



AWTTC

All Wales Therapeutics & Toxicology Centre
Canolfan Therapiwteg a Thocsicoleg Cymru Gyfan

National Prescribing Indicators 2018–2019

Analysis of Prescribing Data to September 2018





All Wales Therapeutics and Toxicology Centre

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Thocsicoleg Cymru Gyfan

This report has been prepared by the Welsh Analytical Prescribing Support Unit (WAPSU), part of the All Wales Therapeutics and Toxicology Centre (AWTTC).

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EXECUTIVE SUMMARY

The All Wales Medicines Strategy Group (AWMSG) has endorsed the National Prescribing Indicators (NPIs) as a means of promoting safe and cost-effective prescribing since 2003. NPIs for 2018–2019 include indicators for primary and secondary care, and have been categorised as safety, stewardship or efficiency indicators.

Background information supporting the choice of NPIs is detailed in the document [National Prescribing Indicators 2018–2019](#).

This report contains data relating to the NPIs for the second quarter of 2018–2019. Unit of measure and targets for each NPI are included in Appendix 1 and primary care NPI prescribing data for GP clusters is presented in Appendix 2.

SAFETY INDICATORS

For 2018–2019 there are four safety NPIs:

- The Prescribing Safety Indicators in primary care are new for 2018–2019; no targets have been set for these indicators.
- Prescribing of hypnotics and anxiolytics (ADQs per 1,000 STAR-PUs) in primary care reduced by 8.08% across Wales, compared with the equivalent quarter of the previous year.
- Analgesics in primary care:
 - Tramadol (DDD per 1,000 patients) reduced by 9.84% across Wales, compared with the equivalent quarter of the previous year.
 - Opioid patches (as a percentage of all opioid prescribing) reduced by 3.13% across Wales, compared with the equivalent quarter of the previous year.
 - Gabapentin and pregabalin (DDD per 1,000 patients) demonstrated an increase of 5.19% across Wales, compared with the equivalent quarter of the previous year, despite the aim of the indicator being to reduce prescribing.
- Yellow Card reporting. Annual targets have been set for these indicators, with the aim of increasing the number of Yellow Card reports submitted. Quarter two data demonstrates:
 - A 2% increase in reporting by GP practices across Wales, compared with the equivalent quarter of the previous year.
 - A 14% reduction in secondary care reporting across Wales, compared with the equivalent quarter of the previous year.
 - A 2% reduction in reporting by health boards across Wales, compared with the equivalent quarter of the previous year.
 - A 5% reduction in reporting by members of the public across Wales, compared with the equivalent quarter of the previous year.
 - The figures for Yellow Cards submitted by community pharmacy are also included in the report; however, targets have not been set.

STEWARDSHIP INDICATORS

Stewardship indicators for 2018–2019 focus on antimicrobial prescribing in primary and secondary care, with the aim of reducing inappropriate prescribing and variation in primary care, and encouraging appropriate antimicrobial prophylaxis for colorectal surgical patients in secondary care. Specific targets have been set for these indicators, either at health board or GP practice level:

- Total antibacterial items per 1,000 STAR-PUs in primary care: Six out of the seven health boards achieved the target of a 5% reduction against the baseline of quarter 2 2016–2017.
- 4C (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin) antimicrobial prescribing in primary care includes two measures which should be considered together:
 - The number of 4C items per 1,000 patients decreased across Wales by 13.0%, compared with the baseline of quarter 2 2016–2017.
 - The number of 4C items as a percentage of total antibacterial items reduced across Wales by 4.08%, compared with the baseline of quarter 2 2016–2017.
- The proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis in secondary care: three health boards achieved the target of an absolute measure of $\geq 90\%$, or a proportional increase of 20%, compared with the equivalent quarter of 2017–2018.

EFFICIENCY INDICATORS

There are three efficiency indicators for 2018–2019, covering primary and secondary care:

- Proton pump inhibitor (PPI) prescribing (DDDs per 1,000 PUs) in primary care, which aims to encourage appropriate use of PPIs, demonstrated a 4.32% reduction across Wales compared with the equivalent quarter of 2017–2018.
- Prescribing of long-acting insulin analogues decreased in both secondary and primary care compared with the equivalent quarter of the previous year, in line with the aim of the NPI.
- There was an increase in the overall use of each of the three biosimilar medicines being monitored (infliximab, etanercept and rituximab) compared with the equivalent quarter of the previous year, in line with the aim of the NPI.

The 2018–2019 NPI report for quarter ending December 2018 will be available on 29th April 2019.



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HEALTH BOARDS/PRACTICES ACHIEVING INDICATOR TARGETS/THRESHOLDS

The table below shows the extent to which practices in each health board met the target or indicator thresholds:

- The figure in the cell is the number of practices in each health board meeting the target or indicator threshold.
- The percentage figure and cell colour represent the proportion of practices in each health board meeting the target or indicator threshold.

The targets for antibacterial items per 1,000 STAR-PU's and prophylactic antibiotics in colorectal surgery are by health board, therefore a tick demonstrates achievement.

Health boards/practices achieving the indicator targets/thresholds – Quarter ending September 2018

Indicator Description	Abertawe Bro Morgannwg UHB	Aneurin Bevan UHB	Betsi Cadwaladr UHB	Cardiff and Vale UHB	Cwm Taf UHB	Hywel Dda UHB	Powys Teaching HB
Hypnotic and anxiolytic ADQs per 1,000 STAR-PU's	16 23%	22 28%	25 23%	36 57%	7 18%	6 12%	8 47%
Tramadol DDDs per 1,000 patients	11 16%	25 32%	28 26%	33 52%	4 10%	18 35%	10 59%
Opioid patch items as a percentage of all opioid prescribing	46 67%	17 22%	30 28%	23 37%	3 8%	3 6%	1 6%
Gabapentin and pregabalin DDDs per 1,000 patients	8 12%	8 10%	21 20%	36 57%	1 3%	14 27%	5 29%
Antibacterial items per 1,000 STAR-PU's	✓	✓	✓	✓	✗	✓	✓
4C antibacterial items per 1,000 patients	30 43%	55 70%	52 49%	38 60%	19 48%	28 55%	8 47%
4C antibacterial items as a percentage of all antimicrobials	29 42%	61 77%	36 34%	41 65%	13 33%	20 39%	5 29%
Proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis	✓	✗	✗	✓	✓	✗	—
Proton pump inhibitor DDDs per 1,000 PUs	14 20%	20 25%	36 34%	34 54%	8 20%	19 37%	3 18%

Percentage of practices meeting threshold



SAFETY INDICATORS

1.0 PRESCRIBING SAFETY INDICATORS

Purpose: To identify patients at high risk of adverse drug reactions (ADRs) and medicines-related harm in primary care.

Units of measure:

1. Number of patients with a peptic ulcer who have been prescribed NSAIDs without a PPI, as a percentage of all patients.
2. Number of patients with asthma who have been prescribed a beta-blocker, as a percentage of all patients.
3. Number of patients with concurrent prescriptions of verapamil and a beta-blocker, as a percentage of all patients.
4. Number of female patients with a past medical history of venous or arterial thrombosis who have been prescribed combined hormonal contraceptives, as a percentage of all female patients.
5. Number of female patients with a current prescription of oestrogen-only hormone replacement therapy without any hysterectomy READ/SNOMED codes, as a percentage of all female patients.
6. Number of patients with concurrent prescriptions of warfarin and an oral NSAID, as a percentage of all patients.
7. Number of patients under 12 with a current prescription of aspirin, as a percentage of all patients.
8. Number of patients aged 65 years or over prescribed an NSAID plus aspirin and/or clopidogrel but without gastroprotection (PPI or H₂ receptor antagonist), as a percentage of all patients aged 65 years or over.
9. Number of patients aged 65 years or over prescribed an antipsychotic, as a percentage of all patients aged 65 years or over.
10. Number of patients aged 75 and over with an Anticholinergic Effect on Cognition (AEC) score of 3 or more for items on active repeat, as a percentage of all patients aged 75 and over.
11. Number of patients on the CKD register (CKD stage 3–5) who have received a repeat prescription for an NSAID within the last 3 months, as a percentage of all patients on the CKD register.
12. Number of patients who are not on the CKD register but have an eGFR of < 59 ml/min and have received a repeat prescription for an NSAID within the last 3 months, as a percentage of all patients who are not on the CKD register but have an eGFR of < 59 ml/min.

Aim: To review patients identified as being at high risk of ADRs and reduce inappropriate prescribing.

In the UK, it is estimated that around 6.5% of hospital admissions are related to adverse drug reactions (ADRs). ADRs can often be predictable, making it possible to identify potential causes and address them before actual patient harm occurs. This new NPI for 2018–2019 provides a process of identifying patients electronically, enabling intervention and helping to avoid patient harm.

No target has been set for this NPI; however, data can provide a baseline for future quarters.

Table 1. Prescribing Safety Indicators – First two quarters of 2018–2019

2.0 HYPNOTICS AND ANXIOLYTICS

Purpose: To encourage a reduction in the inappropriate prescribing of hypnotics and anxiolytics in primary care.

Unit of measure: Hypnotic and anxiolytic ADQs per 1,000 STAR-PUs.

Aim: To reduce prescribing

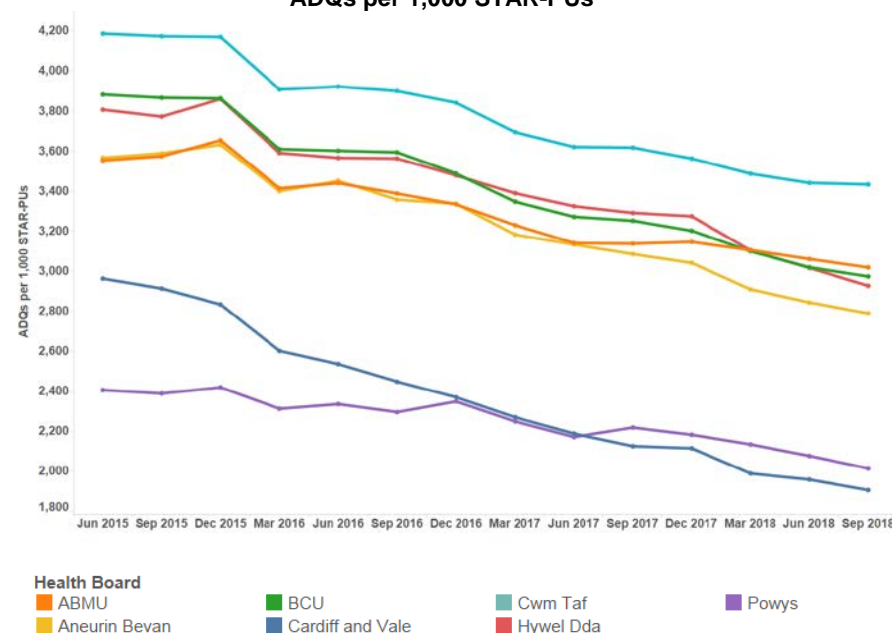
There has been ongoing concern with regard to the high level of hypnotic and anxiolytic prescribing in NHS Wales. Some prescribing may be inappropriate and contribute to the problem of physical and psychological dependence, and/or may be responsible for masking underlying depression.

- Across Wales, the prescribing of hypnotics and anxiolytics decreased by 8.08% for the quarter ending September 2018 compared with the equivalent quarter of the previous year, in line with the aim of this indicator.
- For the quarter ending September 2018, hypnotic and anxiolytic prescribing ranged from 1,905 to 3,434 ADQs per 1,000 STAR-PUs across the health boards.
- The health board with the lowest prescribing was Cardiff and Vale UHB, whilst the highest prescribing was seen in Cwm Taf UHB.
- Hypnotic and anxiolytic prescribing decreased compared with the equivalent quarter of the previous year in all of the health boards.
- The largest percentage decrease was seen in Hywel Dda UHB, and the smallest percentage decrease was seen in Abertawe Bro Morgannwg UHB.

Table 2. Hypnotic and anxiolytic ADQs per 1,000 STAR-PUs

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Hywel Dda	3,291	2,927	-11.1%
Cardiff and Vale	2,124	1,905	-10.3%
Aneurin Bevan	3,086	2,789	-9.62%
Powys	2,218	2,014	-9.21%
Betsi Cadwaladr	3,252	2,974	-8.56%
Cwm Taf	3,618	3,434	-5.09%
Abertawe Bro Morgannwg	3,138	3,019	-3.80%
Wales	3,034	2,789	-8.08%

Figure 1. Trend in hypnotic and anxiolytic prescribing ADQs per 1,000 STAR-PUs



3.0 ANALGESICS

There are three NPIs monitoring the usage of medicines used for the treatment of pain for 2018–2019:

1. Tramadol
2. Opioid patches
3. Gabapentin and pregabalin

3.1 Tramadol

Purpose: To encourage the appropriate use and review of tramadol in primary care, minimising the potential dependence, diversion, misuse and ADRs.

Unit of measure: Tramadol DDDs per 1,000 patients.

Aim: To reduce prescribing

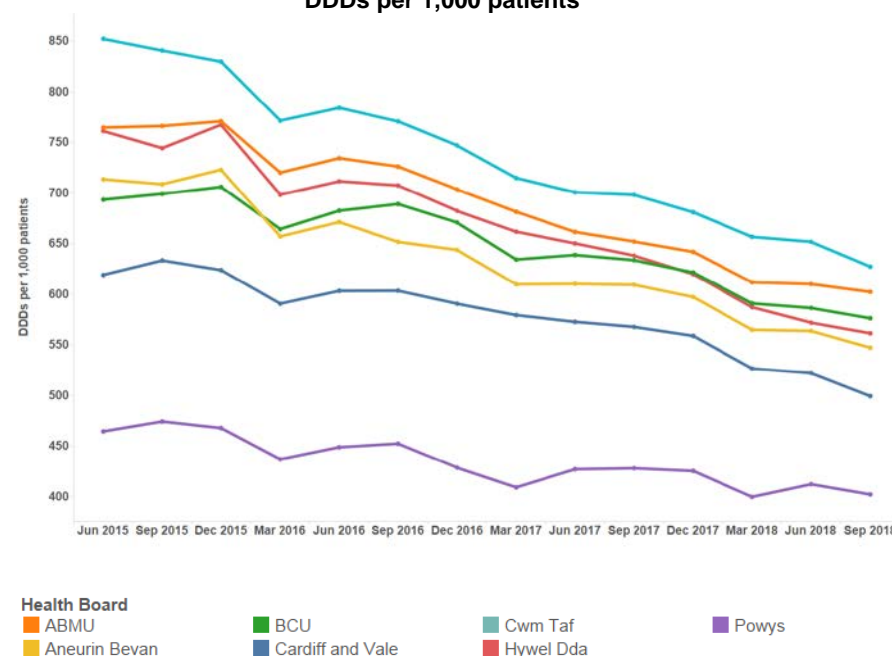
Whilst there is a recognised place in pain management for tramadol, there are concerns regarding the risks associated with dependence, diversion, misuse and ADRs. This NPI promotes a prudent approach to prescribing tramadol, taking into account the risks and benefits, and encouraging timely review.

- Across Wales, prescribing of tramadol was 9.84% lower in the quarter ending September 2018, than in the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending September 2018, tramadol prescribing ranged from 403 to 628 DDDs per 1,000 patients across the health boards.
- The health board with the lowest prescribing was Powys Teaching HB, whilst the highest prescribing was seen in Cwm Taf UHB.
- Tramadol prescribing decreased compared with the equivalent quarter of the previous year in all of the health boards.
- The largest percentage decreases were seen in Cardiff and Vale UHB and Hywel Dda UHB, and the smallest percentage decrease was seen in Powys Teaching HB.

Table 3. Tramadol DDDs per 1,000 patients

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Cardiff and Vale	568	500	-12.0%
Hywel Dda	638	562	-12.0%
Aneurin Bevan	610	547	-10.2%
Cwm Taf	698	628	-10.1%
Betsi Cadwaladr	634	577	-9.05%
Abertawe Bro Morgannwg	652	603	-7.62%
Powys	428	403	-6.01%
Wales	620	559	-9.84%

Figure 2. Trend in tramadol prescribing DDDs per 1,000 patients



3.2 Opioid patches

Purpose: To encourage the appropriate use and review of opioid patches in primary care, minimising the potential for diversion, misuse and ADRs.

Unit of measure: Opioid patch items as a percentage of all opioid prescribing.

Aim: To reduce prescribing

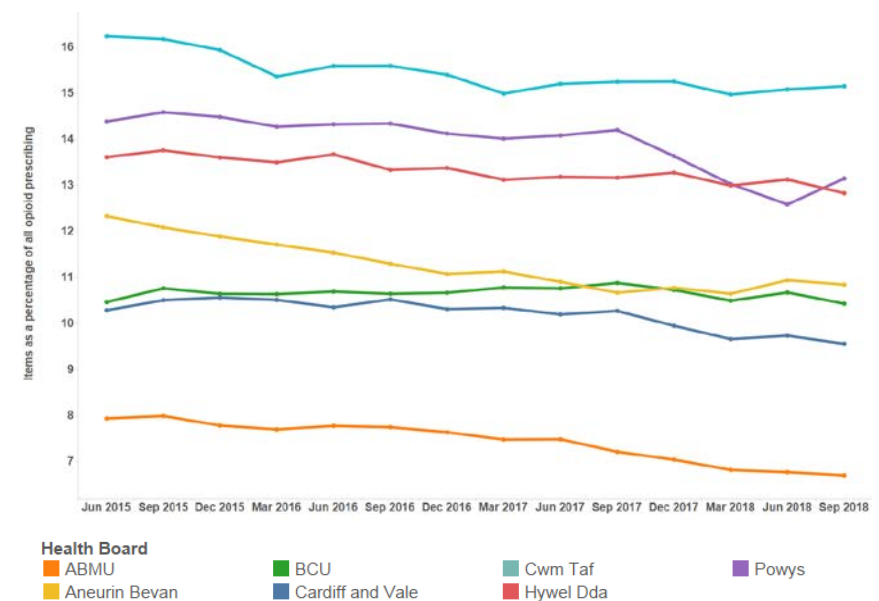
Opioid patches are recommended as a treatment option only where analgesic requirements are stable and where oral opioids are unsuitable. Prescribers should make evidence-based, informed decisions based on the individual needs of the patient. Prescribers should ensure that when an opioid patch is indicated, the patch with the lowest acquisition cost is initiated.

- Across Wales, use of opioid patches as a percentage of all opioid prescribing was 3.13% lower in the quarter ending September 2018 than in the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending September 2018, the proportion of opioid patch prescribing ranged from 6.70% to 15.2%.
- The health board with the lowest proportion was Abertawe Bro Morgannwg UHB, whilst the highest proportion was seen in Cwm Taf UHB.
- The proportion of opioid patches prescribed decreased compared with the equivalent quarter of the previous year in six out of the seven health boards.
- The largest percentage decrease was seen in Powys Teaching HB. Aneurin Bevan UHB demonstrated a small increase in prescribing.

Table 4. Opioid patch items as a percentage of all opioid prescribing

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Powys	14.2	13.2	-7.42%
Abertawe Bro Morgannwg	7.21	6.70	-7.07%
Cardiff and Vale	10.3	9.56	-6.96%
Betsi Cadwaladr	10.9	10.4	-4.13%
Hywel Dda	13.2	12.8	-2.54%
Cwm Taf	15.3	15.2	-0.62%
Aneurin Bevan	10.7	10.8	1.63%
Wales	11.1	10.7	-3.13%

Figure 3. Trend in opioid patch items as a percentage of all opioid prescribing



3.3 Gabapentin and pregabalin

Purpose: To encourage the appropriate use and review of gabapentin and pregabalin, minimising the potential for dependence, diversion, misuse and ADRs.

Unit of measure: Gabapentin and pregabalin DDDs per 1,000 patients.

Aim: To reduce prescribing

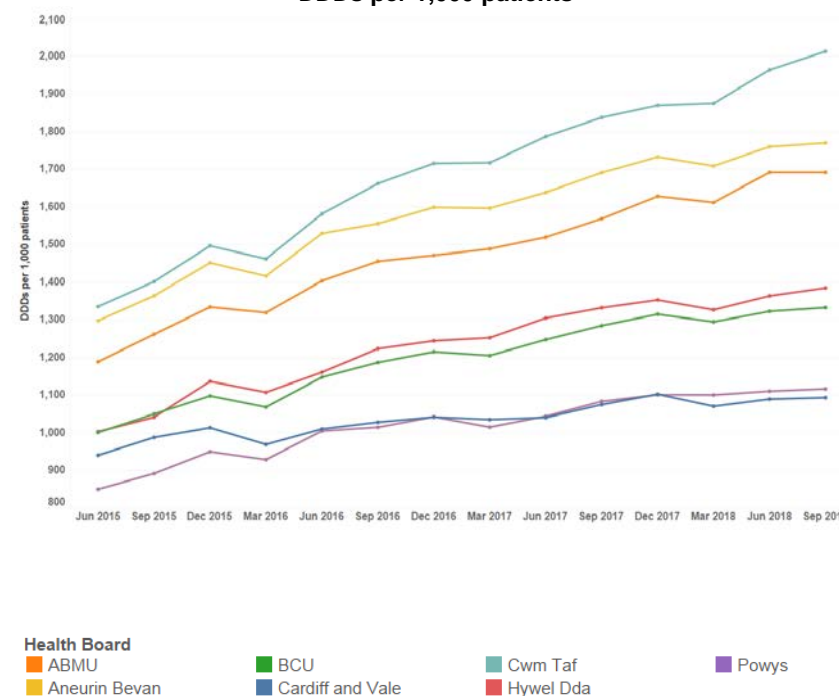
Gabapentin and pregabalin have a well-defined role in the management of a number of conditions including epilepsy and neuropathic pain, and pregabalin also has a role in treatment of generalised anxiety disorder. Both gabapentin and pregabalin have known psychiatric side effects and there is a potential risk of dependence, diversion, misuse and ADRs. Prescribers should make evidence-based, informed decisions on whether to prescribe, taking into account the risks and benefits of these medicines.

- Across Wales, for the quarter ending September 2018, prescribing of gabapentin and pregabalin increased by 5.19% compared with the same quarter of the previous year.
- For the quarter ending September 2018, gabapentin and pregabalin prescribing ranged from 1,094 to 2,013 DDDs per 1,000 patients across the health boards.
- The health board with the lowest prescribing was Cardiff and Vale UHB, whilst the highest prescribing was seen in Cwm Taf UHB.
- Gabapentin and pregabalin prescribing increased compared with the equivalent quarter of the previous year in all of the health boards.
- The smallest percentage increase was seen in Cardiff and Vale UHB and the largest percentage increase was seen in Cwm Taf UHB.

Table 5. Gabapentin and pregabalin DDDs per 1,000 patients

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Cardiff and Vale	1,075	1,094	1.70%
Powys	1,084	1,117	3.01%
Betsi Cadwaladr	1,285	1,333	3.71%
Hywel Dda	1,332	1,385	3.94%
Aneurin Bevan	1,691	1,770	4.65%
Abertawe Bro Morgannwg	1,569	1,692	7.85%
Cwm Taf	1,838	2,013	9.52%
Wales	1,427	1,501	5.19%

Figure 4. Trend in gabapentin and pregabalin prescribing DDDs per 1,000 patients



4.0 YELLOW CARD REPORTING

Purpose: To encourage an increase in the number of Yellow Cards submitted in Wales.

Unit of measure: Number of Yellow Cards submitted per GP practice, per hospital, per health board and by members of the public.
Number of Yellow Cards submitted by community pharmacies, by health board.

Aim: To increase reporting

The Yellow Card Scheme is vital in helping the Medicines and Healthcare products Regulatory Agency (MHRA) monitor the safety of medicines and vaccines that are on the market.

Yellow Card reporting supports the identification and collation of ADRs, which might not have been known about before.

A strong safety culture requires good reporting of adverse events and critical incidents from across all professions and healthcare settings, as well as from patients.

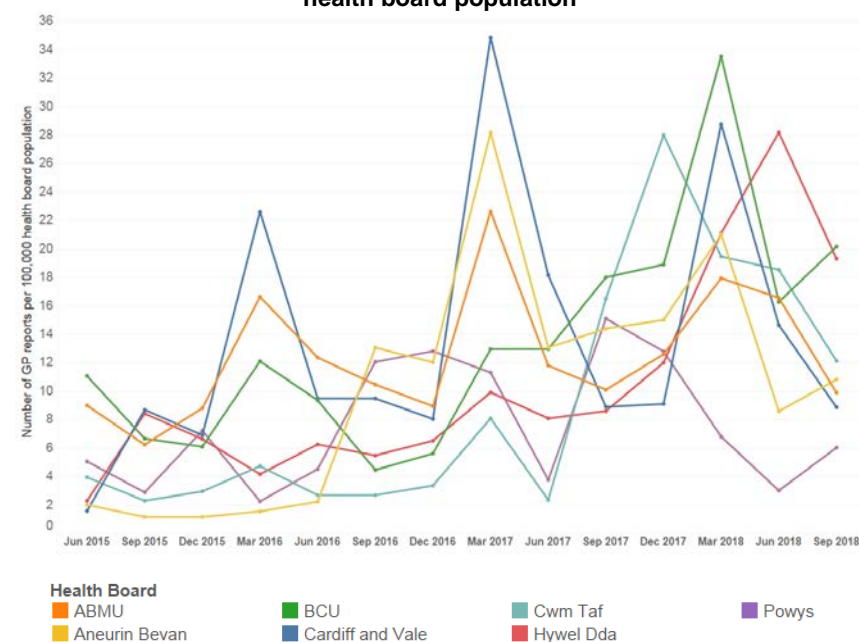
GP practices

- The number of Yellow Cards submitted by GP practices in Wales increased by 2% compared with the equivalent quarter of the previous year.
- The largest percentage increase in GP practice Yellow Card reporting was seen in Hywel Dda UHB. The largest percentage decrease was seen in Powys Teaching HB.

Table 6. Number of Yellow Cards submitted by GP practices

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Hywel Dda	33	74	124%
Betsi Cadwaladr	125	140	12%
Cardiff and Vale	43	43	0%
Abertawe Bro Morgannwg	53	52	-2%
Aneurin Bevan	84	63	-25%
Cwm Taf	49	36	-27%
Powys	20	8	-60%
Wales	407	416	2%

Figure 5. Number of Yellow Cards submitted by GP practices per 100,000 health board population



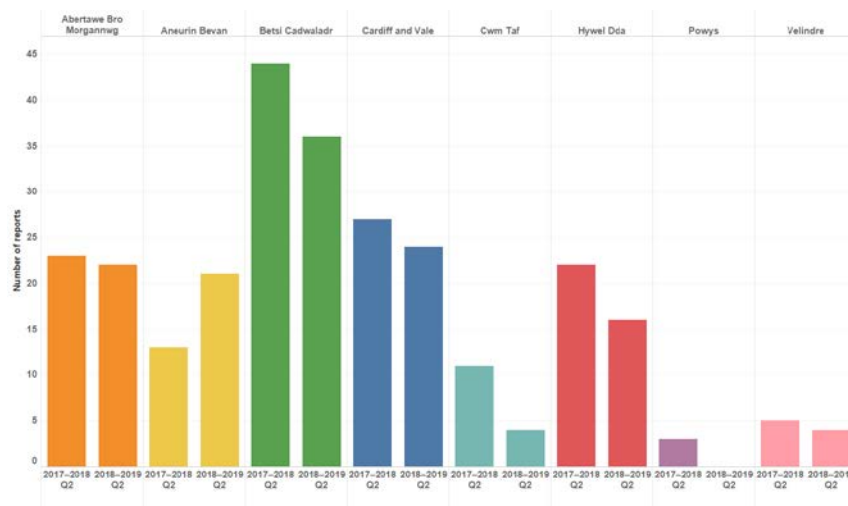
Secondary care

- The number of Yellow Cards submitted by secondary care decreased by 14% compared with the equivalent quarter of the previous year.
- The largest percentage increase in secondary care reporting was seen in Aneurin Bevan UHB. The largest percentage decrease was seen in Powys Teaching HB.

Table 7. Number of Yellow Cards submitted by secondary care

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Aneurin Bevan	13	21	62%
Abertawe Bro Morgannwg	23	22	-4%
Cardiff and Vale	27	24	-11%
Betsi Cadwaladr	44	36	-18%
Velindre	5	4	-20%
Hywel Dda	22	16	-27%
Cwm Taf	11	4	-64%
Powys	3	0	-100%
Wales	148	127	-14%

Figure 6. Number of Yellow Cards submitted by secondary care – Quarter ending September 2018 versus quarter ending September 2017



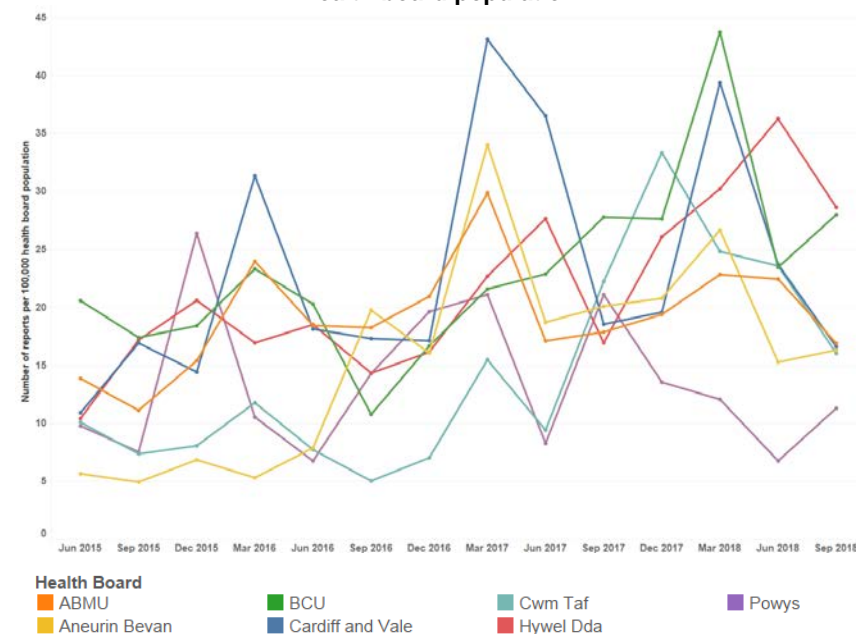
Health boards

- The number of Yellow Cards submitted by health boards decreased by 2% compared with the equivalent quarter of the previous year.
- The largest percentage increase in health board reporting was seen in Hywel Dda UHB. The largest percentage decrease was seen in Powys Teaching HB.

Table 8. Number of Yellow Cards submitted by health board/NHS Trust

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Hywel Dda	65	110	69%
Betsi Cadwaladr	193	195	1%
Abertawe Bro Morgannwg	94	90	-4%
Cardiff and Vale	85	82	-4%
Aneurin Bevan	117	96	-18%
Velindre	5	4	-20%
Cwm Taf	66	48	-27%
Powys	28	15	-46%
Wales	653	640	-2%

Figure 7. Number of Yellow Cards submitted by health boards per 100,000 health board population



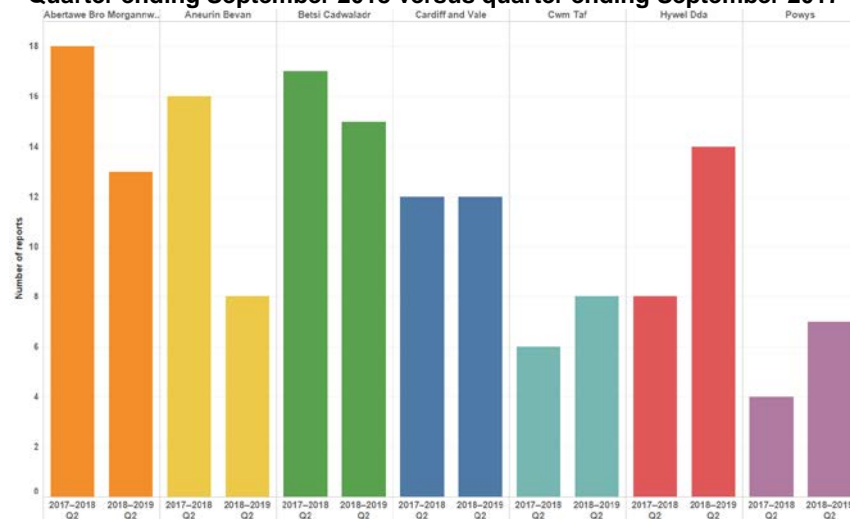
Members of the public

- The number of Yellow Cards submitted by members of the public decreased by 5% compared with the equivalent quarter of the previous year.
- The largest percentage increases in member of the public reporting were seen in Hywel Dda UHB and Powys Teaching HB. The largest percentage decrease was seen in Aneurin Bevan UHB.

Table 9. Number of Yellow Cards submitted by members of the public

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Hywel Dda	8	14	75%
Powys	4	7	75%
Cwm Taf	6	8	33%
Cardiff and Vale	12	12	0%
Betsi Cadwaladr	17	15	-12%
Abertawe Bro Morgannwg	18	13	-28%
Aneurin Bevan	16	8	-50%
Wales	81	77	-5%

Figure 8. Number of Yellow Cards submitted by members of the public – Quarter ending September 2018 versus quarter ending September 2017



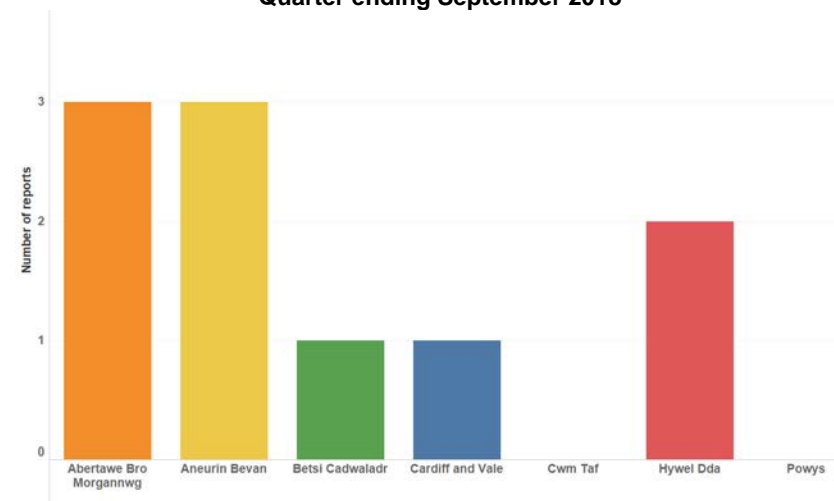
Community pharmacy

- Across Wales, a total of 10 Yellow Card reports were submitted by community pharmacies during the quarter ending September 2018.
- The number of Yellow Card reports submitted by community pharmacies ranged from 0 to 3.

Table 10. Number of Yellow Cards submitted by community pharmacies

	2018–2019 Qtr 2
Abertawe Bro Morgannwg	3
Aneurin Bevan	3
Hywel Dda	2
Betsi Cadwaladr	1
Cardiff and Vale	1
Cwm Taf	0
Powys	0
Wales	10

Figure 9. Number of Yellow Cards submitted by community pharmacy – Quarter ending September 2018



STEWARDSHIP INDICATORS

5.0 ANTIMICROBIAL STEWARDSHIP

There are three antimicrobial NPIs for 2018–2019:

1. Total antibacterial items per 1,000 STAR-PUs
2. 4C antimicrobials (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin)
 - a. Items per 1,000 patients
 - b. Items as a percentage of total antibacterial prescribing
3. Proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis.

5.1 Total antibacterial items

Purpose: To encourage the appropriate prescribing of all antibiotics in primary care.

Unit of measure: Total antibacterial items per 1,000 STAR-PUs.

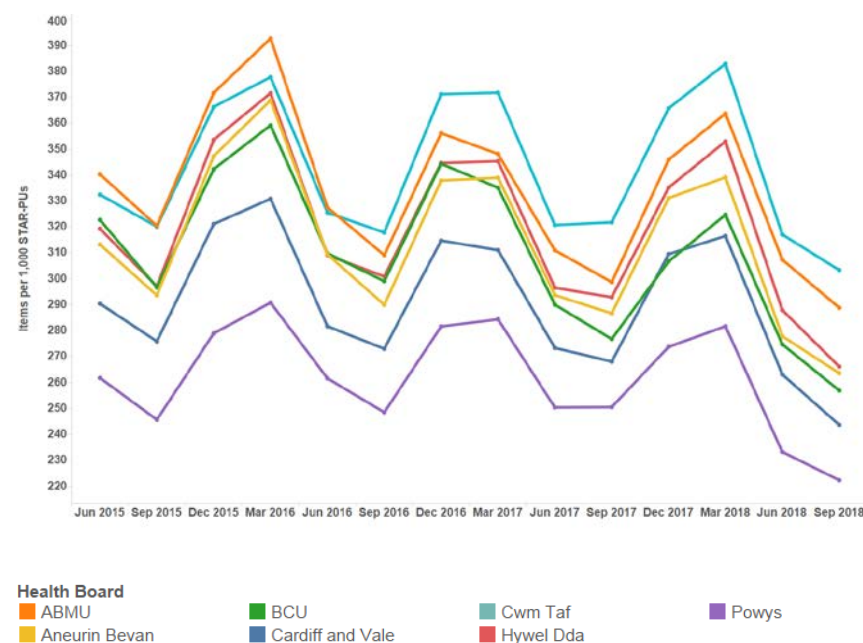
Aim: To reduce prescribing

- Across Wales, for the quarter ending September 2018, total antibacterial items per 1,000 STAR-PUs reduced by 9.92%, compared with the quarter ending September 2016. This is in line with the indicator target.
- For the quarter ending September 2018, the total number of antibacterial items per 1,000 STAR-PUs ranged from 222 to 303 across the health boards.
- The health board with the lowest prescribing was Powys Teaching HB, whilst the highest prescribing was seen in Cwm Taf UHB.
- For the quarter ending September 2018, six out of the seven health boards achieved the target of a 5% reduction against the baseline of quarter 2 2016–2017. The health board that did not achieve the target was Cwm Taf UHB.
- Betsi Cadwaladr UHB demonstrated the greatest percentage reduction in prescribing, compared with September quarter 2016.
- Cwm Taf UHB demonstrated the smallest percentage reduction in prescribing, compared with September quarter 2016.

Table 11. Total antibacterial items per 1,000 STAR-PUs

	2016–2017 Qtr 2	2018–2019 Qtr 2	% Change
Betsi Cadwaladr	299	257	-14.1%
Hywel Dda	301	266	-11.5%
Cardiff and Vale	273	244	-10.7%
Powys	248	222	-10.5%
Aneurin Bevan	290	264	-9.09%
Abertawe Bro Morgannwg	309	289	-6.55%
Cwm Taf	318	303	-4.56%
Wales	295	266	-9.92%

Figure 10. Trend in antibacterial prescribing items per 1,000 STAR-PUs



5.2 4C antimicrobials

Purpose: To encourage a reduction in variation and reduce overall prescribing of the 4C antimicrobials (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin).

Unit of measure: This antibacterial indicator is monitored using two measures which should be considered together:

1. 4C items per 1,000 patients
2. 4C items as a percentage of total antibacterial items

Aim: To reduce prescribing

The use of simple generic antibiotics and the avoidance of these broad-spectrum antibiotics preserve them from resistance and reduce the risk of *C. difficile*, MRSA and resistant urinary tract infections.

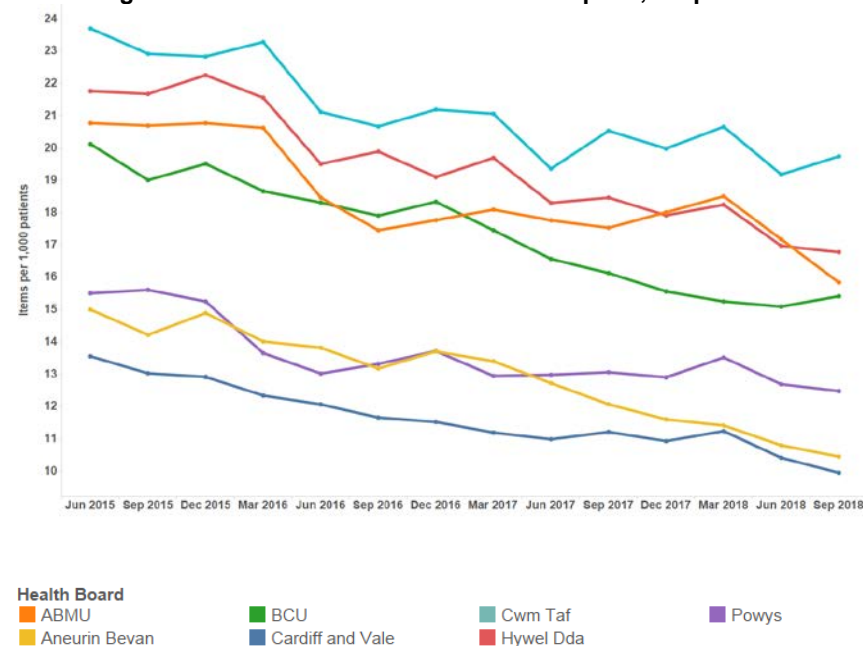
5.2.1 4C antimicrobial items per 1,000 patients

- Across Wales, for the quarter ending September 2018, the number of 4C antimicrobial items per 1,000 patients decreased by 13.0%, compared with the quarter ending September 2016, in line with the aim of this indicator.
- For the quarter ending September 2018, 4C prescribing ranged from 9.9 to 19.7 items per 1,000 patients across the health boards.
- The health board with the lowest prescribing was Cardiff and Vale UHB, whilst the highest prescribing was seen in Cwm Taf UHB.
- 4C prescribing decreased, compared with quarter ending September 2016, in all seven health boards.
- The largest percentage decrease was seen in Aneurin Bevan UHB.
- The smallest percentage decrease was seen in Cwm Taf UHB.

Table 12. 4C antimicrobial items per 1,000 patients

	2016–2017 Qtr 2	2018–2019 Qtr 2	% Change
Aneurin Bevan	13.2	10.4	-20.7%
Hywel Dda	19.9	16.8	-15.6%
Cardiff and Vale	11.7	9.9	-14.7%
Betsi Cadwaladr	17.9	15.4	-13.9%
Abertawe Bro Morgannwg	17.5	15.8	-9.25%
Powys	13.3	12.5	-6.32%
Cwm Taf	20.7	19.7	-4.49%
Wales	16.2	14.1	-13.0%

Figure 11. Trend in 4C antimicrobial items per 1,000 patients



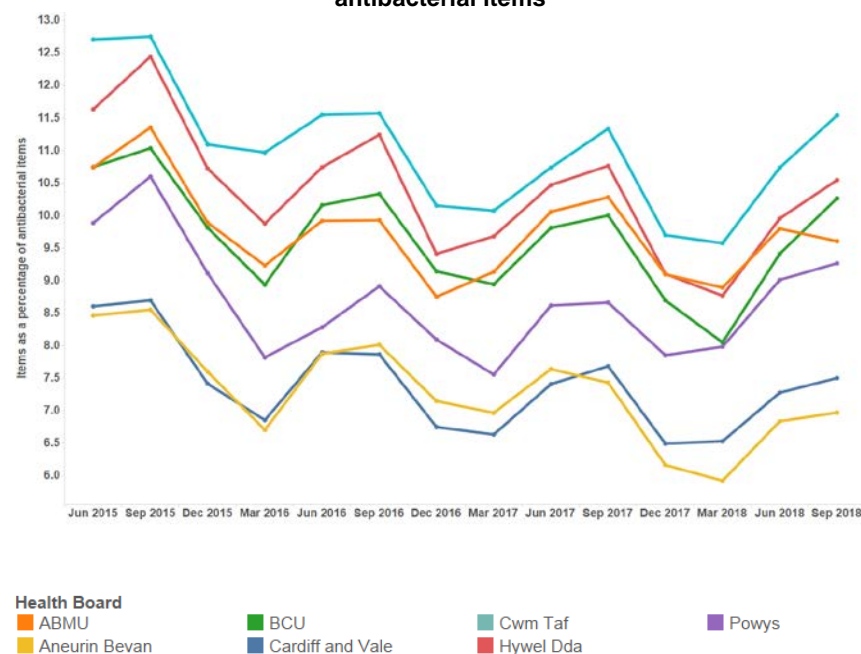
5.2.2 4C antimicrobials as a percentage of total antibacterial items

- Across Wales, for the quarter ending September 2018, the number of 4C antimicrobials as a percentage of total antibacterial items decreased by 4.08%, compared with the quarter ending September 2016, in line with the aim of this indicator.
- For the quarter ending September 2018, the number of 4C antimicrobials as a percentage of total antibacterial items ranged from 6.97% to 11.5% across the health boards.
- The health board with the lowest percentage was Aneurin Bevan UHB, whilst the highest percentage was seen in Cwm Taf UHB.
- For the quarter ending September 2018, the percentage of 4C antimicrobials decreased in six out of the seven health boards, compared with the quarter ending September 2016.
- The health board with the greatest percentage reduction, compared with the quarter ending September 2016, was Aneurin Bevan UHB.
- Powys Teaching HB demonstrated an increase, compared with the quarter ending September 2016.

Table 13. 4C antimicrobial items as a percentage of total antibacterial items

	2016–2017 Qtr 2	2018–2019 Qtr 2	% Change
Aneurin Bevan	8.01	6.97	-13.0%
Hywel Dda	11.2	10.5	-6.20%
Cardiff and Vale	7.87	7.50	-4.64%
Abertawe Bro Morgannwg	9.93	9.61	-3.25%
Betsi Cadwaladr	10.3	10.3	-0.66%
Cwm Taf	11.6	11.5	-0.28%
Powys	8.91	9.27	3.96%
Wales	9.67	9.28	-4.08%

Figure 12. Trend in 4C antimicrobial items as a percentage of total antibacterial items



5.3 Prophylaxis in colorectal surgery

Purpose: To encourage appropriate antimicrobial prophylaxis for colorectal surgical patients in secondary care.

Unit of measure: Proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis.

Aim: To increase percentage

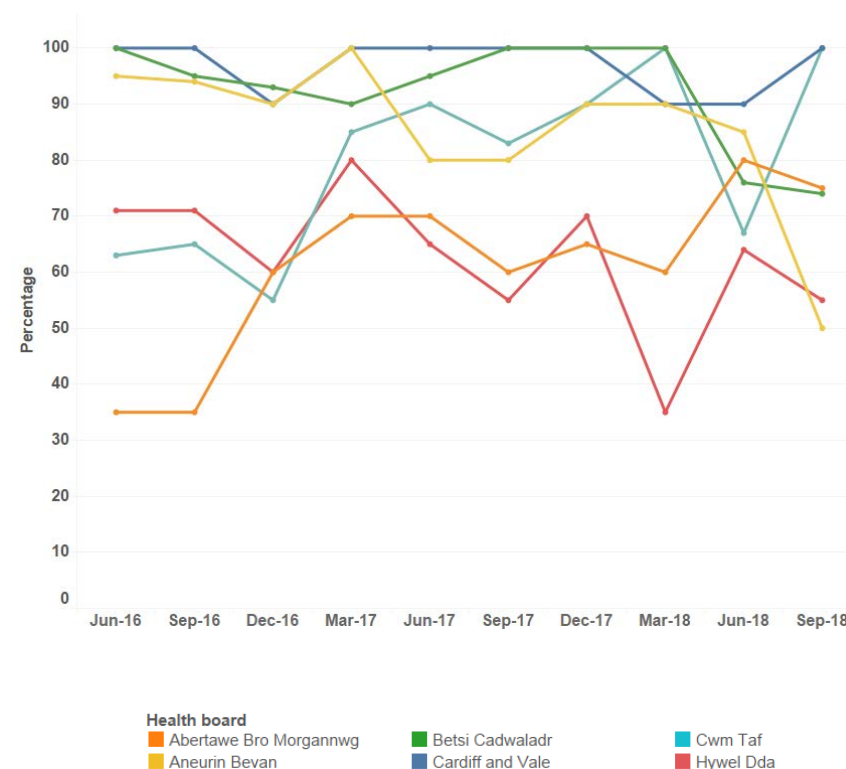
Due to surgical prophylaxis numbers being small and prone to misinterpretation at hospital level, the data are presented at health board level. Hospital level data are available if required.

- Across Wales, there was a 4% decrease in the percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis for quarter ending September 2018 compared with the equivalent quarter of the previous year.
- For the quarter ending September 2018, the percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis ranged from 50% to 100% across the health boards.
- The health boards with the highest proportion of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis were Cardiff and Vale UHB and Cwm Taf UHB whilst the lowest was Aneurin Bevan UHB.
- Cardiff and Vale UHB, Cwm Taf UHB and Abertawe Bro Morgannwg UHB were the only health boards to achieve the target for quarter ending September 2018 (absolute measure of $\geq 90\%$, or a proportional increase of 20%, compared with the equivalent quarter of 2017–2018).
- Abertawe Bro Morgannwg UHB and Cwm Taf UHB had an increase in the proportion of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis, compared with the equivalent quarter of the previous year.
- There was a decrease in the proportion of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis for Aneurin Bevan UHB and Betsi Cadwaladr UHB.

Table 14. Percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Abertawe Bro Morgannwg	60	75	25%
Cwm Taf	83	100	20%
Cardiff and Vale	100	100	0%
Hywel Dda	55	55	0%
Betsi Cadwaladr	100	74	-26%
Aneurin Bevan	80	50	-38%
Wales	76	73	-4%

Figure 13. Percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis



EFFICIENCY INDICATORS

6.0 PROTON PUMP INHIBITORS

Purpose: To encourage appropriate use of proton pump inhibitors (PPIs) in primary care.

Unit of measure: PPI DDDs per 1,000 PUs.

Aim: To reduce prescribing

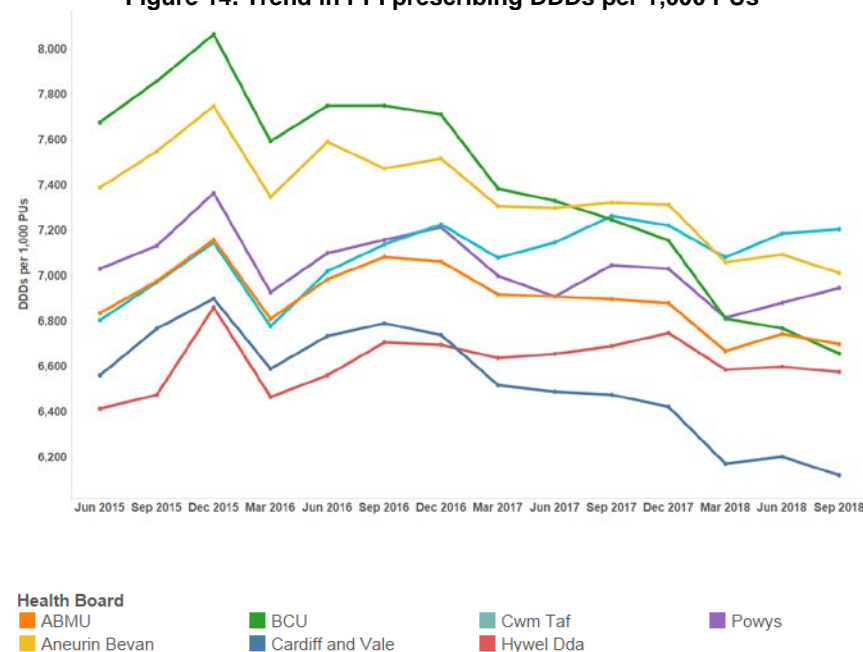
Although PPIs are generally well tolerated, there is emerging evidence that serious adverse effects may be linked with long-term PPI use. These include fractures of the hip, wrist and spine, *Clostridium difficile* infection, and hypomagnesaemia. Prescribers are therefore encouraged to review and reduce where possible.

- Across Wales, for the quarter ending September 2018, PPI DDDs per 1,000 PUs decreased by 4.32%, compared with the quarter ending September 2017, in line with the aim of this indicator
- For the quarter ending September 2018, PPI usage ranged from 6,121 to 7,206 DDDs per 1,000 PUs across the health boards.
- The health board with the lowest prescribing was Cardiff and Vale UHB whilst the highest prescribing was seen in Cwm Taf UHB.
- All seven health boards demonstrated a reduction in DDDs per 1,000 PUs, compared with the equivalent quarter of the previous year.
- Betsi Cadwaladr UHB demonstrated the largest percentage decrease.
- Cwm Taf UHB demonstrated the smallest percentage decrease.

Table 15. PPI DDDs per 1,000 PUs

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Betsi Cadwaladr	7,249	6,658	-8.15%
Cardiff and Vale	6,477	6,121	-5.48%
Aneurin Bevan	7,325	7,014	-4.24%
Abertawe Bro Morgannwg	6,898	6,699	-2.88%
Hywel Dda	6,691	6,577	-1.71%
Powys	7,048	6,948	-1.43%
Cwm Taf	7,265	7,206	-0.81%
Wales	7,010	6,707	-4.32%

Figure 14. Trend in PPI prescribing DDDs per 1,000 PUs



7.0 INSULIN

Purpose: To encourage a reduction in the prescribing of long-acting insulin analogues in line with NICE guidance to maximise cost-effectiveness in Wales.

Unit of measure: Items/number of long-acting insulin analogues expressed as a percentage of total long- and intermediate-acting insulin prescribed in primary and secondary care.

Aim: To reduce prescribing

NICE guidance recommends human isophane (neutral protamine Hagedorn [NPH]) insulin as the first choice insulin-based treatment when prescribing insulin in type 2 diabetes mellitus. For most people with type 2 diabetes, long-acting insulin analogues offer no significant benefit over human isophane insulin and are more expensive.

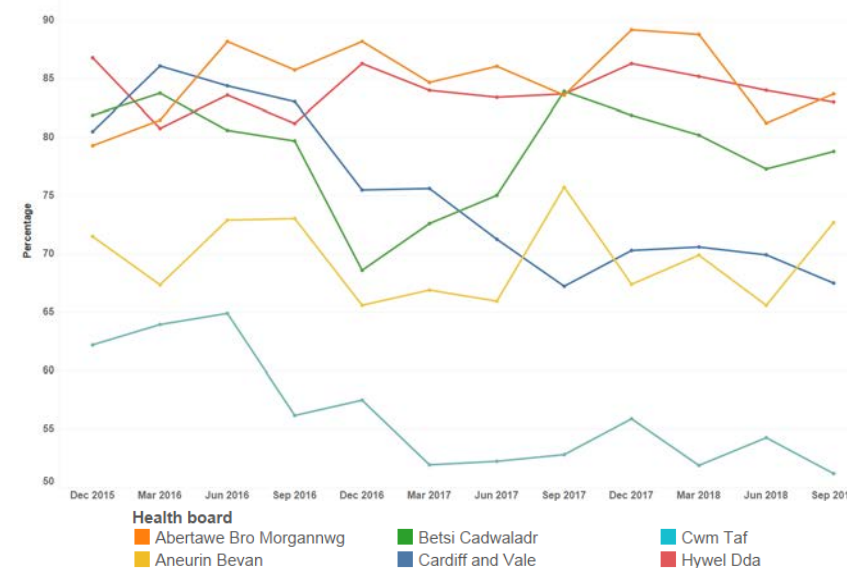
This report considers data sets from both secondary and primary care, as prescribing will usually be continued in the primary care setting following secondary care initiation.

Secondary care prescribing

- Across Wales, secondary care use of long-acting insulin as a percentage of all long- and intermediate-acting insulin prescribing was 2.37% lower in the quarter ending September 2018 than in the equivalent quarter of the previous year.
- For the quarter ending September 2018, prescribing of long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin ranged from 51.2% to 83.7%.
- The health board/trust with the lowest prescribing percentage was Cwm Taf UHB. The highest prescribing percentage was seen in Abertawe Bro Morgannwg UHB.
- The proportion of long-acting insulin analogue prescribing decreased in five of the seven health boards/trusts, compared with the equivalent quarter of the previous year.
- Velindre Trust showed the greatest percentage decrease; however, usage in this trust is very low, so percentage changes are likely to show a greater magnitude of fluctuation between comparative periods. Betsi Cadwaladr UHB had the next highest percentage decrease at 6.08%.
- The health board/trust with the greatest percentage increase was Cardiff and Vale UHB.

Table 16. Long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin prescribing in secondary care

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Velindre	85.7	57.1	-33.4
Betsi Cadwaladr	83.9	78.8	-6.08
Aneurin Bevan	75.7	72.7	-3.96
Cwm Taf	52.8	51.2	-3.03
Hywel Dda	84.0	83.0	-1.19
Abertawe Bro Morgannwg	83.6	83.7	0.12
Cardiff and Vale	67.2	67.5	0.45
Wales	76.1	74.3	-2.37

Figure 15. Trend in long-acting analogue prescribing as a percentage of total long- and intermediate-acting insulin prescribed in secondary care

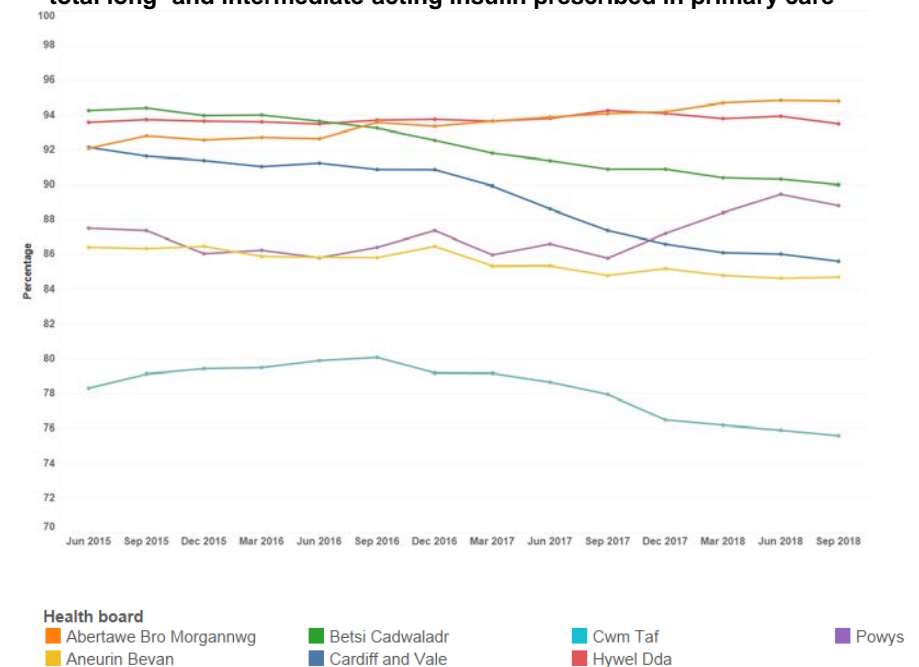
Primary care prescribing

- Across Wales, the prescribing of long-acting insulin analogues as a proportion of total long- and intermediate-acting insulin prescribing decreased by 0.68% for the quarter ending in September 2018, compared with the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending September 2018, long-acting insulin analogue prescribing ranged from 75.6% to 94.8% across the health boards.
- The health board with the lowest prescribing was Cwm Taf UHB, whilst the highest prescribing was seen in Abertawe Bro Morgannwg UHB.
- Across the seven health boards in Wales prescribing decreased compared with the equivalent quarter of the previous year in five health boards and increased in two health boards.
- The health board/trust with the greatest percentage decrease was Cwm Taf UHB.
- The largest percentage increase was seen in Powys Teaching HB.

Table 17. Long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin prescribing in primary care

	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Cwm Taf	78.0	75.6	-3.08
Cardiff and Vale	87.4	85.6	-2.06
Betsi Cadwaladr	90.9	90.0	-0.99
Hywel Dda	94.3	93.5	-0.85
Aneurin Bevan	84.8	84.7	-0.12
Abertawe Bro Morgannwg	94.1	94.8	0.74
Powys	85.8	88.8	3.50
Wales	88.5	87.9	-0.68

Figure 16. Trend in long-acting analogue prescribing as a percentage of total long- and intermediate-acting insulin prescribed in primary care



8.0 BIOSIMILARS

Purpose: To ensure prescribing of biological medicines supports cost-effective prescribing in Wales.

Unit of measure: Quantity of biosimilar medicines prescribed as a percentage of total 'reference' product plus biosimilar.

Aim: Increase the appropriate use of cost-effective biological medicines, including biosimilar medicines.

Biological medicines are those that are made or derived from a biological source and, as such, are complex, with inherent variability in their structure. A biosimilar medicine is a biological medicine that is developed to be highly similar and clinically equivalent to an existing biological medicine (i.e. 'reference' medicine or 'originator' medicine). Continuing development of biosimilar medicines offers an increased choice for patients and clinicians.

There is an increasing range of biosimilar products becoming available and therefore new products will be monitored and reported on in this section of the NPI report as they begin to be used within NHS Wales.

MHRA guidelines state that biological medicines, including biosimilar medicines, must be prescribed by brand name to prevent automatic substitution taking place without clinician and patient involvement, and to support ongoing pharmacovigilance of the individual products.

2.1 Infliximab

Within Wales there was an increase in the use of the infliximab biosimilar (Inflectra®) as a percentage of all infliximab for the quarter ending September 2018 compared with the equivalent quarter of the previous year, from 72.3% to 94.2%.

Table 18. Quantity of infliximab reference (Remicade®) and biosimilar (Inflectra®) prescribed in NHS Wales

Reference (Remicade®)†	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	1,908	428	-77.6%
Biosimilar (Inflectra®)	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	4,982	6,965	39.8%

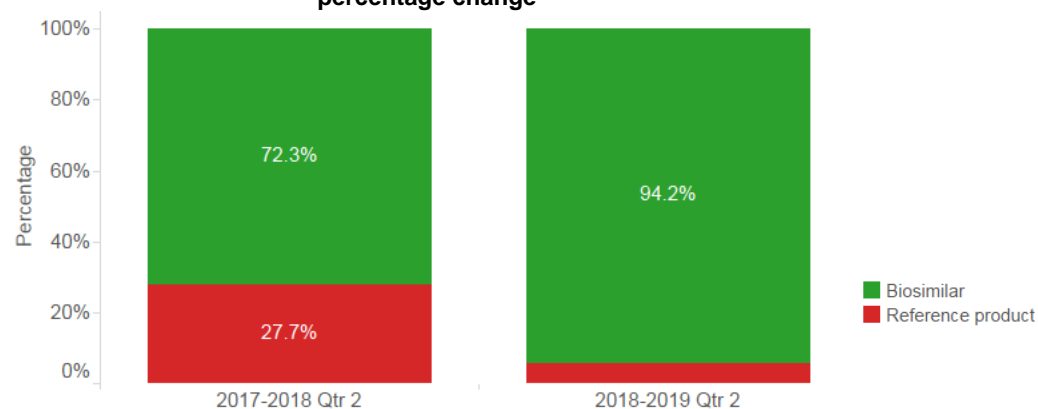
† These data include supplies recorded through homecare.

*Due to quantity discrepancy in the data set, this number has been estimated.

Table 19. Infliximab biosimilars as a percentage of reference and biosimilar prescribed

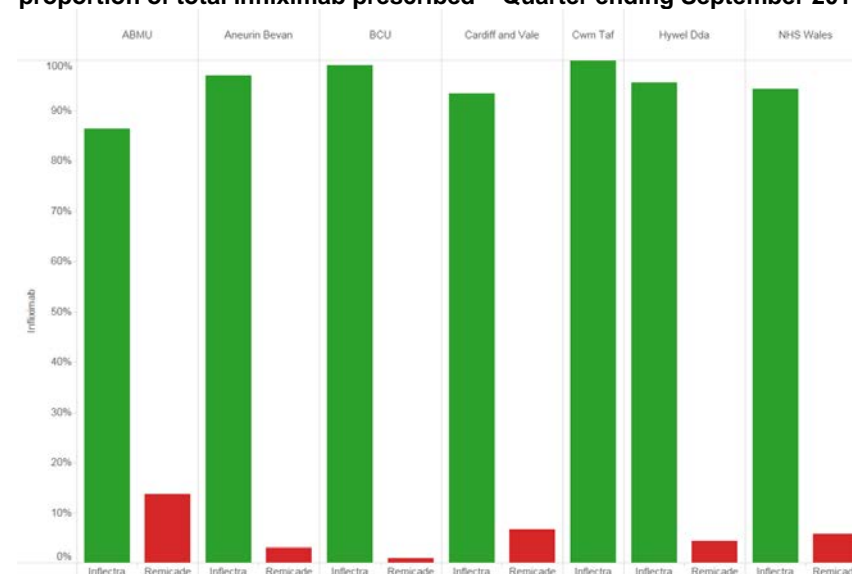
	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	72.3%	94.2%	30.3%

Figure 17. Infliximab reference (Remicade®) and biosimilar (Inflectra®) percentage change



Six health boards show biosimilar infliximab prescribing. All six of these health boards use the biosimilar for the majority of their supplies.

Figure 18. Infliximab reference (Remicade®) and biosimilar (Inflectra®) as a proportion of total infliximab prescribed – Quarter ending September 2018



2.2 Etanercept

Within Wales there was an increase in the use of the etanercept biosimilar (Benepali®, Erelzi®) as a percentage of all etanercept for the quarter ending September 2018 compared with the equivalent quarter of the previous year, from 48.7% to 83.8%.

Table 20. Quantity of etanercept reference (Enbrel®) and biosimilar (Benepali®, Erelzi®) prescribed in NHS Wales

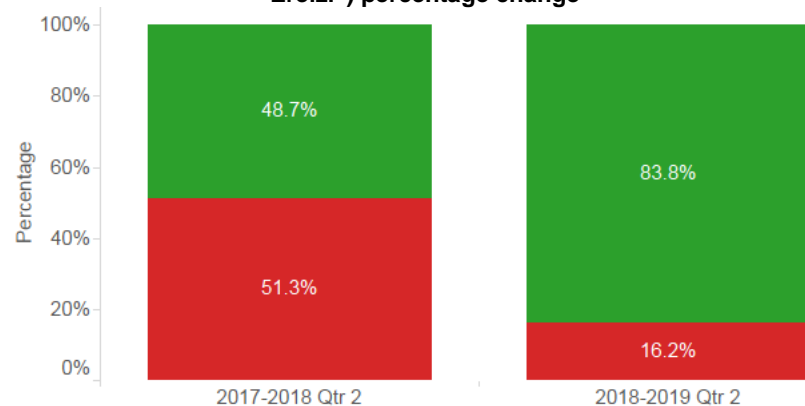
Reference (Enbrel®) [†]	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	9,552	3,557	-62.8%
Biosimilar (Benepali®, Erelzi®)	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	9,056	18,416	103.4%

[†]These data include supplies recorded through homecare.

Table 21. Etanercept biosimilar as a percentage of reference and biosimilar prescribed

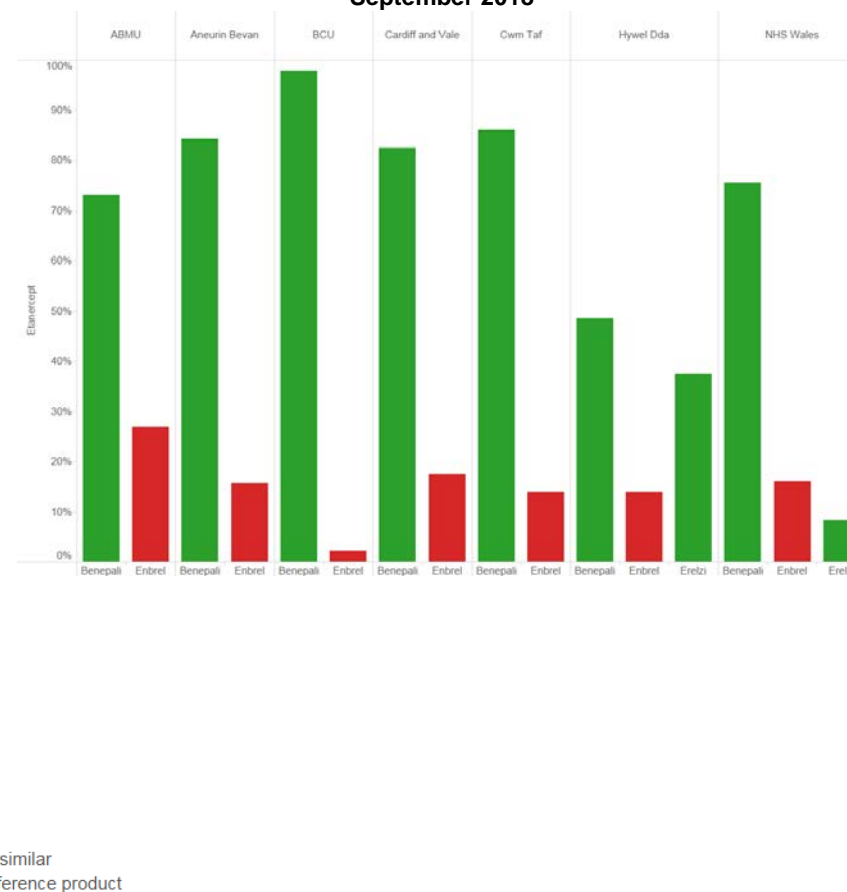
	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	48.7%	83.8%	72.1%

Figure 19. Etanercept reference (Enbrel®) and biosimilar (Benepali®, Erelzi®) percentage change



Six health boards show biosimilar etanercept prescribing. All six of these health boards use the biosimilar for the majority of their supplies.

Figure 20. Etanercept reference (Enbrel®) and biosimilar (Benepali®, Erelzi®) as a proportion of total etanercept prescribed – Quarter ending September 2018



2.3 Rituximab

Within Wales there was an increase in the use of the rituximab biosimilar (Truxima®) as a percentage of all rituximab from 41.2% to 96.3% for quarter ending September 2018 compared with the equivalent quarter of the previous year.

Table 22. Quantity of rituximab reference (MabThera®) and biosimilar (Truxima®) prescribed in NHS Wales

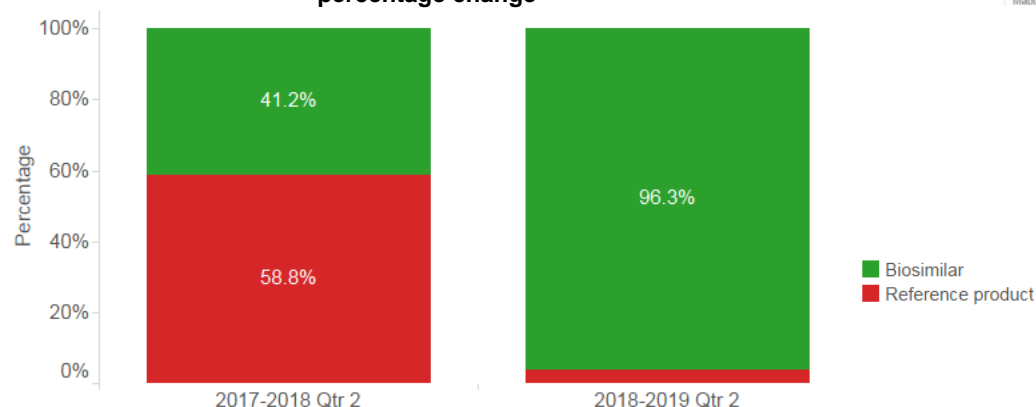
Reference (MabThera®) [†]	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	1,195	90	-92.5%
Biosimilar (Truxima®)	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	838	2,329	177.9%

[†]These data include supplies recorded through homecare.

Table 23. Rituximab biosimilar as a percentage of reference and biosimilar prescribed

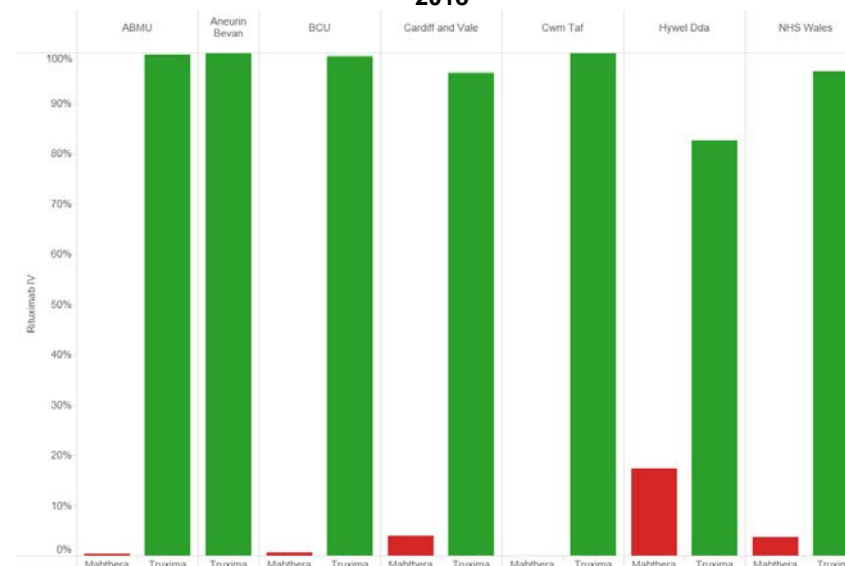
	2017–2018 Qtr 2	2018–2019 Qtr 2	% Change
Total	41.2%	96.3%	133.7%

Figure 21. Rituximab reference (MabThera®) and biosimilar (Truxima®) percentage change



Six health boards show biosimilar rituximab prescribing. All six of these health boards use the biosimilar for the majority of their supplies.

Figure 22. Rituximab reference (MabThera®) and biosimilar (Truxima®) as a proportion of total rituximab prescribed – Quarter ending September 2018



2.4 Total biosimilar usage

Within Wales there was an increase in the use of the reported biosimilar medicines (infliximab, etanercept and rituximab) combined as a percentage of reported 'reference' biological medicines plus biosimilars combined, from 54% to 87% for the quarter ending September 2018 compared with the equivalent quarter of the previous year.

Figure 23. Biological reference and biosimilar as a proportion of total reference plus biosimilar prescribed – Quarter ending September 2018

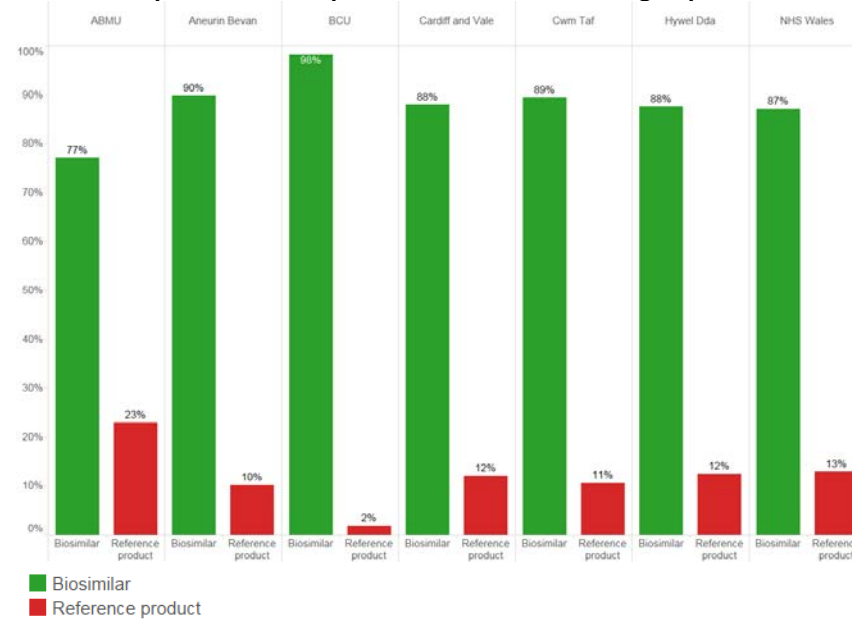
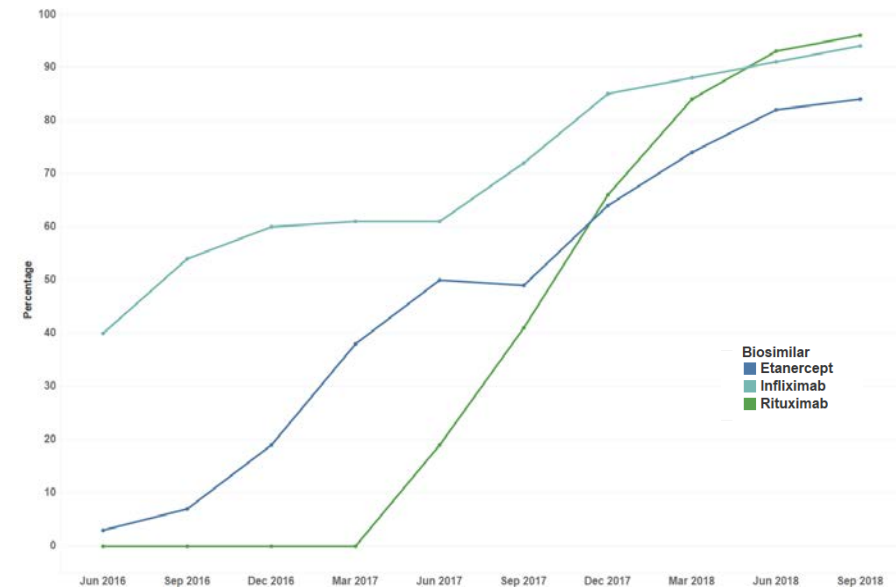


Figure 24. Trend in biosimilar percentage in Wales



CAUTION WITH INTERPRETING NPI MONITORING DATA

Calculations for the percentage difference reported are based on raw data, and values may therefore vary slightly from those calculated from the data tables or graphs, where figures have been rounded up or down.

Data for the anticholinergic burden and NSAIDs and CKD NPIs have been provided by Audit+, the GP software tool delivered and supported by the NHS Wales Informatics Service (NWIS).

The Medusa data warehouse is reliant on data input by individual hospital pharmacy departments. If the data on a medicine are input under an alternative name to the usual generic or brand name, it may not be identified at extraction.

Medusa records the issue of medicines within the secondary care setting in Wales. Where supplies are issued to named patients, it can be assumed that the difference between number of medicines issued and number administered to patients is not significant. However, when the supplies are issued to wards or clinics, these items are often held as stock and therefore may be administered to patients at a considerably later point in time. However, within this report they are only considered for analysis within the time period they were issued.

The report includes medicines supplied by homecare and recorded through the hospital system; medicines supplied through other homecare providers are not included in this report. Therefore some medicines use data may currently be incomplete. This issue is being worked on within NHS Wales as a priority.

Medicines supplied through hospitals in England or on FP10HP (issued by hospital clinicians in NHS England) to patients resident in Wales, which do not get issued via Medusa or recorded through CASPA, are not included in this report.

Combining data obtained from two different software systems provides challenges, particularly as CASPA and Medusa report data via different measurement criteria. Hence, in order to amalgamate data, total cost of medicine usage is reported for all indicators and, where relevant, other measures such as total quantity, items and number are also reported.

GLOSSARY

ADQ – The average daily quantity (ADQ) is a measure of prescribing volume based upon prescribing behaviour in England. It represents the assumed average maintenance dose per day for a medicine used for its main indication in adults. The ADQ is not a recommended dose but an analytical unit to compare prescribing activity.

DDD – The defined daily dose (DDD), developed by the World Health Organization, is a unit of measurement whereby each medicine is assigned a value within its recognised dosage range. The value is the assumed average maintenance dose per day for a medicine when used for its main indication in adults. A medicine can have different DDIs depending on the route of administration.

PU – Prescribing units (PUs) were adopted to take account of the greater need of elderly patients for medication in reporting prescribing performance at both the practice and primary care organisational level.

PRESCRIBING – Although the term ‘prescribing’ is used in this report, the data presented within the primary care section of the report represent prescriptions that have been dispensed and forwarded for pricing. It is assumed that the difference between the number of prescriptions issued and those dispensed is not significant, and that dispensing provides an accurate representation of prescribing. In relation to the secondary care data presented within this report please see information above.

STAR-PU – Specific therapeutic group age-sex related prescribing units (STAR-PUs) are designed to measure prescribing weighted for age and sex of patients. There are differences in the age and sex of patients for whom medicines in specific therapeutic groups are usually prescribed. To make such comparisons, STAR-PUs have been developed based on costs of prescribing of items within therapeutic groups.

APPENDIX 1. AWMMSG NATIONAL PRESCRIBING INDICATORS 2018–2019

National Prescribing Indicator	Applicable to:	Unit of measure	Target for 2018–2019	Data source	
Safety					
Prescribing Safety Indicators	Primary care	Number of patients identified as a percentage of the practice population	No target set	Audit+	
Hypnotics and anxiolytics	Primary care	Hypnotic and anxiolytic ADQs per 1,000 STAR-PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP	
Analgesics	Primary care	Tramadol DDDs per 1,000 patients	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP	
		Opioid patch items as a percentage of all opioid prescribing	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP	
		Gabapentin and pregabalin DDDs per 1,000 patients	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP	
Yellow Card Reporting	Primary care	Number of Yellow Cards submitted	One Yellow Card per 2,000 GP practice population	MHRA	
	Secondary care		In excess of a 20% increase from baseline		
	Health board		In excess of one Yellow Card per 2,000 health board population		
			In excess of a 50% increase from baseline for Yellow Cards submitted by members of the public		
			Community pharmacy		No target set. Reported as the number of Yellow Cards submitted by health board.
Stewardship					
Antimicrobial stewardship	Primary care	Total antibacterial items per 1,000 STAR-PUs	Health board target: a reduction of 5% against a baseline of April 2016–March 2017	NWSSP	
	Primary care	4C antimicrobials (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin): – the number of 4C items per 1,000 patients – the number of 4C items as a percentage of total antibacterial prescribing.	Absolute measure ≤7% or a proportional reduction of 10% against a baseline of April 2016–March 2017	NWSSP	
	Secondary care	Prophylaxis in colorectal surgery: proportion of elective colorectal patients receiving a single dose of antimicrobial for surgical prophylaxis	Absolute measure ≥90% or a proportional increase of 20% against performance for 2017–2018	Data collection by antimicrobial pharmacists	

Efficiency				
Proton pump inhibitors	Primary care	PPI DDDs per 1,000 PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP
Biosimilars	Primary + secondary care	Quantity of biosimilar medicines prescribed as a percentage of total 'reference' product plus biosimilar	Increase the appropriate use of cost-effective biological medicines, including biosimilar medicines.	NWSSP Medusa
Long-acting insulin analogues	Primary + secondary care	Items/number of long-acting insulin analogues expressed as a percentage of total long- and intermediate-acting insulin prescribed	Reduce prescribing of long-acting insulin analogues and achieve prescribing levels below the Welsh average	NWSSP Medusa

APPENDIX 2. PRIMARY CARE NPI PRESCRIBING BY GP CLUSTER

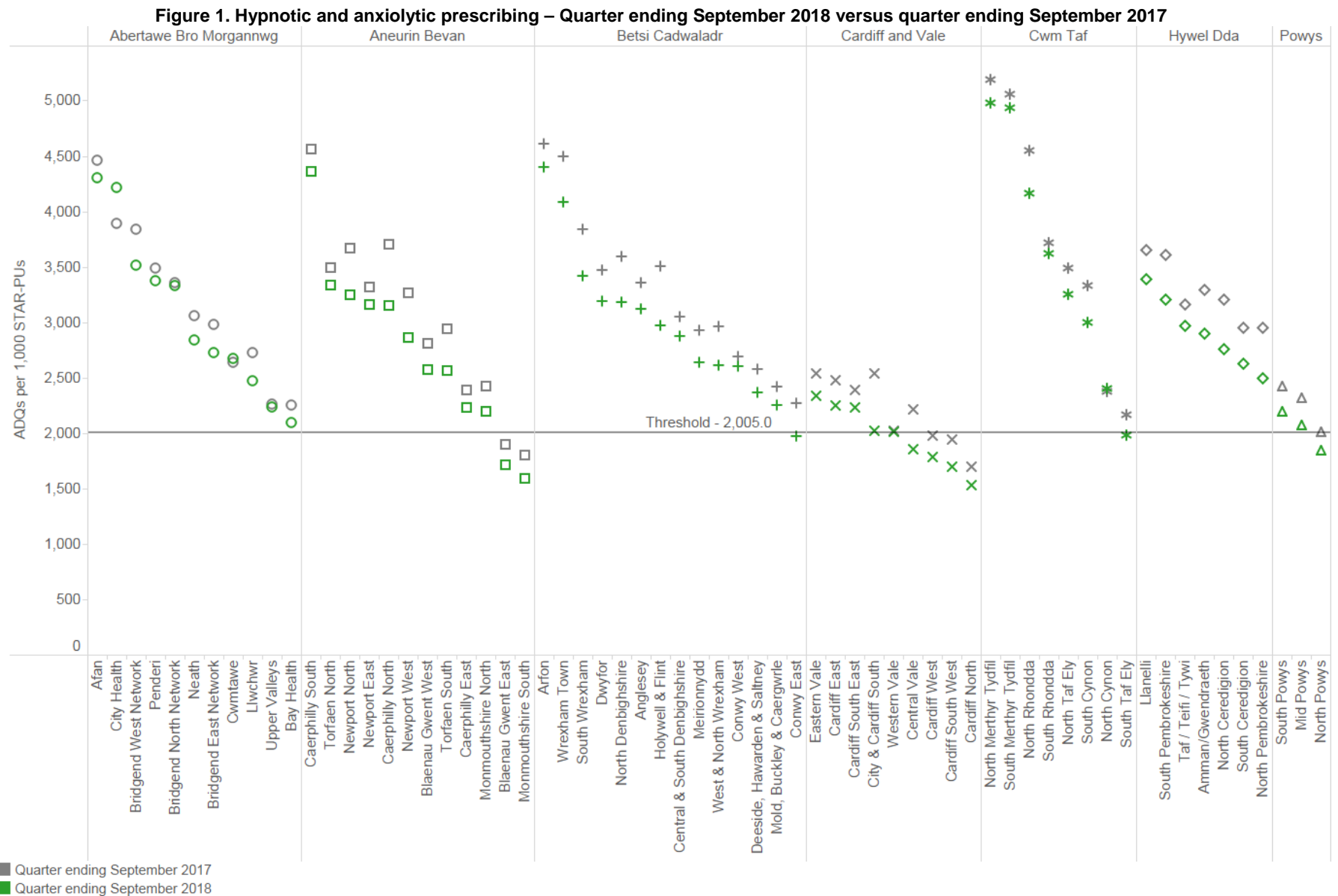


Figure 2. Tramadol prescribing – Quarter ending September 2018 versus quarter ending September 2017

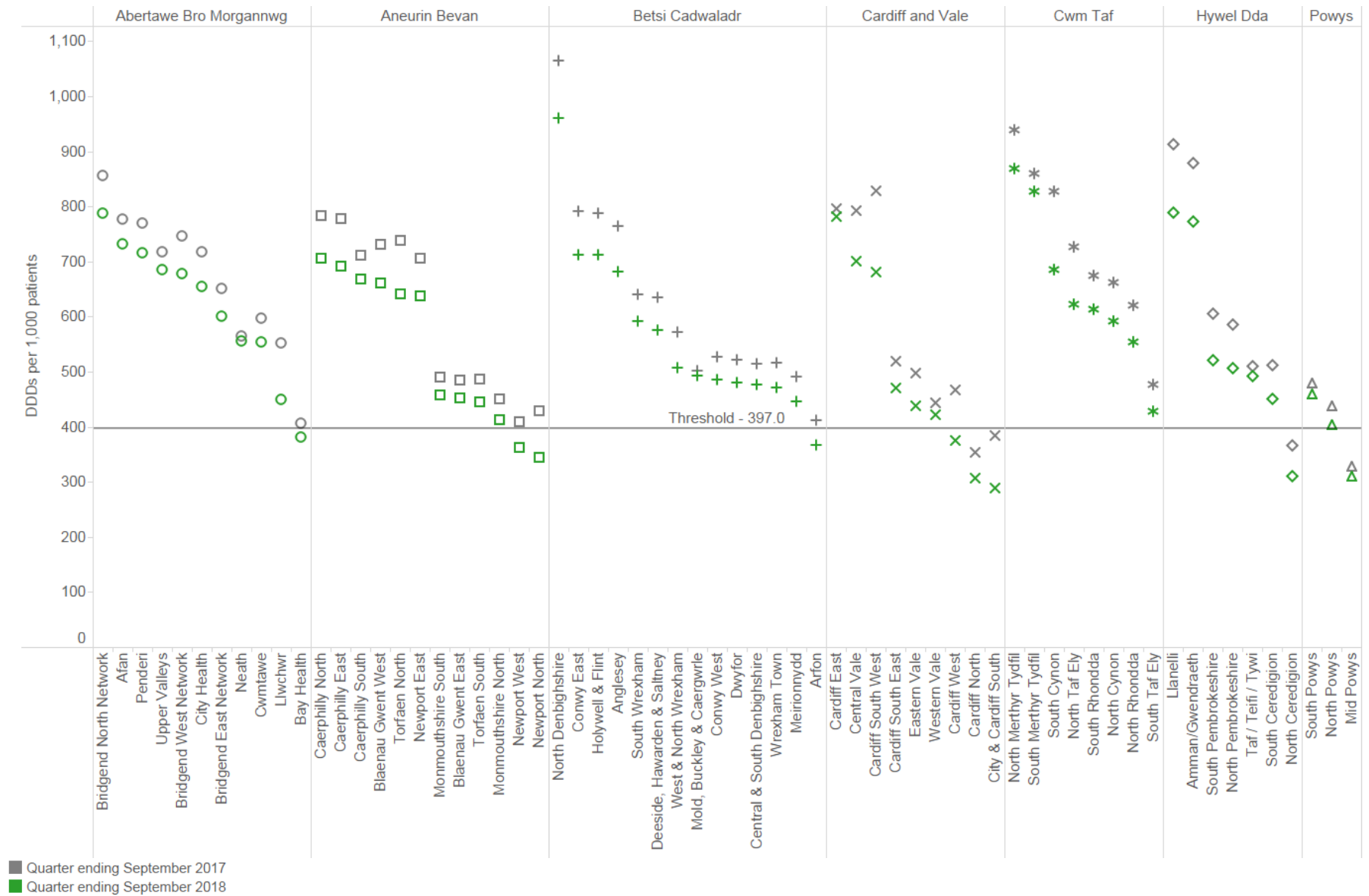


Figure 3. Opioid patch prescribing – Quarter ending September 2018 versus quarter ending September 2017

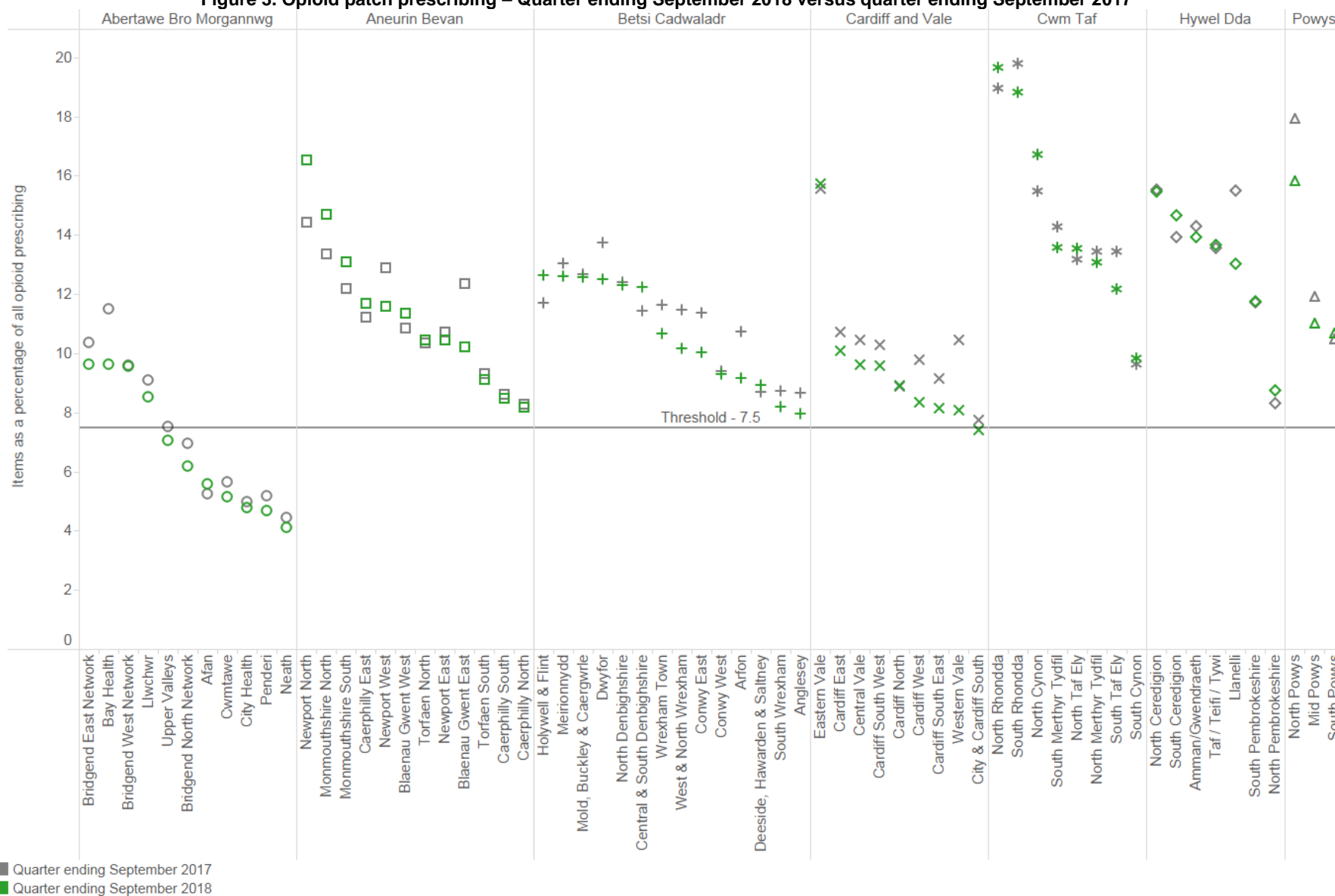


Figure 4. Gabapentin and pregabalin prescribing – Quarter ending September 2018 versus quarter ending September 2017

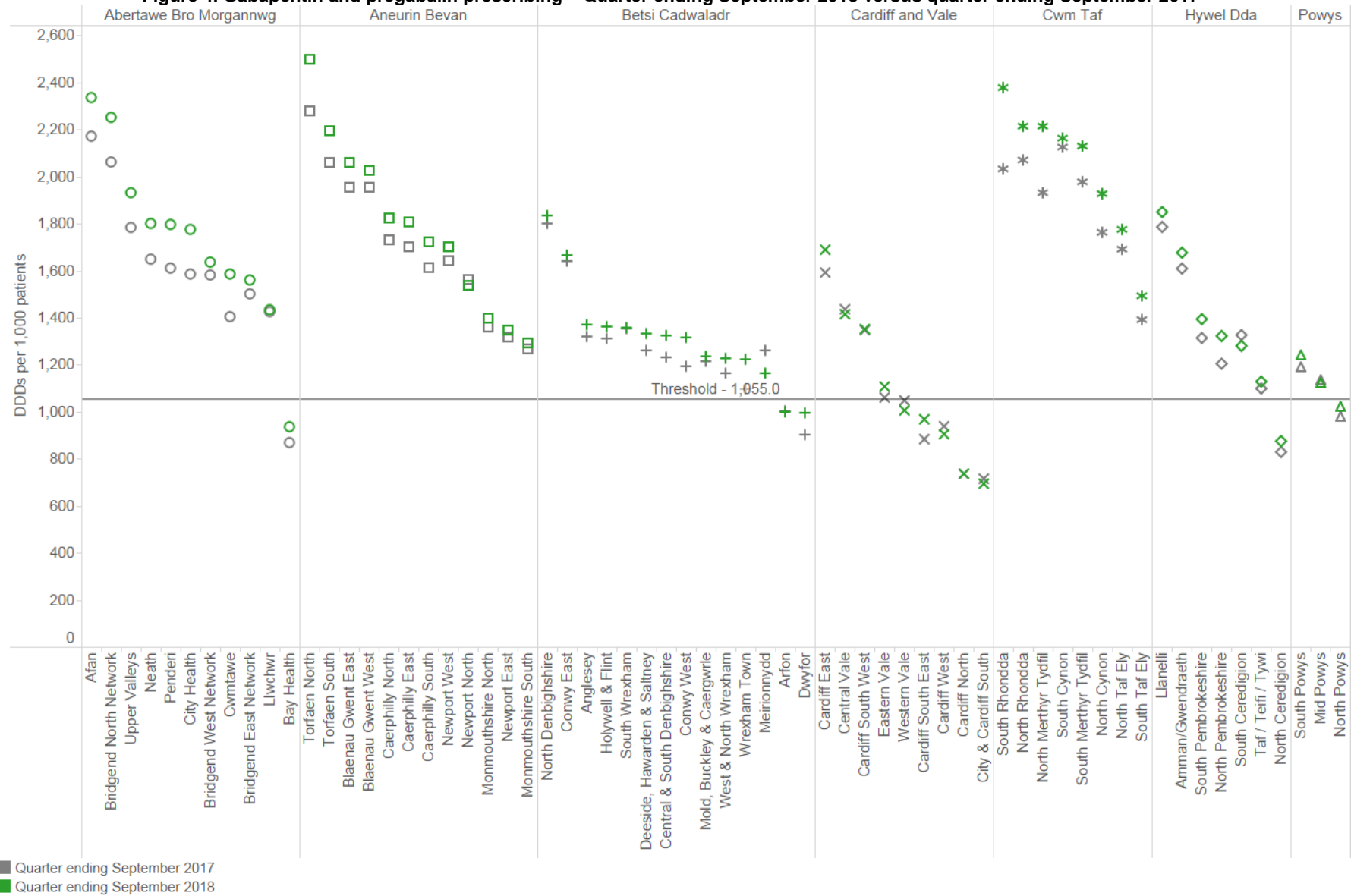


Figure 5. Antibacterial prescribing – Quarter ending September 2018 versus quarter ending September 2016

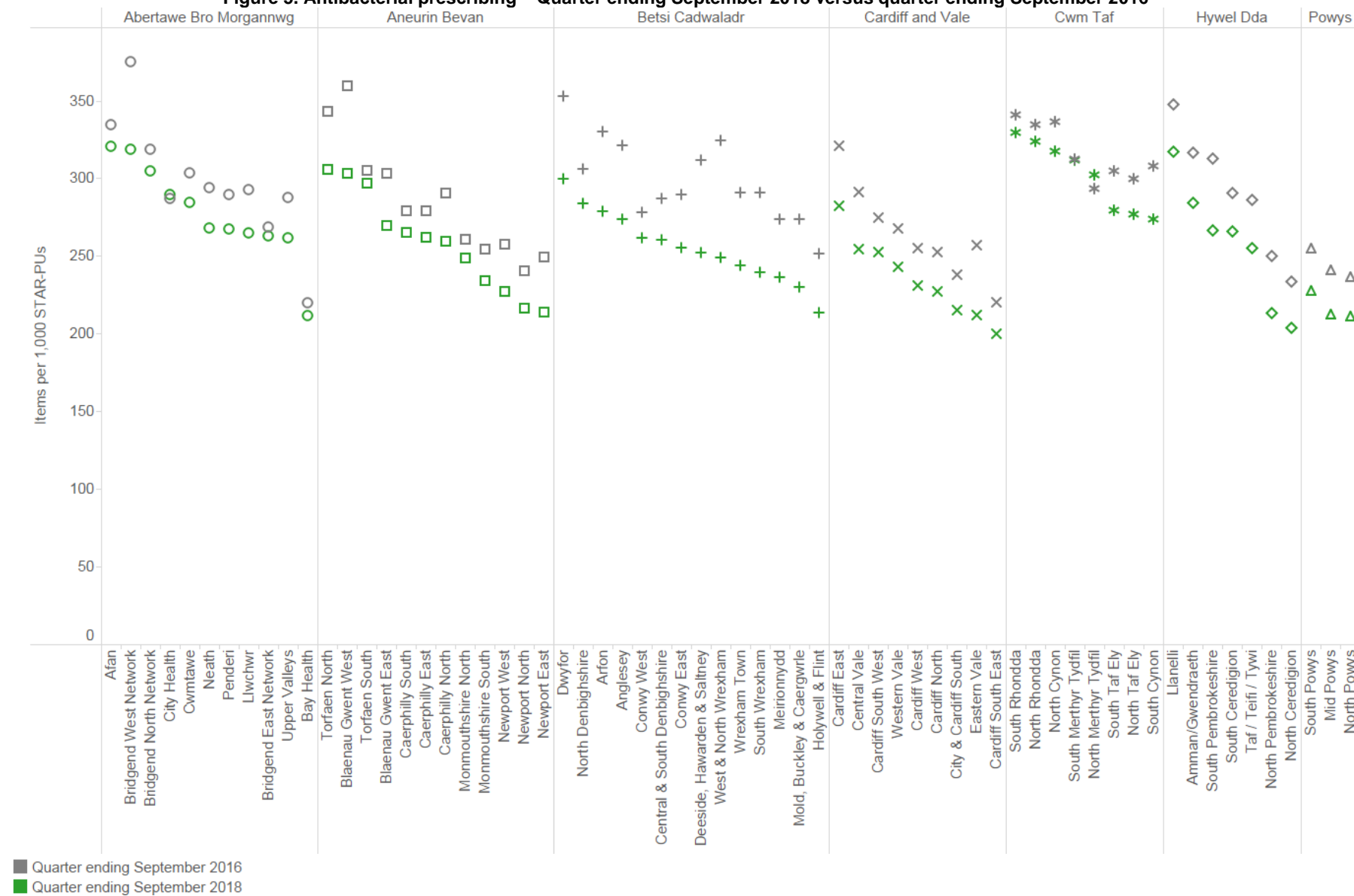


Figure 6. 4C prescribing – Quarter ending September 2018 versus quarter ending September 2016

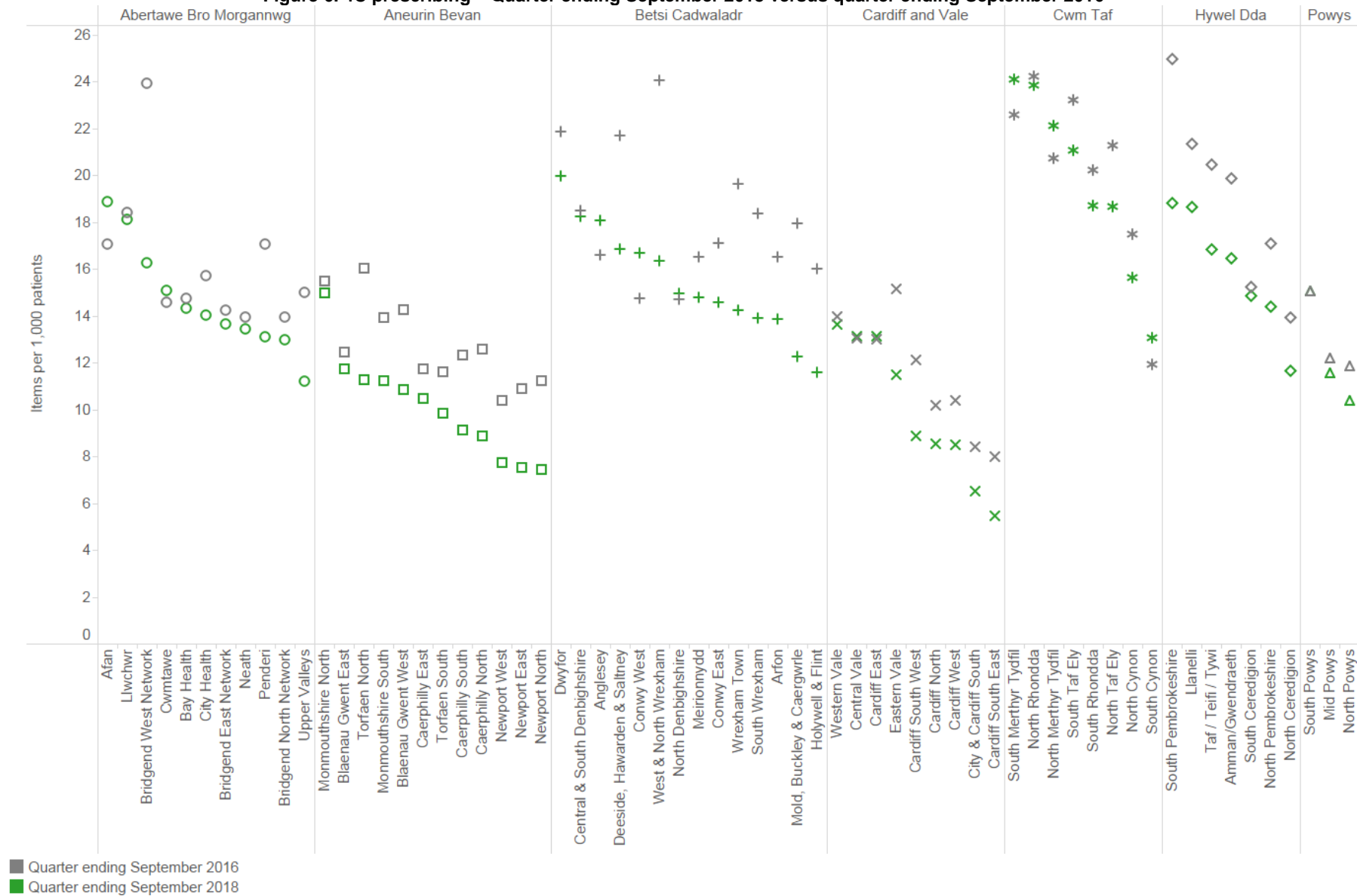


Figure 7. 4C prescribing – Quarter ending September 2018 versus quarter ending September 2016

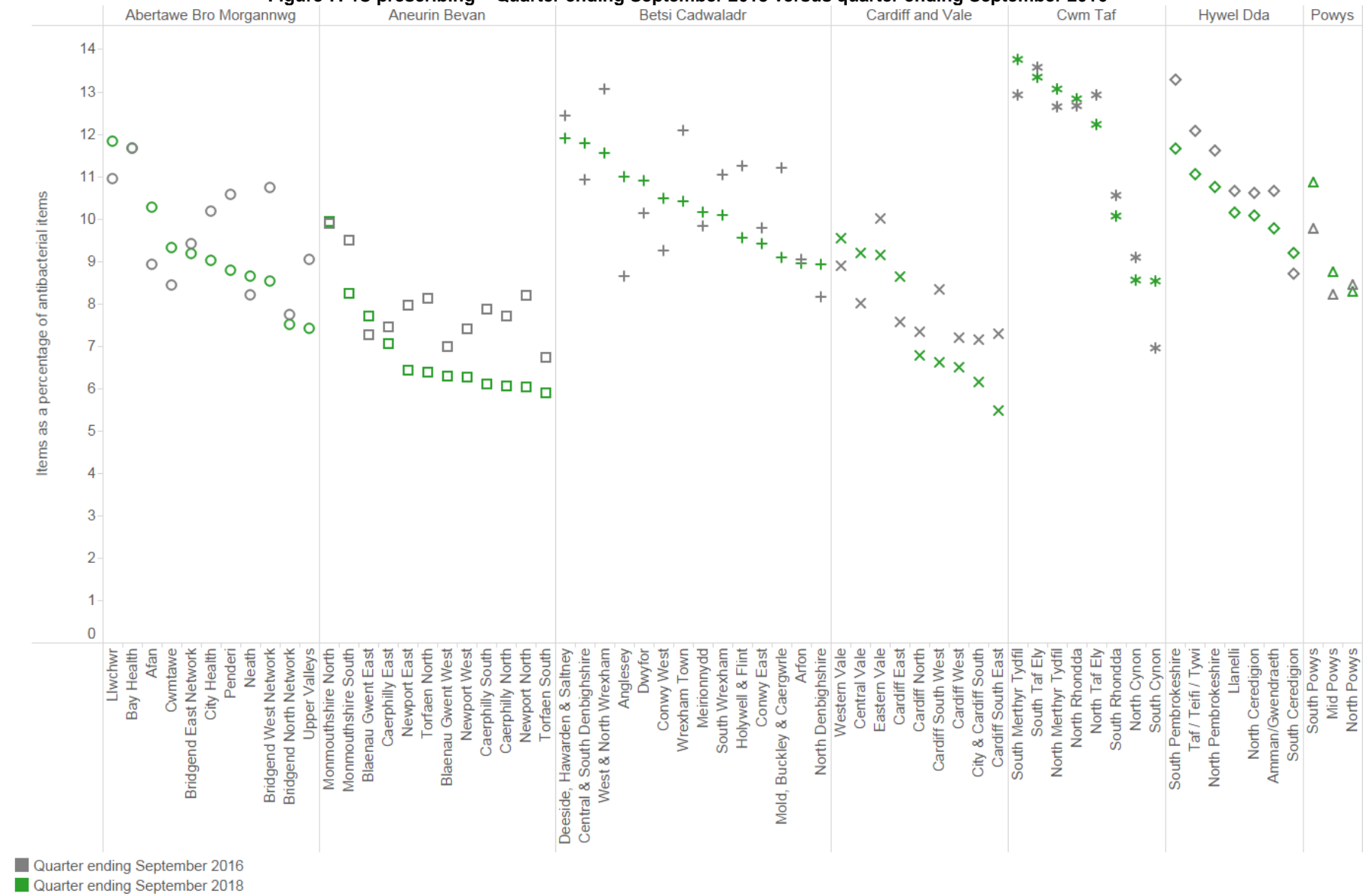


Figure 8. Proton pump inhibitor prescribing – Quarter ending September 2018 versus quarter ending September 2017

