UNEQUAL PROGRESS TOWARDS NATIONAL ANTIMICROBIAL CONSUMPTION TARGETS IN THE AMBULATORY CARE SECTOR IN BELGIUM: A 2012-2021 LONGITUDINAL STUDY INCLUDING THE COVID-19 ERA

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INTRODUCTION

The Belgian National action plan against antimicrobial resistance (NAP-AMR) details targets to reduce inappropriate antimicrobial consumption (AMC) in the ambulatory sector, that represents approximately 87% of Belgian human AMC.

Main objectives:

- assess progress towards the NAP-AMR targets
- assess the impact of the COVID-19 pandemic

… on ambulatory AMC in a European context

METHODS

- AMC Reimbursement data for Belgium obtained from the National Institute for Health and Disability Insurance (NIHDI)
- AMC data for other EU/EEA countries obtained from the European Surveillance of Antimicrobial Consumption Network (ESAC-Net)
- Sales data for fluoroquinolones in Belgium obtained from IQVIA (www.iqvia.com)
  - ✓ Anatomical Therapeutic Chemical (ATC) classification system from WHO
  - ✓ Translated in Defined Daily Dose (DDDs)
- Indicators :
  - ✓ DDDs/1000 inhabitants/day (DID) (Eurostat)
  - ✓ Percentage fluoroquinones/total J01 antibacterials (AB)
  - ✓ Ratio broad spectrum/narrow spectrum antimicrobials
  - ✓ Ratio amoxicillin/amoxicillin-clavulanic acid
- AMC metrics calculated across a 10-year period

RESULTS

Figure 1. Consumption of systemic antimicrobials (J01) expressed as DID in the Belgian ambulatory sector and the European average, 2012-2021

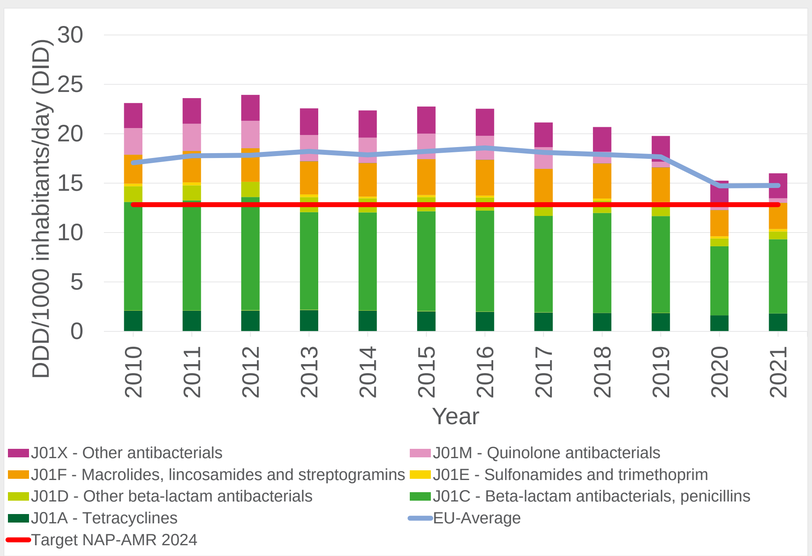


Figure 2. Percentage of total J01 antibacterial consumption comprising fluoroquinolones (J01MA)* in the Belgian ambulatory sector, 2012-2021

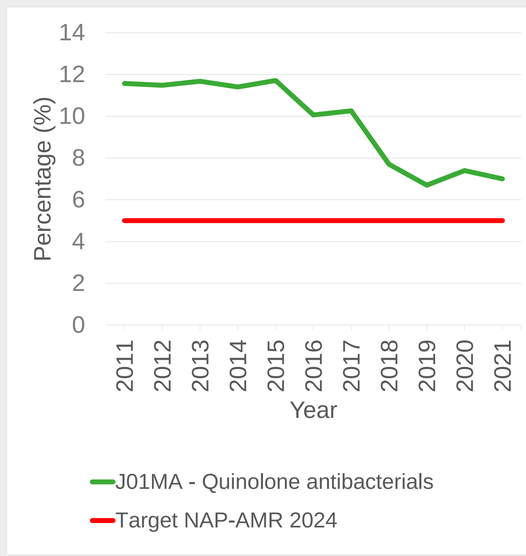


Figure 3. Relative proportions of broad** and narrow*** spectrum antimicrobials in the Belgian ambulatory sector 2012-2021

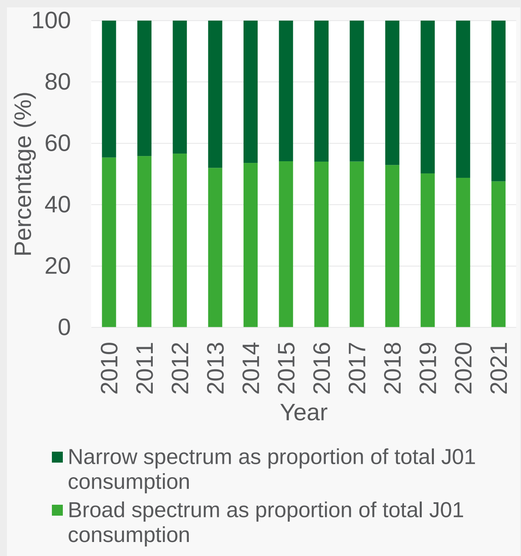
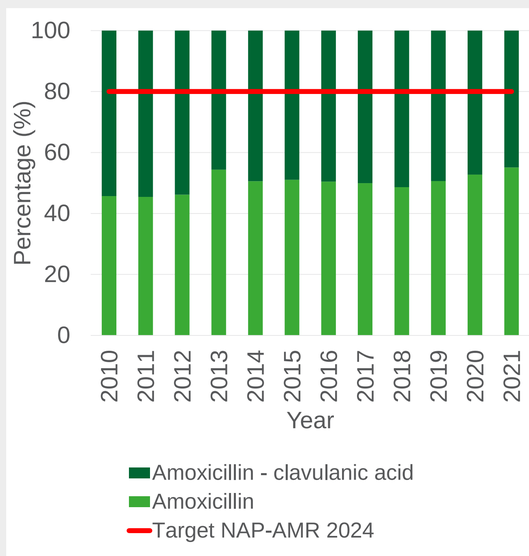


Figure 4. Relative proportions of amoxicillin and amoxicillin-clavulanic acid consumption in the Belgian ambulatory sector, 2012-2021



*Reimbursement data (NIHDI) were combined with total sales data (IQVIA) to reflect fluoroquinolones (J01MA) consumption from 2018 onwards. **Broad spectrum = broad-spectrum penicillins, cephalosporins, macrolides (excluding erythromycin) (J01(CR+DC+DD+(FA-FA01)+MA)). ***Narrow spectrum = narrow-spectrum penicillins, cephalosporins, and erythromycin (J01(CA+CE+CF+DB+FA01))
DID : DDD/1000 inhabitants/day ; NAP-AMR : National Action Plan on Antimicrobial Resistance.

Trends in the consumption of antibacterials for systemic use (ATC group J01) in the Belgian community, compared with European averages and NAP-AMR objectives:

Target 1

Decrease total antimicrobial consumption (in DID) by 5 to 10% each year to reach an overall reduction of 40% of the 2019 baseline by 2024

→ 19% decrease (19.8 to 16.0 DIDs) in total consumption 2019-2021

→ 33% decrease 2012-2021, with decreases across all J01 subgroups.

→ No year-on-year reduction (23% reduction 2019 to 2020, then +4.9% 2020-2021)- COVID-19 impact followed by rebound.

→ Above the European average (blue line, **Figure 1**)

Target 2

Decrease consumption of quinolones to 5% of the total antimicrobial consumption by 2024

→ 57.4% reduction in consumption from 2012 to 2021 (from 2.77 to 1.18 DID)

→ Proportion declined from 11.5% to 7% between 2012 and 2021

→ Remains above the 5% target (red line, **Figure 2**)

→ Increased 2019 - 2021 due to greater reductions in other J01 subgroups.

Target 3.1

Reduce the prescription of broad-spectrum antimicrobials as a proportion of total AMC

→ 15% decrease in the last decade (**Figure 3**)

→ Belgium better than overall European mean

→ Belgium inferior to majority of European neighbours (broad:narrow spectrum ratio in 2021 Belgium = 1.9, France = 1.0, Germany = 1.6, Luxembourg = 3.1, Netherlands = 1.5)

Target 3.2

Increase the ratio of amoxicillin to amoxicillin-clavulanic acid consumption from 51:49 in 2019 to 80:20 in 2024

→ Gradual improvement (46:54 in 2012 to 55:45 in 2021)

→ Still far from target 80:20 ratio (red line, **Figure 4**).

CONCLUSION

- The last decade has seen considerable reductions in AMC within the Belgian ambulatory sector:

1. The COVID-19 era saw particularly encouraging declines.
2. Yet consumption remains above the European average with some targets, like fluoroquinolone consumption, more resistant to change.
3. Given growing concerns of a rebound in AMC following the removal of COVID-19 restrictions, considerable efforts could be required to meet national targets by 2024.

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