



## Medicines Evidence Commentary

commentary on important new evidence from Medicines Awareness Weekly

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### Acute cough – public expectation of symptom duration differs from published evidence

#### Document as included in MAW

A systematic review of observational studies and RCTs supports NICE guidance that, on average, acute cough lasts for around 3 weeks. However, a survey of adults in the USA shows that public expectation is that acute cough should only last for about 7 to 9 days. While acute cough can indicate serious illness in some groups, for most people it is self-limiting. In line with NICE guidance, giving advice about the usual natural history and average total length of the illness may provide some reassurance to patients and prevent unnecessary consultations and subsequent prescribing of antibiotics.

#### Overview and current advice

Most people will develop an acute respiratory tract infection (RTI) every year, making it the commonest acute problem dealt with in primary care. The [NICE guideline on respiratory tract infections - antibiotic prescribing](#) recommends that a no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy should be agreed for patients with a number of common respiratory tract infections including acute cough/acute bronchitis. NICE guidance recommends that patients should be given advice about the usual natural history of the illness, including the average total length of the illness, which for acute cough is 3 weeks.

Prescribing antibiotics when they are not clinically indicated for RTIs such as acute cough medicalises 'self-limiting illness' and may give the false impression that antibiotics are helpful for most infections. The [UK Five Year Antimicrobial Resistance Strategy 2013-2018](#) acknowledges that patient consultations can be difficult when patients expect antibiotics for self-limiting infections and may be unwilling to accept that they do not need them. The strategy highlights that one of the key areas of future action should be public engagement and that more needs to be done to educate patients, parents and the public more generally about appropriate antibiotic use. To support European Antibiotic Awareness Day held each year on 18 November, the Department of Health has published a range of [materials to support and promote the responsible use of antibiotics](#). To provide support for GPs in 2012, a GP toolkit - '[Treat Antibiotics Responsibly, Guidance and Education Tool](#)' (TARGET) was developed by the then Health Protection Agency in collaboration with several other professional bodies.

[NICE](#) also provides guidance on identifying those patients with RTIs who are likely to be at risk of developing complications to whom an immediate antibiotic prescription and/or further appropriate investigation and management should be offered.

See the [NICE Clinical Knowledge Summary](#) for a general overview of acute cough, differential diagnoses and management recommendations.

## New evidence

A [systematic review](#) of [observational studies](#) and [controlled trials](#) (where there was an untreated group of patients) in otherwise healthy adults with acute cough aimed to determine the mean duration of the cough-related illness<sup>1</sup>. The authors of this systematic review also conducted a survey of adults residing within the state of Georgia, USA, to see if public expectations of how long acute cough should last matched that shown in published medical literature.

The systematic review excluded studies set in hospital and those in adults with serious chronic respiratory illness or for who there was a clear suspected cause of cough such as pneumonia or cough caused by medication. Studies in people who were smokers were also excluded. Nineteen studies with between 23 and 1,230 participants in each were identified for inclusion; 8 studies took place in Europe, 7 in the USA, 3 in Russia and 1 in Kenya. Where reported, the mean age in the studies ranged from 29 to 44 years. The weighted mean duration of any cough (n=1,821) was 17.8 days (range 15.3 to 28.6 days). The mean duration of any cough in the largest observational study included in the review (n=1,230; conducted in 13 European countries) was 17.3 days.

Questions relating to acute cough were included in the Georgia Poll, a random digit dialing survey conducted twice a year by the Survey Research Center of the University of Georgia. Participants were presented with 1 of 6 randomly selected versions of a scenario which described being ill with a cough, the scenario stated that no medication was being taken for the cough. The 6 scenarios differed in the description of cough (yellow sputum, green sputum or dry cough) and whether or not a fever was present. Participants were asked how long they thought it would take for the cough to go and how effective they thought antibiotics would be for the cough. They were also asked if they had ever been prescribed an antibiotic for acute cough and if they had asthma or chronic lung disease.

Of 1,131 eligible adults 493 responded to the Georgia Poll survey questionnaire. The study authors stated that they believed they reflected a typical population seeking care for acute cough in the United States. The mean duration of acute cough predicted by respondents ranged from 6.9 to 9.3 days (median 5 to 7 days) depending on the scenario, although there were no statistically significant differences between the scenarios for predicted length of cough. Participants with self-reported asthma or chronic lung disease (n=43) predicted a longer mean duration of cough compared with those who did not report this (10.9 days; 95% [confidence interval](#) [CI] 7.1 to 14.6 compared with 7.6 days; 95% CI 6.9 to 8.2;  $p=0.002$ ). When asked how effective antibiotics would be for the cough described in the scenario participants who had previously taken antibiotics for acute cough were more likely to agree with statements that antibiotics are 'always' or 'usually' helpful (instead of 'sometimes', 'rarely' or 'never' helpful), compared with those who had not previously taken antibiotics for acute cough (144/287 [50.2%] compared with 72/206 [34.9%];  $p=0.001$ ).

The authors acknowledge that the survey was limited to adults who responded to the survey in 1 state of the USA and it may not reflect beliefs or expectations regarding acute cough and antibiotic use in other countries. However, they note that the population included in the survey was diverse in terms of age, race, sex, income and educational attainment.

## Commentary

This study found a substantial difference between public expectation of how long acute cough usually lasts and documented evidence on its actual length. As highlighted by the authors of the study this has important implications for antibiotic prescribing. If an individual expects a cough to last for only 7 to 9 days, they may seek medical advice and expect an antibiotic if they still have symptoms after this time. If an antibiotic is prescribed and then the person begins to feel better they may attribute this to the antibiotic rather than it being a reflection of the natural history of acute cough. Research also shows that such patients may be more likely to request an antibiotic again when they have another acute

cough<sup>2</sup> and this was supported by this survey where those who had previously received antibiotics for acute cough were more likely to expect antibiotics to be 'always' or 'usually' helpful for treating acute cough.

As recommended in [NICE guidance](#) patients should be given advice about the usual natural history of acute cough, including the average total length of the illness. For most people it is a self-limiting illness and a no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy should be agreed with patients. However, some people with acute cough of infective origin may be at risk of complications and NICE guidance lists situations in which an immediate antibiotic prescription and/or further appropriate investigation and management should be offered. In addition, cough may not have an infective origin, and consideration should be given to other causes including aspiration of a foreign body, worsening asthma, pulmonary embolism, or lung cancer, which may require emergency admission to hospital or urgent referral. See the [NICE Clinical Knowledge Summary](#) for a general overview of acute cough, differential diagnoses and management recommendations.

## Study sponsorship of systematic review and population survey

The systematic review and survey was supported by the Institute for Evidence-based Health Professionals Education at the University of Georgia, Athens, Georgia, USA.

## References

1. Ebel MH, Lundgren J, Youngpairoj S et al. [How long does a cough last? Comparing patients expectations with data from a systematic review of the literature](#). Annals of Family Medicine. 11; 5-13.
2. Moore M, Little P et al. [Effect of antibiotic prescribing strategies and an information leaflet on longer-term reconsultation for acute lower respiratory tract infection](#). The British Journal of General Practice. 59; 728-734.

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