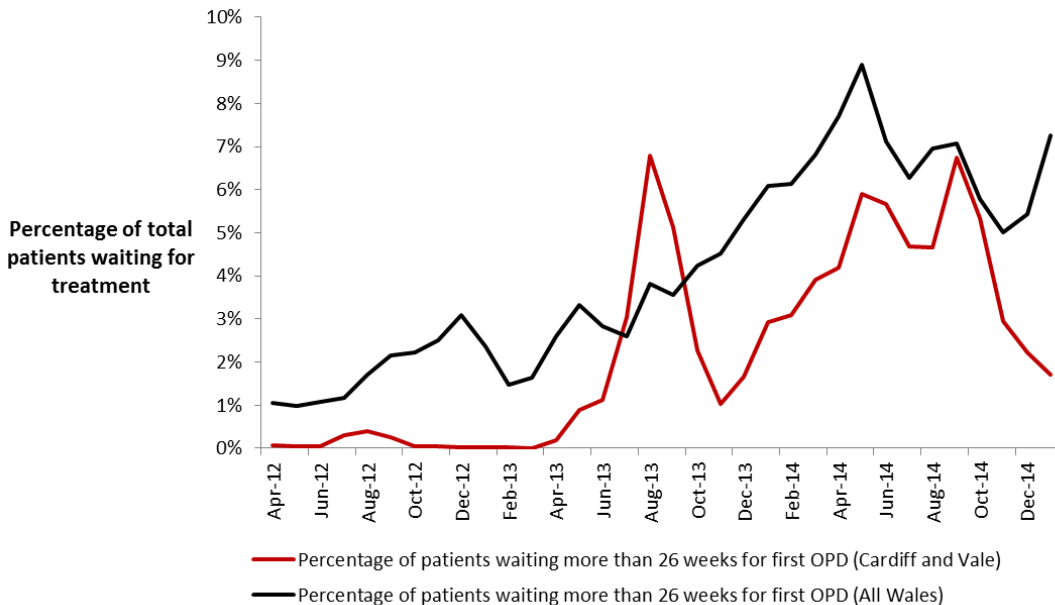
Part 2

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 UHB has a local target of 12 weeks for routine orthopaedic appointments, which reduces pressure on the diagnostic and inpatient elements of the 26-week referral to treatment pathway. The percentage of patients waiting more than 26 weeks for their first outpatient appointment was consistently low in 2012 but started to rise in April 2013, peaking at 6.8 per cent in August 2013 (Exhibit 11). With the exception of July 2013 to September 2013, the percentage of patients waiting more than 26 weeks for their first outpatient appointment is lower than the all-Wales average, with performance at March 2014 just below four per cent. Since November 2013, there was an increasing trend, which suggested that there was insufficient sustained outpatient capacity to meet demand and maintain low waiting times; however, performance has improved since September 2014.

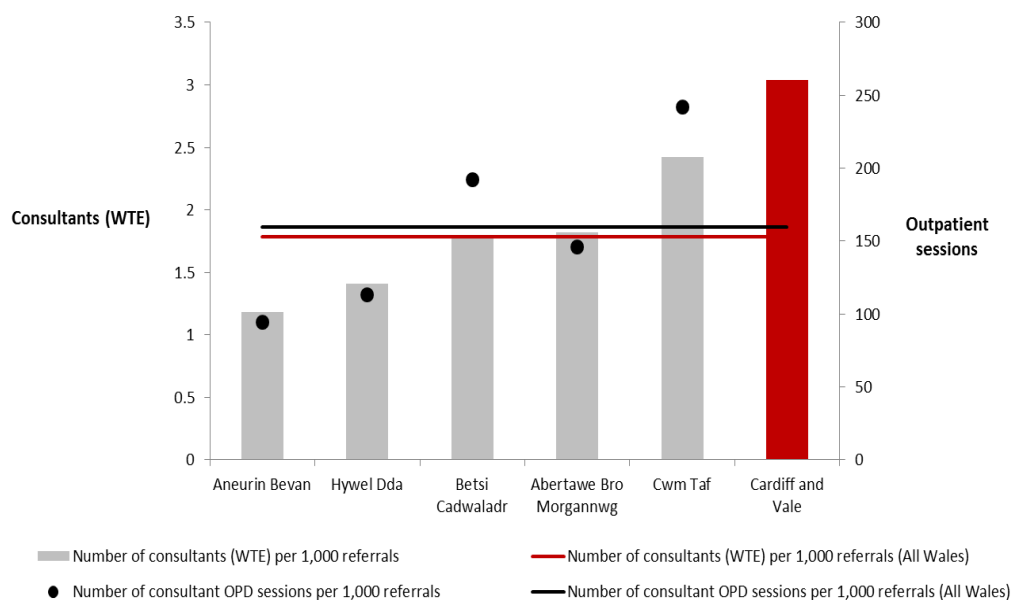
Exhibit 11: Percentage of patients waiting more than 26 weeks for first outpatient appointment



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. The number of consultants per 1,000 referrals at the UHB is the highest across Wales (Exhibit 12), although no data was available from the UHB to determine the number of consultant sessions dedicated to outpatient activity.

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

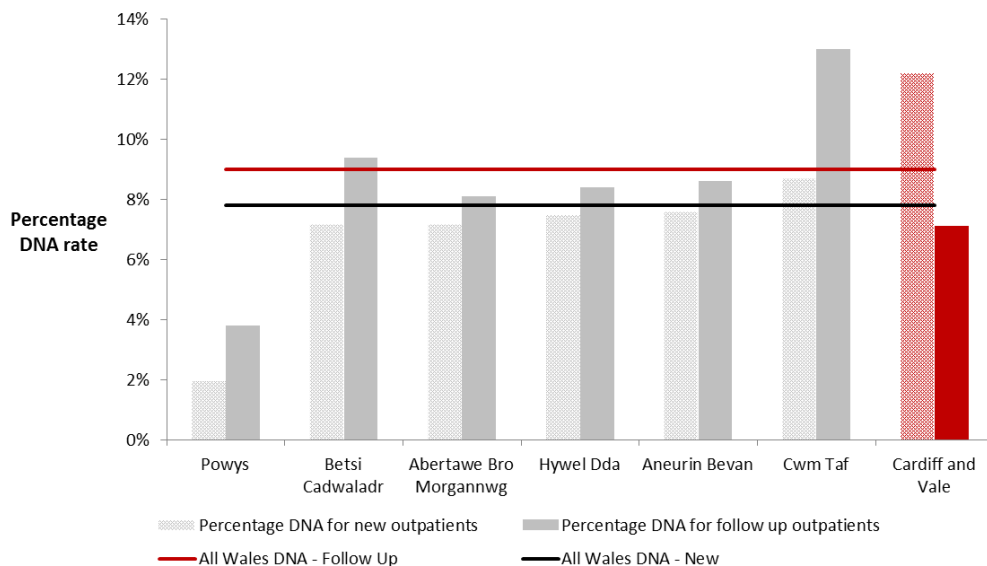


Source: Stats Wales and Wales Audit Office Health Board Survey

2.3 Once an outpatient session is planned, it is important that those sessions be maintained as cancelling a clinic creates additional pressures within the system, as it is still obliged to treat patients within 26 weeks. The UHB told us that the rate of cancelled outpatient clinics for 2012-13 was 6.9 per cent at University Hospital Llandough, where 95 per cent of the outpatient orthopaedic activity takes place. The rate of cancelled outpatient clinics at University Hospital of Wales was 4.3 per cent. Many health boards are unable to report this data and therefore there is no comparison available.

- 2.4 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.
- 2.5 For the period 2013-14, the ratio of follow-up to new appointments in the UHB is well above the previous Welsh Government target at 3.2 follow-up appointments to every new appointment.
- 2.6 Changes to the provision of outpatient services can help to improve 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, 93 per cent of patients felt that the UHB tried to co-ordinate the number of visits that they needed to make. This was the highest response across Wales.
- 2.7 The DNA rate and patient cancellation rate can provide an indication as to whether appointments are appropriate. The DNA rate for new appointments in the UHB is the highest across Wales at 12.2 per cent. The DNA rate for follow-up appointments is 7.1 per cent and is the second lowest in Wales. Both rates, however, are above the Welsh Government targets of five per cent for new appointments and seven per cent for follow-up appointments, indicating that there is considerable scope for the UHB to improve the efficiency of its outpatient services ([Exhibit 13](#)). The UHB 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.

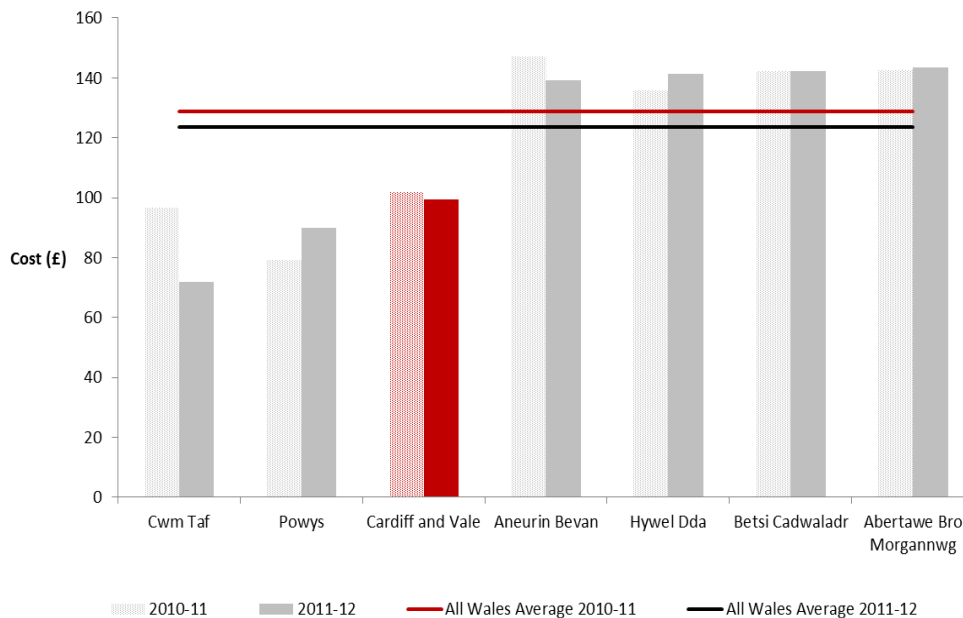
Exhibit 13: DNA rates for new and follow-up outpatients 2013-14



Source: Stats Wales

2.8 Using financial information submitted by the UHB to the Welsh Government on an annual basis, we identified that the cost of an orthopaedic outpatient attendance in the UHB was below the all-Wales average for 2011-12 at £99.35 (Exhibit 14), and had reduced from the previous year. The level of activity that goes through the outpatient departments will influence the cost of an outpatient attendance, along with a higher proportion of new attendances, although other costs associated with staff and equipment will also be important factors.

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

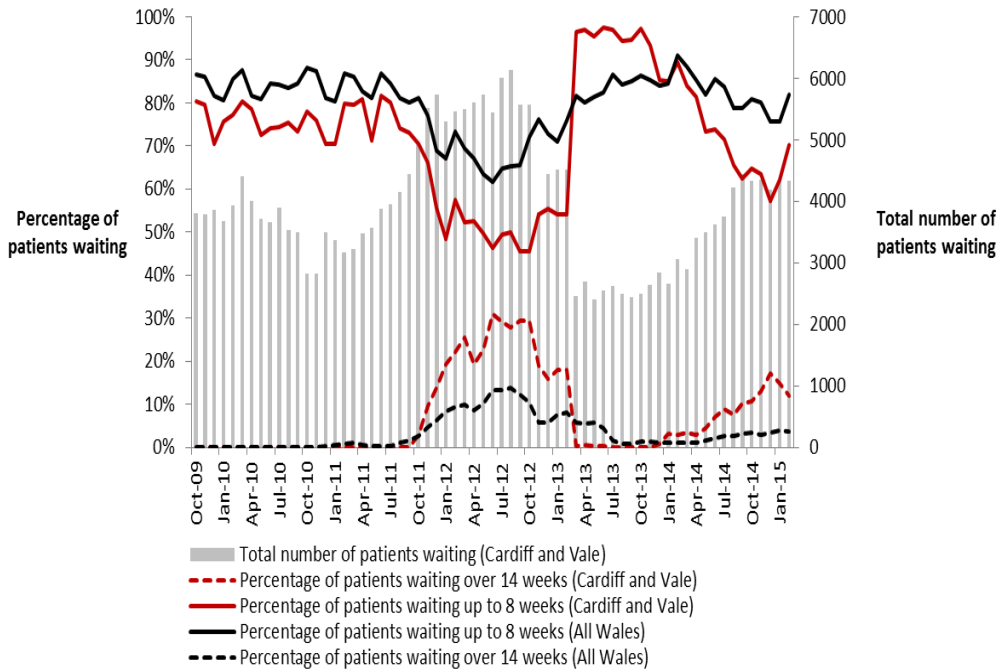


Source: Welsh costing returns

Physiotherapy services

- 2.9 The UHB generally sees patients requiring physiotherapy to treat musculoskeletal problems less quickly than in other parts of Wales. The percentage of patients waiting less than eight weeks averaged 70.7 per cent compared to the all-Wales performance of 86.2 per cent between January 2014 and February 2015 (Exhibit 15). Performance across the UHB improved considerably since the beginning of 2013; following a period when on average, only 50 per cent of patients were seen within eight weeks; however, since October 2013, performance started to deteriorate.
- 2.10 The Welsh Government target is that no patient should wait more than 14 weeks for therapy services. During the period 2013-14, very few patients waited more than 14 weeks in the UHB although performance has deteriorated since December 2013 (Exhibit 15).

Exhibit 15: Waiting times for physiotherapy (adults)



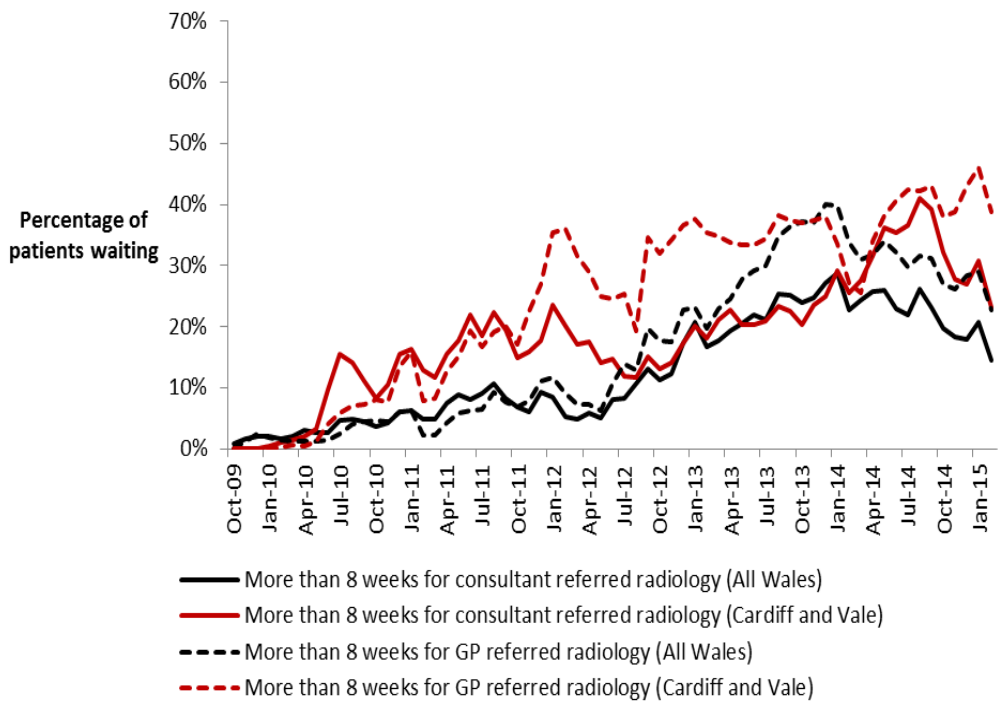
Source: Stats Wales

2.11 Outpatient physiotherapy services are provided in outpatient settings, although unlike other health boards across Wales, there is no physiotherapy provision in GP surgeries. The UHB 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 the working week.

Radiology services

2.12 In the main, patients with musculoskeletal problems will require access to radiological tests. Access to all radiology tests requested by GPs and consultants in the UHB has been consistently worse than the all-Wales average in the past (Exhibit 16). Across the period April 2013 to March 2014, the UHB's performance was similar to that seen across Wales although during 2014-15, performance has been above the all-Wales position (Exhibit 16).

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



Source: Stats Wales

2.13 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 UHB are significantly higher at 36 per cent and 51 per cent of all GP-referred radiology requests and consultant-referred radiology requests respectively. This pattern of referral shows considerable variation between the two hospital sites and reflects the complexity of patients treated at University Hospital of Wales (Exhibit 17).

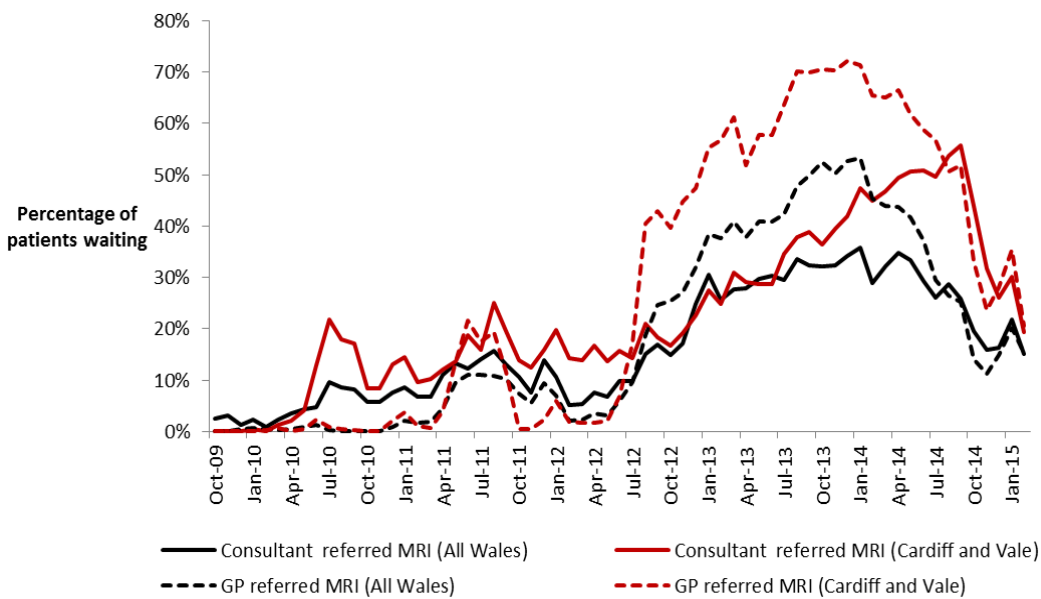
Exhibit 17: Proportion of radiology requests for MRI scans

Hospital site	Proportion of GP referrals for MRI scans	Proportion of consultant referrals for MRI scans
University Hospital Llandough	26	37
University Hospital of Wales	42	55
All-Wales average	23	39

Source: Stats Wales

2.14 The increased rate of demand, particularly for GP-referred MRI scans, can place pressure on health boards' radiology departments. Waiting times for MRI scans have risen steadily at the UHB in recent years, and a greater proportion of patients have extended waits compared to those in other parts of Wales. Across the period April 2013 to March 2014, an average of 66.2 per cent of patients referred by their GP had waited more than eight weeks for their MRI tests. The all-Wales average for this period was 45.6 per cent. Of the patients referred through a consultant, 38.2 per cent waited more than eight weeks, compared to an average of 30.8 per cent across Wales ([Exhibit 18](#)). During 2014, performance has improved but remains above the all-Wales position.

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, the UHB 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 UHB ([Exhibit 19](#)).

Exhibit 19: Pre-operative assessment arrangements

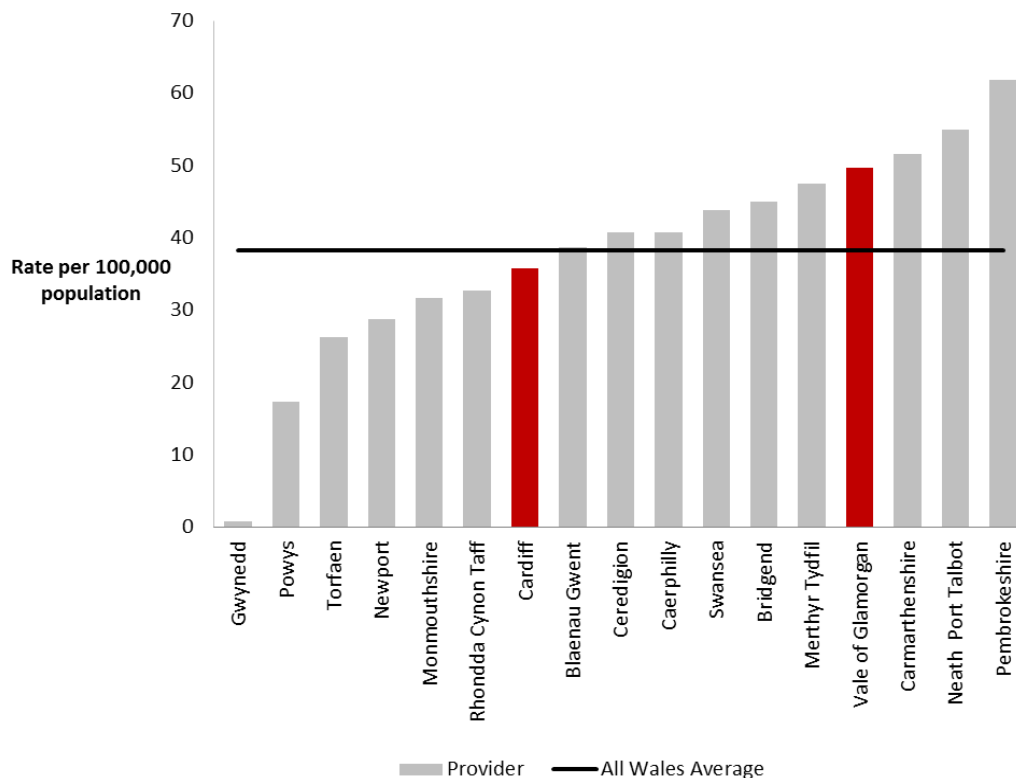
	Cardiff and Vale
Is the pre-operative assessment held in a dedicated department?	✗ (part of outpatients)
Is pre-operative assessment nurse led?	✓
How many days per week is pre-operative assessment available?	5
Is pre-operative assessment orthopaedic specific?	✓
Who arranges the pre-operative assessment appointment?	Medical secretaries and front-desk staff

Source: Wales Audit Office Health Board Survey

- 3.2 Our survey of patients undergoing knee replacement survey identified that all patients received a pre-operative assessment with the exception of one patient at University Hospital Llandough who reported that they received a pre-operative assessment on admission. Thirty-four per cent 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 around the all-Wales average across the UHB, but reached 50 per 100,000 residents in Vale of Glamorgan ([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.

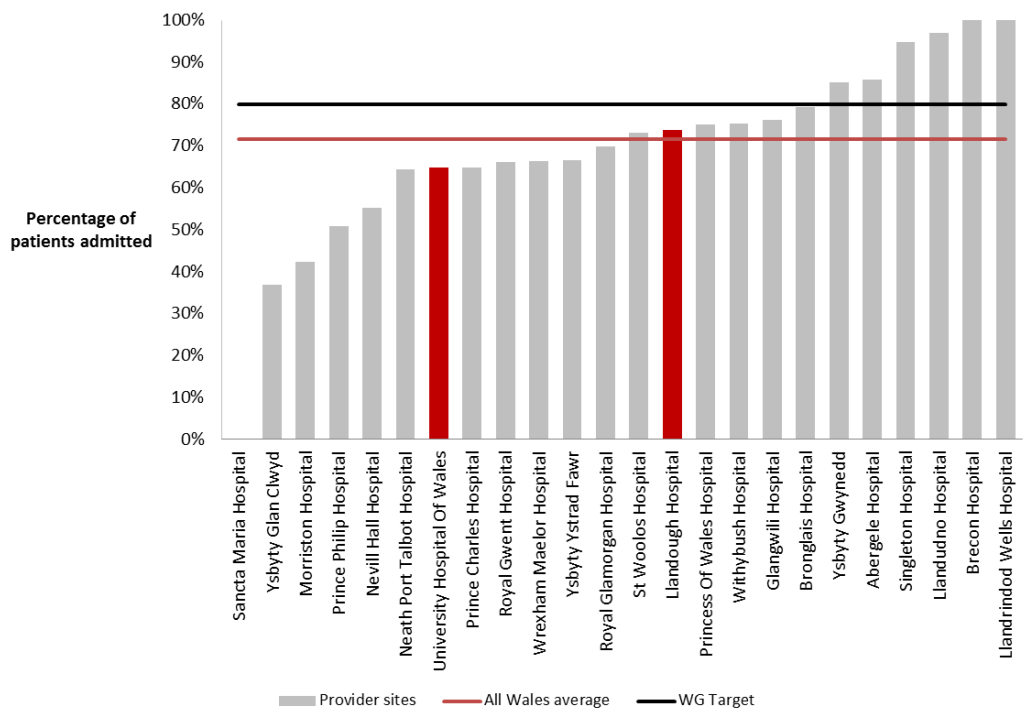
Exhibit 20: Rate of procedures of limited clinical effectiveness per 100,000 head of population 2012-13



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 failed to reach the Welsh Government target. Rates at University Hospital of Wales and University Hospital Llandough were 65 per cent and 74 per cent respectively ([Exhibit 21](#)).

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

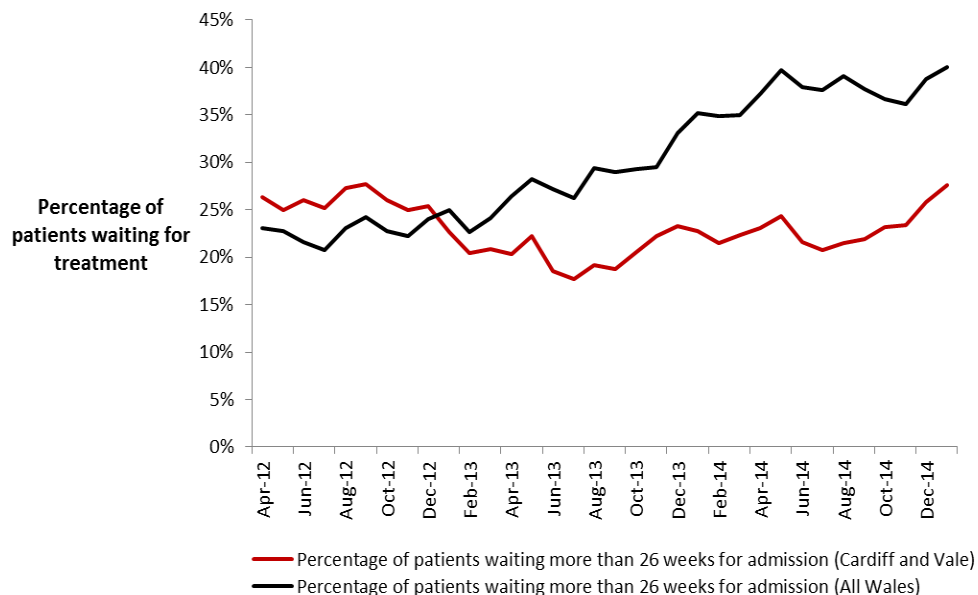


Source: Patient Episode Database Wales

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 UHB 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 UHB has remained relatively constant since February 2013 (Exhibit 22). In January 2015, 28 per cent of patients had waited more than 26 weeks for admission. Across Wales, the percentage of patients waiting more than 26 weeks is increasing with 40 per cent waiting by March 2015.

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

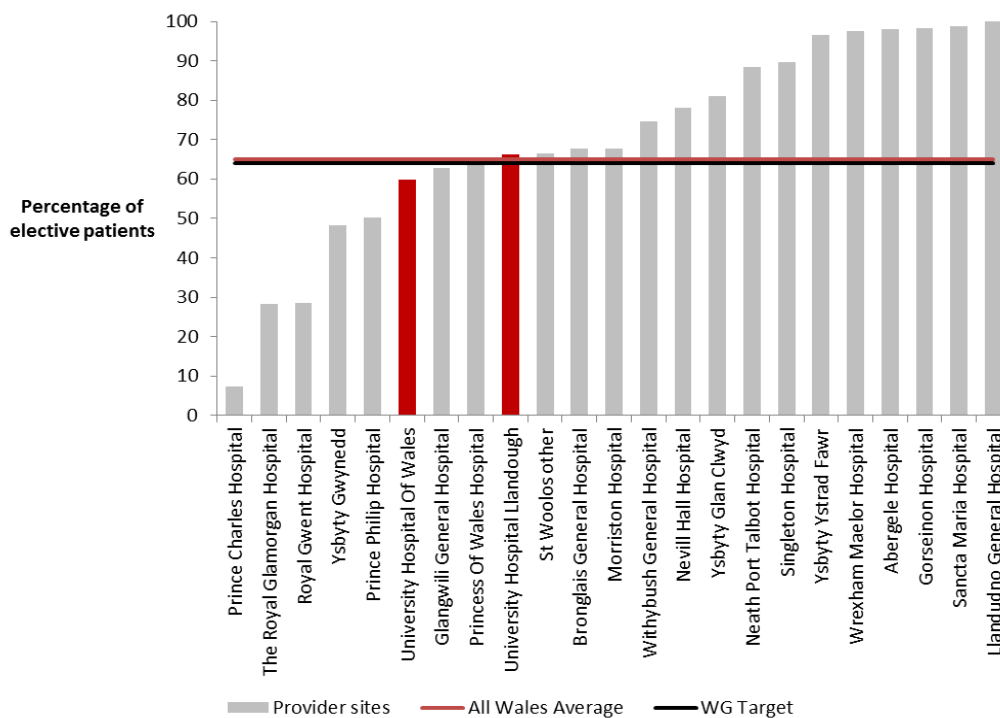


Source: Welsh Government Delivery Unit

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. The Welsh Government target is that at least 64 per cent of patients are admitted on the day of their surgery. At University Hospital Llandough, 66 per cent of patients are admitted on the same day, while at University Hospital of Wales, the figure is below target at 60 per cent (Exhibit 23).

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



Source: Patient Episode Database Wales

3.8 The UHB has dedicated wards for elective orthopaedic activity. The number of available trauma and orthopaedic beds has reduced by 14.7 per cent over the last four years, with an average of 153 daily available beds across the UHB's two main sites in 2013-14. The occupancy rate across these beds has slightly reduced over this period from 89.1 per cent in 2010-11 to 84.5 per cent in 2013-14. This compares to an optimal occupancy rate of 85 per cent. However, there is a considerable variation between the UHB's two main sites (Exhibit 24). The occupancy rate for orthopaedic beds at University Hospital of Wales was 97.2 per cent in 2013-14, offering little capacity to accommodate emergency trauma and orthopaedic admissions. At University Hospital Llandough, occupancy during this period has reduced from 81.9 per cent in 2011-12 to 63.9 per cent in 2013-14, indicating that there are opportunities to increase throughput or to reduce the available bed capacity.

Exhibit 24: Available beds and occupancy rates 2013-14

	Available beds	Occupancy rate (%)
University Hospital Llandough	58.4	63.9
University Hospital of Wales	95.0	97.2

Source: Stats Wales

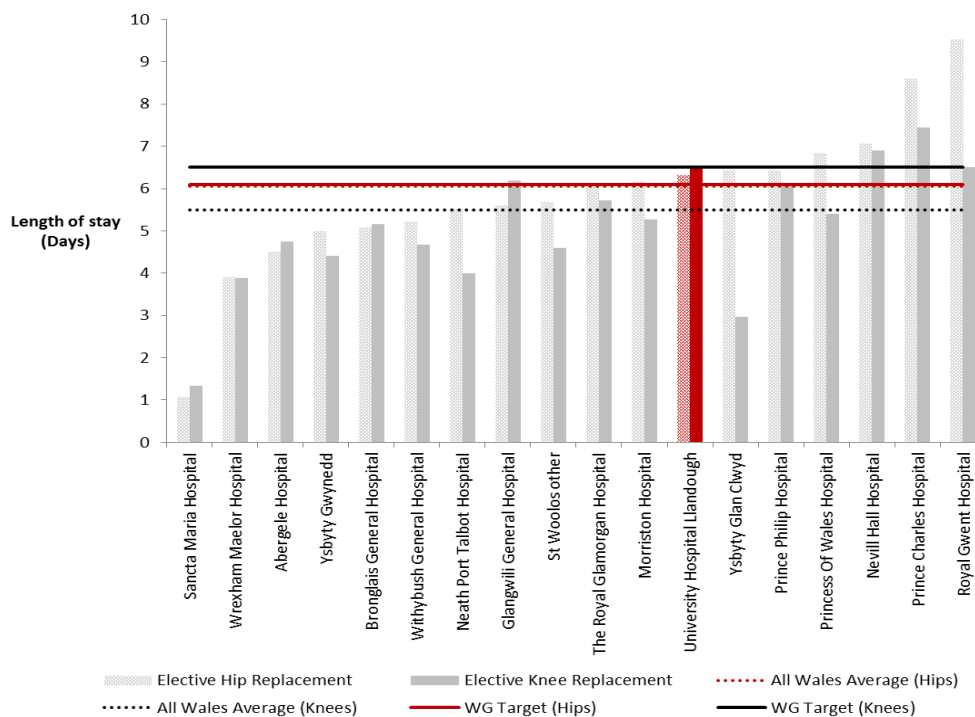
During admission

- 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. No information was provided by the UHB about its theatre utilisation across orthopaedic surgery. The Welsh Government target for theatre utilisation is 95 per cent. Not all health boards were able to provide us with theatre utilisation performance specific to orthopaedic surgery and therefore there is no comparison available.
- 3.10 The UHB was also unable to report the rate of cancelled orthopaedic theatre sessions and cancelled operations for the period 2012-13. The Welsh Government has previously set a target for cancelled operations on the day of surgery at two per cent. 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 UHB is 4.3 days, which is above the Welsh Government target of four days. There is variation across the two main sites within the UHB. The shortest average length of stay is at University Hospital of Wales at 3.0 days compared with 4.5 days at University Hospital Llandough.
- 3.12 The average length of stay for patients undergoing hip replacements is outside the Welsh Government target at 6.3 days, compared with the target of 6.1 days. The average length of stay for patients undergoing knee replacements is in line with the Welsh Government target at 6.5 days ([Exhibit 25](#)). All hip and knee replacements are undertaken at University Hospital Llandough.

Exhibit 25: Average length of stay for elective hip and knee replacements between April 2012 and October 2013

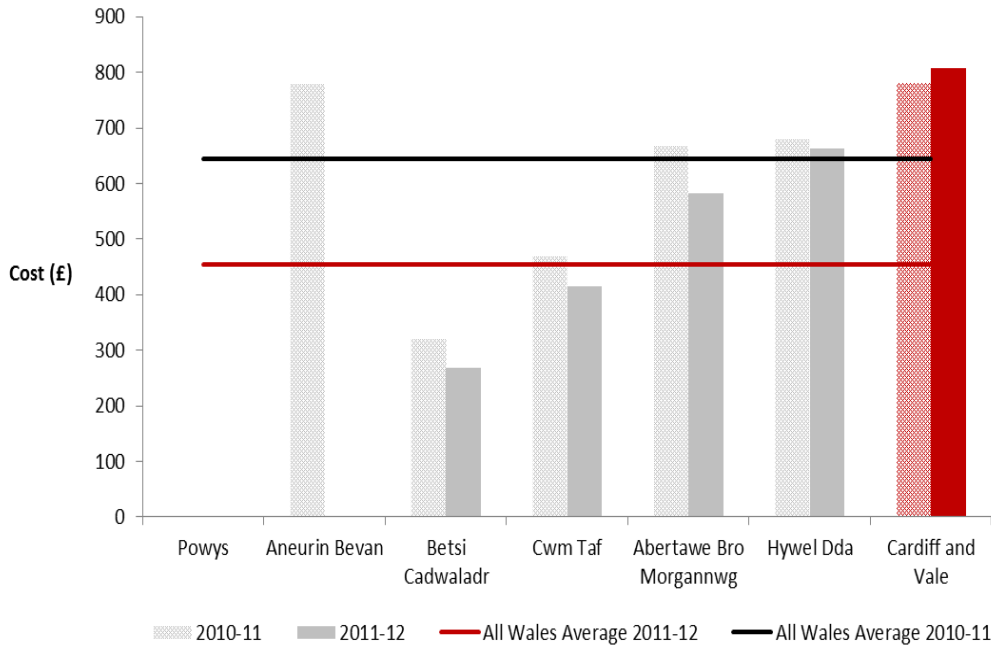


Source: Patient Episode Database Wales

3.13 The average cost of an elective orthopaedic hospital episode in the UHB for 2012-13 was the highest across Wales at £4,795. This compares with the all-Wales average of £4,239. Length of stay will influence the cost of a hospital episode, but other costs associated with staff and equipment will also be important factors.

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 UHB in 2011-12 was the highest in Wales at £808, an increase of 3.5 per cent from the previous year (Exhibit 26). The broader range of orthopaedic activity undertaken in the UHB is likely to affect the cost.

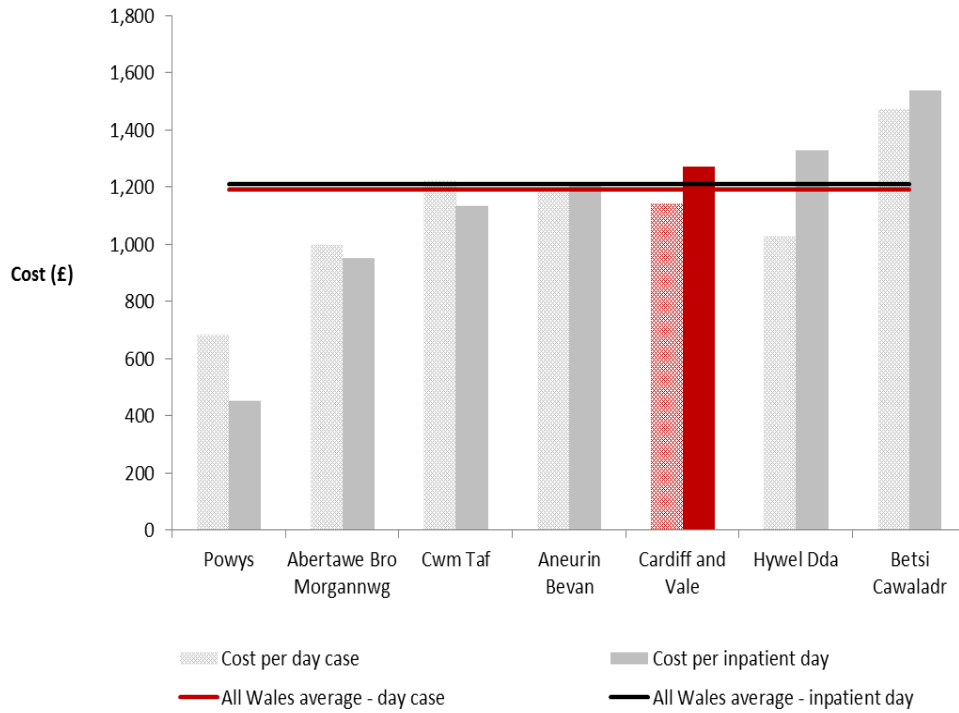
Exhibit 26: Average prosthetic costs per admission for 2010-11 and 2011-12



Source: Welsh costing returns

3.15 The cost of a bed day for an elective orthopaedic inpatient in the UHB is just above the all-Wales average at £1,273 (Exhibit 27). The cost of an elective orthopaedic day case is just below the all-Wales average at £1,144 (Exhibit 27). If performance against the BADS orthopaedic procedures at University Hospital Llandough improved to the recommended level of 80 per cent, the reduction in the additional bed days could potentially release approximately £262,136, or free up capacity to increase throughput.

Exhibit 27: Average cost per elective orthopaedic day case and inpatient bed day 2012-13



Source: Welsh costing returns

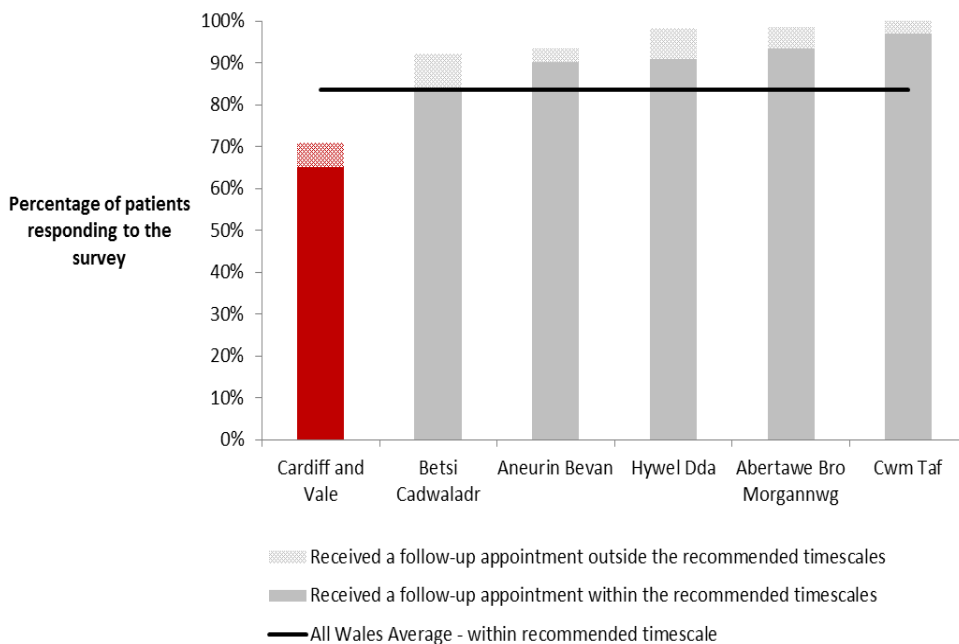
Part 4

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 UHB reported that 80.7 per cent of patients undergoing a hip or knee replacement over a three-month period received their follow-up appointment within the specified timescales. Our patient survey identified that only 71 per cent of the patients undergoing knee replacement surgery who responded to our survey had received a follow-up post-discharge (Exhibit 28). This was the lowest proportion across Wales. Of those patients, 91.5 per cent had received the follow-up appointment within the specified timescales.

Exhibit 28: 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 or knee surgery at University Hospital Llandough are comparable with the all-Wales average ([Exhibit 29](#)). The Welsh Government target is zero per cent.

Exhibit 29: SSI rates for hip and knee arthroscopy

Hospital	SSI rate (hips)	SSI rate (knees)
University Hospital Llandough	1.5	1.5
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 knee replacements are lower than the all-Wales average. The readmission rate for elective hip replacements is in line with the all-Wales average. Death rates for elective orthopaedic admissions are also below the all-Wales average and among the lowest across Wales ([Exhibit 30](#)).

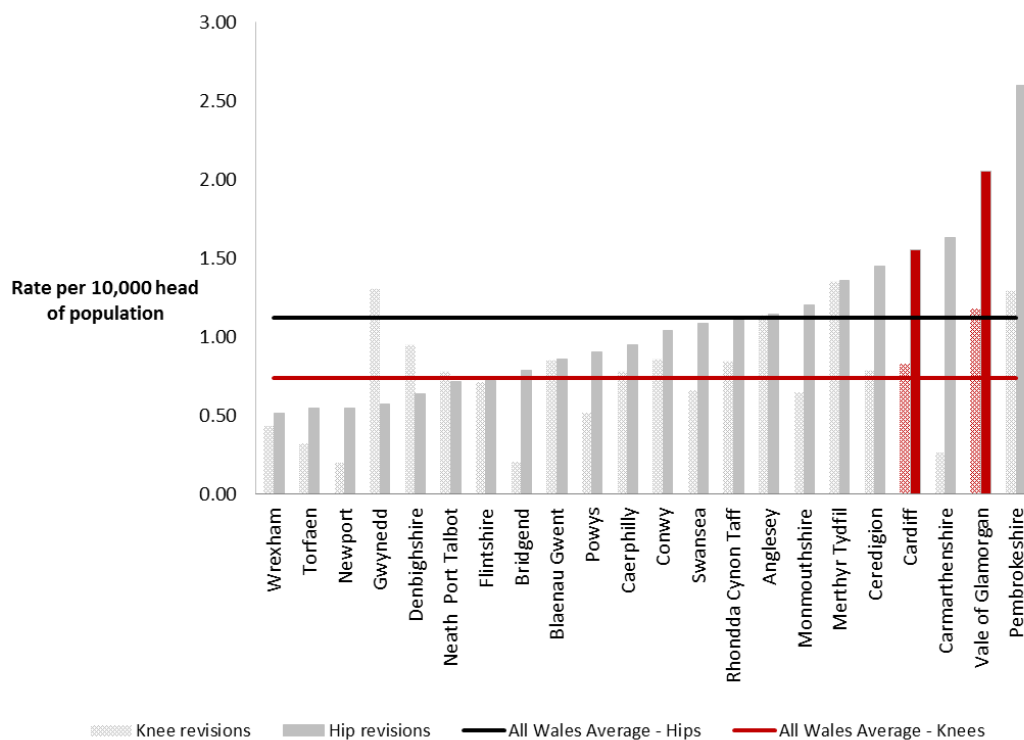
Exhibit 30: Readmission and mortality rates for elective orthopaedics

Indicator	Cardiff and Vale	All-Wales average
Percentage of patients readmitted within 28 days following a hip replacement	0.9	0.9
Percentage of patients readmitted within 28 days following a knee replacement	0.0	0.1
Death in hospital per 100 elective orthopaedic admissions	0.04	0.06
Death within 30 days of discharge following an elective orthopaedic admission, per 100 elective orthopaedic admissions	0.04	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 undergone 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 rates of revision for hips are among the highest across Wales for both Cardiff and Vale of Glamorgan residents. The rate of knee revisions for Vale of Glamorgan residents is also high at 1.2 per 10,000 head of population against an all-Wales average of 0.7 (Exhibit 31).

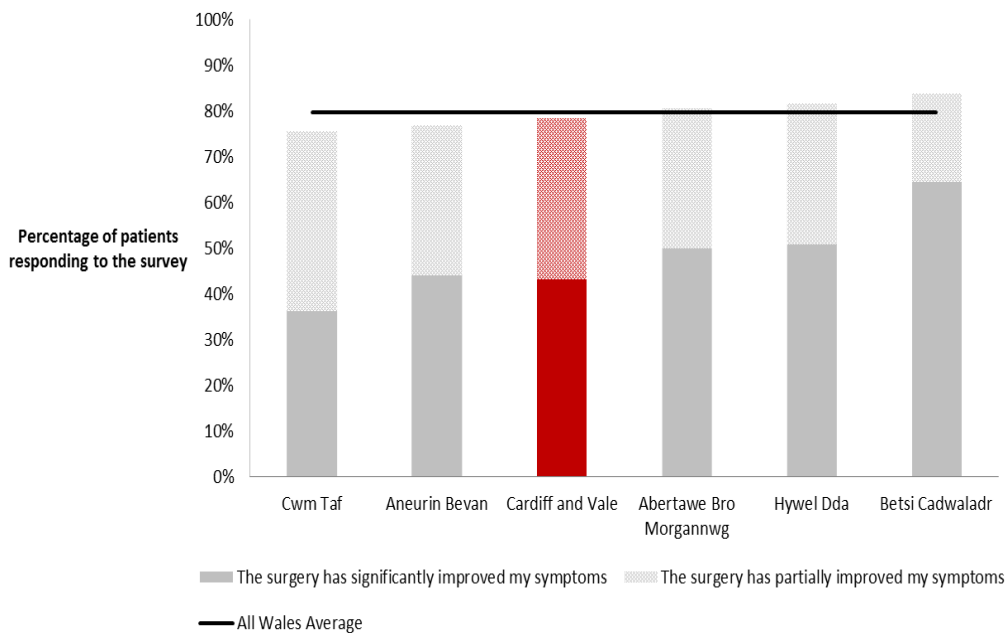
Exhibit 31: Rate of revision per 10,000 head of population



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. 78.4 per cent of the UHB's patients at University Hospital Llandough noticed an improvement. This was just below the all-Wales average of 80 per cent. Forty-three per cent of the UHB's patients reported that surgery had significantly improved their symptoms, and a further 35 per cent stated that surgery had partially improved their symptoms (Exhibit 32).

Exhibit 32: 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 UHB reported using a range of measures to monitor the outcomes of patients undergoing orthopaedic treatment through the Bluespier system, including the Oxford hip and knee scores, along with submission of patient data to the National Joint Registry. This is recognised as good practice.
- 4.8 The UHB also reports undertaking one or more patient satisfaction surveys during the last 12 months to gather the views of orthopaedic patients. In addition, the UHB also reported using ward questionnaires, audit and clinical governance measures to monitor the patient experience during their hospital stay. However, the UHB is not able to quantify the number of complaints received in relation to orthopaedic services. Many other health boards are also unable to report the number of complaints specifically relating to orthopaedic services.

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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