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# A Comparative Picture of Orthopaedic Services **Hywel Dda 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 Hywel Dda University Health Board (the Health Board) based on that data, 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 inefficient outpatient services are resulting in long waits for orthopaedic outpatient and diagnostic treatment. Patient outcomes are generally good but the high rates of joint replacement revisions and procedures of limited effectiveness are a concern:

- Investment in primary care has increased but GP referral rates are one of the highest in Wales and despite the Clinical Musculoskeletal Assessment and Treatment Service (CMATS) having a positive impact, referrals to secondary care are now starting to increase.
- Although physiotherapy services are meeting demand, outpatient services are inefficient and waits for radiology have been the highest in Wales, with the proportion of MRI referrals also high.
- Pre-operative assessment arrangements are in place and hospital stays are generally shorter than across Wales. There is further scope to increase day-case rates and bed occupancy, reduce cancelled operations and minimise the number of procedures of limited effectiveness undertaken.
- Patients are followed up and generally have positive outcomes although revision rates for joint replacements are some of the highest in Wales.

Exhibit 2: Summary assessment

Primary and community based services		
Indicator	Health board performance	Performance rating
<b>Has the Health Board invested in primary care provision?</b>		
Increased investment in primary care musculoskeletal provision	Spend on primary care provision for musculoskeletal problems has increased by seven 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 £12.40.	
Proportion of total musculoskeletal spend allocated to primary care	The proportion of total spend on primary care is below the all-Wales average at 10.3 per cent but increasing.	
Range of community based services available to GPs	The Health Board is unable to report the range of community based services available to GPs.	-
Receipt of alternative intervention prior to surgery	The extent to which patients receive alternative intervention prior to surgery is low with the exception of pain relief, which is the highest in Wales.	
<b>Is demand for secondary care services managed?</b>		
GP referral rate	The rate of GP referrals per 100,000 head of population is high and the second highest in Wales.	
Trend in referrals	The number of GP referrals reduced after the introduction of CMATS although since April 2014 has fluctuated.	
<b>Is the CMATS operating effectively?</b>		
CMATS in place	The Health Board has introduced CMATS although it is the last in Wales to do so.	
CMATS operational arrangements	CMATS comply with the key Welsh Government principles with the exception of medical involvement and acting as a gateway to all GP referrals.	
CMATS staffing levels	The level of staff per 1,000 GP referrals compares better than many other teams.	

Primary and community based services		
Indicator	Health board performance	Performance rating
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 Health Board was unable to report the average waiting time for face-to-face assessment by CMATS.	-

Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
<b>Are outpatient services effective?</b>		
Waits for first outpatient appointment	With the exception of three months, the percentage of patients waiting more than 26 weeks for their first outpatient appointment is consistently higher than the all-Wales average.	
Consultant outpatient sessions	The number of consultant outpatient sessions per 1,000 GP referrals is the second lowest in Wales.	Descriptive indicator
Cancelled outpatient clinics	The proportion of outpatient clinics cancelled for 2012-13 was 5.9 per cent. A greater proportion of outpatient clinics were cancelled in Pembrokeshire hospitals. There is no comparison available.	
Follow-up to new ratios	The ratio of follow-up to new appointments is within the Welsh Government target at 1.6 follow-ups to every new, but may be understated due to the high number of new referrals.	
Did Not Attend (DNA) rates	DNA rates are below the all-Wales average but remain higher than the Welsh Government targets.	

<b>Outpatient and diagnostic services</b>		
<b>Indicator</b>	<b>Health board performance</b>	<b>Performance rating</b>
Patient cancellations	The patient cancellation rate is high at 11.2 per cent and 12.4 per cent for new and follow-up appointments respectively.	
Co-ordination of visits	Seventy-six per cent of patients felt that the Health Board tried to co-ordinate the number of visits that they need to make. This was the lowest in Wales.	
Cost per outpatient attendance	The cost of an orthopaedic outpatient attendance is above the all-Wales average at £141.31.	
<b>Are physiotherapy services able to meet demand?</b>		
Waits for physiotherapy services	The percentage of patients waiting less than eight weeks is below the all-Wales average at 80 per cent although very few patients, if any, wait 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 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.	
<b>Are radiology services able to meet demand?</b>		
Waits for all radiology tests	Waiting times for radiology tests increased to April 2014 but are now below the all-Wales average.	
MRI referral rates	The rate of referrals for MRI scans from both GPs and consultants are significantly higher than the all-Wales average with the exception of consultant referrals in Withybush Hospital.	
Waits for MRI scans	The percentage of patients waiting more than eight weeks for MRI scans was consistently higher than the all-Wales average but since April 2014 have reduced to below the all-Wales average.	

Inpatient services		
Indicator	Health board performance	Performance rating
<b>Is there evidence that arrangements relating to surgical procedures are effective?</b>		
Pre-operative assessment arrangements	Pre-operative assessment arrangements are in place but they are inconsistent across the Health Board.	
Receipt of pre-operative assessment	A high proportion of patients undergoing knee replacement surgery received pre-operative assessment, although 24.5 per cent received an assessment less than three weeks before surgery.	
Procedures of limited clinical effectiveness	The rate of procedures of limited clinical effectiveness is high across the localities in the Health Board, with the rate for Pembrokeshire residents the highest across Wales.	
British Association of Day Surgery (BADs) day-case rates	The percentage of recommended orthopaedic procedures undertaken as a day case compares well although performance is below the Welsh Government target and Prince Philip Hospital is one of the lowest in Wales.	
Implementation of 'joint school' <sup>1</sup>	The Health Board has implemented a joint school although this is only available in Withybush Hospital.	
Waits for surgery	The percentage of patients waiting more than 26 weeks for an inpatient or day-case admission is now below the all-Wales average.	

<sup>1</sup> 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.

<b>Inpatient services</b>		
<b>Indicator</b>	<b>Health board performance</b>	<b>Performance rating</b>
<b>Is bed capacity used effectively?</b>		
Day of surgery admission	Seventy-five per cent of patients at Withybush Hospital are admitted on the day of surgery, which is above the Welsh Government target. There is variation across the other sites, with performance at Prince Philip Hospital the lowest at 50 per cent.	
Reduction in inpatient beds	The total number of orthopaedic beds has reduced from 132 in 2010-11 to 110 in 2013-14, a decrease of 16.6 per cent.	Descriptor indicator
Bed occupancy	Occupancy rates have reduced by 1.3 per cent to 82.3 per cent, which is below the optimal level of 85 per cent. There is variation across sites.	
<b>Is operating theatre capacity used effectively?</b>		
Theatre utilisation	Performance ranges between 78 and 94 per cent at Glangwili Hospital, and 91 and 99 per cent at Prince Philip Hospital. This compares to the Welsh Government target of 95 per cent. No information is available for the other sites.	
Cancelled operations	The rate of cancelled operations made by the Health Board was five per cent compared with the Welsh Government target of two per cent. There is no comparison available.	
<b>Is length of stay kept to a minimum?</b>		
Average length of stay for elective orthopaedic admissions	Average length of stay for an elective orthopaedic patient in the Health Board is 3.2 days, which is within the Welsh Government target of four days and the shortest across Wales.	
Average length of stay for hip and knee replacements	The average length of stay for patients undergoing hip and knee replacements are also within the Welsh Government targets with the exception of Prince Philip Hospital for hip replacements.	

Inpatient services		
Indicator	Health board performance	Performance rating
Cost per inpatient episode	The average cost of an elective orthopaedic hospital episode in the Health Board is below the all-Wales average at £3,807 and the second lowest in Wales.	
Prosthetic cost per inpatient episode	The average cost of prostheses per episode for 2010-11 and 2011-12 was one of the highest in Wales at £663.	
Cost per day case	The cost of an elective orthopaedic day case is below the all-Wales average at £1,028.	
Cost per inpatient bed day	The cost of an elective inpatient bed day is higher than the all-Wales average at £1,328.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
<b>Are patients followed up?</b>		
Follow-up appointment	Ninety-eight per cent of patients undergoing knee replacement surgery received a follow-up appointment post-discharge.	
Follow-up appointment within recommended timescales	Ninety-three per cent of patients undergoing knee replacement surgery received a follow-up appointment within six weeks and three months after discharge.	
<b>Are adverse complications avoided and the benefits of surgery optimised?</b>		
Surgical Site Infections (SSIs)	The rate of SSIs for both hips and knees are lower in all sites than the all-Wales average. No SSIs were reported for Glangwili Hospital, which is compliant with the Welsh Government target of zero per cent.	
Readmission rates for hip and knee replacements	The readmission rate following elective hip replacement is below the all-Wales average but the readmission rate for knee replacements, although relatively small, is the highest in Wales.	

Follow-up and outcomes		
Indicator	Health board performance	Performance rating
Mortality rates for elective orthopaedic patients	Mortality rates for elective orthopaedic patients are better than the all-Wales average and some of the lowest in Wales.	
Revision rates	The rate of revision for hips and knees across the Hywel Dda population is amongst the highest in Wales, with the rate of revision for hips for the Pembrokeshire population the highest in Wales.	
Improvement of symptoms	Eighty-two per cent of patients reported that surgery had partially or significantly improved their symptoms. This is the second highest in Wales and above the all-Wales average.	

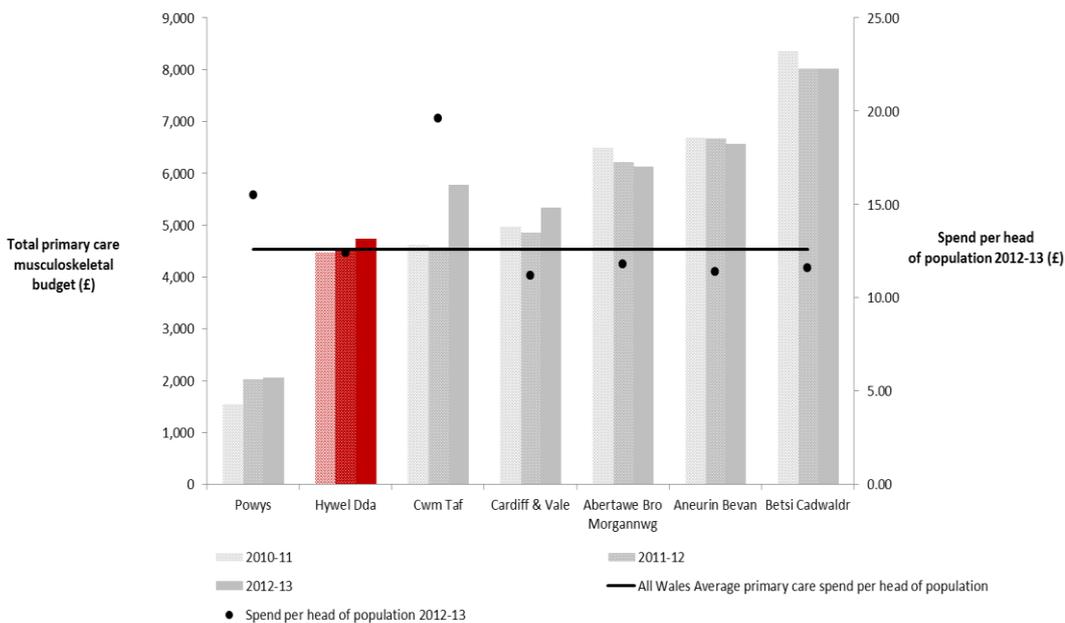
# Part 1

## 1 Primary and community based services

### Primary care provision

1.1 Between 2010 and 2013, the Health Board was only one of two health boards across Wales to continually increase primary care spend on musculoskeletal services, with an increase of 6.7 per cent (Exhibit 3). In the main, this includes pharmacy and prescription costs associated with musculoskeletal problems. The Health Board spend per head of population on primary care musculoskeletal services, however, was just below the all-Wales average at £12.40 (Exhibit 3), although this level of spending is in line with many other health boards.

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 was the lowest in Wales in both 2010-11 and 2011-12 (Exhibit 4). This would indicate that musculoskeletal services have been potentially focused predominantly more towards secondary care provision. This improved in 2012-13 with primary care spend accounting for 10.3 per cent of total expenditure although this remained below the all-Wales average.

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
<b>All Wales</b>	<b>11.1</b>	<b>10.4</b>	<b>11.2</b>

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 (Exhibit 5). The Health Board was unable to report what services existed in the community but did report that GPs referred patients directly to the CMATS, who would then access these community based services if appropriate.

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, which was the highest in Wales (and correlates with the positive level of primary care investment on musculoskeletal prescribing as discussed in [Paragraph 1.1](#)), the extent to which patients had received other interventions, such as weight management advice, was the lowest in Wales ([Exhibit 6](#)).

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

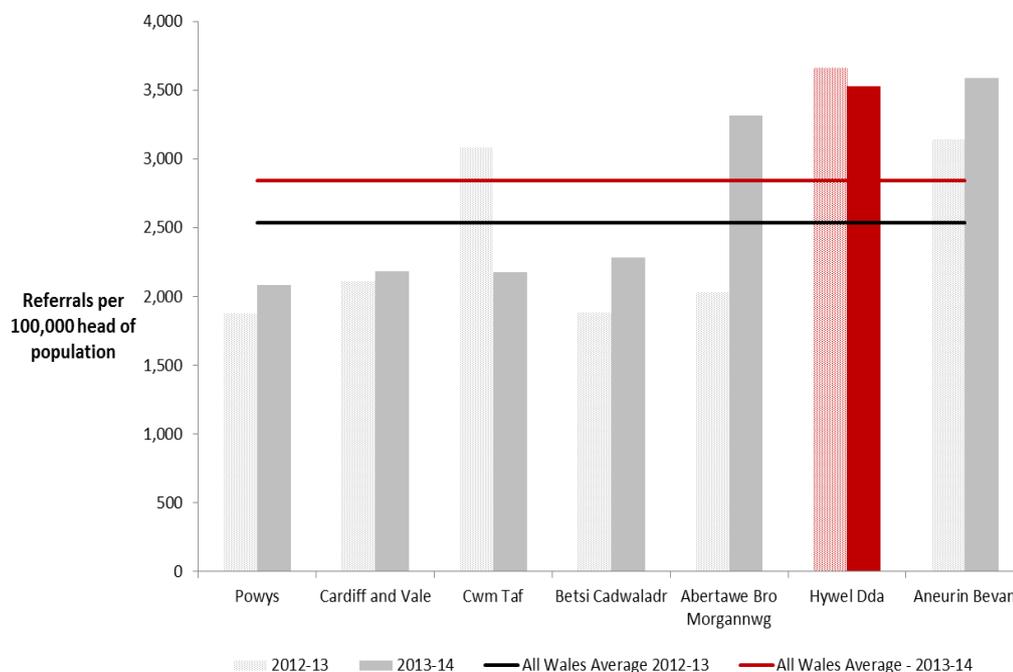
	Hywel Dda	All-Wales average
Percentage of patients receiving pain relief before surgery	83.6	74.9
Percentage of patients receiving physiotherapy advice or treatment before surgery	14.5	26.1
Percentage of patients receiving an exercise programme before surgery	10.9	23.4
Percentage of patients receiving weight management advice before surgery	5.5	9.1

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

## GP referrals

1.5 The Health Board has one of the highest rates of GP referrals for orthopaedics per 100,000 head of population in Wales. The proportion of residents aged 65 and over is one of the highest in Wales. This may account for some of the referrals, although the age of the population is comparable with Betsi Cadwaladr, which has a much lower 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 alternative services, a lack of clear referral criteria and GP behaviours. The rate of referrals has slightly reduced since 2012-13 ([Exhibit 7](#)), although still remains high.

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



Source: Stats Wales

1.6 Typically, the Health Board used to receive an average of 1,140 GP referrals per calendar month. After October 2013, the number of GP referrals for orthopaedics dropped with the monthly average stabilising at around 890 GP referrals between December 2013 and April 2014 (Exhibit 8). Up until June 2013, there were no mechanisms in place to make sure that all GP referrals to orthopaedics services were appropriate. Since the introduction of CMATS, monitoring and triage of referrals is now in place. The reduction in GP referrals would indicate that this monitoring and triage had a positive impact. However, since April 2014, the number of GP referrals fluctuated.

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 June 2013. The Welsh Government set out clear guidance as to how CMATS should operate. Compliance with the key principles set out in the Welsh Government guidance at a local level is mixed (Exhibit 9).

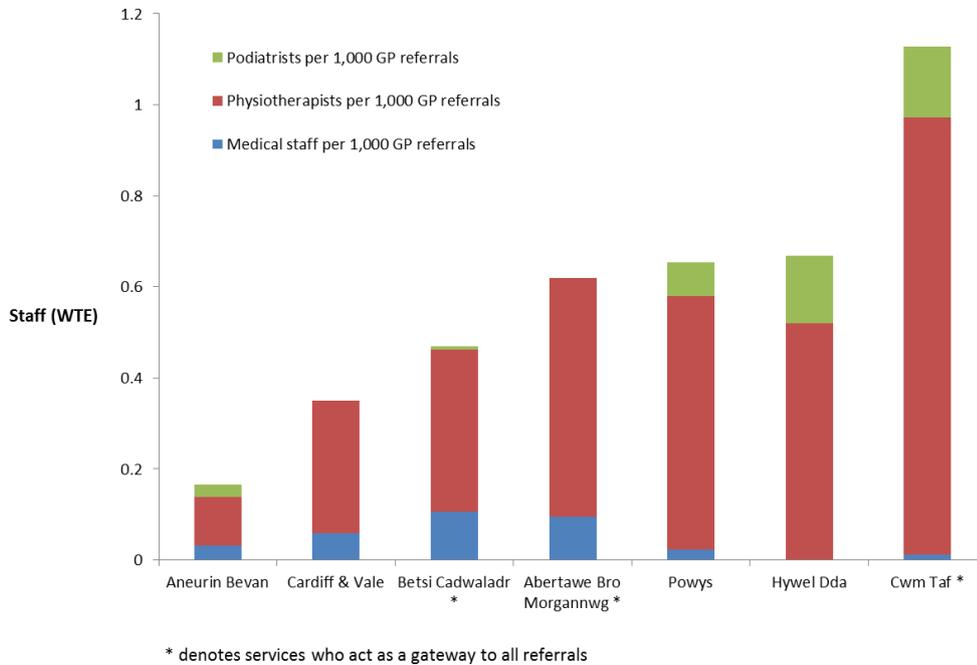
Exhibit 9: Compliance with the key principles set out in the Welsh Government guidance on CMATS

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	✓/✗ (GPs are allowed discretion to use the CMATS or refer directly to consultants)	Three (Abertawe Bro Morgannwg, Betsi Cadwaladr and Cwm Taf)
Staff have direct access to diagnostics	✓	All except Powys
<b>The service consists of:</b>		
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	✗ (There is no medical involvement in CMATS)	Four (Abertawe Bro Morgannwg, Aneurin Bevan, Betsi Cadwaladr and Cardiff and Vale)

Source: Wales Audit Office Health Board Survey

1.8 Despite having no medical involvement, the staffing levels for the CMATS compare better than most other teams across Wales ([Exhibit 10](#)). The Health Board'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, such as at Abertawe Bro Morgannwg. However, given the geographical spread of the Health Board, it is likely that there are variances in staffing levels at a locality level. The Health Board was unable to provide staffing levels at a locality level.

## 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 the only health board in Wales unable to report the proportion of patients seen and treated by CMATS, and the average wait for a face-to-face assessment.

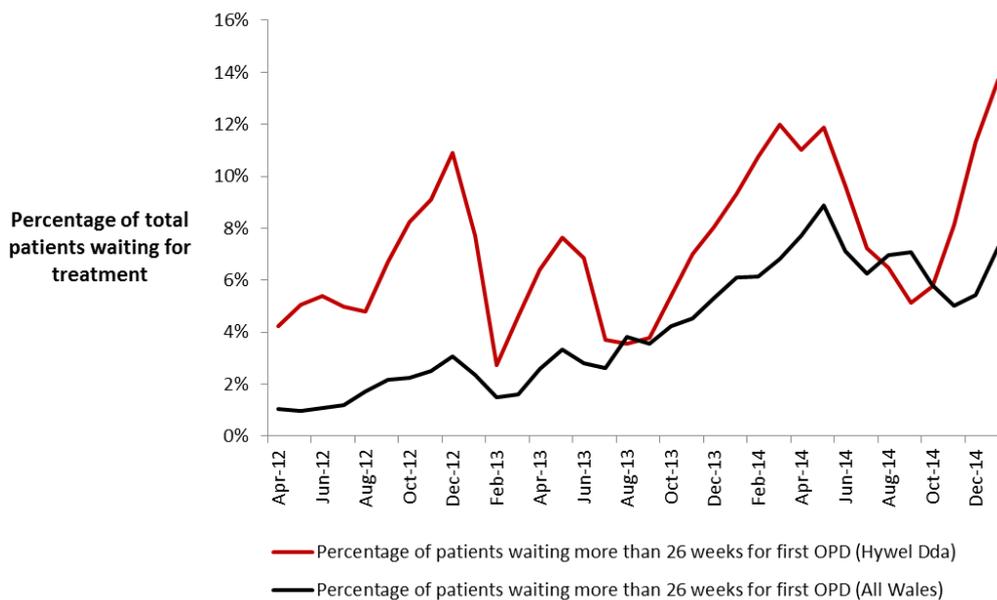
# Part 2

## 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. It is not clear what internal target the Health Board is working to; however, the percentage of patients waiting more than 26 weeks for their first outpatient appointment has been consistently higher than the all-Wales average for the last three years, with the exception of August 2013, and August to September 2014. The percentage of patients waiting more than 26 weeks reached a peak in January 2015 at 13.7 per cent. This performance would indicate that there is insufficient outpatient capacity to meet demand (Exhibit 11).

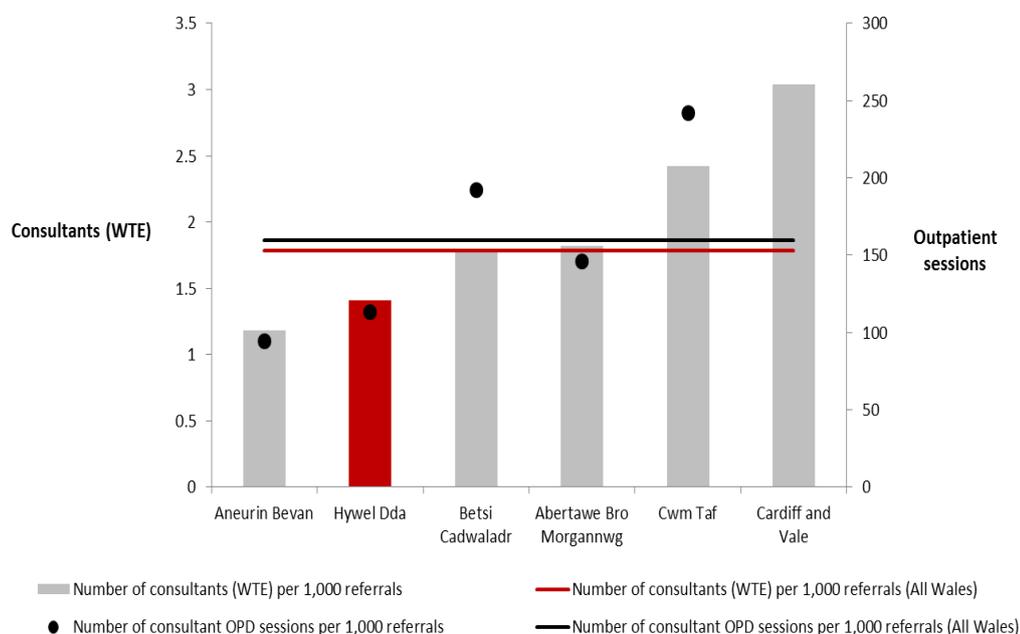
Exhibit 11: Percentage of patients waiting more than 26 weeks for first outpatient appointment



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 and number of consultant sessions dedicated to outpatient activity are the second lowest in Wales (**Exhibit 12**). Both of these indicators would suggest that there is not enough consultant capacity to deal with the current outpatient demand, which would result in waiting times for new outpatients becoming longer.

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

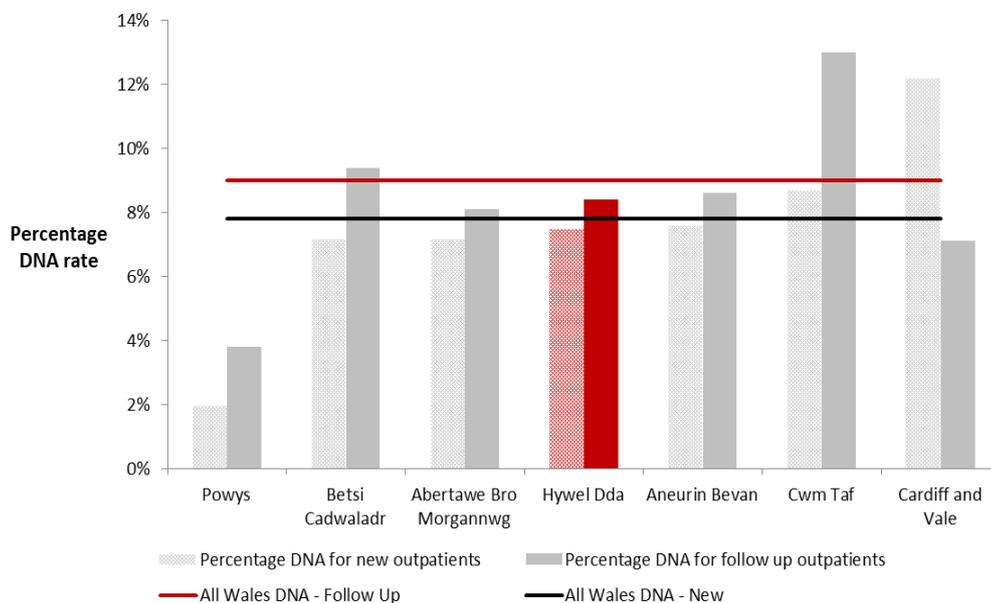


Source: Stats Wales and Wales Audit Office Health Board Survey

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 those patients within 26 weeks. The Health Board told us that the rate of cancelled outpatient clinics for 2012-13 was 5.9 per cent. The highest rates of cancelled outpatient clinics were within the Pembrokeshire-based hospitals with an average of 9.4 per cent of clinics cancelled across South Pembrokeshire Hospital, Tenby Hospital and Withybush District General Hospital. 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 Health Board was comparably low at 1.6 follow-up appointments to every new appointment. This was also lower than the previous Welsh Government target of 1.9. However, the high rate of GP referrals during this period could suggest that a large proportion of new referrals were inappropriate. As the CMATS filters out inappropriate referrals, the number of new appointments will go down, and therefore the ratio of follow-up to new appointments is likely to increase. This could indicate that the rate of follow-up appointments may also be too high.
- 2.6 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, 76 per cent of patients felt that the Health Board tried to co-ordinate the number of visits that they needed to make. This was the lowest percentage 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 both new and follow-up outpatient appointments in the Health Board are below the all-Wales average. Although at 7.5 per cent and 8.4 per cent respectively, this performance is still above the Welsh Government target of five per cent for new appointments and seven per cent for follow-up appointments ([Exhibit 13](#)). Through the Health Board Survey, the Health Board reported that the rates of patient cancellation for new and follow-up outpatient appointments are both high at 11.2 per cent and 12.4 per cent respectively. Not all health boards were able to report cancellation rates and therefore there is no comparison available.

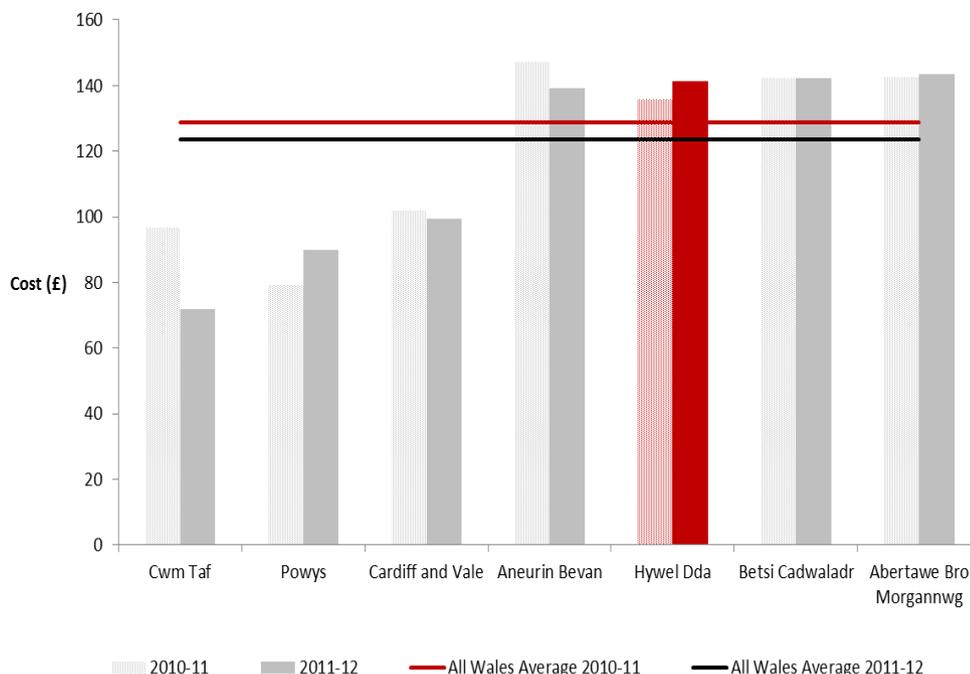
Exhibit 13: DNA rates for new and follow-up outpatients 2013-14



Source: Stats Wales

2.8 Using financial information submitted by the Health Board to the Welsh Government on an annual basis, we identified that the cost of an orthopaedic outpatient attendance in the Health Board is higher than the all-Wales average (Exhibit 14) at £141.31 and is increasing. The level of activity that goes through the outpatient departments will influence the cost of an outpatient attendance, along with the 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

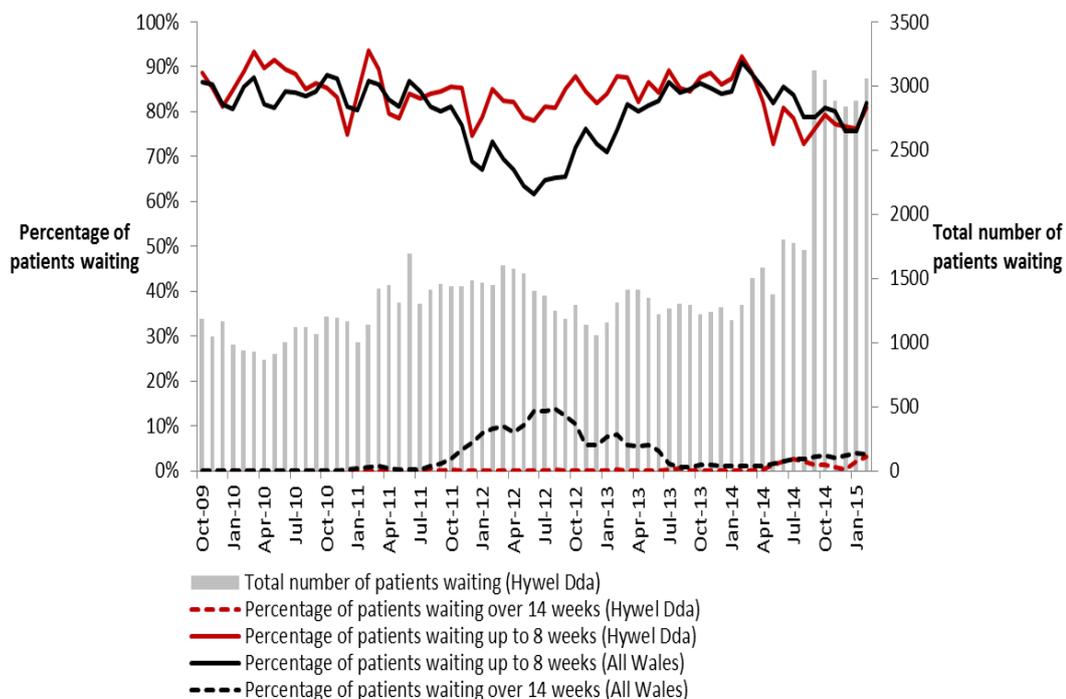


Source: Welsh costing returns

## Physiotherapy services

- 2.9 The Health Board generally sees patients requiring physiotherapy to treat musculoskeletal problems less quickly than in other parts of Wales. During the period January 2014 to February 2015, the percentage of patients waiting less than eight weeks averaged around 80.1 per cent compared to the all-Wales performance of 82.3 per cent (Exhibit 15). Performance had been better than the all-Wales position between July 2011 and January 2014, but deteriorated during 2014. Performance within the Health Board is generally better at Bronglais Hospital.
- 2.10 The Welsh Government target is that no patient should wait more than 14 weeks for therapy services. Very few patients wait more than 14 weeks in the Health Board compared to the all-Wales performance (Exhibit 15) which is good.

Exhibit 15: Waiting times for physiotherapy (adults)



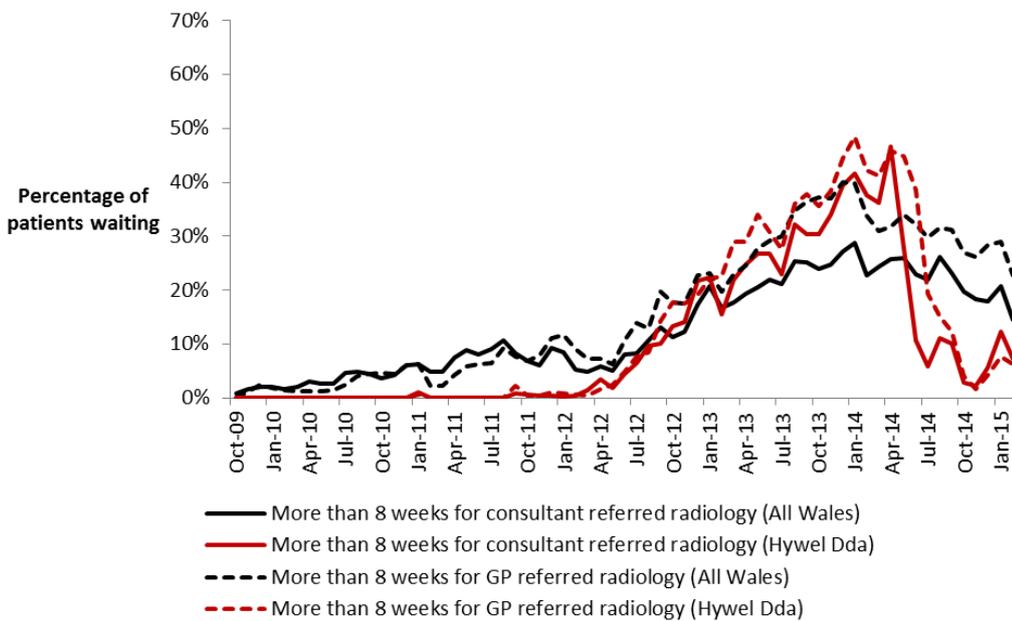
Source: Stats Wales

2.11 Outpatient physiotherapy services are provided in a wide range of settings across the Health Board including GP surgeries, which is identified as good practice. The Health Board has also recently introduced 'physio direct', which allows patients to contact the physiotherapy department for advice prior to a referral being made should it be deemed appropriate. This reduces the need for patients to be referred to the physiotherapy department by another healthcare professional, and aids patients to be signposted to other more appropriate services. 'Physio direct' is only available in Carmarthenshire and Ceredigion, although the Pembrokeshire service offers a drop-in clinic which functions in a similar way, as well as self-referral. However, 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. Up until September 2012, access to all radiology tests requested by both GPs and consultants in the Health Board was better than the all-Wales average. However, since that time, waiting times deteriorated and performance since late 2013 was worse than the all-Wales position until April 2014 when performance started to improve (Exhibit 16). Waits are now within the all-Wales average.

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 Health Board are significantly higher at 42 per cent and 55 per cent of all GP-referred radiology requests and consultant-referred radiology requests respectively. This pattern of referral is variable across the four hospital sites (Exhibit 17).

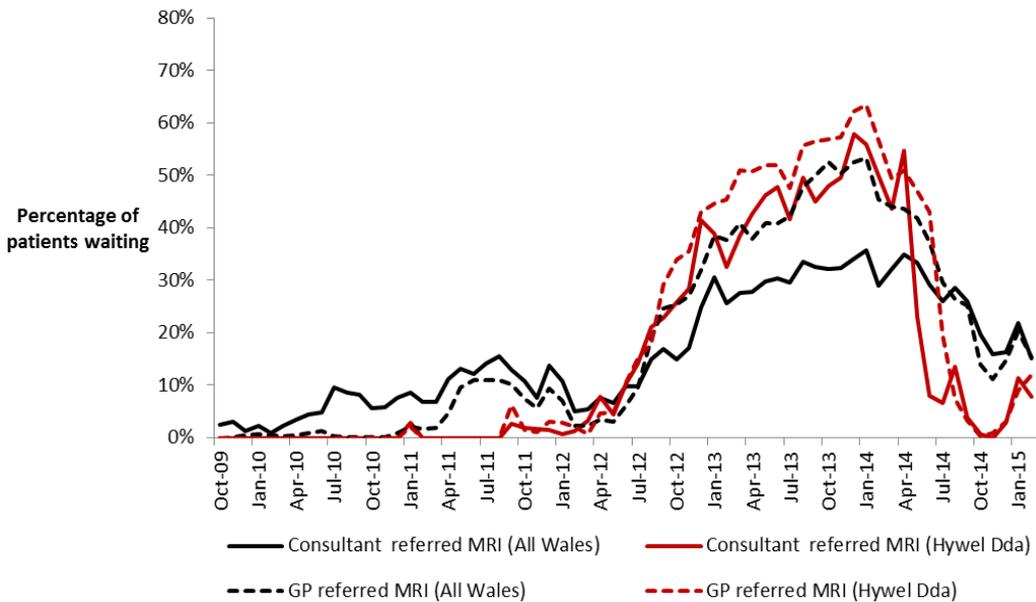
Exhibit 17: Proportion of radiology requests for MRI scans

Hospital site	Proportion of GP referrals for MRI scans	Proportion of consultant referrals for MRI scans
Bronglais	41	54
Glangwili	47	43
Prince Philip	43	42
Withybush	30	33
<b>All-Wales average</b>	<b>23</b>	<b>39</b>

Source: Stats Wales

2.14 The increased rate of demand, particularly for GP-referred MRI scans, has placed pressure on the health boards' radiology departments. Waiting times for MRI scans have grown since June 2012, with the percentage of patients waiting more than eight weeks for a GP-referred MRI scan consistently higher than the all-Wales position since September 2012 (Exhibit 18), although performance has significantly improved since April 2014.

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 Health Board 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 varies (**Exhibit 19**). No information was provided for Bronglais Hospital.

**Exhibit 19: Pre-operative assessment arrangements**

	<b>Bronglais Hospital</b>	<b>Glangwili Hospital</b>	<b>Prince Philip Hospital</b>	<b>Withybush Hospital</b>
Dedicated department	-	✘	✓	✓
Nurse led	-	In part	In part	In part
Available five days per week	-	✓	✓	✓
Orthopaedic specific	-	✘	✘	✓
Co-ordination of booking appointments	-	Booking office	Booking office	Waiting list co-ordinators

Source: Wales Audit Office Health Board Survey

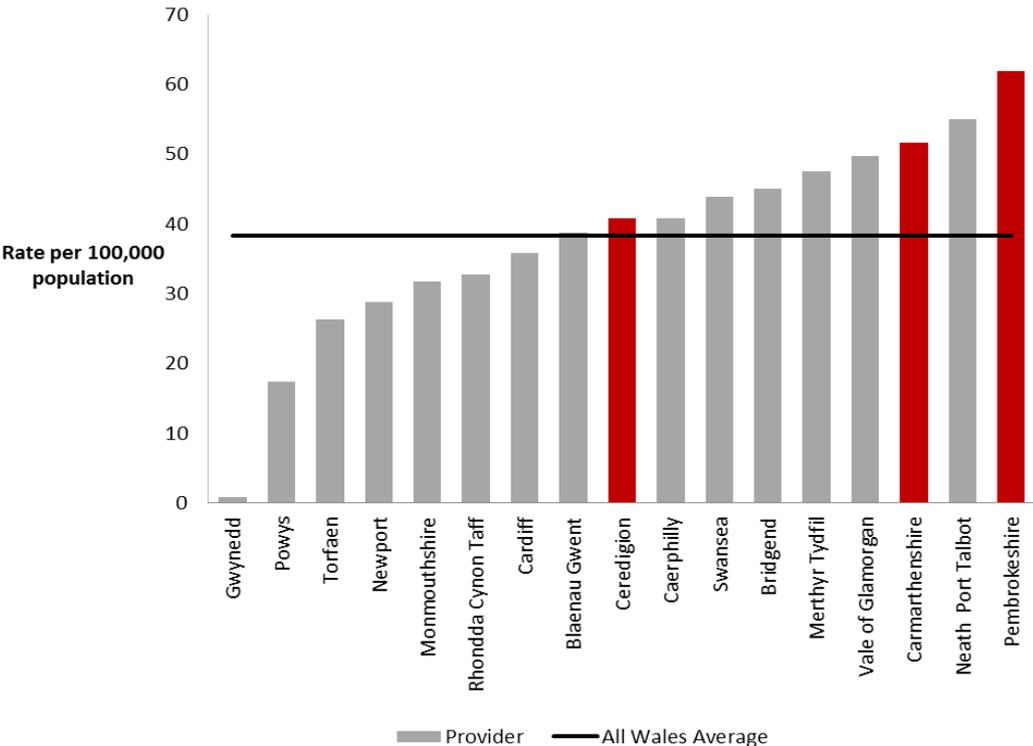
- 3.2 Our survey of patients undergoing knee replacement survey identified that all patients received a pre-operative assessment prior to admission with the exception of one patient at Withybush who reported that they received a pre-operative assessment on admission. Pre-operative assessments should be carried out with reasonable notice to minimise unexpected cancellations if a patient requires further intervention prior to surgery. At the Health Board, 24.5 per cent of patients were assessed less than three weeks before 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 effectiveness<sup>2</sup>. For the period 2012-13, we identified that the rate of procedures of limited clinical effectiveness was high across the different

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<sup>2</sup> 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.

localities in the Health Board, with the rate in Pembrokeshire the highest across Wales (Exhibit 20).

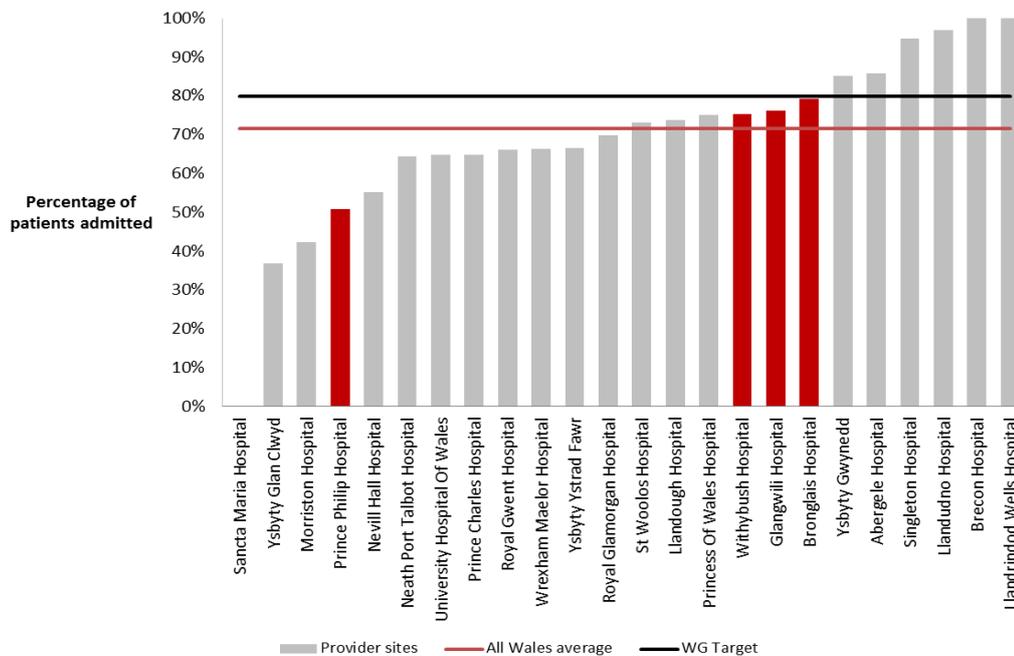
Exhibit 20: Rate of procedures of limited clinical effectiveness per 100,000 head of population 2012-13



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 the recommended orthopaedic procedures undertaken as a day case at Worthybush, Glangwili and Bronglais hospitals compared well to the rest of Wales (Exhibit 21) although performance was below the 80 per cent target. Performance in Prince Philip Hospital was significantly lower at 51 per cent.

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

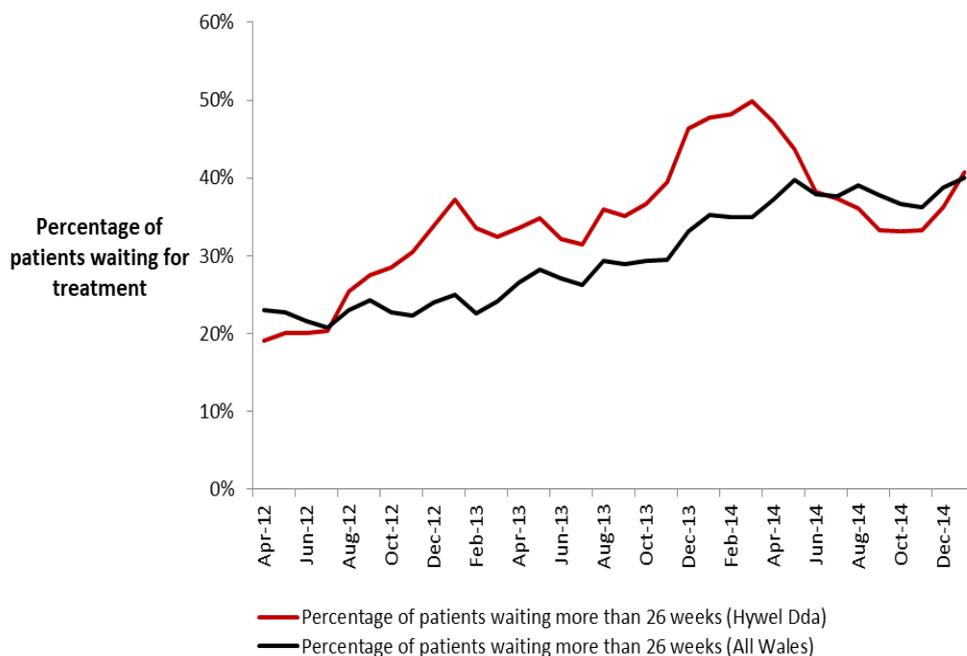


Source: Patient Episode Database Wales

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. The Health Board has established the 'joint school'; however, this is only available in Withybush Hospital.
- 3.6 The percentage of patients waiting more than 26 weeks for an inpatient or day-case admission has been higher than the all-Wales average since July 2012; however, performance has improved since February 2014 and been lower than the all-Wales average since June 2014 (Exhibit 22). The longer waits for outpatient appointment, followed by waits for diagnostics, will have had a knock-on effect on the ability of the Health Board to treat those who require admission within 26 weeks but improvements in diagnostic waits will have had a positive impact.

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

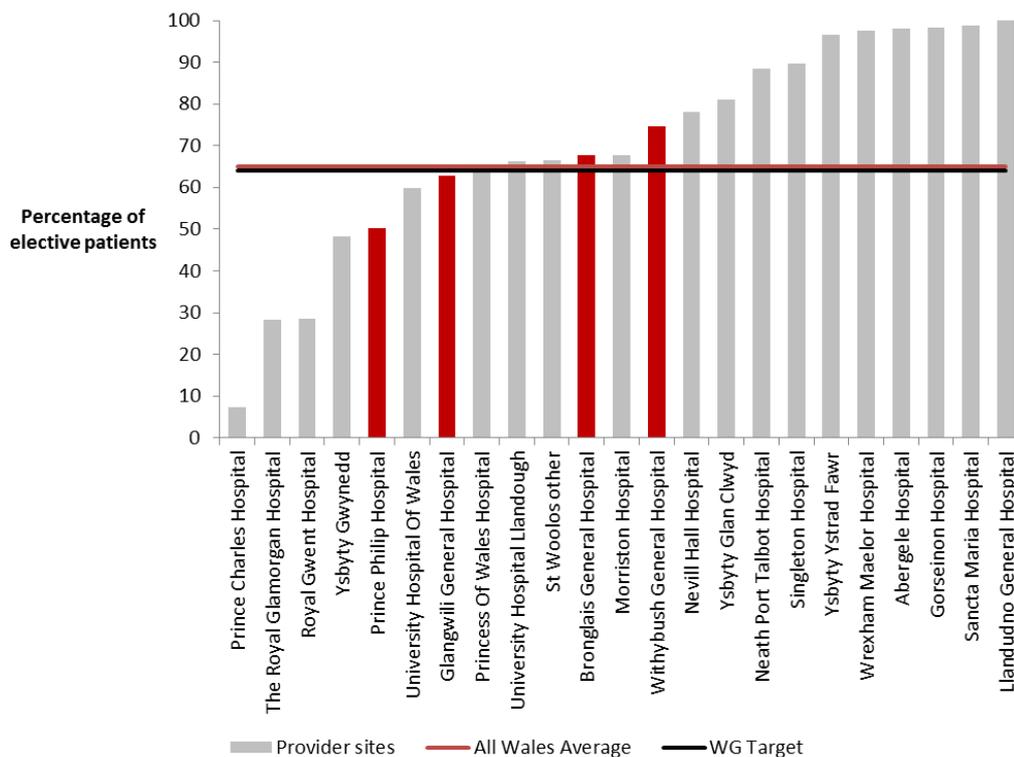


Source: Welsh Government Delivery Unit

## 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 surgery. Across the Health Board, the greatest proportion of patients admitted on the day of surgery is at Withybush Hospital with performance at 75 per cent ([Exhibit 23](#)). There is variation across the other sites, with performance at Prince Philip Hospital the lowest at 50 per cent, which is below the Welsh Government target.

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 beds has reduced over the last three years from 132 in 2010-11 to 110 in 2013-14, a decrease of 16.6 per cent. The occupancy rate for these beds, however, has also reduced by 1.3 per cent from an occupancy rate of 83.6 per cent in 2010-11 to 82.3 per cent in 2013-14, dipping to 76.7 per cent in 2012-13. This compares 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 further. There is, however, variation across the sites, with a high level of occupancy at Bronglais Hospital compared with a significantly low level of occupancy at Prince Philip (Exhibit 24). Rates at Prince Philip Hospital have been consistently lower than the other sites.

#### Exhibit 24: Available beds and occupancy rates 2013-14

	Available beds	Occupancy rate (%)
Bronglais Hospital	13.9	92.6
Glangwili Hospital	37.1	88.8
Prince Philip Hospital	21.6	48.7
Withybush Hospital	36.9	91.7

Source: Stats Wales

### During admission

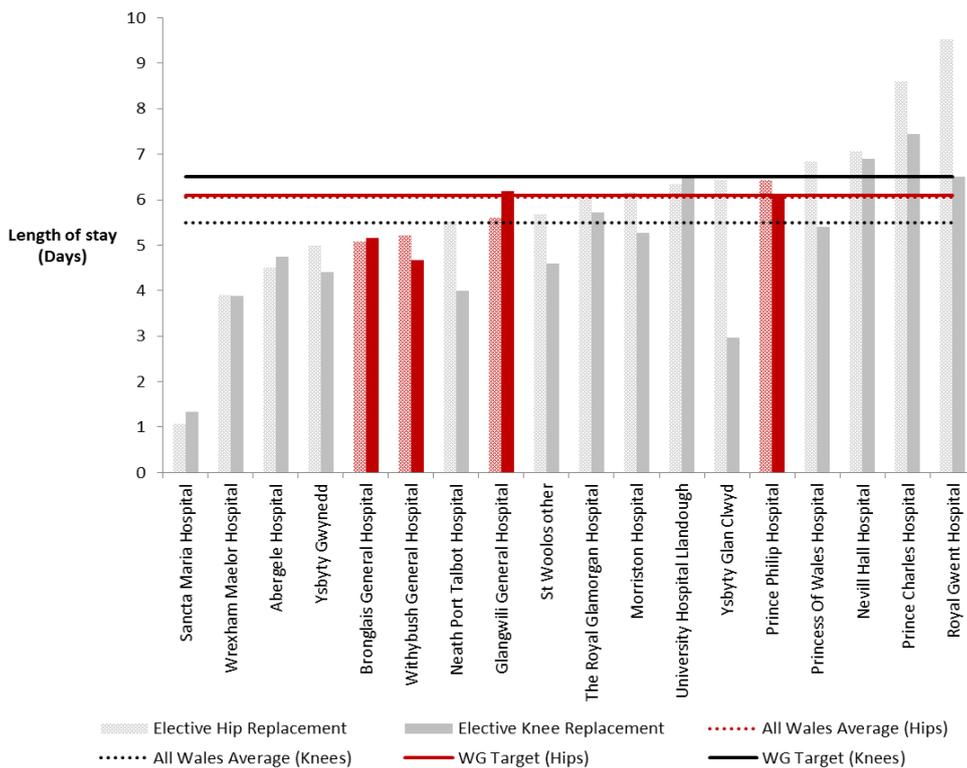
- 3.9 Operating theatres play an important part in the hospital stay of an elective orthopaedic patient, and any delays in surgery or cancellations can result in poor patient experience and inefficient use of resources. Cancellations on the day of surgery can also result in underutilisation in theatre capacity. The Health Board was unable to provide information on utilisation of orthopaedic theatres for Bronglais and Withybush hospitals. Performance at the other sites identified theatre utilisation ranging between 78 and 94 per cent of available capacity at Glangwili Hospital, and 91 and 99 per cent at Prince Philip Hospital over a three-month period January 2013 to March 2013. This compares with a Welsh Government target of 95 per cent. Not all health boards provided us with theatre utilisation performance and therefore there is no comparison available.
- 3.10 The Health Board was also unable to report the number of cancelled theatre sessions. Across sessions that were held, the rate of cancelled operations made by the Health Board was five per cent for the period 2012-13, although no information was provided for Bronglais Hospital. The rate of cancelled operations made by the Health Board was highest at Withybush Hospital at seven per cent. This 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 3.2 days, which is below the Welsh Government target of four days and the shortest across Wales. There is variation across the four sites within the Health Board, although all remain within the Welsh Government target. The shortest average length of stay is in Glangwili Hospital at 2.5 days compared with the longest average length of stay in Bronglais Hospital at 3.7 days.

3.12 The average length of stay for patients undergoing hip and knee replacements are also within the Welsh Government targets set for these procedures ([Exhibit 25](#)), with the exception of hip replacements at Prince Philip Hospital, which is longer than the Welsh Government target at 6.4 days.

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

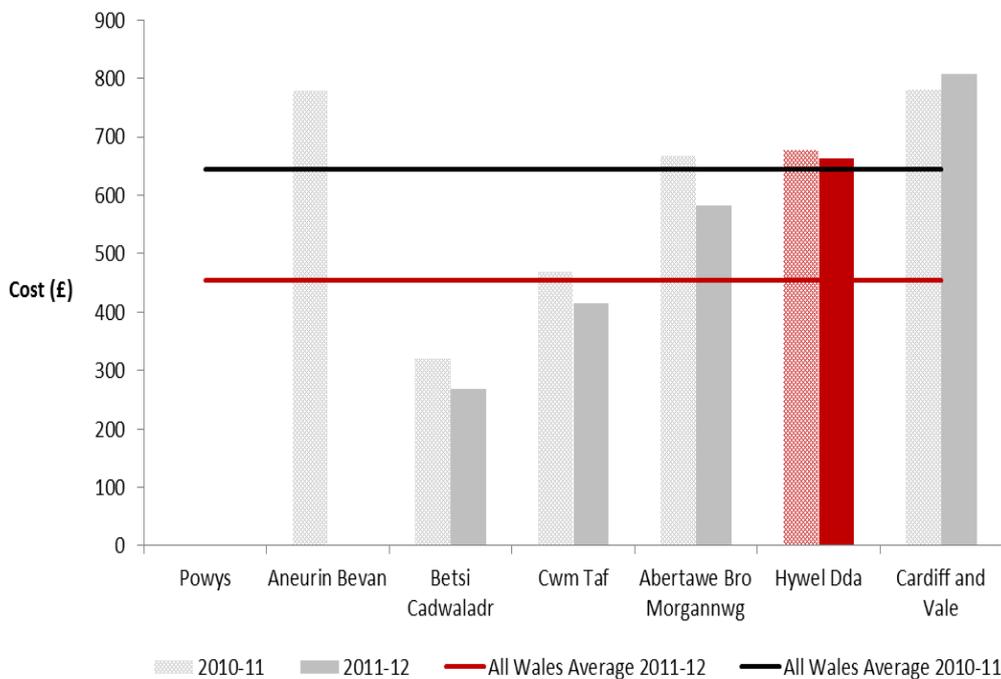


Source: Patient Episode Database Wales

3.13 The average cost of an elective orthopaedic hospital episode in the Health Board for 2012-13 was below the all-Wales average at £3,807 and the second lowest in Wales. The shorter average length of stay will influence the cost, but other costs associated with staff and equipment will 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 Health Board was above the all-Wales average for both 2010-11 and 2011-12, and was the second highest in Wales ([Exhibit 26](#)).

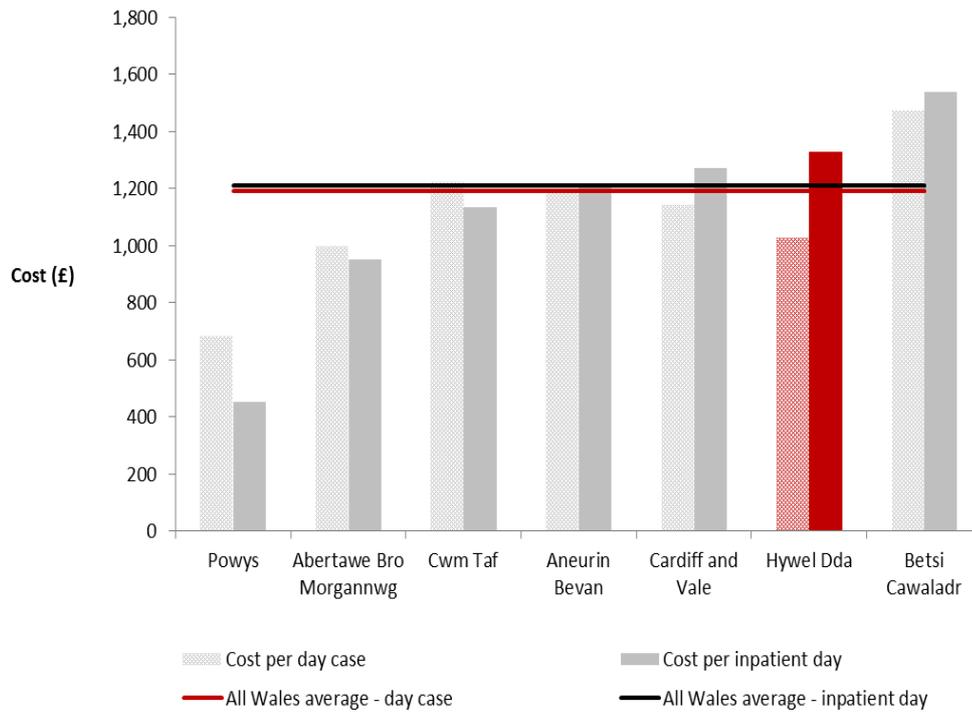
**Exhibit 26: Average prosthetic cost per episode for 2010-11 and 2011-12**



Source: Welsh costing returns

3.15 For the period 2012-13, the cost of an elective orthopaedic day case was below the all-Wales average at £1,028 ([Exhibit 27](#)); however, the cost of an elective inpatient bed day was higher than the all-Wales average at £1,328. If performance against the BADS orthopaedic procedures at Prince Philip 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 realise approximately £85,000 per year.

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



Source: Welsh costing returns

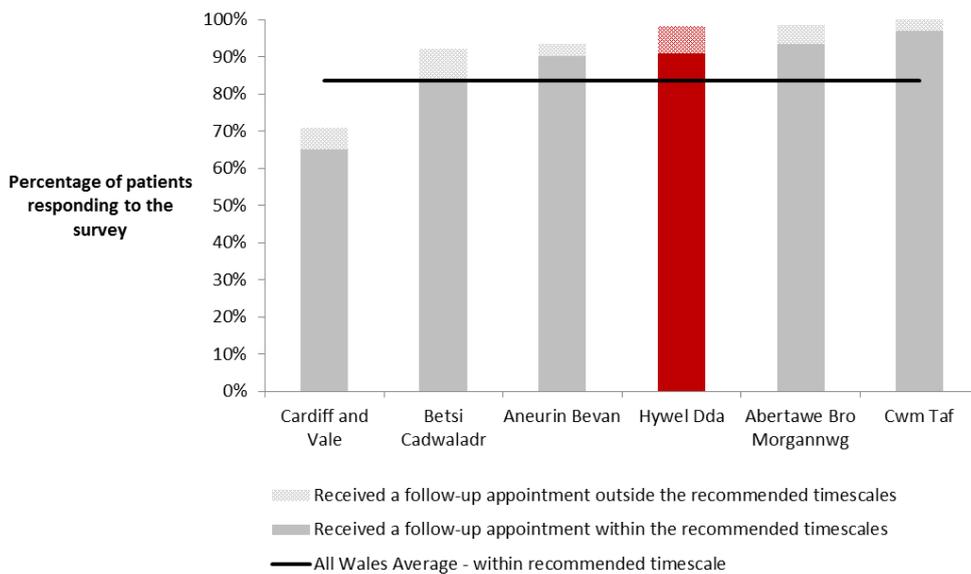
# Part 4

## 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 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 98 per cent of the patients undergoing knee replacement surgery who responded to our survey had received a follow-up post-discharge (**Exhibit 28**), which is above the all-Wales average. Of those, 93 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. These procedures account for approximately 42 per cent of elective orthopaedic activity in the Health Board. The rate of SSI for both hips and knees are lower in all sites than the all-Wales average, with no SSIs reported for Glangwili Hospital ([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)
Bronglais	1.3	0
Glangwili	0	0
Prince Philip	0	0.7
Withybush	0.6	1.4
<b>All-Wales average</b>	1.5	1.8

Source: Public Health Wales Observatory

- 4.4 For the same period, we also identified that readmission rates following elective hip replacements and death rates for elective orthopaedic admissions are better than the all-Wales average and some of the lowest in Wales. The readmission rate following elective knee replacements, although relatively small, however is the highest in Wales ([Exhibit 30](#)).

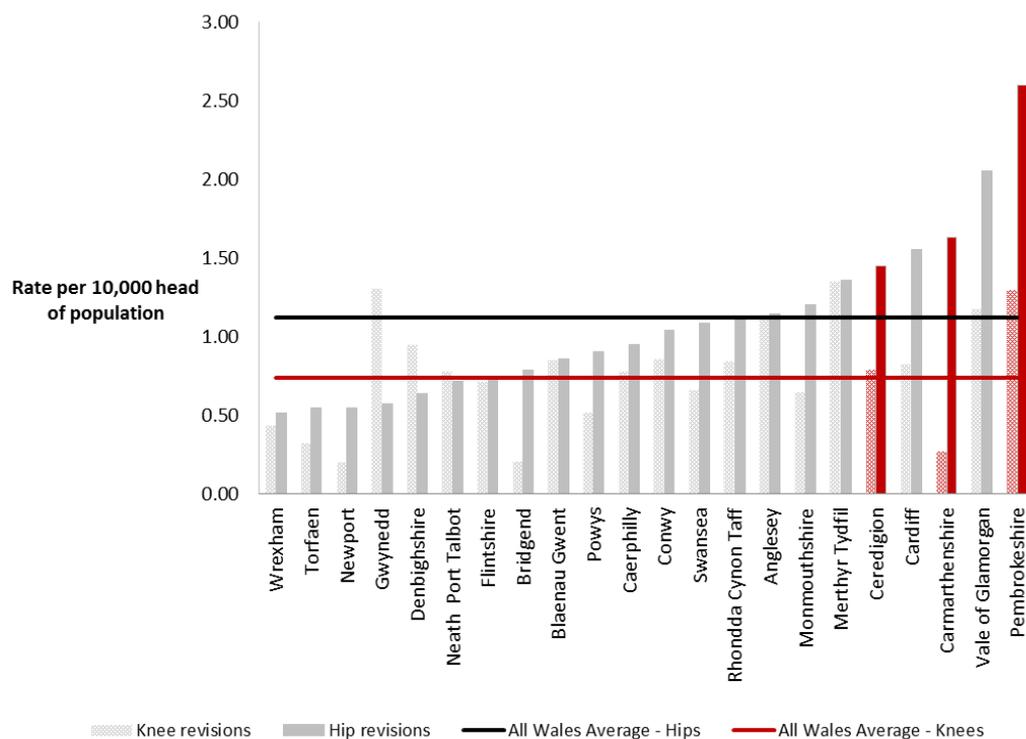
### Exhibit 30: Readmission and mortality rates for elective orthopaedics 2012-13

Indicator	Hywel Dda	All-Wales average
Percentage of patients readmitted within 28 days following a hip replacement	0.7	0.9
Percentage of patients readmitted within 28 days following a knee replacement	0.2	0.1
Death in hospital per 100 elective orthopaedic admissions	0.02	0.06
Death within 30 days of discharge following an elective orthopaedic admission, per 100 elective orthopaedic admissions	0.03	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 across Hywel Dda is some of the highest in Wales, with the rate of revision for hips for Pembrokeshire residents the highest (Exhibit 31).

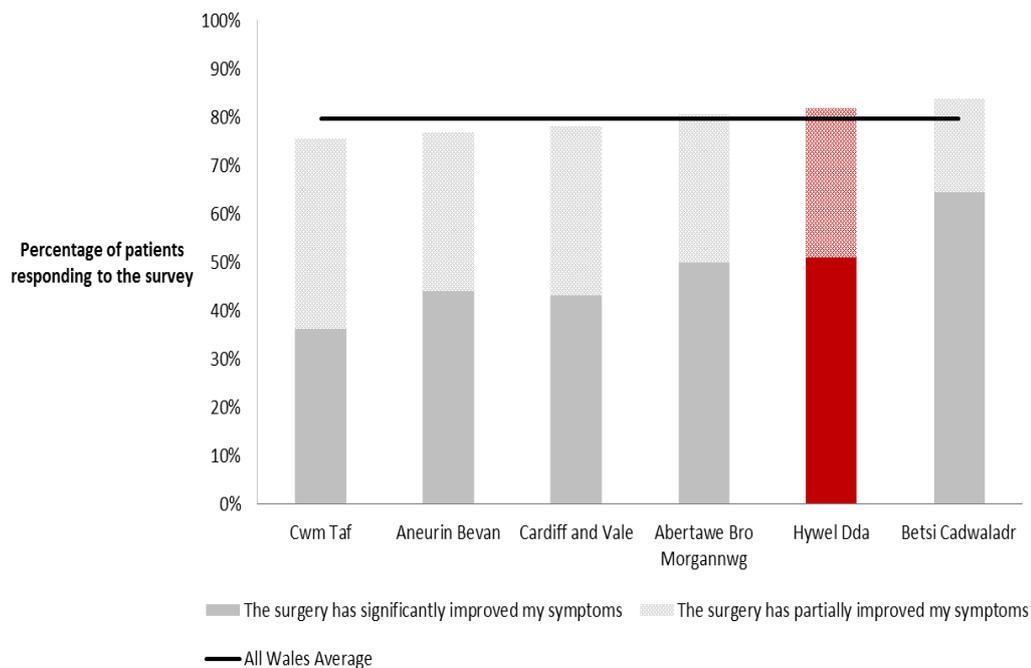
Exhibit 31: Rates of revision per 10,000 head of population 2012-13



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. Just under 82 per cent of the Health Board’s patients reported that surgery had partially or significantly improved their symptoms (**Exhibit 32**). This was the second highest in Wales and above the all-Wales average. There is variation however between sites, with only 71 per cent of patients from Wwithyush Hospital reporting improvements, compared to 75 per cent from Bronglais Hospital and 89 per cent from Prince Philip Hospital.

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 Health Board reported using the Oxford Hip and Knee scores as a way of measuring the impact of joint replacement surgery, along with submission of patient data to the National Joint Registry. This is recognised as good practice.
- 4.8 The Health Board also reported undertaking a number of patient satisfaction surveys during the last 12 months to gather the views of orthopaedic patients. During the period 2012-13, the Health Board recorded 110 complaints relating to orthopaedic services. This equates to 1.8 per cent of elective orthopaedic 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](http://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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