

# Guidance on the use of co-trimoxazole in secondary care in NHS Scotland

## Situation

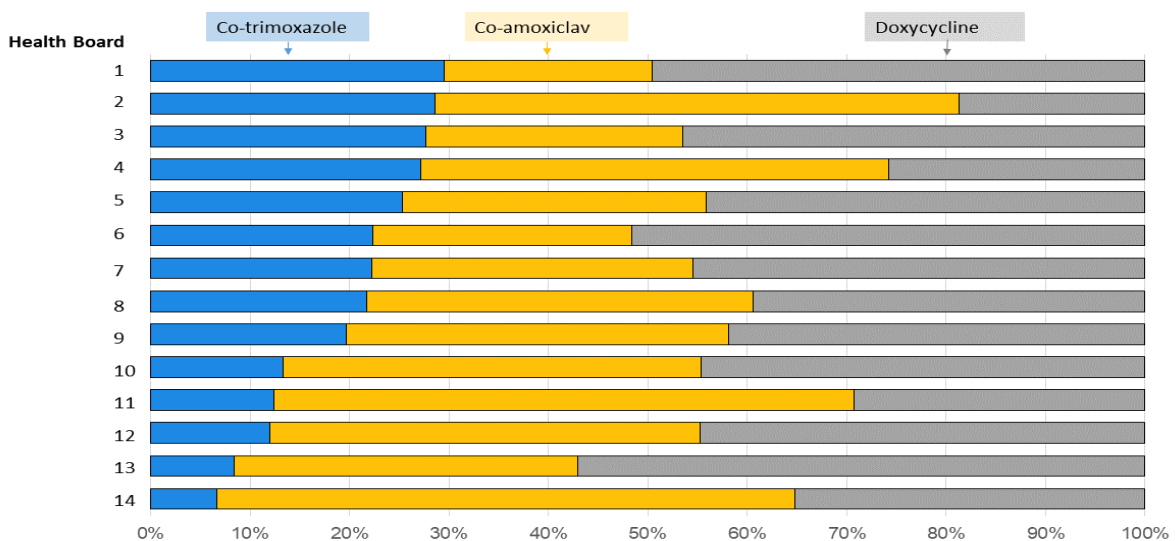
Across secondary care in NHS Scotland there is significant variation in co-trimoxazole use and there are potential antimicrobial stewardship (AMS) benefits from its wider adoption. This guidance is designed to support antimicrobial management teams (AMTs) with incorporating wider adoption of co-trimoxazole into local guidance.

## Background

Co-trimoxazole (sulfamethoxazole and trimethoprim) is a synergistic combination antibiotic in the World Health Organization’s (WHO) access category.<sup>1,2</sup> It has activity versus *Staphylococcus aureus*, beta haemolytic *Streptococci* and a range of gram negative organisms and is recommended for empirical use in a number of conditions in adults and children aged 12 years or more. Recognised indications include uncomplicated urinary tract, lower respiratory tract and skin and soft tissue infections. The current National Institute for Health and Care Excellence’s British National Formulary position is that co-trimoxazole may be ‘indicated for use’ but should only be considered ‘when there is bacteriological evidence of sensitivity to co-trimoxazole and good reason to prefer this combination to a single antibacterial’.<sup>3</sup> This does not take into account the potential role of co-trimoxazole within an AMS programme and, particularly, how it may be considered as an alternative to co-amoxiclav or quinolone antibiotics in the treatment of a variety of common bacterial infections.

Well tolerated, low risk alternatives to co-amoxiclav are important in view of high rates of gram negative resistance and the relatively higher risk of *C. difficile* with co-amoxiclav. While co-trimoxazole is widely used in other countries outside of the UK, use in Scotland varies greatly. The variation in the relative proportional use of co-trimoxazole, co-amoxiclav and doxycycline in acute hospitals across Scotland’s health boards is shown in figure 1. Doxycycline is used by several boards to reduce reliance on co-amoxiclav in respiratory tract and soft tissue infections. Increased doxycycline and co-trimoxazole prescribing can be used as a strategy to reduce co-amoxiclav prescribing.

Figure 1: Proportion of defined daily doses (DDDs) in acute hospitals by NHS Scotland health board (September 2021-August 2022)<sup>4</sup>



Individual health board data available from AMT or on request

## Assessment

Co-trimoxazole has been promoted in empirical guidance for more than 10 years in NHS Grampian, Tayside and Lothian and more recently in Greater Glasgow and Clyde and other boards. These boards use co-trimoxazole both empirically, and in intravenous to oral switch, as part of stewardship strategies to limit the use of co-amoxiclav and ciprofloxacin and mitigate rising gram negative resistance and *C. difficile* risk. Indications for co-trimoxazole include urinary tract, intra-abdominal (in combination with metronidazole), soft tissue and community and hospital acquired lower respiratory tract infections.

Co-trimoxazole is also used as directed therapy for a number of other indications where its sensitivity is known, including in complex bone and joint infections. Collective experience is that short term (less than two weeks) use of co-trimoxazole is well tolerated. A large population-based follow-up study showed risks of serious liver, blood, skin and kidney disorders were small and similar to many other antibacterials. Whilst co-trimoxazole susceptibility is not routinely tested for in NHS diagnostic laboratories, it is inferred from Biomerieux Vitek trimethoprim susceptibility testing. Antimicrobial resistance and healthcare associated infection Scotland data on trimethoprim sensitivity for key organisms isolated from blood stream infections in Scotland in 2021 are shown in table 1.

Table 1: Trimethoprim sensitivity for key organisms isolated from blood stream infections in Scotland in 2021

Organism	% sensitive to trimethoprim	95% confidence interval	Number tested
<i>E. coli</i>	77.3%	(74.6-80%)	856
<i>Klebsiella oxytoca</i>	98.3%	(91.1-99.7%)	60
<i>Klebsiella pneumoniae</i>	86.9%	(81.1-91.1%)	23
<i>S. aureus</i>	95.8%	(91.6-97.9%)	167
<i>Streptococcus pneumoniae</i>	91.0%	(86.4-94.1%)	221
<i>Streptococcus pyogenes</i> (Group A)	95.3%	(84.5-98.7%)	43

## Recommendation

The Scottish Antimicrobial Prescribing Group (SAPG) recommends that AMTs consider the introduction and promotion of co-trimoxazole in both empirical antimicrobial and intravenous to oral switch guidance. This should be included within guidance as part of a wider AMS strategy to limit co-amoxiclav and quinolone.

## References

1. World Health Organization. AWaRe classification, WHO access, watch, reserve, classification of antibiotics for evaluation and monitoring of use. 2021. Available [online](#) [accessed 25/11/22].
2. Budd E, Cramp E, Sharland M, Hand K, Howard P, Wilson P, Wilcox M, Muller-Pebody B, Hopkins S. Adaptation of the WHO Essential Medicines List for national antibiotic stewardship policy in England: being AWaRe. *Journal of Antimicrobial Chemotherapy*. 2019 Nov 1; 74(11):3384-9. [Online](#).
3. National Institute for Health and Care Excellence. British National Formulary. Co-trimoxazole. 2022. Available [online](#) [accessed 7/12/22].
4. Public Health Scotland. Data from Hospital Medicines Utilisation Database (HMUD) 2022. Public Health Scotland. Available [online](#) [accessed 7/12/22].