

Antibiotic Prescribing in General Practice During COVID-19 and Beyond

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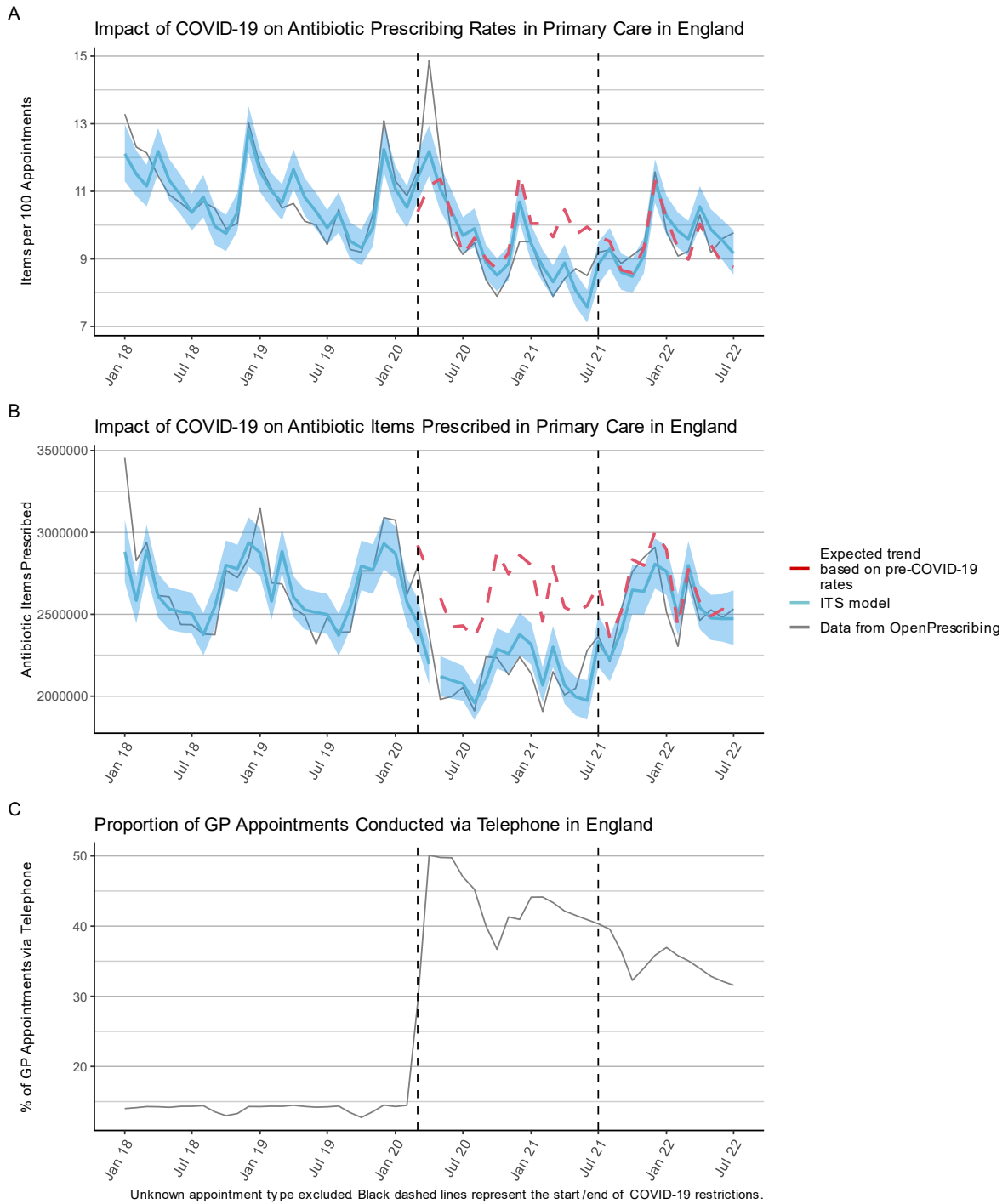


Figure 1. (A) Antibiotic items prescribed per 100 appointments in general practice; (B) Antibiotic items prescribed in general practice; and (C) Proportion of GP appointments conducted via telephone; in England from January 2018 to July 2022.

In their Correspondence, Armitage and Nellums¹ reported that when accounting for changes in appointment numbers, the total number of antibiotics prescribed between April and August, 2020, was 6.17% higher than expected—a statistically significant increase.

Using updated data, we were able to assess whether the increase was sustained throughout the pandemic and beyond. OpenPrescribing publishes monthly data on the number of items prescribed in

general practice (GP) in England.² National Health Service (NHS) England provides monthly data on appointment activity in general practice.³

We conducted an interrupted time-series (ITS) analysis using the negative binomial model and data from January, 2018, to July, 2022. Interruptions were set at March, 2020, the start of the pandemic, and July, 2021, when restrictions were lifted in England. All data and analysis code is available at https://github.com/OliviaKBryant/antibiotic_prescribing_covid_ITS.

In accordance with Armitage and Nellums, we found that the start of the pandemic saw an immediate increase in the mean number of items prescribed per 100 appointments (incident rate ratio [IRR]=1.14 [95%CI=1.07–1.23]). However, the prescribing rate gradually declined following April, 2020 (IRR=0.98 [95%CI=0.97–0.98]) and was lower than the expected trend from December, 2020, to July, 2021, coinciding with later national lockdowns. The results were consistent when April, 2020, data was excluded.

The lifting of lockdown restrictions saw an immediate increase in the prescribing rate (IRR=1.21 [95%CI=1.11–1.33]), which continued to gradually increase (IRR=1.03 [95%CI=1.02–1.04]) to be following the expected trend.

However, the start of the pandemic saw an immediate decrease in the absolute number of antibiotics prescribed (IRR=0.85 [95%CI=0.80–0.91]) and the absolute number of antibiotics prescribed remained below the expected trend throughout the period of COVID-19 restrictions. The lifting of lockdown restrictions saw an immediate increase in the number of items prescribed (IRR 1.18 [95%CI=1.09–1.29]).

Armitage and Nellums suggested that the increase in antibiotic prescribing was driven by the sharp increase in telephone appointments. The proportion of GP appointments conducted via telephone, though decreasing, remains high at 31.6% in July, 2022, compared to 14.2% in 2019. Nevertheless, antibiotic prescribing rates have returned to the expected trend. Our data provide limited evidence of sustained inappropriate antibiotic stewardship due to telephone appointments.

Clinicians must still be supported to use antibiotics appropriately. However, when considering the impact of the totality of the pandemic restrictions in England, there is limited evidence that COVID-19 has derailed the attempts by the NHS to reduce antibiotic prescribing.⁴

Declaration of interests

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