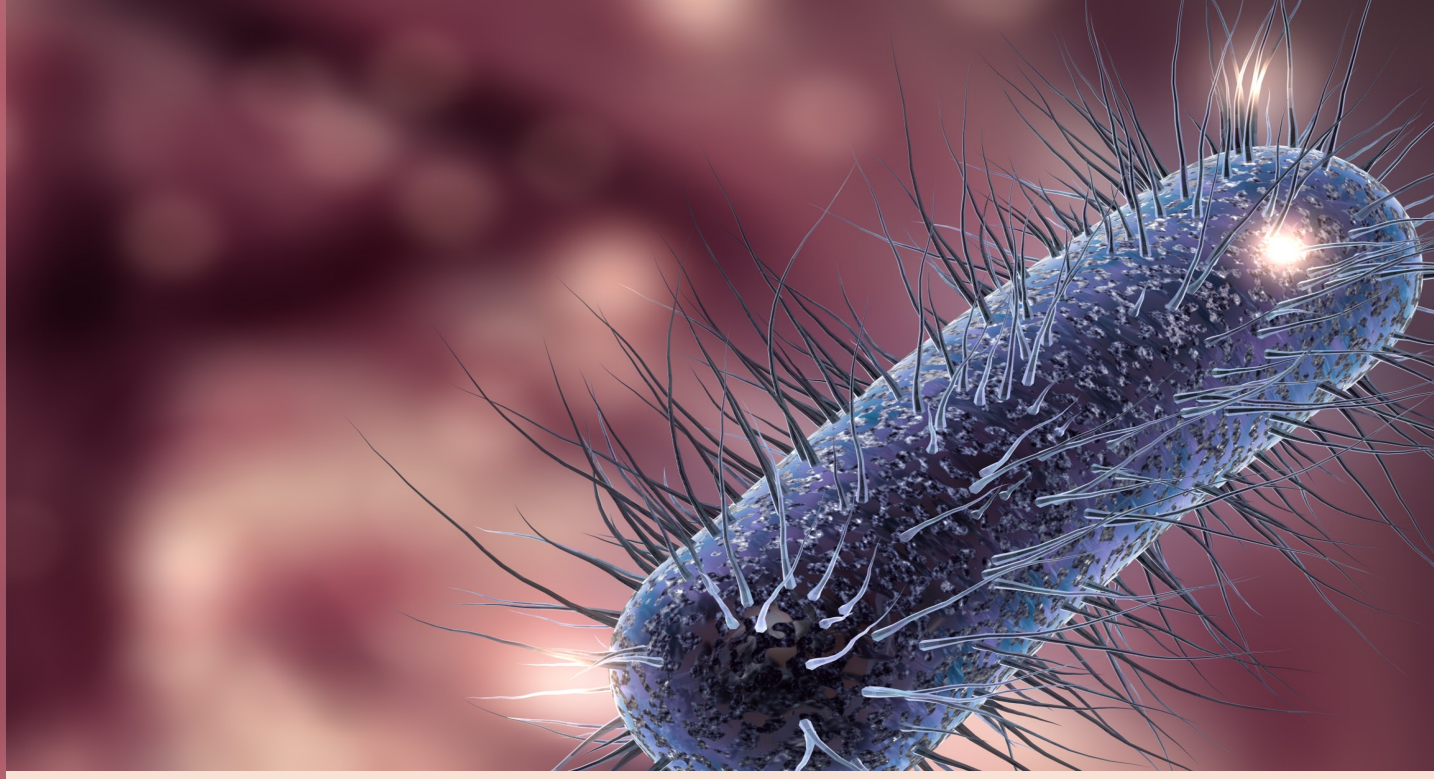

These guidelines are no longer actively supported or updated; the content may now be out of date.

Please refer to the **NICE website** for any new versions of the source guideline.

Respiratory tract infections (self-limiting) – reducing antibiotic prescribing

Management of self-limiting respiratory tract infections in adults and children in primary care

November 2015

bpac^nz guidelines
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Contents

Respiratory tract infections (self-limiting) – reducing antibiotic prescribing
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Introduction

Most people will develop an acute self-limiting respiratory tract infection (RTI) every year. These self-limiting RTIs (common colds, acute rhinosinusitis, acute otitis media, and acute cough/bronchitis) are also the commonest acute problem dealt with in primary care – the 'bread and butter' of daily practice. Management of some acute RTIs in the past has concentrated on advising prompt antibiotic treatment of presumptive bacterial infections intended to reduce the incidence of suppurative complications.[1] However, in New Zealand and similar developed countries, rates of major complications are now low. In addition, there is no convincing evidence, either from international comparisons or from evidence within countries, that lower rates of prescribing are associated with higher rates of complications. Therefore, much of the historically high volume of prescribing to prevent complications may be inappropriate. The level of antibiotic prescribing in New Zealand is considerably higher than the levels of prescribing in most northern European countries. Many people presenting in primary care with an acute uncomplicated RTI may still receive an antibiotic prescription – with many doctors and patients believing that this is the right thing to do.[2]

There may be several problems with this. First, complications are now much less common, so the evidence for symptomatic benefit should be strong to justify prescribing; otherwise many patients may have unnecessary antibiotics, needlessly exposing them to common adverse effects (which can include gastrointestinal symptoms and skin reactions) or rarer more serious adverse effects (which can include liver or bone marrow failure, pseudomembranous colitis or potentially fatal allergic reactions). Second, except in cases where the antibiotic is clinically necessary, patients, and their families and friends, may get the message from healthcare professionals that antibiotics are helpful for most infections. This is because patients will understandably attribute their symptom resolution to antibiotics, and thus maintain a cycle of 'medicalising' self-limiting illness. Third, international comparisons make it clear that antibiotic resistance rates are strongly related to antibiotic use in primary care.[3] This is potentially a major public health problem both for our own and for future generations; unless there is clear evidence of benefit, we need to maintain the efficacy of antibiotics by more judicious antibiotic prescribing.

Following a review of the evidence, a NICE Guideline Development Group (GDG) produced a simple, practical guideline for antibiotic prescribing for some common, acute, uncomplicated, self-limiting RTIs, with recommendations for targeting of antibiotics. The guideline includes suggestions for safe methods of implementing alternatives to an immediate antibiotic prescription – including the 'delayed' antibiotic prescription.

The NICE Guideline Development Group recognised the concern of GPs and patients regarding the danger of developing complications from RTIs. While most patients can be reassured that they are not at risk of major complications, the difficulty for prescribers lies in identifying the small number of patients who will experience severe and/or prolonged illness or, more rarely, go on to develop complications. The GDG struggled to find much good evidence to inform this issue. This is clearly an area where further research is needed. In the meantime, GPs need to take 'safety-netting' approaches in the case of worsening illness, either by using delayed prescriptions or by prompt clinical review.

The Best Practice Advocacy Centre New Zealand (bpac^{nz}) recognised the potential value of the NICE Respiratory tract infections guideline and sought the permission of NICE for this guideline to be contextualised for New Zealand prescribers. With the approval of NICE, bpac^{nz} established a local Guideline Review and Contextualisation Group that has carefully considered the NICE guideline and revised it to produce a guideline which we hope will be welcomed by those who manage and experience the clinical care of acute respiratory tract infections. The only significant changes to the NICE guideline recommended by the NZ contextualisation group have been to:

- exclude sore throat/pharyngitis/tonsillitis from the guideline, and
- to recommend that clinicians have a lower threshold for antibiotic prescribing in patients with acute otitis media or acute cough/acute bronchitis who they consider might be at significant risk of failing to promptly return for a further consultation in the event of a significant clinical deterioration.

Sore throat/pharyngitis/tonsillitis has been excluded from the contextualised guideline for two reasons:

(i) in contrast to the UK, New Zealand has a relatively high incidence of rheumatic fever and therefore the risks of not prescribing an antibiotic treatment for many patients with sore throat are very much greater; and

(ii) in New Zealand there are widely used guidelines that recommend antimicrobial treatment for patients with sore throat who are at high risk for rheumatic fever such as the *Heart Foundation of New Zealand Guidelines for Rheumatic Fever*.[4]

The recommendation that New Zealand clinicians have a lower threshold for antibiotic prescribing in those patients with acute otitis media or acute cough/acute bronchitis, who they consider might be at significant risk of failing to promptly return for a further consultation in the event of a significant clinical deterioration, has been made because of evidence that the incidence and severity of respiratory tract infections, including otitis media, are increased in Māori and Pacific people in New Zealand. This is presumably the result of a variety of factors that include: socioeconomic deprivation, high levels of household crowding, and greater exposure to cigarette smoke.[5–9] Furthermore, financial, cultural and other barriers can reduce access to healthcare in these population groups resulting in patients failing to consult their family doctor or another health provider despite the development of a significant clinical deterioration. Clinicians are encouraged to consider these factors when deciding whether to prescribe an antibiotic.

In summary, there is good evidence that antibiotics offer little benefit in treating a large proportion of RTIs in adults and children in primary care. These RTIs include the common cold, acute sinusitis, acute otitis media and acute bronchitis. These conditions are largely self-limiting, and complications are likely to be rare if antibiotics are withheld. The inappropriate prescribing of antibiotics has the potential to cause drug-related adverse events, to increase the prevalence of antibiotic resistant organisms in the community and to increase primary care consultation rates for minor illness.

Patient-centred care

This guideline offers best practice advice on the care of adults and children (3 months and older) with RTIs, for whom immediate antibiotic prescribing is not indicated.

Treatment and care should take into account patients' needs and preferences. Adults and children (or their parents/carers) for whom immediate antibiotic prescribing is not indicated should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals.

Good communication between healthcare professionals and patients is essential. Care may be supported by evidence-based written information tailored to the patient's needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

Families and carers should also be given the information and support they need.

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3. Thomas MG, Smith AJ, Tilyard M. Rising antimicrobial resistance: a strong reason to reduce antimicrobial consumption in New Zealand. NZ Med J 2014;127:1394:72-84.
4. Heart Foundation of New Zealand: Guidelines for Group A Streptococcal Sore Throat Management Guideline: 2014 Update. Available from: www.heartfoundation.org.nz (Accessed September, 2015).
5. Baker MG, *et al*. Increasing incidence of serious infectious diseases and inequalities in New Zealand: a national epidemiological study. Lancet 2012;379:1112-9.
6. Grant CC, *et al*. Hospitalisation for pneumonia in children in Auckland, New Zealand. J Paedtr Child Health 1998;34:355-9.
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8. Singleton RJ, *et al*. Indigenous childen from three countries with non-cystic fibrosis chronic suppurative lung disease/bronchiectasis. Pediatr Pulmonol 2014;49:189-200.
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1. Guidance

The following guidance is based on the best available evidence. The NICE full guideline (CG69) gives details of the methods and the evidence used to develop the NICE guidance. The process and methods for contextualising the NICE guideline for the New Zealand health sector is available on the bpac^{nz} guidelines website.

The clinical effectiveness of antibiotic management strategies for self-limiting respiratory tract infections (RTIs)

1.1 At the first face-to-face contact in primary care, including walk-in centres and emergency departments, adults and children (3 months and older) presenting with a history suggestive of the following conditions should be offered a clinical assessment:

- acute otitis media
- common cold
- acute rhinosinusitis
- acute cough/acute bronchitis.

The clinical assessment should include a history (presenting symptoms, use of over-the-counter or self medication, previous medical history, relevant risk factors, relevant comorbidities) and an examination to identify relevant clinical signs.

1.2 Patients' or parents'/carers' concerns and expectations should be determined as per the Code of Health and Disability Services Consumers' Rights, and addressed when agreeing the use of the three antibiotic prescribing strategies (no prescribing, delayed prescribing and immediate prescribing).

1.3 A no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy should be recommended for most patients with the following conditions:

- acute otitis media
- common cold
- acute rhinosinusitis
- acute cough/acute bronchitis.

Depending on clinical assessment of severity, an immediate antibiotic prescribing strategy (instead of a no antibiotic or a delayed antibiotic prescribing strategy) should be considered for patients in the following subgroups:

- bilateral acute otitis media in children younger than 2 years
- acute otitis media in children with otorrhoea.

1.4 For all antibiotic prescribing strategies, patients should be given:

- advice about the usual natural history of the illness, including the average total length of the illness (before and after seeing the doctor):
  - acute otitis media: 4 days
  - common cold: 1½ weeks
  - acute rhinosinusitis: 2½ weeks
  - acute cough/acute bronchitis: 3 weeks

- advice about managing symptoms, including fever (particularly analgesics and antipyretics). For information about managing symptoms, refer to the 'Implementation' section, or for information about fever in children younger than 5 years, refer to 'Feverish illness in children' (NICE clinical guideline 160) or the Starship Clinical Guideline 'Fever Investigation and Management'.[10]

1.5 When the no antibiotic prescribing strategy is adopted, patients should be offered:

- reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have common adverse effects, for example, diarrhoea, vomiting and rash, and rarer, potentially more serious adverse effects such as bone marrow and liver failure, pseudomembranous colitis, and potentially fatal allergic reactions.
- a clinical review if the condition worsens or becomes prolonged.

1.6 When the delayed antibiotic prescribing strategy is adopted, patients should be offered:

- reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have common adverse effects, for example, diarrhoea, vomiting and rash, and rarer, potentially more serious side effects such as bone marrow and liver failure, pseudomembranous colitis, and potentially fatal allergic reactions.
- advice about using the delayed prescription if symptoms are not starting to resolve in accordance with the expected course of the illness or if a significant worsening of symptoms occurs
- advice about re-consulting if there is a significant worsening of symptoms despite using the delayed prescription.

A delayed prescription with instructions can either be given to the patient or left at an agreed location to be collected at a later date.

Identifying those patients with RTIs who are likely to be at risk of developing complications

1.7 An immediate antibiotic prescription and/or further appropriate investigation and management should only be offered to patients (both adults and children) in the following situations:

- if the patient is systemically very unwell
- if the patient has symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia,[11] mastoiditis, intraorbital and intracranial complications)
- if the patient is at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, and young children who were born prematurely
- if the patient has had ≥ 3 episodes of wet cough lasting >4 weeks during the last 12 months[12–14]
- if the patient with acute otitis media or acute cough/acute bronchitis is considered unlikely to promptly return for a further consultation in the event of significant clinical deterioration. This includes children aged under 2 years from areas of high socioeconomic deprivation, with household crowding and financial or cultural barriers to healthcare.
- if the patient is older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria:
  - hospitalisation in previous year
  - type 1 or type 2 diabetes
  - history of congestive heart failure
  - current use of oral glucocorticoids.

For these patients, the no antibiotic prescribing strategy and the delayed antibiotic prescribing strategy should not be considered.

10. Starship Clinical Guideline: Fever Investigation and Management. Available from: www.starship.org.nz (Accessed Aug, 2015).
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13. Wong C *et al*. Azithromycin for prevention of exacerbations in non-cystic fibrosis bronchiectasis (EMBRACE): a randomised, double-blind, placebo-controlled trial. Lancet 20; 380: 660-667.
14. Valery P *et al*. Long-term azithromycin for Indigenous children with non-cystic-fibrosis bronchiectasis or chronic suppurative lung disease (Bronchiectasis Intervention Study): a multicentre, double-blind, randomised controlled trial. Lancet Respiratory 2013; 1: 610-620.

2. Notes on the scope of the guidance

The New Zealand contextualised version of the NICE guideline has been developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from the bpac^{nz} guidelines website.

The aim of this guideline is to provide evidence-based recommendations to guide healthcare professionals in the appropriate prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care.

3. Implementation

bpac^{nz} has developed supplementary material to help organisations implement this guidance. This can be accessed on the bpac^{nz} guidelines website.

4. Other versions of this guideline

Full NICE guideline (UK)

The full NICE guideline (CG69), 'Respiratory tract infections – antibiotic prescribing: Prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care' contains details of the methods and evidence base used to develop the NICE guideline.

5. Updating the guideline

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 2 years after publication, and healthcare professionals and patients are asked for their views; NICE use this information to decide whether all or part of a guideline needs updating. If important new evidence is published at other times, NICE may decide to do a more rapid update of some recommendations. bpac^{nz} updates will be triggered by updates to the evidence base affecting context specific recommendations in this guidance or following NICE update.

The NICE Guideline 'Respiratory tract infections – antibiotic prescribing: Prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care' (CG69) was last reviewed for update in 2012. In 2013, after stakeholder consultation, the guideline was placed on the NICE static list. Routine surveillance every 2 years is not carried out on guidelines transferred to the static list. A high level surveillance review would be carried out on static list guidelines every 5 years. Please see the NICE website for further information.

Appendix A:

The Guideline Review and Contextualisation Group and the NICE Guideline Development Group

Guideline Review and Contextualisation Group

The GRCG was composed of relevant healthcare professionals and bpac[nz] staff.

Mark Thomas (Chair)	*Infectious Diseases Physician, University of Auckland, Auckland*
Bruce Arroll	*Professor of General Practice, University of Auckland, Auckland*
Emma Best	*Paediatric Infectious Diseases Physician, University of Auckland, Auckland*
William Kim	*GP and Urgent Care Doctor, Auckland*
Nigel Thompson	*GP and Clinical Lead, Best Practice Advocacy Centre*
Jared Graham	*Project Manager, Best Practice Advocacy Centre*

NICE Guideline Development Group

The NICE GDG was composed of relevant healthcare professionals, patient representatives and NICE technical staff.

The members of the GDG are listed below.

Paul Little	*Professor of Primary Care Research and General Practitioner (GDG Chair)*
Nicky Coote	*Consultant Paediatrician*
Anne Joshua	*Associate Director of Pharmacy, NHS Direct*
Cliodna McNulty	*Consultant Microbiologist*
Cheryl Salmon	*Patient/carer Representative*
Mike Sharland	*Consultant Paediatrician*
Genine Riley	*Senior Pharmaceutical Adviser*
Matthew Thompson	*General Practitioner and Clinical Lecturer in Primary Health Care*
Mark Woodhead	*Consultant in Respiratory Medicine*

The following individual was not a full member of the GDG but was co-opted onto the group as an expert adviser:

Matt Griffiths	*Professor of Prescribing and Medicines Management*

NICE Internal Clinical Guidelines Technical Team

The NICE Internal Clinical Guidelines Technical Team was responsible for this guideline throughout its development. It was responsible for preparing information for the NICE GDG, for drafting the guideline and for responding to consultation comments.

NICE Guideline contextualisation quality assurance team

The NICE guideline contextualisation quality assurance team was responsible for quality assuring the guideline contextualisation process.

Phil Alderson	*Clinical Adviser, NICE Centre for Clinical Practice*
Christine Carson	*Programme Director, NICE Centre for Clinical Practice*
Andrew Gyton	*Programme Manager, NICE Centre for Clinical Practice*
Nichole Taske	*Associate Director (Methodology), NICE Centre for Clinical Practice*

About this guideline

The bpac^{nz} contextualised versions of NICE clinical guidelines provide recommendations about the treatment and care of people with specific diseases and conditions in New Zealand.

The guideline was originally developed by the NICE Internal Clinical Guidelines programme and then contextualised by the bpac^{nz} Guideline Review and Contextualisation Group. The NICE team worked with a group of healthcare professionals (including consultants, GPs and nurses), patients and carers, and technical staff, who reviewed the evidence and drafted the recommendations. The NICE recommendations were finalised after public consultation within the UK. Similarly the bpac^{nz} contextualised version of the NICE guideline were finalised after wide consultation within New Zealand.

The methods and processes for the bpac^{nz} contextualisation of NICE clinical guidelines are described on the bpac^{nz} guidelines website. The NICE guideline was developed using the NICE short clinical guideline process.

We have produced information for the public explaining this guideline. Tools to help you put the guideline into practice and information about the evidence it is based on are also available.

Your responsibility

This guidance represents the view of bpac^{nz} in contextualising the NICE clinical guideline Respiratory Tract Infections – Antibiotic Prescribing (CG69). Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Recommendations from NICE CG69 that have been contextualised

Recommendations listed in the table below are those which changes have been made to the NICE clinical guideline to ensure they are appropriate for New Zealand with the rationale for these changes outlined.

Original wording from Respiratory tract infections – antibiotic prescribing (CG69)	**Recommendation following contextualisation for this guideline**	***Rationale for contextualisation***
The clinical effectiveness and cost effectiveness of antibiotic management strategies for respiratory tract infections (RTIs)	The clinical effectiveness of antibiotic management strategies for self-limiting respiratory tract infections (RTIs)	*The GRCG removed the reference to 'cost effectiveness' as the NICE evidence behind this wording (page 65 full guideline) only pertained to sore throat, which is not included in this contextualised version.*
1.1 At the first face-to-face contact in primary care, including walk-in centres and emergency departments, adults and children (3 months and older) presenting with a history suggestive of the following conditions should be offered a clinical assessment: • acute otitis media • acute sore throat/acute pharyngitis/acute tonsillitis • common cold acute rhinosinusitis acute cough/acute bronchitis. The clinical assessment should include a history (presenting symptoms, use of over-the-counter or self medication, previous medical history, relevant risk factors, relevant comorbidities) and, if indicated, an examination to identify relevant clinical signs.	**1.1** At the first face-to-face contact in primary care, including walk-in centres and emergency departments, adults and children (3 months and older) presenting with a history suggestive of the following conditions should be offered a clinical assessment: • acute otitis media • common cold • acute rhinosinusitis • acute cough/acute bronchitis. The clinical assessment should include a history (presenting symptoms, use of over-the-counter or self medication, previous medical history, immunisation status, relevant risk factors, relevant comorbidities) and an examination to identify relevant clinical signs.	*Sore throat / pharyngitis / tonsillitis has been excluded from the contextualised guideline for two reasons:* *(i) in contrast to the UK, New Zealand has a relatively high incidence of rheumatic fever and therefore the risks of not prescribing an antibiotic treatment for many patients with sore throat are very much greater; and* *(ii) in New Zealand there are widely used guidelines that recommend antimicrobial treatment for patients with sore throat who are at high risk for rheumatic fever such as the National Heart Foundation New Zealand Guidelines for Rheumatic Fever.*
1.2 Patients' or parents'/carers' concerns and expectations should be determined and addressed when agreeing the use of the three antibiotic prescribing strategies (no prescribing, delayed prescribing and immediate prescribing).	**1.2** Patients' or parents'/carers' concerns and expectations should be determined as per the Code of Health and Disability Services Consumers' Rights, and addressed when agreeing the use of the three antibiotic prescribing strategies (no prescribing, delayed prescribing and immediate prescribing).	*The GRCG added the contextual reference to the New Zealand Code of Health and Disability Services Consumers' Rights following input from stakeholders*

1.3 A no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy should be agreed for patients with the following conditions: • acute otitis media • acute sore throat/acute pharyngitis/acute tonsillitis • common cold • acute rhinosinusitis • acute cough/acute bronchitis. Depending on clinical assessment of severity, patients in the following subgroups can also be considered for an immediate antibiotic prescribing strategy (in addition to a no antibiotic or a delayed antibiotic prescribing strategy): • bilateral acute otitis media in children younger than 2 years • acute otitis media in children with otorrhoea • acute sore throat/acute pharyngitis/acute tonsillitis when three or more Centor criteria are present.	**1.3** A no antibiotic prescribing strategy or a delayed antibiotic prescribing strategy should be recommended for most patients with the following conditions: • acute otitis media • common cold • acute rhinosinusitis • acute cough/acute bronchitis. Depending on clinical assessment of severity, an immediate antibiotic prescribing strategy (instead of a no antibiotic or a delayed antibiotic prescribing strategy) should be considered for patients in the following subgroups: • bilateral acute otitis media in children younger than 2 years • acute otitis media in children with otorrhoea.	*Sore throat / pharyngitis / tonsillitis has been excluded from the contextualised guideline (see 1.1 above)* *The GRCG considered that the differences in cost to the patient for consultations and medications between New Zealand and the United Kingdom required a stronger/more advisory recommendation to be made.* *The revision to 'an immediate antibiotic prescribing strategy (instead of a no antibiotic or a delayed antibiotic prescribing strategy) should be considered for patients in the following subgroups:' was made following stakeholder feedback requesting greater clarity regarding the circumstances for this recommendation.*
1.4 For all antibiotic prescribing strategies, patients should be given: • advice about the usual natural history of the illness, including the average total length of the illness (before and after seeing the doctor): – acute otitis media: 4 days – acute sore throat/acute pharyngitis/acute tonsillitis: 1 week – common cold: 1½ weeks – acute rhinosinusitis: 2½ weeks – acute cough/acute bronchitis: 3 weeks • advice about managing symptoms, including fever (particularly analgesics and antipyretics). For information about fever in children younger than 5 years, refer to 'Feverish illness in children' (NICE clinical guideline 47).	**1.4** For all antibiotic prescribing strategies, patients should be given: • advice about the usual natural history of the illness, including the average total length of the illness (before and after seeing the doctor): – acute otitis media: 4 days – common cold: 1½ weeks – acute rhinosinusitis: 2½ weeks – acute cough/acute bronchitis: 3 weeks • advice about managing symptoms, including fever (particularly analgesics and antipyretics). For information about managing symptoms, refer to the 'Implementation' section, or for information about fever in children younger than 5 years, refer to 'Feverish illness in children' (NICE clinical guideline 160) or the Starship Clinical Guideline 'Fever Investigation and Management'.	*Reference to the 'Implementation' section was made following stakeholder feedback on a need for clarity on the New Zealand specific resources to accompany the guideline.* *Reference was made to the Starship Clinical Guideline 'Fever Investigation and Management' as a New Zealand option for clinicians as well as the NICE 'Feverish illness in children' guideline*

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Original wording from Respiratory tract infections – antibiotic prescribing (CG69)	Recommendation following contextualisation for this guideline	***Rationale for contextualisation***
1.5 When the no antibiotic prescribing strategy is adopted, patients should be offered: • reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have side effects, for example, diarrhoea, vomiting and rash • a clinical review if the condition worsens or becomes prolonged	**1.5** When the no antibiotic prescribing strategy is adopted, patients should be offered: • reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have common adverse effects, for example, diarrhoea, vomiting and rash, and rarer, potentially more serious adverse effects such as bone marrow and liver failure, pseudomembranous colitis, and potentially fatal allergic reactions. • a clinical review if the condition worsens or becomes prolonged	*The GRCG included differentiation between common and more serious adverse effects to improve clarity for New Zealand prescribers, and to further outline to patients what the potential harmful consequences of antibiotic use can be.*
1.6 When the delayed antibiotic prescribing strategy is adopted, patients should be offered: • reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have side effects, for example, diarrhoea, vomiting and rash • advice about using the delayed prescription if symptoms are not starting to settle in accordance with the expected course of the illness or if a significant worsening of symptoms occurs • advice about re-consulting if there is a significant worsening of symptoms despite using the delayed prescription. A delayed prescription with instructions can either	**1.6** When the delayed antibiotic prescribing strategy is adopted, patients should be offered: • reassurance that antibiotics are not needed immediately because they are likely to make little difference to symptoms and may have common adverse effects, for example, diarrhoea, vomiting and rash, and rarer, potentially more serious side effects such as bone marrow and liver failure, pseudomembranous colitis, and potentially fatal allergic reactions. • advice about using the delayed prescription if symptoms are not starting to resolve in accordance with the expected course of the illness or if a significant worsening of symptoms occurs • advice about re-consulting if there is a significant worsening of symptoms despite using the delayed prescription. A delayed prescription with instructions can either be given to the patient or left at an agreed location to be collected at a later date.	*Please see above.*

1.7 An immediate antibiotic prescription and/or further appropriate investigation and management should only be offered to patients (both adults and children) in the following situations: • if the patient is systemically very unwell • if the patient has symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia, mastoiditis, peritonsillar abscess, peritonsillar cellulitis, intraorbital and intracranial complications) • if the patient is at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis, and young children who were born prematurely • if the patient is older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria: – hospitalisation in previous year – type 1 or type 2 diabetes – history of congestive heart failure – current use of oral glucocorticoids. For these patients, the no antibiotic prescribing strategy and the delayed antibiotic prescribing strategy should not be considered.	**1.7** An immediate antibiotic prescription and/or further appropriate investigation and management should only be offered to patients (both adults and children) in the following situations: • if the patient is systemically very unwell • if the patient has symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia, mastoiditis, intraorbital and intracranial complications) • if the patient is at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, and young children who were born prematurely • if the patient has had ≥ 3 episodes of wet cough lasting >4 weeks during the last 12 months • if the patient with acute otitis media or acute cough/acute bronchitis is considered unlikely to promptly return for a further consultation in the event of significant clinical deterioration. This includes children aged under 2 years from areas of high socioeconomic deprivation, with household crowding and financial or cultural barriers to health care. • if the patient is older than 65 years with acute cough and two or more of the following criteria, or older than 80 years with acute cough and one or more of the following criteria: – hospitalisation in previous year – type 1 or type 2 diabetes – history of congestive heart failure – current use of oral glucocorticoids. For these patients, the no antibiotic prescribing strategy and the delayed antibiotic prescribing strategy should not be considered.	*References to peritonsillar abscess and peritonsillar cellulitis removed as these refer to sore throat, which has been excluded from this contextualised guideline.* *Addition of bullet point for wet cough has been made to acknowledge the high prevalence of bronchiectasis, particularly within Maori and Pacific patients within New Zealand. Supporting references (11–13) have been made which further clarify this contextual issue.* *The GRCG agreed that the specific reference to cystic fibrosis was not required (or bronchiectasis) given that earlier in the paragraph 'lung disease' is referred to, covering both of these conditions.* *Wording has been inserted to acknowledge predominant risk factors within some areas of New Zealand which are important to highlight in the guideline. The insertions were agreed following consensus of the GRCG.*

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