Meeting the needs
of patients with upper
respiratory tract infections

Continuing professional development module from the Global Respiratory Infection Partnership

GRIP
GLOBAL RESPIRATORY
INFECTION PARTNERSHIP

Introduction

Upper respiratory tract infections (URTIs) represent some of the most commonly seen conditions in primary care.[1] While the majority of these infections are self-limiting in nature,[2–4] many patients still present to their doctor, often seeking relief from symptoms such as persistent sore throat pain.[5]

Despite the growing threat posed by antibiotic resistance,[6] a relatively high number of these patients are given antibiotics.[7,8] This practice continues, even though evidence suggests that the majority of URTIs are of a viral nature and, as such, symptoms will not improve with antibiotic use.[3,5]

This Continuing Professional Development module has been created with the Global Respiratory Infection Partnership* and examines the challenges of managing URTIs while meeting patients' needs for symptomatic relief and reserving antibiotics for those most in need.

Learning objectives

After completing this module you should be able to:

- understand antibiotic resistance as a result of antibiotic overuse and/or misuse and the importance of a cohesive, integrated approach to combat the problem
- acknowledge the importance of communicating with patients on appropriate antibiotic use in URTIs
- recognise the importance of meeting patients' symptomatic treatment needs in URTIs
- be aware of when antibiotic use is appropriate for patients with sore throat
- have a knowledge of the 1, 2, 3 approach to sore throat management

*The Global Respiratory Infection Partnership (GRIP) is an international group of healthcare professionals consisting of primary care and hospital doctors, microbiologists, pharmacists and researchers. GRIP members recognise the imminent onset of the post-antibiotic era and note the limited number of new antibiotics in development. The GRIP has formulated a framework for assessment and management options for URTIs, in particular sore throat.

Antibiotic resistance

Antibiotic resistance is a global health threat where inappropriate antibiotic use is the primary driver in the development of resistance.[6,10] Data show a direct correlation between the use of antibiotics and resistance. Countries where there is higher consumption of antibiotics show higher resistance rates.[6,11]

It is estimated that some 25,000 people in Europe die each year as a direct result of resistant infection,[12] while in America, hospital-acquired infections, most of which are caused by antibiotic-resistant pathogens, result in an estimated 99,000 deaths per year.[13] Although antibiotic resistance has been more prominent in the hospital setting, recent data show the issue is spreading beyond this environment.[14]

Recently, the World Health Organization (WHO) warned that antibiotic resistance could herald a return to the pre-antibiotic era that, in time, could impact on the control of infectious diseases, increase the costs of healthcare and jeopardise the healthcare gains made in the last 100 years.[15]

> **"Inappropriate and irrational use of antimicrobial medicines provides favourable conditions for resistant microorganisms to emerge, spread and persist"**
>
> **WHO[15]**

The problem of antibiotic resistance is also compounded by the lack of investment in the development of novel antibiotics, with few new antibiotics in development to replace existing antimicrobial agents.[12,13] This further emphasises the importance of preserving the efficacy of existing agents.[16]

Antibiotic resistance and URTIs

Some 80–90% of all antibiotics are prescribed in primary care, most commonly for respiratory tract infections (RTIs).[6,17] RTIs rank among the most frequently treated acute conditions in primary care.[1]

RTIs can be classified as either upper or lower RTIs. The majority of URTIs are non-serious[3] and of viral aetiology[3,9] (that is, 85–95% of adult sore throats are viral).[10,18] Irrespective of whether the causative pathogen is bacterial or viral, the vast majority of URTIs resolve spontaneously without antibiotics,[3] as the immune system can effectively fight these infections.

Despite this, antibiotic use for RTIs and URTIs remains high globally, particularly for conditions like influenza, the common cold, sore throat and sinusitis:[8]

- In Europe, URTIs accounted for 57% of antibiotics used, with a further 30% for lower RTIs; in contrast the next most common condition for antibiotic use was urinary tract infection at 7%[19]

- In Thailand, 80% of patients with RTIs receive an antibiotic[7]

- In the US, 68% of primary care antibiotic prescribing is for RTIs[20]

- In India, 45–80% of patients with RTI symptoms and diarrhoea are estimated to receive an antibiotic[21]

- In China, up to 97% of children with RTIs of presumed viral origin have been treated with an antibiotic[22]

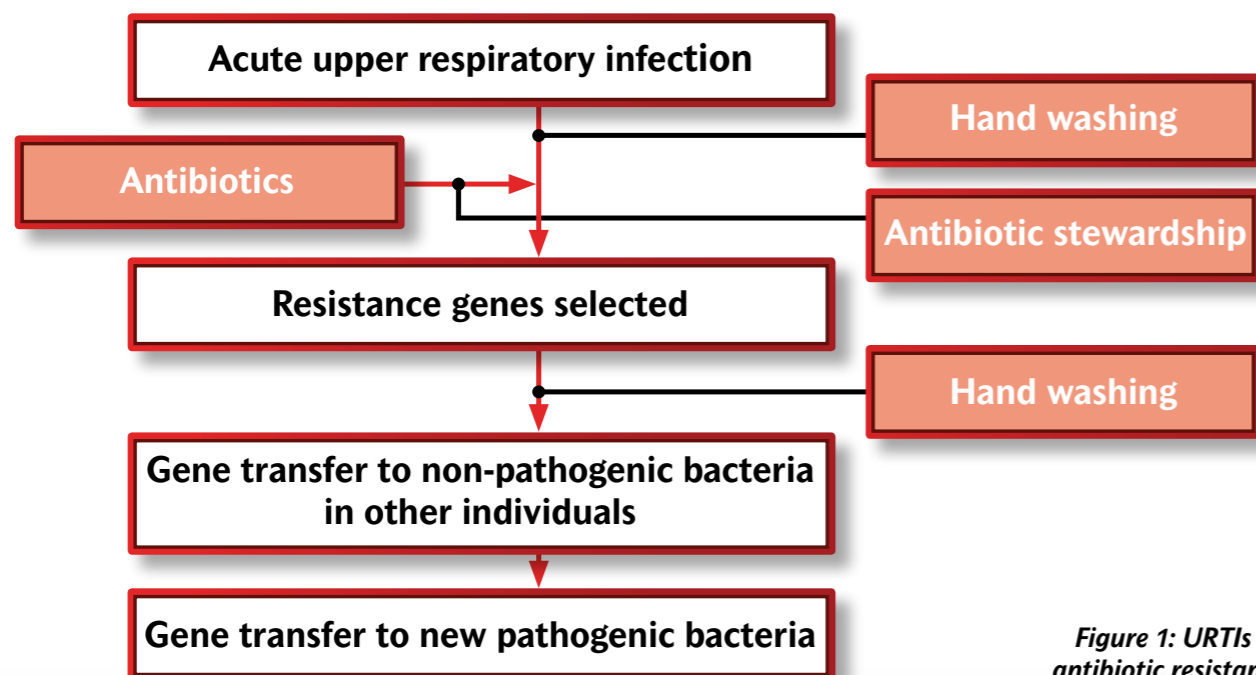The result is an increase in antibiotic resistance among bacterial organisms (Figure 1).

Acute upper respiratory infection

Antibiotics

Hand washing

Antibiotic stewardship

Resistance genes selected

Hand washing

Gene transfer to non-pathogenic bacteria in other individuals

Gene transfer to new pathogenic bacteria

Figure 1: URTIs and antibiotic resistance[23]

Evaluate

- Why do you think patients consult when they have an URTI?
- Are most of your patients aware that antibiotics won't relieve their symptoms or make them feel better faster?
- Do you feel confident in explaining antibiotic resistance to patients?
- Do patients have a realistic understanding of the duration of URTI symptoms or when to seek further medical advice?
- Do you feel under pressure to prescribe an antibiotic when patients present with an URTI?
- Do patients understand the difference between the viral and bacterial aetiology of sore throats?
- Is time pressure an issue for you in consultations for self-limiting conditions?

At the patient level, antibiotic use can result in the harbouring of bacteria which become resistant to the antibiotic used and persist in the body up to 12 months post-treatment.[24] This could create situations where there is increased use of second-line antibiotics[24] having an even more marked effect on the wider community. For example, the respiratory pathogen *Streptococcus pneumoniae* causes significant mortality around the globe.[25] Data from Asia show prevalence of multiple drug resistance at almost 60%, compared with 9–24% in the US and 0–43% in Europe.[25] The consequence is that treatment is more difficult, illness is prolonged, and there is an increased mortality risk, contributing to increased healthcare costs.[15]

Amid growing calls from international organisations such as the WHO and the European Center for Disease Prevention and Control to tackle antibiotic resistance,[10,12] re-evaluating antibiotic use for URTIs is one area where primary care can make a difference. For URTIs, symptomatic relief is often all that is necessary and antibiotics only have a modest effect, if any, on the duration of symptoms.[26]

Tackling antibiotic resistance requires a cohesive, consistent approach across primary care to restrict antibiotic prescribing, in alignment with evidence-based guidelines. In addition to policy changes at a national level to encourage rational antibiotic use, primary healthcare professionals (HCPs) are vital in ensuring such policies are implemented, while also playing an important role in facilitating patient education and helping patients understand that in most cases antibiotics are not appropriate for URTIs. For primary HCPs, the challenge lies in driving a change in patient expectations for URTI treatment without adversely affecting the practitioner–patient relationship. Optimising this interaction during an URTI consultation is key. Therefore, the Global Respiratory Infection Partnership has created a simple three-step framework that can help, as outlined here.

Principles of the 1, 2, 3 approach for URTIs

This three-step approach allows HCPs to tackle patient expectations and manage patient pressures in practice:

- ↻ **Step 1:** Address patient's concerns
- ↻ **Step 2:** Be vigilant — assess severity
- ↻ **Step 3:** Counsel on effective self-management

1 Step 1: Address patient's concerns

Addressing patients' primary concerns and expectations from treatment is an important step in determining how consultations should move forward.

Empathising with patient concerns is also key; some patients may be particularly worried about their symptoms, or have pre-conceptions about their treatment needs, even asking directly for antibiotics.[5] Primary care physicians say they often feel patient pressure to prescribe antibiotics.[5] Nonetheless, data suggest many doctors overestimate a patient's wish for antibiotics, resulting in inappropriate prescribing.[27]

Evidence suggests, however, that antibiotic demand may not be the main patient driver. Primary reasons for visiting a HCP according to research are:[5]

- ↻ to establish the cause of the symptoms and/or exclude serious causes

- ↻ to obtain symptomatic relief

- ↻ to gain information on the course of disease.

In one study of patients with sore throat, the desire for an antibiotic ranked only 11th out of 13 reasons for consultation.[5]
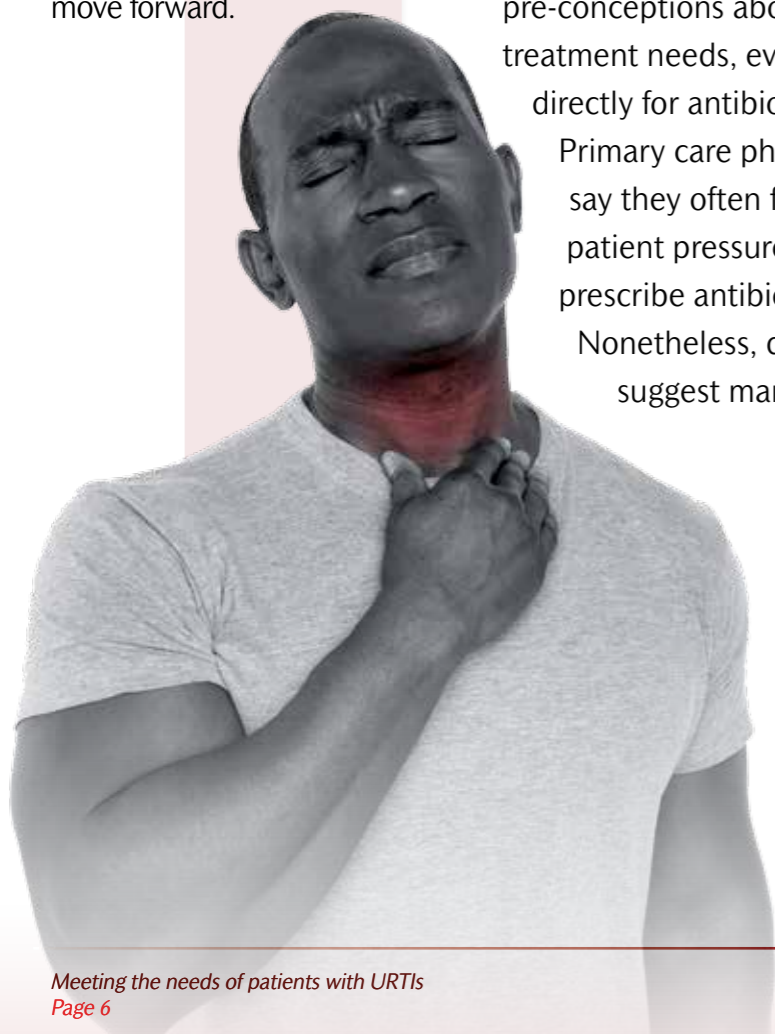
Patient/parent factors	Healthcare professional factors
Anxiety	Real or perceived patient/parent pressure
Misconceptions about what antibiotics do	Economic concerns (e.g. patients missing work, loss of client for healthcare professional)
Belief in healing power of the healthcare professional	Reduced appointment time, allowing little time to educate patient
Return to work needs	Responsiveness to patient satisfaction surveys, that may be salary-linked
Day-care needs	Lack of knowledge, or awareness of knowledge that is not implemented

Figure 2: Factors that may influence (inappropriate) antibiotic prescribing[28]

Delayed antibiotic prescribing, where patients are advised only to use their prescription if symptoms persist, or show no improvement, or come back for a script if not better, has been suggested as a means of HCPs meeting patient demands while communicating that antibiotics are not always required.[29] A meta-analysis of the available evidence of this strategy in URTIs demonstrated no difference in clinical outcomes between delayed antibiotic use or no antibiotics.[32] More importantly, patient satisfaction was not compromised: around 80% of patients are satisfied with treatment, even when no antibiotic has been prescribed.[28]

2 Step 2: Be vigilant – assess severity

Complications of URTIs are relatively rare in primary care; over 4,000 courses of antibiotics need to be prescribed to prevent one complication.[30] However, it is often difficult to distinguish between viral or bacterial infections based on symptoms or physical findings alone[31,32] and this should be borne in mind when contemplating antibiotic use.

Rather than focusing on the cause (bacterial or viral) of the URTI as a rationale for antibiotic use, consider instead the severity of the patient's condition, using red flag signs and whether they are at high risk of complications. This will differ for each URTI.
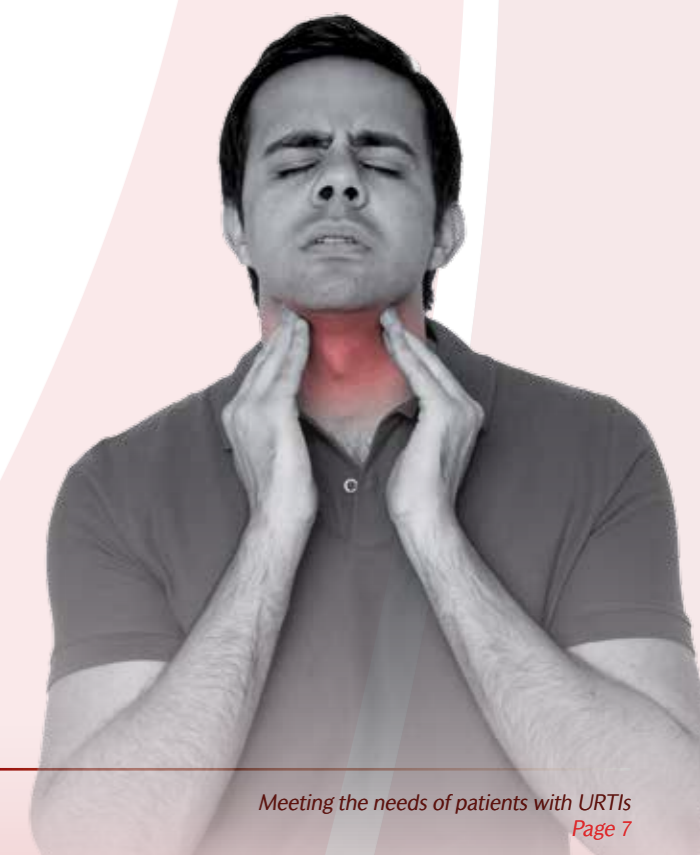
Step 3: Counsel on effective self-management

Many patients will get comfort and reassurance being told that their symptoms can be treated even in the absence of antibiotics,[5] with a high rate of satisfaction with no antibiotic prescribing.[29]

Effective self-management should focus on:

- Reassuring patients by explaining the non-serious nature of their URTI and advising that it can be treated with symptomatic relief products. Explain that antibiotics are not necessary and can have adverse effects, such as diarrhoea[3] and vaginal candidiasis (in women)[33]

- Recommending appropriate symptomatic relief. Switching the patient to symptomatic relief also sets a model for future patient behaviour; prescribing an antibiotic confirms to the patient that this will be necessary to manage their symptoms the next time they have them.[27] Select medications and formulations that best meet patient preferences and needs

- Advise the patient on what further actions are needed:

  » Outline the normal duration of symptoms (Figure 3)

  » Highlight when they should re-consult, i.e. when symptoms persist for longer than normal, if they develop red flag symptoms or are in a group at high risk of complications.

Effective self-management can be underpinned by identifying patient concerns as part of Step 1 to allow the treatment to be tailored to meet their specific symptoms. For URTIs, a range of different therapeutic options and formulations are available to help meet patient preferences.

Otitis media: 4 days
Sore throat/tonsillitis: 1 week
Common cold: 1.5 weeks
Flu: 2 weeks
Runny nose/nasal congestion: 1–2.5 weeks
Sinusitis: 2–3 weeks
Acute cough: 3 weeks

Figure 3: Typical duration of URTIs[2,34–36]

Applying the 1, 2, 3 approach in practice: Sore throat

RTIs can be classified as either upper or lower RTIs.[37]

URTIs include:

- **Sore throat (e.g. pharyngitis, tonsillitis, laryngitis):** throat feels sore or tender with difficulty swallowing, possibly with swollen tonsils and/or swollen lymph nodes

- **Sinusitis:** pain and/or pressure in the nose, forehead, cheek area or behind the eyes

- **Runny nose/nasal congestion (rhinitis):** build up of mucous causing a blocked or constantly-runny nose

- **Common cold:** runny or blocked nose, throat pain, cough, headache and generally feeling unwell

- **Influenza (flu):** fever, runny or blocked nose, throat pain, no energy, general (muscle) aches and pains

- **Otitis media (earache):** dull or burning pain inside the ear, often with fever

Lower RTIs (LRTIs) include pneumonia and bronchitis.[38]

Otitis media: infection of the middle ear often after a common cold, also known as earache

Sinusitis: inflammation of the sinuses, usually after a common cold

Tonsillitis: infection of the tonsils, usually caused by a virus

Common cold and influenza: viral cause; enters through the nasal passages

(Irritant) rhinitis: inflammation of the nasal mucous membranes, as a result of a virus, causing a runny nose or congestion

Pharyngitis: infection of the pharynx, also known as sore throat

Laryngitis: infection of the larynx, also known as sore throat, and often characterised by hoarseness

Acute cough: dry and unproductive in the early days of infection as a result of inflammatory response of the upper airways spreading to the larynx, can become productive if inflammation spreads to lower airways
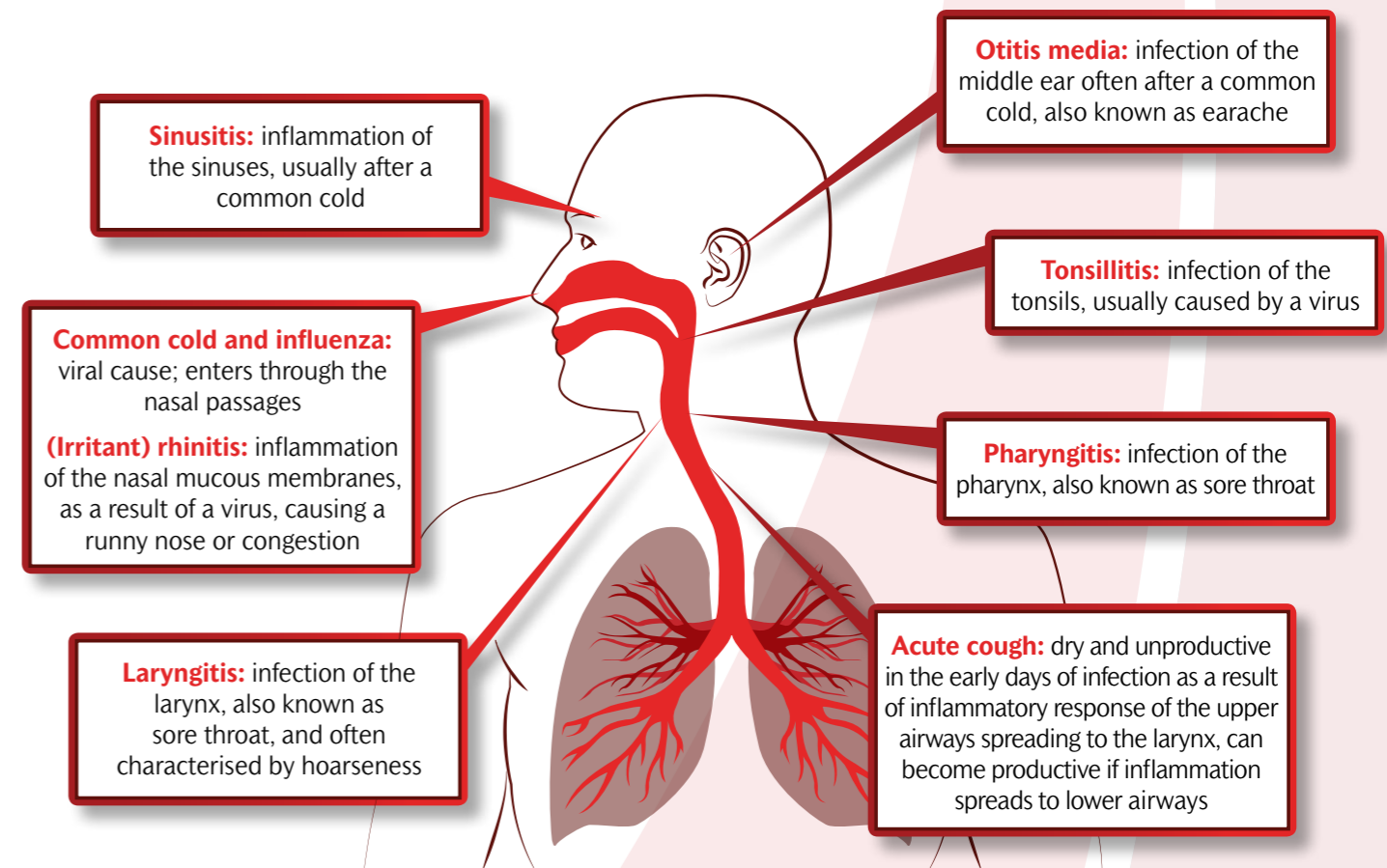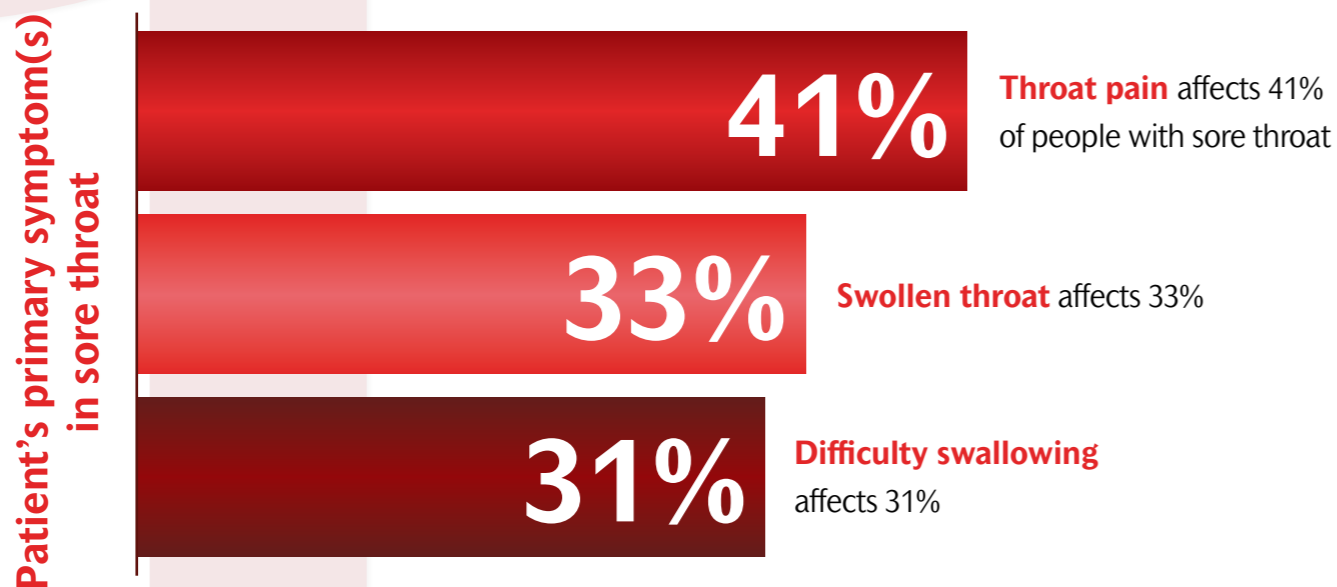
Figure 4: Upper RTIs[36–39]

Sore throat presents as part of other URTIs, such as the common cold,[36] as well as being a symptom on its own. Together with the factors outlined below, this makes sore throat a good model for the application of the 1, 2, 3 approach in primary care:

- The majority of sore throats are viral, accounting for up to 85–90% of cases in adults.[18] Therefore, antibiotics are ineffective for most patients
- Even in the 10% of adults with bacterial sore throat,[18] antibiotics have shown only a modest benefit, with symptoms resolving only 16 hours sooner with antibiotics, over one week symptom duration.[34] This effect must be weighed against the risk of adverse effects[40]
  - » The number needed to treat to benefit (NNTB) for antibiotics for sore throat is 21 patients (measured over one week)[34]
- Symptoms usually resolve without treatment: 40% of patients are symptom-free within 3 days and 82% within 7 days[34]
- Antibiotics may be required for patients with complications, such as a sore throat with a peritonsillar abscess or rheumatic fever[34,41]

1 Step 1: Address patient's concerns on sore throat

To help manage patient expectations, first determine the main symptoms and concerns. Pain is among the primary drivers for sore throat consultation[5] and is the most common symptom experienced by patients:[42]

Patient's primary symptom(s) in sore throat

41% **Throat pain** affects 41% of people with sore throat

33% **Swollen throat** affects 33%

31% **Difficulty swallowing** affects 31%

Other reasons for sore throat consultation are to determine the cause, and to understand how serious their complaint is and to find out how long they will suffer.[5] Around half of patients feel anxious and worried,[5] so reassurance is important.

2 Step 2: Be vigilant – assess severity of sore throat

Reassure the patient that sore throat is self-limiting, hardly ever causes complications and probably has a viral origin.[18] Although bacterial infections can occur, this only happens in a small proportion of patients.[18] Group A ß-haemolytic Streptococci (GABHS), the most common bacterial cause of sore throat,[18] accounts for 10% of sore throats in adults and young children and one third of sore throats in 5 to 15-year-olds.[18] Patients with GABHS infection presenting with sore throat may be at risk of complications such as rheumatic fever,[34] although this is very rare in many Western countries.[40]

The Centor criteria can help to assess the likelihood of GABHS (see Box).[18,40] The likelihood of a GABHS infection increases with the number of Centor criteria present. Even in patients with three or four Centor criteria, the benefits of antibiotics are modest and it is not advised that antibiotics are used to prevent potential complications in GABHS.[40] A meta-analysis found that antibiotics shortened the duration of sore throat by just 16 hours.[34]

Some patients, however, are at high risk of complications (see Box below).[40]

Centor criteria[43]

Tender anterior cervical adenopathy (swollen neck glands)
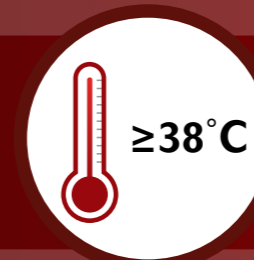
≥38°C **High temperature ≥38°C**

Absence of a cough

Tonsillar swelling or exudate (tonsils are red and swollen with/without white pus)

High-risk populations[2,40,44]

Certain populations are at increased risk of complications, including:

- elderly patients aged >65 years or young children aged <2 years of age or born prematurely

- immunocompromised patients (e.g. people receiving chemotherapy and those with HIV)

- those with pre-existing conditions, such as diabetes, cystic fibrosis, chronic lung disease and people with HIV

- specific local populations, e.g. Torres Strait Islanders, Aboriginal populations, American Indians or Alaskan Natives

3

Step 3: Counsel on effective self-management for sore throat

Reassure the patient

Remind the patient that sore throat is extremely common and 80% will resolve within approximately one week.[34] Explain there is a low risk of serious complications and that effective products are available to relieve their symptoms.[45]

If the patient requests antibiotics it may be helpful to determine what they expect from antibiotic treatment. It may be that they have a perception that antibiotics can target pain, which can only be managed with symptomatic treatments. Also, make the patient aware that antibiotics do have adverse effects and may sometimes do more harm than good.[3,33]

Recommend symptomatic relief

Recommend treatments to target pain, inflammation and difficulty swallowing, which are the most prominent sore throat symptoms.[42] This can also help move the conversation on from the expectation of antibiotic therapy. For sore throat, a wide range of active ingredients and formulations are available and it is important to determine the patient's individual preferences.

Active ingredients are broadly divided into those acting throughout the body (systematically) and those which target the local throat area. Systemic options include:

- Oral non-steroidal anti-inflammatory drugs (NSAIDs), e.g. ibuprofen and aspirin. These relieve pain by inhibiting the production of the pain and inflammation mediators (prostaglandins) throughout the body and central nervous system.[46] They are available as tablets, caplets, dissolvable tablets or liquid-filled capsules

- Oral analgesics, e.g. paracetamol which is believed to act primarily in the central nervous system to relieve pain. Paracetamol is available as tablets, capsules, and liquid suspension.[47]

Locally-delivered topical drugs provide a low-dose, targeted option with a fast onset of action.[48] These include:

- NSAID lozenges, such as flurbiprofen, which offers localised pain relief and reduced inflammation.[49–51] The lozenge formulation also has a demulcent effect and releases its active ingredient slowly, with the mouth also acting as a reservoir for the distribution of the active ingredients to the throat[48]

- NSAID sprays/gargles, such as benzydamine. Because of the gag reflex, gargle formulations only reach the mouth and do not deliver active ingredients to all areas of the throat[52]

- Antiseptic/anaesthetic lozenges. Many products contain a combination of ingredients to provide symptom relief. These may include local anaesthetics that have a numbing effect[53] (e.g. lidocaine, benzocaine, hexylresorcinol), coupled with antiseptics that have an antibacterial and antiviral action (e.g. amylmetacresol, 2,4-dichlorobenzyl alcohol) or an antibacterial effect (e.g. cetylpyridinium). As with NSAIDs, the formulation is also important

- Demulcents, such as glycerin and honey, lubricate the throat to produce a soothing effect[48,51]

Multiple products may be required for adequate relief of symptoms. Prior to offering advice, ask the patient what product, including dosage, he or she is already using. When patients require multiple products, ensure that the combination of active ingredients and dosing frequencies are appropriate and advise the patient accordingly (e.g. two or more products containing an NSAID should not be taken together).

Advise patients what to do next

Although encouraging self-management is key to avoiding antibiotic use, the patient should also feel that they are able to return for further consultation if necessary. Guidance is needed on when this is appropriate for sore throat. While most patients will have symptoms that resolve within approximately 7 days,[2,34] those with red flag symptoms (see

Box below) should be further investigated, while patients in the high-risk groups (see Box on p 12) should be monitored more closely.
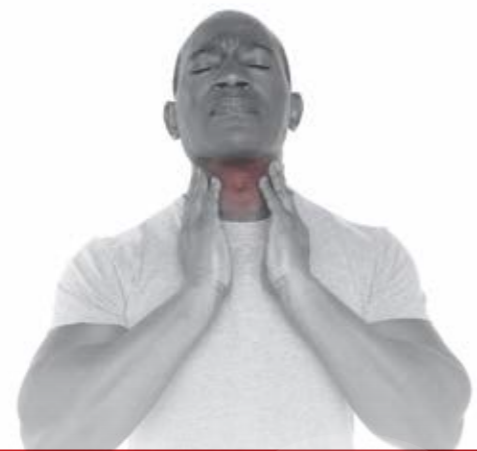
Red flag symptoms

The following symptoms may warrant further investigation:[26,43]

- Coughing up blood
- Shortness of breath
- Unilateral neck swelling unrelated to lymph nodes
- Great difficulty swallowing
- Very high temperature (>39°C) or night sweats
- Drooling or muffled voice
- Wheezing sounds when breathing
- Patients who show signs of being severely unwell

Applying the 1, 2, 3 approach for physicians: Sore throat

Communicating the need to change antibiotic use behaviour to patients can be a challenge. The following can offer some guidance on structuring a consultation.

1 Step 1: Address patient's concerns

Start the consultation with an open question.

"How can I help/What would you like me to do for you today?"

Acknowledge the fact that the symptoms are bothersome for the patient.

"It sounds/looks as if that is painful/uncomfortable for you. How long have you been experiencing it?"

Determine which symptoms the patient is most concerned about.

"Which symptoms do you find are most troublesome/ Which is your worst symptom?"

Identify any action the patient has taken before consultation.

"Have you tried any treatments already? What were these and did you find them helpful?"

Where the patient has less than two Centor criteria and is at low risk of complications, provide reassurance that most sore throats are self-limiting, viral in origin and there is little risk of a serious infection.

"From looking at your throat, I can see it is inflamed but there are no signs of a serious bacterial infection. Your immune system can deal with this infection. Around 85–95% of sore throats are caused by viruses, which don't respond to antibiotics and that's what I think we have here"

Where the patient is at high risk of complications, advise them to return if symptoms last more than one week without improvement, or last longer than 2 weeks.

"Around 85–95% of sore throats in adults are caused by viruses that don't respond to antibiotics and I think that's what we have here. But as you are older/have a pre-existing condition/a weak immune system I would like you to come back and see me if you are concerned or feel you are not getting better or and we'll need to have another look"

When the patient has three to four Centor criteria, but is at low risk of complications, encourage the patient to assess whether they want an antibiotic and recommend symptomatic relief as an interim measure.

"Around 85–95% of sore throats are caused by viruses, but in your case it looks as if there is more chance of a bacterial infection. For most people, their immune system is usually strong enough to overcome this type of infection. Let's discuss what would meet your needs best. Treating sore throat with antibiotics could reduce the durations of your symptoms slightly. Antibiotics also take some time to work so you won't get fast relief from the pain or swelling, though I can give you something to help in the meantime. In addition, there is the chance that antibiotics cause side effects, like diarrhoea or thrush, and using it now may make this antibiotic less effective in the future"

For all patients, provide reassurance on the normal duration of sore throats and when to come back for further investigation.

"Most sore throats should clear up within approximately one week. If you find you still have symptoms after this time, without improvement, still have symptoms after two weeks, or you develop new symptoms such as having difficulty breathing or swallowing, or you have a high fever or neck swelling then come back to me and we'll need to have another look"

Determine what the patient needs from symptomatic relief.

"It's important that we manage the symptoms that you are finding most uncomfortable. Tell me, what do you envisage is the ideal treatment for you?

Recommend self-management options that can help.

"Based on what you've said, I think an oral pain reliever/ topical pain reliever/topical antiseptic/anaesthetic would best help ease your sore throat. I can prescribe this/your pharmacy has a wide range of products that can help. Do you have any preference whether it is a tablet, lozenge, spray or gargle?

End the consultation with further recommendations and leaving the patient free to say if they are happy.

"Taking care of yourself, resting and drinking plenty of fluids can also help you feel better. And if you are at all concerned you can always come back to me for more advice. Is there anything else you are concerned about?

Applying the 1, 2, 3 approach for pharmacy: Sore throat

Communicating the need to change antibiotic use behaviour to patients can be a challenge. The following can offer some guidance on **structuring a request for treatment/advice.**

1

Step 1: Address patient's concerns

For patients who ask for advice on sore throat treatment, acknowledge the fact that the symptoms are bothersome for the patient.

> "It sounds like that is painful/uncomfortable for you. How long have you had these symptoms?"

Determine which symptoms the patient is most concerned about.

> "Which do you find is the worst symptom to cope with?"

Identify any action the patient has taken already.

> "Have you tried any treatments already? What were these and did you find them helpful?"

2

Step 2: Be vigilant – assess severity of sore throat

As most patients are at low risk of complications, provide reassurance that most sore throats are self-limiting, viral in origin, and with little risk of a serious infection.

> "Most sore throats are caused by viruses. Antibiotics don't work against viruses, so you don't need to visit the doctor for these. However, we do have a wide range of treatments that can work to ease your symptoms"

If the patient is in a high-risk group, advise them to see the doctor for further assessment.

> "Most sore throats are caused by viruses, but as you are older/have a pre-existing condition/a weak immune system I think it would be worth visiting your doctor just to make sure. In the meantime, I can give you something to help manage symptoms before you see the doctor, if that would help"

If the patient has a red flag symptom, advise them to see the doctor immediately for further assessment.

> "Most regular sore throats are caused by viruses, but from your symptoms it sounds as though it may be something that your doctor should look at. I would try to see them soon, just to make sure."

If the patient is at low risk but asks if they should see a doctor for antibiotics/requests antibiotics, dissuade them.

> "Around 85–95% of sore throats in adults are caused by viruses and antibiotics don't work against this type of infection. Antibiotics don't relieve your symptoms or speed up recovery. They can also cause side effects, like diarrhoea, and may make the antibiotic less effective when you really need them for more serious infections. We have treatments here that work much faster"

3 Step 3: Counsel on effective self-management

For all patients, provide reassurance on the normal duration of sore throats and when to consult the doctor for further investigation.

"Most sore throats should clear up within approximately one week. If you find you still have symptoms after this time without improvement, still have symptoms after two weeks, or you develop new symptoms, then it is best to go and see your doctor for advice"

Determine what the patient needs from symptomatic relief.

"We have a wide range of products that can help to ease sore throat symptoms. To make sure we have the right one for you, tell me what the ideal treatment should do for you. Can I also check if you have any other medical problems or you're taking any other medicines as that can help us decide which treatment to choose?"

Recommend self-management options that can help.

"Based on what you've said, I think an oral pain reliever/topical pain reliever/topical antiseptic/anaesthetic would best meet your needs. Would you prefer a tablet, lozenge, spray or gargle? Tablets work but they take a bit longer to feel any benefit, while lozenges and sprays act faster and directly target your throat"

End the conversation with further recommendations and guidance on seeing the doctor if needed.

"Taking care of yourself and drinking plenty of fluids can also help you feel better. And if you are at all concerned you can always come back to me or see your doctor for more advice"

In summary: GRIP's 1, 2, 3 approach for sore throat

1 Address the patient's concerns

- Identify the patient's main symptom or concern and ascertain how unwell they are.
- Doctors should perform a clinical assessment of the head and neck. Check glands and tonsils.

2 Be vigilant – assess severity

- For doctors: Use the Centor criteria to identify risk of GABHS and identify potential risk factors (NB. It is difficult to distinguish between viral and bacterial infections due to the similar nature of symptoms).
- For pharmacy: Identify risk factors, co-morbidities and/or red flag symptoms and refer when needed.

3 Counsel on effective self-management

- Provide reassurance for the patient, recommend symptomatic relief and, if required, advise the patient when they should see a doctor.
- Explain why antibiotics are not needed together with the benefits that symptomatic relief can provide.
- The pharmacy can help explain to patients the range of symptomatic relief products available.
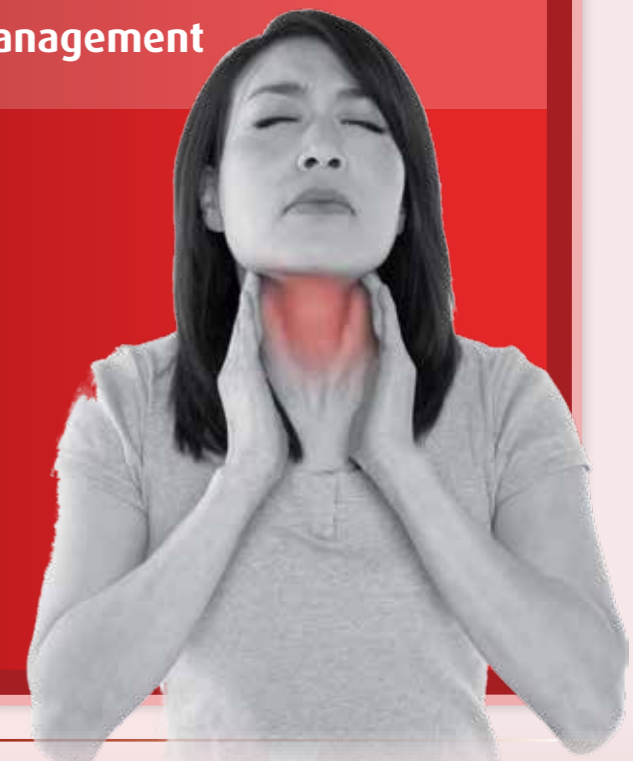
Applying the 1, 2, 3 approach: Sore throat case studies

Case Study 1: John

1 Address patient's concerns

- 60-year-old, healthy male with sore throat
- Wants a long-lasting pain reliever
- Wonders if he needs to see a doctor for antibiotics

2 Be vigilant – assess severity

- Patient: *"Symptoms started 2 days ago with a sore throat. I don't have a cough, and my tonsils and temperature appear normal. My glands are a bit swollen though"*
- John has no red flag symptoms and is not a high-risk patient

3 Counsel on effective self-management

- **Reassure** John that his symptoms are most likely due to a non-serious throat infection, which is usually viral, self-limiting and does not require antibiotics[9,34]
- **Recommend** anti-inflammatory lozenges for long-lasting sore throat relief, as requested by John. These can provide local relief at the site of pain and, in addition, reduce swelling and difficulty in swallowing
- **Advise** John that his symptoms usually last approximately 7 days;[34] if symptoms persist or show no improvement, he should see his doctor

Case Study 2: Priya

1 Address patient's concerns

- 27-year-old, healthy female
- Sore throat with a cough
- Priya has come to the pharmacy for analgesics and also asks if she should see her doctor for antibiotics

2 Be vigilant – assess severity

- Patient: *"Symptoms started 3 days ago with a sore throat and cough. I don't think my glands are swollen"*
- Priya has no red flag symptoms and is not a high-risk patient

3 Counsel on effective self-management

- **Reassure** Priya that her symptoms are likely to be due to a respiratory infection, which is usually viral, self-limiting, non-serious and does not require antibiotics – especially as the associated side effects may do more harm than good[3,34]
- **Recommend** medicated lozenges for fast, long-acting, local relief at the site of throat pain. Systemic pain relief (e.g. tablets) may also be useful
- **Advise** Priya that symptoms usually only last approximately 7 days.[34] If her symptoms persist or show no improvement, she should see her own doctor

Evaluation

Case Study 3:

Think about a recent patient you have seen presenting with sore throat. Use the 1, 2, 3 approach below to show how you would manage your patient's main symptoms, including a list of recommendations for symptomatic relief

1 **Address patient's concerns**

....

....

....

....

2 **Be vigilant – assess severity**

....

....

....

....

3 **Counsel on effective self-management**

....

....

....

....

....

....

Question 1

Antibiotics are <u>always</u> needed when treating what type of infection?

- **A.** Bacteria
- **B.** Viruses
- **C.** Neither bacterial or viral infections

Question 2

The majority of URTIs can be described as what type of condition?

- **A.** Non-serious and will usually resolve in 2 weeks
- **B.** A condition that requires treatment with antibiotics
- **C.** A condition which is likely to cause complications

Question 3

How can the problem of antibiotic resistance be addressed?

- **A.** Treat all URTIs with antibiotics
- **B.** Limit antibiotic use to patients who are at high-risk of developing complications
- **C.** Stop prescribing antibiotics all together

Question 4

Which of these infections is NOT a URTI?

- **A.** Sore throat
- **B.** Common cold
- **C.** Pneumonia

Question 5

Which of these is a key driver for a patient consulting a doctor for sore throat?

- **A.** To obtain pain relief
- **B.** To get a sick note
- **C.** To get a prescription for antibiotics

Question 6

How long does a sore throat usually last?

- **A.** 2 days at most
- **B.** 7 days
- **C.** Up to 2 weeks

Question 7

What percentage of adult sore throats are caused by a virus?

- **A.** 50–60%
- **B.** 75–85%
- **C.** 85–95%

Question 8

What do the Centor criteria measure?

- **A.** The risk of getting complications from a sore throat
- **B.** Whether the patient has a serious sore throat or not
- **C.** The likelihood the sore throat is caused by a bacterial infection

Question 9

Which of these patients would be considered high risk?

- **A.** An 80-year-old woman with a sore throat and no other symptoms
- **B.** A 25-year-old man with a sore throat who had a cold one month ago that improved after 10 days
- **C.** A 35-year-old woman with a sore throat and swollen tonsils with no other symptoms

Question 10

Which of these symptoms is NOT considered a red flag symptom for sore throat?

- **A.** Symptoms not improving after one week
- **B.** Swollen glands in the neck
- **C.** Shortness of breath

References

1. Francis NA, Butler CC, Hood K, *et al*. *BMJ*. 2009;339:b2885.

2. NICE. Clinical Guideline 69. Respiratory tract infections — antibiotic prescribing. Prescribing of antibiotics for self-limiting respiratory tract infections and in adults and children in primary care. July 2008.

3. Arroll B. *Respir Med*. 2005;99(12):1477–1484.

4. NPS. NPS News 63: Managing expectations for antibiotics in respiratory tract infections. June 2009. Accessed 1 June 2013. Available at http://www.nps.org.au/__data/assets/pdf_#le/0009/71478/news_63.pdf

5. van Driel ML, De Sutter A, Deveugele M, *et al*. *Ann Fam Med*. 2006;4(6):494–499.

6. Goossens H, Ferech M, Vander Stichele R, *et al*. *Lancet*. 2005;365(9459):579–587.

7. Thamlikitkul V, Apisitwittaya W. *Int J Infect Dis*. Jan 2004;8(1):47–51.

8. Mazzaglia G, Caputi AP, Rossi A, et al. *Eur J Clin Pharmacol*. 2003;59(8–9):651–657.

9. van Gageldonk-Lafeber AB, He&nen ML, Bartelds AI, *et al*. *Clin Infect Dis*. 2005;41(4):490–497.

10. WHO. The evolving threat of antimicrobial resistance. Options for action. 2012. Accessed April 2013. Available at: http://www.euro.who.int/en/what-we-do/healthtopics/disease-prevention/sections/news/2012/11/antibiotic-resistance-a-growingthreat/antibiotic-resistance

11. Riedel S, Beekmann SE, Heilmann KP, *et al*. *Eur J Clin Microbiol Infect Dis.* 2007;26(7):485–490.

12. ECDC/EMEA Joint Technical Report: The bacterial challenge: time to react. 2009. EMEA/576176/2009. http:/ / http://www.ema.europa.eu/ docs/ en_GB/document_library/ Report/ 2009/ 11/WC500008770.pdf

13. IDSA. Facts about Antibiotic Resistance. April 2011. Available at: http://www.idsociety.org/IDSA/Site_Map/Topics_of_Interest/Antimicrobial_Resistance/Public_Policy/Facts_about_Antibiotic_Resistance.aspx

14. NCCID. Community-acquired antimicrobial resistance. Consultation notes. February 2010. http://www.nccid.ca/#les/caAMR_Consultation-Notes_#nal.pdf

15. WHO. Factsheet No 194. Accessed 1 June 2013. Available at http://www.who.int/mediacentre/factsheets/fs194/en/

16. Davies SC, Fowler T, Watson J, *et al*. *Lancet*. 2013;381(9878):1606–9.

17. ECDC. Key messages for primary care prescribers. Accessed on 1 June 2013. Available at http://ecdc.europa.eu/en/eaad/antibiotics/pages/messagesforprescribers.px

18. Worrall GJ. *Can Fam Physician*. 2007;53(11):1961–1962.

19. Special Eurobarometer 338. Antimicrobial resistance. Survey carried out by TNS Opinion & Social at the request of the Directorate-General for Health and Consumers. 2010. Available at: http://ec.europa.eu/health/antimicrobial_resistance/docs/ebs_338_en.pdf

20. CDC. Get Smart. Fast Facts: fast facts about antibiotic resistance. Available at: http://www.cdc.gov/getsmart/antibiotic-use/fast-facts.html

21. Ganguly NK, Arora NK, Chandy SJ, *et al*. *Indian J Med Res. Sep* 2011;134:281–294.

22. Hui L, Li XS, Zeng XJ, *et al*. *Pediatr Infect Dis J*. 1997;16(6):560–564.

23. Del Mar C, Glasziou P, Lowe JB, *et al*. *Aust Fam Physician*. Nov 2012;41(11):839–840

24. Costelloe C, Metcalfe C, Lovering A, *et al*. *BMJ*. 2010;340:c2096.

25. Kim SH, Song JH, Chung DR, *et al*. *Antimicrob Agents Chemother*. 2012;56(3):1418–1426.

26. van Duijn HJ, Kuyvenhoven MM, Schellevis FG, *et al*. *Br J Gen Pract*. 2007;57(540):561–568.

27. Altiner A, Brockmann S, Sielk M, *et al*. *J Antimicrob Chemother*. 2007;60(3):638–644.

28. Harrison PF, Lederberg J, eds. *Antimicrobial Resistance: Issues and Options: Workshop Report*. 1998.

29. Spurling GK, Del Mar CB, Dooley L, *et al*. *Cochrane Database Syst Rev*. 2013;4:Cd004417.

30. Petersen I, Johnson AM, Islam A, *et al*. *BMJ*. 2007;335(7627):982.

31. Aalbers J, O'Brien KK, Chan WS, *et al*. *BMC Med*. 2011;9:67.

32. Shephard A, et al. ECCMID. Berlin, Germany, 2013. P2085.

33. Wilton L, Kollarova M, Heeley E, *et al*. *Drug Saf*. 2003;26(8):589–597.

34. Spinks AB, Glasziou PP, Del Mar CB. *Cochrane Database Syst Rev*. 2006(4):CD000023.

35. Macy E. *Perm J*. 2012;16(4):61–66.

36. Eccles R. *Lancet Infect Dis*. 2005;5(11):718–725.

37. Baron S. Medical Microbiology. 4th edition. Chapter 93. Infections of the Respiratory System. 1996.

38. Sauro A, Barone F, Blasio G, *et al*. *Eur J Gen Pract*. 2006;12:34–36.

39. Reveiz L, Cardona AF. Cochrane Database Syst Rev.2013;3:CD004783.

40. Pelucchi C, Grigoryan L, Galeone C, *et al*. *Clin Microbiol Infect*. 2012;18 Suppl 1:1–28.

41. Sowerby LJ, Hussain Z, Husein M. *J Otolaryngol Head Neck Surg*. 2013;42(1):5.

42. Schachtel B, Aspley S, Berry P, *et al*. *The Journal of Pain : Official Journal of the American Pain Society*. 2012;13(4):S6.

43. Centor RM, Samlowski R. *Am Fam Physician*. 2011;83(1):26–28.

44. CDC. Seasonal Infuenza (Flu). 2012. Accessed May 2013. Available at http://www.cdc.gov/flu/about/disease/high_risk.htm

45. Thomas M, Del Mar C, Glasziou P. *Br J Gen Pract*. 2000;50(459):817–820.

46. Burian M, Geisslinger G. *Pharmacol Ther*. 2005;107(2):139–154.

47. Graham GG, Scott KF. *Am J Ther*. 2005;12(1):46–55.

48. Oxford JS, Leuwer M. *Int J Clin Pract*. 2011;65(5):524–530.

49. Blagden M, Christian J, Miller K, *et al*. *Int J Clin Pract*. 2002;56(2):95–100.

50. Watson N, Nimmo WS, Christian J, *et al*. *Int J Clin Pract*. 2000;54(8):490–496.

51. Benrimoj SI, *et al*. *Clin Drug Invest*. 2001;21:183–93.

52. Limb M, Connor A, Pickford M, *et al*. *Int J Clin Pract*. 2009;63(4):606–612.

53. McNally D, Shephard A, Field E. *J Pharm Pharm Sci*. 2012;15(2):281–294

54. The Merck Manual. Sore throat. Accessed April 2013. Available at: http://www.merckmanuals.com/professional/ear_nose_and_throat_disorders/approach_to_the_patient_with_nasal_and_pharyngeal_symptoms/sore_throat.html

Learning log record

Date learning need identified: .... **CPD entry number:** ....

Name of entry: ....

Reflection

What do or what did you need to learn? ....

....

How is this learning relevant to your practice? ....

....

Planning

Why is this learning important to you and your practice? ....

....

What might you do in order to achieve this learning? ....

....

Action

What specific skills, knowledge, attitude and/or behaviour have you learnt? ....

....

Evaluate

To what extent did you learn what you set out to when you started this CPD cycle? ....

....

What benefits has this learning provided and how will you apply this learning in practice? ....

....

Is there further learning you need to undertake and what will you do to achieve this? ....

....

Impact record

List the activities you have undertaken and when ....

....

Please document what you have found in practice ....

....

Describe any changes to prescribing practice ....

....

What is GRIP?

The Global Respiratory Infection Partnership (GRIP) is an international group of healthcare professionals committed to reducing inappropriate antibiotic use for respiratory tract infections in primary care and the wider community, helping to counteract antibiotic resistance.

www.grip-initiative.com

GRIP

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INFECTION PARTNERSHIP