

# Insights into Primary Care Antibiotic Prescribing for Patients with Sore Throat in the United Kingdom (UK) using Real World Data

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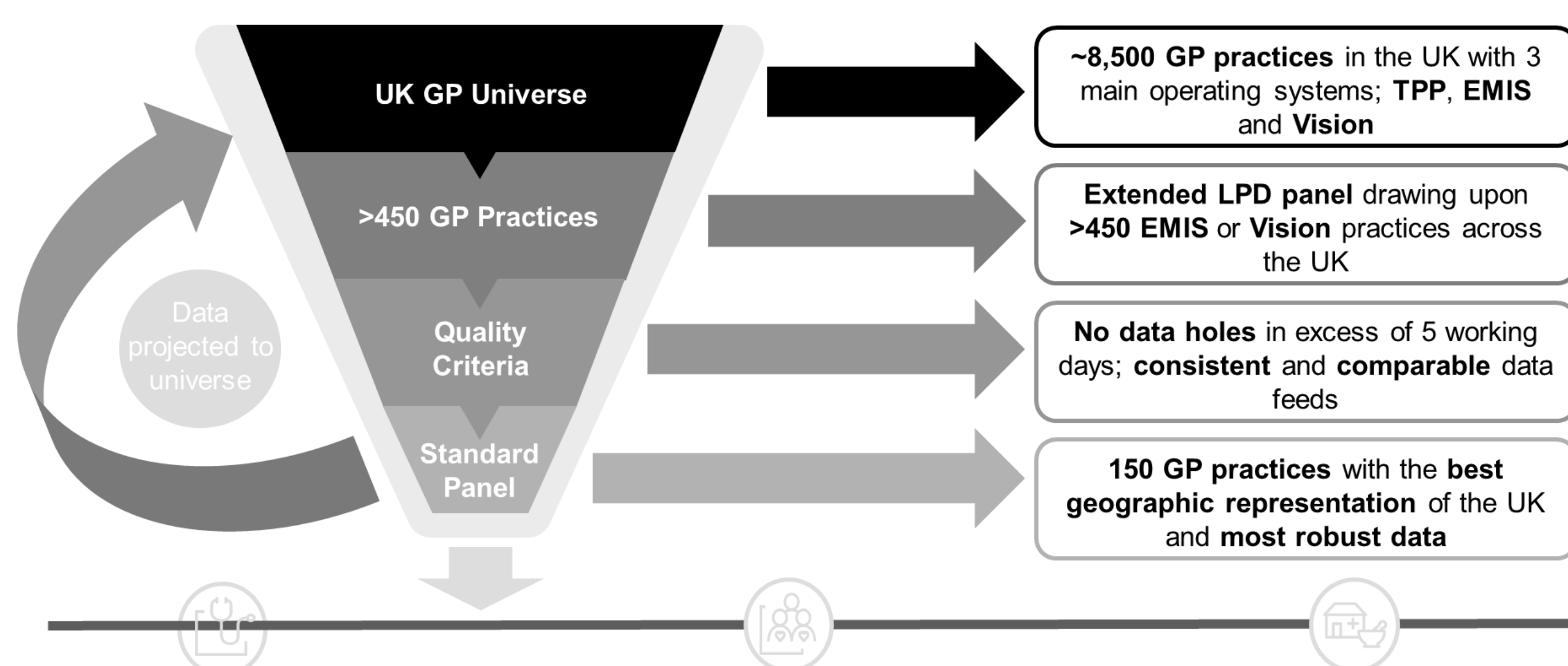
## Introduction

Although most cases of sore throat (ST) are self-limiting viral infections<sup>1</sup>, they are a common cause of healthcare visits within primary care where antibiotic use persists. Real-world evidence was used to quantify antibiotic prescriptions to patients with ST and whether prescribing has changed over the period studied.

The size of antimicrobial resistance (AMR) is significant and one strategy to reduce antibiotic use has been to modify general practice prescribing behaviour<sup>2</sup>. However, despite NICE guidelines discouraging first-line antibiotic treatment for ST<sup>3</sup>, the number and proportion of antibiotic prescriptions issued when there is a ST diagnosis remains high.

## Methods and Materials

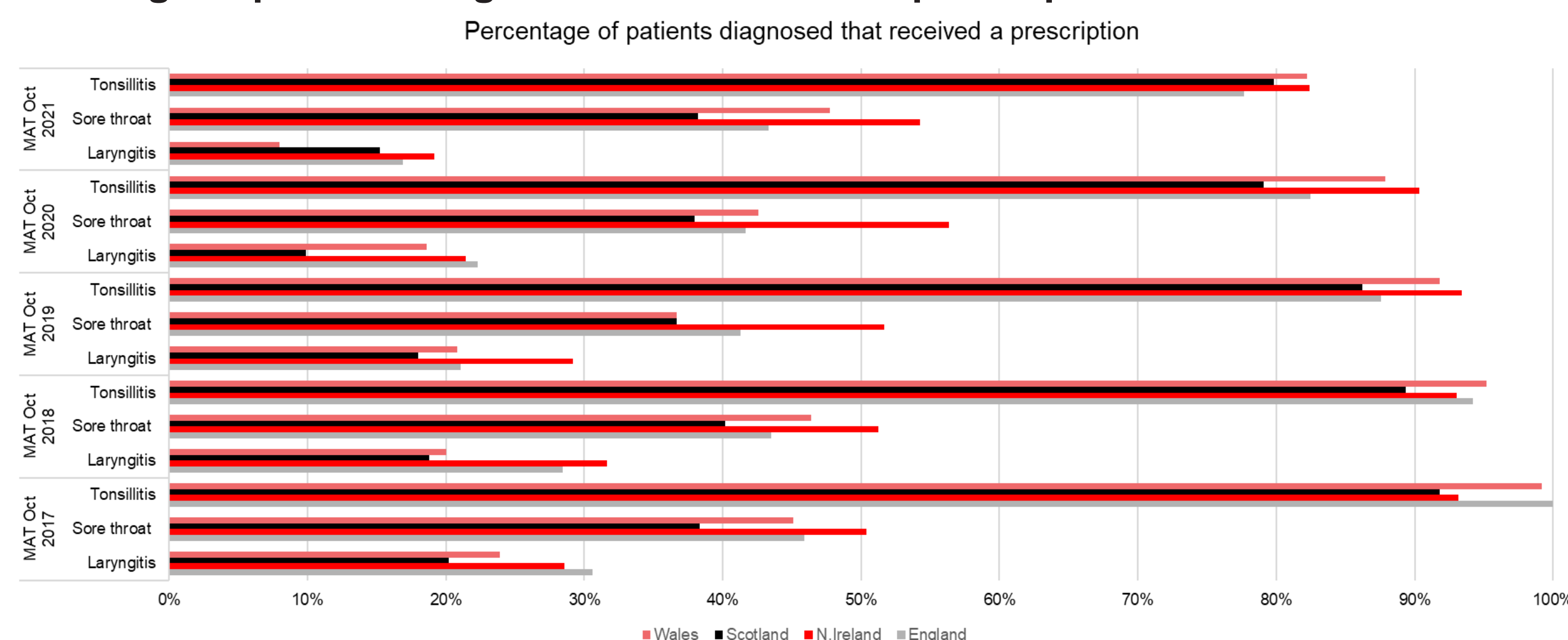
Prescribing data was extracted from >8 million de-identified electronic health records from ≈ 8,500 UK primary care practices, between November 2016–October 2021. The real-world dataset from IQVIA used a representative demographic proportion (150 practices) of the UK population (England, Wales, Scotland, and Northern Ireland) acquired through the longitudinal patient database and filtered to identify patients with a diagnosis of ST, tonsillitis, laryngitis, or glandular fever within 14 days of an antibiotic prescription<sup>4</sup>.



**Figure 1: What is Longitudinal Patient Data (LPD)?** Real-world dataset of >8 million de-identified patient records collected directly from physician prescribing systems<sup>4</sup>.

## Results

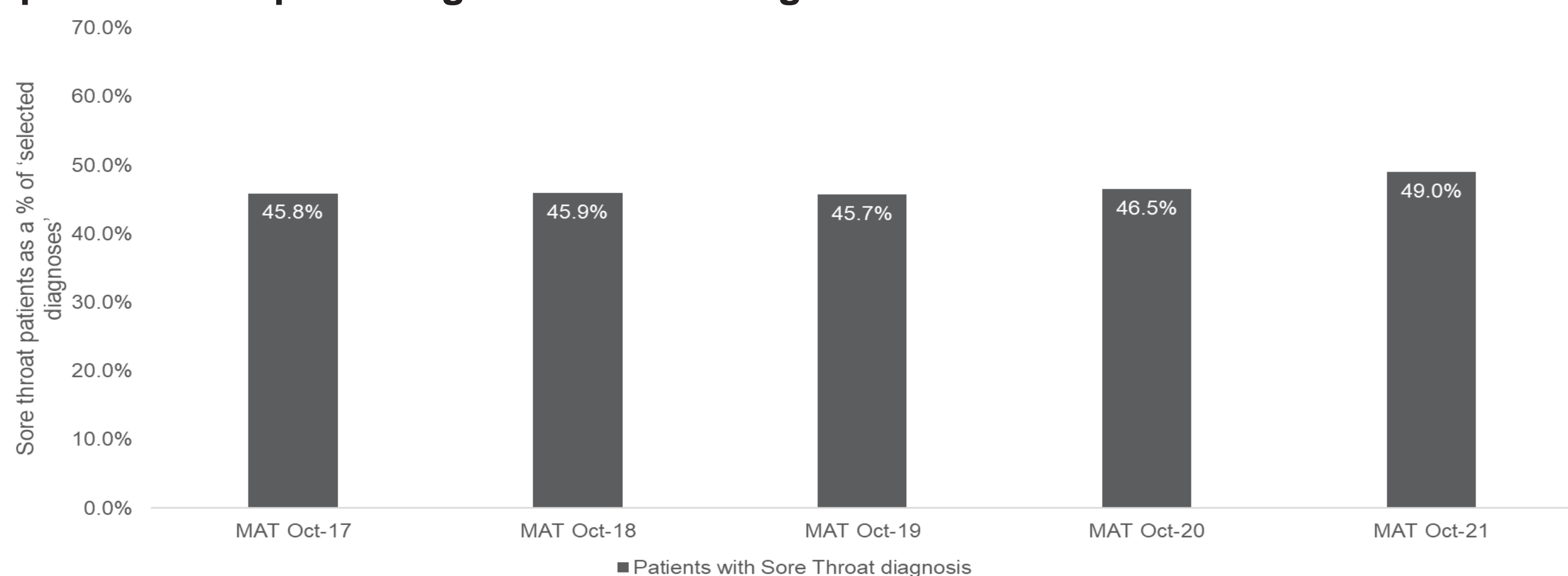
### Percentage of patients diagnosed that received a prescription



**Figure 2: % of patients diagnosed that received a prescription.**

- The proportion of patients diagnosed with ST that received an antibiotic prescription remained relatively consistent ( $46.6 \pm 1.2\%$ ).
- A reduction in the proportion of antibiotic prescriptions to patients diagnosed with ST was only observed in England (46% in 2017 vs. 43% in 2021); with a 4% increase in N. Ireland (50% in 2017 vs. 54% in 2021), a 3% increase in Wales (45% in 2017 vs. 48% in 2018) and Scotland remaining consistent at 38% of ST patients.

### ST patients as a percentage of selected diagnoses

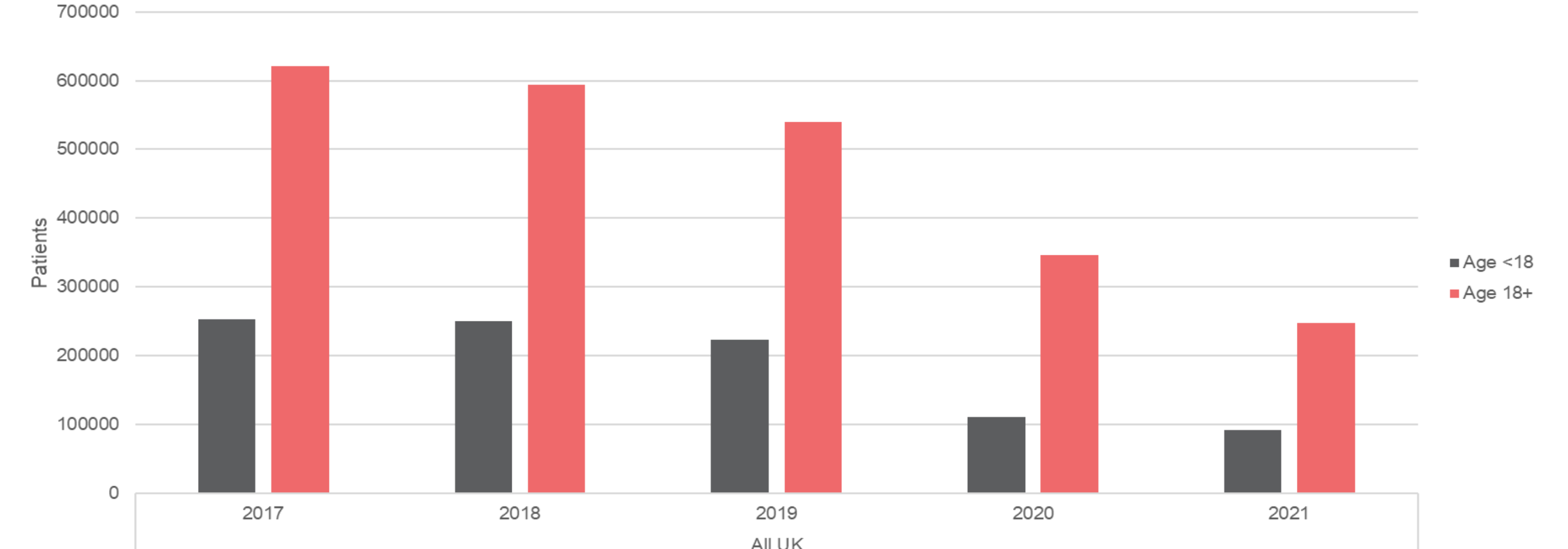


**Figure 3: ST patients as a percentage of selected diagnoses.** Selected diagnoses = all related diagnoses as defined in the methods, within 14 days of an antibiotic prescription<sup>4</sup>.

- The absolute number of ST patients prescribed antibiotics decreased over the 5-year study period.
- However, the percentage of patients with ST diagnosis remained relatively stable, slightly increasing in 2021 to 49%.

## Results cont.

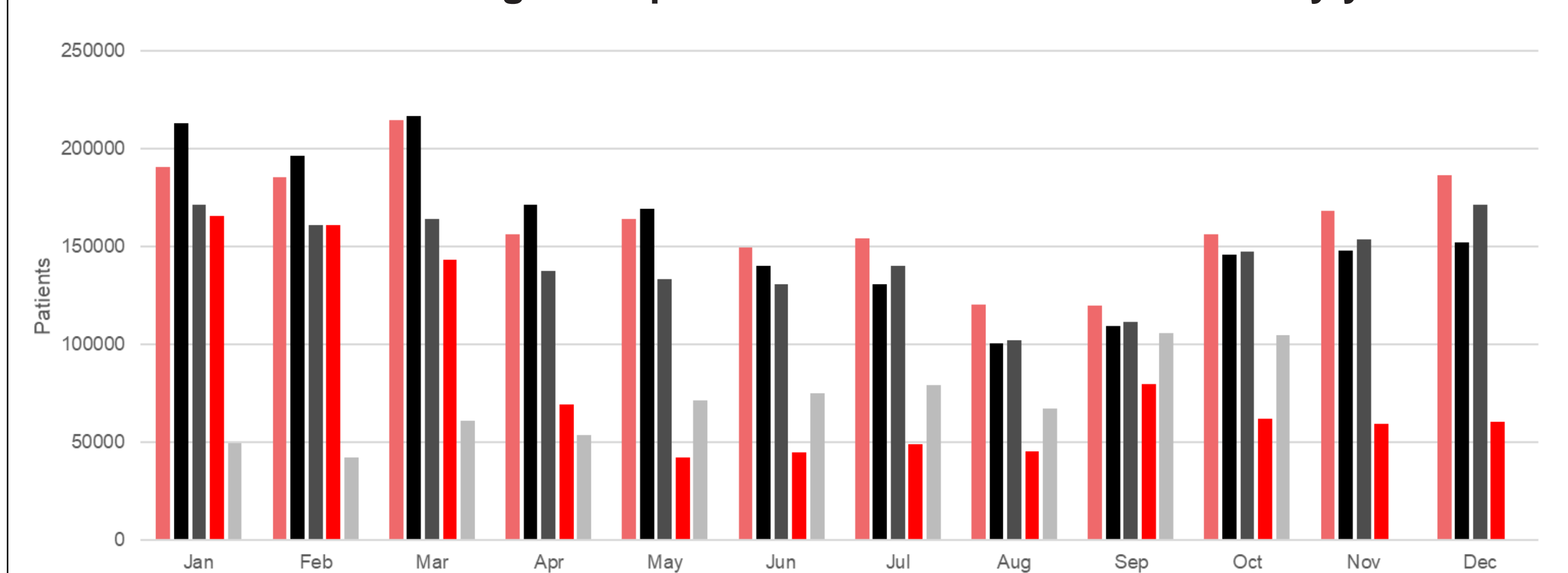
### ST patients prescribed an antibiotic by age



**Figure 4: Number of patients with ST that have been prescribed an antibiotic, by age.**

- Prescribing of antibiotics was higher within the 18+ age group.
- A large absolute reduction in prescribing was seen in both age groups in 2020; a 50% reduction in prescriptions ( $n=222,728$  in 2019 vs.  $n=111,390$  in 2020) in <18 age group, and a 36% reduction ( $n=539,756$  in 2019 vs.  $346,517$  in 2020) in 18+ age group.

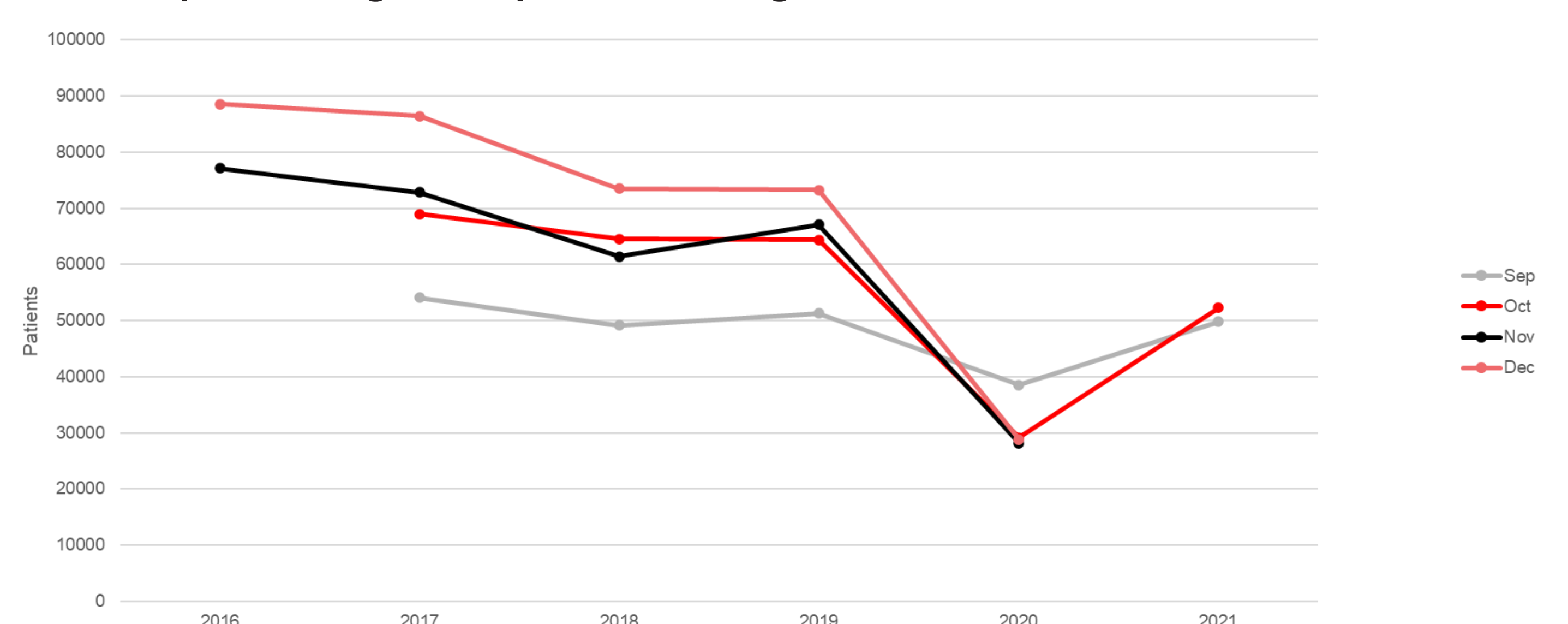
### Patients with selected diagnoses prescribed an antibiotic in the UK by year



**Figure 5: Number of patients with selected diagnoses prescribed an antibiotic in the UK by year.** Selected diagnoses = all related diagnoses as defined in the methods, within 14 days of an antibiotic prescription<sup>4</sup>.

- An apparent reduction in number of antibiotic prescriptions was observed from April 2020, coinciding with COVID-19.
- Trends in antibiotic prescribing mirrored the seasonality of respiratory infections.

### Antibiotic prescribing to ST patients during winter season



**Figure 6: Number of patients diagnosed with ST that have been prescribed an antibiotic during winter season (Q4).**

- Similar prescribing trends were observed during pre-COVID years (2016-2019).
- Following COVID-19, rates rose proportionately with the projected seasonal trend by October 2021 ( $n=52,256$ ).

## Discussion and Conclusion

The percentage of antibiotic prescriptions for patients with ST has remained relatively consistent ( $46.6 \pm 1.2\%$ ) during the study period from 2016 to 2021. Overall, in the UK, there was a reduction of only 2% in the proportion of antibiotic prescriptions to patients diagnosed with ST (45% in 2017 vs. 43% in 2021). During a period of more limited GP consultations in 2020, i.e., during the COVID-19 pandemic, a notable decline in antibiotic prescribing was observed. However, rates rose again proportionately over time and recovered towards the projected trend, even increasing to 50% by October 2021.

## Take Home Message

The role of antibiotic prescription for patients with ST is a sizeable problem that cannot be tackled by guidelines alone. This finding stresses the need for different initiatives to help reduce antimicrobial resistance, including interventions that can enhance public knowledge and practitioners prescribing behaviours.

Endorsement by international respiratory medical societies and antimicrobial stewardship is critical to the prevention of AMR and consequently enhance quality public healthcare reducing associated health costs.

## References

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