GRIP

GLOBAL RESPIRATORY INFECTION PARTNERSHIP

RESPONSIBILITY TREATS BEST

STOP ANTIBIOTIC OVERUSE

RESPONSIBLE MANAGEMENT OF RESPIRATORY TRACT INFECTIONS (RTIs) IN PHARMACY

GRIP guidance

Reckitt Benckiser has funded and supported the development of this material, including review of content for code compliance. The views and opinions represent those of the Global Respiratory Infection Partnership (GRIP) and are not necessarily the views of Reckitt Benckiser as the sponsor.

OVERUSE AND MISUSE OF ANTIBIOTICS DRIVES ANTIBIOTIC RESISTANCE[1]

- Antibiotic resistance develops as **bacteria adapt and grow** in the presence of antibiotics, which **reduces the effectiveness** of antibiotics against them[1–4]
- Antibiotics only work against **bacteria** – not viruses[5]
- Since **the majority of RTIs are caused by viral infections**[6–11] and are self-limiting,[8,10] using antibiotics in these patients is **antibiotic misuse**[1,9]
- **Responsible management** of acute RTIs **in the pharmacy setting** can help counter the development of antibiotic resistance

RESPONSIBLE MANAGEMENT OF ACUTE RTIs IN THE PHARMACY

Would the patient benefit from antibiotics?

Should the patient see a doctor?

Is the patient aware of the issue of antibiotic resistance?

Which symptomatic relief would best meet the patient's needs?

"Antimicrobial resistance threatens the very core of modern medicine and the sustainability of an effective, global public health response to the enduring threat from infectious diseases"[1]

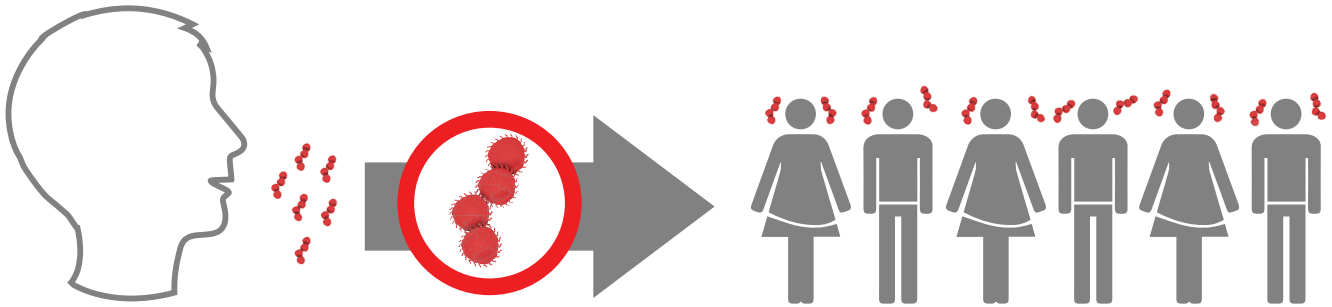
In a study of outpatient visits, 80% of antibiotics given for acute RTIs were found to be unnecessary[9]

1. World Health Organization. Global action plan on antimicrobial resistance, 2015. Available at: http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/ (accessed July 2018); 2. Munita JM, Arias CA. Microbiol Spectr 2016;4; 3. Leekha S, et al. Mayo Clin Proc 2011;86:156–67; 4. Zaman SB, et al. Cureus 2017;9:e1403; 5. Hildreth CJ, et al. JAMA 2009;302:816; 6. Ebell MH, et al. JAMA 2000;284:2912–8; 7. Van Gageldonk-Lafeber AB, et al. Clin Infect Dis 2005;41:490–7; 8. Kenealy T, Arroll B. Cochrane Database Syst Rev 2013;6:CD000247; 9. Scott JG, et al. J Fam Pract 2001;50:853–8; 10. Baron S. Medical Microbiology 4th edition. Chapter 93. Infections of the Respiratory System. 1996. University of Texas Medical Branch at Galveston, Galveston, Texas; 11. Creer DD, et al. Thorax 2006;61:75–9.

ANTIBIOTIC RESISTANCE AFFECTS EVERYONE, TODAY

- **Resistant bacteria** can develop in any of us after antibiotic use, and can stay in our bodies for **up to 1 year**[1]
- **Misuse and overuse** of antibiotics is reducing their ability to cure infections and save lives, **now and in the future**[2,3]
- Increased use of antibiotics,[4,5] including their **misuse and overuse,**[2] results in higher risks of **antibiotic resistance developing**[2,4,5] **and spreading**[6] in the community

PEOPLE CAN CARRY RESISTANT BACTERIA AND SPREAD THEM TO OTHERS IN THEIR COMMUNITY[6]



We could find ourselves in a world where common infections could once again kill, as antibiotics will no longer work effectively[2,3]

1. Costelloe C, et al. BMJ 2010;340:c2096; 2. World Health Organization. Global action plan on antimicrobial resistance, 2015. Available at: http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/ (accessed July 2018); 3. Zaman SB, et al. Cureus 2017;9:e1403; 4. Goossens H, et al. Lancet 2005;365:579–87; 5. Riedel S, et al. Eur J Clin Microbiol Infect Dis 2007;26:485–90; 6. World Health Organization. Antimicrobial resistance. Fact sheet, 2018. Available at: http://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance (accessed July 2018).

HOW CAN GRIP HELP?

- The Global Respiratory Infection Partnership (GRIP) is a group of healthcare professionals from around the world, consisting of primary care and hospital doctors, microbiologists, pharmacists and researchers
- GRIP has developed a framework and support materials for the pro-symptomatic management of RTIs[1]
- The World Health Organization warns that "steps need to be taken **immediately** in order to raise awareness of antimicrobial resistance and **promote behavioural change**"[2]
- Promoting behaviour change is at the core of GRIP's mission, based on a pentagonal (5-P) framework which encompasses policy, prevention, prescriber, pharmacy and patient[3]

THE GRIP 5-P FRAMEWORK FOR CHANGE[3]

POLICY
to advance antibiotic stewardship and conservation, and encourage symptomatic management

PATIENT
empowerment on self-management

PHARMACY
guidance in the provision of advice to patients

PREVENTION
of resistance, by the rational use of antibiotics

PRESCRIBER
guidance on antibiotic stewardship and effective dialogue with patients

1. Global Respiratory Infection Partnership (GRIP). Available at: http://www.grip-initiative.org/home/ (accessed July 2018); 2. World Health Organization. Global action plan on antimicrobial resistance, 2015. Available at: http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/ (accessed July 2018); 3. Essack S, Pignatari AC. Int J Clin Pract 2013;67(Suppl 180):4–9.

THE PHARMACY TEAM IS CRITICAL FOR ANTIBIOTIC EDUCATION

- The pharmacy team has a **key role** to play in antibiotic stewardship[1,2]
- Community pharmacists are amongst the most accessible of healthcare providers, and pharmacies are often the first place patients go to for advice on common health complaints and the last point of contact before antibiotic treatment commences[2]
- A survey across 13 countries (n=5196) showed that **people trust pharmacists** to give sound and appropriate advice about sore throat[3]

76% agreed/strongly agreed with **'I value the advice of the pharmacist or pharmacy assistant'**[3]

68% agreed/strongly agreed with **'I believe what they tell me'**[3]

72% agreed/strongly agreed with **'They can tell me if I need to go to the doctor'**[3]

- RTIs are the most commonly treated acute problem in primary care[4]
- GRIP has developed a simple **1,2,3-step approach** for use in the pharmacy setting that aids responsible management of RTIs, including sore throat

1,2,3 APPROACH FOR SORE THROAT

1. **ADDRESS PATIENT'S CONCERNS**
2. **BE VIGILANT – ADDRESS SEVERITY**
3. **COUNSEL ON EFFECTIVE SELF-MANAGEMENT**

1. National Institute for Health and Care Excellence. Antimicrobial stewardship: changing risk-related behaviours in the general population. Guideline 63. January 2017. Available at: https://www.nice.org.uk/guidance/ng63 (accessed July 2018); 2. Essack S, et al. J Clin Pharm Ther 2018;43:302–7; 3. Bell J, et al. Poster presented at 78th FIP World Congress of Pharmacy and Pharmaceutical Sciences, Glasgow, UK, 2–6 September 2018; 4. Francis NA, et al. BMJ 2009;339:b2885.

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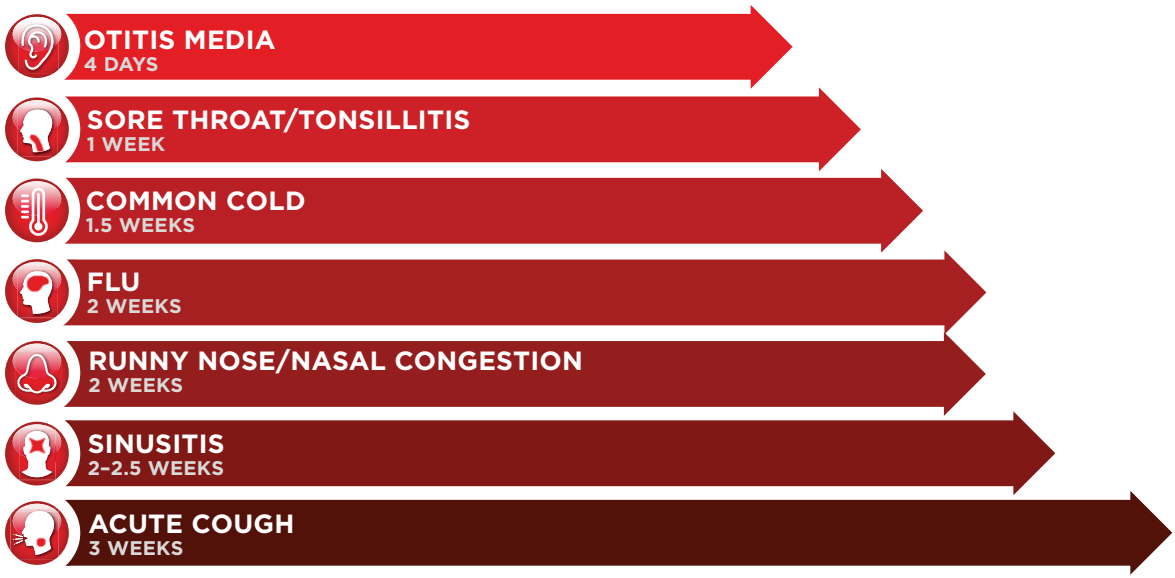
RESPONSIBLE RTI MANAGEMENT – WHAT PATIENTS NEED TO KNOW

Encouraging symptomatic relief of RTIs

MOST RTIs ARE CAUSED BY VIRUSES

- Throughout the respiratory tract, the **majority of RTIs are caused by viruses**,[1–6] and **antibiotics do not work**[4,7,8]
- Most RTIs – whether bacterial or viral – are non-serious, self-limiting[1,4] and **resolve without antibiotics** in 1–2 weeks[9–14]
- Despite this, **antibiotics are often provided** for RTIs[5,15,16] but **may do more harm than good** in most patients[9,17]

UPPER RESPIRATORY TRACT INFECTION (URTI) IS SELF-LIMITING[1,4] AND SHORT-LIVED, AND THE DURATION OF EACH SYMPTOM FROM ITS FIRST OCCURRENCE VARIES[9–14]



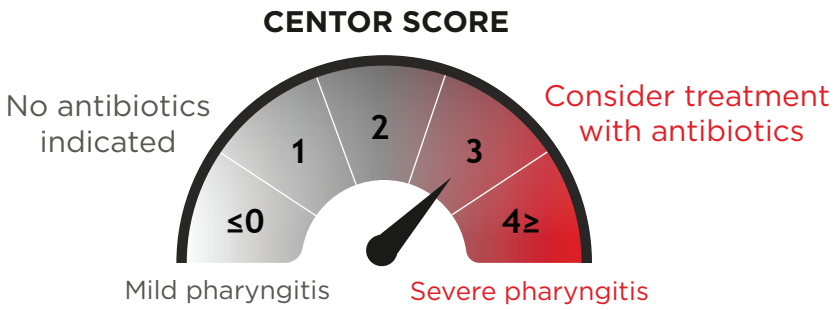
RTIs are classified as upper (URTI) or lower, based on the area of the body that is affected,[1] URTIs being those affecting the nasal cavities/sinuses, pharynx, epiglottis, larynx, and upper airways[1]

1. Baron S. Medical Microbiology 4th edition. Chapter 93. Infections of the Respiratory System. 1996. University of Texas Medical Branch at Galveston, Galveston, Texas; 2. Ebell MH, et al. JAMA 2000;284:2912–8; 3. Van Gageldonk-Lafeber AB, et al. Clin Infect Dis 2005;41:490–7; 4. Kenealy T, Arroll B. Cochrane Database Syst Rev 2013;6:CD000247; 5. Scott JG, et al. J Fam Pract 2001;50:853–8; 6. Creer DD, et al. Thorax 2006;61:75–9; 7. Hildreth CJ, et al. JAMA 2009;302:816; 8. Moore M, et al. Br J Gen Pract 2008;58:88–92; 9. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 10. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023; 11. Macy E. Perm J 2012;16:61–6; 12. Centers for Disease Control and Prevention. Flu symptoms and complications. 2018. Available at: https://www.cdc.gov/flu/consumer/symptoms.htm (accessed July 2018); 13. Gwaltney JM, et al. JAMA 1967;202:494–500; 14. Arruda E, et al. J Clin Microbiol 1997;35:2864–8; 15. Dekker AR, et al. Fam Pract 2015;32:401–7; 16. Gulliford MC, et al. BMJ Open 2014;4:e006245; 17. Wright J, Paauw DS. Med Clin North Am 2013;97:667–79.

SORE THROAT IS USUALLY VIRAL AND SELF-LIMITING

- Up to **8 out of 10 sore throats are caused by viral URTIs** (such as the common cold or flu)[1] against which antibiotics do not work[2]
- Sore throat is usually self-limiting and resolves within 1 week[3,4]
- Group A ß-haemolytic Streptococcus is associated with about 10% of adult sore throats and up to 30% in children[5]
- However, it can be difficult to distinguish between a viral or bacterial infection **based on signs and symptoms**[6]
  - There is **no evidence** for using the colour of nasal discharge or phlegm as a marker for the prescription of antibiotics[7]
  - **Better predictors**, such as the absence of cough in sore throat, can help identify bacterial infections[8–10]
  - Antibiotics may be considered for patients with three or more Centor criteria[8]

THE LIKELIHOOD OF STREP THROAT CAN BE ESTIMATED USING MODIFIED CENTOR CRITERIA,[8–10] WITH ANTIBIOTICS CONSIDERED FOR PATIENTS WITH THREE OR MORE CENTOR CRITERIA[8]



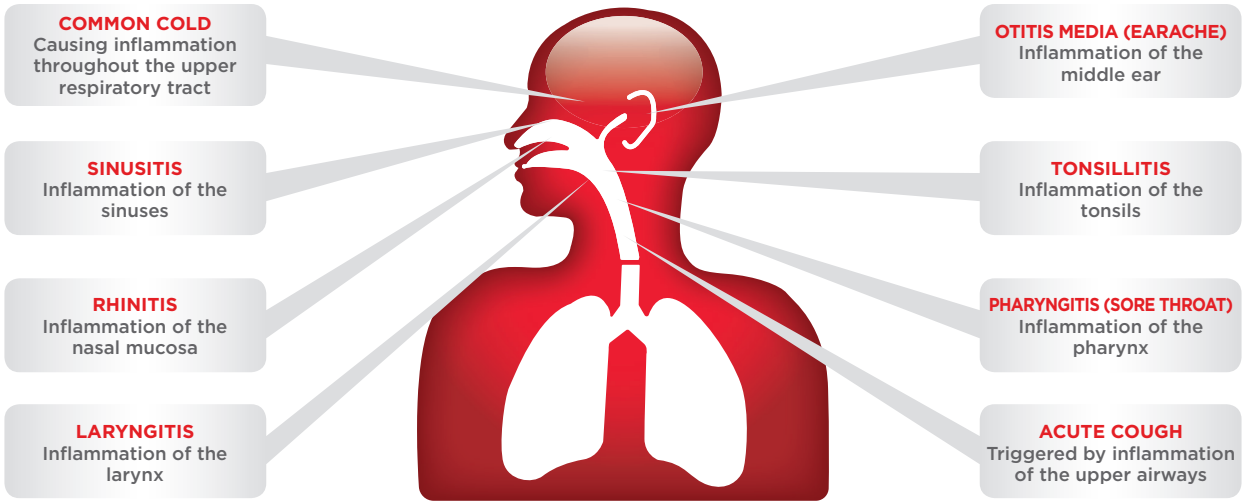
CRITERIA	POINTS
Absence of cough	1
Swollen and tender anterior cervical nodes	1
Temperature >38°C	1
Tonsillar exudates or swelling	1
Age	
3–14 years	1
15–44 years	0
45 years and older	-1
Cumulative score	____

1. Ebell MH, et al. JAMA 2000;284:2912–8; 2. Hildreth CJ, et al. JAMA 2009;302:816; 3. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 4. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023; 5. Bisno AL. N Engl J Med 2001;344:205–11; 6. Aalbers J, et al. BMC Med 2011;9:67; 7. Eccles R. Lancet Infect Dis 2005;5:718–725; 8. Centor RM, Samlowski R. Am Fam Physician 2011;83:26–8; 9. Centor RM, et al. Med Decis Making 1981;1:239–46; 10. McIsaac WJ, et al. JAMA 2004;291:1587–95.

ANTIBIOTICS DO NOT TARGET THE PAIN AND INFLAMMATION UNDERLYING SORE THROAT

- A key underlying feature of sore throat is **inflammation**[1,2] resulting in throat pain that patients describe using a variety of sensory, affective and functional descriptors (e.g. dry, agonising, difficult to swallow)[3]
- Antibiotics do not target the inflammation underlying sore throat, and are not direct pain relievers
- Antibiotics have minimal effects on the symptoms of sore throat[4,5]
  - Evidence shows that, compared with placebo, the benefits of antibiotics for patients with sore throat are 'modest'[4]
  - Even when antibiotics are indicated, their effect on symptoms is small[4]
  - A study in patients with streptococcal infection receiving flurbiprofen lozenge showed that additional antibiotic treatment did not provide further symptomatic relief for sore throat, beyond that provided by flurbiprofen lozenge alone[5]
- Studies show that patients with sore throat are looking for pain relief[6,7]

URTIs CAUSE INFLAMMATION THROUGHOUT THE UPPER RESPIRATORY TRACT, RESULTING IN THE FAMILIAR SYMPTOMS OF THE COMMON COLD OR FLU[1,8]



1. Eccles R. Br J Hosp Med (Lond) 2007;68:71–5; 2. Renner B, et al. Inflamm Res 2012;61:1041–52; 3. Schachtel B, et al. Pain Manag 2018;8:85–94; 4. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023; 5. Shephard A, et al. Poster presented at the 23rd European Congress of Clinical Microbiology and Infectious Diseases, 27–30 April 2013, Berlin, Germany (P852); 6. van Driel, ML, et al. Ann Fam Med 2006;4:494–9; 7. RB data on file (U&A survey 2017); 8. Baron S. Medical Microbiology 4th edition. Chapter 93. Infections of the Respiratory System. 1996. University of Texas Medical Branch at Galveston, Galveston, Texas.

RELIEF OF PAINFUL SORE THROAT

- To relieve sore throat, treatments should
  - Target the underlying **inflammation**,[1] which can be caused by viruses or bacteria[2–4]
  - Provide evidence-based **relief of the painful symptoms** of sore throat,[1] which can be mild or severe[5]
  - Provide **rapid onset** and **prolonged duration** of action[1]

URTI symptom	Examples of active ingredients	Local formulation	Systemic formulation	Mode of action
Sore throat	Local non-steroidal anti-inflammatory drug (e.g. flurbiprofen)	✓	✗	Locally inhibits prostaglandin production[6] to relieve sore throat and other qualities of throat pain[7–10]
	Systemic non-steroidal anti-inflammatory drug (e.g. ibuprofen)	✗	✓	Non-steroidal anti-inflammatory drugs inhibit prostaglandin production throughout the body and in the central nervous system to relieve pain, inflammation and fever[11,12]
	Oral analgesic tablets (e.g. paracetamol)	✗	✓	Paracetamol is thought to act on prostaglandins in the central nervous system and relieves pain[13] and fever[12] but has only low level anti-inflammatory action[13]
	Antiseptics (e.g. amylmetacresol, 2,4-dichlorobenzyl alcohol and hexylresorcinol)	✓	✗	Antibacterial, antiviral, local anaesthetic, blocks voltage-gated Na+ channels in a local anaesthetic-like manner[1,14]
	Local anaesthetics (e.g. lidocaine)	✓	✗	Local anaesthetic, blocks voltage-gated Na+ channels[1,14]

- A local anti-inflammatory drug such as **flurbiprofen**, delivered as a lozenge or spray, can rapidly[7,15] relieve sore throat pain, difficulty swallowing, swollen throat,[7,8] and other symptoms of throat discomfort[10] with pain relief that lasts for up to 4–6 hours[7,8,16]

1. Oxford JS, Leuwer M. Int J Clin Pract 2011;65:524–30; 2. Ebell MH, et al. JAMA 2000;284:2912–8; 3. Eccles R. Br J Hosp Med (Lond) 2007;68:71–5; 4. Renner B, et al. Inflamm Res 2012;61:1041–52; 5. Shephard A. J Family Med Community Health 2014;1:1014; 6. Sefia E, et al. Poster presented at the annual scientific meeting of the British Pain Society, 24–27 April 2007, Glasgow, UK; 7. Schachtel B, et al. Pain 2014;155:422–8; 8. de Looze F, et al. Eur J Gen Pract 2016;22:111–8; 9. Burova N, et al. J Pain Res 2018;11:1045–55; 10. Schachtel B, et al. Pain Manag 2018;8:85–94; 11. Burian M, Geisselinger G. Pharmacol Ther 2005;107:139–54; 12. Rainsford KD. Inflammopharmacology 2009;17:275–342; 13. Graham GG, et al. Inflammopharmacology 2013;21:201–32; 14. Buchholz V, et al. Naunyn Schmiedebergs Archiv Pharmacol 2009;380:161–8; 15. Bychkova V, et al. Int J Clin Pharm 2017;39:208–341 [abstract]; 16. Schachtel B, et al. Pain Pract 2016;16:6–176 [abstract].

RELIEF OF OTHER URTI SYMPTOMS

- Sore throat is often accompanied by other URTI symptoms, and relief of these can be tailored to individual symptoms

URTI symptom	Examples of active ingredients	Local formulation	Systemic formulation	Mode of action
Cough (dry, tickly)	Menthol	✓	✗	Suppresses the cough reflex[1,2]
	Cough suppressants (e.g. dextromethorphan) Sedative antihistamines (e.g. diphenhydramine)	✗	✓	
Nasal congestion, rhinitis (blocked or runny nose)	Antihistamines (e.g. diphenhydramine) Decongestants (e.g. pseudoephedrine, oxymetazoline) Anti-cholinergics (e.g. ipratropium)	✓	✓	Antihistamines reduce histamine-related nasal mucosal swelling and secretion[3] Decongestants constrict swollen nasal blood vessels[3,4] Anti-cholinergics reduce the amount of mucus produced in the nose[5,6]
Sinusitis	Decongestants (e.g. pseudephedrine)	✓	✓	
Pain, muscle aches	Ibuprofen Paracetamol	✗	✓	Non-steroidal anti-inflammatory drugs inhibit prostaglandin production to reduce inflammation and relieve pain and fever[7,8] Paracetamol relieves pain[9] and fever[8] but has only low level anti-inflammatory action[9]
Fever	Ibuprofen Paracetamol	✗	✓	
Otitis media (earache)	Local anaesthetic (e.g. topical lignocaine)	✓	✗	Anaesthetic mode of action. Uptake of the local anaesthetic lignocaine is increased when tympanic membrane is inflamed[10]

Note: Active ingredients may not be available in all countries

1. Morice AH, et al. Thorax 2006;61(Suppl I):i1–24; 2. Dicpinigaitis PV, et al. Cough 2009;5:11; 3. Meltzer EO, et al. Int J Gen Med 2010;3:69–91; 4. Taverner D, Latte GJ. Cochrane Database Syst Rev 2007;1:CD001953; 5. Eccles R, et al. Curr Med Res Opin 2010;26:889–99; 6. AlBalawi ZH, et al. Cochrane Database Syst Rev 2013;6:CD008231; 7. Burian M, Geisselinger G. Pharmacol Ther 2005;107:139–54; 8. Rainsford KD. Inflammopharmacology 2009;17:275–342; 9. Graham GG, et al. Inflammopharmacology 2013;21:201–32; 10. Bolt P, et al. Arch Dis Child 2008;93:40–4.

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1,2,3 FOR SORE THROAT MANAGEMENT IN PHARMACY

Encouraging symptomatic relief of RTIs

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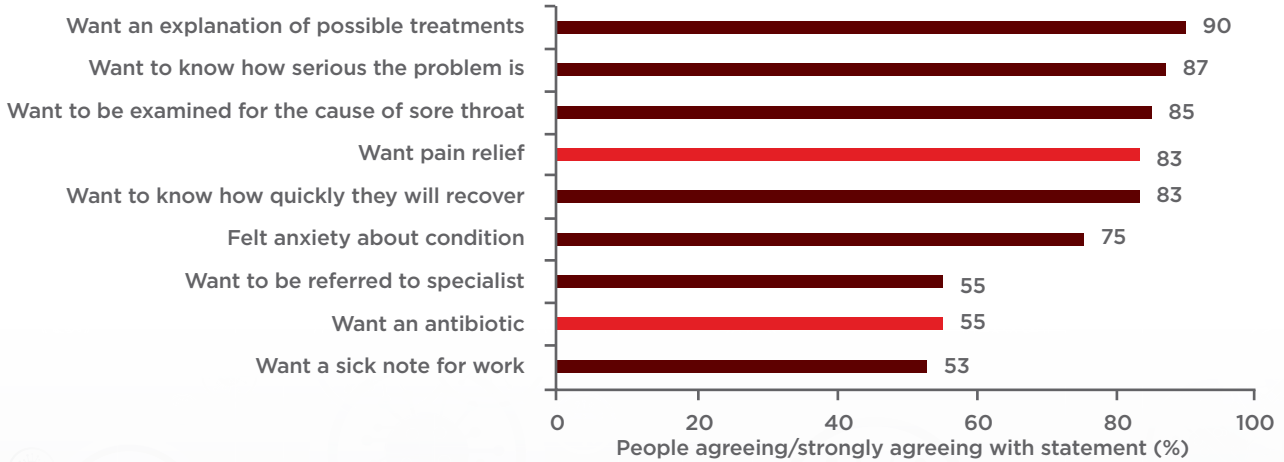
1,2,3 FOR SORE THROAT

- Studies show that patients with sore throat primarily want information[1,2]
  - Top reasons for visiting a doctor are to explain how serious the problem is, to establish the cause and duration, and discuss possible treatments[1,2]
  - A high proportion of patients are looking for pain relief[1,2]
  - 'Wanting an antibiotic' was less important than most other reasons for visiting a doctor about sore throat[1,2]

REASONS FOR VISITING DOCTOR ABOUT SORE THROAT[2]



Responses (n=2040) to the question "How strongly do you agree or disagree with the following statements about why you visit your doctor?" (single response to each statement allowed: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) [Question QIN5a]

- Some of these patient needs can be met in the pharmacy, including information on the likely duration, assessment of severity, and an explanation of potential treatments and pain relief
- GRIP recommends a simple **1,2,3-step approach** to responsibly address the needs of individuals with sore throat in the pharmacy setting

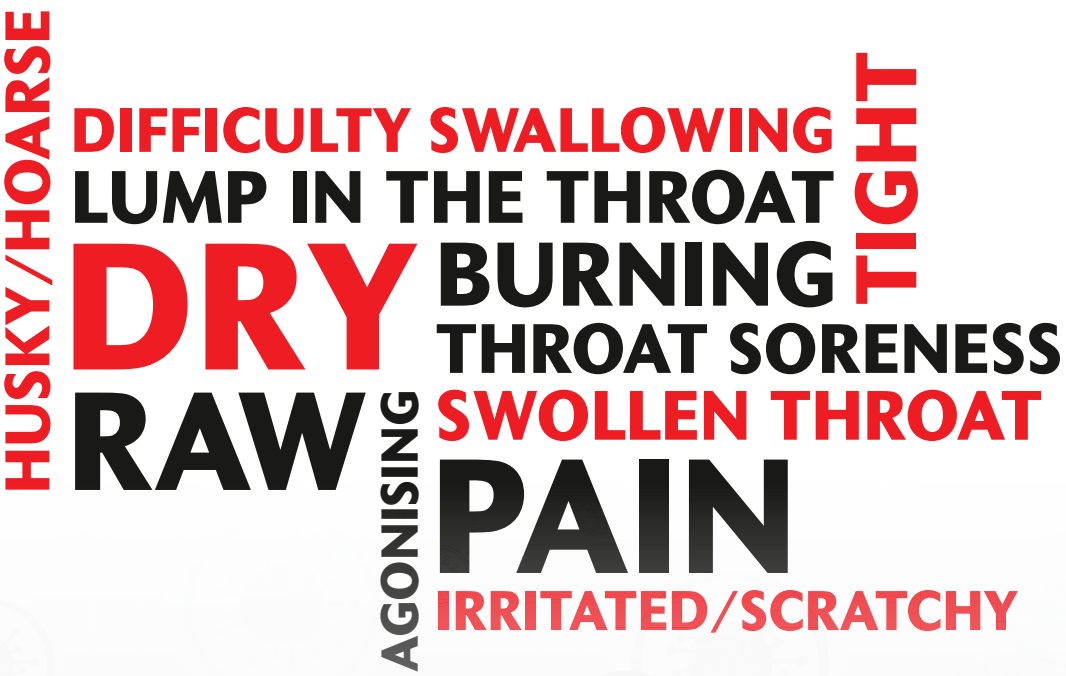
1,2,3 APPROACH FOR SORE THROAT

1. ADDRESS PATIENT'S CONCERNS
2. BE VIGILANT – ADDRESS SEVERITY
3. COUNSEL ON EFFECTIVE SELF-MANAGEMENT

1. van Driel, ML, et al. Ann Fam Med 2006;4:494–9; 2. RB data on file (U&A survey 2017).

1 ADDRESS PATIENT'S CONCERNS

- Ask the patient about their main symptom(s) and what they are concerned about
- Patients describe sore throat in various ways, using sensory, affective and functional descriptors:[1] however, reassure them that **effective symptomatic relief** is available for **all types of sore throat**[1]



- Recognise that sore throat **can be worrying and uncomfortable** for patients
- Provide reassurance on **duration and severity** of sore throat
- Establish what the patient is expecting from treatment

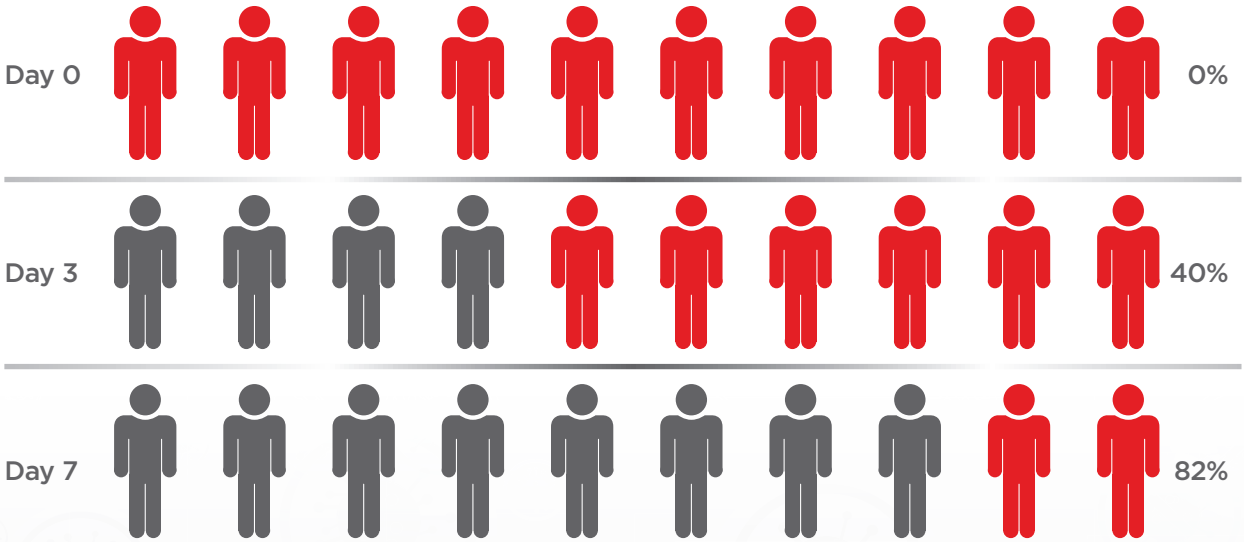
Sore throat usually lasts for approximately 1 week[2,3]

1. Schachtel B, et al. Pain Manag 2018;8:85–94; 2. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 3. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023.

2 BE VIGILANT – ASSESS SEVERITY

- The majority of sore throats are viral (up to 8 out of 10),[1] non-serious and self-limiting[2,3]

NUMBER OF PATIENTS WITH SORE THROAT WHO ARE SYMPTOM-FREE OVER 1 WEEK[2]



- However, **bacterial infections** are associated with approximately **10% of sore throats** in adults, and up to 30% in children, most commonly Group A ß-haemolytic Streptococcus[4]
- In higher risk patients, bacterial throat infections can lead to complications (e.g. acute rheumatic fever)[5] so **it is important to check for red flags and risk factors**

1. Ebell MH, et al. JAMA 2000;284:2912–8; 2. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023; 3. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 4. Bisno AL. N Engl J Med 2001;344:205–11; 5. Pelucchi C, et al. Clin Microbiol Infect 2012;18(Suppl 1):1–27.

2 BE VIGILANT – ASSESS SEVERITY

Look for red flags and risk factors

RED FLAGS?

Any of these red flag symptoms require further investigation:

- Coughing up blood[1]
- Shortness of breath, wheezing sounds, respiratory distress[1,2]
- Great difficulty swallowing, e.g. unable to swallow food[1]
- Drooling or muffled voice[2]
- Neck swelling[2] on one side of the neck, not related to the lymph nodes[3]
- Very high temperature (>39°C) or night sweats[3]

HIGH RISK?

Be alert to those patients at increased risk of complications:[4]

- Elderly patients aged >65 years or young children <2 years or born prematurely[4,5]
- Immunocompromised patients[4]
- Patients with pre-existing conditions such as diabetes, cystic fibrosis, chronic lung disease, HIV[4,5]

- For patients at high risk of complications, presenting with red flag symptoms, or who appear very unwell, **referral to a doctor is needed**
- Sore throat that **persists** without improvement for more than 1 week, or appears to be getting **progressively worse** may also require a doctor

1. Van Duijn HJ, et al. Br J Gen Pract 2007;57:561–8; 2. MSD Manual. Sore throat. Available at: https://www.msdmanuals.com/en-gb/professional/ear,-nose,-and-throat-disorders/approach-to-the-patient-with-nasal-and-pharyngeal-symptoms/sore-throat (accessed July 2018); 3. Centor RM, Samlowski R. Am Fam Physician 2011;1;83:26–8; 4. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 5. Centers for Disease Control and Prevention. People at high-risk of developing flu-like complications. Available at: www.cdc.gov/flu/about/disease/high_risk.htm (accessed July 2018).

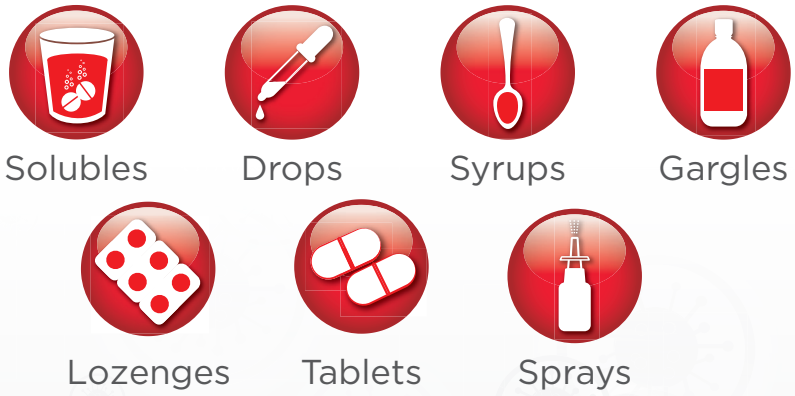
3 COUNSEL ON EFFECTIVE SELF-MANAGEMENT

REASSURE THE PATIENT

- Sore throat has a low risk of serious problems/complications[1] and can be treated with symptomatic relief products
- **Antibiotics are not necessary for most sore throats**, because they are caused by viruses,[2] and may do more harm than good[1,3]

RECOMMEND SYMPTOMATIC RELIEF FOR ALL PATIENTS, AND ALLOW FOR PERSONAL PREFERENCES

- Target the patient's main cause of discomfort and aim to reduce the underlying inflammation
- Select medication and formulations that best meet the patient's needs
- When antibiotics are necessary, tell the patient the antibiotic alone won't relieve their symptoms[4,5]



ADVISE THE PATIENT WHAT TO DO NEXT

- Symptoms should last no longer than 1 week[1,4]
- If symptoms persist without improvement for more than 1 week, get worse, the patient is high risk, or red flag symptoms develop, advise them to visit their doctor
- When antibiotics are necessary, advise the patient to complete the course

1. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 2. Ebell MH, et al. JAMA 2000;284:2912–8; 3. Wright J, Paauw DS. Med Clin North Am 2013;97:667–79; 4. Spinks A, et al. Cochrane Database Syst Rev 2013;11:CD000023; 5. Shephard A, et al. Poster presented at the 23rd European Congress of Clinical Microbiology and Infectious Diseases, 27–30 April 2013, Berlin, Germany (P852).

TAILORING SORE THROAT TREATMENT TO PATIENT NEEDS AND PREFERENCES

Formulation and examples of active ingredients	Local delivery	Relieves pain	Anti-inflammatory	Demulcent effect	Low dose, low risk of adverse effect	Notes
Local NSAID lozenge (e.g. flurbiprofen)	✓	✓[1–5]	✓[6]	✓[4]	✓[1–4]	Local anti-inflammatory[6] and pain relieving[1–5] action in the throat
Local NSAID throat spray (e.g. flurbiprofen)	✓	✓[7,8]	✓[6]	✗	✓[7,8]	Directly targets the throat[9] to provide local anti-inflammatory[6] and pain relieving[7,8] action
Oral NSAID tablets (e.g. ibuprofen)	✗	✓[10–12]	✓[11]	✗	✗	Anti-inflammatory action[11] throughout the body. Slower acting[12] than local treatments[4,7]
Oral analgesic tablets (e.g. paracetamol)	✗	✓[13]	✗	✗	✗	Only low-level anti-inflammatory activity[13]
Antiseptic/ anaesthetic lozenge (e.g. amylmetacresol, 2,4-dichlorobenzyl alcohol, hexylresorcinol, lidocaine)	✓	✓[14–17]	✗	✓[14]	✓[14,17]	Lozenge dissolves slowly to release active ingredients[18]

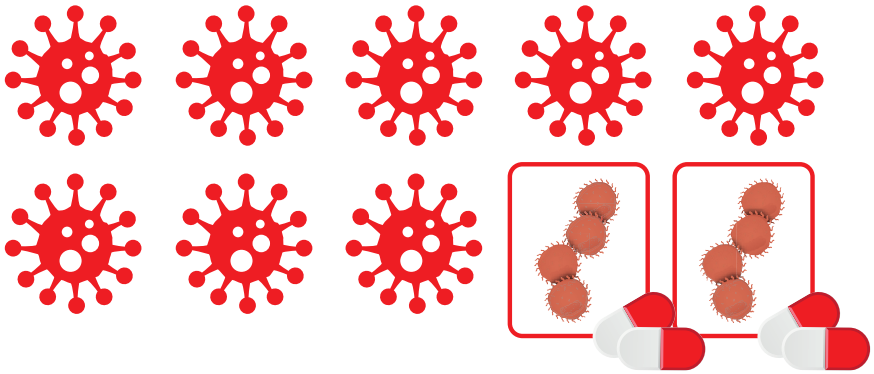
NSAID, non-steroidal anti-inflammatory drug

1. Blagden M, et al. Int J Clin Pract 2002;56:95–100; 2. Watson N, et al. Int J Clin Pract 2000;54:490–6; 3. Benrimoj SI, et al. Clin Drug Invest 2001;21:183–93; 4. Schachtel B, et al. Pain 2014;155:422–8; 5. Schachtel B, et al. Pain Pract 2016;16:6–176 [abstract]; 6. Sefia E, et al. Poster presented at the annual scientific meeting of the British Pain Society, 24–27 April 2007, Glasgow, UK; 7. Bychkova V, et al. Int J Clin Pharm 2017;39:208–341 [abstract]; 8. de Looze F, et al. Eur J Gen Pract 2016;22:111–8; 9. Veale D, et al. Curr Drug Deliv 2017;14:725–33; 10. Burian M, Geisselinger G. Pharmacol Ther 2005;107:139–54; 11. Rainsford KD. Inflammopharmacology 2009;17:275–342; 12. Schachtel BP, et al. Clin Pharmacol Ther 1994;55:464–70; 13. Graham GG, et al. Inflammopharmacology 2013;21:201–32; 14. Wade AG, et al. BMC Family Practice 2011;12:6; 15. Buchholz V, et al. Naunyn Schmiedebergs Arch Pharmacol 2009;380:161–8; 16. McNally, D et al. Int J Clin Pract 2010;64:194–207; 17. McNally D, et al. J Pharm Pharm Sci 2012;15:281–94; 18. Oxford JS, Leuwer M. J Clin Pract 2011;65:524–30.

EDUCATING PATIENTS ABOUT RESPONSIBLE ANTIBIOTIC USE

- Some patients may ask about antibiotics or have been prescribed an antibiotic
- The pharmacy team has an important role in providing education on responsible antibiotic use
- Tell all patients that the **majority of sore throats are caused by viruses**,[1] against which **antibiotics do not work**[2]
  - Antibiotics do not have any direct pain-relieving effects
  - Antibiotics have side effects[3,4]
- Tell patients that misusing antibiotics can generate **resistant bacteria**[5] which could stay in their body **for the next year**.[6] The resistant bacteria can be spread[7] to family and friends, making it harder to treat them
- Remind them that sore throat is usually non-serious and self limiting,[3] and **best treated symptomatically**

UP TO 8 OUT OF 10 SORE THROATS ARE CAUSED BY VIRUSES[1]



Antibiotics only kill bacteria

Misuse and overuse of antibiotics is reducing their ability to save lives now and in the future[5,8]

1. Ebell MH, et al. JAMA 2000;284:2912–8; 2. Hildreth CJ, et al. JAMA 2009;302:816; 3. National Institute for Health and Care Excellence. Respiratory tract infections (self-limiting): prescribing antibiotics. Clinical guideline 69. July 2008. Available at: https://www.nice.org.uk/guidance/cg69 (accessed July 2018); 4. Wright J, Paauw DS. Med Clin North Am 2013;97:667–79; 5. World Health Organization. Global action plan on antimicrobial resistance, 2015. Available at: http://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/ (accessed July 2018); 6. Costelloe C, et al. BMJ 2010;340:c2096; 7. World Health Organization. Antimicrobial resistance. Fact sheet, 2018. Available at: http://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance (accessed July 2018); 8. Zaman SB, et al. Cureus 2017;9:e1403.

SUMMARY

1. **ADDRESS PATIENT'S CONCERNS**
   Ask about the patient's main symptoms and concerns, and expectations of treatment

2. **BE VIGILANT – ASSESS SEVERITY**
   Look for red flags and risk factors for complications that might need referral to a doctor

3. **COUNSEL ON EFFECTIVE SELF-MANAGEMENT**
   Reassure the patient, recommend symptomatic relief and advise them on what to do next

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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.

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RESPONSIBILITY TREATS BEST
STOP ANTIBIOTIC OVERUSE