

# National Prescribing Indicators 2018–2019

Analysis of Prescribing Data to June 2018





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 first 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 7.16% across Wales, compared with the equivalent quarter of the previous year.
- Analgesics in primary care:
  - o Tramadol (DDDs per 1,000 patients) reduced by 8.31% across Wales, compared with the equivalent quarter of the previous year.
  - o Opioid patches (as a percentage of all opioid prescribing) reduced by 2.45% across Wales, compared with the equivalent quarter of the previous year.
  - Gabapentin and pregabalin (DDDs per 1,000 patients) demonstrated an increase of 7.51% 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
  one data demonstrates:
  - A 36% increase in reporting by GP practices across Wales, compared with the equivalent quarter of the previous year.
  - o A 42% reduction in secondary care reporting across Wales, compared with the equivalent quarter of the previous year.
  - o A 4% increase in reporting by health boards across Wales, compared with the equivalent guarter of the previous year.
  - o A 9% increase in reporting by members of the public across Wales, compared with the equivalent quarter of the previous year.
  - o The number of reports 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 1 2016–2017.
- 4C (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin) antimicrobial prescribing in primary care includes two measures which should be considered together:
  - o The number of 4C items per 1,000 patients decreased across Wales by 13.7%, compared with the baseline of guarter 1 2016–2017.
  - The number of 4C items as a percentage of total antibacterial items reduced across Wales by 6.42%, compared with the baseline of quarter 1 2016–2017.
- The proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis in secondary care: one health board achieved the target of an absolute measure of ≥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 3.44% reduction across Wales compared with the equivalent guarter of 2017–2018.
- Prescribing of long-acting insulin analogues increased in secondary care compared with the equivalent quarter of the previous year; however, there was a decrease in primary care usage, in line with the aim of the NPI.
- There was an increase in the overall use of each of the four biosimilar medicines being monitored (infliximab, etanercept, rituximab, insulin glargine) 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 September 2018 will be available on 25th January 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-PUs and prophylactic antibiotics in colorectal surgery are by health board, therefore the tick or cross demonstrates achievement.

### Health boards/practices achieving the indicator targets/thresholds - Quarter ending June 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
Hypnotics and anxiolytics ADQs per 1,000	20	25	28	37	10	6	9
STAR-PUs	27%	31%	26%	57%	24%	12%	53%
Tramadol DDDs per 1,000 patients	17	24	31	28	5	15	10
	23%	30%	29%	43%	12%	29%	59%
Opioid patch items as a percentage of all opioid prescribing	51	17	30	21	5	3	2
	70%	21%	28%	32%	12%	6%	12%
Gabapentin and pregabalin DDDs per 1,000 patients	15	9	30	36	2	15	9
	21%	11%	28%	55%	5%	29%	53%
Antibacterial items per 1,000 STAR-PUs	<b>✓</b>	<b>~</b>	<b>✓</b>	<b>✓</b>	×	<b>✓</b>	<b>✓</b>
4C antibacterial items per 1,000 patients	25	57	54	42	19	22	6
	36%	73%	51%	66%	46%	43%	38%
4C antibacterial items as a percentage of all antimicrobials	25	56	63	39	23	26	8
	36%	72%	59%	61%	56%	51%	50%
Proportion of elective colorectal patients receiving a single dose antimicrobial for surgical prophylaxis	×	×	×	<b>✓</b>	×	×	_
Proton pump inhibitor DDDs per 1,000 PUs	20	16	34	36	10	17	4
	27%	20%	31%	55%	24%	33%	24%

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 betablocker, 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.
- 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 oestrogenonly 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.
- Number of patients aged 65 years or over prescribed an NSAID plus aspirin and/or clopidogrel but without gastroprotection (PPI or H<sub>2</sub> 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 – Quarter ending June 2018

received a repeat prescription for an NSAID within the last 3 months, as a percentage of all patients on the CKD register	Percent	1			1.181			
Number of patients on the CKD register (CKD stage 3–5) who have	O O	3 2 1.879	1.892	1.783	4.454	2.135	1.790	2.693
Cognition (AEC) score of 3 or more for items on active repeat, as a percentage of all patients aged 75 and over	۵	0						
Number of patients aged 75 and over with an Anticholinergic Effect on	Itage	8.011	8.327	7.130	6.143	8.042	5.987	6.281
Number of patients aged 65 years or over prescribed an antipsychotic, as a percentage of all patients aged 65 years or over	erce	1						
Number of nationts agod 65 years or over prescribed an entire which are	eg.	2 1.835	1.516	1.299	1.487	1.515	1.289	1.309
aspirin and/or clopidogrel but without gastroprotection (PPI or H2 receptor antagonist), as a percentage of all patients aged 65 years or over	Percenta 0 0 0	1	0.150	0.153	0.125	0.151		0.151
Number of patients aged 65 years or over prescribed an NSAID plus	g 0.00	3					0.247	
Number of patients under 12 with a current prescription of aspirin as a percentage of all patients	Do.00		0.004	0.003	0.005		0.003	0.004
	0.00 g 0.01					0.008		
Number of patients with concurrent prescriptions of warfarin and an oral NSAID as a percentage of all patients	0.01 0.01		0.007	0.010	0.004	0.008		
codes, as a percentage of all female patients.	0.01			0.010			0.012	0.012
Number of female patients with a current prescription of oestrogen-only hormone replacement therapy without any hysterectomy READ/SNOMED	rcentage	2 0.205	0.265	0.275	0.212	0.261	0.204	
as a percentage of all female patients	0.00	0		0.275		0.003		0.297
Number of female patients with a past medical history of venous or arterial thrombosis who have been prescribed combined hormonal contraceptives,	0.01 0.00		0.004	0.010	0.005	0.000	0.007	0.009
beta-blocker as a percentage of all patients	0.00		0.004					
Number of patients with concurrent prescriptions of verapamil and a	0.01 0.00		0.004	0.008	0.005	0.004	0.008	0.005
as a percentage of all patients	Perce	1			6.100			
Number of patients with asthma who have been prescribed a beta-blocker	entage 0	3 0.237	0.215	0.295	0.160	0.212	0.206	0.244
without a PPI as a percentage of all patients	0.0 0.0				0.007			
umber of patients with a peptic ulcer who have been prescribed NSAIDs	o.0	0.013	0.013	0.013		0.013	0.017	0.011

### 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

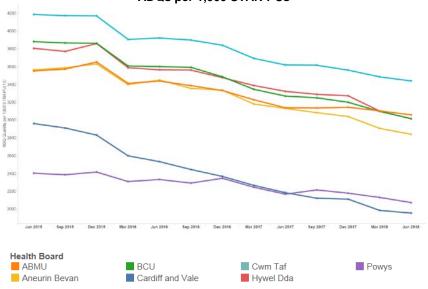
There has been ongoing concern with regard to the high level of hypnotic and anxiolytic prescribing within NHS Wales. Some prescribing may be inappropriate and contribute to the problem of physical and psychological dependence, and/or may be responsible for masking underlying depression.

- Across Wales, the prescribing of hypnotics and anxiolytics decreased by 7.16% for the quarter ending June 2018 compared with the equivalent quarter of the previous year, in line with the aim of this indicator.
- For the quarter ending June 2018, hypnotic and anxiolytic prescribing ranged from 1,958 to 3,442 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 Cardiff and Vale 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 1	2018–2019 Qtr 1	% Change
Cardiff and Vale	2,188	1,958	-10.5%
Hywel Dda	3,325	3,017	-9.27%
Aneurin Bevan	3,133	2,843	-9.25%
Betsi Cadwaladr	3,272	3,019	-7.72%
Cwm Taf	3,621	3,442	-4.96%
Powys	2,171	2,076	-4.36%
Abertawe Bro Morgannwg	3,141	3,061	-2.54%
Wales	3,059	2,840	-7.16%

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

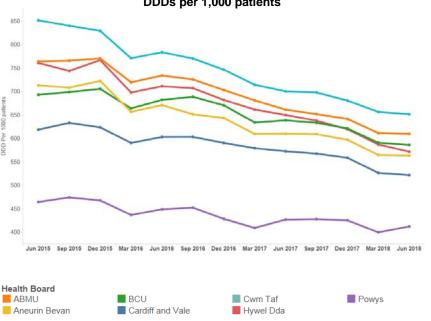
Whilst there is a recognised place in pain management for tramadol, there are concerns regarding the risks associated with dependence, diversion, misuse and ADRs. This NPI promotes a prudent approach to prescribing tramadol, taking into account the risks and benefits, and encouraging timely review.

- Across Wales, prescribing of tramadol was 8.31% lower in the quarter ending June 2018, than in the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending June 2018, tramadol prescribing ranged from 413 to 652 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 decrease was seen in 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 1	2018–2019 Qtr 1	% Change
Hywel Dda	650	572	-12.0%
Cardiff and Vale	573	522	-8.85%
Betsi Cadwaladr	639	587	-8.19%
Abertawe Bro Morgannwg	662	610	-7.77%
Aneurin Bevan	610	564	-7.60%
Cwm Taf	701	652	-6.97%
Powys	427	413	-3.46%
Wales	625	573	-8.31%

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

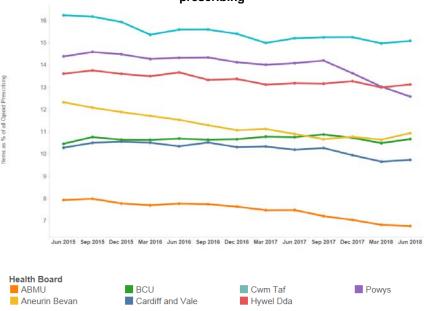
Opioid patches are recommended as a treatment option only where analgesic requirements are stable and where oral opioids are unsuitable. Prescribers should make evidence-based, informed decisions based on the individual needs of the patient. Prescribers should ensure that when an opioid patch is indicated,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

- Across Wales, use of opioid patches as a percentage of all opioid prescribing was 2.45% lower in the quarter ending June 2018 than in the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending June 2018, the proportion of opioid patch prescribing ranged from 6.77% to 15.1%.
- 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 1	2018–2019 Qtr 1	% Change
Powys	14.1	12.6	-10.6%
Abertawe Bro Morgannwg	7.49	6.77	-9.55%
Cardiff and Vale	10.2	9.74	-4.51%
Betsi Cadwaladr	10.8	10.7	-0.82%
Cwm Taf	15.2	15.1	-0.79%
Hywel Dda	13.2	13.1	-0.43%
Aneurin Bevan	10.9	10.9	0.34%
Wales	11.1	10.8	-2.45%

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

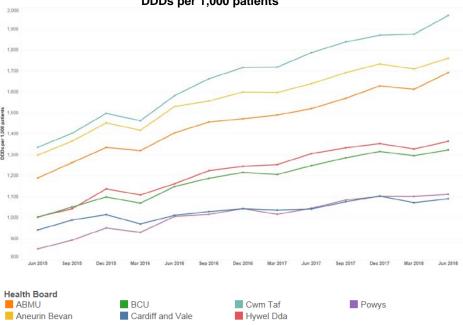
Gabapentin and pregabalin have a well-defined role in the management of a number of conditions including epilepsy and neuropathic pain, and pregabalin also has a role in treatment of generalised anxiety disorder. Both gabapentin and pregabalin have known psychiatric side effects and there is a potential 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 June 2018, prescribing of gabapentin and pregabalin increased by 7.51% compared with the same quarter of the previous year.
- For the quarter ending June 2018, gabapentin and pregabalin prescribing ranged from 1,090 to 1,964 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 Hywel Dda UHB and the largest percentage increase was seen in Abertawe Bro Morgannwg UHB.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Hywel Dda	1,305	1,364	4.51%
Cardiff and Vale	1,041	1,090	4.73%
Betsi Cadwaladr	1,248	1,323	6.05%
Powys	1,045	1,111	6.33%
Aneurin Bevan	1,639	1,760	7.38%
Cwm Taf	1,787	1,964	9.90%
Abertawe Bro Morgannwg	1,520	1,692	11.3%
Wales	1,384	1,488	7.51%

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.

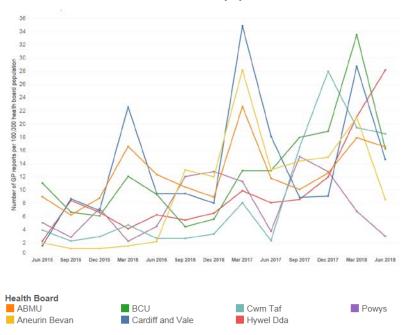
### **GP** practices

- The number of Yellow Cards submitted by GP practices in Wales increased by 36% compared with the equivalent quarter of the previous year.
- The largest percentage increase in GP practice Yellow Card reporting was seen in Cwm Taf UHB. The largest percentage decrease was seen in Aneurin Bevan UHB.

Table 6. Number of Yellow Cards submitted by GP practices

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Cwm Taf	7	55	686%
Hywel Dda	31	108	248%
Abertawe Bro Morgannwg	62	87	40%
Betsi Cadwaladr	90	113	26%
Cardiff and Vale	88	71	-19%
Powys	5	4	-20%
Aneurin Bevan	76	50	-34%
Wales	359	488	36%

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



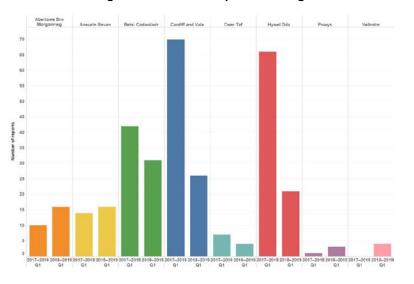
### Secondary care

- The number of Yellow Cards submitted by secondary care decreased by 42% compared with the equivalent quarter of the previous year.
- The largest percentage increase in secondary care reporting was seen in Powys Teaching HB. The largest percentage decrease was seen in Hywel Dda UHB.

Table 7. Number of Yellow Cards submitted by secondary care

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Powys	1	3	200%
Abertawe Bro Morgannwg	10	16	60%
Aneurin Bevan	14	16	14%
Betsi Cadwaladr	42	31	-26%
Cwm Taf	7	4	-43%
Cardiff and Vale	70	26	-63%
Hywel Dda	66	21	-68%
Velindre	0	4	N/A
Wales	210	121	-42%

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



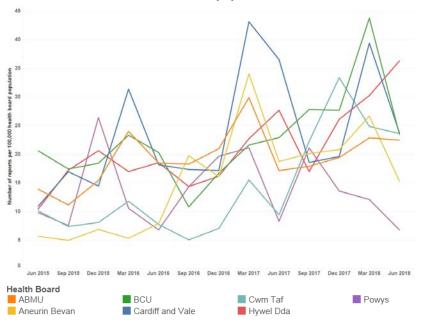
### **Health boards**

- The number of Yellow Cards submitted by health boards increased by 4% compared with the equivalent quarter of the previous year.
- The largest percentage increase in health board reporting was seen in Cwm Taf UHB. The largest percentage decrease was seen in Cardiff and Vale UHB.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Cwm Taf	28	70	150%
Hywel Dda	106	139	31%
Abertawe Bro Morgannwg	90	118	31%
Betsi Cadwaladr	159	163	3%
Powys	11	9	-18%
Aneurin Bevan	109	89	-18%
Cardiff and Vale	177	115	-35%
Velindre	0	4	N/A
Wales	680	707	4%

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



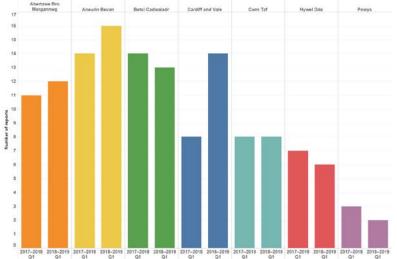
### Members of the public

- The number of Yellow Cards submitted by members of the public increased by 9% compared with the equivalent quarter of the previous year.
- The largest percentage increase in member of the public reporting was seen in Cardiff and Vale UHB. The largest percentage decrease was seen in Powys Teaching HB.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Cardiff and Vale	8	14	75%
Aneurin Bevan	14	16	14%
Abertawe Bro Morgannwg	11	12	9%
Cwm Taf	8	8	0%
Betsi Cadwaladr	14	13	-7%
Hywel Dda	7	6	-14%
Powys	3	2	-33%
Wales	65	71	9%

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



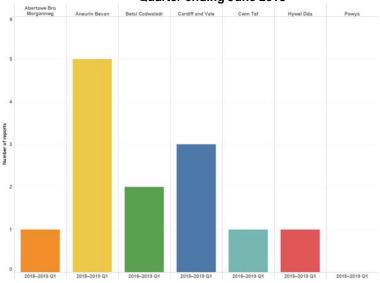
### **Community pharmacy**

- Across Wales, a total of 13 Yellow Card reports were submitted by community pharmacies during the quarter ending June 2018.
- The number of Yellow Card reports submitted by community pharmacies ranged from 5 to 0.

Table 10. Number of Yellow Cards submitted by community pharmacies

	2018–2019 Qtr 1
Aneurin Bevan	5
Cwm Taf	1
Hywel Dda	1
Abertawe Bro Morgannwg	1
Betsi Cadwaladr	2
Cardiff and Vale	3
Powys	0
Wales	13

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



# STEWARDSHIP INDICATORS

### 5.0 ANTIMICROBIAL STEWARDSHIP

There are three antimicrobial NPIs for 2018-2019:

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

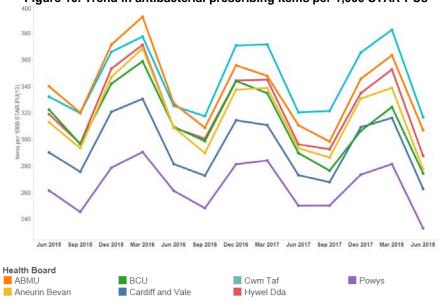
Aim: To reduce prescribing

- Across Wales, for the quarter ending June 2018, total antibacterial items per 1,000 STAR-PU reduced by 8.06%, compared with the quarter ending June 2016. This is in line with the indicator target.
- For the quarter ending June 2018, the total number of antibacterial items per 1,000 STAR-PUs ranged from 233 to 317 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 June 2018, six out of the seven health boards achieved the target of a 5% reduction against the baseline of quarter 1 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 June quarter 2016.
- Cwm Taf UHB demonstrated the smallest percentage reduction in prescribing, compared with June quarter 2016.

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

	2016–2017 Qtr 1	2018–2019 Qtr 1	% Change
Betsi Cadwaladr	310	275	-11.3%
Powys	262	233	-10.8%
Aneurin Bevan	309	278	-10.2%
Hywel Dda	309	288	-6.86%
Cardiff and Vale	282	263	-6.60%
Abertawe Bro Morgannwg	328	307	-6.15%
Cwm Taf	326	317	-2.60%
Wales	308	283	-8.06%

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.

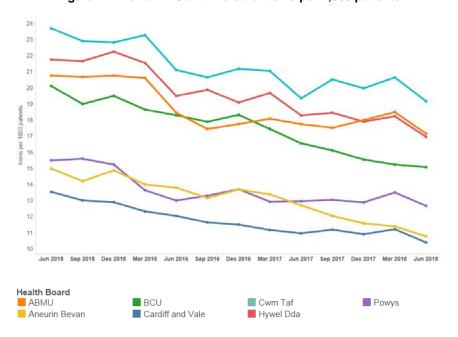
### 5.2.1 4C antimicrobial items per 1,000 patients

- Across Wales, for the quarter ending June 2018, the number of 4C antimicrobial items per 1,000 patients decreased by 13.7%, compared with the quarter ending June 2016, in line with the aim of this indicator.
- For the quarter ending June 2018, 4C prescribing ranged from 10.4 to 19.2 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 June 2016, in all seven health boards.
- The largest percentage decrease was seen in Aneurin Bevan UHB.
- The smallest percentage decrease was seen in Powys Teaching HB.

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

	2016–2017 Qtr 1	2018–2019 Qtr 1	% Change
Aneurin Bevan	13.8	10.8	-21.9%
Betsi Cadwaladr	18.3	15.1	-17.6%
Cardiff and Vale	12.1	10.4	-13.7%
Hywel Dda	19.5	17.0	-13.0%
Cwm Taf	21.1	19.2	-9.17%
Abertawe Bro Morgannwg	18.5	17.2	-7.00%
Powys	13.0	12.7	-2.53%
Wales	16.7	14.4	-13.7%

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



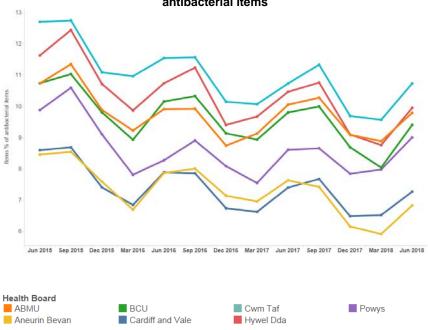
### 5.2.2 4C antimicrobials as a percentage of total antibacterial items

- Across Wales, for the quarter ending June 2018, the number of 4C antimicrobials as a percentage of total antibacterial items decreased by 6.42%, compared with the quarter ending June 2016, in line with the aim of this indicator.
- For the quarter ending June 2018, the number of 4C antimicrobials as a percentage of total antibacterial items ranged from 6.84% to 10.7% 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 June 2018, the percentage of 4C antimicrobials decreased in six out of the seven health boards, compared with June quarter 2016.
- The health board with the greatest percentage reduction, compared with June quarter 2016, was Aneurin Bevan UHB.
- Powys Teaching HB demonstrated an increase, compared with June quarter 2016.

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

	2016–2017 Qtr 1	2018–2019 Qtr 1	% Change
Aneurin Bevan	7.87	6.84	-13.2%
Cardiff and Vale	7.90	7.28	-7.84%
Betsi Cadwaladr	10.2	9.41	-7.35%
Hywel Dda	10.7	10.0	-7.33%
Cwm Taf	11.5	10.7	-7.02%
Abertawe Bro Morgannwg	9.92	9.80	-1.22%
Powys	8.28	9.01	8.81%
Wales	9.51	8.90	-6.42%

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

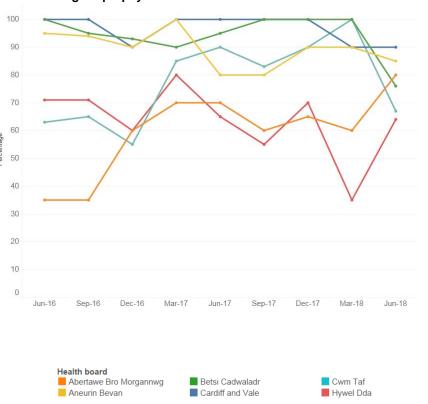
Due to surgical prophylaxis numbers being small and prone to misinterpretation at hospital level, the data are presented at health board level. Hospital level data are available if required.

- Across Wales, there was a 5% decrease in the percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis for quarter ending June 2018 compared with the equivalent quarter of the previous year.
- For the quarter ending June 2018, the percentage of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis ranged from 64% to 90% across the health boards.
- The health board with the highest proportion of patients receiving a single dose antimicrobial for colorectal surgical prophylaxis was Cardiff and Vale UHB whilst the lowest was Hywel Dda UHB.
- Cardiff and Vale UHB was the only health board to achieve the target for quarter ending June 2018.
- Abertawe Bro Morgannwg UHB and Aneurin Bevan 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 the other four health boards.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Abertawe Bro Morgannwg	70	80	14%
Aneurin Bevan	80	85	6%
Hywel Dda	65	64	-2%
Cardiff and Vale	100	90	-10%
Betsi Cadwaladr	95	76	-20%
Cwm Taf	90	67	-25%
Wales	82	78	-5%

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

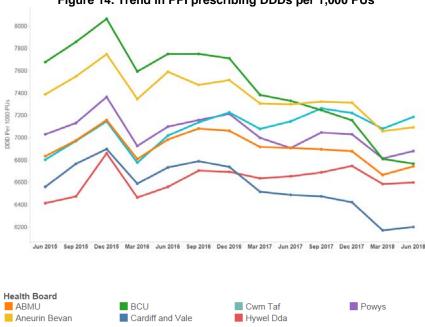
Although PPIs are generally well tolerated, there is emerging evidence that serious adverse effects may be linked with long-term PPI use. These include fractures of the hip, wrist and spine, *Clostridium difficile* infection, and hypomagnesaemia. Prescribers are therefore encouraged to review and reduce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

- Across Wales, for the quarter ending June 2018, PPI DDDs per 1,000 PUs decreased by 3.44%, compared with the quarter ending June 2017, in line with the aim of this indicator
- For the quarter ending June 2018, PPI usage ranged from 6,203 to 7,188 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.
- Six out of the 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 a small increase in prescribing.

Table 15. PPI DDDs per 1,000 PUs

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Betsi Cadwaladr	7.332	6,769	-7.67%
Cardiff and Vale	6,490	6,203	-4.43%
Aneurin Bevan	7,301	7,095	-2.82%
Abertawe Bro Morgannwg	6,910	6,745	-2.39%
Hywel Dda	6,657	6,600	-0.85%
Powys	6,910	6,882	-0.40%
Cwm Taf	7,148	7,188	0.55%
Wales	7,006	6,765	-3.44%

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.

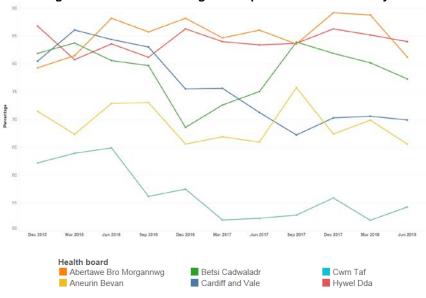
### Secondary care prescribing

- Across Wales, secondary care use of long-acting insulin as a percentage of all long- and intermediate-acting insulin prescribing was 0.41% higher in the quarter ending June 2018 than in the equivalent quarter of the previous year.
- For the quarter ending June 2018, prescribing of long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin ranged from 54.3% to 84.0%.
- The health board/trust with the lowest prescribing percentage was Cwm Taf UHB. The highest prescribing percentage was seen in Hywel Dda UHB.
- The proportion of long-acting insulin analogue prescribing decreased in three of the seven health boards/trusts, compared with the equivalent quarter of the previous year.
- The health board/trust with the greatest percentage decrease was Abertawe Bro Morgannwg UHB.
- Velindre Trust showed the greatest percentage increase; however, usage
  in this trust is very low, so percentage changes are likely to show a greater
  magnitude of fluctuation between comparative periods. Cwm Taf UHB had
  the next highest percentage increase at 3.82%.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Abertawe Bro Morgannwg	86.1	81.2	-5.69%
Cardiff and Vale	71.3	69.9	-1.96%
Aneurin Bevan	66.0	65.6	-0.61%
Hywel Dda	83.4	84.0	0.72%
Betsi Cadwaladr	75.0	77.3	3.07%
Cwm Taf	52.3	54.3	3.82%
Velindre	33.3	75.0	125%
Wales	72.7	73.0	0.41%

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



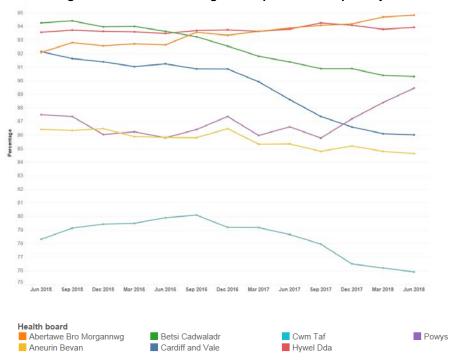
### Primary care prescribing

- Across Wales, the prescribing of long-acting insulin analogues as a proportion of total long- and intermediate-acting insulin prescribing decreased by 0.85% for the quarter ending in June 2018, compared with the equivalent quarter of the previous year. This is in line with the aim of the indicator.
- For the quarter ending June 2018, long-acting insulin analogue prescribing ranged from 75.9% 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 four health boards and increased in three 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 1	2018–2019 Qtr 1	% Change
Cwm Taf	78.7	75.9	-3.50%
Cardiff and Vale	88.6	86.0	-2.93%
Betsi Cadwaladr	91.4	90.3	-1.17%
Aneurin Bevan	85.4	84.6	-0.83%
Hywel Dda	93.8	93.9	0.14%
Abertawe Bro Morgannwg	93.9	94.8	1.01%
Powys	86.6	89.5	3.29%
Wales	88.9	88.1	-0.85%

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 June 2018 compared with the equivalent quarter of the previous year, from 60.5% to 90.5%.

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

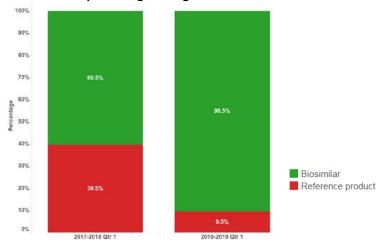
Reference (Remicade <sup>®</sup> ) <sup>†</sup>	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	2,508	650	-74.1%
Biosimilar (Inflectra®)	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	3,839	6,167	60.6%

<sup>†</sup> These data include supplies recorded through homecare.

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

	2017-2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	60.5%	90.5%	49.6%

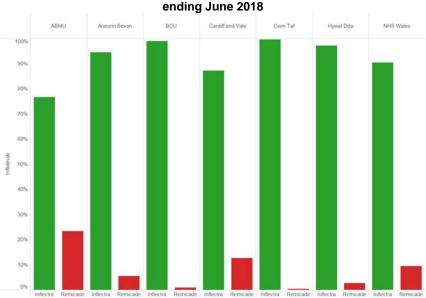
Figure 17. Infliximab reference (Remicade®) and biosimilar (Inflectra®) percentage change



### 2.1.1 Secondary care

Six health boards show biosimilar infliximab prescribing in secondary care. 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 in secondary care – Quarter



<sup>\*</sup>Due to quantity discrepancy in the data set, this number has been estimated.

### 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 June 2018 compared with the equivalent quarter of the previous year, from 50.1% to 81.6%.

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

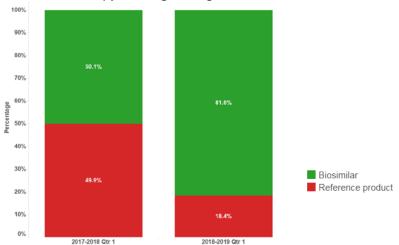
Reference (Enbrel <sup>®</sup> ) <sup>†</sup>	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	9,502	3,840	-59.6%
Biosimilar (Benepali <sup>®</sup> , Erelzi <sup>®</sup> )	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	9,556	17,076	78.7%

<sup>&</sup>lt;sup>1</sup>These data include supplies recorded through homecare.

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

	2017-2018 Qtr 1	2018-2019 Qtr 1	% Change
Total	50.1%	81.6%	62.9%

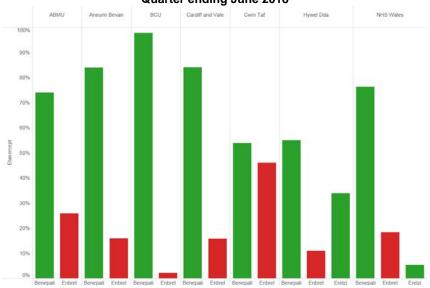
Figure 19. Etanercept reference (Enbrel®) and biosimilar (Benepali®, Erelzi®) percentage change



### 2.2.1 Secondary care

Six health boards show biosimilar etanercept prescribing in secondary care. 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 in secondary care – Quarter ending June 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 19.3% to 93.1% for quarter ending June 2018 compared with the equivalent quarter of the previous year.

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

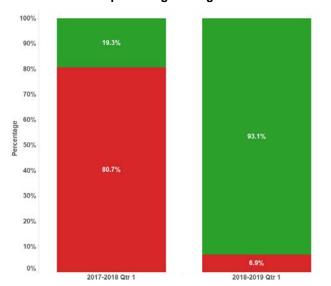
Reference (MabThera <sup>®</sup> ) <sup>†</sup>	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	1,827	155	-91.5%
Biosimilar (Truxima®)	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	437	2,081	376%

<sup>&</sup>lt;sup>1</sup>These data include supplies recorded through homecare.

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

	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Total	19.3%	93.1%	382%

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

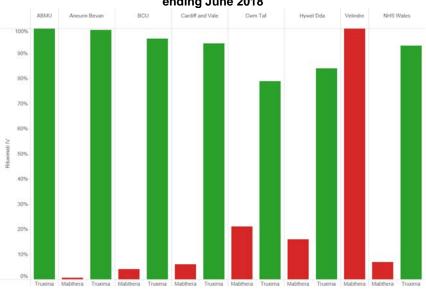


■ Biosimilar ■ Reference product

### 2.3.1 Secondary care

Six health boards show biosimilar rituximab prescribing in secondary care. 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 in secondary care – Quarter ending June 2018



### 2.4 Insulin glargine

Within Wales there was an increase in the use of insulin glargine biosimilar (Abasaglar®) for quarter ending June 2018 compared with the equivalent quarter of the previous year, from 2.7% to 4.2%.

Table 24. Quantity of insulin glargine reference (Lantus® and Toujeo®) and biosimilar (Abasaglar®) prescribed

Reference (Lantus <sup>®</sup> and Toujeo <sup>®</sup> )	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Primary care	194,800	182,405	-6.4%
Secondary care	3,461	3,829	10.6%
Total	198,261	186,234	-6.1%
Biosimilar (Abasaglar <sup>®</sup> )	2017–2018 Qtr 1	2018–2019 Qtr 1	% Change
Primary care	5,034	7,833	55.6%
Secondary care	533	364	-31.7%
,			

Table 25. Insulin glargine biosimilar (Abasaglar®) as a percentage of reference (Lantus® and Toujeo®) and biosimilar prescribed

	2017–2018 Qtr 1	2018-2019 Qtr 1	% Change
Primary care	2.5%	4.1%	64.0%
Secondary care	13.3%	8.7%	-34.6%
Total	2.7%	4.2%	55.6%

Figure 23. Insulin glargine reference (Lantus® and Toujeo®) and biosimilar (Abasaglar®) percentage change

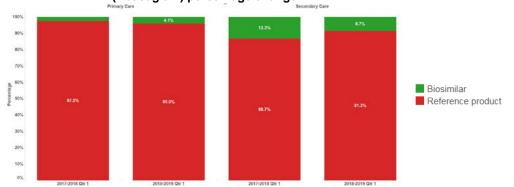
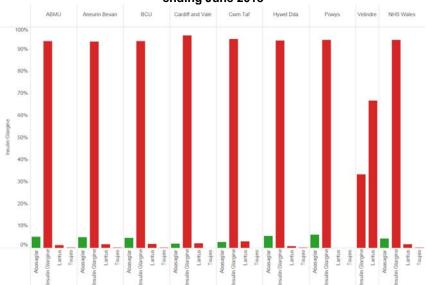


Figure 24. Insulin glargine reference (Lantus® and Toujeo®) and biosimilar (Abasaglar®) as a proportion of total insulin glargine prescribed – Quarter ending June 2018



### 2.5 Total biosimilar usage

Within Wales there was an increase in the use of the reported biosimilar medicines (infliximab, etanercept, rituximab and insulin glargine) combined as a percentage of reported 'reference' biological medicines plus biosimilars combined, from 8% to 15% for the quarter ending June 2018 compared with the equivalent quarter of the previous year.

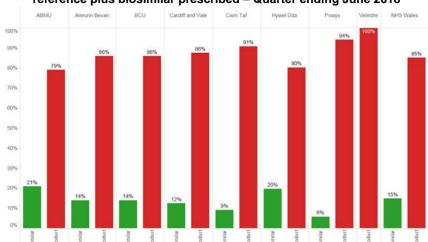


Figure 25. Biological reference and biosimilar as a proportion of total reference plus biosimilar prescribed – Quarter ending June 2018

### **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 DDDs 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.

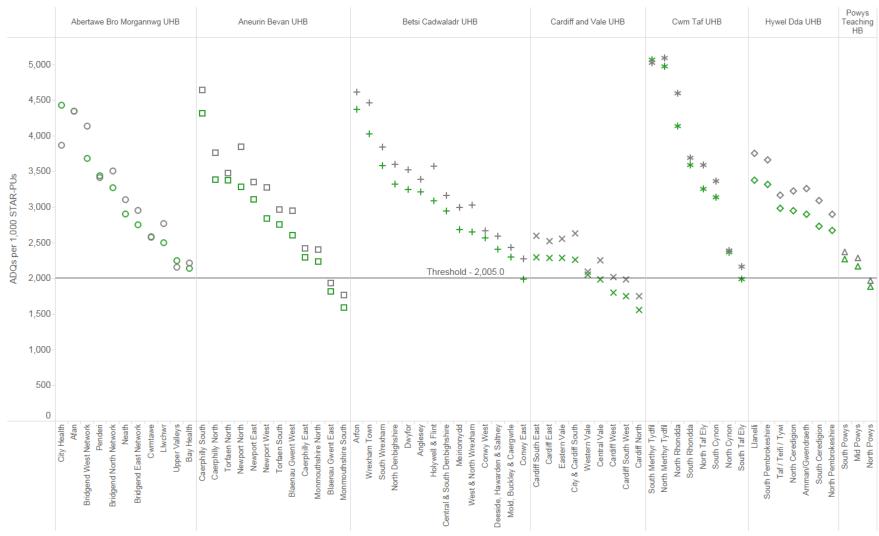
# **APPENDIX 1. AWMSG NATIONAL PRESCRIBING INDICATORS 2018–2019**

National Prescribing Indicator	g 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	
		Tramadol DDDs per 1,000 patients	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below	NWSSP	
Analgesics	Primary care Opioid patch items as a percentage of all opioi 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	
	Primary care		One Yellow Card per 2,000 GP practice population	MHRA	
	Secondary care		In excess of a 20% increase from baseline		
Yellow Card Reporting	Health board Num	Number of Yellow Cards submitted	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.	d.	
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	
Antimicrobial stewardship	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	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 1. Hypnotic and anxiolytic prescribing – Quarter ending June 2018 versus quarter ending June 2017



Quarter ending June 2017Quarter ending June 2018

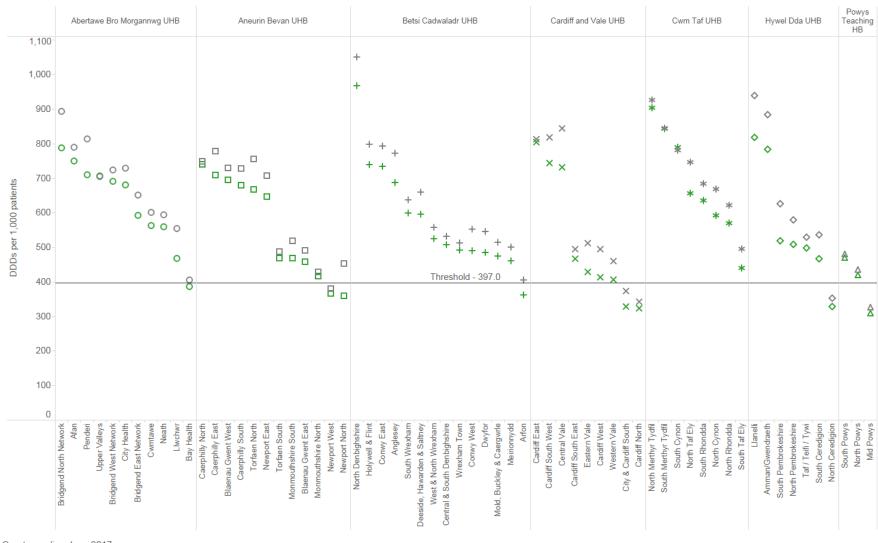


Figure 2. Tramadol prescribing – Quarter ending June 2018 versus quarter ending June 2017

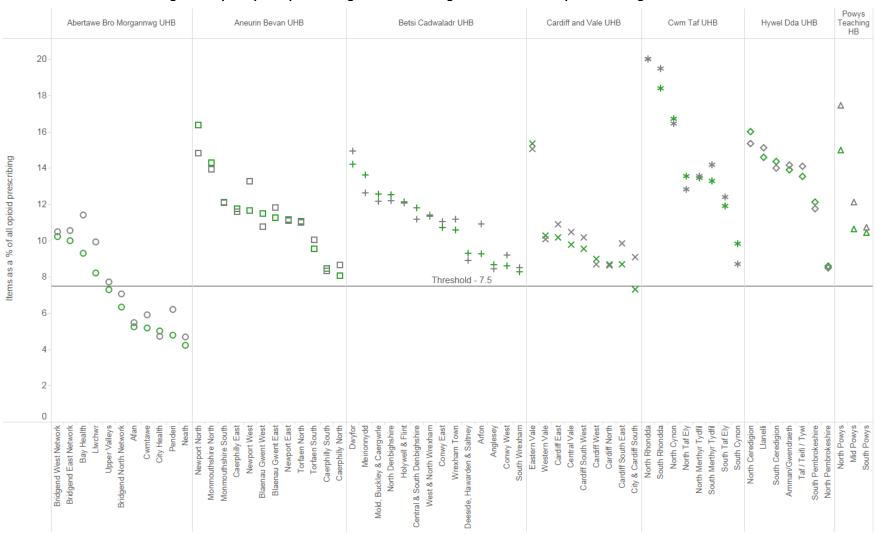


Figure 3. Opioid patch prescribing – Quarter ending June 2018 versus quarter ending June 2017

Quarter ending June 2017Quarter ending June 2018

Powys Teaching HB Abertawe Bro Morgannwg UHB Aneurin Bevan UHB Betsi Cadwaladr UHB Cardiff and Vale UHB Cwm Taf UHB Hywel Dda UHB 2,400 2,200 0 0 2,000 00 1,800 **\Q** 1,600 DDDs per 1,000 patients 0 000  $\Diamond$ 00 0 × 0 1,400 00 × ㅁ밀믬 1,200  $\Diamond$ ΔΔ Threshold - 1,055.0 1,000 ×× 00 8 800 600 400 200 0 Newport East North Denbighshire Cardiff West Cardiff South East Caerphilly North Caerphilly East Cardiff North Conwy West West & North Wrexham Mold, Buckley & Caergwrle Cardiff South West Eastern Vale Amman/Gwendraeth Caerphilly South Monmouthshire North outhshire South Central Vale & Cardiff South South Taf Ely Bay Health Blaenau Gwent Eas Conwy Eas Taf/Teifi/Tyw Newport Wes South Wrexhan uth Denbighshire Holywell & Flin South Ceredigion South Pembrokeshir Bridgend East Netwo South Cyn au Gwent We Bridgend North Net

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

■ Quarter ending June 2017 ■ Quarter ending June 2018

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

	Abertawe Bro Morgannwg UHB	Aneurin Bevan UHB	Betsi Cadwaladr UHB	Cardiff and Vale UHB	Cwm Taf UHB	Hywel Dda UHB	Powys Teaching HB
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200-	0	_		×		<b>*</b>	
150-							
100-							
50-							
0			Threshold - 0.0				
	Afan Bridgend West Network Bridgend North Network Llwchwr City Health Neath Upper Valleys Penderi Cwmtawe Bridgend East Network Bay Health	Blaenau Gwent West Torfaen North Caerphilly North Caerphilly East Blaenau Gwent East Caerphilly South Monmouthshire North Monmouthshire South Newport West Newport West Newport West	Dwyfor  North Denbighshire  Arfon  Anglesey ral & South Denbighshire side, Hawarden & Saltney Conwy West West & North Wrexham South Wrexham Meirionnydd Conwy East Wrexham Conwy East Wrexham (Conwy East Holywell & Caegwrle Holywell & Flint	Cardiff East Central Vale Cardiff South West Western Vale Cardiff North Cardiff South Eastern Vale Cardiff South	South Rhondda North Rhondda North Cynon South Merthyr Tydfil South Cynon South Taf Ely North Taf Ely	Llanelli Amman/Gwendraeth South Ceredigion South Pembrokeshire Taf / Teifi / Tywi North Pembrokeshire North Ceredigion	South Powys North Powys Mid Powys
	350- 300- 250- 200- 150- 50-	400- 350- 300- 300- 250- 100- 50- 0	400- 0 350- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	400 - O - O - O - O - O - O - O - O - O -	400 0 350 0 300 0 250 0 250 0 160 100 50 0 0 0 170 170 170 170 170 170 170 170 170 170	400 0 350 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	400 0 350 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Quarter ending June 2016

Quarter ending June 2018

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

	Abertawe Bro Morgannwg UHB	Aneurin Bevan UHB	Betsi Cadwaladr UHB	Cardiff and Vale UHB	Cwm Taf UHB	Hywel Dda UHB	Powys Teaching HB
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24			+		*	v	
22-			+		* * *	<b>*</b>	
20-	° 0		+ + +		* *	<b>* *</b>	
18-	0 0		+ + + + + +		* * *	<b>*</b>	
Items per 1,000 patients	88000		+ <sub>+</sub> , + , +	×	*	<b>* *</b>	
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8-				× × × × ×			
6-		_		××			
4-							
2-							
0			Threshold - 0.0				
	Afan Lwchwr Bridgend West Network Penderi City Health Bridgend North Network Neath Bridgend East Network Bay Health Cwmtawe Upper Valleys	Monmouthshire North Monmouthshire South Blaenau Gwent West Torfaen North Blaenau Gwent East Caerphilly South Caerphilly North Torfaen South Caerphild North Torfaen South Newport North Newport North Newport North		Central Vale Western Vale Eastern Vale Cardiff South West Cardiff West Cardiff South East Cardiff South East City & Cardiff South	North Rhondda South Merthyr Tydfil South Taf Ely North Taf Ely South Rhondda North Cynon South Cynon	South Pembrokeshire Llanelli Amman/Gwendraeth South Ceredigion Taf / Teifi / Tywi North Ceredigion North Pembrokeshire	South Powys Mid Powys North Powys

Quarter ending June 2016

Quarter ending June 2018

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

	Abertawe Bro Morgannwg UHB	Aneurin Bevan UHB	Betsi Cadwaladr UHB	Cardiff and Vale UHB	Cwm Taf UHB	Hywel Dda UHB	Powys Teaching HB
14 13 12 11 10 10 8 8 8 8 5 5 4 1 1 3 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	800000000000000000000000000000000000000		+ + + + + + + + + + + + + + + + + + +	×××	* * * * * * * * * * * *		Δ Δ Δ Δ
0	Llwchwr Bay Health Afan Penderi City Health Bridgend East Network Neath Bridgend West Network Cwmtawe Bridgend North Network Upper Valleys	Monmouthshire North Mommouthshire South Blaenau Gwent East Caerphilly South Newport North Caerphilly North Newport East Caerphilly East Toraen South Blaenau Gwent West Newport West	Central & South Denbighshire Deeside, Hawarden & Saltney Dwyfor West & North Wrexham Anglesey Mold, Buckley & Caergwrle Wrexham Town Conwy West Holywell & Flint South Wrexham Pow Conwy East Onwy Meath Methonydd Metinomydd	Eastern Vale Western Vale Central Vale Cardiff South West Cardiff West Cardiff South Cardiff South Cardiff South East Cardiff South East	South Merthyr Tydfil South Taf Ey North Merthyr Tydfil North Rhondda North Taf Ey South Rhondda North Cynon	South Pembrokeshire North Ceredigion North Pembrokeshire South Ceredigion Taf / Teifi / Tywi Llanelli Amman/Gwendraeth	South Powys North Powys Mid Powys

Quarter ending June 2016Quarter ending June 2018

Powys Teaching Abertawe Bro Morgannwg UHB Aneurin Bevan UHB Betsi Cadwaladr UHB Cardiff and Vale UHB Cwm Taf UHB Hywel Dda UHB HB 9,000 0 8,000 0 0 0000 7,000-×× Α 8 . Threshold - 6,062.0 ㅁ뮤 6,000 DDDs per 1,000 PUs 5,000 8 4,000 3,000 2,000 1,000 0 Newport East Monmouthshire South Newport North Newport West North Denbighshire & South Denbighshire South Rhondda North Rhondda Western Vale Bridgend North Network Forfaen South Caerphilly South outhshire North West & North Wrexham South Wrexham Central Vale North Taf Ely nau Gwent Wes Caerphilly Eas Cardiff South Eas South Cynor South Taf Ely arden & Saltne Caerphilly Nor North Ceredig

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

Quarter ending June 2017Quarter ending June 2018