

Evidence to inform practice:

Telehealth and antibiotic prescribing

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Registrar Clinical Encounters in Training (ReCEnT) is an educational and research program in general practice vocational training. Since its inception in 2010, general practice registrars in a number of Australian training regions have collected information on their in-consultation clinical and educational experience. The analyses reported here were conducted as part of Dr Michelle Gao's 2023 Academic Registrar post.

For the full report refer to:

Gao Y, Magin P, Tapley A, et al. Prevalence of antibiotic prescribing for acute respiratory tract infection in telehealth versus face-to-face consultations: Cross-sectional analysis of general practice registrars' clinical practice. *J Med Internet Res* 2025;27:e60831. doi: 10.2196/60831.

Practice points

- Antimicrobial resistance is a major global health threat and antibiotic prescribing rates in Australian general practice are generally higher than in comparable countries (though Australian registrars' prescribing is a little lower than that of established Australian general practitioners).
- Diagnostic uncertainty is recognised as a driver of inappropriate antibiotic prescribing for self-limited respiratory tract infections (and telehealth consultations are thought to entail greater diagnostic uncertainty than face-to-face [F2F] consultations).
- We found that Australian general practice registrars are less likely to prescribe

antibiotics for upper respiratory tract infections (URTIs), sore throat, or otitis media when seeing patients by telehealth versus F2F. There were no significant differences for acute bronchitis or acute sinusitis.

Using data from the ReCEnT project, we sought to establish whether Australian general practice registrars' prescribing of antibiotics is more likely when consultations are conducted by telehealth rather than F2F. This concern was raised by diagnostic uncertainty having been found as one driver of inappropriate antibiotic prescribing – and diagnostic uncertainty being greater in less experienced doctors than in established doctors. Findings of previous research on the impact of telehealth consultations on antibiotic stewardship in general practice have been mixed.

We undertook cross sectional analyses of ReCEnT data (2020–23), using univariable and multivariable logistic regression, to estimate the odds of NSW, ACT, Tasmanian, and Victorian registrars prescribing an antibiotic when managing URTIs, acute bronchitis, acute sore throat, acute otitis media, and acute sinusitis in consultations conducted via telehealth compared with F2F consultations.

We found that 25% of registrar consultations for these self-limiting acute respiratory tract infections during this period were via telehealth. Antibiotics were prescribed for 6.9% of URTI presentations, 64% of bronchitis presentations, 51% of sore throat presentations, 73% of otitis media diagnoses, and 61% of sinusitis presentations.

On multivariable analysis, antibiotics were prescribed significantly less often in telehealth than F2F consultations for URTI (adjusted odds ratio [aOR] 0.64), sore throat (aOR 0.69), and otitis media (aOR 0.47).

There were no significant differences for bronchitis (aOR 1.07) or sinusitis (aOR 1.00).

Thus, while the educational implications of registrars' conduct of telehealth consultations during training remains an area of active research, the implications of our research for this important area of clinical practice (antibiotic stewardship) are reassuring.

Ethical approval

For the research reported in the original article, ethics approval was by The University of Newcastle Human Research Ethics Committee (reference: H-2009-0323) and The Royal Australian College of General Practitioners National Research and Evaluation Ethics Committee (reference: NREEC 23-161).

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Competing interests: None.

Funding: None.

Provenance and peer review: Commissioned, externally peer reviewed.

AI declaration: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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