Shared decision-making: antibiotic use for acute respiratory infections

A Cochrane review found moderate quality evidence that interventions to facilitate shared decision-making reduced antibiotic prescribing for acute respiratory infections in primary care in the short term.

Overview:
- A Cochrane systematic review found moderate quality evidence that interventions to facilitate shared decision-making reduced short-term prescribing of antibiotics for acute respiratory infections from 47% to 29% in primary care.
- There were not enough data to assess whether the interventions produced a sustained reduction in antibiotic prescribing or adverse outcomes.
- The NICE guidelines on antimicrobial stewardship and medicines optimisation recommend that all people have the opportunity to be involved in making decisions about their medicines.

Background: Antibiotics are sometimes prescribed to people who see their GP for acute respiratory infections. However, antibiotics have little benefit in these types of infections, such as in acute bronchitis (Smith et al. 2014) or colds (Kenealy and Arroll 2013). In addition, prescribing antibiotics for acute respiratory infections may contribute to the growth of antimicrobial resistance (Costelloe et al. 2010).

Shared decision-making is the conversation that happens between a patient and their health professional to reach a healthcare choice together (NHS 2012). Shared decision-making is a potential strategy for reducing the overuse of ineffective treatments (Elwyn et al. 2012).

Current advice: The NICE guideline on antimicrobial stewardship recommends that prescribers take time to discuss with the patient and/or their family members or carers (as appropriate):
- the likely nature of the condition
- why prescribing an antimicrobial may not be the best option
- alternative options to prescribing an antimicrobial
- their views on antimicrobials, taking into account their priorities or concerns for their current illness and whether they want or expect an antimicrobial
- the benefits and harms of immediate antimicrobial prescribing
- what they should do if their condition deteriorates (safety netting advice) or they have problems as a result of treatment
- whether they need any written information about their medicines and any possible outcomes.

The NICE guideline on [medicines optimisation](#) recommends that all people have the opportunity to be involved in making decisions about their medicines. Healthcare professionals should find out what level of involvement in decision-making the person would like and avoid making assumptions about this.

The guideline adds that patient decision aids can support health professionals to adopt a shared decision-making approach in a consultation, to ensure that patients, and their family members or carers where appropriate, are able to make well-informed choices that are consistent with the person’s values and preferences. Further recommendations on shared decision-making are outlined in the guideline.

The NICE pathways on [antimicrobial stewardship](#) and [medicines optimisation](#) bring together all related NICE guidance and associated products on these issues into sets of interactive topic-based diagrams.

**New evidence:** A Cochrane review by [Coxeter et al. (2015)](#) looked at whether interventions that aimed to facilitate shared decision-making increased or reduced antibiotic prescribing for acute respiratory infections in primary care.

The review included 9 moderate quality randomised controlled trials (RCTs) in around 492,000 patients and over 1100 primary care doctors in several countries (3 RCTs included people from the UK). Reported study duration ranged from 14 days to just over 3.5 years.

All studies provided education and communication skills training to improve GPs’ understanding in several areas such as risk communication techniques, evidence for the risk–benefit of antibiotics and other treatment options, and how to deal with patients’ concerns and expectations. Several interventions contained materials developed for patients.

The primary outcome was prescription of antibiotics (for example, antibiotics prescribed per consultation, or a change in the population rate of antibiotic prescriptions per unit of time) compared with usual care.

A pooled analysis of moderate quality evidence from 8 RCTs (n=10,172) showed that the interventions reduced short-term prescribing of antibiotics (immediately after or within 6 weeks of the consultation) for acute respiratory infections from 47% to 29% (risk ratio=0.61, 95% confidence interval 0.55 to 0.68, p<0.001).

No significant differences were seen between the intervention and usual care groups in clinical complications, such as reconsultation for the same illness. Only 2 studies (n=1052) could be pooled to assess the effects of the intervention on patient satisfaction with the consultation, and no significant difference was seen between groups. However, the authors graded the data on patient satisfaction as low quality.

The study is limited by the fact that there were not enough data to assess the effects of the intervention on sustained reduction in antibiotic prescribing, adverse outcomes (such as hospital admission, pneumonia or death), or on the involvement of the patient or caregiver in shared decision-making (such as regret or conflict with the decision made).
Commentary by Professor Alastair Hay, Professor of Primary Care and NIHR Research Professor, Centre for Academic Primary Care, University of Bristol and chair of the guideline development group for the NICE guideline on antimicrobial stewardship:

“The majority of antibiotics prescribed in England are prescribed in primary care (Public Health England 2014). Ashworth et al. (2015) have recently shown an association between reduced practice-level antibiotic prescribing and reduced patient satisfaction. But GPs should not prescribe more antibiotics to improve patient satisfaction.

“Clinicians and policy makers seeking solutions to the problem of prescribing and patient satisfaction should be encouraged by this Cochrane review by Coxeter et al. (2015). This study synthesises the evidence on shared decision-making for optimising the prescribing of antibiotics for respiratory tract infections. The review provides robust evidence of reduced prescribing with this approach, without reducing patient satisfaction.

“Sadly, despite the review analysing data from nearly 500,000 patients, only 2 of the reviewed studies reported adverse event data (pneumonia and death) and none reported impacts on antimicrobial resistance. So, there remains an absence of evidence to evaluate the safety of reduced prescribing and the likely benefits in preventing antimicrobial resistance.

“All NICE guidelines state patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. The NICE antimicrobial stewardship guideline states that antimicrobial stewardship interventions should include clinical education and that health and social care practitioners across all care settings should communicate consistent messages about antimicrobial use.

“However, the evidence from this review goes beyond the principles of informed decision-making and suggests that NHS antimicrobial stewardship strategies could be significantly enhanced by implementing the interventions used in these studies. These include relatively inexpensive web-based training modules that clinicians complete at their convenience. A health economic evaluation has yet to be published, but the cost-effectiveness profile is likely to be enhanced due to the benefits of shared decision-making extending beyond prescribing for respiratory tract infections.”

Study sponsorship: National Health and Medical Research Council (NHMRC), Australia.

About this article: This article appeared in the May 2016 issue of Eyes on Evidence. Eyes on Evidence is a monthly email service that summarises and provides expert commentary on important new evidence in health, public health and social care, to help busy professionals stay up to date. The service outlines how the new evidence fits in with current guidance and provides expert views on how the evidence might influence practice. It does not constitute formal NICE guidance. The commentaries included are the opinions of contributors and do not necessarily reflect the views of NICE.

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