

## Are we all prescribing antibiotics too differently?

Higher antibiotic prescribing propensity of dentists in deprived areas and those with greater access to care in the North East and Cumbria, UK  
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The subject of antimicrobial resistance (AMR) has dominated headlines in recent years. From news articles to government guidelines, the message is clear: antimicrobial resistance is becoming a worldwide crisis and could be

responsible for hundreds of thousands of deaths every year through drug-resistant infections, unless prompt action is taken internationally. Yet, this warning isn't new. In his Nobel Prize speech in 1945, Alexander

Fleming himself, the man who discovered penicillin, prophetically warned of the possibility that bacteria could develop resistance to these drugs with improper usage. It is clear, therefore, that now is the time for us to take another look at how we use antibiotics and evaluate our own prescribing habits.

This paper by Bird *et al.* aimed to answer two main questions: what are the prescribing habits of dentists in the North East and Cumbria (UK), and what were the factors influencing them? To do this, NHS dental antibiotic prescribing data from the region for the month of October 2016 were extracted by the Business Services Authority and analysed by the authors.

Overall, this study revealed considerable variation in prescription rates across the region, with some areas prescribing up to nine times more antibiotics compared to others. Amoxicillin, metronidazole and erythromycin were the most frequently prescribed antibiotics. The differences in prescription rates were generally linked to area deprivation and access to dental services, with higher prescription rates seen in areas of greater deprivation and access to care. One possible explanation, as suggested by the authors, is that areas of greater deprivation tend to have higher levels of untreated dental disease, which means patients are more likely to present with abscesses and hence are more likely to require antibiotics. However, despite this general trend, practitioner preferences and biases also had a significant influence on prescribing habits, as seen by the variation in prescription rates between dental practices in areas of similar deprivation.

In practice, data on regional prescribing trends such as those presented in this study serve as a useful tool for identifying anomalous prescribing habits and hence allows a more targeted approach to education. The authors also recommend that dentists regularly audit their own prescribing habits and compare it with the regional average to ensure appropriate antibiotic prescribing.

After all, since dentists prescribe around 10% of all antibiotics in NHS primary care, it is clear that we play a very important role in the fight against antimicrobial resistance.

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### Author Q&A

with Lucy Bird  
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#### What made you look into this aspect of prescribing?

During my general professional training, my trainer (who was chair of the local dental network) was involved in early discussions with PHE and Health Sciences at Sunderland University regarding research on this topic and the team (my co-authors in the article) kindly let me become involved. Having worked in both primary and secondary care, I had noticed that the attitudes of clinicians regarding the appropriate use of antibiotics varied with respect to indication, antibiotic, dose and duration. The WHO have defined AMR as 'an increasingly serious threat to global public health that requires action across

all government sectors and society'. As frontline prescribers we have a responsibility to do our part in this.

#### Do you believe AMR can be curbed in time?

AMR is a global problem with significant contributions from both healthcare and agriculture, therefore the challenges of managing AMR are complex and even if we were able to achieve this within the UK, the problem worldwide will be ongoing, particularly in countries where over-the-counter antibiotics are available with minimal regulation. If we are able to regulate prescribing more effectively and commit to developing new antibiotics then hopefully this looming disaster can be averted. The ESPAUR report in 2017 shows there has been an improvement in prescribing habits of GDPs between 2012 and 2016; however, the fact that over 13,000 prescriptions were issued in one region in one month shows that this is a problem that cannot be solved overnight. ■