



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

In focus report: 4C antimicrobials

April 2026



Care has been taken to ensure the information is accurate and complete at the time of publication. However, the All Wales Therapeutics and Toxicology Centre (AWTTC) and All Wales Medicines Strategy Group (AWMSG) do not make any guarantees to that effect. The information in this document is subject to review and may be updated or withdrawn at any time. AWTTC and AWMSG accept no liability in association with the use of its content. Information presented in this document can be reproduced using the following citation:

All Wales Therapeutics and Toxicology Centre. In focus report: 4C antimicrobials. April 2026.

Data presented within this report are also accessible via the Server for Prescribing Information Reporting and Analysis (SPIRA) at spira.uk/info.

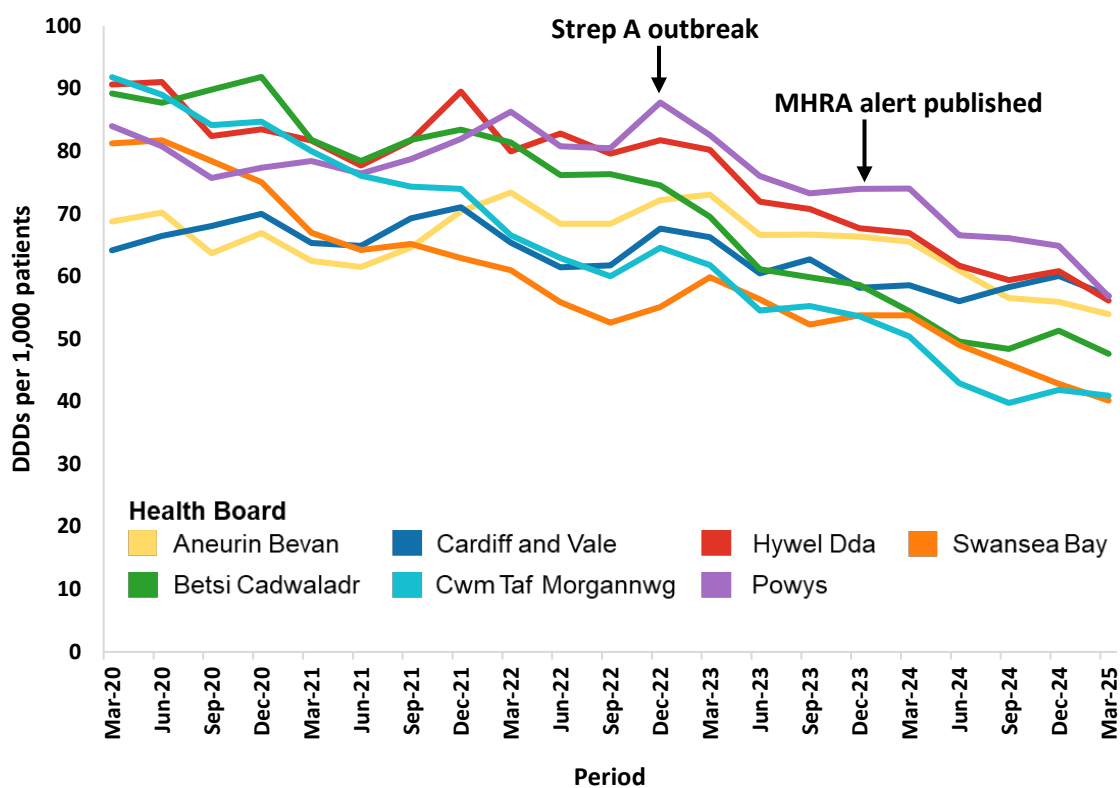
Copyright AWTTC 2026. All rights reserved.

National Prescribing Indicators 2024–2025: A focus on 4C prescribing

This report provides supplementary information to that contained within the [National Prescribing Indicator \(NPI\) quarterly reports](#) in order to provide a more detailed picture of prescribing by GP practices across Wales. NHS Wales network users can access the data used to create the graphs in this report via the interactive Server for Prescribing Information Reporting and Analysis ([SPIRA](#)) dashboards. Examples of good practice for all of the NPIs are published on the [AWTTC website](#).

Prescribing of 4C antimicrobials (co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin) has been monitored as part of the [NPIs](#) since 2018–2019 and use of these antimicrobials has been steadily reducing ([Figure 1](#)). The NPI measure for 2025–2026 (DDD¹ per 1,000 patients) aligns with the [antimicrobial resistance national action plan](#).

Figure 1. Trend in 4C antimicrobial DDDs per 1,000 patients²



There continues to be variation in prescribing when comparing GP practices and clusters across Wales, and within health boards, as demonstrated by [Figures 2](#) and [3](#).

¹ 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.

² National outbreak of Strep A infections around December 2022 led to an increase in prescribing.

Figure 2. Box and Whisker plot – 4C antimicrobial DDDs per 1,000 patients from Q4 2022–2023 to Q4 2024–2025

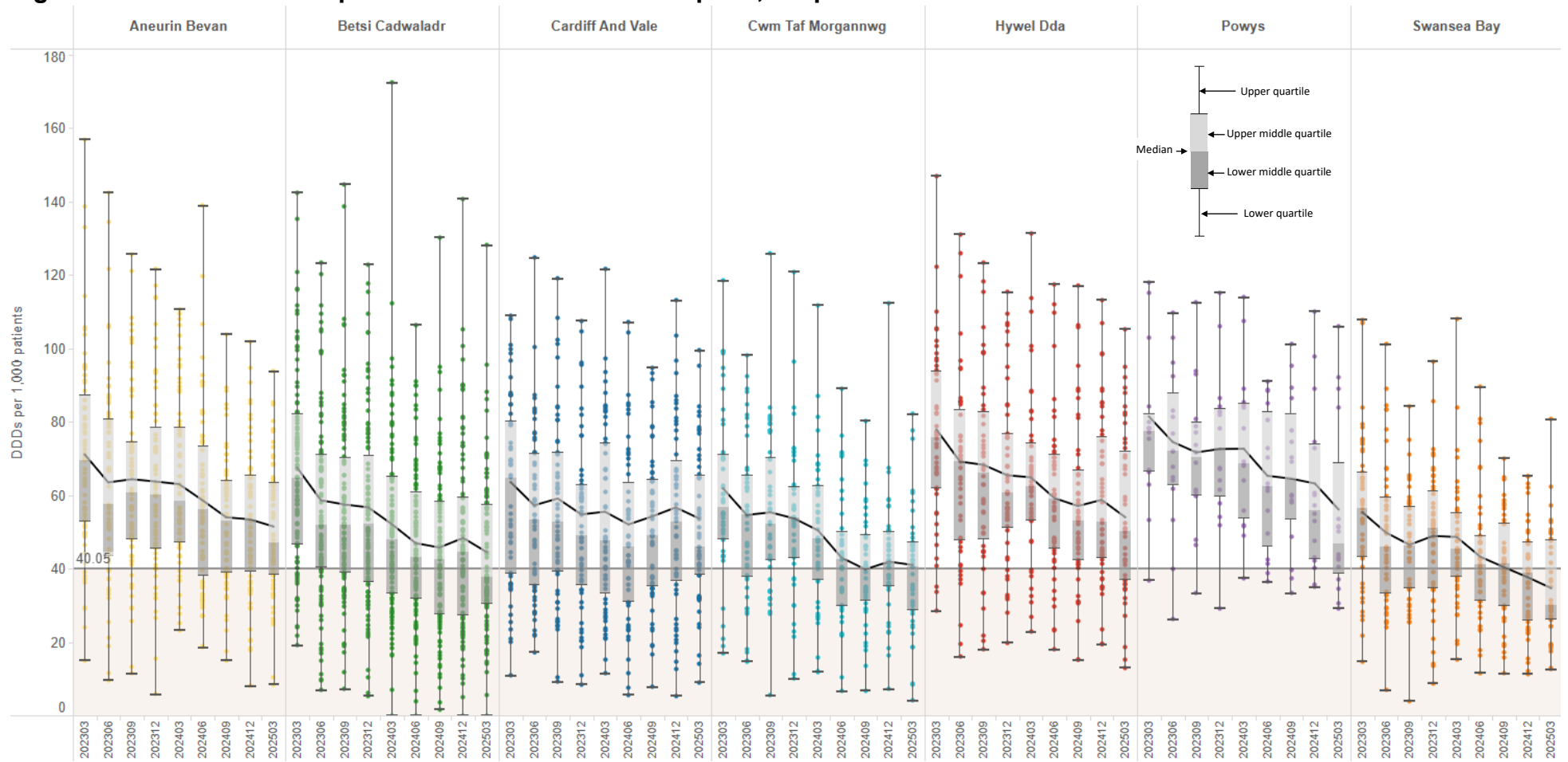
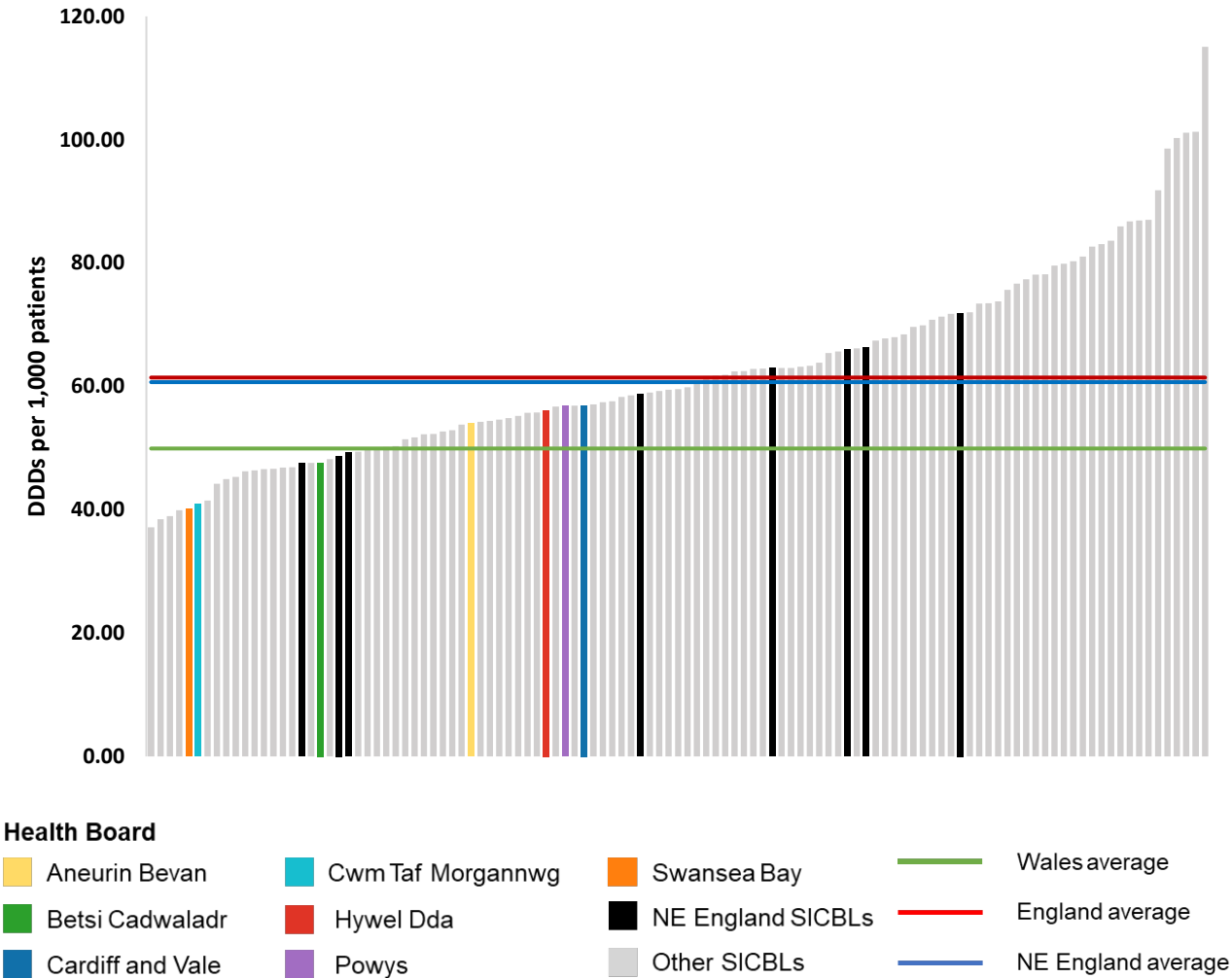


Figure 3. Trend in 4C antimicrobial prescribing by cluster from Q4 2022–2023 to Q4 2024–2025



Prescribing has been steadily decreasing across Wales and it remains lower than that in England ([Figure 4](#)).

Figure 4. 4C antimicrobial DDDs per 1,000 patients in Welsh health boards and English SICBLs³ – Quarter ending March 2025



This report aims to look at a breakdown of 4C prescribing to explore the proportion of 4C antimicrobials prescribed. In addition, it further breaks down cephalosporin and fluoroquinolone prescribing.

In January 2024 the MHRA released an updated [safety alert](#) regarding the use of fluoroquinolones, stating that they should only be used in situations when other antibiotics, that are commonly recommended for the infection, are inappropriate. Since then, the prescribing of fluoroquinolones in Wales has reduced by 35% from 21.6 DDDs per 1,000 patients (quarter ending December 2023), to 14.0 DDDs per 1,000 patients (quarter ending December 2024). [Figure 5](#) shows prescribing patterns for each of the 4C antimicrobials, reported as DDDs per 1,000 patients and items per 1,000 patients.

³ SICBLs – Sub Integrated Care Board Locations

Figure 5a. Trends in prescribing of each 4C antimicrobial (DDDs per 1,000 patients) from Q4 2021–2022 to Q4 2024–2025, by health board

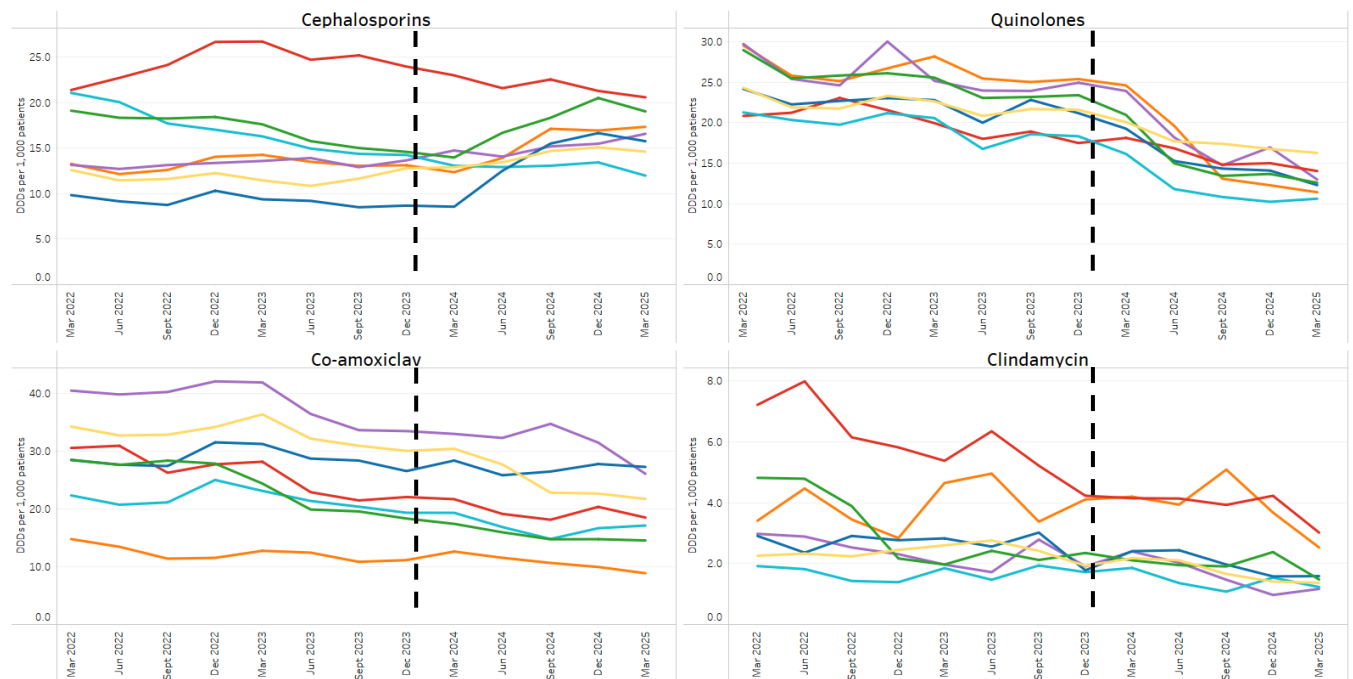
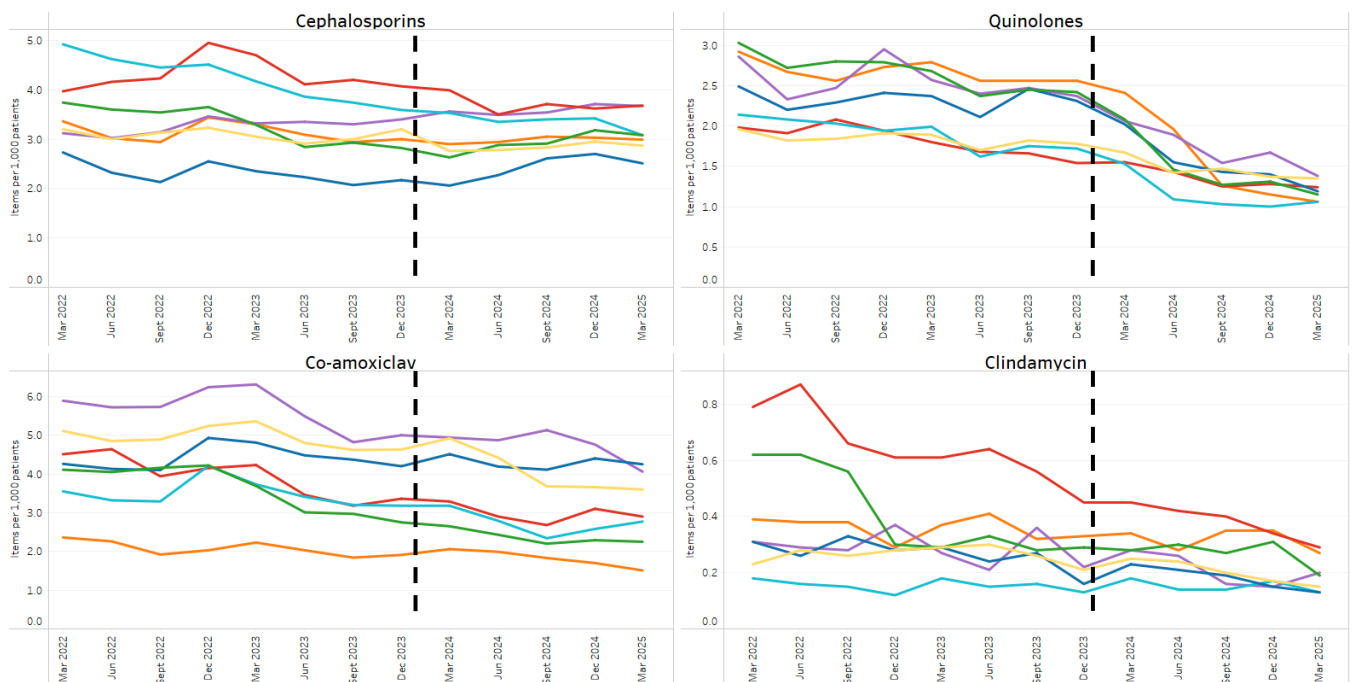


Figure 5b. Trends in prescribing of each 4C antimicrobial (items per 1,000 patients) from Q4 2021–2022 to Q4 2024–2025, by health board

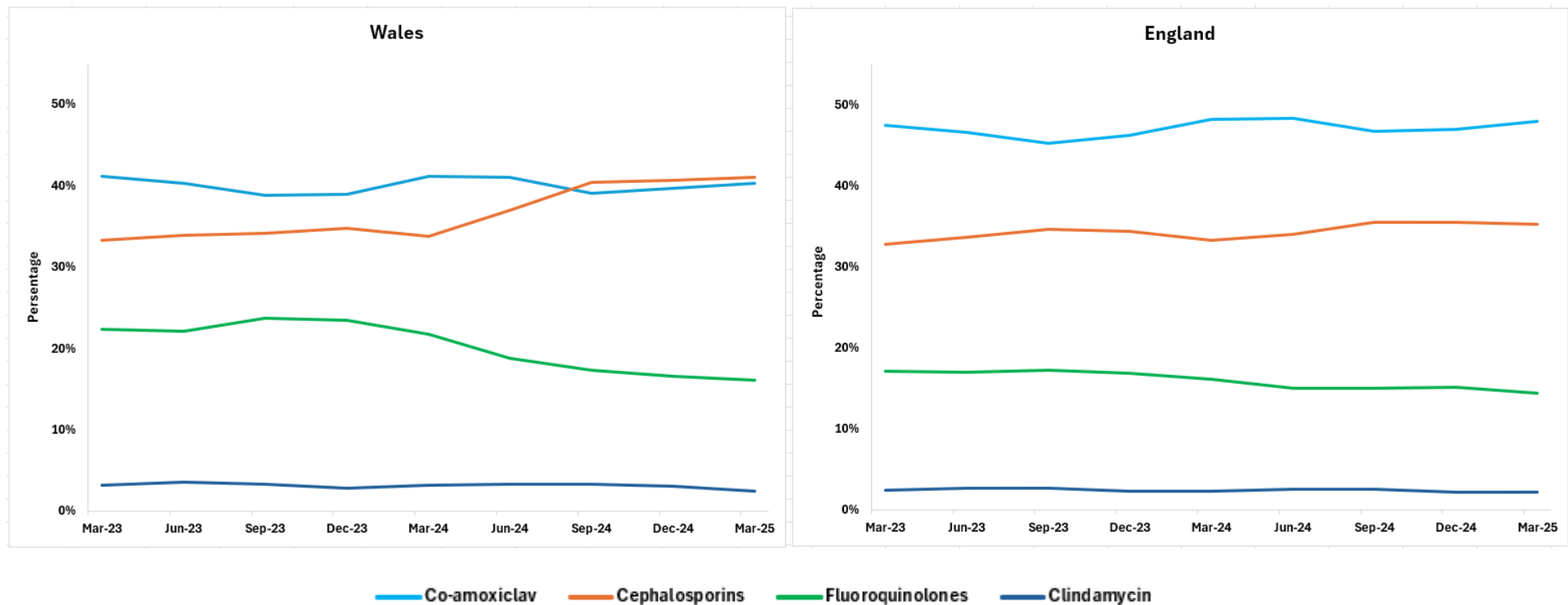


Health Board

- Aneurin Bevan
 - Betsi Cadwaladr
- Cardiff and Vale
 - Cwm Taf Morgannwg
- Hywel Dda
 - Powys
- Swansea Bay
 - MHR alert published

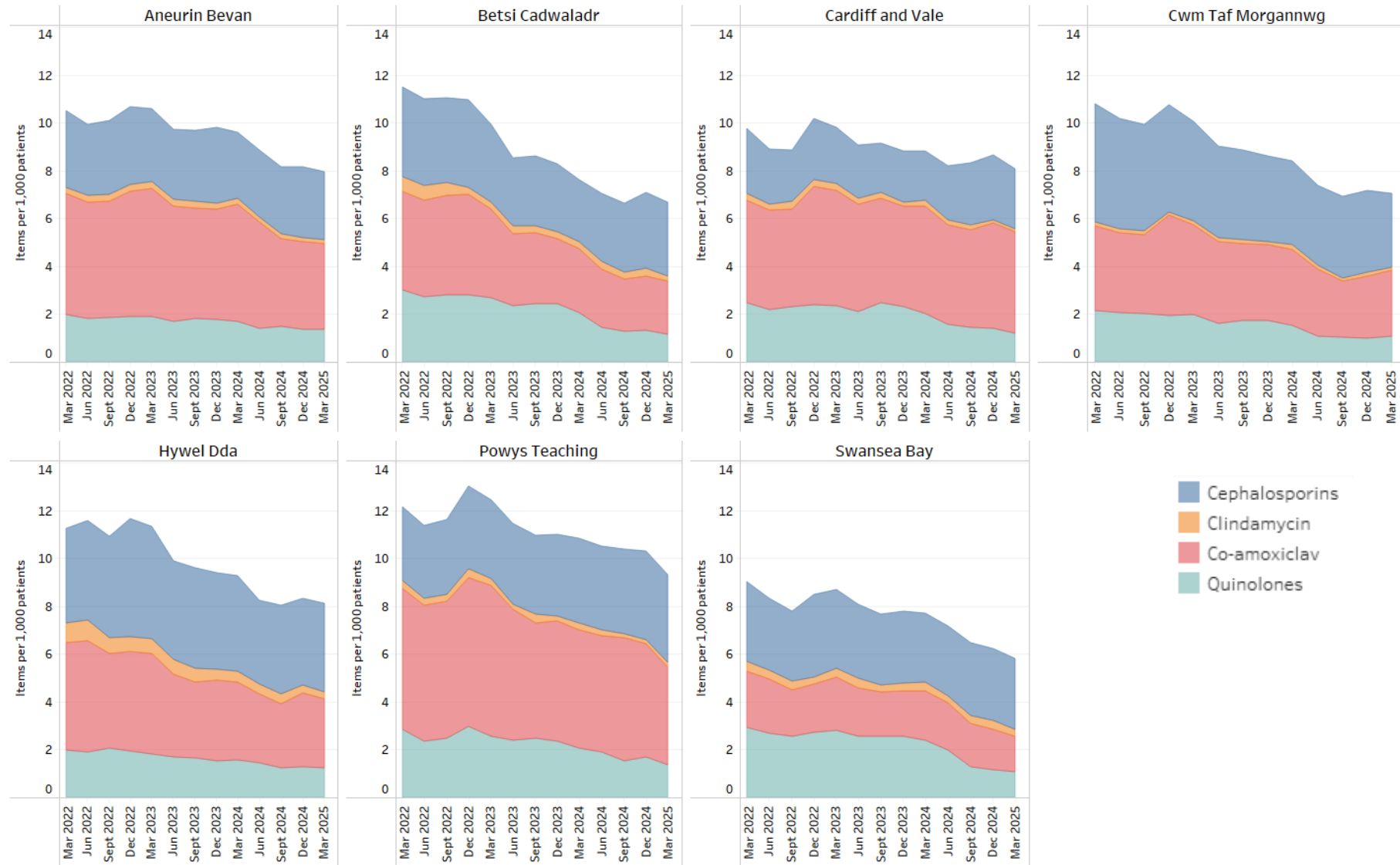
Across Wales, cephalosporins account for 41% of items per 1,000 patients, co-amoxiclav accounts for 40%, fluoroquinolones 16% and clindamycin 2% (Figure 6). A different pattern is seen in England where co-amoxiclav accounts for 48% of items per 1,000 patients, cephalosporins account for 35%, fluoroquinolones 14% and clindamycin 2% ([Figure 6](#)).

Figure 6. Percentage of 4C antimicrobials contributing to total 4C antimicrobial items per 1,000 patients from Q4 2022–2023 to Q4 2024–2025



[Figure 7](#) shows a breakdown of 4C antimicrobial prescribing for each health board.

Figure 7. Breakdown of the 4C antimicrobials items per 1,000 patients by health board from Q4 2021–2022 to Q4 2024–2025

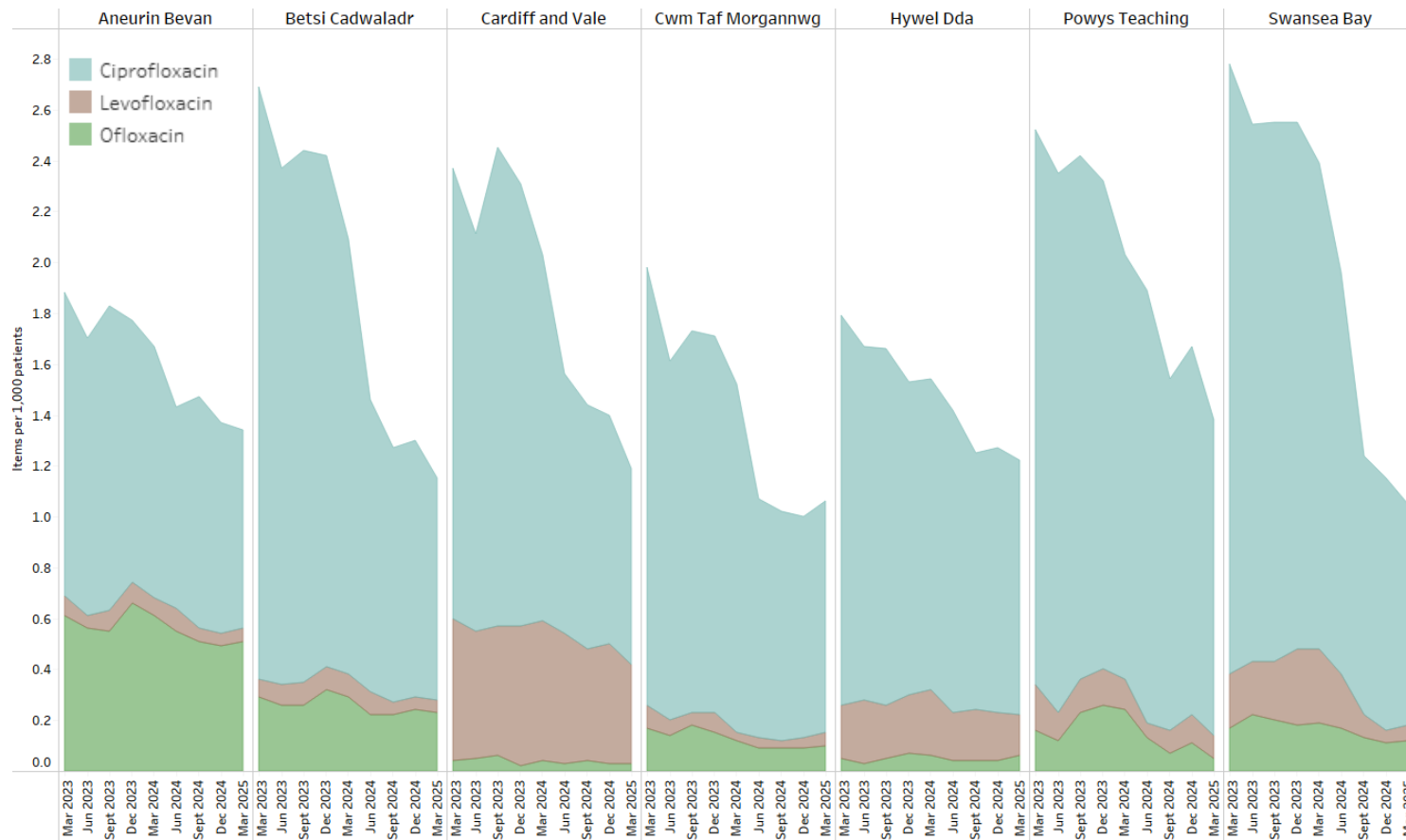


Fluoroquinolones

For the quarter ending March 2025, the top 3 fluoroquinolones prescribed, which account for 99% of fluoroquinolone prescribing, were ciprofloxacin (62%), ofloxacin (24%) and levofloxacin (13%).

The most commonly prescribed fluoroquinolone remains ciprofloxacin for all health boards, with the exception of Aneurin Bevan UHB where it is ofloxacin. Cardiff and Vale UHB are the highest prescribers of levofloxacin ([Figure 8](#)).

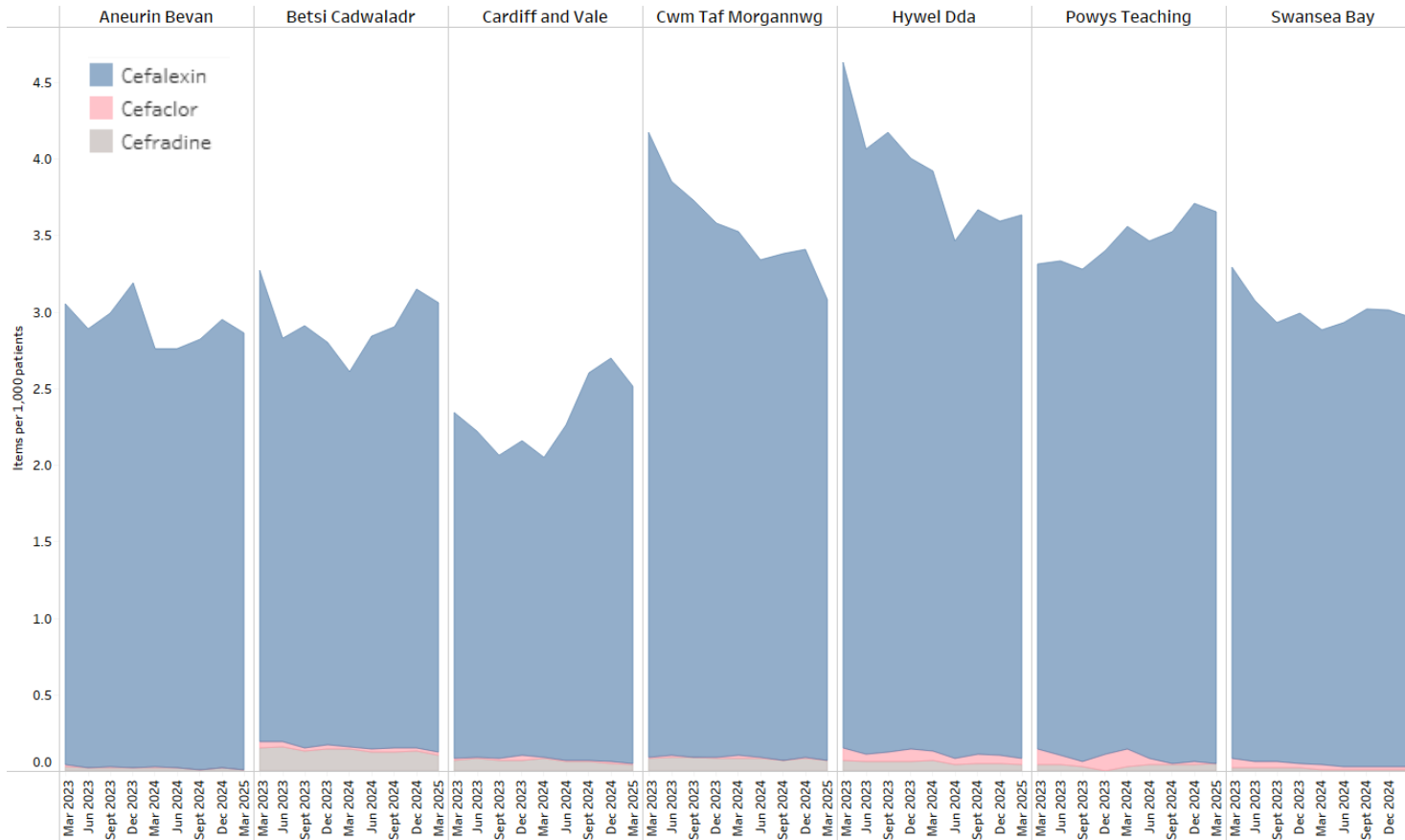
Figure 8. Top 3 fluoroquinolones prescribed, by health board from Q4 2022–2023 to Q4 2024–2025



Cephalosporins

For the quarter ending March 2025, the top 3 cephalosporins prescribed, which account for 99% of cephalosporin prescribing, were cefalexin (94%), cefradine (4%) and cefaclor (1%) ([Figure 9](#)).

Figure 9. Top 3 cephalosporins prescribed, by health board from Q4 2022–2023 to Q4 2024–2025



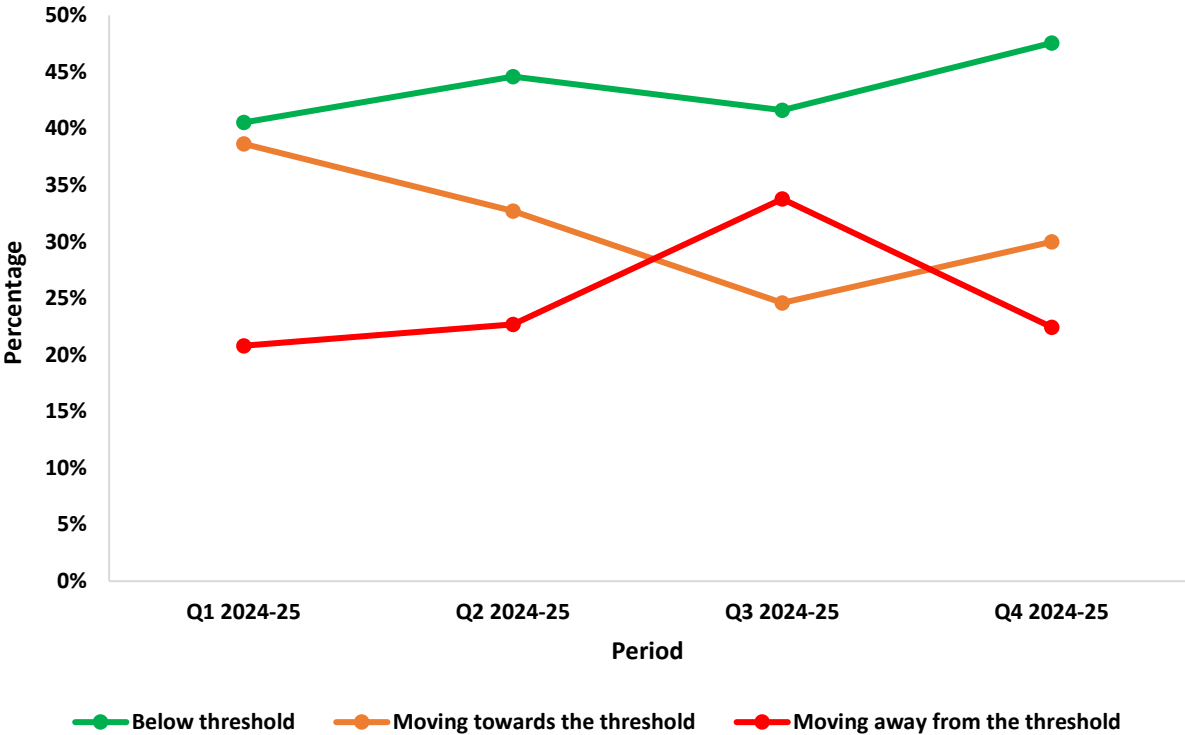
Threshold achievement

The target is for GP practices to maintain performance levels within the lower quartile or show a reduction towards the lower quartile. A threshold is set at the prescribing rate of the best performing 25% of GP practices in Wales. For 2024–2025, the threshold for the lower quartile (based on data from the quarter ending December 2023) is 40.1 DDDs per 1,000 patients.

Figure 10 shows the percentage of practices:

- Below the threshold (practice mean 4C antimicrobial prescribing is equal to or less than 40.1 DDDs per 1,000 patients for that quarter).
- Moving towards the threshold (practice mean 4C antimicrobial prescribing is greater than 40.1 DDDs per 1,000 patients but has decreased compared to the previous quarter).
- Moving away from the threshold (practice mean 4C antimicrobial prescribing is greater than 40.1 DDDs per 1,000 patients and has increased compared to the previous quarter).

Figure 10. Trend in percentage of practices that are below, moving towards, and moving away from the lower quartile threshold



Target achievement

Practices are able to meet the target by maintaining prescribing at or below the threshold, or by demonstrating a reduction in prescribing and therefore moving towards the lower quartile. [Figure 11](#) shows the trend in percentage of practices within the health board that are meeting the target.

Figure 11. Trend in percentage of practices that met the target, by health board

