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# A Comparative Picture of Orthopaedic Services **Abertawe Bro Morgannwg 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 Abertawe Bro Morgannwg University Health Board (the Health Board) and our view of how the service compares to the rest of Wales.
- 3 We have based our view on the efficiency, effectiveness and economy of orthopaedic services provided by the Health Board using the patient pathway. Collection of the data has been from a range of sources, which are set out in **Appendix 1**, and the data used is the most available data at the point of reporting. The findings from the data analysis are set out in the main body of this report but the high-level messages are set out in **Exhibit 1**. **Exhibit 2** is a summary assessment that uses a traffic light rating to show how the Health Board compares with the rest of Wales on each indicator, and where applicable, Welsh Government targets.

## Exhibit 1: High-level messages

A rising level of demand has placed pressure on outpatient services which is now improving but once admitted, there are inefficiencies in the inpatient pathway that are impacting on the use of resources and patient experience with some outcomes following orthopaedic surgery less positive than elsewhere:

- investment in primary care services is low and decreasing, GP referral rates are increasing and are now one of the highest in Wales and the Clinical Musculoskeletal Assessment and Treatment Service (CMATS) is struggling to meet demand;
- increasing demand on outpatients has placed pressure on waiting times, along with high rates of patients who do not attend and patient cancellations, although physiotherapy and radiology services are generally meeting demand and outpatient waiting times are now improving;
- the use of inpatient resources varies across the Health Board's hospital sites with scope to improve day-case rates, timely pre-operative assessment, theatre utilisation, bed occupancy and minimise the number of procedures with limited effectiveness undertaken; and
- patients are followed up although some outcomes are less positive than elsewhere in Wales with higher rates of elective orthopaedic mortality and Surgical Site Infections (SSIs).

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 reduced by 6.4 per cent between 2010 and 2013.	
Total spend on primary care provision	Average spend per head of population on primary care is below the all-Wales average at £11.80.	
Proportion of total musculoskeletal spend allocated to primary care	The proportion of total spend on primary care is below the all-Wales average with performance in 2012-13 at 10.8 per cent.	
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 extent to which patients receive alternative intervention prior to surgery is low, with the exception of pain relief, which is higher than the all-Wales average.	
<b>Is demand for secondary care services managed?</b>		
GP referral rate	The rate of GP referrals per 100,000 head of population is now one of the highest across Wales.	
Trend in referrals	The number of GP referrals into secondary care has increased considerably since 2012-13.	
<b>Is the CMATS operating effectively?</b>		
CMATS in place	The Health Board introduced CMATS in 2011 covering all localities.	
CMATS operational arrangements	CMATS comply with the key Welsh Government principles with the exception of offering advanced practice podiatrists.	

Primary and community based services		
Indicator	Health board performance	Performance rating
CMATS staffing levels	The level of staff per 1,000 GP referrals for CMATS is around the average of teams across Wales.	
Patients treated by CMATS	65.8 per cent of patients referred received a face-to-face assessment by CMATS.	Descriptive indicator
Waiting times for face-to-face assessment by CMATS	The average wait from referral to face-to-face assessment by CMATS is 10 weeks, which is outside the Welsh Government target of eight weeks.	

Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
<b>Are outpatient services effective?</b>		
Waits for first outpatient appointment	The percentage of patients waiting more than 26 weeks for their first outpatient appointment is lower than the all-Wales average, and is now one of the lowest in Wales.	
Consultant outpatient sessions	The number of consultant outpatient sessions per 1,000 GP referrals is just above the all-Wales average.	Descriptive indicator
Cancelled outpatient clinics	The Health Board was unable to report the proportion of outpatient clinics cancelled.	-
Follow-up to new ratios	The ratio of follow-up to new appointments is 1.7 follow-ups to every new, which is within the Welsh Government target of 1.9.	
Did Not Attend (DNA) rates	DNA rates are below the all-Wales average. However, DNA rates exceed the Welsh Government targets for both new and follow-up appointments.	

<b>Outpatient and diagnostic services</b>		
<b>Indicator</b>	<b>Health board performance</b>	<b>Performance rating</b>
Patient cancellations	The patient cancellation rate for new appointments is high at 10.1 per cent. The follow-up cancellation rate is lower at 7.6 per cent.	
Co-ordination of visits	Eighty-five 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 second lowest in Wales.	
Cost per outpatient attendance	The cost of an orthopaedic outpatient attendance is the highest in Wales at £143.62 and increasing.	
<b>Are physiotherapy services able to meet demand?</b>		
Waits for physiotherapy services	The percentage of patients waiting less than eight weeks is higher than the all-Wales average and 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 are considerably better than the all-Wales average, although performance remains below the Welsh Government target.	
MRI referral rates	The rate of referrals for MRI scans from both GPs and consultants are lower than the all-Wales average with the exception of Morriston Hospital, which reflects the broader case mix of patients in this hospital.	

Outpatient and diagnostic services		
Indicator	Health board performance	Performance rating
Waits for MRI scans	The percentage of patients waiting more than eight weeks for MRI scans has deteriorated and is now in line with 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 and consistent across the Health Board's sites, although there is no dedicated department for assessment.	
Receipt of pre-operative assessment	All patients undergoing knee replacement surgery received a pre-operative assessment, although 14.5 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 Neath Port Talbot residents the second highest across Wales.	
British Association of Day Surgery (BADS) day-case rates	The percentage of recommended orthopaedic procedures undertaken as a day case is below the Welsh Government target across all sites except Singleton Hospital. The rate at Murryston Hospital is among the lowest in Wales.	

<b>Inpatient services</b>		
<b>Indicator</b>	<b>Health board performance</b>	<b>Performance rating</b>
Implementation of 'joint school' <sup>1</sup>	The Health Board runs a 'joint school' programme across three sites to provide educational sessions for patients undergoing hip or knee replacement surgery.	
Waits for surgery	The percentage of patients waiting more than 26 weeks for an inpatient or day-case admission is increasing and is now above the all-Wales average.	
<b>Is bed capacity used effectively?</b>		
Day of surgery admission	The percentage of patients admitted on the day of surgery is above the Welsh Government target at all sites, with the exception of Princess of Wales Hospital.	
Reduction in inpatient beds	The total number of orthopaedic beds remained reasonably constant over 2010-2013, but has decreased by 17.3 per cent to 183.5 beds in 2013-14.	Descriptor indicator
Bed occupancy	Occupancy rates are just below the optimal level of 85 per cent at 84.1 per cent. However, there is variation across sites, with occupancy at Neath Port Talbot at just 34.6 per cent.	
<b>Is operating theatre capacity used effectively?</b>		
Theatre utilisation	Performance ranges between 83 and 93 per cent across inpatient and day-case theatres, which is below the Welsh Government utilisation target of 95 per cent.	

<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.

Inpatient services		
Indicator	Health board performance	Performance rating
Cancelled operations	The rate of cancelled operations made by the Health Board was 15.8 per cent for inpatient cases and 10.4 per cent for day surgery cases. 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 is 3.8 days, which is within the Welsh Government target of four days. However, there is variation between sites, with performance outside the target at Princess of Wales and Morriston hospitals.	
Average length of stay for hip and knee replacements	The average length of stay for patients undergoing hip and knee replacements are within the Welsh Government targets with the exception of hip replacements at Princess of Wales Hospital.	
Cost per inpatient episode	The average cost of an elective orthopaedic hospital episode is the second highest across Wales at £4,657.	
Prosthetic cost per inpatient episode	The average cost of prostheses per episode is above the all-Wales average at £582 but reducing.	
Cost per day case	The cost of an elective orthopaedic day case is comparatively low at £998.	
Cost per inpatient bed day	The cost of an elective inpatient bed day is the second lowest across Wales at £952.	

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, which is above the all-Wales average.	
Follow-up appointment within recommended timescales	Ninety-five per cent of patients had received the follow-up appointment within six weeks and three months after discharge.	
<b>Are adverse complications avoided and the benefits of surgery optimised?</b>		
SSIs for hip and knee replacements	The rate of SSIs for both hips and knees are higher in all sites than the all-Wales average, with the exception of knee surgery at Neath Port Talbot Hospital. The Welsh Government target for SSI is zero per cent.	
Readmission rates for hip and knee replacements	The readmission rate following elective hip replacement is above the all-Wales average. The readmission rate for knee replacements is in line with the all-Wales average.	
Mortality rates for elective orthopaedic patients	Mortality rates for elective orthopaedic admissions both in hospital and within 30 days of discharge are some of the highest in Wales.	
Revision rates	The rate of revision for hips and knees across the Health Board localities is below the all-Wales average, with the rate of revision for knees for the Bridgend population the lowest across Wales.	
Improvement of symptoms	Eighty-one per cent of patients reported that knee surgery had partially or significantly improved their symptoms. This is around the all-Wales average.	

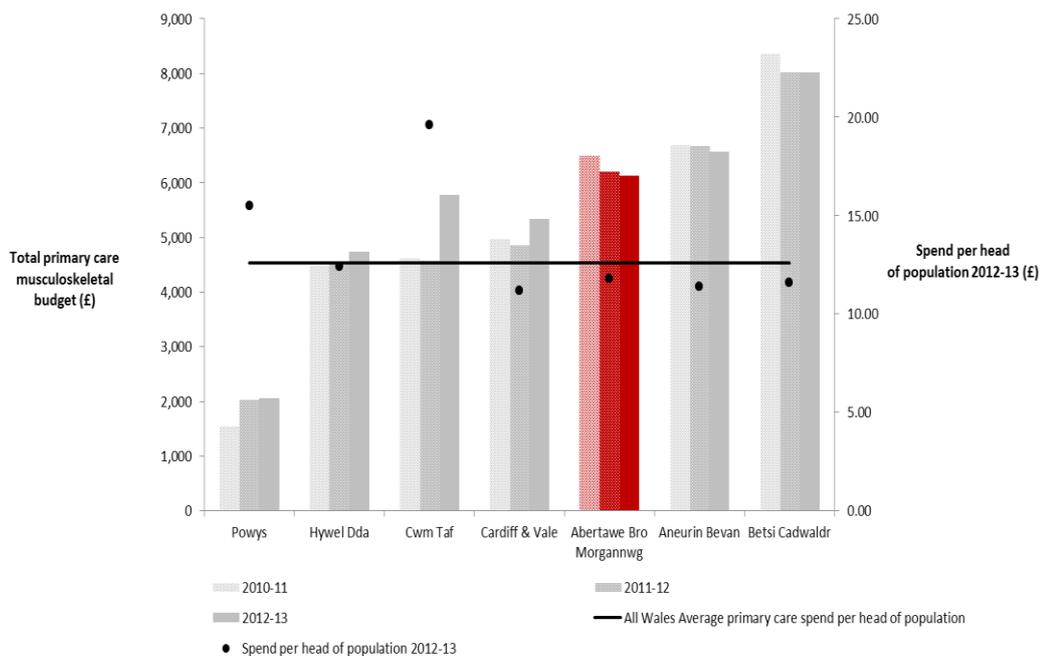
# Part 1

## 1 Primary and community based services

### Primary care provision

1.1 Over the three years between 2010 and 2013, the Health Board has reduced its primary care spend on musculoskeletal services by 6.4 per cent (Exhibit 3). The Health Board spend per head of population on primary care musculoskeletal services was just below the all-Wales average at £11.80 (Exhibit 3). This level of spending is in line with many other health boards across Wales.

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



Source: Stats Wales

1.2 The proportion of musculoskeletal monies spent on primary care by the Health Board fell between 2010-11 and 2011-12 but rose slightly the following year ([Exhibit 4](#)). However, since 2011-12, it has been consistently below the all-Wales average, suggesting that musculoskeletal services have been focused predominantly more towards secondary care provision.

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

Health board	% of MSK programme budget spent on primary care		
	2010-11	2011-12	2012-13
Abertawe Bro Morgannwg	11.3	9.8	10.8
Aneurin Bevan	10.2	10.2	9.7
Betsi Cadwaladr	10.7	9.3	9.9
Cardiff and Vale	11.9	10.6	12.0
Cwm Taf	16.0	15.1	15.4
Hywel Dda	9.3	9.0	10.3
Powys Teaching	9.9	14.0	17.1
<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. The Health Board reported having a number of services in place, which allow direct access by GPs. The range of services, however, compares less favourably with some 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. With the exception of receiving pain relief, which was above the all-Wales average, the extent to which patients had received other interventions across the Health Board, such as weight management advice, was below the all-Wales average ([Exhibit 6](#)). The proportion of patients receiving physiotherapy advice or treatment prior to surgery was the lowest across Wales at 12.9 per cent.

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

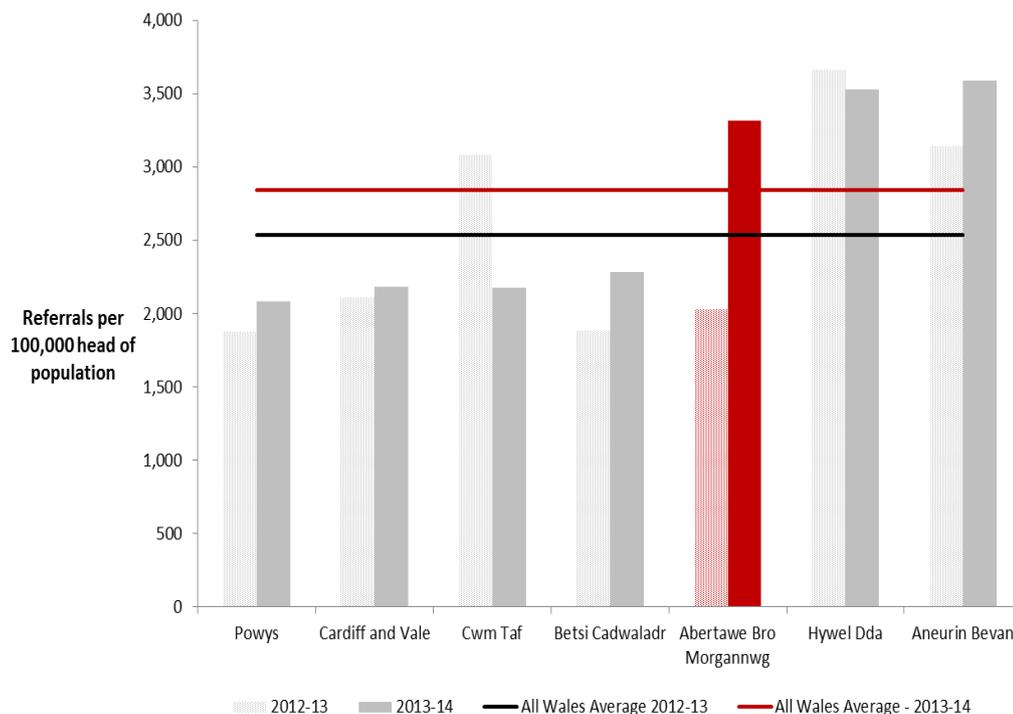
	Abertawe Bro Morgannwg	All-Wales average
Percentage of patients receiving pain relief before surgery	80.6	74.9
Percentage of patients receiving physiotherapy advice or treatment before surgery	12.9	26.1
Percentage of patients receiving an exercise programme before surgery	17.7	23.4
Percentage of patients receiving weight management advice before surgery	8.1	9.1

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

**GP referrals**

1.5 The Health Board now has one of the highest rates of GP referrals for orthopaedics per 100,000 head of population in Wales, following a significant increase from 2012-13 ([Exhibit 7](#)). The proportion of residents aged 65 and over is below the all-Wales average in Bridgend and Swansea, and just above the all-Wales average in Neath Port Talbot. The age of the population would therefore not appear to be a contributory factor to the high referral rate. This would suggest that there has been a change in GP behaviour, which has resulted in a higher rate of referrals, some of which may be inappropriate referrals.

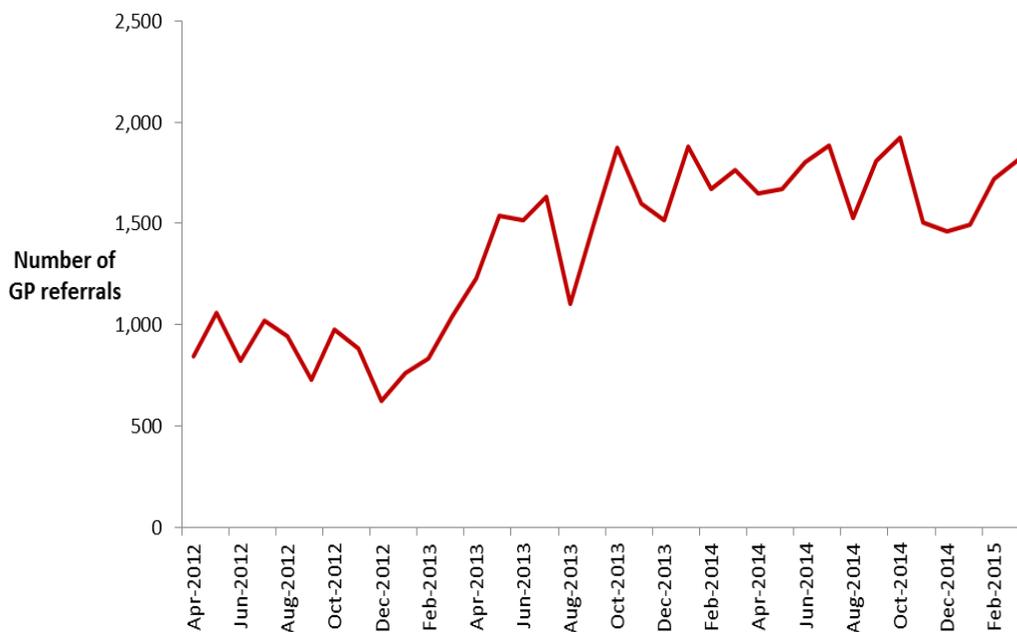
Exhibit 7: GP referrals per 100,000 head of population 2012-2014



Source: Stats Wales

1.6 Typically, the Health Board used to receive an average of 870 GP referrals per calendar month. However, since April 2013, the number of GP referrals for orthopaedics has risen to a monthly average of 1,690 GP referrals by March 2015 (Exhibit 8).

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



Source: Stats Wales

## Community musculoskeletal assessment and treatment services

1.7 In 2012, the Welsh Government introduced the concept of the CMATS. The aim of the CMATS is to provide a first point of contact for GP referrals for assessment and treatment of musculoskeletal-related pain and conditions as a way of ensuring that the right referrals for orthopaedic services are filtering through to secondary care. The Health Board introduced CMATS in 2011. The Welsh Government set out clear guidance as to how CMATS should operate. Local compliance with the key principles set out in the Welsh Government guidance is positive, with the exception of the inclusion of an advanced podiatry practitioner within the service (Exhibit 9).

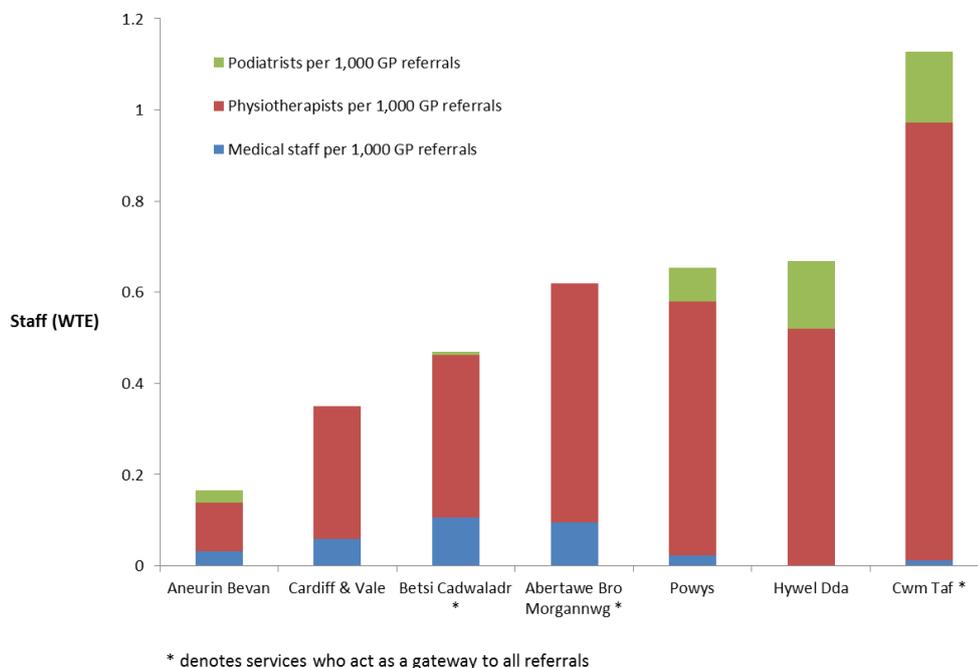
Exhibit 9: Compliance with the key principles set out in the Welsh Government guidance on CMATS

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
<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	✓	Four (Abertawe Bro Morgannwg, Aneurin Bevan, Betsi Cadwaladr and Cardiff and Vale)

Source: Wales Audit Office Health Board Survey

- 1.8 Although the Health Board has no advanced practice podiatrists supporting the service, the overall staffing levels for the CMATS are around the average of teams across Wales ([Exhibit 10](#)). The Health Board's CMATS acts as a gateway to all referrals so will be under more pressure than services with similar staffing levels such as Powys and Hywel Dda, where referrals also pass through other routes.

## 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. From data provided by the Health Board, 65.8 per cent of patients referred received a face-to-face assessment. Not all health boards were able to provide this data. 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. At the Health Board, the average wait from referral to face-to-face assessment is 10 weeks, which is outside the Welsh Government target of eight weeks.

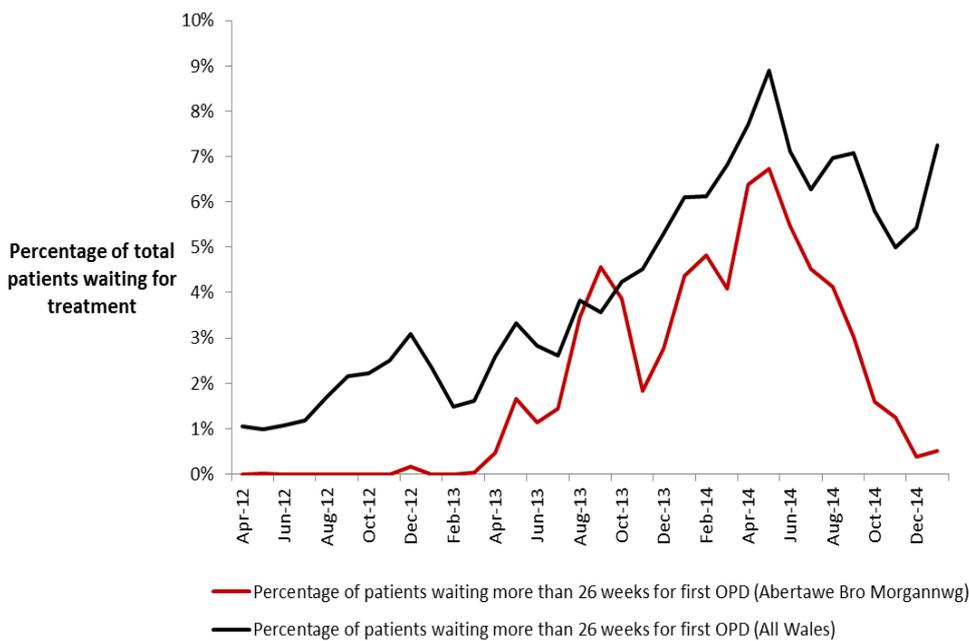
# Part 2

## 2 Outpatients and diagnostic services

### Outpatient services

2.1 In order to meet the Welsh Government target of 95 per cent of patients treated within 26 weeks of referrals, health boards should be working to an internal target of between 12 to 14 weeks for first outpatient appointment. The Health Board is currently working to an internal target of between 12 and 18 weeks for first appointment, which places greater pressure on the diagnostic and inpatient elements of the 26-week referral to treatment pathway. Between April 2012 and March 2013, very few patients waited more than 26 weeks for their first outpatient appointment, and performance has generally been better than the rising all-Wales average (Exhibit 11). The percentage of patients waiting more than 26 weeks at the Health Board started to increase from April 2013, which suggests that outpatient capacity has not kept pace with the demand from the increasing rate in referrals (Exhibit 11), although since June 2014 performance has improved.

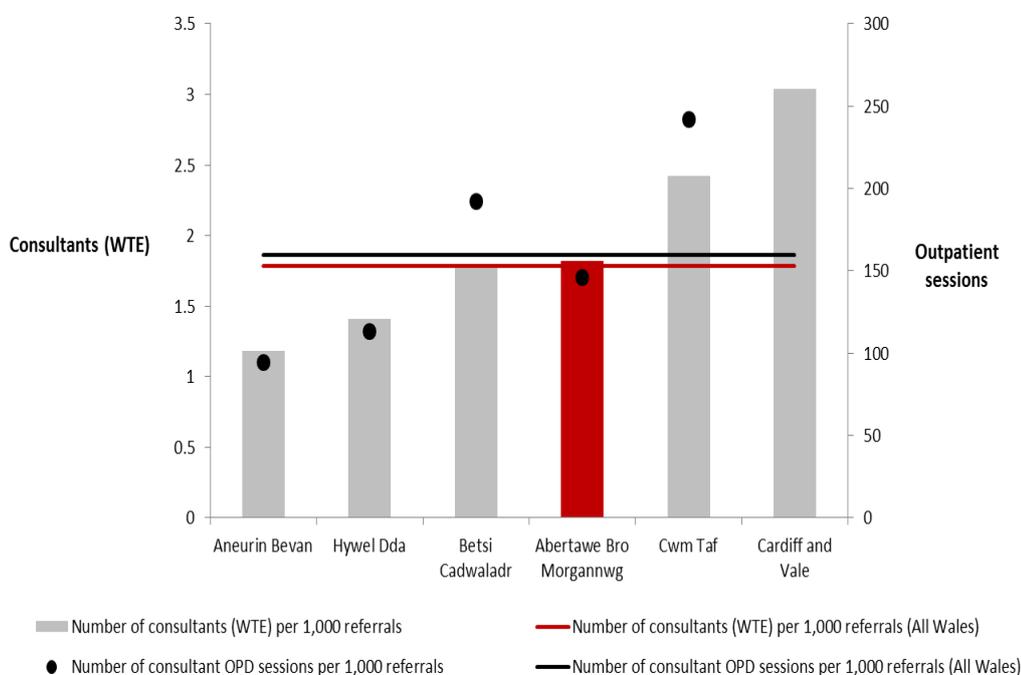
Exhibit 11: Percentage of patients waiting more than 26 weeks for first outpatient appointment



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 just above the all-Wales average (Exhibit 12). These indicators would suggest that there is sufficient consultant time devoted to outpatient services to meet demand.

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

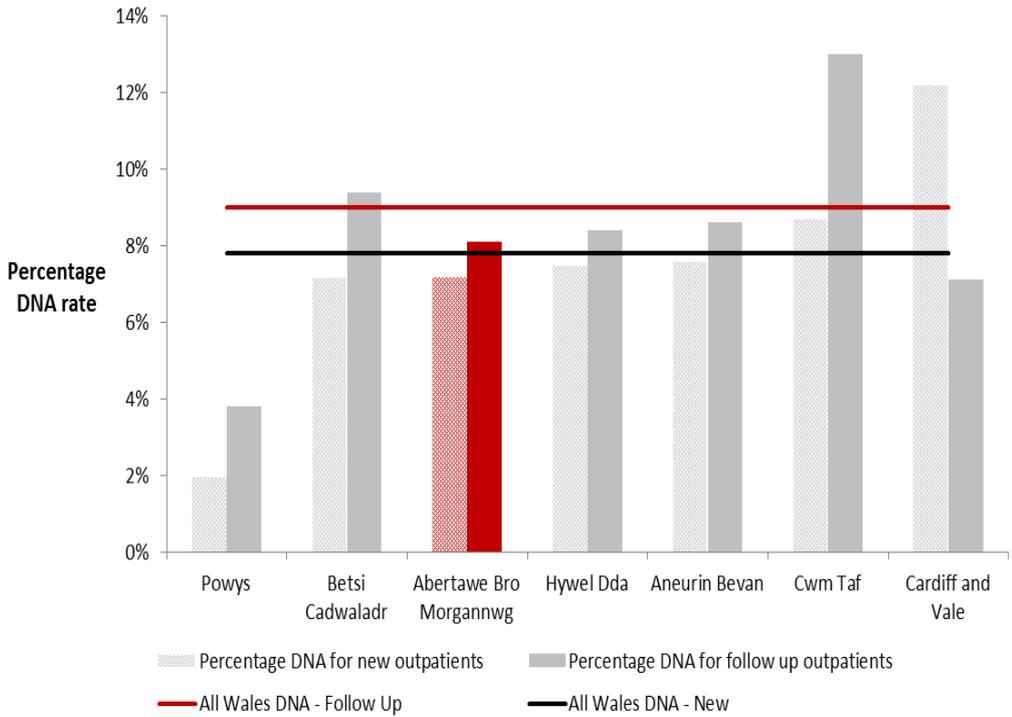


Source: Stats Wales and Wales Audit Office Health Board Survey

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 the Health Board is still obliged to treat patients within 26 weeks. The Health Board was unable to report its cancelled outpatient clinics for 2012-13. 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 1.7 follow-up appointments to every new appointment. This was lower than the previous Welsh Government target of 1.9.
- 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, 85 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 second-lowest response across health boards, compared with the all-Wales average of 88.3 per cent.
- 2.7 The DNA rate and patient cancellation rate can provide an indication as to whether appointments are appropriate. The DNA rates for both new and follow-up outpatient appointments in the Health Board are below the all-Wales average, at 7.2 and 8.1 per cent respectively ([Exhibit 13](#)). This performance, however, is outside the Welsh Government target of five per cent for new appointments and seven per cent for follow-up appointments, indicating that there is scope to improve efficiency within the system. Through the Health Board Survey, the Health Board reported that the rates of patient cancellation for new patients are at 10.1 per cent, but lower for follow-up outpatient appointments at 7.6 per cent. Not all health boards were able to report cancellation rates and therefore there is no comparison available.

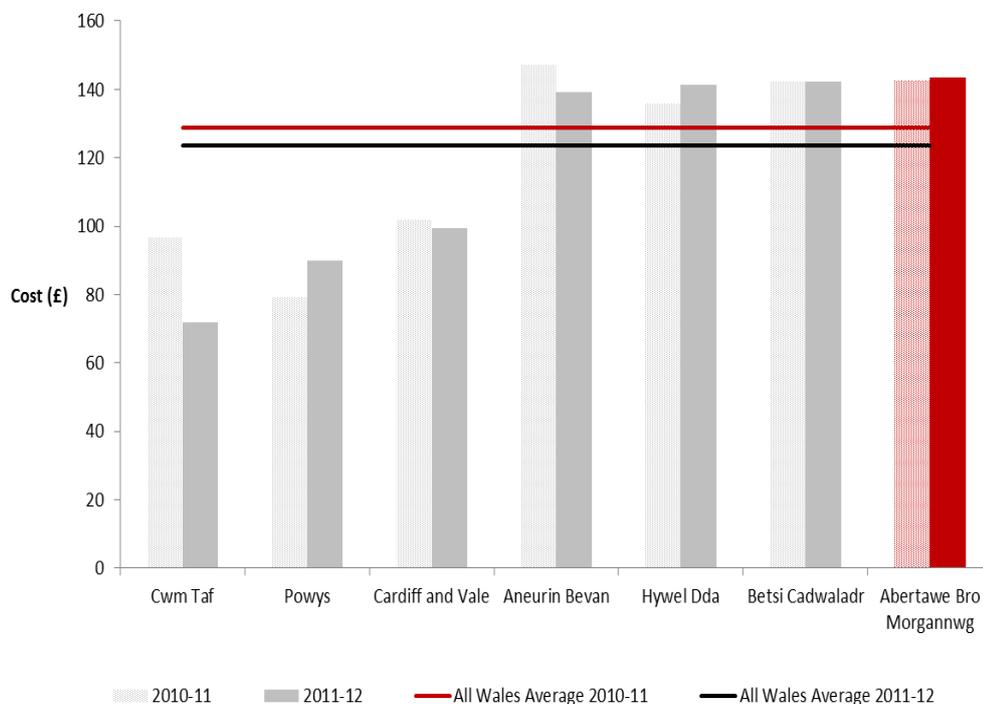
Exhibit 13: DNA rates for new and follow-up outpatients 2013-14



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 was the highest across Wales in 2011-12 at £143.62 (Exhibit 14), and showed a slight increase on 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

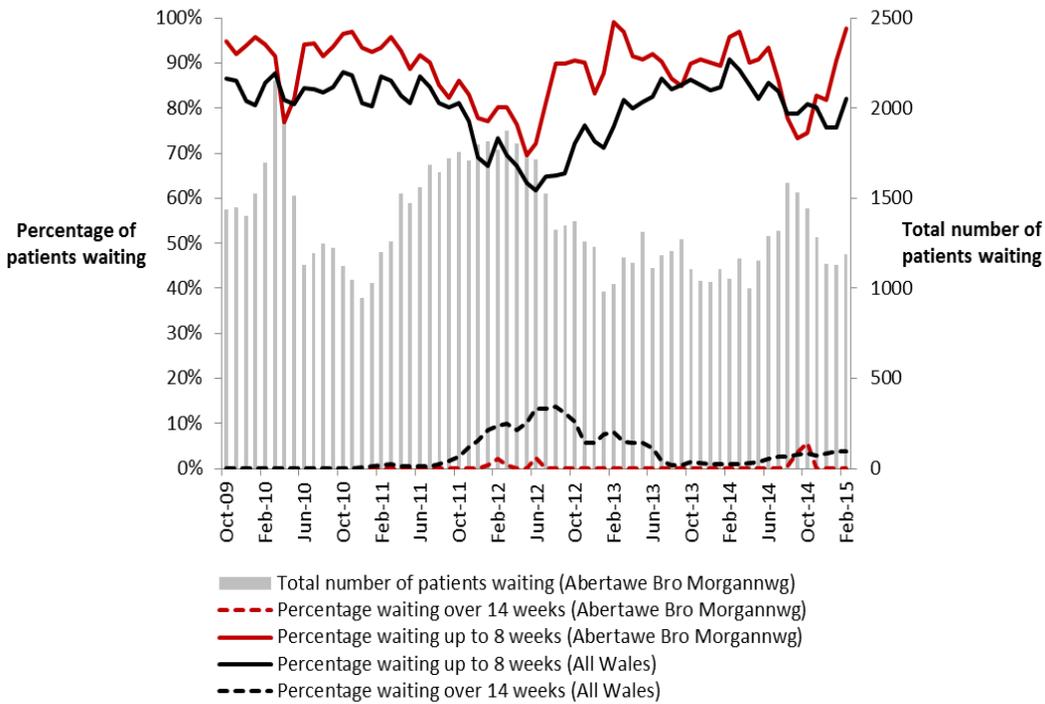


Source: Welsh costing returns

## Physiotherapy services

- 2.9 The Health Board generally sees patients requiring physiotherapy to treat musculoskeletal problems quicker 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 87.2 per cent compared to the all-Wales performance of 82.3 per cent (Exhibit 15). Performance is similar between Morriston and Singleton hospitals.
- 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 performance. In addition, the number of patients waiting in any given month has reduced considerably since 2012.

Exhibit 15: Waiting times for physiotherapy (adults)



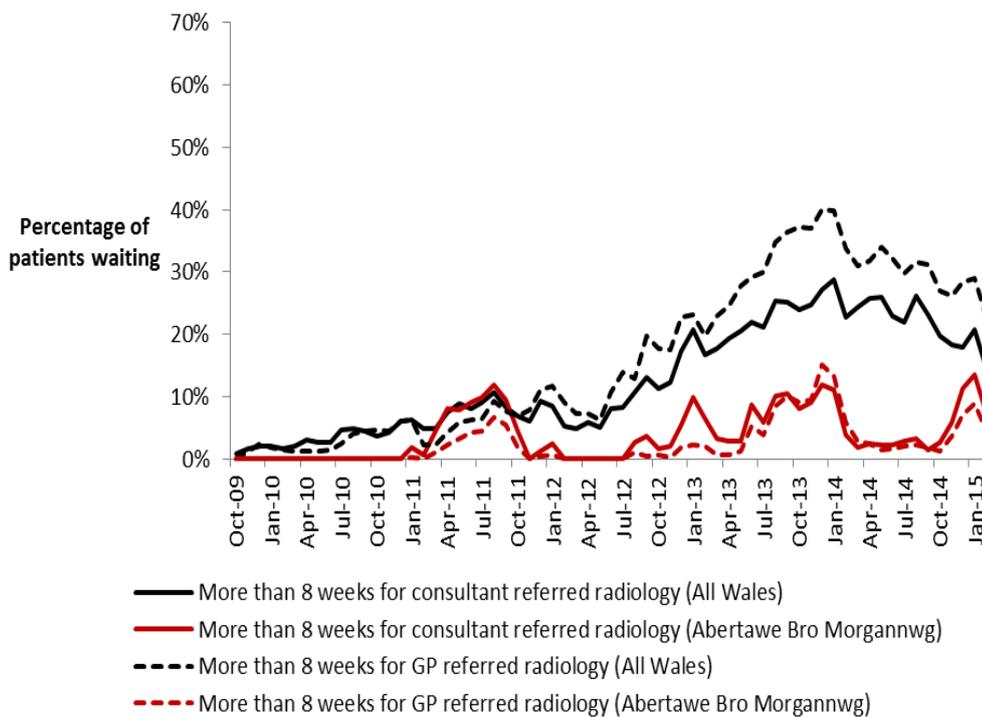
Source: Stats Wales

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. The Health Board has also recently established a walk-in physiotherapy assessment clinic for people with joint or muscle problems. This service is available for 30 patients a day, five days a week at Morryston Hospital. 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 this Health Board is considerably better than the all-Wales average (Exhibit 16). Across the period January 2014 to February 2015, an average of 4.7 per cent of patients had waited more than eight weeks for their radiological tests. This compares favourably against an all-Wales average of 31 per cent for GP referrals and 22 per cent for consultant referrals.

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 lower at 13 per cent and 32 per cent of all GP-referred radiology requests and consultant-referred radiology requests respectively. This pattern of referral is variable across the three hospital sites (Exhibit 17).

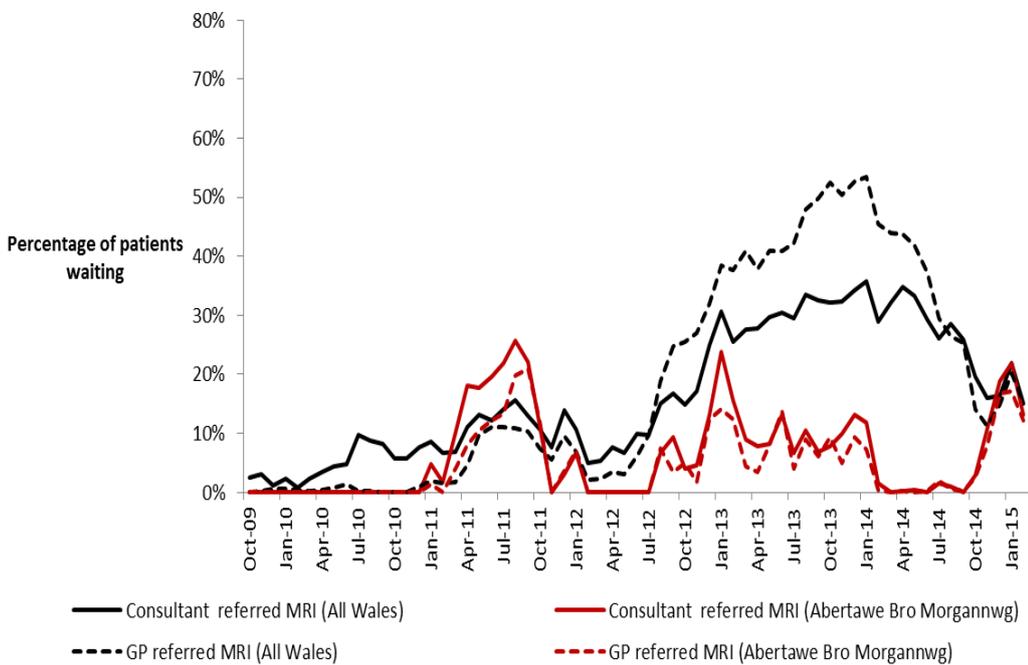
Exhibit 17: Proportion of radiology requests for MRI scans

Hospital site	Proportion of GP referrals for MRI scans	Proportion of consultant referrals for MRI scans
Princess of Wales	9	33
Morrison Hospital	24	43
Neath Port Talbot	14	34
<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, can place pressure on health boards' radiology departments. Waiting times for MRI scans have been relatively favourable at the Health Board up until recently, when the percentage of patients waiting more than eight weeks has risen to the all-Wales average (Exhibit 18).

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



Source: Stats Wales

# Part 3

## 3 Inpatient services

### Waits and preparation for admission

3.1 Once the clinician has made the decision that the most appropriate course of action to deal with musculoskeletal problems is a surgical intervention, 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 five days per week through outpatient clinics in Neath Port Talbot and Morriston hospitals, and on Ward 9 at Princess of Wales Hospital (**Exhibit 19**).

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

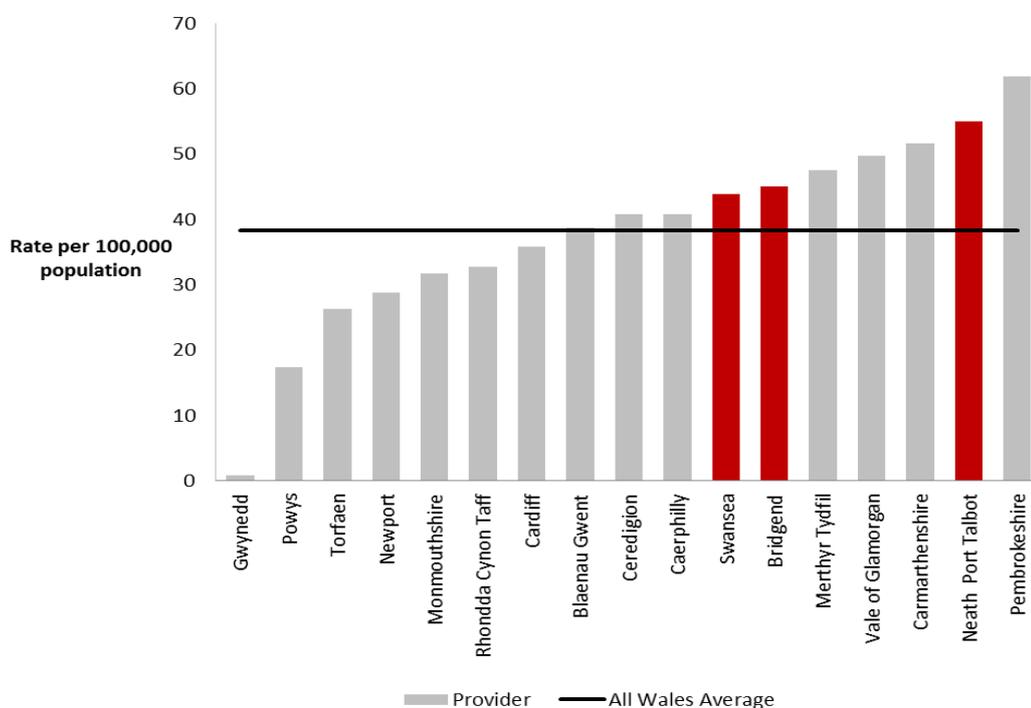
	Neath Port Talbot Hospital	Morriston Hospital	Princess of Wales Hospital
Dedicated department	x (part of outpatients)	x (part of outpatients)	x (on Ward 9)
Nurse led	✓	✓	✓
Available five days per week	✓	✓	✓
Orthopaedic specific	✓	✓	✓
Co-ordination of booking appointments	Pre-operative assessment clerk	Pre-operative assessment clerk	Pre-operative assessment clerk

Source: Wales Audit Office Health Board Survey

3.2 Our survey of patients undergoing knee replacement identified that all patients received a pre-operative assessment prior to admission. Pre-operative assessments should be carried out with reasonable notice to minimise unexpected cancellations if a patient requires further intervention before surgery. At the Health Board, 14.5 per cent of these 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 Health Board localities, with the rate in Neath Port Talbot being the second highest in Wales (Exhibit 20).

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

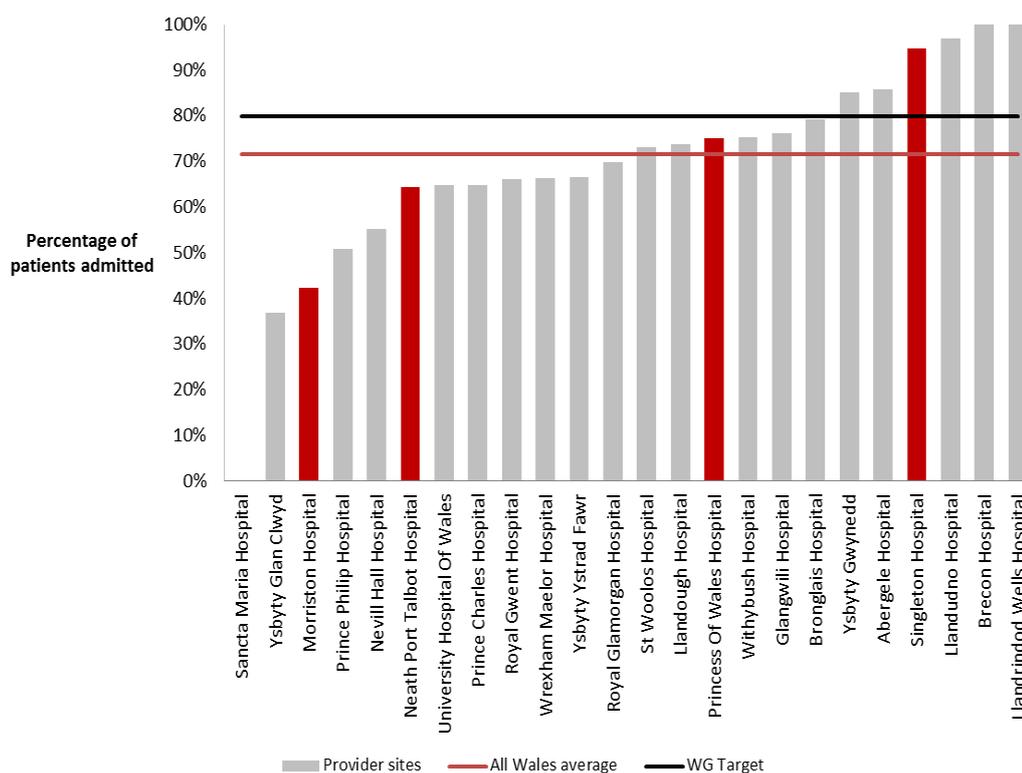


Source: Patient Episode Database Wales

<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.

3.4 When listing a patient, it is also important that there is consideration of the potential for providing surgery on a day-case basis so that patients are not kept in hospital unnecessarily. The BADS has recommended a number of orthopaedic procedures, which are suitable as day case. These have previously formed part of the Welsh Government performance management framework with a target of 80 per cent. For the financial year 2012-13, the percentage of recommended orthopaedic procedures undertaken as a day case at Singleton Hospital exceeded the Welsh Government target. Across other health board sites, performance at Morriston and Neath Port Talbot hospitals was some of the lowest across Wales, at 42 per cent and 64 per cent respectively (Exhibit 21).

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

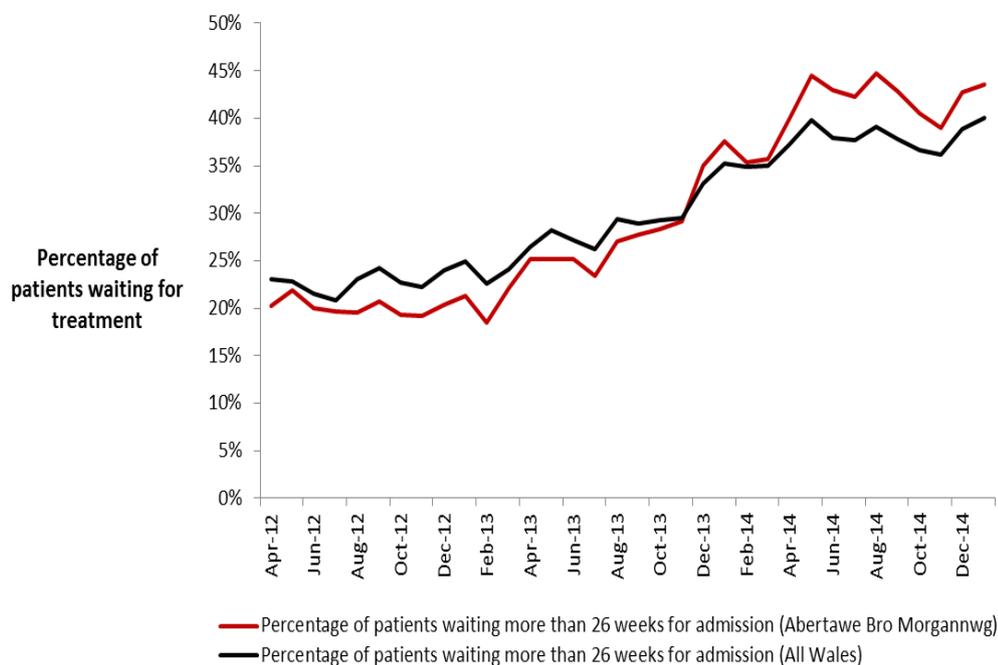


Source: Patient Episode Database Wales

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. The Health Board has adopted the 'joint school' principle with a weekly 'joint school' programme held in Morriston, Neath Port Talbot and Princess of Wales hospitals.
- 3.6 The percentage of patients waiting more than 26 weeks for an inpatient or day-case admission at the Health Board has been above the all-Wales average since December 2013 ([Exhibit 22](#)). At January 2015, 44 per cent of patients had waited longer than 26 weeks for admission.

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

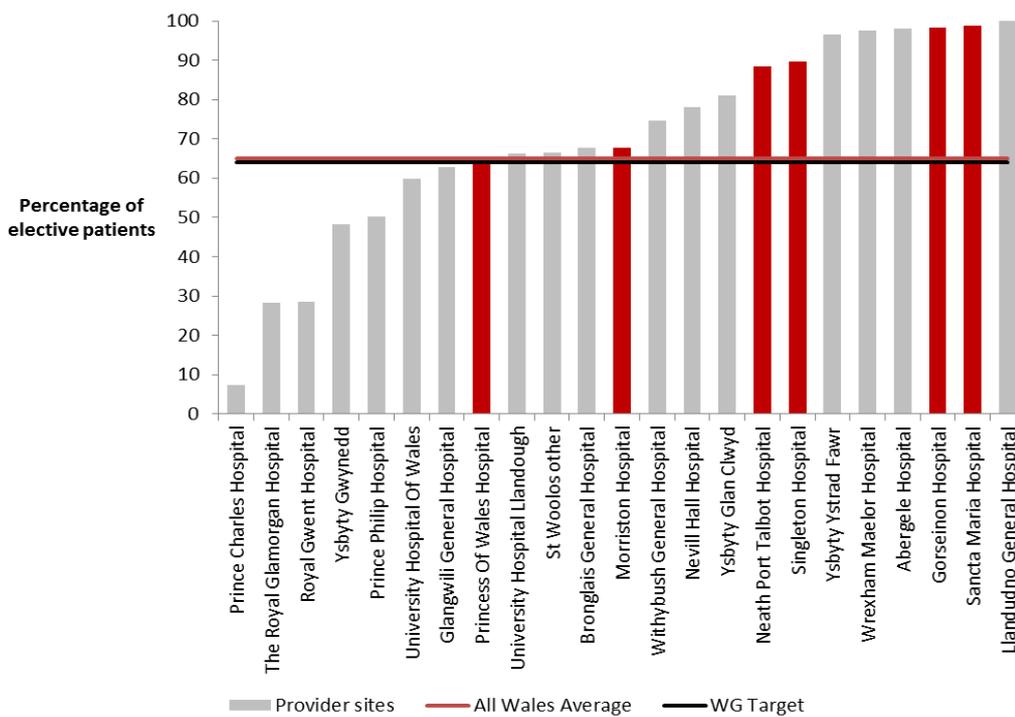


Source: Welsh Government Delivery Unit

## 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 proportion of patients admitted on the day of surgery is above the Welsh Government target; however, there is variation across hospital sites, with performance at Princess of Wales Hospital being just on the Welsh Government target (Exhibit 23). During the period 2012-13, a number of patients were managed through private facilities.

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



Source: Patient Episode Database Wales

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

3.8 The Health Board has dedicated wards for elective orthopaedic activity. The number of available trauma and orthopaedic beds remained reasonably constant over the period 2010-2013, with an average of 222 daily available beds across the Health Board. However, total number of beds has since reduced to 183.5 in 2013-14, a reduction of 17.3 per cent. The occupancy rate for these beds reduced from 89.1 per cent in 2010-11 to 80.0 per cent in 2012-13, compared to an optimal occupancy rate of 85 per cent. Since the reduction in beds, the occupancy rate has improved to 84.1 per cent. There is, however, variation across the four main sites, ranging from 34.6 per cent at Neath Port Talbot Hospital to 89.5 per cent occupancy at Princess of Wales Hospital ([Exhibit 24](#)). Both Neath Port Talbot Hospital and Singleton Hospital provide day-case facilities.

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

	Available beds	Occupancy rate (%)
Morrison Hospital	111.5	82.5
Neath Port Talbot Hospital	5.7	34.6
Princess of Wales Hospital	55.9	89.5
Singleton Hospital	0.3	86.2

Source: Stats Wales

## During admission

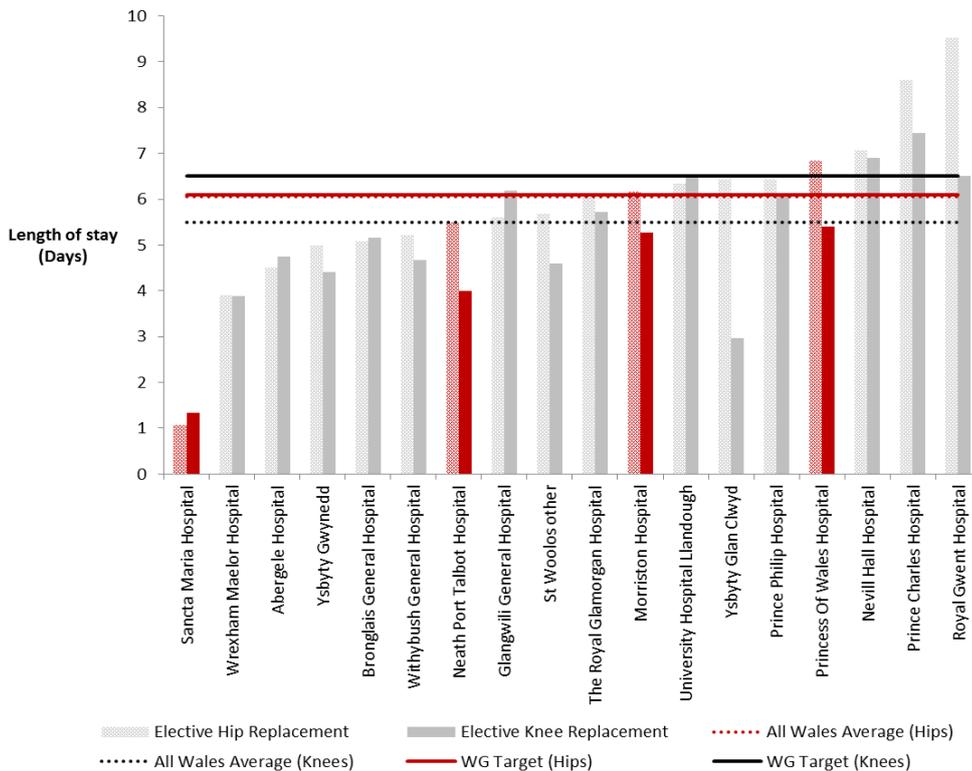
3.9 Operating theatres play an important part in the hospital stay of an elective orthopaedic patient, and any delays in surgery or cancellations can result in poor patient experience and inefficient use of resources. Cancellations on the day of surgery can also result in underutilisation in theatre capacity. The Health Board reports overall orthopaedic theatre utilisation rates ranging between 83 and 93 per cent across the three months of January 2013 to March 2013. The Welsh Government target for utilisation is 95 per cent. No information is given to show how the Health Board's utilisation varies across its hospital sites. Not all health boards provided us with theatre utilisation performance and therefore there is no comparison available.

3.10 The Health Board's rate of cancelled orthopaedic theatre sessions for the period 2012-13 was 17.3 per cent across all sites. During the same period, the percentage of operations cancelled by the Health Board was 15.8 per cent for inpatient procedures and 10.4 per cent for day surgery cases. The Welsh Government has previously set a target for cancelled operations on the day of surgery at two per cent. Although the cancelled operations rate for the Health Board are not just cancellations on the day of surgery, these higher rates need to be explored to understand the reasons why patients are being cancelled. Not all health boards were able to report cancellation rates and therefore there is no comparison available.

## Discharge

- 3.11 The average length of stay for an elective orthopaedic patient in the Health Board is 3.8 days, which is within the Welsh Government target of four days. There is variation across sites within the Health Board. The shortest average length of stay is 1.2 days in Singleton Hospital, which reflects the day-case activity undertaken at this site. Princess of Wales and Morrision hospitals fall outside the Welsh Government target with an average length of stay of 4.4 days.
- 3.12 The average length of stay for patients undergoing hip or knee replacements are within the Welsh Government targets set for these procedures of 6.1 days and 6.5 days respectively (Exhibit 25), with the exception of hip replacements at Princess of Wales Hospital, which is longer than the Welsh Government target at 6.8 days.

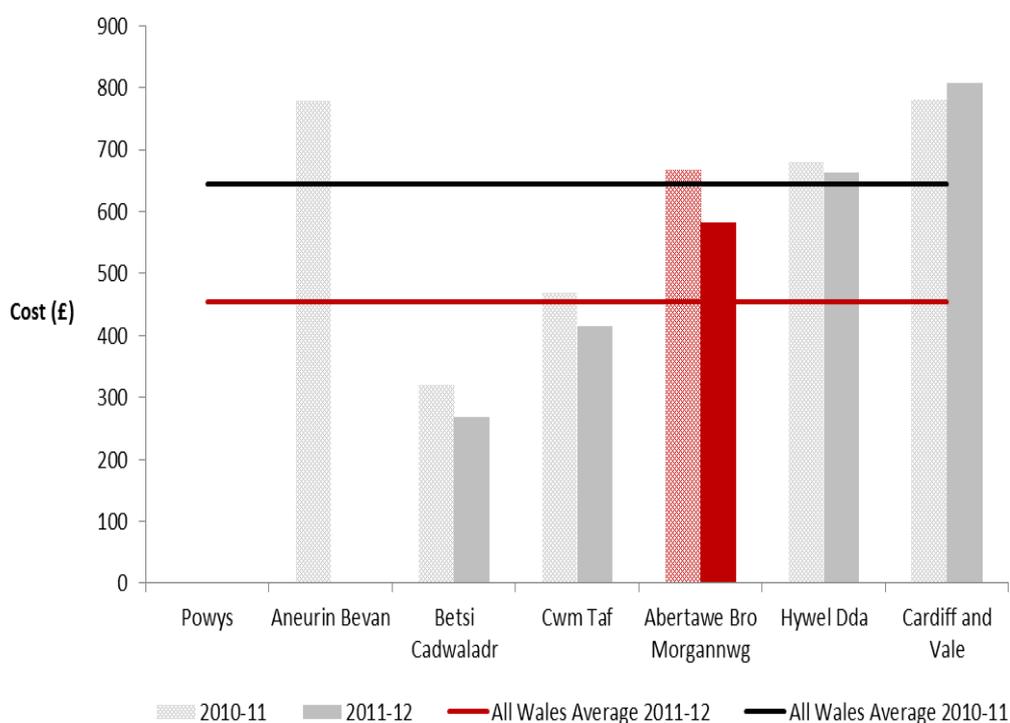
Exhibit 25: Average length of stay for elective hip and knee replacements between April 2012 and October 2013



Source: Patient Episode Database Wales

- 3.13 The average cost of an elective orthopaedic hospital episode in the Health Board is £4,657, the second highest in Wales. 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 Health Board in 2011-12 was above the all-Wales average at £582, although the cost had reduced by 12.7 per cent from the previous year ([Exhibit 26](#)).

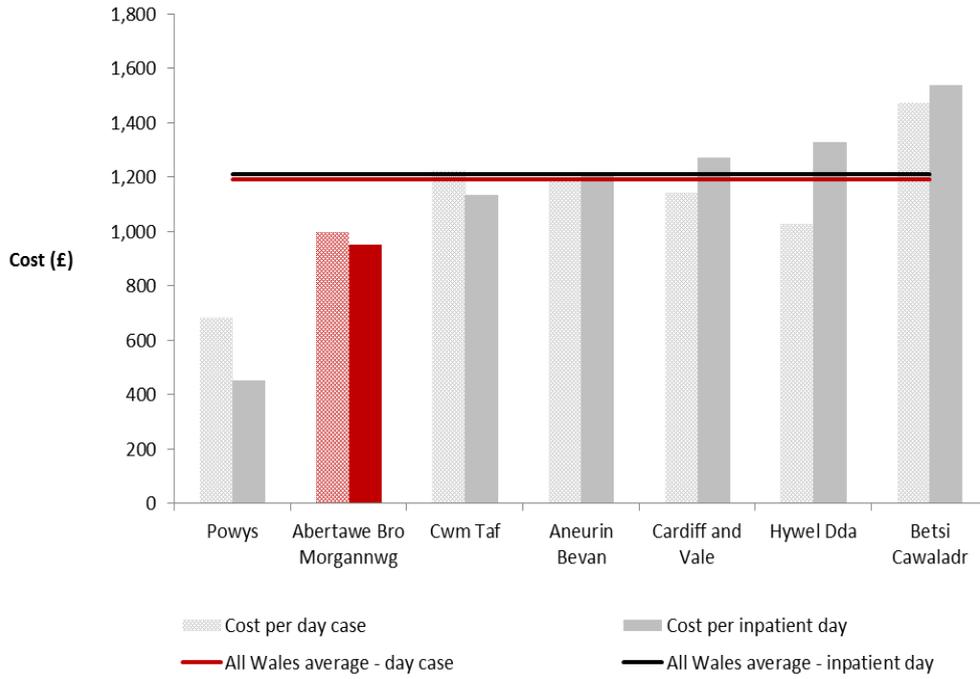
**Exhibit 26: Average prosthetic cost per episode for 2010-11 and 2011-12**



Source: Welsh costing returns

- 3.15 For the period 2012-13, the cost of an elective orthopaedic inpatient bed day at the Health Board was the second lowest in Wales at £952 ([Exhibit 27](#)). The cost of an elective orthopaedic day case was also low, at £998 per day ([Exhibit 27](#)). If the average length of stay for elective hip replacements at Princess of Wales Hospital reduced to the Welsh Government target of 6.1 days, this could potentially release resources in the region of £204,584, 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

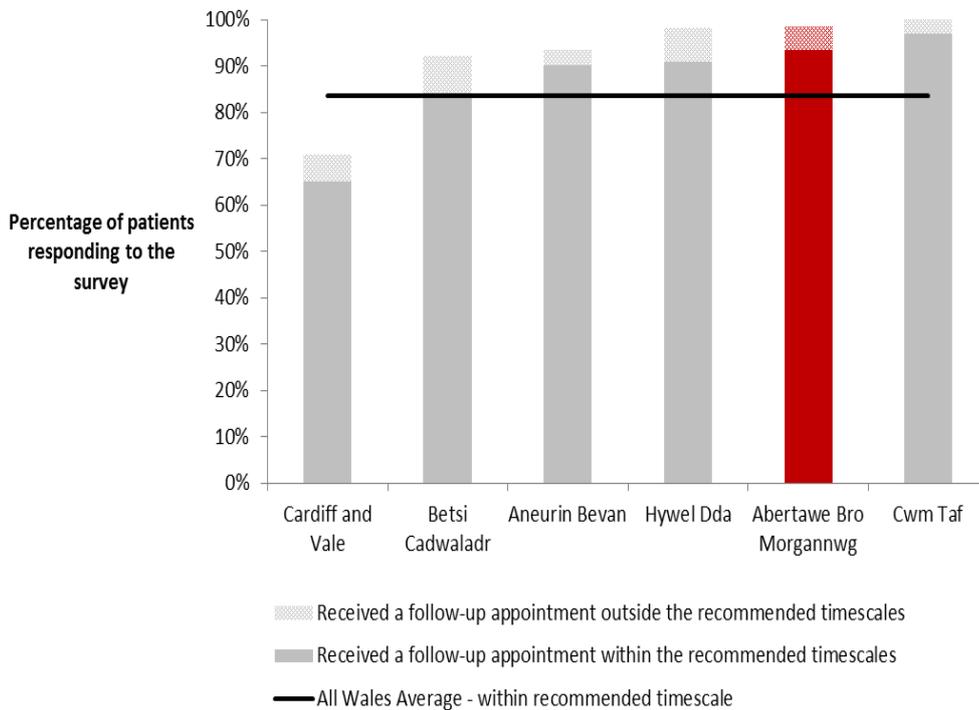
# Part 4

## 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 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 98.4 per cent of the patients undergoing knee replacement surgery who responded to our survey had received a follow-up post-discharge (**Exhibit 28**), which was the second highest in Wales. Of those, 95.1 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 rate of SSI for both hips and knees are higher in all hospital sites than the all-Wales average, with the exception of knee surgery at Neath Port Talbot Hospital, which is below 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)
Morriston Hospital	2.5	2.3
Neath Port Talbot	1.7	1.4
Princess of Wales Hospital	2.3	2.3
<b>All-Wales average</b>	<b>1.5</b>	<b>1.8</b>

Source: Public Health Wales Observatory

- 4.4 For the same period, we identified that readmission rates following elective hip replacements are higher than the all-Wales average and the second highest across Wales, although readmission rates for knee replacements are in line with the all-Wales average. Mortality rates are also elevated. Death rates within 30 days of discharge following an elective orthopaedic admission are the highest across Wales ([Exhibit 30](#)).

### Exhibit 30: Readmission and mortality rates for elective orthopaedics

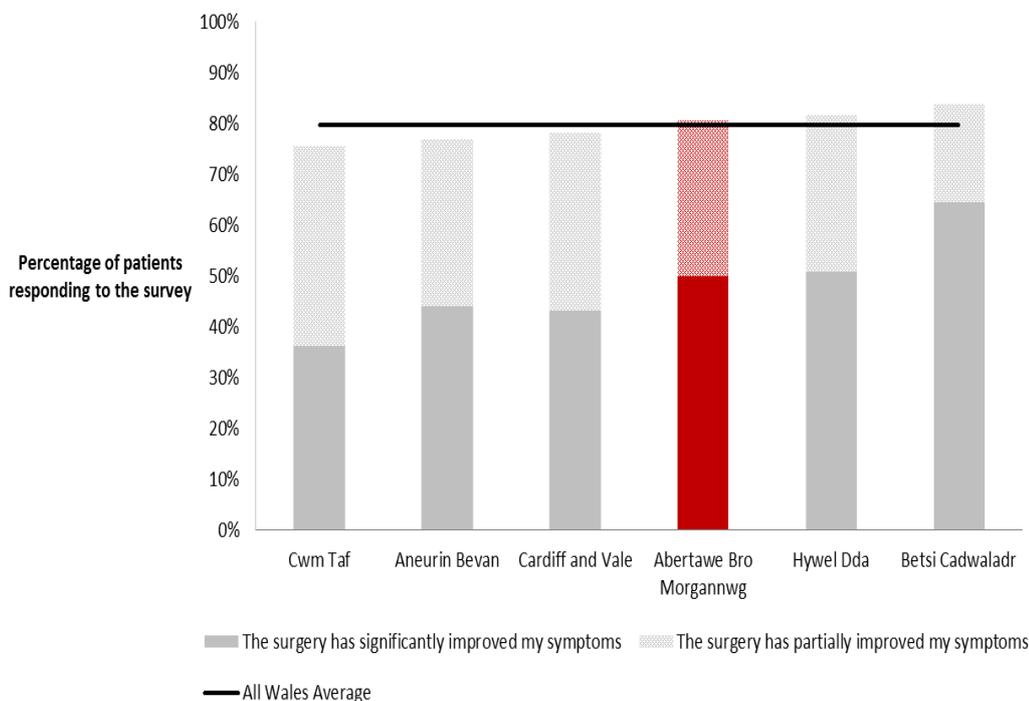
Indicator	Abertawe Bro Morgannwg	All-Wales average
Percentage of patients readmitted within 28 days following a hip replacement	1.2	0.9
Percentage of patients readmitted within 28 days following a knee replacement	0.1	0.1
Death in hospital per 100 elective orthopaedic admissions	0.09	0.06
Death within 30 days of discharge following an elective orthopaedic admission, per 100 elective orthopaedic admissions	0.17	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. Across the Health Board, the rate of revision for hips and knees is below the all-Wales average with the rate of revision for knee replacements for Bridgend residents the lowest in Wales ([Exhibit 31](#)).



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 did not specify how it measures the impact of the joint replacement surgery that it undertakes other than through patient-reported experience and outcomes (PREMS and PROMS). Good practice would include the use of the Oxford Hip and Knee scores, and submission of patient data to the National Joint Registry.
- 4.8 The Health Board reported undertaking one or more patient satisfaction surveys during the last 12 months to gather the views of orthopaedic patients. In addition, the Health Board told us that weekly nursing assurance meetings were held by lead nurses, and patient compliments and complaints were used to monitor the patient experience of orthopaedic services. However, the Health Board did not quantify the number of complaints received in relation to orthopaedic services during the period 1 April 2012 to 31 March 2013. Many other health boards are 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](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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