The Challenge
Antibiotics are important medicines for treating bacterial infections. However, bacteria adapt and find ways to become resistant to antibiotics which means these drugs are losing their ability to fight infections. This antibiotic resistance, caused by doctors prescribing, and people taking, too many antibiotics poses a significant threat to patient health.

One way to investigate overprescribing of these medications is for researchers to study data collected from pharmacies on the numbers and types of antibiotics that are dispensed. However, these data contain important gaps in the sorts of information researchers need, such as what the antibiotics are prescribed for or the age of the people they are prescribed for. It is therefore difficult to get a full picture of how, when and why antibiotics are prescribed.

The Research
Patient data that is routinely collected by GPs contains valuable information about patients’ age, sex and health in addition to the medications they are prescribed. Researchers from the Farr Institute Department of Infectious Disease Informatics and Public Health England therefore turned to anonymised patient data from general practices in England to study the antibiotic prescribing practices among GPs who are required to follow clear guidance on how these drugs should prescribed. For example, GPs are not recommended to prescribe antibiotics for cases of mild respiratory infections such as coughs, colds and sore throats as they are generally not needed and contribute to antibiotics becoming resistant to infection due to overuse.

The Results
The research showed that alarmingly, about half of patients going to their GP for minor respiratory infections were continuing to receive antibiotics going against guidelines that GPs should follow. Using these detailed data, researchers can explore antibiotic prescribing practices in detail, such as which patients are most in need of antibiotics so that drugs can be targeted to treating patients who really need them.

The Impact
This important study has contributed to developing a national strategy to reduce overprescribing where it is not needed to help combat resistance. The findings were used to raise awareness among GPs and the general public and were widely reported in the national press and in medical literature for GPs. The Chief Medical Officer for England has spoken about this work and has written to high-prescribing GPs to try to reduce the overall use of unnecessary antibiotics. As a result of this study, the National Institute for Health and Care Excellence (NICE), the body responsible for providing national guidance and advice on quality standards in healthcare, has released guidance that calls for stricter monitoring and reviews of GP prescribing.

For more information about antibiotics visit: www.nhs.uk/conditions/Antibiotics-penicillins/

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