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Title

Evaluating Audit and Feedback Strategies to Reduce Antibiotic Prescribing in Primary Care: A Randomized Controlled Trial

Priority 1 (Research Category)

Dissemination and implementation research

Presenters

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Abstract

Context: An estimated 25-50% of antibiotic prescriptions in primary care are unnecessary, increasing the risk of antimicrobial resistance in the population.

Objective: To investigate the effect of providing family physicians with audit and feedback (A&F) on antibiotic prescribing compared to their peers on antibiotic use.

Study design and analysis: We performed a pragmatic randomized controlled trial (4:1 allocation) with an embedded process evaluation of an A&F mailed letter to family physicians compared to no letter in Ontario, Canada. Within the intervention arm was a 2x2 factorial trial evaluating case-mix adjusted comparators versus unadjusted, and emphasis, or not, on the harms of antibiotics. The primary outcome was antibiotic prescribing rate per 1,000 patient visits at 6 months. A mixed-methods process evaluation used interviews with family physicians to explore potential mechanisms underlying the observed effects (Clinical Trial IDs: NCT04594200, NCT05044052).

Setting or dataset: Family physicians in the intervention arm were sent the audit and feedback letter in January 2022. Prescribing data was derived from administrative databases. Qualitative data utilized inductive and deductive techniques informed by the Clinical Performance Feedback Intervention Theory.

Results: 4,076 physicians received a feedback letter. At 6 months, the antibiotic prescribing rate was lower in the intervention arm (56.43 versus 59.95) with a Relative Rate of 0.95 (95% CI, 0.94-0.96). The intervention was most impactful among younger physicians and those with high baseline volumes. No significant incremental reduction was seen for adjusted case-mix data or harms messaging. The process evaluation found that physicians with a large gap between the “target” and their own prescribing rate were less motivated to change their prescribing behaviors, especially those that practiced in walk-in clinics, emergency departments, or rural settings. Finally, physicians were more generally accepting of feedback related to reducing the duration of their antibiotic prescribing.

Conclusion: Peer comparison A&F letters reduced overall antibiotic prescribing by 5% with no additional benefit through case-mix adjustment or harms messaging. Our A&F was an effective intervention for antimicrobial stewardship in primary care but may benefit from a more tailored approach that includes customized targets based on physicians’ prescribing rates and addressing their unique practice location.