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

Antimicrobials: stewardship and sustainability hand in hand

The impact of optimising antibiotic course duration in Wales

Grŵp Strategaeth Meddyginiaethau Cymru Gyfan
All Wales Medicines Strategy Group

GIG CYMRU NHS WALES

What is antimicrobial stewardship?

Antimicrobial stewardship means using antibiotics responsibly to achieve the best clinical outcome while minimising avoidable harm.

It means choosing the:

- **Right antibiotic**
- **Right dose**
- **Right route**
- **Right duration**

Key message **Every unnecessary antibiotic dose increases exposure without providing additional clinical benefit.**

What do we mean by sustainability?

Sustainable healthcare delivers high-quality patient care while making the best use of NHS resources and reducing environmental impact.

For medicines, this includes reducing:

- Unnecessary prescribing and medicine waste
- Manufacturing and packaging requirements
- Transport and distribution
- Financial costs
- The release of antimicrobials into the environment

Where do stewardship and sustainability meet?

Optimising antibiotic course duration can:

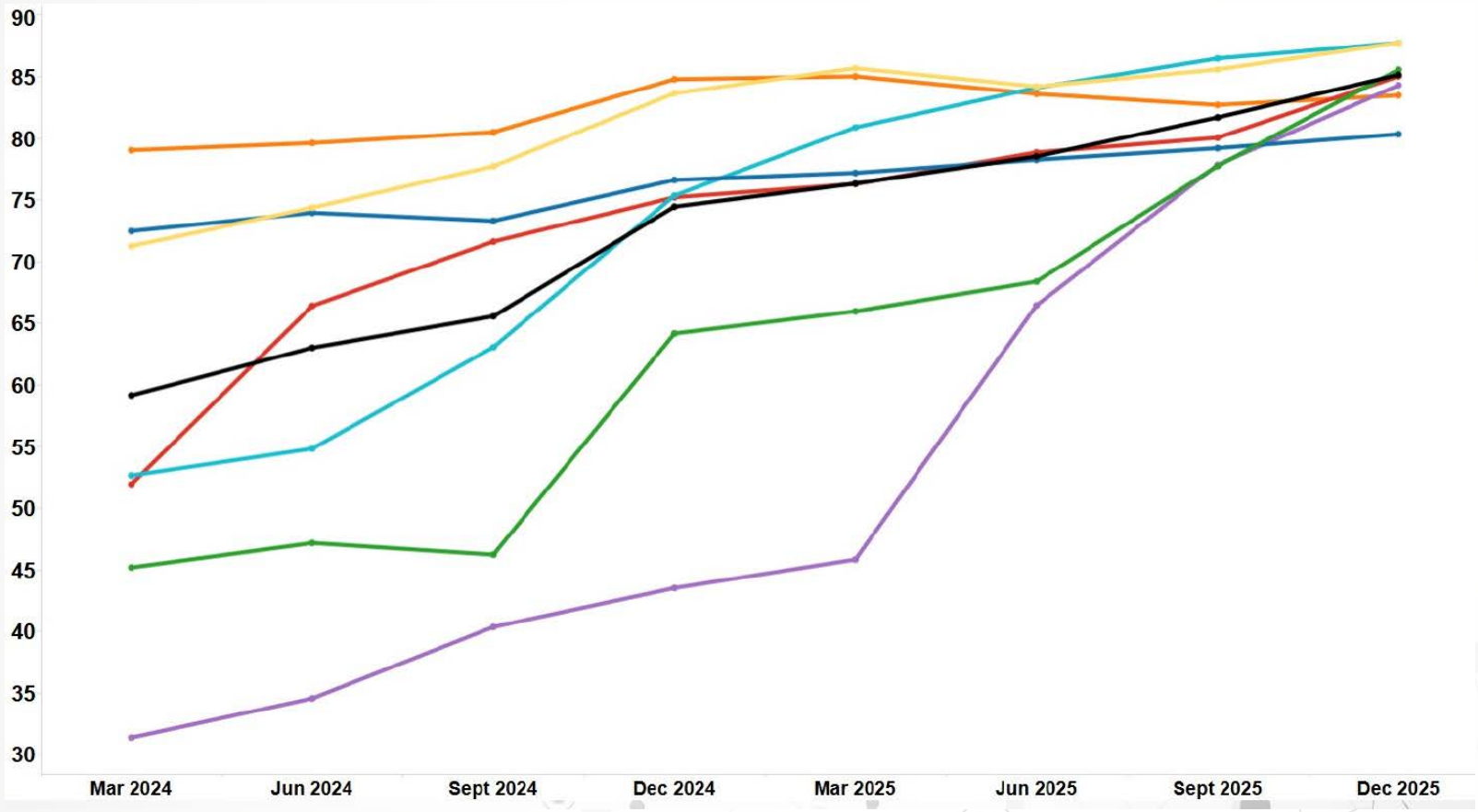
Reduce unnecessary antibiotic exposure
Lower the risk of adverse effects
Reduce selection pressure for antimicrobial resistance
Reduce the number of tablets manufactured and supplied
Reduce antibiotic expenditure
Reduce the associated carbon footprint

Key message	**The primary aim is better clinical care.** **Environmental and financial benefits follow from avoiding unnecessary treatment.**

Why focus on course duration?

- For many uncomplicated acute respiratory tract infections (RTIs) where antibiotic treatment is clinically appropriate, a five-day antibiotic course is recommended.
- However, prescribing data showed that seven-day courses remained common, resulting in avoidable additional antibiotic exposure.
- The antibiotic course duration for RTIs was introduced as part of the NPIs in 2025–2026. The antibiotics included in this indicator are:
  - amoxicillin 500 mg capsules
  - doxycycline 100 mg capsules
  - clarithromycin 500 mg tablets
- The target is for 75% of all 5- and 7-day course prescriptions to be issued as a 5-day course.

Amoxicillin: proportion issued as 5-day courses



59% → 85%

Amoxicillin reached the 75% target overall, showing a clear shift towards shorter appropriate courses.

- Large volume change
- Target achieved
- Variation reduced

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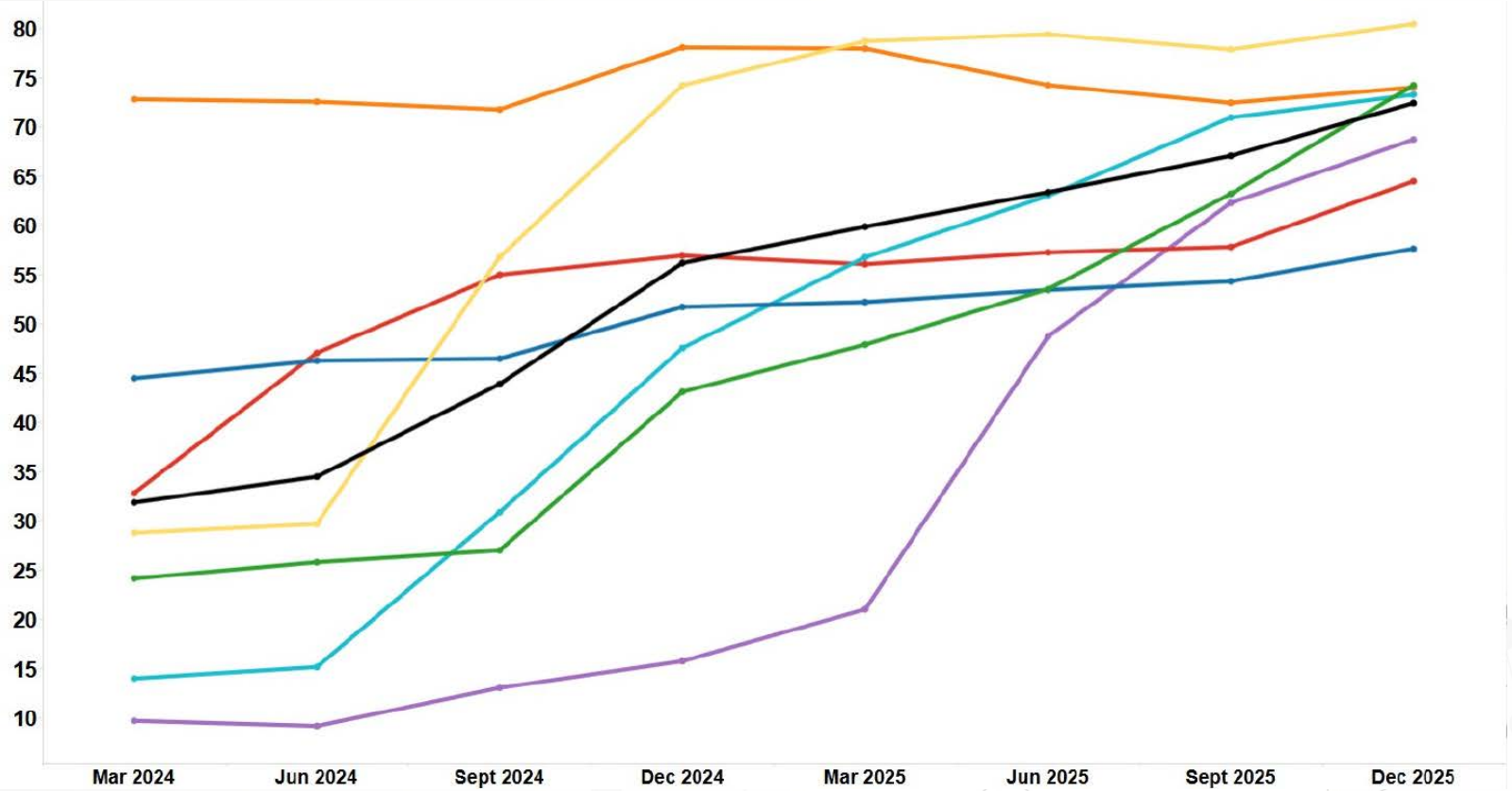
Doxycycline: proportion issued as 5-day courses



32% → 72%

Doxycycline showed substantial improvement, moving close to the 75% target.

- Major improvement
- Close to target
- Further progress possible

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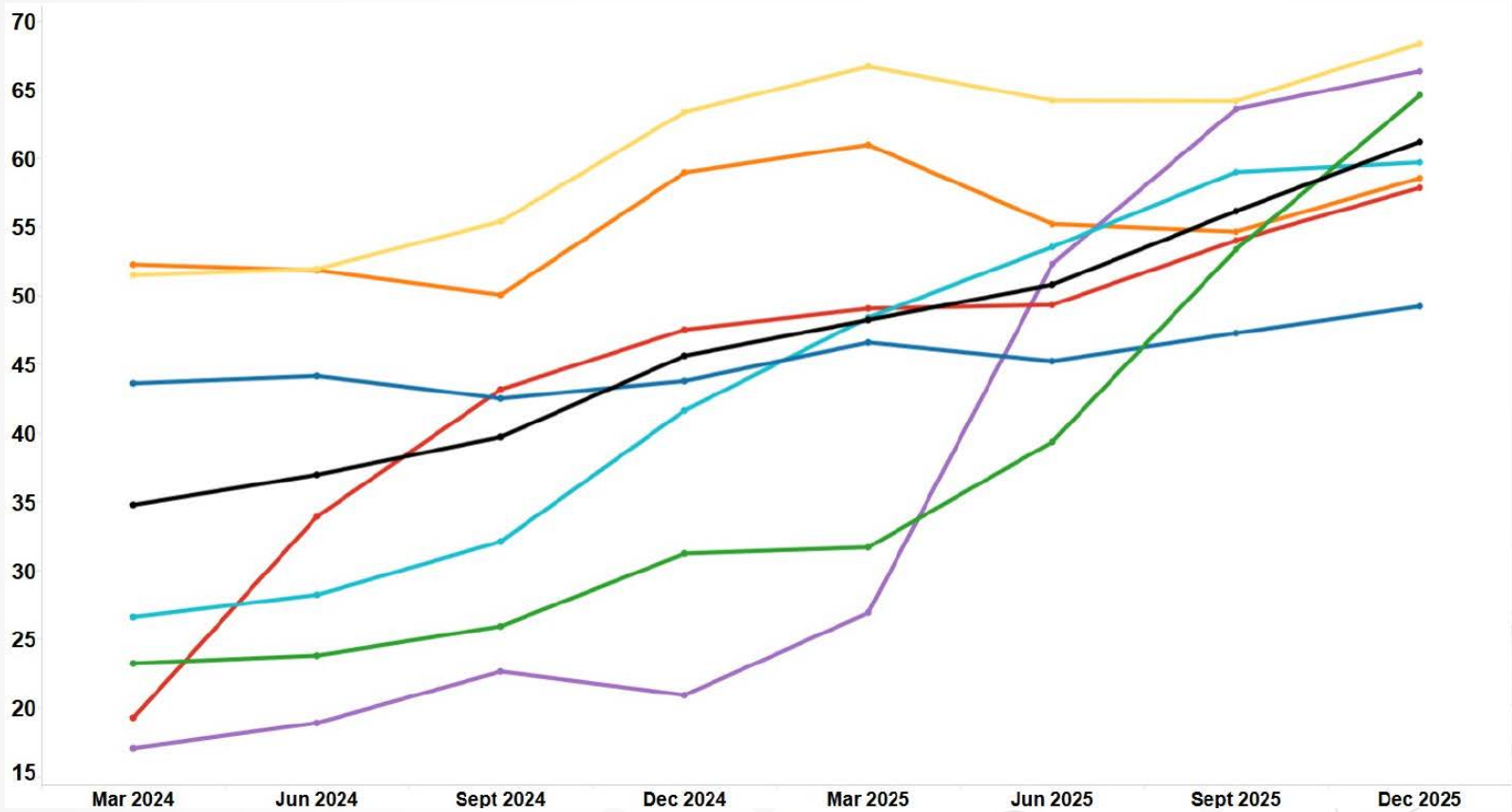
Clarithromycin: proportion issued as 5-day courses



35% → 61%

Clarithromycin improved, but remained below target overall, highlighting ongoing opportunity.

- Clear upward trend
- Below target overall
- Room to improve

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Question 1

Quantity of amoxicillin 500 mg capsules issued reduced by how much in 2025 compared with 2024?

A. 292,031

B. 692,031

C. 1,292,031

D. 1,884,083

Answer 1

1,292,031 fewer capsules

This was the largest contribution to the overall reduction in medicine volume.

- Stewardship: less unnecessary antibiotic exposure
- Sustainability: fewer capsules manufactured, packaged, supplied and dispensed

Question 2

Quantity of doxycycline 100 mg capsules issued reduced by how much in 2025 compared with 2024?

A. 128,298

B. 328,298

C. 528,298

D. 728,298

Answer 2

328,298 fewer capsules

The prescribing shift translated into a sizeable reduction in doxycycline capsule use.

- Clinical benefit remains the reason for change
- The reduced volume is an additional sustainability benefit

Question 3

Quantity of clarithromycin 500 mg tablets issued reduced by how much in 2025 compared with 2024?

A. 63,754

B. 163,754

C. 263,754

D. 363,754

Answer 3

263,754 fewer tablets

- Amoxicillin: 1,292,031 fewer
- Doxycycline: 328,298 fewer
- Clarithromycin: 263,754 fewer

Across all three preparations, this added up to 1,884,083 fewer tablets / capsules.

Question 4

Number of days exposure to those three preparations reduced by how much in 2025?

A. 86,210 days

B. 359,210 days

C. 559,210 days

D. 859,210 days

Answer 4

859,210 antibiotic days avoided

This represents a substantial reduction in population-level antibiotic exposure.

- Fewer unnecessary days of treatment
- Reduced potential for adverse effects
- Reduced selection pressure for antimicrobial resistance

Question 5

Spend on those three preparations reduced by how much in 2025?

A. £54,000

B. £134,000

C. £234,000

D. £434,000

Answer 5

Approximately £234,000 saved

Improving prescribing quality also reduced avoidable medicines expenditure.

- The primary aim was appropriate antibiotic use
- The financial saving is an additional benefit of better clinical practice

Question 7

What is the main reason for optimising antibiotic course duration?

A. Reduces unnecessary exposure

B. Supports stewardship

C. Reduces environmental and financial impact

D. All of the above

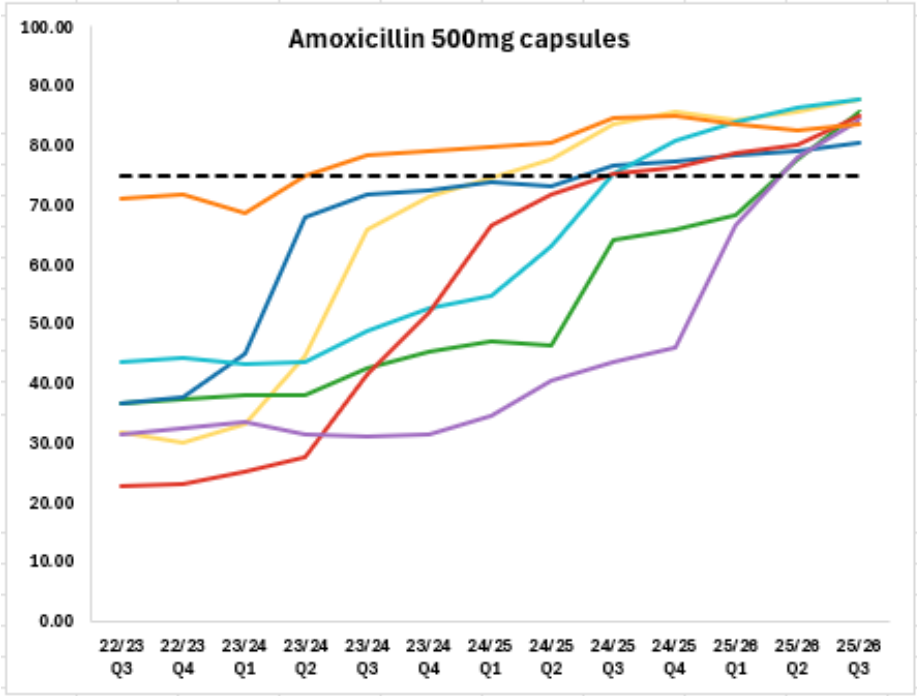
Final takeaway

D. All of the above

Clinical benefit comes first.

The shortest effective antibiotic course can benefit the patient, support antimicrobial stewardship and reduce the wider impact on healthcare.

- Better care for patients: less unnecessary exposure and fewer avoidable adverse effect
- Better antimicrobial stewardship: reduced population exposure and resistance pressure
- A more sustainable NHS: less antibiotic use, waste, expenditure and environmental impact


Amoxicillin 500mg capsules
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
22/23 Q3
22/23 Q4
23/24 Q1
23/24 Q2
23/24 Q3
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24/25 Q4
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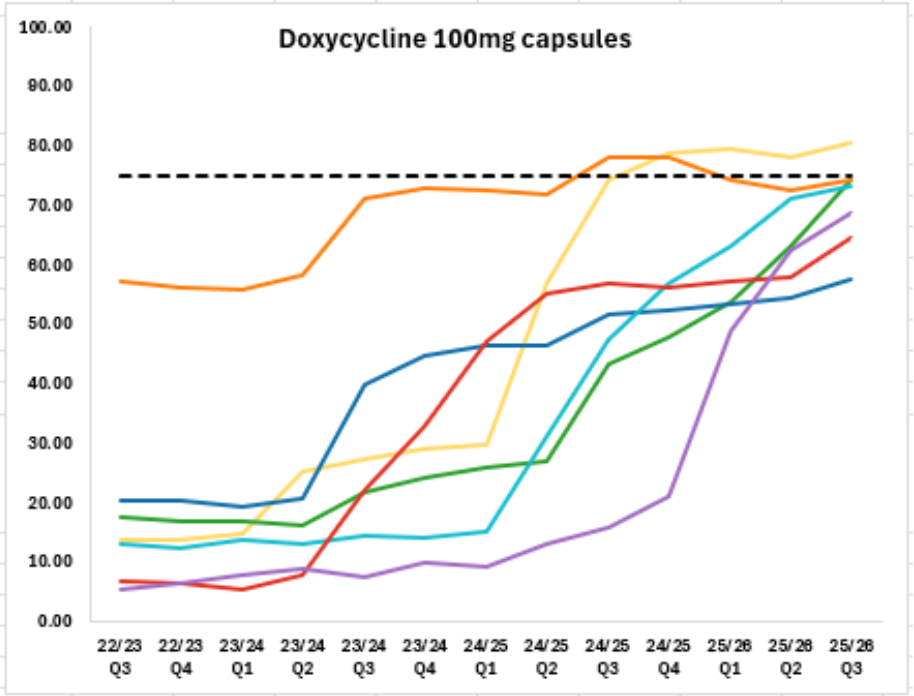
Doxycycline 100mg capsules
100.00
90.00
80.00
70.00
60.00
50.00
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0.00
22/23 Q3
22/23 Q4
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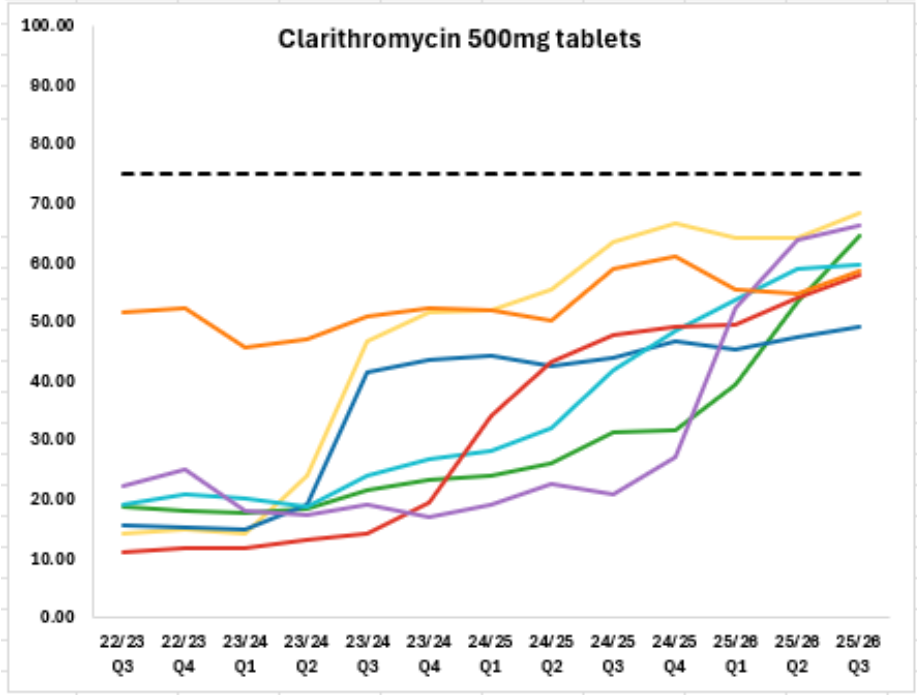
Clarithromycin 500mg tablets
100.00
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70.00
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10.00
0.00
22/23 Q3
22/23 Q4
23/24 Q1
23/24 Q2
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24/25 Q1
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24/25 Q3
24/25 Q4
25/26 Q1
25/26 Q2
25/26 Q3


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