Electronically delivered interventions to reduce antibiotic prescribing for respiratory infections in primary care: cluster RCT using electronic health records and cohort study

Martin C Gulliford,[1,2]* Dorota Juszczyk,[1,2] A Toby Prevost,[1,2,3] Jamie Soames,[4] Lisa McDermott,[1] Kirin Sultana,[4] Mark Wright,[4] Robin Fox,[5] Alastair D Hay,[6] Paul Little,[7] Michael Moore,[7] Lucy Yardley,[8,9] Mark Ashworth[1] and Judith Charlton[1]

[1]School of Population Health and Environmental Sciences, King's College London, London, UK
[2]NIHR Biomedical Research Centre, Guy's and St Thomas' NHS Foundation Trust, London, UK
[3]School of Public Health, Imperial College London, London, UK
[4]Clinical Practice Research Datalink, Medicines and Healthcare products Regulatory Agency, London, UK
[5]The Health Centre, Bicester, UK
[6]Centre for Academic Primary Care, School of Social and Community Medicine, University of Bristol, Bristol, UK
[7]Primary Care Research Group, University of Southampton, Southampton, UK
[8]Department of Psychology, University of Southampton, Southampton, UK
[9]School of Psychological Science, University of Bristol, Bristol, UK

*Corresponding author martin.gulliford@kcl.ac.uk

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Plain English summary

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The overuse of antibiotics to treat infections is contributing to the rise of antibiotic resistance in bacteria. A trial was carried out to evaluate whether or not interventions delivered through general practice computer systems may be used to reduce antibiotic prescribing for self-limiting respiratory tract infections (RTIs). The study was carried out in 79 UK general practices. The study tested the effect of a webinar to introduce the trial interventions, which included monthly feedback reports of data for respiratory consultations and antibiotic prescriptions, as well as computer-delivered decision support tools. These interventions were specially developed for this study and were pre-tested with general practitioners and practice nurses. Over the 12-month intervention period, the antibiotic-prescribing rate was about 12% lower in the intervention trial arm than in the control arm. There was no effect of intervention in children aged < 15 years or adults aged ≥ 85 years, but antibiotic prescribing was reduced by about 16% in adults aged between 15 and 84 years. Assuming this was caused by the intervention, one antibiotic prescription was avoided per year for every 62 patients aged between 15 and 84 years and registered with a trial practice. The study found no evidence that the intervention might increase the risk of 12 bacterial infections. In addition, a follow-up study of 610 UK general practices not included in the trial was conducted. The study found that if a general practice with an average list size of 7000 patients reduces the proportion of RTI consultations with antibiotics prescribed by 10%, then it may be possible to observe about one more case of pneumonia per year and one more case of peritonsillar abscess per decade, but no increase in other infections is likely. It can be concluded that electronically delivered interventions, including feedback of antibiotic-prescribing data for specific indications, may have the potential to reduce unnecessary antibiotic prescribing; however, antimicrobial stewardship interventions need to be tailored to particular age groups.

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