

27 January 2015

Archwilydd Cyffredinol Cymru  
Auditor General for Wales

# NHS Waiting Times for Elective Care in Wales Technical Report



WALES AUDIT OFFICE  
SWYDDFA ARCHWILIO CYMRU





I have prepared and published this report in accordance with the  
Government of Wales Act 1998 and 2006.

The Wales Audit Office study team comprised Mark Jeffs, Gareth Jones,  
Verity Winn and Steve Ashcroft under the direction of David Thomas.

**Huw Vaughan Thomas**  
**Auditor General for Wales**  
**Wales Audit Office**  
**24 Cathedral Road**  
**Cardiff**  
**CF11 9LJ**

The Auditor General is independent of the National Assembly and government. He examines and certifies the accounts of the Welsh Government and its sponsored and related public bodies, including NHS bodies. He also has the power to report to the National Assembly on the economy, efficiency and effectiveness with which those organisations have used, and may improve the use of, their resources in discharging their functions.

The Auditor General, together with appointed auditors, also audits local government bodies in Wales, conducts local government value for money studies and inspects for compliance with the requirements of the Local Government (Wales) Measure 2009.

The Auditor General undertakes his work using staff and other resources provided by the Wales Audit Office, which is a statutory board established for that purpose and to monitor and advise the Auditor General.

For further information please write to the Auditor General at the address above, telephone 029 2032 0500, email: [info@wao.gov.uk](mailto:info@wao.gov.uk), or see website [www.wao.gov.uk](http://www.wao.gov.uk).

© Auditor General for Wales 2015

You may re-use this publication (not including logos) free of charge in any format or medium. You must re-use it accurately and not in a misleading context. The material must be acknowledged as Auditor General for Wales copyright and you must give the title of this publication. Where we have identified any third party copyright material you will need to obtain permission from the copyright holders concerned before re-use.

If you require any of our publications in an alternative format and/or language please contact us using the following details: Telephone 029 2032 0500, or email [info@wao.gov.uk](mailto:info@wao.gov.uk)

# Contents

	About this report	5
1	Performance	6
	The referral to treatment target – the ‘open’ measure	7
	Other ways of measuring waiting times	16
	Rules for managing the impacts of patient behaviour on waiting times	36
	The impact of long waiting times	38
2	Factors contributing to long waiting times	39
	Strategic direction	40
	National capacity and resource constraints	44
	Demand and activity	54
	Making better use of existing capacity	59

# About this report

- 1 This report provides further information on the performance and causes of long waiting times in Wales. **Part 1** on performance includes further analysis of NHS Wales' performance against its own waiting times targets with comparisons where possible to put Wales' performance in context with other countries in the UK and further afield. **Part 2** provides additional evidence related to the factors that contribute to current waiting times performance and areas where there is scope to make better use of existing capacity.

Part 1

Performance



## The referral to treatment target – the ‘open’ measure

### Performance against the ‘open’ measure in Wales

- 1.1 The primary measure of waiting times performance in Wales is based on what is called the ‘open target’ which focuses on patients waiting for treatment rather than people who have received treatment. The ‘open target’ is that 95 per cent of all patients on the waiting list should have been waiting under 26 weeks from referral to treatment and no patient should be waiting more than 36 weeks.

#### Box 1: Approaches to measuring waiting times

**The patient clock:** Waiting times are measured using the concept of the patient clock. In Wales, England and Scotland the clock starts when a health board/provider receives a referral (usually from a GP). The clock stops when the patient starts their definitive treatment or a decision is made that treatment is not necessary. Treatment is not necessarily a procedure: for many patients, treatment involves getting advice at an outpatient appointment.

**Open measure:** Is a measure of the length of time patients wait who are currently on the waiting list. It is the preferred measure of the Welsh Government and is also used in England. The advantage is that it is a live measure of how the system is currently performing. The key disadvantage is that it does not reflect how long patients actually wait to get their treatment.

**Closed measure:** Is a measure of the length of time waited by patients who have received their treatment. The closed measure is used as a key measure in Scotland and England. The advantage of the measure is that it reflects the end-to-end waiting times. The main disadvantage is that it is not a live measure so does not show how long people currently on the list are waiting.

**Clock pauses, resets and adjustments:** NHS bodies can legitimately make ‘adjustments’ to the measures to reflect, for example, patient choices (like choosing to wait longer to allow for a planned holiday) and behaviour (such as not turning up for appointments). The rules for adjustments differ across the UK and are discussed in [paragraph 1.15](#) of this report.

**Data quality:** There have been issues with the quality of published data on waiting times. In January 2014, the National Audit Office<sup>1</sup> found errors in some trusts’ recording of waiting times figures for England and concluded that they ‘need to be viewed with a degree of caution’. An Audit Scotland report in February 2013<sup>2</sup> found minor errors in waiting times data across Scotland. Our study has not included a review of the quality of Welsh referral to treatment data.

- 1.2 Our main report explains that performance against the Welsh Government’s ‘open target’ has deteriorated significantly following a period of sustained improvement culminating in meeting the 26-week referral to treatment target in December 2009. There is significant variation in performance against the targets depending on where people live. Residents living in the areas covered by Cardiff and Vale and Betsi Cadwaladr University Health Boards face the longest waits. [Figures 1 and 2](#) show performance against the ‘open’ target across health boards in Wales.

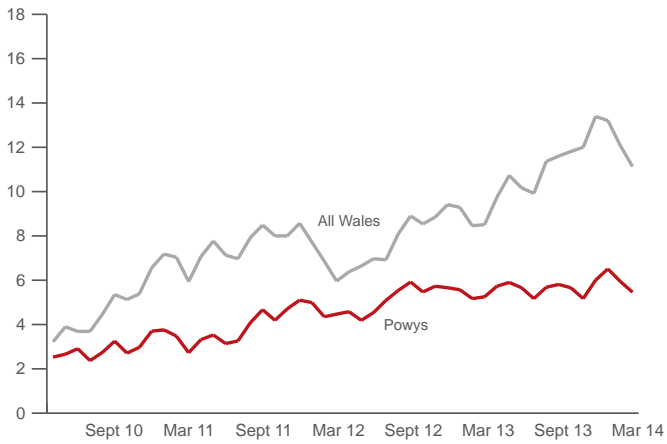
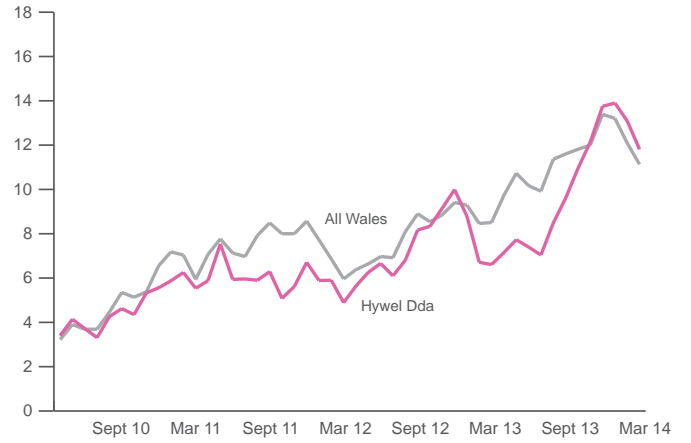
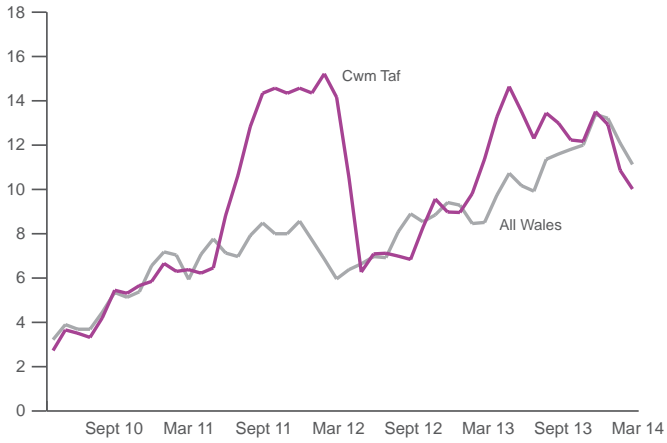
<sup>1</sup> National Audit Office, *NHS waiting times for elective care in England*, January 2014

<sup>2</sup> Audit Scotland, *Management of patients on NHS waiting lists*, February 2013

Figure 1 – Percentage of patients on the list waiting more than 26 weeks by local health board

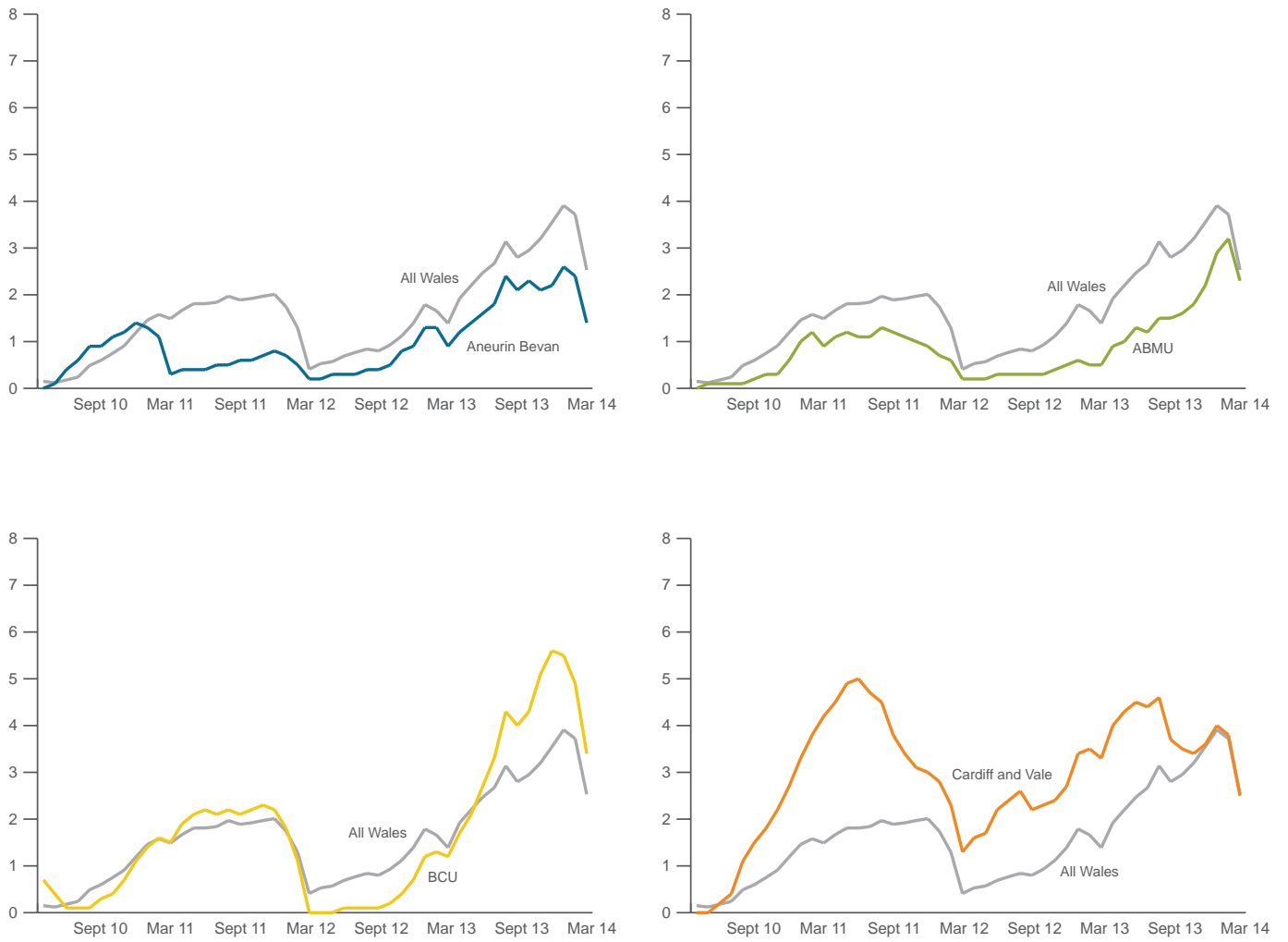


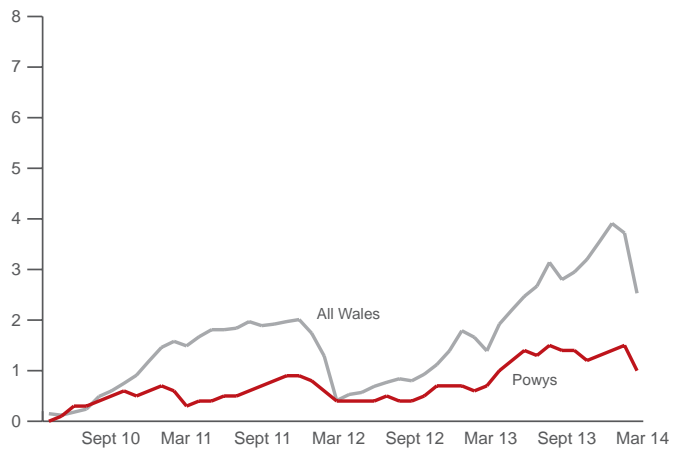
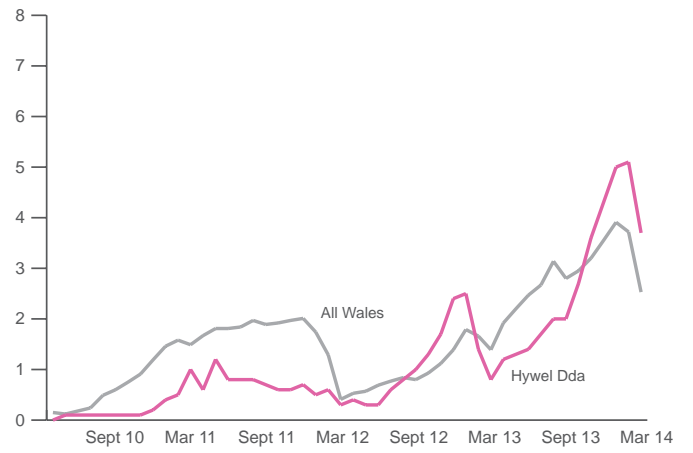
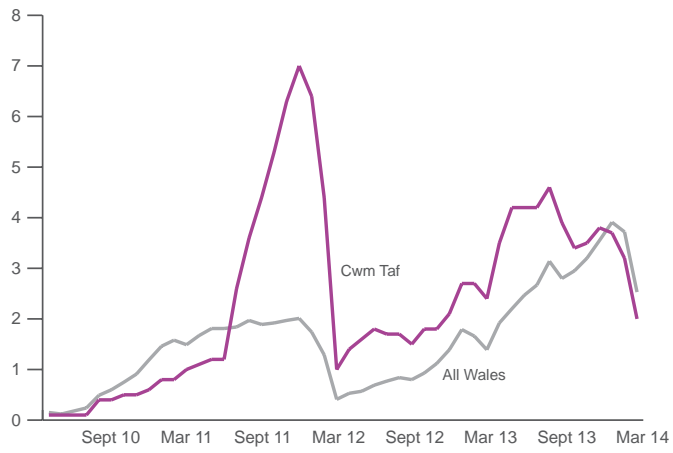




Source: Wales Audit Office analysis of Welsh Government data

Figure 2 – Patients on the list waiting more than 36 weeks by local health board





Source: Wales Audit Office analysis of Welsh Government data

- 1.3 We have analysed referral to treatment statistics for Powys in more detail to understand why patients living in this health board area experience shorter waiting times. We have used Welsh Government data which provides a breakdown of waiting times for Powys residents waiting for treatment by Powys Teaching Health Board, other health boards in Wales and by non-Welsh providers. In March 2014, most Powys residents on the waiting list were waiting for treatment by Powys Teaching Health Board (41 per cent) or by non-Welsh providers (30 per cent). Around 10 per cent of Powys patients were waiting for treatment in Aneurin Bevan and Abertawe Bro Morgannwg University Health Boards, and the remaining nine per cent were waiting for treatment by other Welsh providers. Powys patients waiting for treatment by Powys Teaching Health Board faced the shortest waits with only one per cent waiting longer than 26 weeks in March 2014 compared to eight per cent at Aneurin Bevan, 12 per cent at Abertawe Bro Morgannwg and nine per cent from non-Welsh providers.
- 1.4 The majority of Powys residents who were waiting for treatment by Powys Teaching Health Board in March 2014 were waiting for a first outpatient appointment or diagnostic test (87 per cent of patients on the waiting list). As Powys has shorter waiting times for stages one and two compared to other health boards, it is possible that people living in Powys face shorter waiting times because they are seen more quickly for an initial consultation and diagnosis provided by Powys Teaching Health Board before waiting for treatment elsewhere.

Figure 3 – Proportion of patients waiting over 26 weeks at March 2014

Health board	First outpatient appointment	Diagnostic tests
Abertawe Bro Morgannwg	4%	5%
Aneurin Bevan	4%	6%
Betsi Cadwaladr	8%	4%
Cardiff and Vale	7%	2%
Cwm Taf	4%	6%
Hywel Dda	5%	16%
Powys	1%	1%

- 1.5 There is also variation by specialty. There were 418,442 patients on the elective waiting list in March 2014. **Figure 4** shows that the patients waiting for cardiothoracic surgery were most likely to experience long waits with 35 per cent waiting more than 26 weeks. Twenty per cent of patients waiting for cardiothoracic surgery had been waiting over 36 weeks for treatment. In March 2014, none of the patients on the clinical neurophysiology waiting list and less than one per cent of patients waiting for paediatrics, paediatric neurology, dental medicine, audiological medicine and allied professional services<sup>3</sup> were waiting more than 26 weeks.
- 1.6 Cardiothoracic surgery, restorative dentistry, oral surgery, trauma and orthopaedics, ophthalmology, pain management, and urology waiting lists have seen the biggest increase in patients waiting over 26 weeks for treatment since March 2012 (**Figure 5**).

**Figure 4 – Percentage of patients waiting over 26 weeks and 36 weeks in March 2014 by specialty<sup>4</sup>**

	Percentage of list waiting over 26 weeks	Percentage of list waiting over 36 weeks
Cardiothoracic surgery	35.0	19.6
Pain management	15.5	0.6
T&O	14.6	6.7
General surgery	14.4	3.3
General pathology	14.4	
GP maternity	14.3	
Restorative dentistry	13.6	1.4
Neurosurgery	13.6	0.4
Oral surgery	12.4	6.1
Ophthalmology	11.9	3.9
Orthodontics	10.8	2.0
ENT	10.7	1.7
Urology	10.5	4.4
Gastroenterology	10.3	0.9

<sup>3</sup> Allied professional services is the treatment of a patient by one of the following types of allied health professional: art therapist, chiropodist/podiatrist, dietician, occupational therapist, orthoptist, physiotherapist, prosthetist, orthotist, radiographer, speech and language therapist.

<sup>4</sup> 'Other' category includes all other specialties with a value of less than three per cent.

Figure 4 – Percentage of patients waiting over 26 weeks and 36 weeks in March 2014 by specialty (continued)

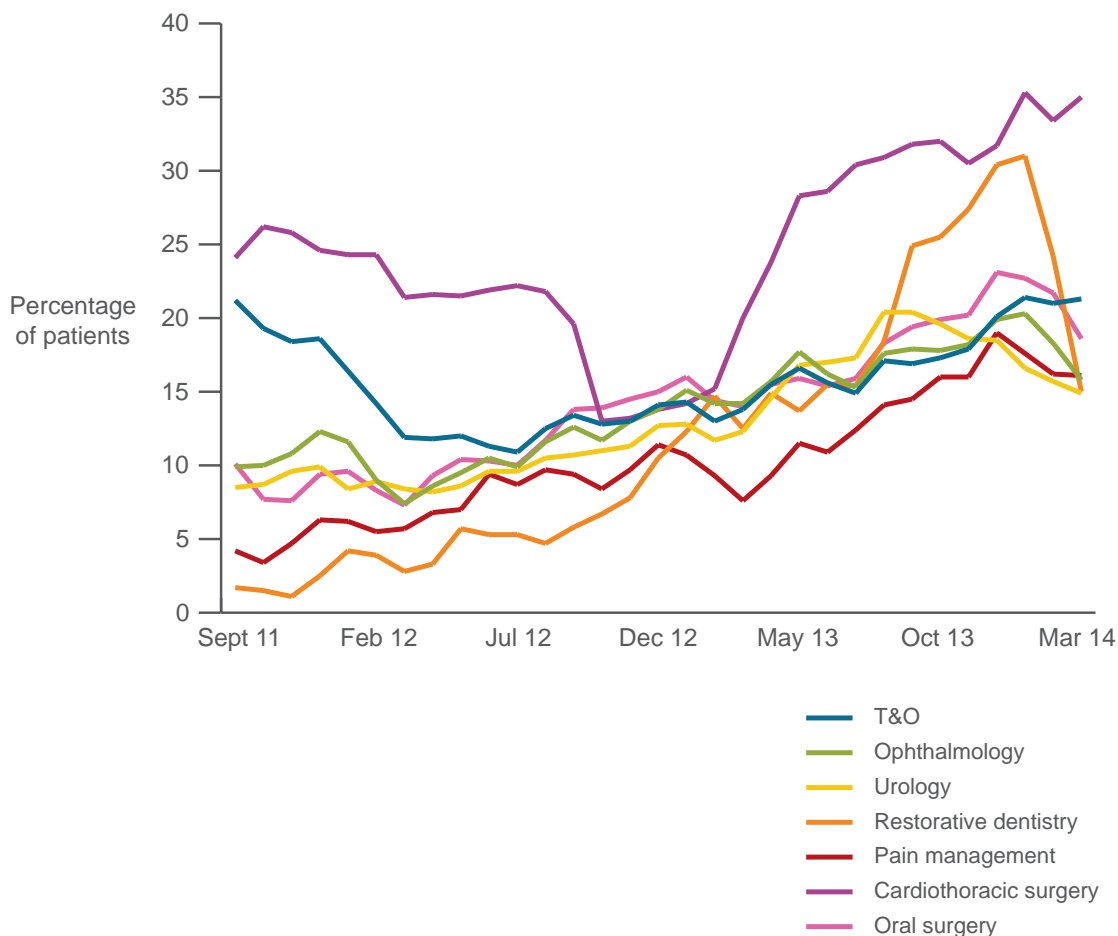
	Percentage of list waiting over 26 weeks	Percentage of list waiting over 36 weeks
Neurology	9.4	1.8
Clinical pharmacology	9.2	
Plastic surgery	9.0	5.0
Gynaecology	8.9	2.3
Cardiology	8.5	0.2
Radiology	8.3	
Radiotherapy	8.3	
Paediatric surgery	7.4	1.2
Chemical pathology	7.3	
Dermatology	6.8	0.1
Thoracic medicine	4.9	0.0
General medicine	4.7	0.4
Nephrology	4.6	
Rheumatology	3.8	0.0
Anaesthetics	3.4	
Infectious diseases	3.1	
Paediatric dentistry	2.8	
Diagnostic services	2.0	0.1
Endocrinology	1.2	
Rehabilitation	1.2	
Geriatric medicine	1.1	
Haematology clinical	1.0	0.2

Figure 4 – Percentage of patients waiting over 26 weeks and 36 weeks in March 2014 by specialty (continued)

	Percentage of list waiting over 26 weeks	Percentage of list waiting over 36 weeks
Paediatrics	0.8	
Dental medicine	0.8	
Paediatric neurology	0.8	
Audiological medicine	0.4	
Allied health professional services	0.3	0.1

Source: Welsh Government data

Figure 5 – Percentage of patients waiting over 26 weeks in cardiothoracic surgery, restorative dentistry, oral surgery, trauma and orthopaedics, ophthalmology, pain management and urology



Source: Wales Audit Office analysis of Welsh Government data

## Comparing performance against the 'open' measure

### Box 2: Waiting times targets around the UK

Each part of the UK sets its own targets for waiting times for elective care. In Wales, the target is based on the 'open measure': at least 95 per cent of patients on the waiting list should have been waiting under 26 weeks from the date of their referral. Nobody should be waiting more than 36 weeks. In **Scotland**, the target is based on the closed measure and requires that 90 per cent of patients are treated within 18 weeks. In **England**, there are three targets. Initially, there were two targets based on the 'closed measure': 95 per cent of non-admitted patients must be treated within 18 weeks and 90 per cent of admitted patients must be treated within 18 weeks. Following criticism that the closed measure target provided little incentive to treat patients once they had breached the 18-week limit, the UK Government introduced a new target based on the open measure: 92 per cent of patients on the waiting list should be waiting less than 18 weeks. The targets in **Northern Ireland** are set out below and could be read to make up a maximum waiting time target of 57 weeks:

- From April 2013, at least 70 per cent should wait no longer than nine weeks for their first outpatient appointment and none should wait more than 18 weeks, increasing to 80 per cent by March 2014 and no one waiting longer than 15 weeks.
- From April 2013, no patient should wait longer than nine weeks for a diagnostic test.
- From April 2013, at least 70 per cent of inpatient and day cases should be treated within 13 weeks and none should wait more than 30 weeks. This increased to 80 per cent by March 2014 with no patient waiting longer than 26 weeks.

## Other ways of measuring waiting times

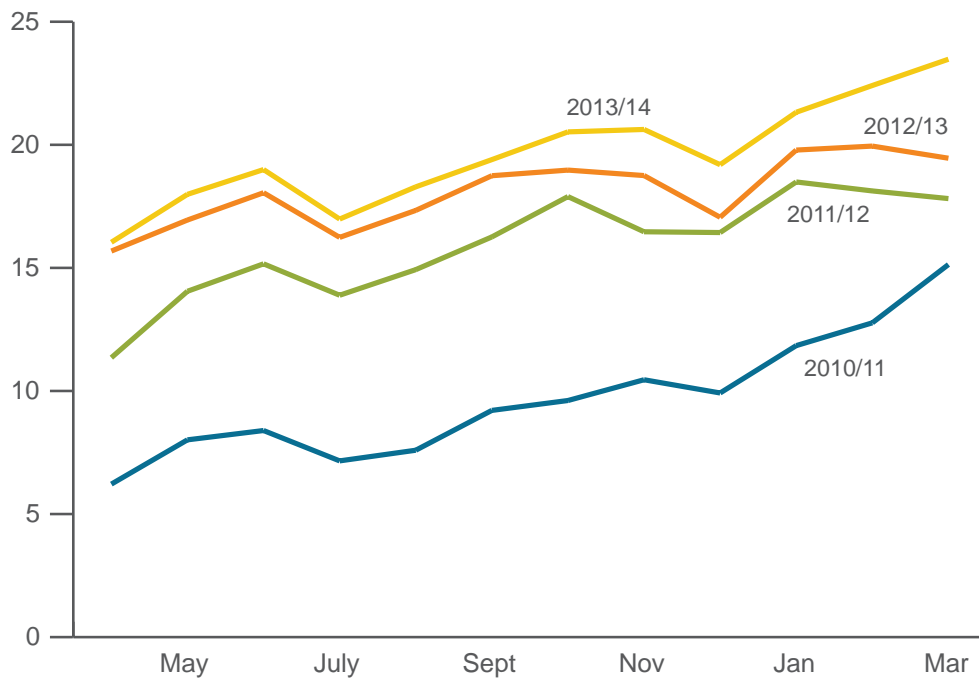
### Performance against the 'closed measure' in Wales

1.7 The Welsh Government also publishes data using what is called the 'closed measure' of waiting times. The 'closed measure' reflects the length of time that patients who have been treated have waited (although there may have been clock stops and resets so it may not fully reflect the whole wait)<sup>5</sup>. Performance looks significantly worse against the 'closed measure' of waiting times, with almost one in four treated patients waiting more than 26 weeks in March 2014. There has also been a sustained increase in the number of patients who waited more than 36 weeks for treatment. Against a target that nobody should wait this long, in March 2014 more than 10 per cent of those treated had waited more than 36 weeks. In part, this significant increase in March reflects the efforts that health boards made to prioritise long waiting patients. **Figures 6 and 8** show the percentage of treated patients that had waited more than 26 and 36 weeks for treatment. These figures relate to the closed pathway and the sharp increase in the percentage of patients waiting more than 36 weeks in the final quarter of 2013-14 reflects targeted activity to treat patients with the longest waits, and complete their treatment for the purposes of waiting time recording. Correspondingly, **Figures 7 and 9** show a reduction in the percentage of patients still waiting over 26 and 36 weeks for treatment (the open pathway) in the final quarter of 2013-14.

<sup>5</sup> Health boards in Wales are held to account for performance against the open measure and for this reason data on the closed measure in Wales is not validated and should be treated with caution as it may not be an accurate reflection of the length of time patients in Wales waited for treatment.

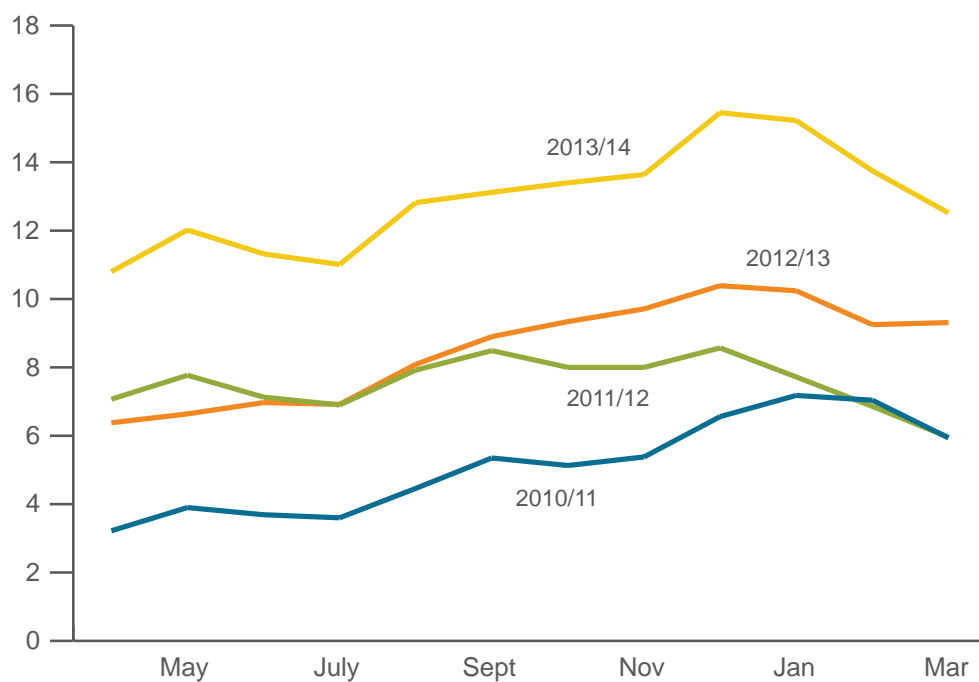


Figure 6 – Percentage of treated patients that had waited more than 26 weeks (closed pathway)



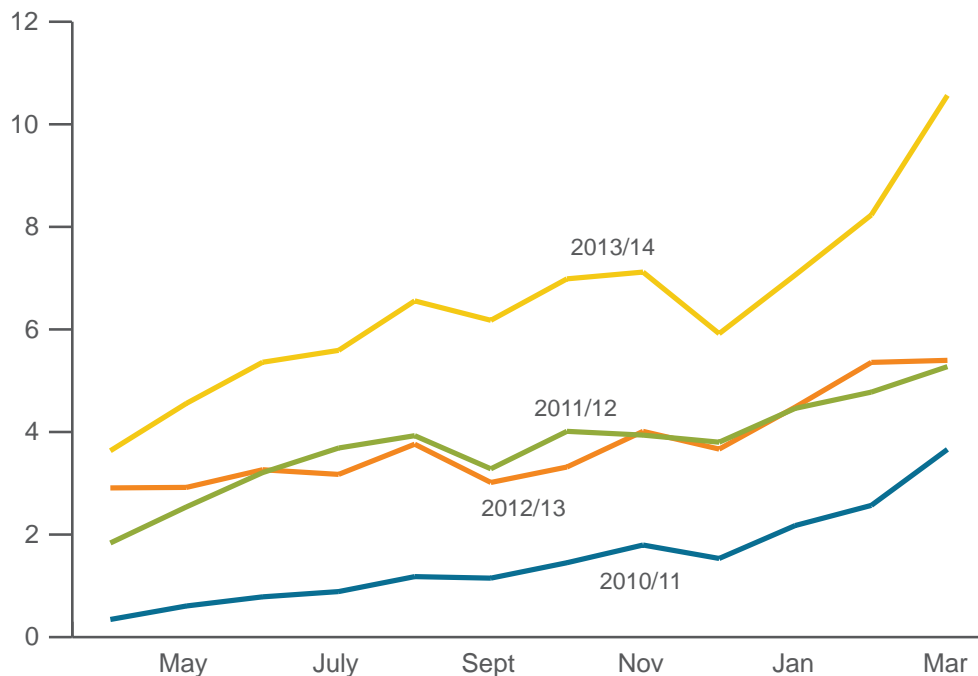
Source: Wales Audit Office analysis of Welsh Government data

Figure 7 – Percentage of patients waiting more than 26 weeks (open pathway)



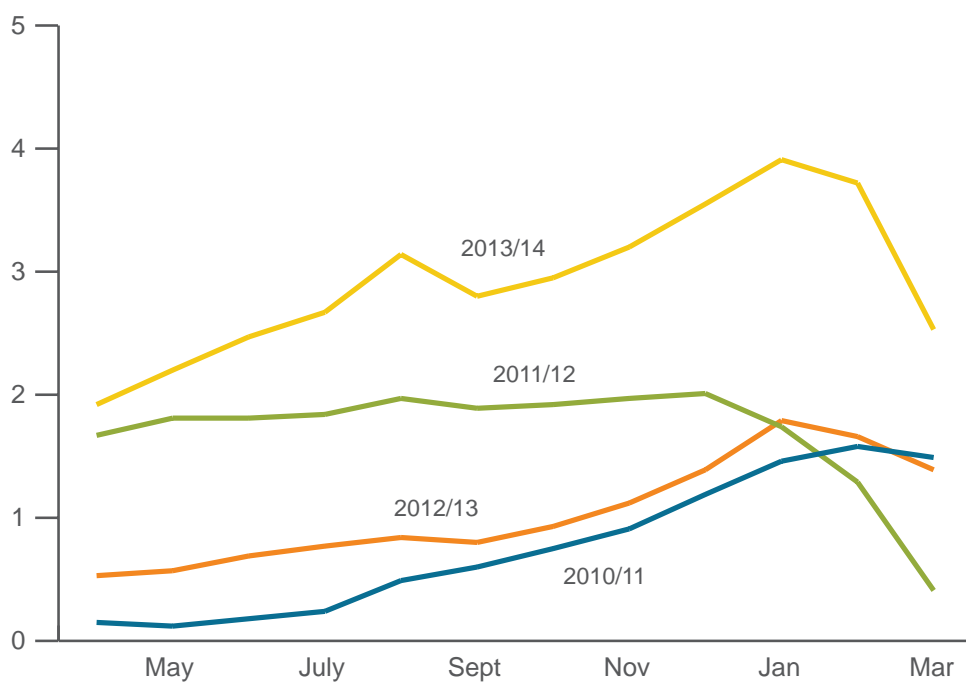
Source: Wales Audit Office analysis of Welsh Government data

Figure 8 – Percentage of treated patients that had waited more than 36 weeks (closed pathway)



Source: Wales Audit Office analysis of Welsh Government data

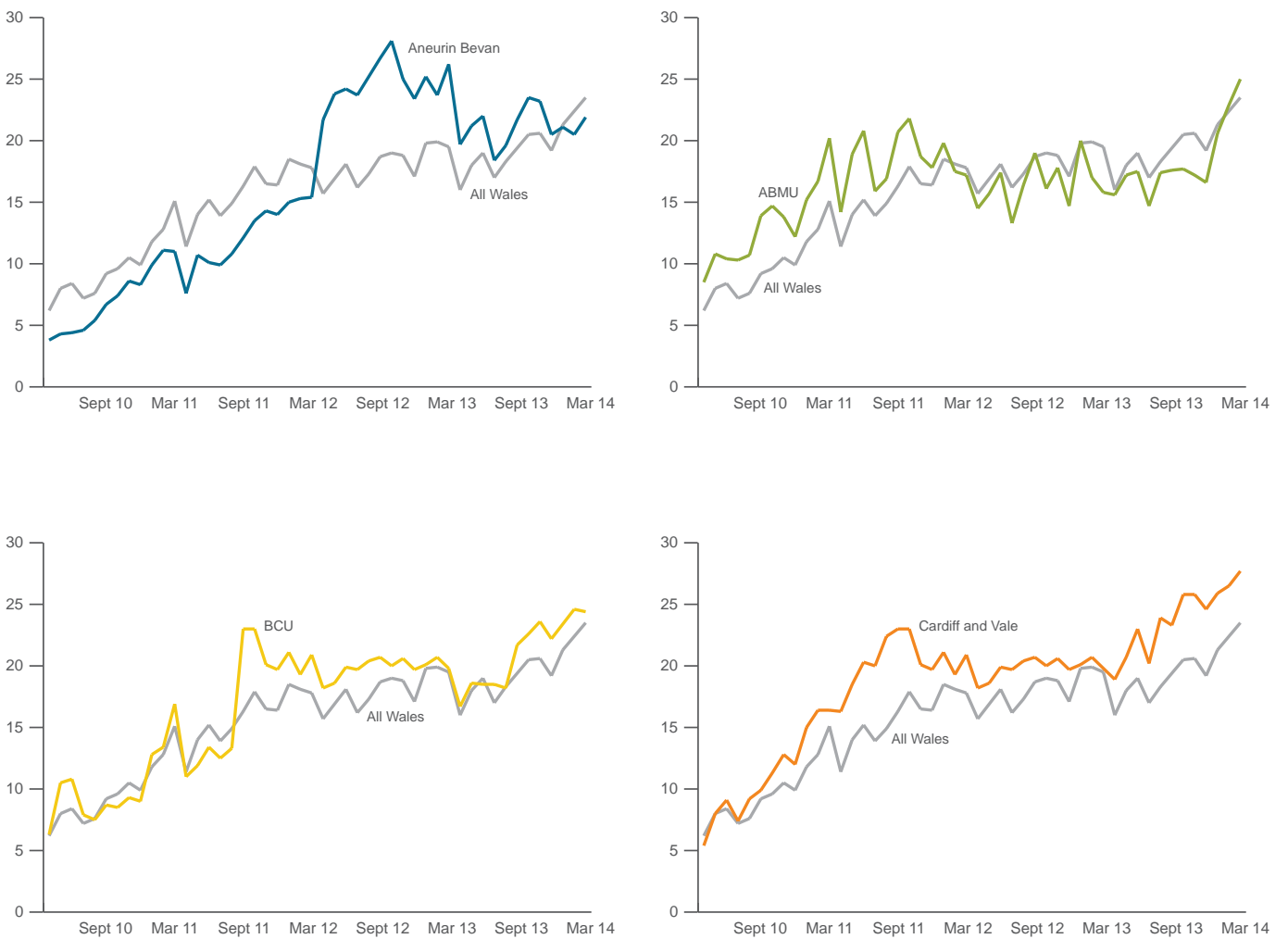
Figure 9 – Percentage of patients waiting more than 36 weeks (open pathway)

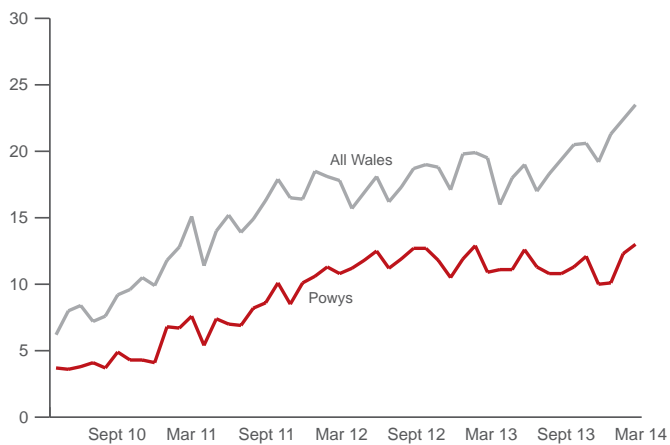
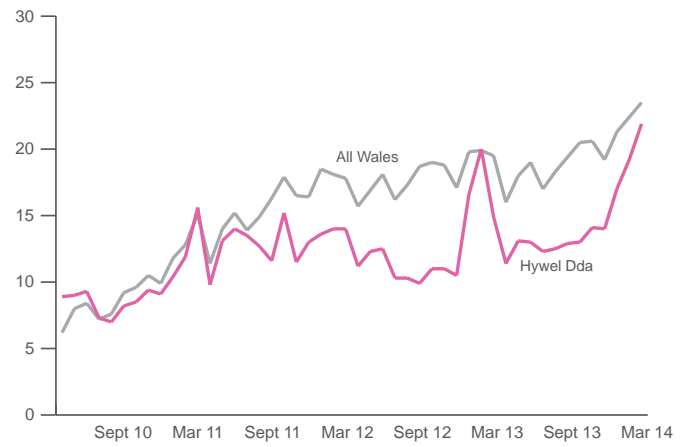
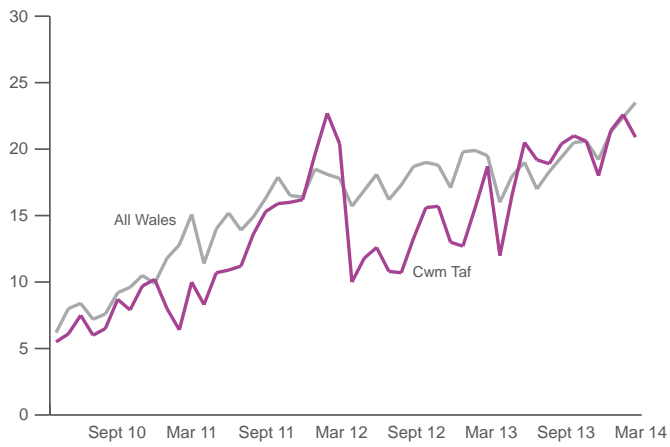


Source: Wales Audit Office analysis of Welsh Government data

1.8 Against the 'closed measure' there is again significant variation depending on where people live. Performance is better for residents in Powys and worse for those in Cardiff and Vale, Betsi Cadwaldr and Aneurin Bevan University Health Boards.

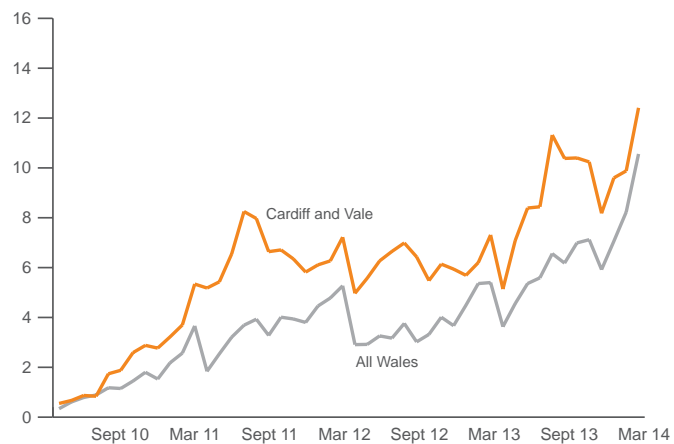
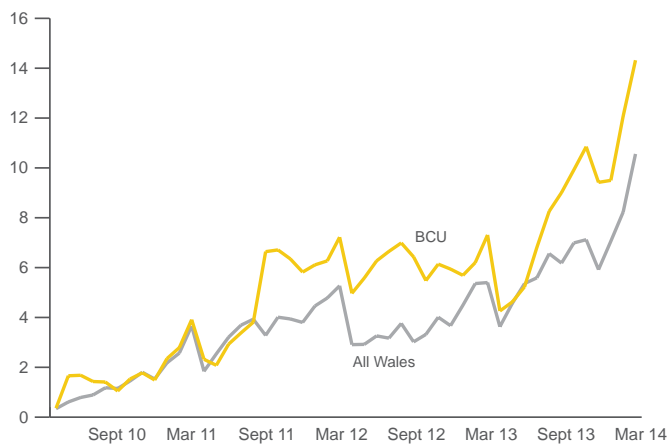
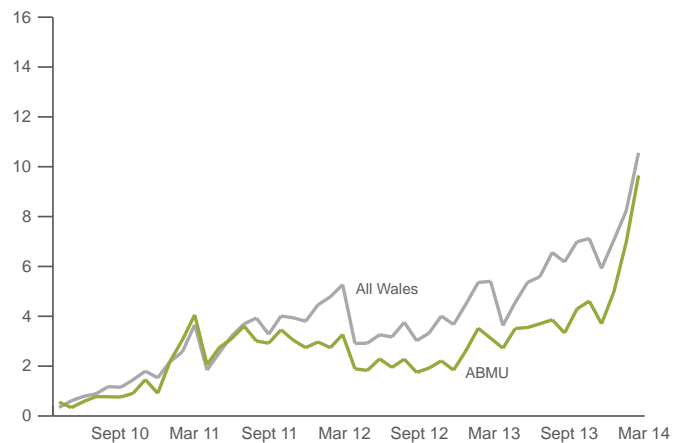
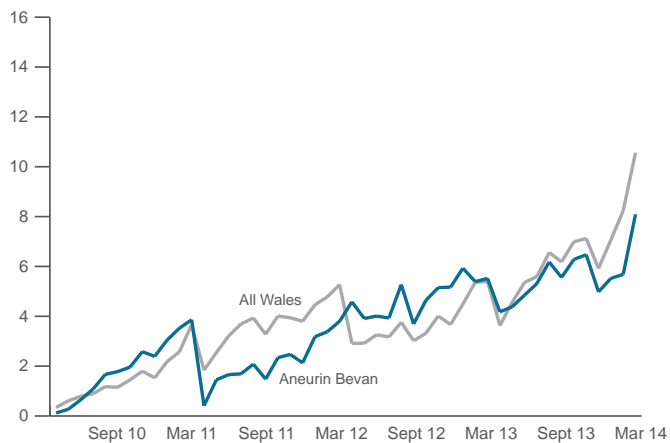
Figure 10 – Treated patients that had waited more than 26 weeks by local health board

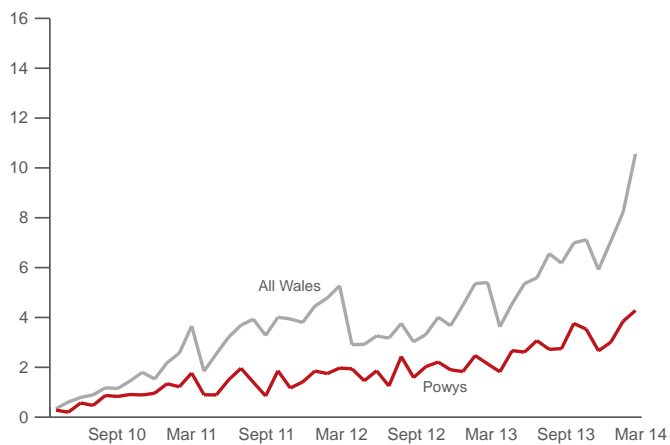
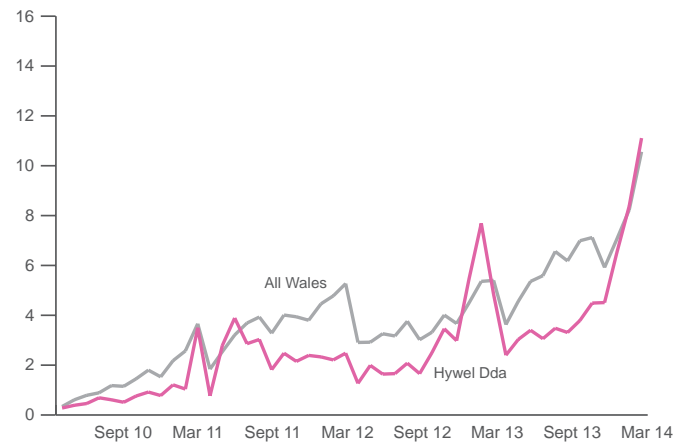
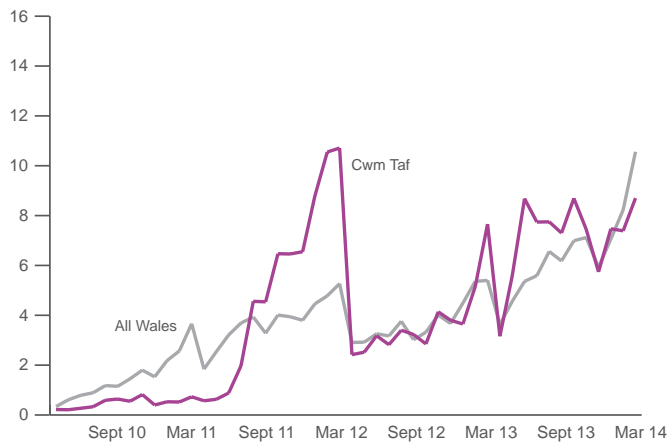




Source: Wales Audit Office analysis of Welsh Government data

Figure 11 – Treated patients that had waited more than 36 weeks by local health board



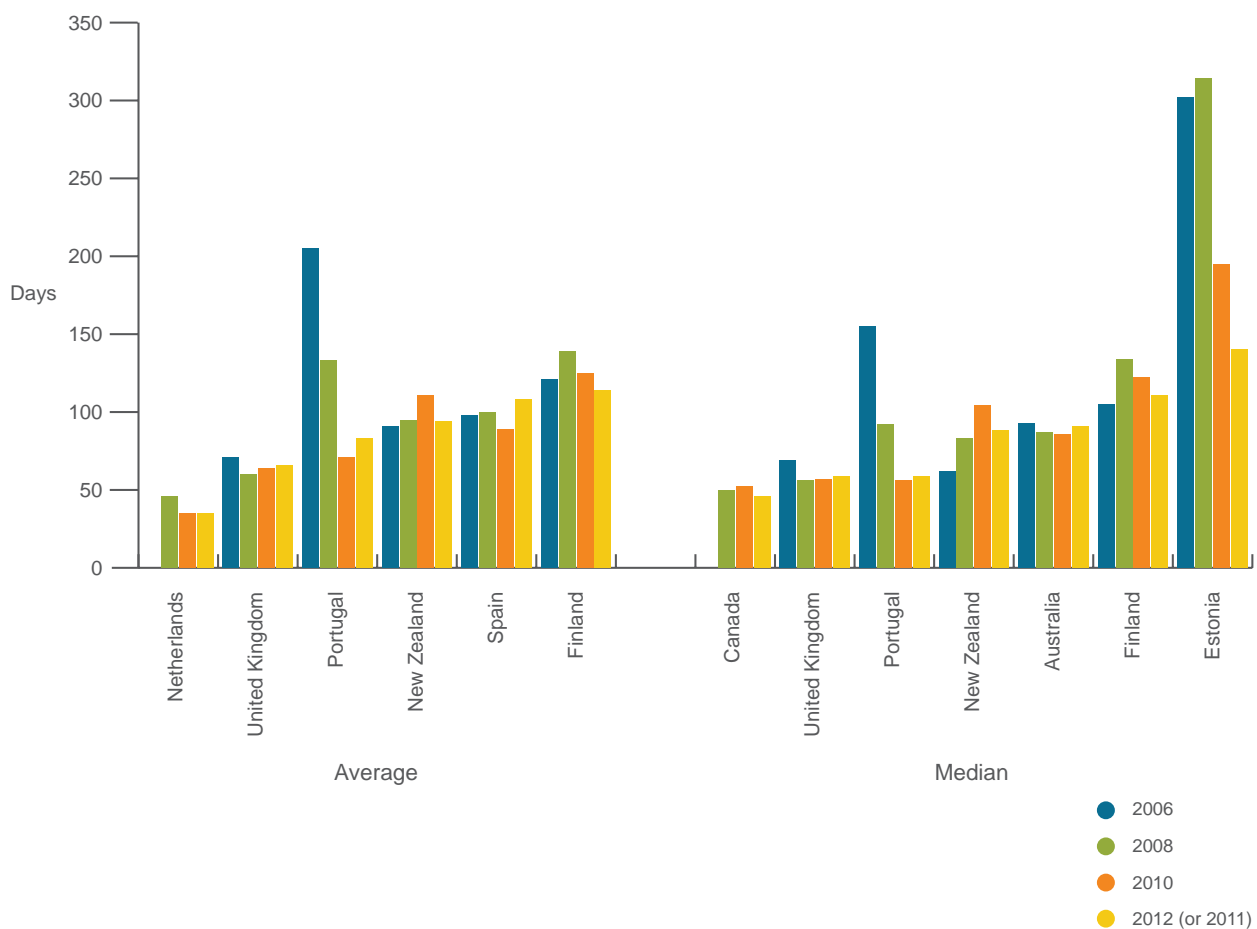


Source: Wales Audit Office analysis of Welsh Government data

## Comparing performance against the 'closed measure'

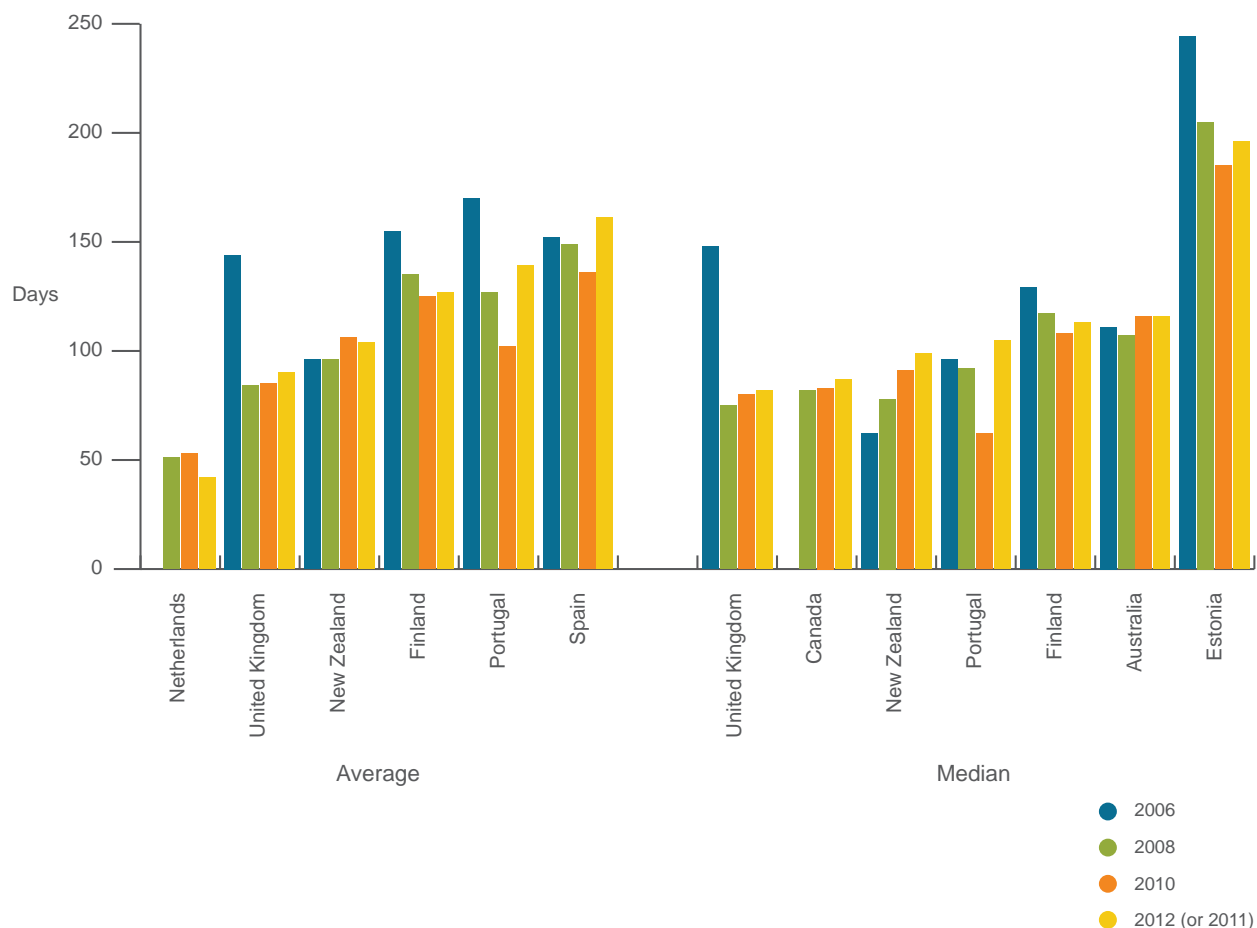
1.9 There is limited comparable international evidence on the total length of time patients wait in different countries. The Organisation for Economic Co-operation and Development (OECD) has done some comparison based on specific procedures. Figures 12 and 13 report the UK position (which is in fact England).

Figure 12 – Cataract surgery, waiting times from specialist assessment to treatment



Source: OECD

Figure 13 – Hip replacement, waiting times from specialist assessment to treatment



Source: OECD

1.10 The data available on the Patient Episode Database for Wales, like the above OECD data, covers the period from the decision to treat. However, we understand that the Patient Episode Database for Wales dataset does not include adjustments and it is unclear whether adjustments are included for other countries. Despite the caveat, comparison provides a broader international context on the position in Wales. For cataracts, the median wait was 75 days in Wales during 2011-12. That put Wales behind three of the seven international comparators. The average (mean) wait for cataracts is 104 days: higher than five of the comparators. For hip replacement, the median wait was 150 days: higher than all but Estonia. The mean wait of 169 days is higher than any of the comparators.<sup>6</sup> Since 2011-12, waiting times in both these specialities have deteriorated in Wales.

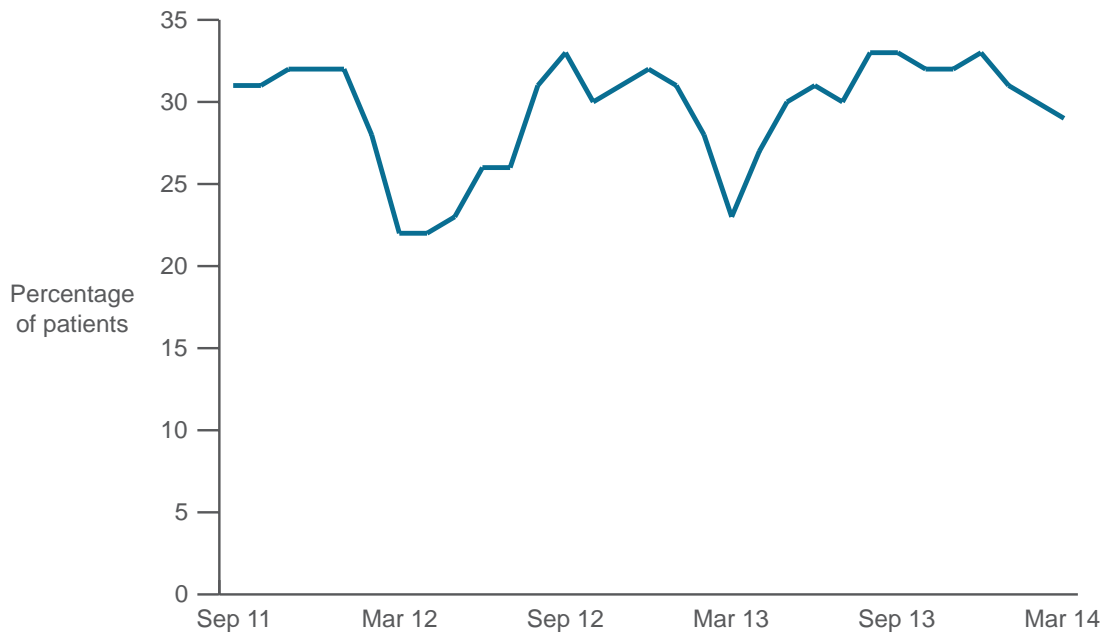
6 Source: Patient Episode Database Wales – residency based figures 2011-12



## Component waits

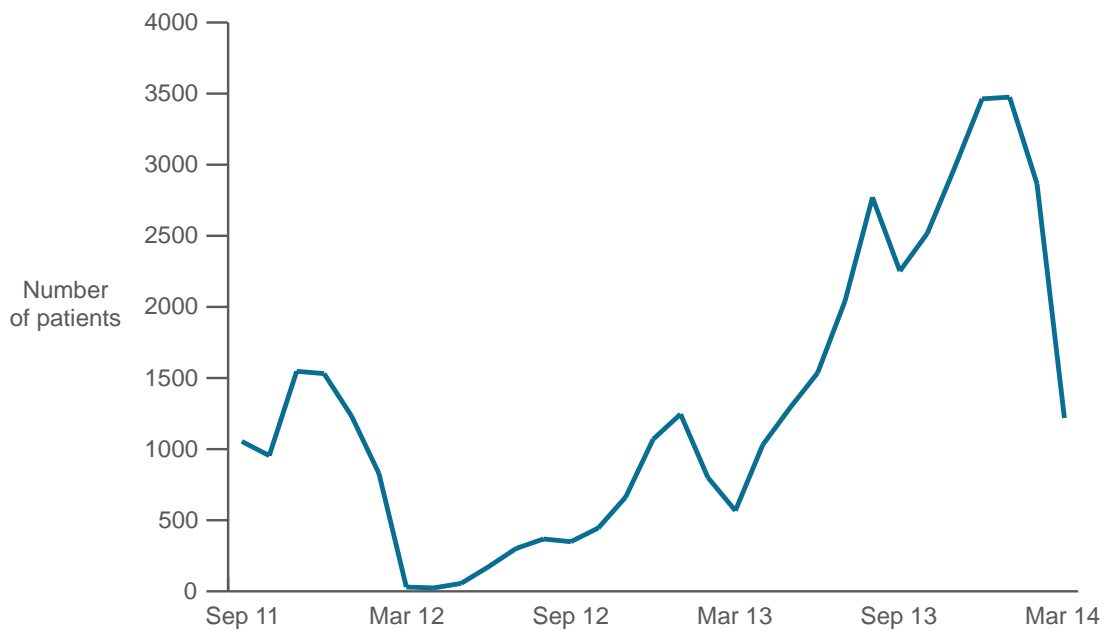
- 1.11 Shortly before 2009, the Welsh Government measured and reported waiting times for each stage of the patient journey. This measurement was described as 'component waits'. The Welsh Government set maximum waiting times for each part or component of the patient journey:
  - a waiting for a first outpatient appointment: 10 weeks;
  - b waiting for a diagnostic test: eight weeks;
  - c waiting for specified therapy services: 14 weeks; and
  - d waiting for inpatient/day-case treatment: 14 weeks.
- 1.12 The Welsh Government stopped measuring the 'component waits' from December 2009 onwards, but started again in 2011. We do not have trend data prior to 2011 but [Figure 14](#) shows that by 2011, around 30 per cent of patients were waiting more than 26 weeks for their first outpatient appointment: a situation that has slowly deteriorated up to March 2014. The numbers waiting more than 36 weeks for their first outpatient appointment has also increased, peaking at 3,500 in January 2014 before a significant reduction in March 2014 ([Figure 15](#)). The reduction towards the end of the financial year reflects a longstanding pattern where more first outpatient appointments and elective procedures take place in the final quarter of the financial year than in any other quarter (see [paragraphs 2.16](#) and [Figures 34 and 35](#)). Typically, as happened in 2014, the rise in activity is directed at long-waiting patients in order to improve performance against targets at the end of the financial year.
- 1.13 Over recent years, waiting times for diagnostic tests and therapies have increased significantly. The Welsh Government has set a target that patients should not wait more than eight weeks for diagnostic tests and therapies. In October 2009, 91 per cent of patients got their tests or therapies within eight weeks. By March 2014, that figure had fallen to 75 per cent.

Figure 14 – Proportion of patients on the waiting list who had been waiting more than 26 weeks for their first outpatient appointment



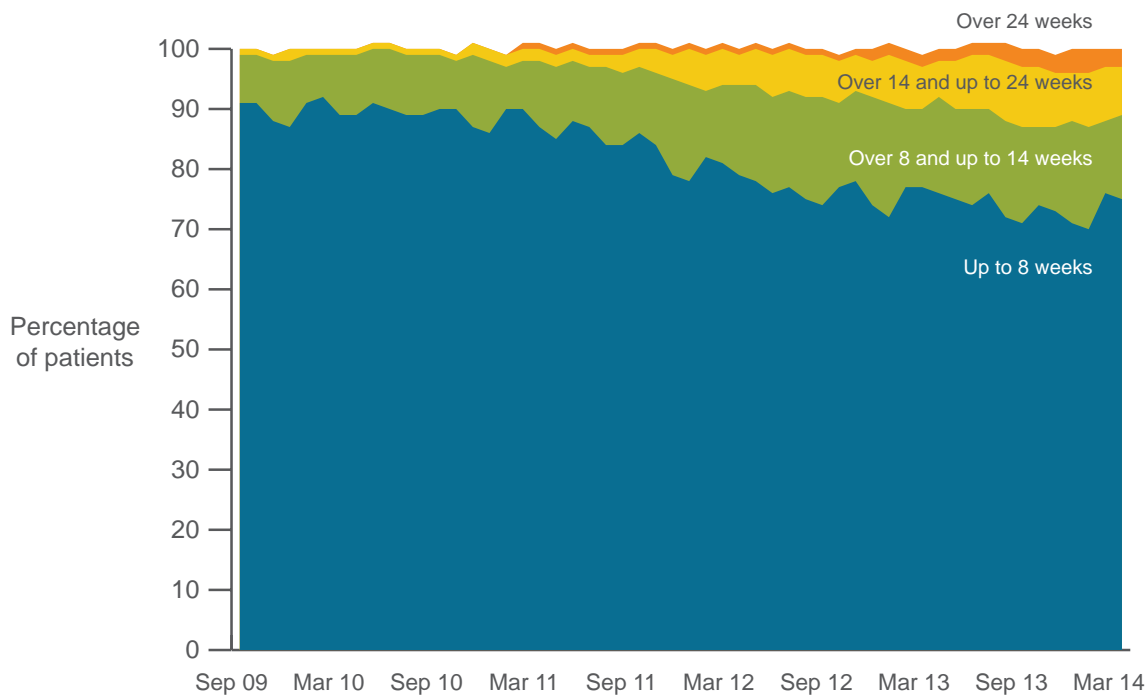
Source: Wales Audit Office analysis of Welsh Government data

Figure 15 – Number of patients on the waiting list who had been waiting more than 36 weeks for their first outpatient appointment



Source: Wales Audit Office analysis of Welsh Government data

Figure 16 – Diagnostic waiting times



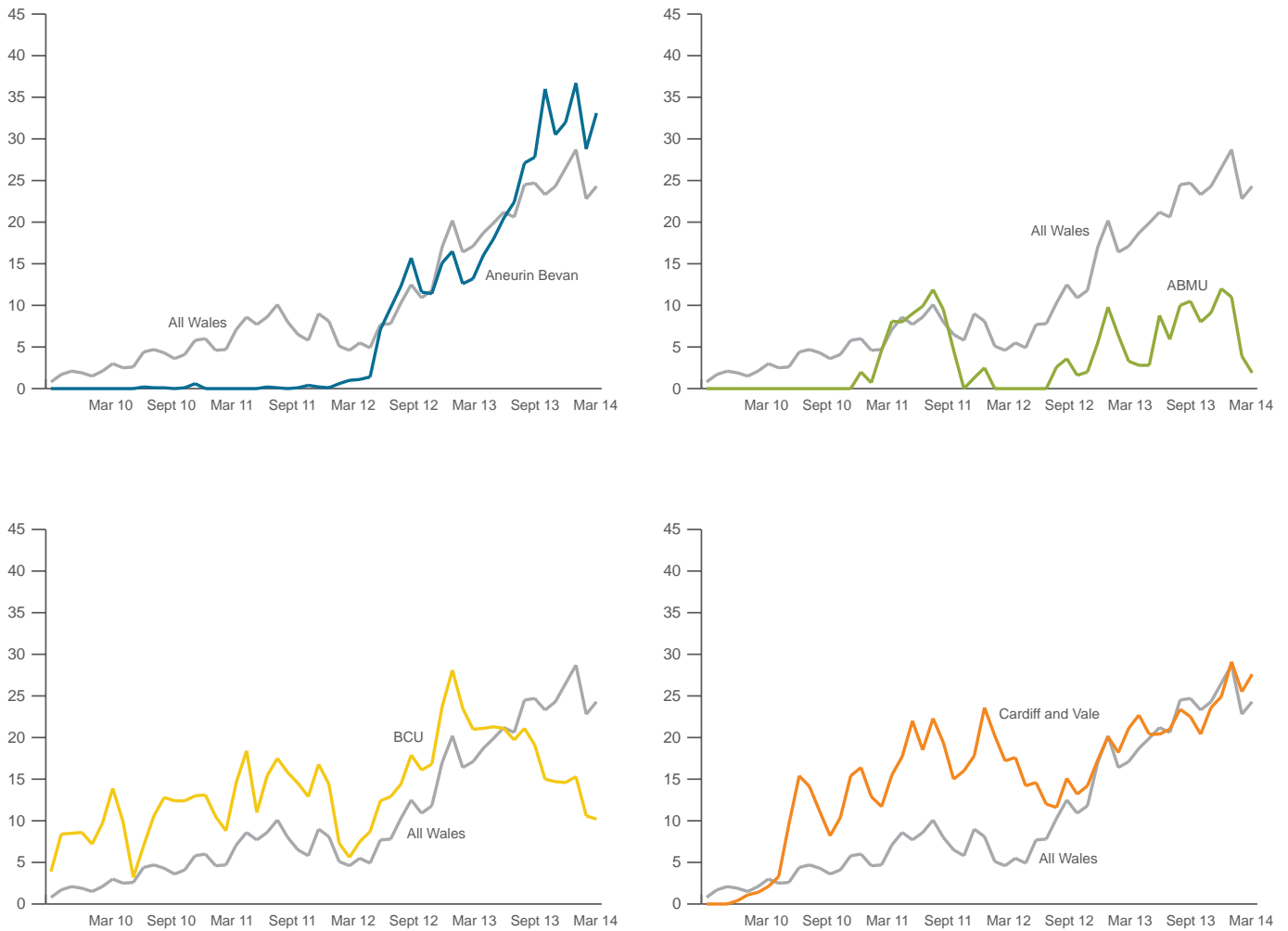
Source: Wales Audit Office analysis of Welsh Government data

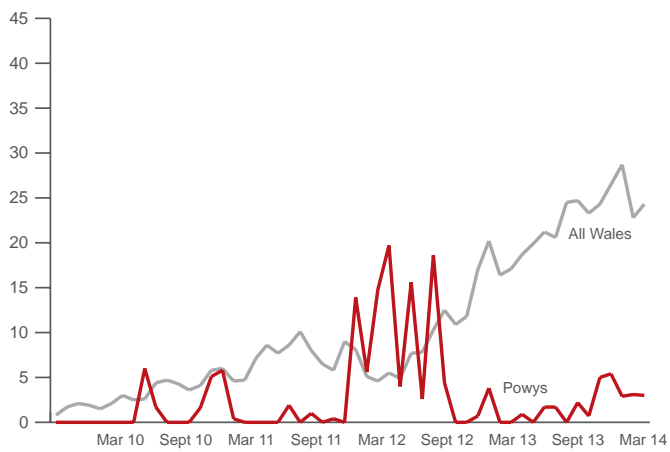
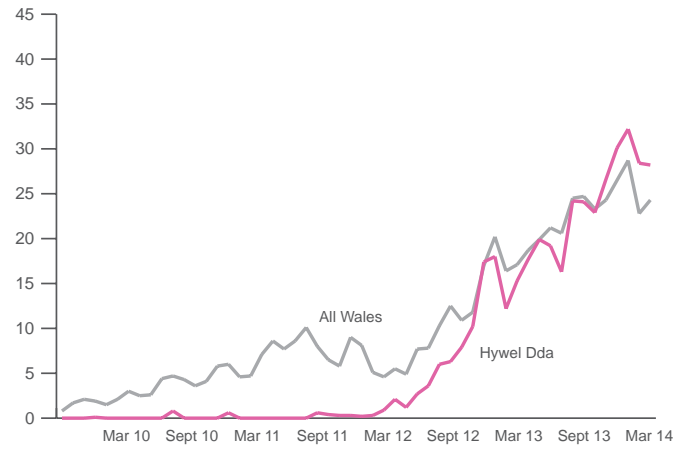
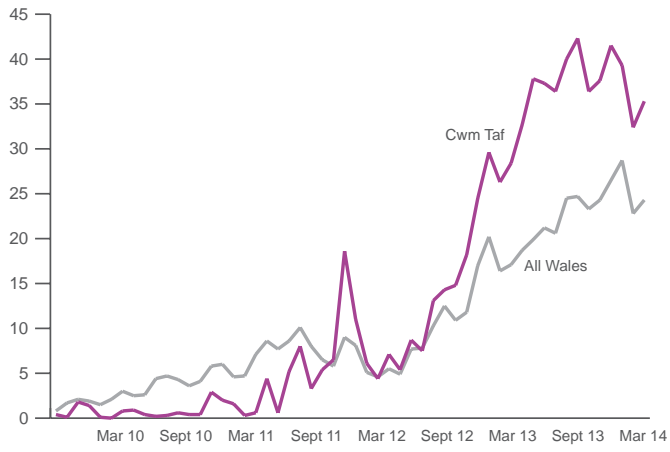
1.14 Further analysis shows that there are long waits for some in some key diagnostic and therapy services: radiology, cardiology and endoscopy:

- a In radiology, virtually all patients received their test within eight weeks in October 2009. In March 2014, 24 per cent of patients where tests were requested by a consultant and 30 per cent where the tests were requested by a GP waited eight weeks. These figures mask significant variations between health boards, with 50 per cent of patients in Aneurin Bevan University Health Board waiting more than eight weeks for GP-requested radiology diagnostic appointment in March 2014 (Figures 17 and 18).
- b In cardiology, 0.2 per cent (seven patients) waited more than eight weeks in October 2009. In March 2014, that figure was 22 per cent. There has been an overall improvement since the peak of 39 per cent in January 2013. There is again significant variation with Aneurin Bevan University Health Board having by far the longest waits, with 50 per cent of patients waiting more than eight weeks for cardiology tests in March 2014 (Figure 19).

- c Endoscopy waits over eight weeks have risen from eight per cent in October 2009 to 39 per cent in March 2014. The position has varied around the 40 per cent mark – between 36 per cent and 46 per cent between January 2011 and January 2013. Abertawe Bro Morgannwg University Health Board had the longest wait in March 2014 with over half of patients waiting more than eight weeks (Figure 20).

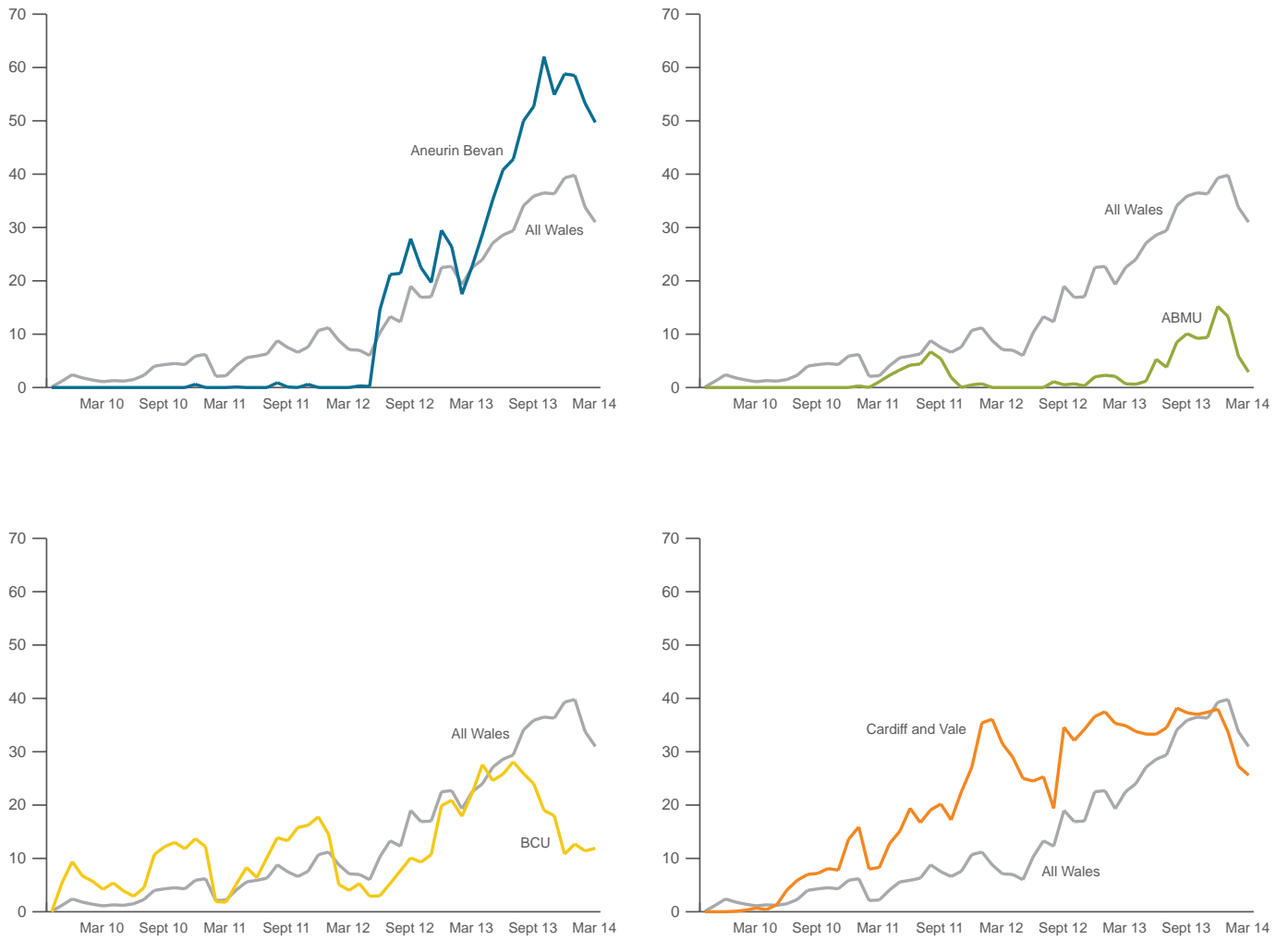
Figure 17 – Percentage of patients waiting over eight weeks for a radiology (consultant referral) diagnostic test by health board



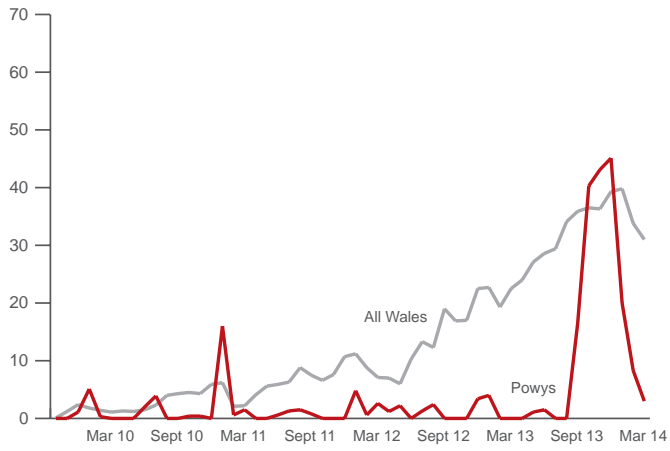
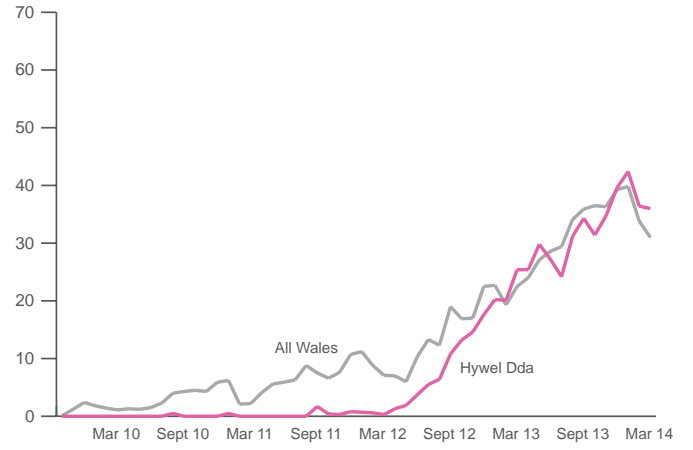
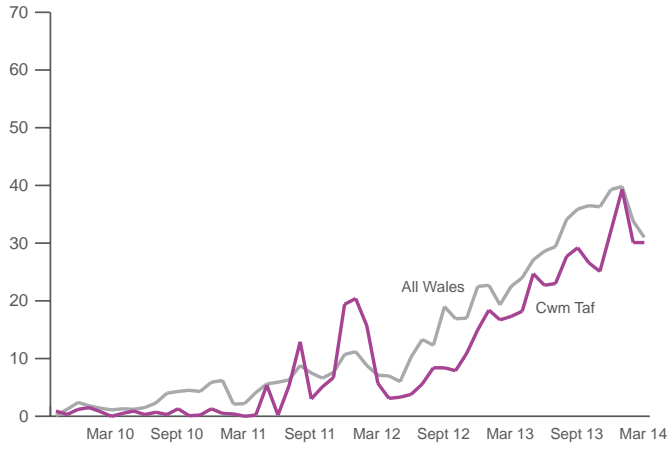


Source: Wales Audit Office analysis of Welsh Government data

Figure 18 – Percentage of patients waiting over eight weeks for a radiology (GP referral) diagnostic test by health board<sup>7</sup>

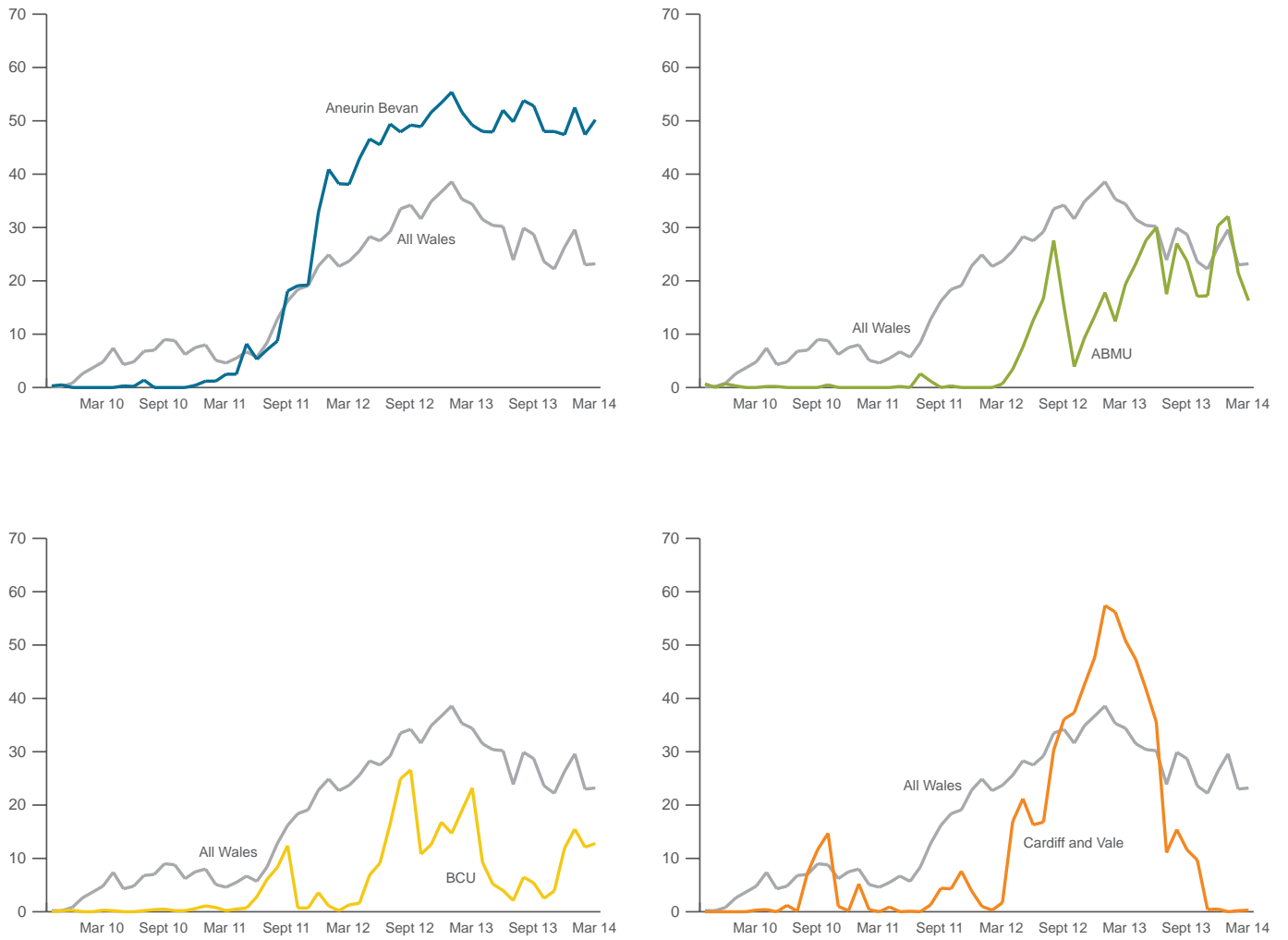


<sup>7</sup> Source: [www.statswales.wales.uk](http://www.statswales.wales.uk)

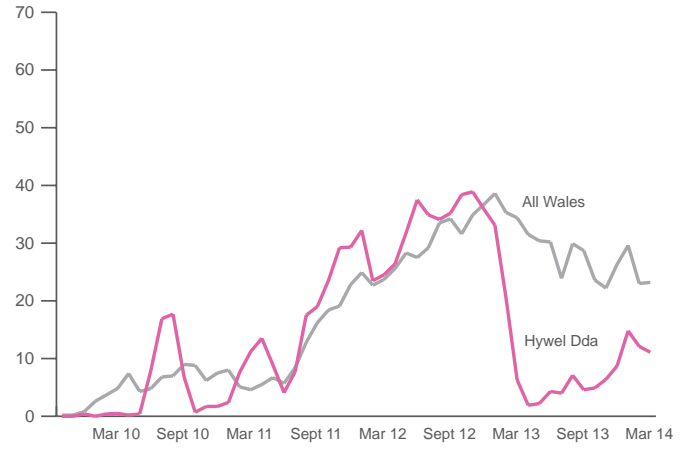
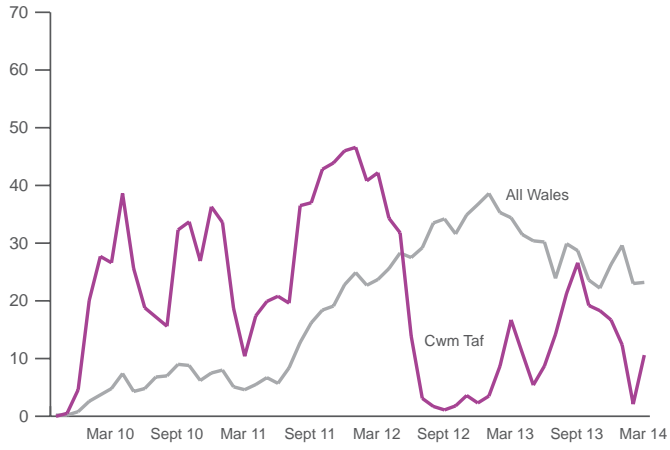


Source: Wales Audit Office analysis of Welsh Government data

Figure 19 – Percentage of patients waiting more than eight weeks for cardiology diagnostic tests by health board

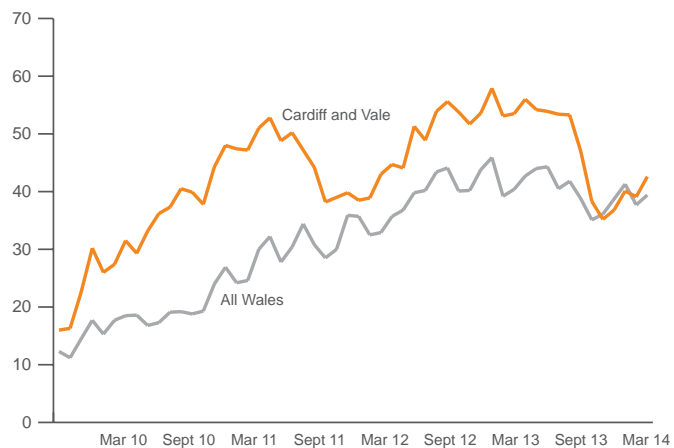
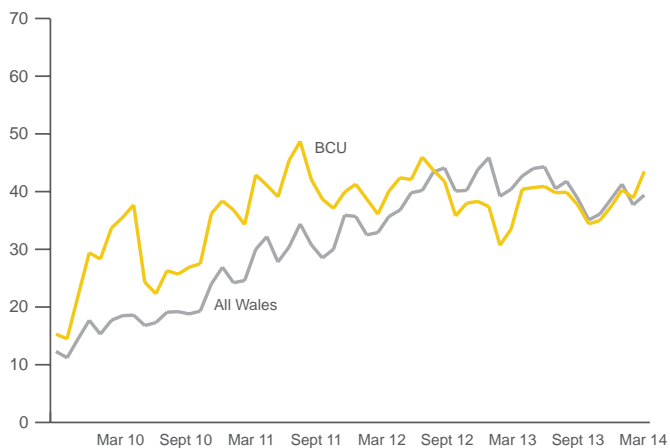
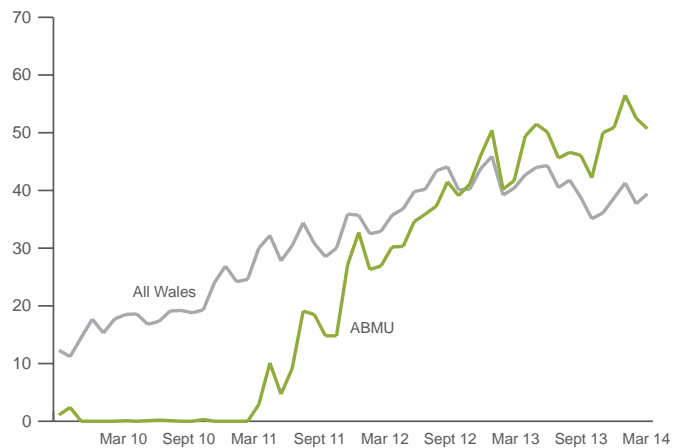
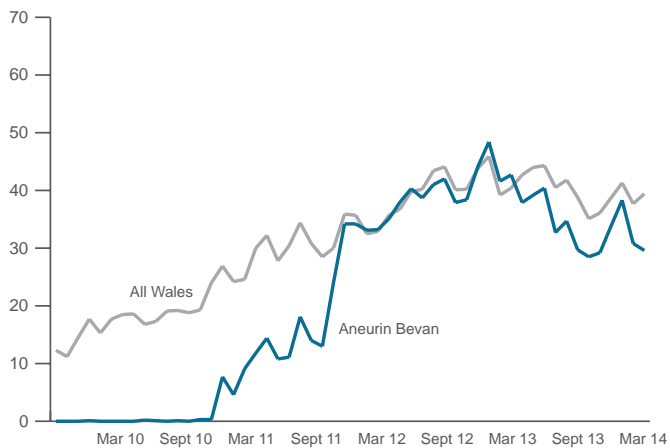


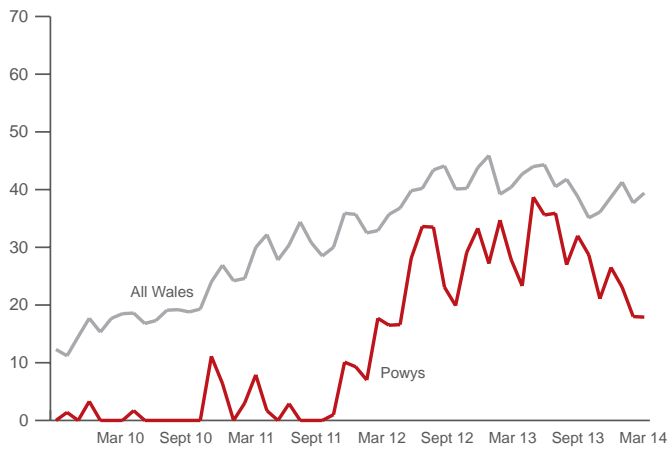
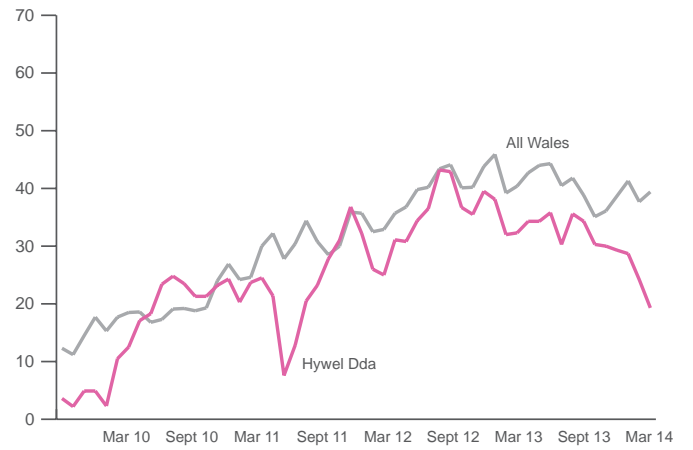
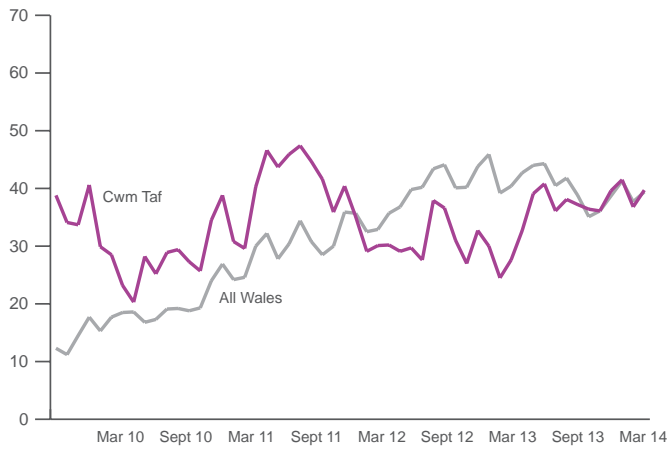




Source: Wales Audit Office analysis of Welsh Government data

Figure 20 – Percentage of patients waiting more than eight weeks for endoscopy diagnostic tests by health board





Source: Wales Audit Office analysis of Welsh Government data

## Rules for managing the impacts of patient behaviour on waiting times

1.15 The main report explains that the rules for managing referral to treatment differ between England, Scotland and Wales. The rules on when a patient's clock starts are the same in each country. But there are different rules covering when a clock can be paused, reset or stopped. Our main report examines the impact of adjustments to patients' clocks on patient experience and official performance figures. **Figure 21** shows that the rules in Wales provide the most opportunity for NHS providers to stop and reset patients' clocks to zero.

**Figure 21 – Comparison of referral to treatment rules related to patient behaviour**

Issue	Wales	England	Scotland
Clock start	The date the referral is received by the provider.	The date the referral is received by the provider.	The date the referral is received by the provider.
Patient Could Not Attend (CNA)/ cancelled	On first CNA, the clock is reset but the patient must be offered a new appointment as soon as the patient is available. Patients can have one CNA at each stage of the pathway. On second CNA, the clock stops (ie, pathway ends and the patient is discharged) unless the consultant considers they should not be removed for clinical reasons.	A cancellation will not result in any change to the patient's waiting time. However, the rebooking process may result in a waiting time clock pause being reported if a decision to treat has been made and the patient declines two or more reasonable offers for admission.	RTT guidance allows flexibility. Hospitals may reset the clock if it is clinically appropriate and reasonable to do so. It describes specific circumstances, such as a patient being unwell with a minor illness or if the patient is urgent, where it would not be reasonable to reset the clock. On a third cancellation, the patient would usually be returned to the referring clinician, where it is reasonable and appropriate to do so. In all cases, advice should be taken from clinical team. Patient clocks cannot be reset for a CNA or Did Not Attend (DNA) after a patient has waited more than 12 weeks. This includes new outpatients.
Patient DNA	If a patient DNAs they should be returned to the referrer and the clock stopped. However, if it is clear they will need to be re-referred the clock can be reset. This must be a clinical decision. The DNA reset may be applied a maximum of two times on an RTT pathway.	If a patient DNAs their first appointment following referral it 'nullifies' their pathway and they are excluded from measurement. They can either be discharged back to primary care or given a new appointment. A new clock would start if a new referral was made. If there is a DNA later on the pathway the clock can be stopped provided certain criteria are met, including it being in the best clinical interest of each patient and protection for vulnerable groups.	Advice must be sought from the clinical team. The health board may reset the clock to zero or stop the clock. It is subject to the same caveat as CNA – that it must be reasonable and clinically appropriate. Patient clocks cannot be reset for a CNA or DNA after a patient has waited more than 12 weeks. This includes new outpatients.

Figure 21 – Comparison of referral to treatment rules related to patient behaviour (continued)

Issue	Wales	England	Scotland
Patient unavailability adjustments/ clock pauses	<p>Social reasons.</p> <p>Unavailability of up to two weeks: no adjustment.</p> <p>Unavailability of two to eight weeks: clock can be adjusted.</p> <p>Unavailability of more than eight weeks: clock stop.</p> <p>Medical reasons: adjustment up to 21 days.</p> <p>If over 21 days, returned to referrer and clock stop.</p>	<p>A clock pause can only be reported where a decision to treat has been taken.</p> <p>Clock pauses only cover social reasons. The clock is paused for the period between the point at which the patient declines two or more reasonable offers of admission and the point where the patient makes themselves available for treatment. There is no limit to how long the clock can be paused for. Where patients have co-morbidities, guidance states it may be more appropriate to stop the clock and start a new one when the patient is medically fit.</p>	<p>Two types: medical (patient advised) and social (patient requested) unavailability ; split 'indefinite' and 'known'.</p> <p>If indefinite, the clock stops and the health board must review the patient after 12 weeks. Where known, for medical it must be agreed by a clinician, and the pause runs from the point the clinician agrees the patient is medically unavailable to the point the clinician deems they are available.</p> <p>For social unavailability the patient must advise of the day from which they become unavailable and the date they make themselves available. Patients can also request a period of unavailability where they request to be treated in a specific location in full awareness that they will have to wait longer.</p>

1.16 There are fairly common scenarios in which the official length of time patients in Wales are waiting could be significantly shorter than their actual wait. For example:

- a A patient cancels a first outpatient appointment after waiting 20 weeks, their clock is reset back to zero. The patient may be offered and accept a new appointment six weeks later. They then attend the appointment and the consultant decided no further treatment is required. In this case, the official referral to treatment waiting time would be just six weeks.
- b If a patient cancels or fails to attend on the day of their treatment, their clock is reset. But if the consultant decides that the patient needs to be treated and a slot is found in two weeks, the official waiting time is just two weeks.

1.17 These sorts of situations are not uncommon. For example, in 2013-14 there were around 38,000 cancellations of operations due to 'patient' reasons. According to the rules, in each case there should have been a clock stop or reset. There are cancellations at other stages – outpatients' diagnostics and pre-surgical assessment – which would also stop or reset the clock but these cancellations are not routinely measured by health boards.

- 1.18 Patients' clocks can be adjusted or stopped if they are unavailable for treatment for social or medical reasons (see [Figure 21](#)). We took a snapshot of patients from one health board's trauma and orthopaedic list at the end of June 2014. The majority of patients did not have their clock adjusted but one per cent of patients experienced adjustments. Ninety-eight patients had their clock adjusted once and six patients twice. The difference between patients' actual and reported waiting times ranged from less than a week to 19 weeks. Patients who experienced adjustments had an average of four and a half weeks added to their waiting time.

## The impact of long waiting times

- 1.19 Empirical evidence, summarised recently by the OECD<sup>8</sup>, suggests that long waiting times can have a detrimental impact on health outcomes for more urgent procedures like coronary bypass, but less so for less urgent ones, like elective hip replacement.
- 1.20 The Welsh Health Specialised Services Committee (WHSSC) published three reports on cardiac services in Wales on 26 February 2014<sup>9</sup>. The reports describe a marked difference in elective waiting times for cardiac surgery between North and South Wales and conclude that waiting times in South Wales for many patients are 'longer than clinically appropriate leading to excessive morbidity and risk of mortality on the waiting list, poorer surgical outcomes, increased risk of emergency admission and reduced efficiency in resource utilisation'. The committee found that 99 patients have died whilst on the waiting list for cardiac surgery in the last five years; 57 at Morriston Hospital and 42 at University Hospital of Wales. Because of existing co-morbidities, it is not clear how many of these deaths were directly attributable to long waits<sup>10</sup>.
- 1.21 The cardiac surgery working group report states that demand for cardiac surgery is expected to remain stable over the next five to 10 years but patients will continue to get older and the mix of cardiac operations is changing towards a higher proportion of more complex procedures. These changes will have direct consequences for resources as older patients undergoing more complex surgery will tend to have longer lengths of stay in hospital. The working group recommended that specific cardiac surgery waiting times targets are developed with a maximum referral to surgery waiting time target of 10 weeks to reduce mortality rates on waiting lists from approximately 20 per annum to five per annum. In June 2014, the Welsh Health Specialised Services Joint Committee agreed a project funded by the South Wales health boards for a recurrent increase in cardiac surgery capacity which included short-term outsourcing to reduce waiting times. The committee has also set out a framework for monitoring cardiac surgery waiting list mortality at Morriston Hospital and the University Hospital of Wales. In November 2014, the committee reported 'significant progress' in reducing the number of patients waiting over 36 weeks for cardiac surgery in South East Wales<sup>11</sup> and some progress reducing the number of patients waiting over 36 weeks for cardiac surgery at Morriston Hospital<sup>12</sup>.

8 M. Borowitz, V. Moran, L. Siciliani, *Waiting Times Policies in the Health Sector – What Works?* OECD Publishing, 2013

9 Welsh Health Specialised Services Committee: *Review of Cardiac Services*, March 2013; *Report of the Cardiac Surgery Working Group*, March 2013; and *Cardiac Summary Paper*, September 2013

10 There is currently no robust evidence of the link between mortality and length of wait in cardiac surgery due to significant data issues with measuring mortality and adjusting for differences in clinical presentation and casemix.

11 Outsourcing began in January 2014 in South East Wales and in June 2014 in Mid and West Wales.

12 Welsh Health Specialised Services Joint Committee Paper. *Cardiac Surgery – Improving Outcomes and Waiting Times Project*, 25 November 2014

## Part 2

### Factors contributing to long waiting times



## Strategic direction

- 2.1 Our main report explains that the Welsh Government's approach to managing waiting times since 2009 has been largely to reiterate to health boards that they must meet the targets and hold them to account on this basis. Waiting times targets since 2007 are summarised in [Figure 22](#).

Figure 22 – Welsh Government waiting times targets

Source	Waiting times targets
NHS Wales: <i>Annual Operating Framework 2007/2008</i>	<p>Sets out the target that by December 2009, patients in Wales can expect to wait a maximum of 26 weeks from GP referral to definitive treatment, including specified diagnostic tests and therapy services. The National Service and Financial Framework Targets 2007/2008 include targets on component waits:</p> <ul style="list-style-type: none"> <li>• to reduce the maximum waiting time for inpatient or day-case treatment to 22 weeks;</li> <li>• to reduce the maximum waiting time for first outpatient appointment to 22 weeks;</li> <li>• to reduce the maximum waiting time for access to specified diagnostic services to 14 weeks; and</li> <li>• to reduce the maximum waiting time for access to specified therapy services to 24 weeks.</li> </ul>
NHS Wales: <i>Annual Operating Framework 2008/2009</i>	<p>Sets out revised targets:</p> <ul style="list-style-type: none"> <li>• to reduce referral to treatment time to 26 weeks for 80 per cent of admitted patients and 85 per cent of non-admitted patients;</li> <li>• to reduce referral to treatment times to 32 weeks for 95 per cent of admitted patients and 98 per cent of non-admitted patients;</li> <li>• to reduce the maximum waiting time for inpatient or day-case treatment to 14 weeks;</li> <li>• to reduce the maximum waiting time for a first outpatient appointment to 10 weeks;</li> <li>• to reduce the maximum waiting time for access to specified diagnostic services to eight weeks; and</li> <li>• to reduce the maximum waiting time for access to specified therapy services to 14 weeks.</li> </ul>
NHS Wales: <i>Annual Operating Framework 2009/2010</i>	<p>Sets out national waiting times targets:</p> <ul style="list-style-type: none"> <li>• AOF 1: to reduce referral to treatment times to a maximum of 26 weeks by 31 December 2009; and</li> <li>• AOF 2: to maintain a maximum waiting time of eight weeks for specified diagnostic tests and 14 weeks for specified therapy services for all patients who are not on an RTT pathway.</li> </ul> <p>The Annual Operating Framework reiterates 2008-09 targets on individual component waits and the backstop that 95 per cent of admitted and 98 per cent of non-admitted patients will have a referral to treatment time of less than 32 weeks.</p>



Figure 22 – Welsh Government waiting times targets (continued)

Source	Waiting times targets
<p><i>Statistical First Release</i>, October 2009</p>	<p>The October <i>Statistical First Release</i> explains that in August 2009, the Welsh Government introduced tolerance levels which allowed for exceptions to the referral to treatment targets on clinical grounds. The tolerance levels are:</p> <ul style="list-style-type: none"> <li>• for patients admitted to hospital for treatment – a tolerance of 95 per cent;</li> <li>• for patients not admitted to hospital for treatment – a tolerance of 98 per cent; and</li> <li>• a maximum wait of 36 weeks for patients whose treatment exceeds 26 weeks.</li> </ul>
<p>NHS Wales: <i>Annual Operating Framework 2010/2011</i></p>	<p>The <i>Annual Operating Framework 2010/2011</i> states that national referral to treatment requirements ‘need to be achieved and maintained and become standards, rather than targets’ but sets out specific waiting times targets:</p> <ul style="list-style-type: none"> <li>• to maintain a maximum referral to treatment time of 26 weeks – at least 98 per cent of patients waiting on an open pathway will have waited less than 26 weeks from quarter 1 onwards;</li> <li>• to ensure that 100 per cent of patients not treated within 26 weeks, for clinical reasons and/or patient choice, are treated within a maximum of 32 weeks (on an open pathway); and</li> <li>• to achieve a maximum waiting time of eight weeks for specified diagnostic tests and 14 weeks for specified therapy services for all patients who are not on a referral to treatment pathway through 2010-11.</li> </ul>
<p>NHS Wales: <i>Delivery Framework 2011-2012</i></p>	<p>Sets out the tier 1 access target that 95 per cent of patients will be waiting less than 26 weeks for treatment with a maximum wait of 36 weeks. The document states that ‘For Orthopaedics, we will ensure that no patient will wait longer than 36 weeks for treatment by the 31st March 2012’.</p>
<p>NHS Wales: <i>Delivery Framework 2012-2013</i></p>	<p>The <i>Delivery Framework for 2012-2013</i> was the same as that for 2011-12.</p>
<p>NHS Wales: <i>Delivery Framework 2013-14 and Future Plans</i></p>	<p>Reiterates the tier 1 access target that 95 per cent of patients will be waiting less than 26 weeks for treatment with a maximum wait of 36 weeks and includes a performance indicator on the proportion of procedures that are cancelled on more than one occasion by the hospital with less than eight days’ notice that are subsequently carried out within 14 days or at the patient’s earliest convenience. The specific separate monitoring of orthopaedic waiting times is dropped from tier 1 of the framework which will now be monitored within overall referral to treatment monitoring.</p>

2.2 The Welsh Government provided an additional £2 million to health boards to carry out extra activity to reduce the number of patients waiting over 36 weeks by the end of March 2014. Health boards submitted proposals describing their work plan, anticipated reduction in patients waiting over 36 weeks and the cost of proposed activity. The Welsh Government wrote to the health boards to agree work schemes on 26 February 2014 and warned that funding would only be provided where health boards could provide evidence that they had reduced the number of patients waiting in excess of 52 weeks, 36 weeks and in total. Some managers also told us that they had difficulty spending the additional money in the time available. **Figure 23** sets out health boards' proposed activity to reduce long-waiting patients, the actual reduction in patients waiting over 36 weeks, and the actual funding they received as a result.

**Figure 23 – Funding allocated to work schemes to reduce long waiters by the end of March 2014**

Health board	Area of focus	Anticipated reduction in patients waiting over 36 weeks	Actual reduction in patients waiting over 36 weeks	Cost of proposed activity	Actual funding received
Cwm Taf University Health Board	General surgery day cases	110	110	£63,000	
	Ophthalmology	100	100	£110,000	
	Trauma and orthopaedic day cases	80	80	£56,000	
	Total	290	290	£229,000	£229,000
Betsi Cadwaladr University Health Board	'Stage 3': outpatient clinics across specialities for patients awaiting a decision following tests	210	No stage 3 clinics were undertaken	£32,000	
	Endoscopy	150	150	£67,000	
	Total	360	150	£99,000	£67,000

Figure 23 – Funding allocated to work schemes to reduce long waiters by the end of March 2014 (continued)

Health board	Area of focus	Anticipated reduction in patients waiting over 36 weeks	Actual reduction in patients waiting over 36 weeks	Cost of proposed activity	Actual funding received
Abertawe Bro Morgannwg University Health Board	Oral surgery	269	102	£100,000	
	Endoscopy	150	23	£84,000	
	General surgery	120	142	£112,000	
	Total	539	267	£296,000	£183,331
Hywel Dda University Health Board	MRI	350	150	£150,000	
	Cataracts	500	500	£163,000	
	Pain management	300	300	£75,000	
	Colonoscopy	200	200	£100,000	
	Total	1,350	1,150	£488,000	£163,000 and £198,000 <sup>13</sup>
Aneurin Bevan University Health Board	Restorative dentistry	30	30	£300,000	
	Oral surgery	120	120	£40,000	
	Trauma and orthopaedics	400	400	£550,000	
	Total	550	2,327	£890,000	£950,000 <sup>14</sup>

Note

Cardiff and Vale University Health Board did not bid for funding.

<sup>13</sup> Hywel Dda University Health Board received two payments. The second payment was related to additional activity which was achieved after March but in line with agreed plans. They were the only health board to be on course to achieve their agreed trajectory.

<sup>14</sup> Aneurin Bevan University Health Board also received a further £100,000 funding to undertake 1,777 ultrasounds. The Welsh Government, however, held back £40,000 as the health board's predicted end-of-year profile was not achieved.

## National capacity and resource constraints

### Finance

2.3 Our main report explains that financial pressures have been a contributing factor to the decline in performance against waiting times targets. The UK spends less than the OECD average on health, and less than most European countries (Figure 24). Spending per head of the population in Wales in 2013-14 was just below the UK average. Comparisons with areas of similar demographic and socio-economic characteristics are less favourable. Spending on health in Wales is considerably below the north east of England – the nearest comparator in terms of health need. In 2013-14, spending per head on health in the north east was £2,236 compared to £1,992 in Wales: a difference of 12 per cent<sup>15</sup>.

Figure 24 – Spending on health in 2011 across OECD countries (in \$dollars based on purchasing power parity index)<sup>16</sup>

Spending on health per head	
United States	\$8,175
Switzerland	\$5,643
Norway	\$5,458
Netherlands	\$4,737
Germany	\$4,346
Austria	\$4,307
Canada	\$4,295
Denmark	\$4,285
Belgium	\$4,061
Luxembourg	\$3,998
France	\$3,970
Sweden	\$3,703
Ireland	\$3,521
Iceland	\$3,305

<sup>15</sup> HM Treasury, *Public Expenditure Statistical Analyses (PESA)*, 2014

<sup>16</sup> To compare spending levels between countries, per capita health expenditures are converted to a common currency (US dollar) and adjusted to take account of the different purchasing power of the national currencies. Economy-wide (GDP) purchasing power parities are used as the most available and reliable conversion rates.

Figure 24 – Spending on health in 2011 across OECD countries (in \$dollars based on purchasing power parity index) (continued)

Spending on health per head	
OECD average	\$3,384
United Kingdom	\$3,281
Finland	\$3,217
New Zealand	\$3,182
Spain	\$3,011
Italy	\$2,854
Portugal	\$2,474
Slovenia	\$2,336
Greece	\$2,329
Korea	\$2,100
Czech Republic	\$1,929
Slovak Republic	\$1,828
Hungary	\$1,640
Chile	\$1,512
Poland	\$1,351
Estonia	\$1,286

Source: OECD

## Workforce

2.4 One of the key ways in which the difference in spending in Wales and the north east of England relates to capacity is in terms of staffing levels. The number of medical hospital staff per head of population is 15 per cent higher in the north east of England: 219 per 100,000 population compared to 186 in Wales (September 2012).

- 2.5 Wales also has a smaller proportion of consultants per 100,000 of the population at 73 compared to 88 in the north east of England – some 21 per cent higher. There is international evidence suggesting that consultant-led care results in lower lengths of stay as well as better outcomes<sup>17</sup>. The argument is that consultants are less risk averse, less likely to admit patients and more likely to allow patients to go home earlier.
- 2.6 During our fieldwork, health boards described a number of difficulties matching staff to meet patient need including skills shortages, recruitment delays and reduced finances. The Wales Deanery states that there are difficulties across the UK recruiting specialists to work in paediatrics, psychiatry, core and higher medical specialities and emergency medicine<sup>18</sup>. This problem is exacerbated in Wales due to the geography but also because there are fewer opportunities to meet curriculum requirements for trainees in Wales. Surgeons are increasingly ‘sub-specialising’ in a particular area which means that patients now expect to be treated by a specialist (a foot surgeon rather than a more generalist orthopaedic surgeon for instance). Health boards told us that sub-specialisation has made it difficult to plan services around demand because they lack the resources to cover specialist areas when clinicians are ill or when they have a vacancy. Some health boards experienced delays in recruitment as a result of bureaucratic processes including visa constraints and criminal record bureau checks.
- 2.7 The NHS Wales Staff Survey (May 2013)<sup>19</sup> highlighted issues with employee satisfaction and workforce capacity. Around half the staff who responded said that they do not have time to carry out all of their work, a quarter said that they were unable to meet conflicting demands on their time and 39 per cent said that they do not have adequate materials, supplies and equipment to do their work. More than half of employees felt that there are not enough staff for them to do their job properly.

## Bed capacity

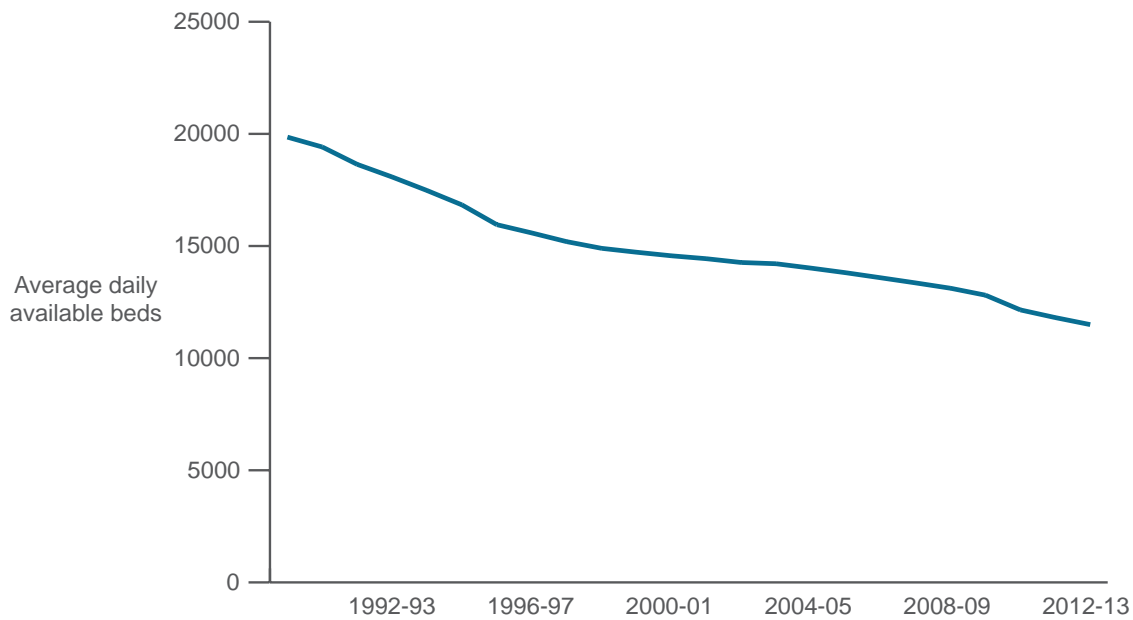
- 2.8 Our main report explains that one of the key capacity constraints on elective treatment is the availability of acute beds. The average number of beds available for use has continued to fall (Figure 25) for the past 25 years, with a sharpening of the reduction since 2009-10. Bed reductions can be a positive response to more efficient ways of treating patients such as treating more patients as day cases or in primary care facilities. However, where reductions have been made without the appropriate planning, this restricts the capacity to treat patients who require a hospital bed.

<sup>17</sup> Academy of Medical Royal Colleges, *The Benefits of Consultant Delivered Care*, 2012

<sup>18</sup> [www.walesdeanery.org](http://www.walesdeanery.org)

<sup>19</sup> The Minister for Health and Social Services made a commitment to undertake a survey of staff across NHS Wales in response to actions outlined in *Working Differently – Working Together*. The survey was conducted in January and February 2013 and achieved a 27 per cent response rate.

Figure 25 – Average number of beds available for use across the NHS in Wales<sup>20</sup>

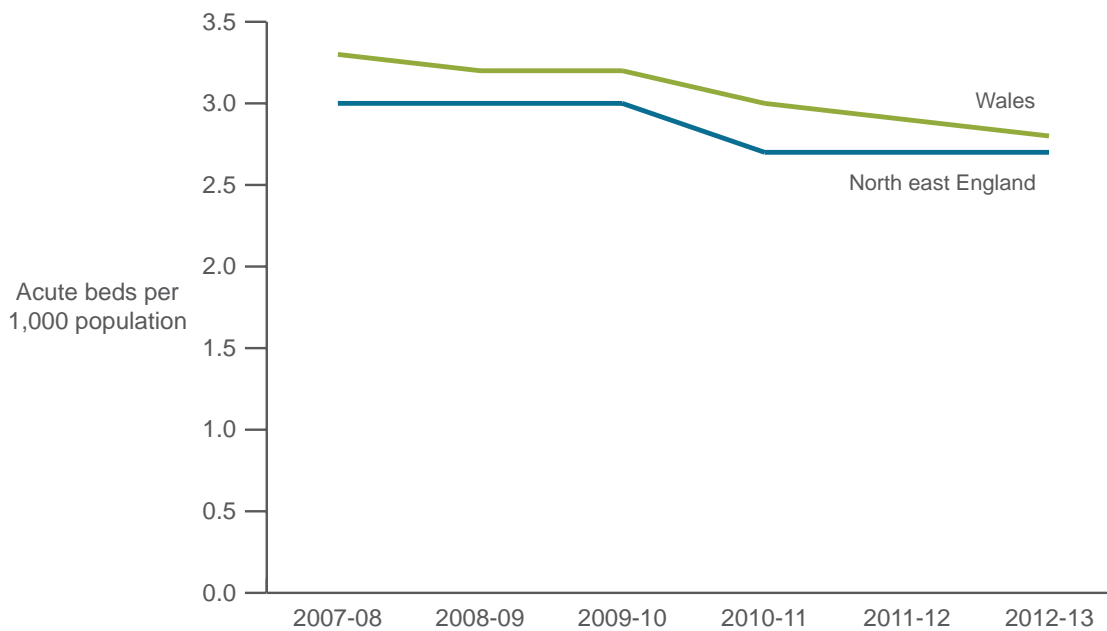


Source: Wales Audit Office analysis of Welsh Government data

2.9 Wales has a higher number of beds per head of population than England as a whole but a broadly similar number to the north east, with 2.8 ‘general and acute’ beds per 1,000, compared to 2.7 in the north east.

<sup>20</sup> The Welsh Government has not published data for 2013-14 due to data quality issues.

Figure 26 – Acute beds per 1,000 population in Wales and North East England<sup>21</sup>



Source: Wales Audit Office analysis of Welsh Government and UK Government data

2.10 Looking further afield, Wales has fewer beds per head of population than many other developed countries. Figure 27 shows the position for 2011, which shows that the UK has amongst the lowest beds per capita.

<sup>21</sup> The Welsh Government has not published data for 2013-14 due to data quality issues. Figures for England are based on [www.england.nhs.uk/statistics](http://www.england.nhs.uk/statistics) bed availability and occupancy data.



Figure 27 – Acute hospital beds per 1,000 capita 2011 (or nearest year)

Acute hospital beds per 1,000 capita	
Japan	8.0
Korea	5.9
Austria	5.4
Germany	5.3
Czech Republic	4.7
Slovak Republic	4.5
Poland	4.3
Luxembourg	4.2
Hungary	4.1
Belgium	4.1
Greece	4.1
Slovenia	3.7
Estonia	3.5
France	3.4
OECD average	3.4
Netherlands	3.3
Switzerland	3.0
Finland	3.0
Wales	2.9
Denmark	2.9
Portugal	2.8
Italy	2.8
New Zealand	2.6

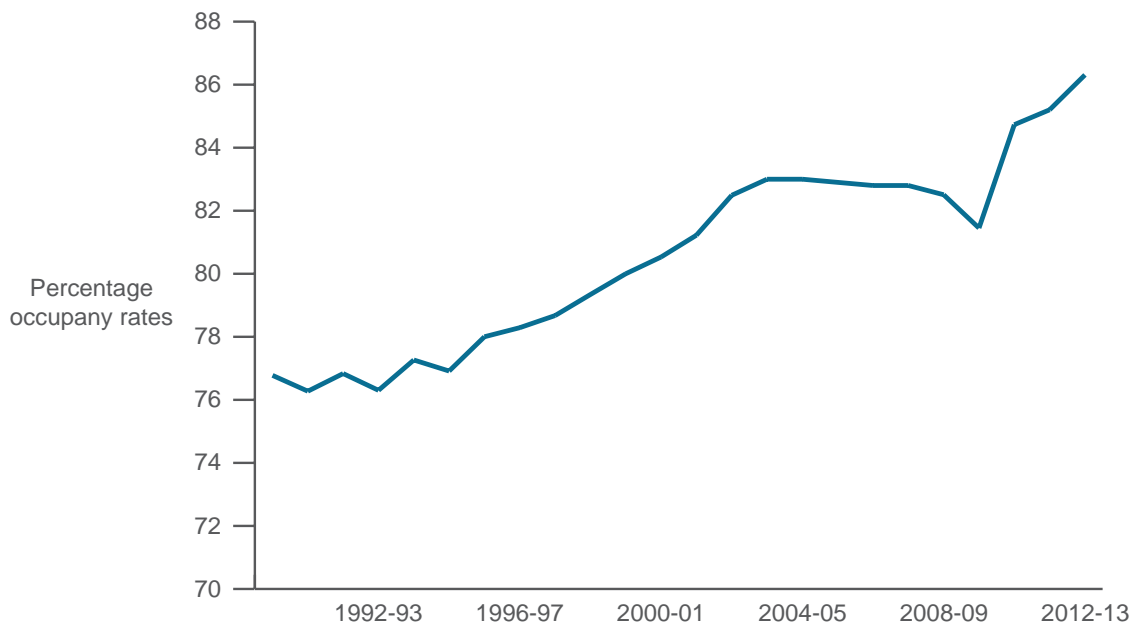
Figure 27 – Acute hospital beds per 1,000 capita 2011 (or nearest year) (continued)

Acute hospital beds per 1,000 capita	
United States	2.6
Spain	2.5
Turkey	2.5
Iceland	2.4
United Kingdom	2.4
Norway	2.4
Ireland	2.2
Sweden	2.0
Chile	2.0
Israel	1.9
Canada	1.7
Mexico	1.6

Source: OECD

2.11 In Wales, bed occupancy rates have been rising significantly over the long term, with a sharp increase since 2009-10. Bed occupancy can be seen as an indicator of the efficiency of the system, with reasonably high occupancy rates an indicator that available capacity is being used, rather than lying idle. There are some significant caveats to this interpretation. There is a point at which high bed occupancy rates cause problems, as there are insufficient beds to admit patients who need to be admitted, with the result that patients are put in the wrong places (for example, medical patients occupying surgical beds), are left on trolleys or have their operations cancelled at short notice. Mathematical modelling demonstrates that occupancy rates in excess of 85 per cent greatly increase the risk of periodic bed crises and failures to admit acutely ill patients.<sup>22</sup> In June 2010, the Royal College of Surgeons warned that bed occupancy should not exceed 82 per cent as rates above this level 'are a clear predictor of an increased risk of infection after an operation'<sup>23</sup>.

Figure 28 – Bed occupancy rates in Wales (all beds)<sup>24</sup>



Source: Wales Audit Office analysis of Welsh Government data

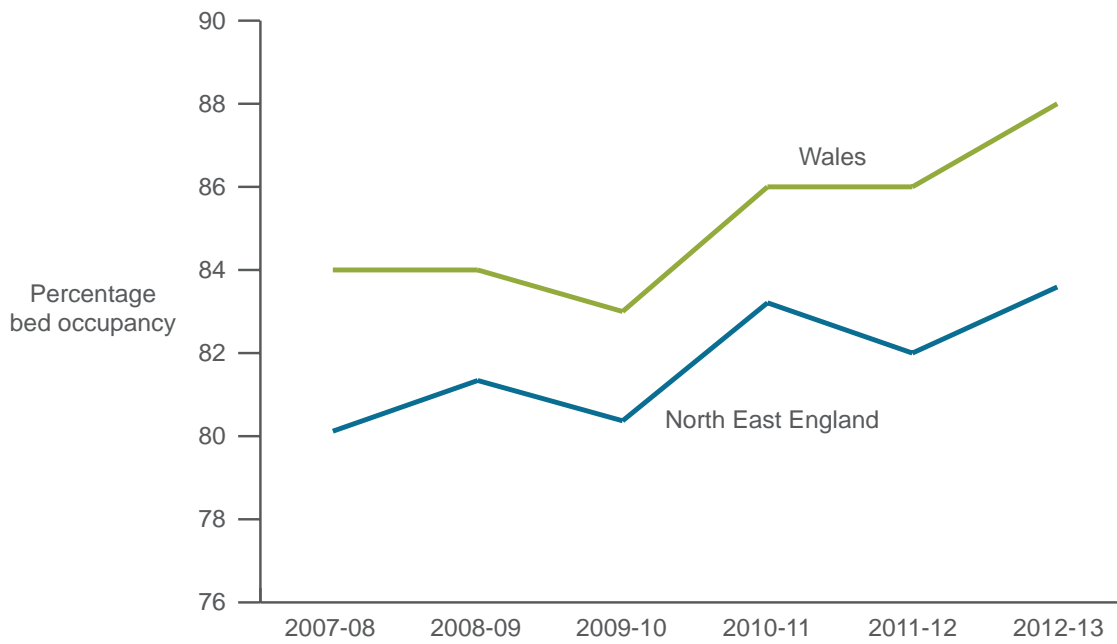
22 Bagust A, Place M, Posnett JW, *Dynamics of bed use in accommodating emergency admissions: stochastic simulation model*, BMJ 1999

23 [www.rcseng.ac.uk/media/medianews/high-nhs-hospital-bed-occupancy-remains-a-big-infection-risk-says-rs](http://www.rcseng.ac.uk/media/medianews/high-nhs-hospital-bed-occupancy-remains-a-big-infection-risk-says-rs)

24 The Welsh Government has not published data for 2013-14 due to data quality issues.

2.12 Bed occupancy rates are significantly higher in Wales than the north east of England.

Figure 29 – Bed occupancy in Wales and North East England<sup>25</sup>



Note  
Difference between Figures 28 and 29 is that, to enable comparison to England, we have only included 'general and acute' beds.  
Source: *Wales Audit Office analysis of Welsh Government and UK Government data*

2.13 It is also worth considering the issue of bed occupancy in an international context. Occupancy rates in the UK, which are broadly mirrored by those in Wales, are amongst the highest in the developed world.

<sup>25</sup> The Welsh Government has not published data for 2013-14 due to data quality issues. Figures for England based on [www.england.nhs.uk/statistics](http://www.england.nhs.uk/statistics) bed availability and occupancy data.

Figure 30 – Occupancy rate of acute care beds in OECD countries 2000 and 2011 (or nearest year)

	2000 (or nearest year)	2011 (or nearest year)
Israel	93.0	98.0
Norway	85.2	93.1
Ireland	84.5	91.9
Canada	91.2	90.0
Switzerland	84.8	89.1
Austria	82.6	85.5
United Kingdom	82.3	84.3
Germany	81.1	79.0
Italy	75.5	78.7
Chile	71.0	78.6
Belgium	78.8	78.2
Japan	81.8	76.1
Spain	77.1	75.4
France	75.0	75.0
Portugal	75.2	74.3
Greece	70.2	73.4
Czech Republic	73.9	72.8
Luxembourg	No info	71.5
Hungary	73.2	71.1
Estonia	66.1	71.0
Slovenia	70.6	68.9
Slovak Republic	70.6	65.5
Turkey	59.3	64.9

Figure 30 – Occupancy rate of acute care beds in OECD countries 2000 and 2011 (or nearest year) (continued)

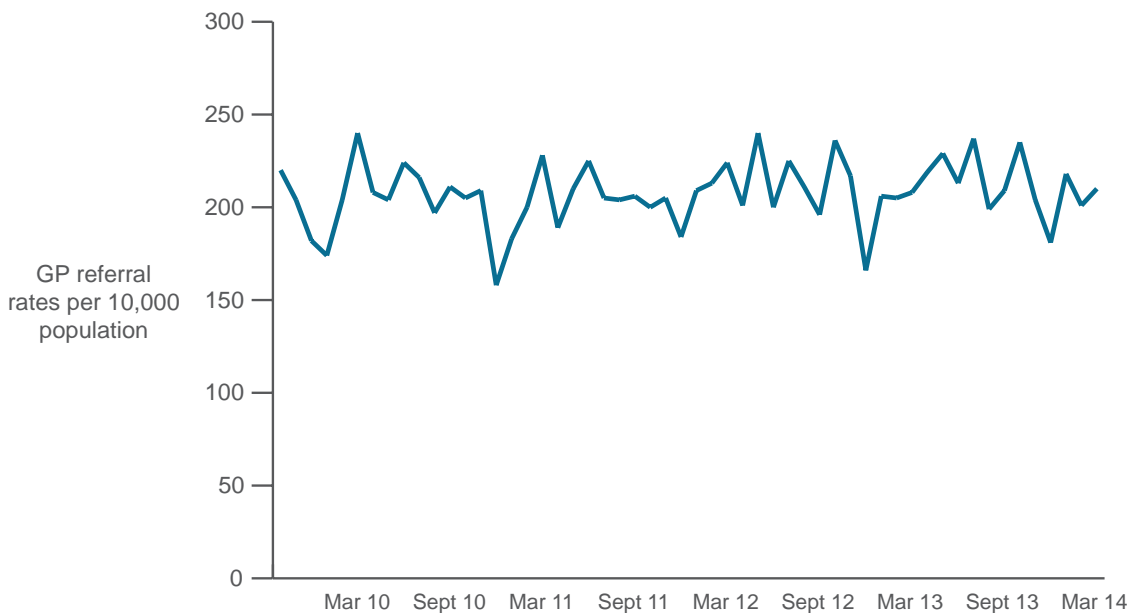
	2000 (or nearest year)	2011 (or nearest year)
United States	63.9	64.4
Netherlands	No info	48.6

Source: OECD

## Demand and activity

2.14 Demand for elective care, as measured by GP referrals<sup>26</sup>, is rising. Figure 31 shows that referral rates per 10,000 population have increased from October 2009. Referral rates for trauma and orthopaedics and general surgery showed the biggest increase whilst rates for ophthalmology, urology and oral surgery have fallen since 2012.

Figure 31 – GP referral rates per 10,000 population<sup>27</sup>



Source: Wales Audit Office analysis of Welsh Government data

<sup>26</sup> Patients can be referred for treatment from other sources such as optometrists which are not included in these figures. The source of referral may vary between health boards which could account for some of the variation across Wales along with differences in the demographic profile of each health board area.

<sup>27</sup> Information is based on the health board area patients live in.

2.15 There is considerable variation in GP referral rates across Wales. Our analysis of referrals in 2013-14<sup>28</sup> found that variation in referral rates for patients living in different health board areas was greatest for trauma and orthopaedics and gynaecology patients where referral rates in one health board area were almost double the rates in another. The table below describes the range of referral rates per 10,000 population by specialty across the seven health boards in Wales.

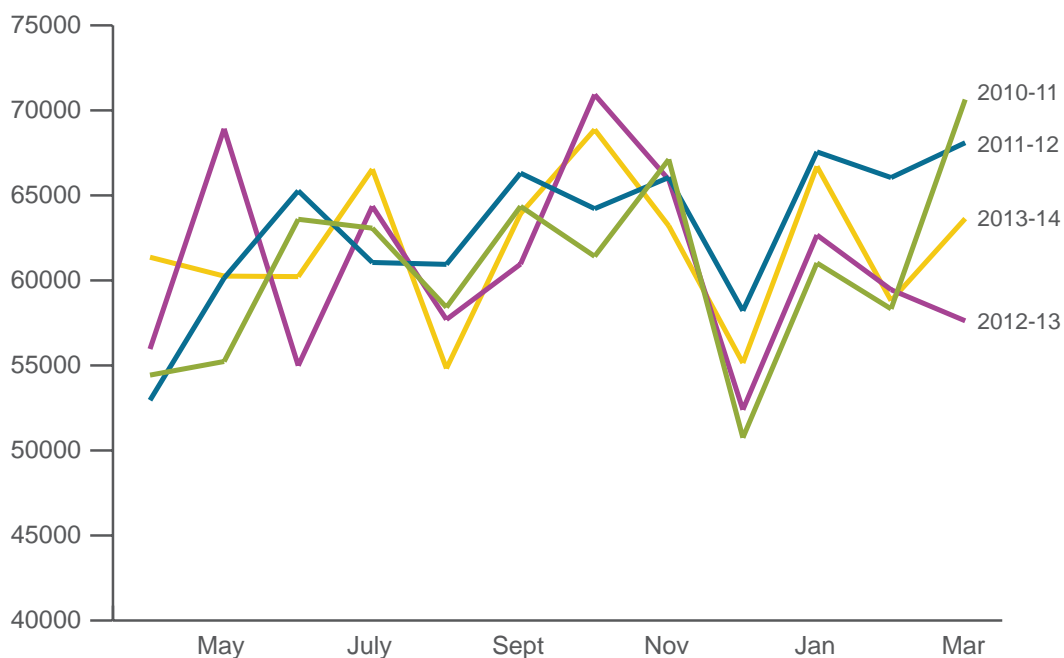
Figure 32 – Variation in referral rates across Wales by specialty

Specialty	Range of referral rates per 10,000 population	Wales average
Cardiology	3.9 in Powys to 12.3 in Hywel Dda	9.6
Dermatology	9.7 in Powys to 20.7 in Hywel Dda	18.9
ENT	11.4 in Powys to 22.7 in Hywel Dda	19.6
Gastroenterology	0.9 in Hywel Dda to 11.5 in Betsi Cadwaladr	8.6
General surgery	19.8 in Powys to 34.7 in Hywel Dda	27.6
Gynaecology	10.0 in Powys to 28.4 in Cardiff and Vale	18.6
Ophthalmology	7.5 in Cardiff and Vale to 17.1 in Betsi Cadwaladr	12.9
Oral surgery	2.2 in Hywel Dda to 12.8 in Cwm Taf	7.3
Paediatrics	4.6 in Abertawe Bro Morgannwg to 10.0 in Aneurin Bevan	7.7
Trauma and orthopaedics	19.3 in Cardiff and Vale to 39.1 in Aneurin Bevan	26.3
Urology	7.9 in Cardiff and Vale to 11.6 in Aneurin Bevan	10.0

28 Source: [www.statswales.gov.uk](http://www.statswales.gov.uk). Information is based on the health board area patients live in.

2.16 The amount of elective activity carried out is an indicator of both demand and capacity. Over recent years, the trend of a growth in elective activity has slowed down or been reversed. The number of first outpatient appointments has fallen, with numbers in 2012-13 and 2013-14 below 2011-12 levels. Figure 33 shows a marked reduction in activity in the final quarter of 2012-13 and 2013-14 compared to previous years. The number of elective procedures has also fallen as well. In particular, the historical pattern of large volumes of elective activity in the final quarter of the financial year has been reduced (Figure 34). Our recent reports covering NHS finances<sup>29</sup> link this reduction in activity to financial pressures.

Figure 33 – Number of first outpatient appointments



Source: Wales Audit Office analysis of Welsh Government data

<sup>29</sup> Wales Audit Office, *Health Finances 2012-13 and Beyond, 2013*; Wales Audit Office, *NHS Wales: an overview of financial and service performance 2013-14, 2014*



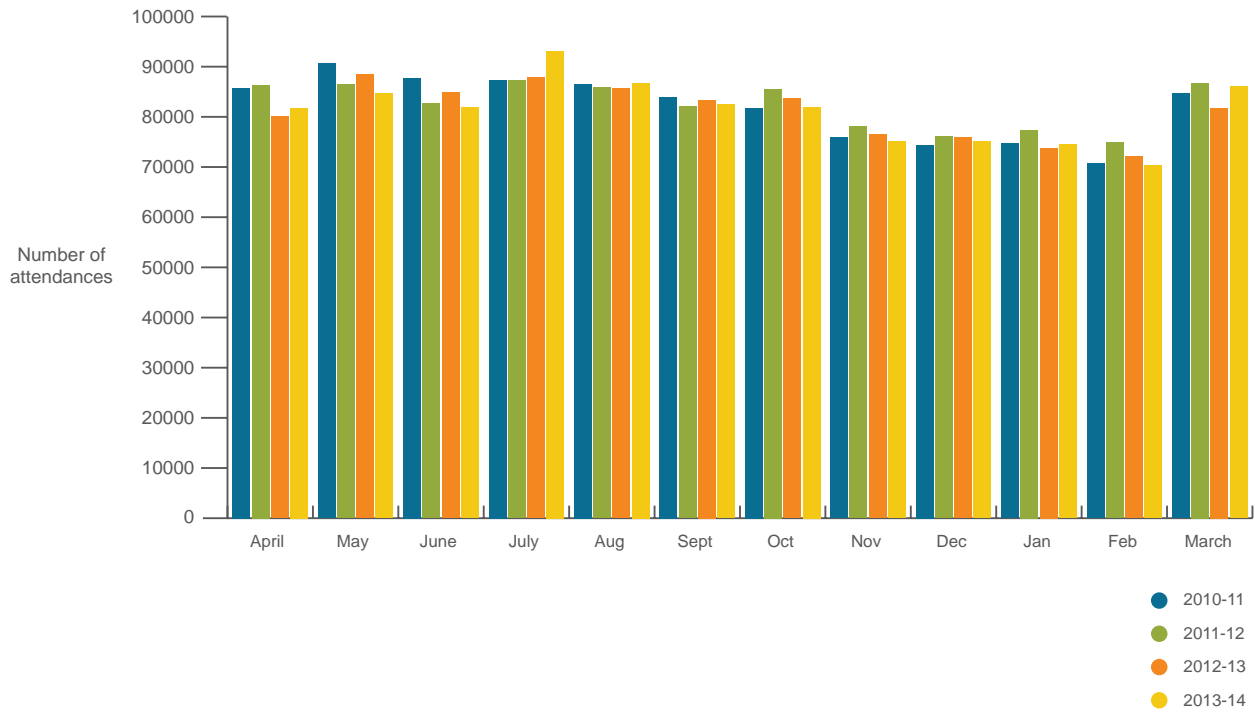
Figure 34 – Number of elective procedures carried out



Source: Wales Audit Office analysis of Welsh Government data

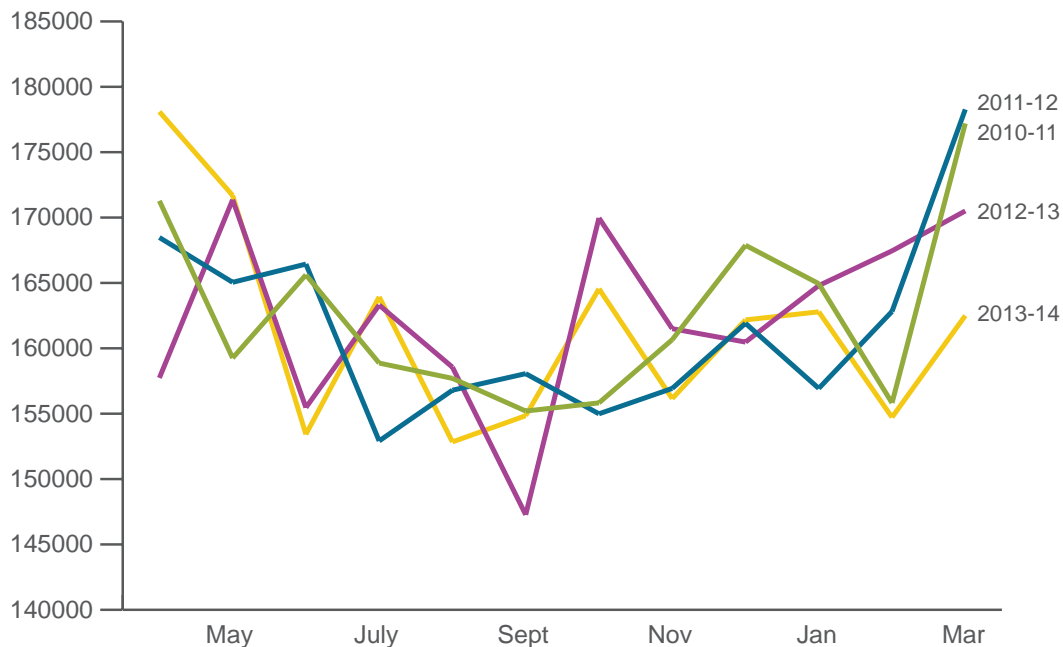
2.17 There seems to be some correlation between pressures on unscheduled care and the reduction in elective activity. For example, the spike in emergency attendances (Figure 35) in July 2013, matches a significant reduction in elective activity (Figure 34). But it can only be part of the story over the medium to long term. Figure 36 shows that the number of bed days taken up by emergency admissions have been fairly static year on year.

Figure 35 – Emergency attendances



Source: Wales Audit Office analysis of Welsh Government data

Figure 36 – Emergency days<sup>30</sup>



Source: Wales Audit Office analysis of Welsh Government data

## Making better use of existing capacity

### Variation in rates of surgical intervention

2.18 Our main report points out that there is scope to improve capacity by understanding variation in rates of surgical intervention across Wales. When looking at demand, we carried out an analysis known as ‘runners, repeaters, strangers’. Runners, repeaters, strangers is a tool for understanding demand in a way that enables organisations to better plan and design services around predictable demand. ‘Runners’ are common procedures that account for the bulk of activity. ‘Repeaters’ are infrequent but not uncommon procedures. ‘Strangers’ are procedures that are rarely carried out and may therefore require highly specialised or bespoke skills and preparation.

2.19 We used data from the Patient Episode Database for Wales to understand which procedures account for the bulk of waiting list activity in Wales. For this analysis, we included only procedures where more than 33 per cent of patients are admitted from a waiting list so it excludes primarily emergency procedures, rehabilitation and maternity. In total, there were 3,584 different types of procedure carried out in 2012-13 where more than 33 per cent were from the waiting list:

<sup>30</sup> The data only includes emergency admissions covered by the length of stay target.

- a just 35 procedures (one per cent) accounted for half of the episodes – within which the first seven procedures accounted for 25 per cent of episodes;
- b a further 118 procedures accounted for the next 25 per cent of episodes; and
- c 3,431 procedures accounted for the final 25 per cent of episodes.

Figure 37 – The most common elective procedures<sup>31</sup>

Principal procedure	Finished consultant episodes	% of all episodes
Total	329,836	
G451 and G459 Fiberoptic Endoscopic Examination	28,686	9%
C751 – Prosthesis of Lens	16,238	5%
M459 – Diagnostic Endoscopic Examination of Bladder	15,847	5%
H221 and H229 Diagnostic Endoscopic Examination of Colon	14,421	4%
H259 – Diagnostic Endoscopic Examination of the Lower Bowel	10,117	3%

2.20 Analysis by bed days reveals a similar pattern, though with a different distribution curve:

- a just 13 procedures account for 25 per cent of all bed days (see Figure 38);
- b the next 25 per cent of bed days is spread across 55 procedures;
- c the next 25 per cent are spread over 172 procedures; and
- d the final 25 per cent are covered by 3,344 procedures.

<sup>31</sup> Some of the seven procedures have been combined where these procedures are very similar.

Figure 38 – Procedures that account for 25 per cent of all bed days 2012-13<sup>32</sup>

Principal procedure	Bed days	As % of all bed days
Total	468,087	
G451 and G459 – Diagnostic Fiberoptic Endoscopic Examination	21,945	5%
W401 – Total Prosthetic Replacement of Knee Joint	21,078	5%
K453 – Connection of Thoracic Artery to Coronary Artery	12,046	3%
W381 – Total Prosthetic Replacement of Hip Joint Not Using Cement	11,719	3%
W371 – Total Prosthetic Replacement of Hip Joint Using Cement	8,052	2%
J183 – Excision of Gall Bladder, Total Cholecystectomy Nec	7,781	2%
Q074 – Total Abdominal Hysterectomy Nec	7,600	2%
U518 – Rehabilitation for Neurological Disorders	6,599	1%
W941 – Hybrid Prosthetic Replacement of the Hip Joint	5,016	1%
M421 – Endoscopic Extirpation of Lesion of Bladder	4,525	1%
M473 – Urethral Catheterisation of Bladder	4,206	1%
K262 – Plastic Repair of Aortic Valve	4,124	1%

2.21 We used data from the Patient Episode Database for Wales to see how often the procedures we identified in the runners, repeaters, strangers analysis were carried out across Wales during 2012-13 and the costs associated with delivering the procedures in our list<sup>33</sup> (Figure 39).

<sup>32</sup> Some of the seven procedures have been combined where these procedures are very similar.

<sup>33</sup> We used information on unit costs per elective finished consultant episode from the Welsh Costing Return 2012-13. Unit costs are available for health resource group rather than individual procedures so we matched health resource groups to each procedure. To account for variation in complexity we divided total activity per health resource group code at each health board by the total cost to give an average cost. Health board figures have been summed to give a figure for Wales. The total cost of delivering these procedures is likely to be underestimated due to the exclusion of patients who had one of the listed procedures that was not recorded as their 'primary' procedure. Where cost information was not available for specific procedures, this information has also been excluded.

Figure 39 – Number of procedures carried out across Wales

	Number of procedures 2012-13	Cost of activity 2012-13
G451 and G459 – Diagnostic Fibreoptic Endoscopic Examination	28,686	£12,020,12
C751 – Prosthesis of the Lens	16,238	£23,049,223
M459 – Diagnostic Endoscopic Examination of the Bladder	15,847	£6,586,651
H221 and H229 – Diagnostic Endoscopic Examination of the Colon	14,421	£7,462,645
H259 – Diagnostic Endoscopic Examination of the Lower Bowel	10,117	£4,321,166
J183 – Excision of Gall Bladder, Total Cholecystectomy Nec	3,899	£9,300,419
K262 – Plastic Repair of Aortic Valve	282	£1,922,292
K453 – Connection of Thoracic Artery to Coronary Artery	921	£7,139,932
M421 – Endoscopic Extirpation of Lesion of Bladder	1,447	£2,873,143
M473 – Urethral Catheterisation of Bladder	1,838	£773,507
Q074 – Total Abdominal Hysterectomy Nec	1,719	£6,563,366
U518 – Rehabilitation for Neurological Disorders	249	No info
W371 – Total Prosthetic Replacement of Hip Joint Using Cement	1,211	£8,907,529
W381 – Total Prosthetic Replacement of Hip Joint Not Using Cement	2,154	£16,284,952
W401 – Total Prosthetic Replacement of Knee Joint	3,854	£26,770,281
W941 – Hybrid Prosthetic Replacement of the Hip Joint	751	£5,353,801
<b>Total</b>	<b>103,634</b>	<b>£139,329,028</b>

Source: Wales Audit Office analysis of NHS benchmarking cost data

2.22 We analysed the rates of surgical intervention per 100,000 by age group at each health board. Comparing age rates in this way accounts for differences in the age profile of each health board population but does not account for other socio-economic and demographic factors which could result in different levels of demand. However, the variation could also be as a result of different clinical practices in both primary and secondary care which is worth investigation to understand whether patients in some areas are more likely to receive treatment than others without good clinical reason. Our analysis found considerable variation in activity across Wales. We used this information to calculate the average rate per 100,000 by age group and then to calculate the reduction in activity if all health boards reduced activity to meet the average rate and the cost savings associated with reducing activity (Figure 40).

Figure 40 – Reduction in activity and cost savings across Wales if health boards matched activity to the average rate per 100,000 per age group

	Reduction in activity across Wales	Estimated cost savings
G451 and G459 – Diagnostic Fiberoptic Endoscopic Examination	1,408	£487,610
C751 – Prosthesis of the Lens	1,947	£3,273,682
M459 – Diagnostic Endoscopic Examination of the Bladder	1,839	£813,499
H221 and H229 – Diagnostic Endoscopic Examination of the Colon	1,301	£751,344
H259 – Diagnostic Endoscopic Examination of the Lower Bowel	1,473	£584,253
J183 – Excision of Gall Bladder, Total Cholecystectomy Nec	254	£610,967
K262 – Plastic Repair of Aortic Valve	31	£168,613
K453 – Connection of Thoracic Artery to Coronary Artery	77	£580,689
M421 – Endoscopic Extirpation of Lesion of Bladder	76	£150,070
M473 – Urethral Catheterisation of Bladder	481	£194,071
Q074 – Total Abdominal Hysterectomy Nec	154	£618,484
U518 – Rehabilitation for Neurological Disorders	52	No info
W371 – Total Prosthetic Replacement of Hip Joint Using Cement	358	£2,636,160

Figure 40 – Reduction in activity and cost savings across Wales if health boards matched activity to the average rate per 100,000 per age group (continued)

	Reduction in activity across Wales	Estimated cost savings
W381 – Total Prosthetic Replacement of Hip Joint Not Using Cement	168	£1,292,467
W401 – Total Prosthetic Replacement of Knee Joint	358	£2,382,154
W941 – Hybrid Prosthetic Replacement of the Hip Joint	237	£1,643,128
Total	10,216	£16,187,192

### Procedures with limited clinical effectiveness for some patients

2.23 Our main report explains that there are considerable savings to be found in addressing the level of limited clinical effectiveness procedures conducted at each health board. Public Health Wales published a report in April 2010 which examined variation in elective surgical procedures across Wales<sup>34</sup>. The study looked in particular at procedures described as having ‘low clinical effectiveness’ which should only be conducted when patients meet certain clinical criteria. The list of procedures used in the study was developed by Public Health Wales and Betsi Cadwaladr University Health Board based on existing evidence from the National Institute of Clinical Effectiveness (NICE) and UK-wide policies. The procedures used in the report are tonsillectomy, grommets, varicose veins, haemorrhoidectomy, apicetomy, dilatation and curettage, hysterectomy, removal of wisdom teeth, removal of gallstones, elective caesarean, removal of skin lesions, orthodontic treatments, removal of ganglia and lumbar spine procedures. The report showed considerable variation in the reported rates of a number of common surgical procedures being undertaken across Wales and suggested that ‘given the evidence that these are low effectiveness unless undertaken within strict clinical criteria, and the lack of robust systems for recording and monitoring the adherence to the criteria, this could suggest overuse of procedures in patients who may derive little benefit’<sup>35</sup>. Public Health Wales updated its analysis of variation in elective surgical procedures across Wales in June 2014<sup>36</sup> which showed that there is still considerable variation across local authority areas in Wales. Whilst rates significantly higher than the all-Wales average should not be considered automatically bad, nor lower rates good, understanding the reasons behind the variation is a useful process to help minimise waste or harm to patients. The Welsh Government<sup>37</sup> is developing revised national guidelines for procedures of limited clinical effectiveness as part of the prudent healthcare agenda.

<sup>34</sup> Public Health Wales Observatory, *Variation in elective surgical procedures across Wales*, 2010

<sup>35</sup> Public Health Wales used data on admitted patients from the Patient Episode Database for Wales for its analysis. The analysis excludes procedures carried out in other settings such as outpatients or primary care. For most of the procedures analysed, it is not possible to judge whether the procedure carried out was clinically appropriate. The Public Health Wales data illustrates variation in rates across Wales but cannot give a picture of the number of procedures of low clinical effectiveness carried out unnecessarily.

<sup>36</sup> There is an interactive tool of the Public Health Wales Observatory: [www.wales.nhs.uk/sitesplus/922/page/73640](http://www.wales.nhs.uk/sitesplus/922/page/73640).

<sup>37</sup> Welsh Government, *Delivering Prudent Healthcare in Wales*, 2014: [www.wales.gov.uk/about/cabinet/cabinetstatements/2014/prudenthealthcare/?lang=en](http://www.wales.gov.uk/about/cabinet/cabinetstatements/2014/prudenthealthcare/?lang=en)



2.24 We used the Public Health Wales list to calculate the costs of delivering each procedure across Wales. For 2012-13, 33,704 procedures that may have limited clinical effectiveness were conducted costing £51 million and using 44,358 bed days<sup>38</sup>. Further work would be required to calculate the number of procedures carried out which did not adhere to clinical criteria and the associated costs. However, given the considerable costs involved, there are potential savings to be found in understanding the level of procedures conducted at each health board without clear clinical need in order to stop unnecessary activity and reduce costs.

Figure 41 – Total costs of delivering procedures which may be of low clinical effectiveness to some patients across Wales 2012-13<sup>39</sup>

Procedure <sup>40</sup>	Number of finished consultant episodes <sup>41</sup>	Total cost <sup>42</sup>	Bed days
Tonsillectomy	2,648	£4,433,662.20	2,738
Grommets	1,382	£1,564,750.90	220
Varicose veins	1,274	£1,653,703.79	244
Haemorrhoidectomy	1,057	£1,035,530.76	391
Apicetomy	59	£45,789.31	0
Dilatation and curettage	256	£248,320.17	121
Hysterectomy	2,245	£8,641,691.68	9,304
Removal of wisdom teeth	1,988	£2,264,750.53	133
Removal of gallstones	4,193	£10,680,575.09	9,702
Removal of skin lesions	8,931	£6,623,110.63	3,540
Orthodontic treatments	237	£209,009.48	4
Removal of ganglia	521	£608,399.80	80
Lumbar spine procedures	1,725	£8,300,157.55	6,918
Blepharoplasty	224	£1,191,631.14	35
Circumcision	1,359	No info	302

38 The total cost of delivering these procedures is likely to be underestimated due to the exclusion of patients who had one of the listed procedures that was not recorded as their 'primary' procedure. Where cost information was not available for specific procedures, this information has also been excluded.

39 There may be other procedures which are of limited clinical effectiveness to some patients which have not been captured in this analysis.

40 Analysis is based on patient's principle procedure and does not include other procedures that may have been carried out at the same time. The figures are therefore likely to underestimate the total number of procedures of low clinical effectiveness carried out in 2012-13.

41 Total number of finished consultant episodes taken from Patient Episode Database for Wales.

42 Costs have been calculated based on Health Resource Groups 2012-13 – average cost per unit, all Wales.

Figure 41 – Total costs of delivering procedures which may be of low clinical effectiveness to some patients across Wales 2012-13 (continued)

Procedure	Number of finished consultant episodes	Total cost	Bed days
Rhinoplasty	237	£1,224,278.57	184
Pinnaplasty	0	0	0
Hallux valgus	1,685	£2,416,182.71	1,598
Total	33,704	£51,141,544.31	44,358

### Understanding patients who account for the bulk of bed days

- 2.25 Our main report suggests the health boards could reduce lengths of stay and tailor support by using the ‘Pareto’ principle to analyse information about the patients using the highest numbers of bed days. The Pareto principle states that roughly 80 per cent of the effects come from 20 per cent of the causes in many situations. This kind of analysis can be a useful way of identifying the key causes of a problem so that resources can be focused in the areas with the most potential for improvement. Some health boards do some analysis to identify emergency patients with multiple attendances but we have not seen this kind of Pareto analysis based on use of bed days nor specifically targeted at elective care.
- 2.26 We used the Pareto principle to analyse patient admissions data from 1 April 2010 to 31 March 2014<sup>43</sup>. 1,009,569 patients<sup>44</sup> were admitted to a hospital in Wales during the four years we analysed. During this period:
- a 2,781,071 bed days were used by elective patients<sup>45</sup>; and
  - b 5,456,210 bed days were used by emergency patients.
- 2.27 Our analysis showed that 82 per cent of elective bed days in Wales were used by 20 per cent of patients during the four-year period. Just five per cent of elective patients used 51 per cent of bed days. This means that 12,432 patients accounted for half of all elective bed days from April 2010 to March 2014. These patients were distributed across a range of specialties and stayed in hospital for more than two months.

<sup>43</sup> Source: NWIS. The data covers patients whose episode ended within this period. This means that there may have been patients using hospital beds during the four years who do not appear in this data because their episode ended after 31 March 2014. We excluded day cases from our analysis.

<sup>44</sup> This figure includes day-case patients.

<sup>45</sup> We attributed one bed day to all admitted elective patients with an official length of stay of zero. This does not include day-case patients.

- 2.28 There is a similar pattern in terms of the capacity used by emergency patients with 81 per cent of bed days being used by 20 per cent of emergency patients. Six per cent of emergency patients used half of the bed days from April 2010 to March 2014. Once again, these patients were being treated in a range of specialties, stayed in hospital for more than six weeks each and accounted for 2,709,423 emergency bed days.
- 2.29 We analysed patient admissions data to look at the patients who stayed in hospital for more than three months. 6,920 elective and 9,807 emergency patients stayed in hospital for more than three months from April 2010 to March 2014. The majority of this group of patients stayed in hospital for three to six months (Figure 42). Patients who stayed in hospital for more than three months were most likely to have had treatment in six specialty areas: nursing, rehabilitation, geriatric medicine, general medicine, trauma and orthopaedics or general surgery (Figure 43). Health boards have more detailed data on patient admissions which means that they could pinpoint the individual patients accounting for long stays in hospital and develop solutions to reduce the length of time these patients stay in hospital.

Figure 42 – Number of patients in hospital for more than three months

	Elective patients	Emergency patients
3-6 months	5,371	8,416
6-9 months	1,024	1,070
9-12 months	333	236
1-2 years	141	75
2-3 years	27	7
3 or more years	24	3

Figure 43 – Specialties with the highest numbers of patients staying in hospital for more than three months

Specialty	Elective admissions where patients stayed longer than three months	Emergency admissions where patients stayed longer than three months
General surgery	96	305
Trauma and orthopaedics	114	190
General medicine	717	1,947
Geriatric medicine	1,699	741
Rehabilitation	2,029	229
Nursing	5,176	-



Wales Audit Office

24 Cathedral Road

Cardiff CF11 9LJ

Tel: 029 2032 0500

Fax: 029 2032 0600

Textphone: 029 2032 0660

E-mail: [info@wao.gov.uk](mailto:info@wao.gov.uk)

Website: [www.wao.gov.uk](http://www.wao.gov.uk)

Swyddfa Archwilio Cymru

24 Heol y Gadeirlan

Caerdydd CF11 9LJ

Ffôn: 029 2032 0500

Ffacs: 029 2032 0600

Ffôn Testun: 029 2032 0660

E-bost: [info@wao.gov.uk](mailto:info@wao.gov.uk)

Gwefan: [www.wao.gov.uk](http://www.wao.gov.uk)