



# Update on Antibiotic Use in the Community 2023

---

---

## Antibiotic prescribing trends

National data on antibiotic consumption over the past few years shows an interesting pattern. Prior to COVID-19, antibiotic consumption in Malta in the primary care exhibited a consistent trend with a slight reduction between 2011 and 2019. During the two COVID-19 years, a significant drop was seen. The reduction was reversed in 2022, which reached the highest consumption level in the last decade (Figure 1). This data is consistent with the reduction in consultations encountered during the COVID-19 pandemic and the rebound in infections seen in 2022 - possibly linked to immunity debt, which has been postulated to have been the consequence of reduced infection exposures as a result of lockdown and mask use. Yet, these infections were predominantly viral in aetiology and therefore it is difficult to explain the significant increase in antibiotic consumption. It does however mirror the findings of successive Eurobarometer surveys and the publications of Erika Saliba Gustafsson, as part of her PhD studies, which suggest that a significant proportion of antibiotics in local primary care are prescribed for presentations consistent with a viral cause.

## Use of broad-spectrum antibiotics

The other characteristic of the 2022 community antibiotic consumption data is the predominance of broad-spectrum formulation prescribed locally. Data from the European Centre for Disease Control (ECDC) suggests that Malta has the second highest ratio of broad to narrow spectrum antibiotics for all EU/EEA countries. Indeed, the ratio for Malta is eight times higher than the median country in the dataset (Figure 2). Broad-spectrum antibiotics are well documented to cause higher disruption of the body's microbiome than narrower spectrum equivalents. The repercussions of this disruption could not only result in a greater risk of adverse effects and antimicrobial resistance but newer research suggests it could also play a role in allergy development

(especially asthma) and metabolic repercussions (including obesity), especially following repeated exposure in young children.

## Types of antibiotics prescribed

Four antibiotic groups (amoxicillin with beta-lactamase inhibitor, second/third generation cephalosporins, macrolides and fluoroquinolones) account for almost 80% of antibiotic consumption in primary care in Malta. This is not consistent with national guidelines which, based on current evidence and local resistance data, recommend narrower spectrum formulations such as amoxicillin and first generation cephalosporins for the vast majority of bacterial respiratory tract infections in the community including (where indicated and appropriate) bacterial tonsillitis, pneumonia, otitis media and sinusitis. To this end, it is again difficult to explain – for example – the high local level of macrolide consumption when these antibiotics are mainly indicated for respiratory infections. However local resistance levels in *Streptococcus pyogenes* and *Streptococcus pneumoniae* (the two most important respiratory pathogens) reach 30% and 45% respectively (Figure 3). These levels exceed the safe thresholds for empiric prescribing, meaning that macrolide prescriptions for respiratory tract infection should follow a culture and sensitivity result.

The National AMR Committee therefore encourages primary care physicians and paediatricians to safeguard judicious prescribing of antibiotics, especially in respiratory tract infections. Several tools are available to assist clinicians to determine whether such presentations are most likely to be viral in origin, such as the Centor score as well as point of care Strep tests. The Committee encourages the use of the national guidelines for the management of community infections, focusing especially on narrower spectrum antibiotics like amoxicillin, in order to minimise the development of resistance and ensure patients receive the most appropriate treatment.

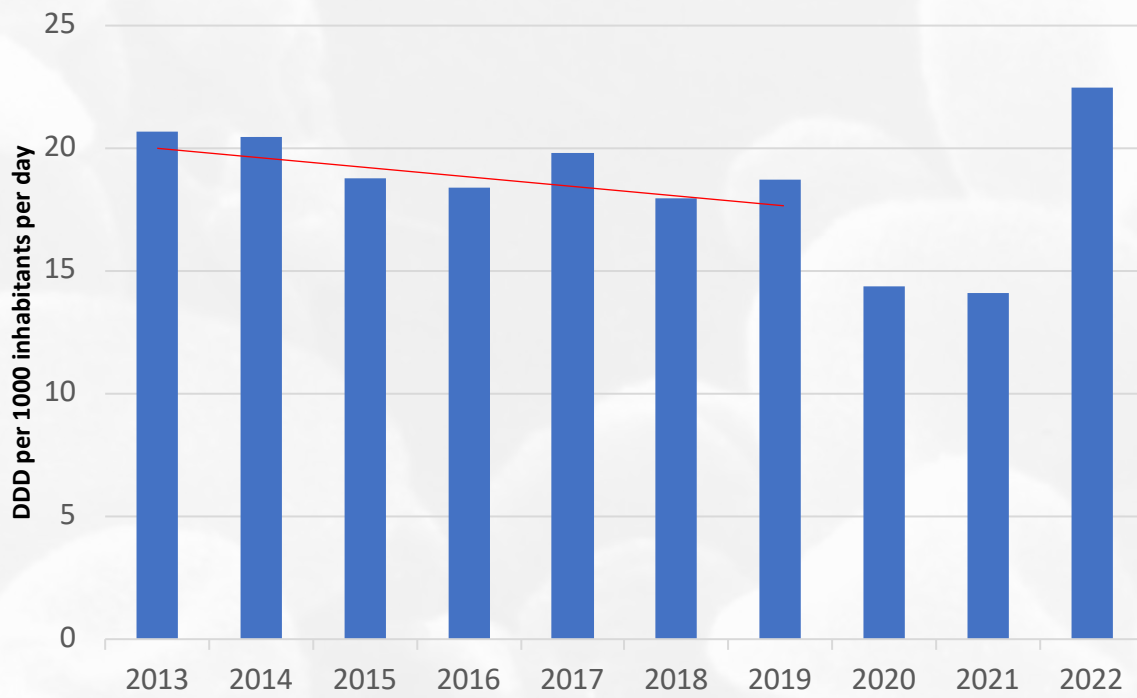


Figure 1: Consumption of all antibiotics in primary care in Malta (2013 – 2022)

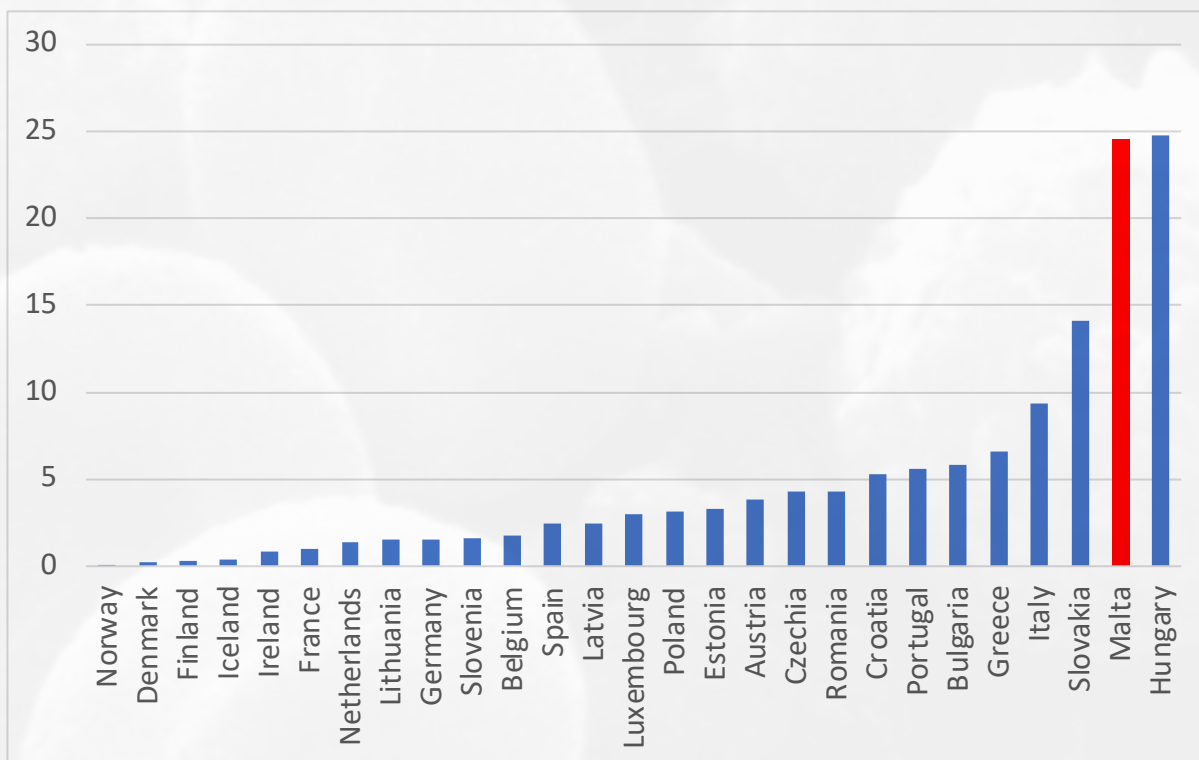


Figure 2: Ratio of broad vs narrow spectrum antibiotics in 2022 within countries of the EU/EEA

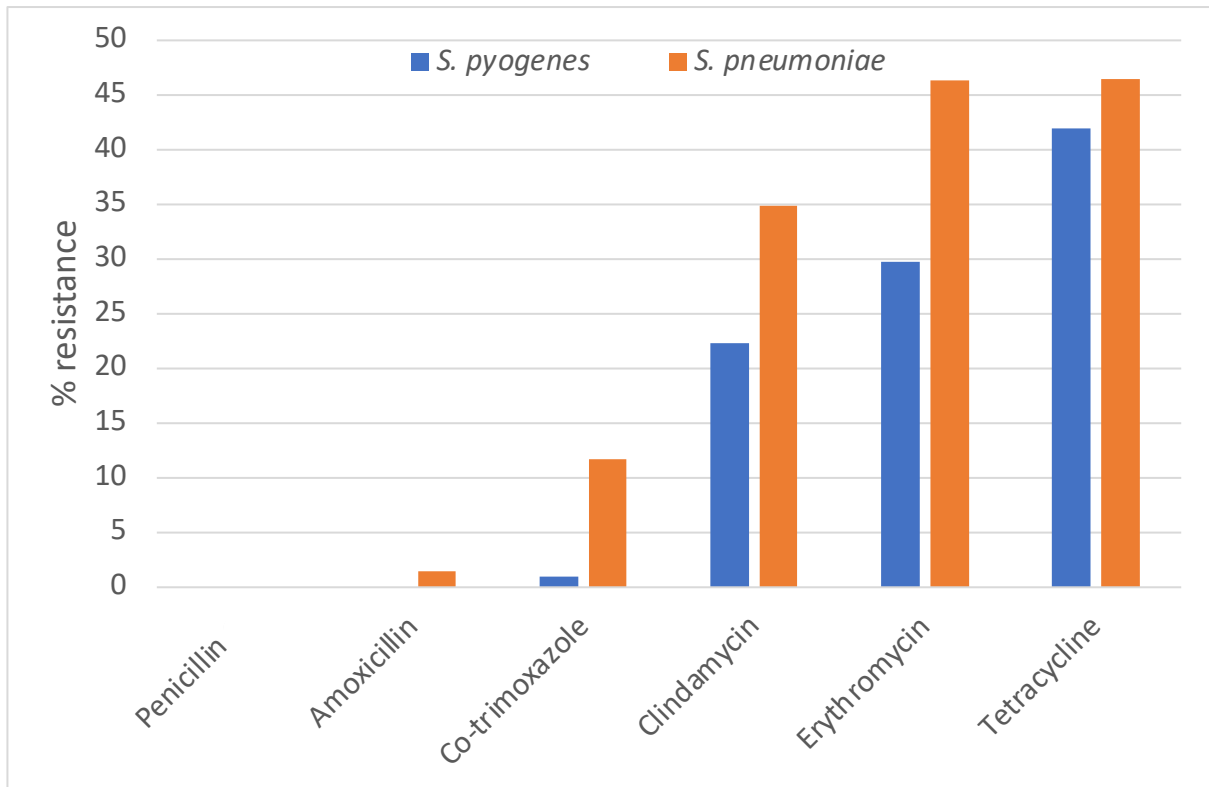


Figure 3: Percentage resistance to first line antibiotics in strains of *Streptococcus pyogenes* and *Streptococcus pneumoniae* isolated in 2021 – 2023 from local community samples.

### Further reading

Eurobarometer 2022: Antibiotic resistance

<https://europa.eu/eurobarometer/surveys/detail/2632>

EA. Saliba-Gustafsson. General practitioners' antibiotic prescribing practices in Malta : understanding drivers to inform the implementation of a social marketing behaviour change intervention

[https://openarchive.ki.se/xmlui/bitstream/handle/10616/46990/Thesis\\_Erika\\_Saliba\\_Gustafsson.pdf?sequence=1&isAllowed=y](https://openarchive.ki.se/xmlui/bitstream/handle/10616/46990/Thesis_Erika_Saliba_Gustafsson.pdf?sequence=1&isAllowed=y)

