



TARGET

Keep Antibiotics Working

Improving antibiotic management of respiratory tract infections: acute cough and sore throat

TARGET Antibiotics Webinar
January 2024

Introductions – TARGET and RCGP



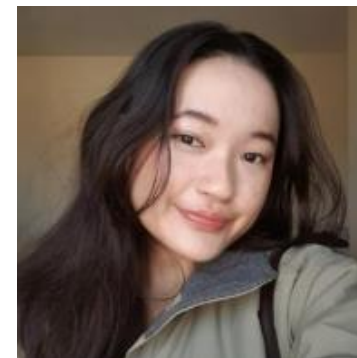
Dr Donna Lecky



Emily Cooper



Catherine Hayes



Ming Lee



Julie Brooke



Liam Clayton



Joseph Besford



Lizzie Richmond



Dr Dharini Shanmugabavan

Introductions – speakers and panellists



Bharat Patel
Clinical Pharmacist

Speaker



Dr Manish Verma
General Practitioner

Panellist



Dr Sanjay Patel
Consultant in Paediatric
Diseases and Immunology

Panellist



Dr Mariyam Mirfenderesky
Consultant in Infectious Diseases
and Medical Microbiology

Panellist

Aims

1. Discuss managing and treatment of acute cough and acute sore throat, in line with current NICE prescribing guidance.
2. Recognise the challenges surrounding the management of RTIs in current healthcare landscape.
3. Interpret patient perspective on antibiotic prescribing for RTIs.
4. Utilise evidence-based strategies and resources when discussing antibiotics with patients in the context of RTIs.



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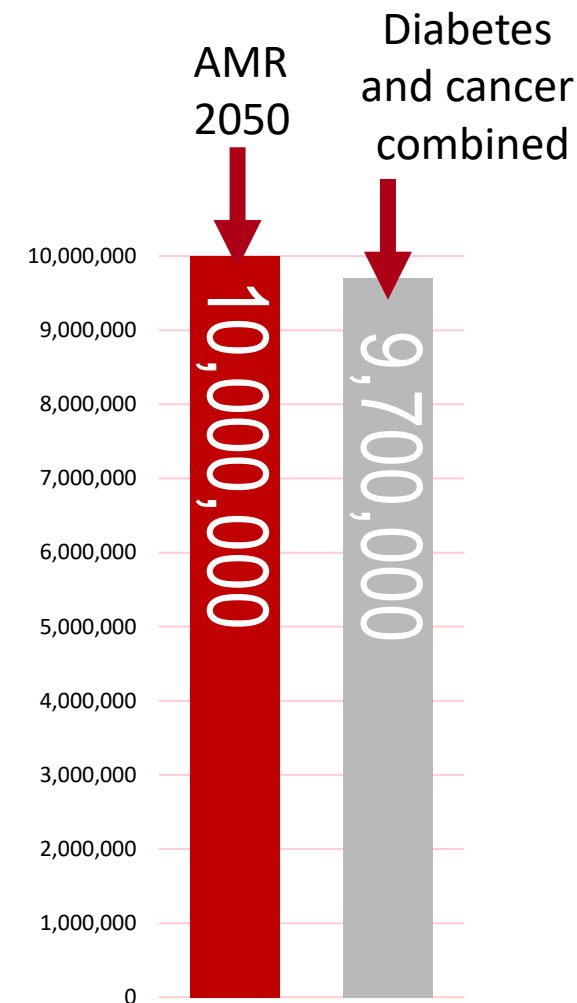
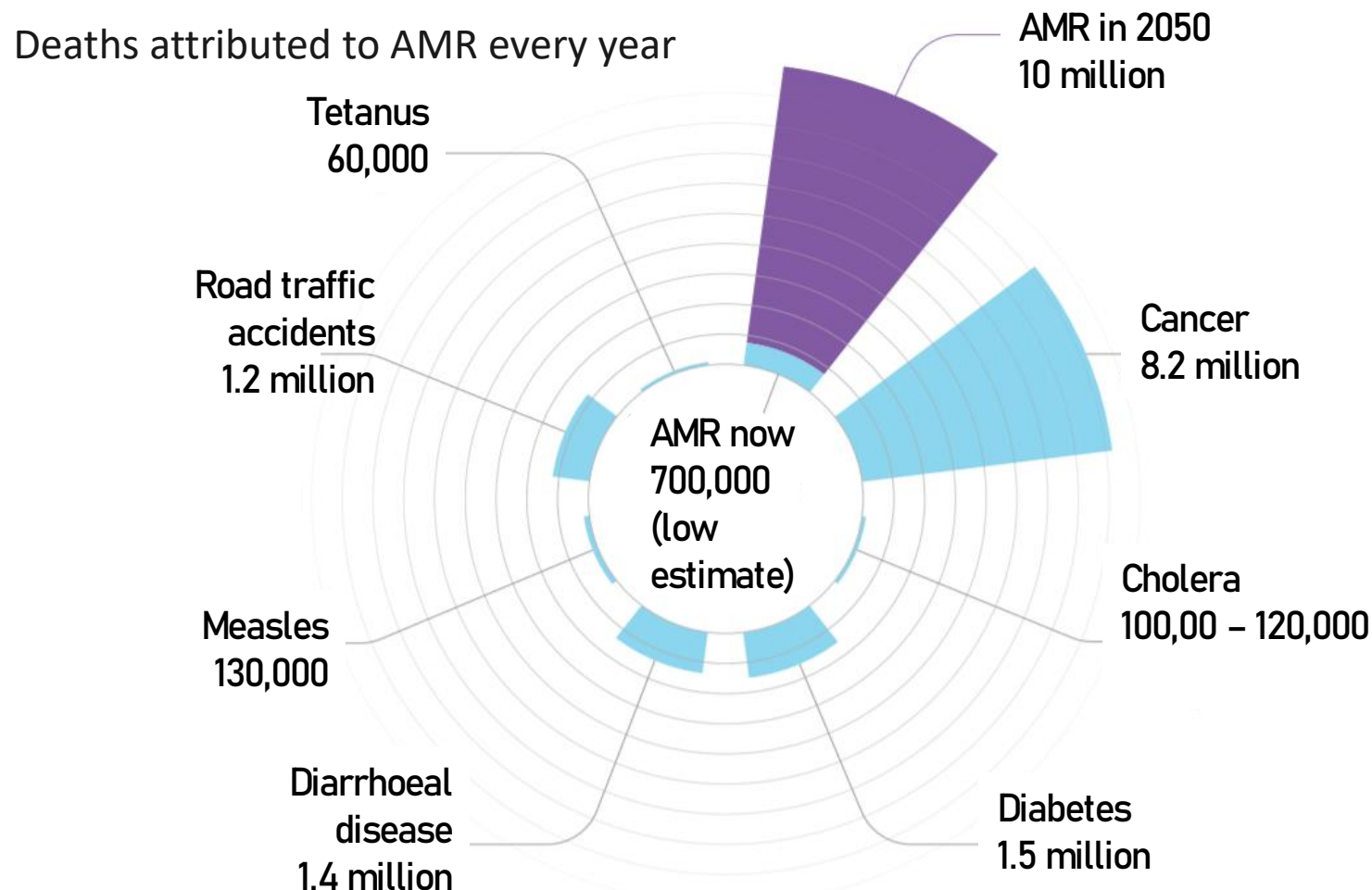
Keep Antibiotics Working



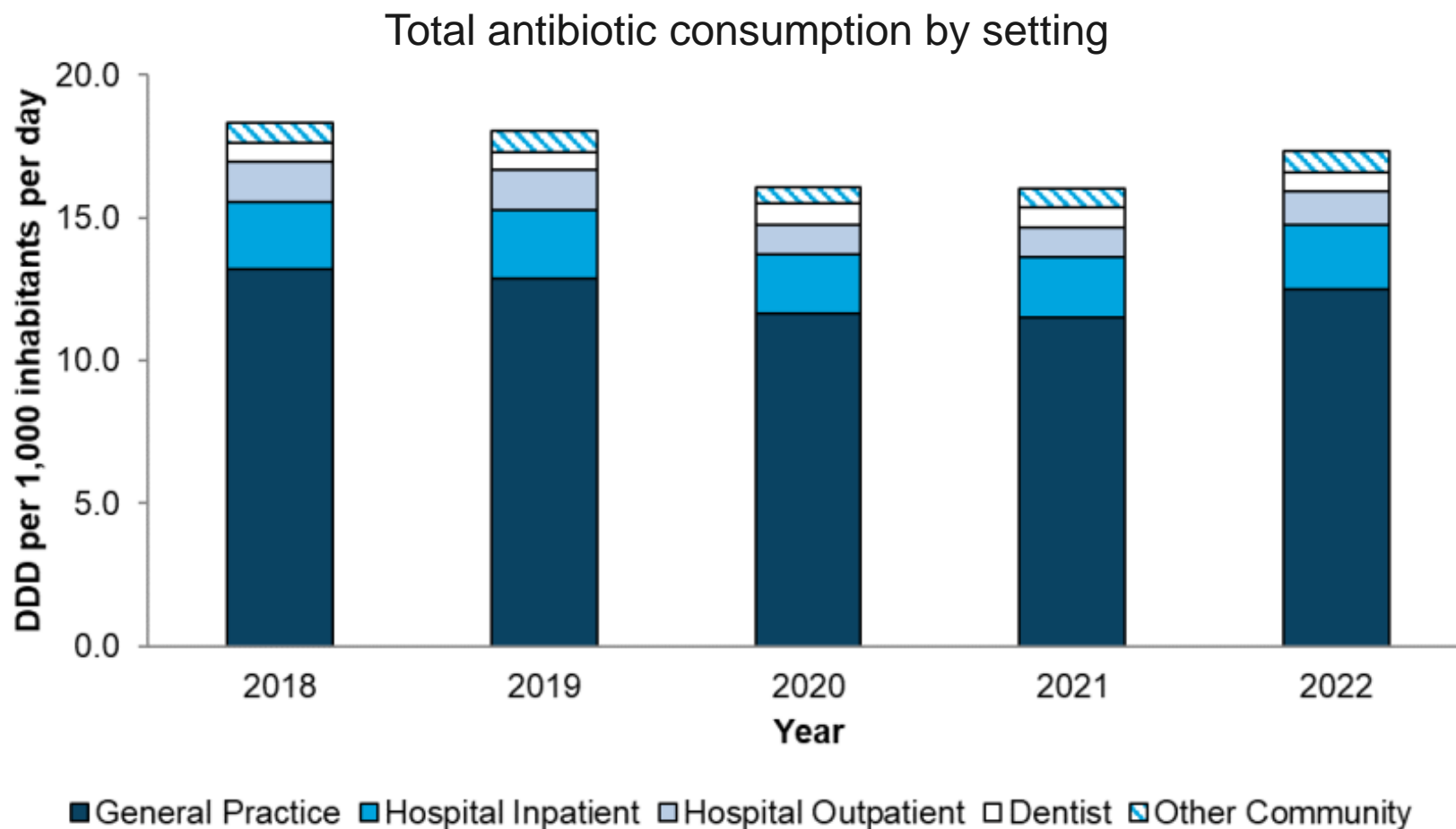
Bharat Patel

Clinical Pharmacist
Speaker

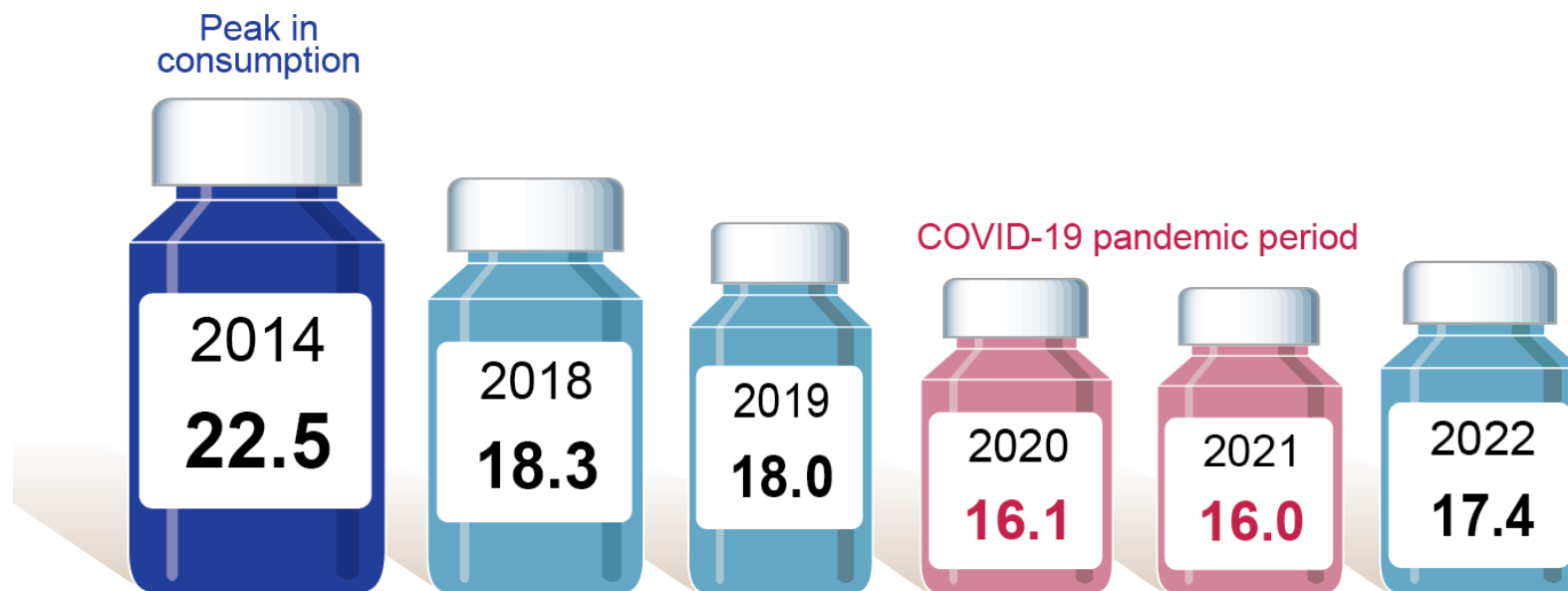
Antimicrobial resistance a major issue



The majority of antibiotics are prescribed in general practice



Antibiotic prescribing increased in 2022



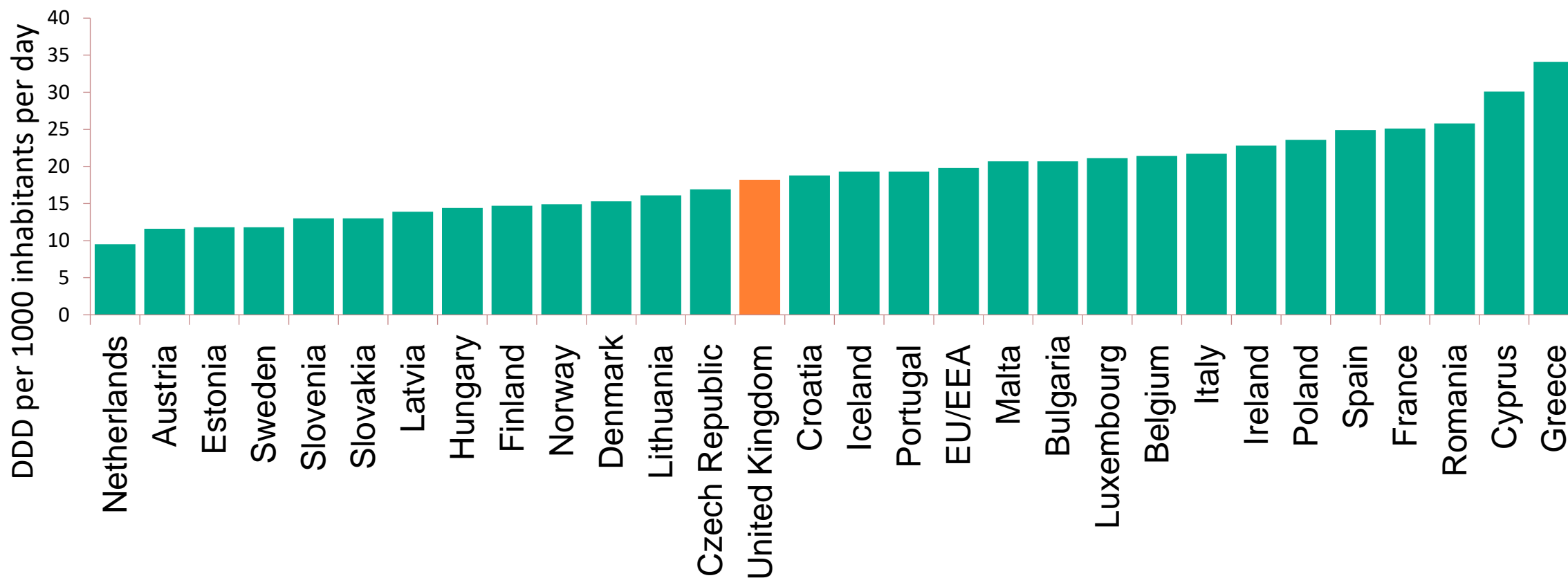
(DDDs per 1,000 inhabitants per day)

Antibiotic prescribing in England 2014-2022

UK prescribing within European context

Total consumption (community and hospital sector) of antibacterials for systemic use by country, EU/EEA and the United Kingdom, 2020 (expressed as DDD per 1 000 inhabitants per day)

Defined Daily Doses (DDD) per 1000 inhabitants per day (2019)



Why respiratory tract infections?

46% of antibiotics in primary care are prescribed for respiratory tract infections:

- Most common reason for prescribing antibiotics in primary care
- Majority prescribed for cough symptoms
- Sore throat is the 3rd most common reason for prescribing in respiratory tract infections



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Acute cough

Acute cough



Acute cough in adults background

Acute cough

- Lasts less than 3 weeks
- Most commonly caused by viral upper RTI
- 41% of acute cough consultations were prescribed antibiotics, however experts advocate that the 'ideal' proportion prescribed should be 10%



Acute cough clinical scenario

Consider the following details:

- 45 year old smoker with cough 1/52, green sputum
- Temp 37.8°C
- Several previous episodes of bronchitis and insists antibiotics 'always help'
- PEFr normal
- Scattered coarse creps and wheeze, vesicular breath sounds, no focal crepitations



Poll - What would you do?



Acute cough clinical scenario: Feedback

- 45 year old smoker with cough 1/52, green sputum
- Temp 37.8°C
- Several previous episodes of bronchitis and insists antibiotics 'always help'
- PEFR normal
- Scattered coarse creps and wheeze, vesicular breath sounds, no focal crepitations

Acute cough

- Antibiotic little benefit as no co-morbidity
- Consider no antibiotics OR if high risk of complications, 5 days back-up antibiotic prescription with safety netting
- Share a leaflet with the patient e.g. TARGET RTI leaflet
- Advise patient symptom resolution can take 3 weeks
- If unclear, consider a point-of-care C-reactive protein (CRP) test



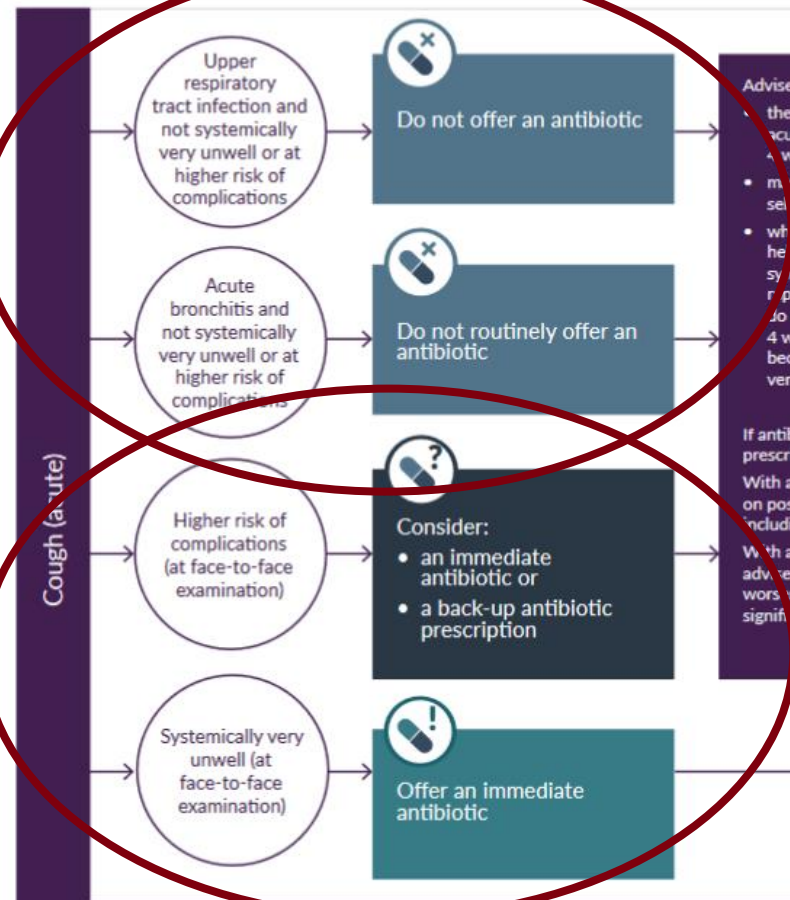
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Acute cough and

Cough (acute): antimicrobials

Acute cough



NICE uses 'offer' when there is more certainty of benefit and 'consider' when

Cough (acute)

Higher risk of complications (at face-to-face examination)



Consider:

- an immediate antibiotic or
- a back-up antibiotic prescription

Upper respiratory tract infection and not systemically very unwell or at higher risk of complications



Do not offer an antibiotic

Acute bronchitis and not systemically very unwell or at higher risk of complications



Do not routinely offer an antibiotic



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Acute cough antibiotic prescribing for adults

Acute cough

NICE antimicrobial prescribing guidance:

Choice of antibiotic for adults ages 18 years and over

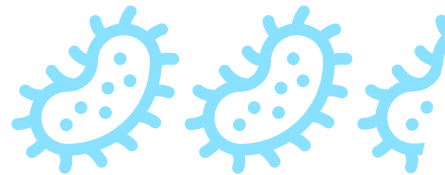
Antibiotic ¹	Dosage and course length
First choice	
Doxycycline ²	200 mg on first day, then 100 mg once a day for 4 days (5-day course in total)
Alternative first choices ³	
Amoxicillin	500 mg three times a day for 5 days
Clarithromycin	250 mg to 500 mg twice a day for 5 days
Erythromycin	250 mg to 500 mg four times a day or 500 mg to 1000 mg twice a day for 5 days
¹ See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding ² Doxycycline should not be used in pregnancy, and the possibility of pregnancy should be considered in women of childbearing age ³ Amoxicillin is the preferred antibiotic in pregnancy. Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms. See the Medicines and Health-care products Regulatory Agency (MHRA) Public Assessment Report on the safety of macrolide antibiotics in pregnancy	

Evidence: Risk of resistance persists for at least 12 months after prescribing antibiotics

- Meta analysis of antibiotic resistance in individuals prescribed antibiotics in primary care RTI
- 7 studies of patients with RTI: n = 2,605

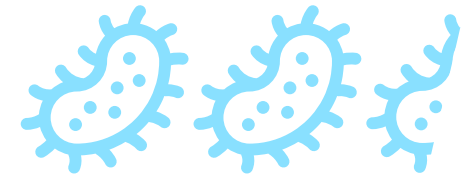
Increased risk of resistant organism

Antibiotic in past
2 months



2.4 times

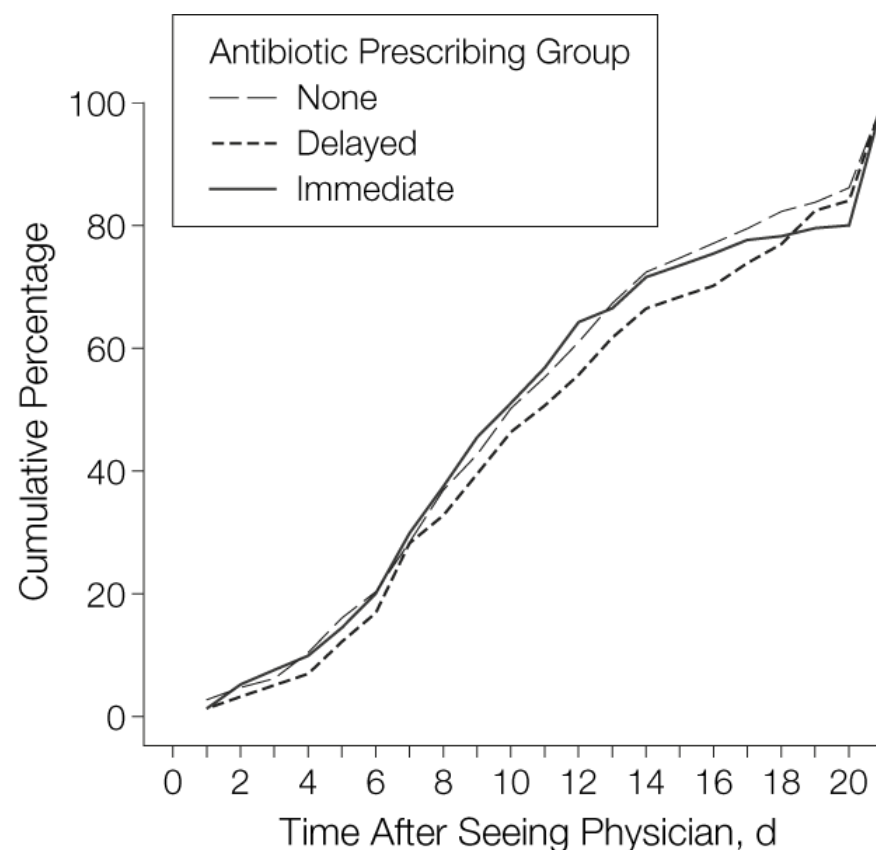
Antibiotic in past
12 months



2.4 times

What is the evidence for back-up / delayed prescribing?

Duration of Cough After Physician Visit Until Patient Is Feeling Better



	Patient satisfaction with treatment
No antibiotic (control Mean SD)	130/181 (72)
Difference due to delayed antibiotic (95% CI)	147/190 (77)
Difference due to Immediate antibiotics (95% CI)	166/194 (86)
p-value	0.005



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COVID-19 and acute cough management?

COVID-19 rapid guideline: managing COVID-19

NICE guideline [NG191] Published: 23 March 2021 Last updated: 30 November 2023

[Guidance](#)[Tools and resources](#)[History](#)[Overview](#)[Recommendations](#)[Update information](#)

Guidance

[Download guidance \(PDF\)](#)[Next >](#)

This guideline covers the management of COVID-19 for babies, children, young people and adults in all care settings.

We are continually monitoring the evidence and updating the guideline as new information emerges.

On **30 November 2023** we:

- replaced two recommendations on managing acute cough with a link to the [NICE guideline on cough \(acute\): antimicrobial prescribing](#)
- removed the recommendation to consider benzodiazepine for managing anxiety or agitation

Consensus recommendation

New

For guidance on managing acute cough, see the [NICE guideline on cough \(acute\): antimicrobial prescribing](#).



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STARWAVE was developed to help predict future hospitalisation among children with cough

The seven symptoms and signs are:

- S** **Short** duration of illness (≤ 3 days)
- T** Parent reported fever in the previous 24 hours or **temperature** $\geq 37.8^{\circ}\text{C}$ at presentation
- A** **Age** < 2 years
- R** Clinician reported inter/subcostal **recession**
- W** Clinician reported **wheeze** on auscultation
- A** Current diagnosis of **asthma**
- V** Parent reported moderate/severe **vomiting** in the previous 24 hours



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Acute cough

Acute cough summary

- Most patients with acute cough do not require antibiotics
- Reducing antibiotic prescribing can reduce consultations
- Patients trust you to give reassurance and advice



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Acute sore throat

Acute sore throat



Image by shurkin_son on Freepick



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Acute sore throat

Acute sore throat background

- Usually caused by viral or bacterial infection
- Symptoms last around 1 week but most improve before this without antibiotics
- General practice penicillin prescribing increased by **22.7%** between 2021 and 2022;
 - Increase in infection following changes in social mixing due to the COVID-19 pandemic
 - Group A strep infection and scarlet fever
 - Circulation of influenza and respiratory syncytial virus

Acute sore throat clinical scenario

Consider the following details:

- 18 year old girl
- 4/7 days sore throat, 'high' fever last night, tiredness, cough
- Difficulty swallowing
- Temp 37.5°C
- Slough on swollen red tonsils, palatal petechiae
- Cervical and axillary lymphadenopathy
- 'Antibiotics helped' for tonsils last year



Poll - What would you do?



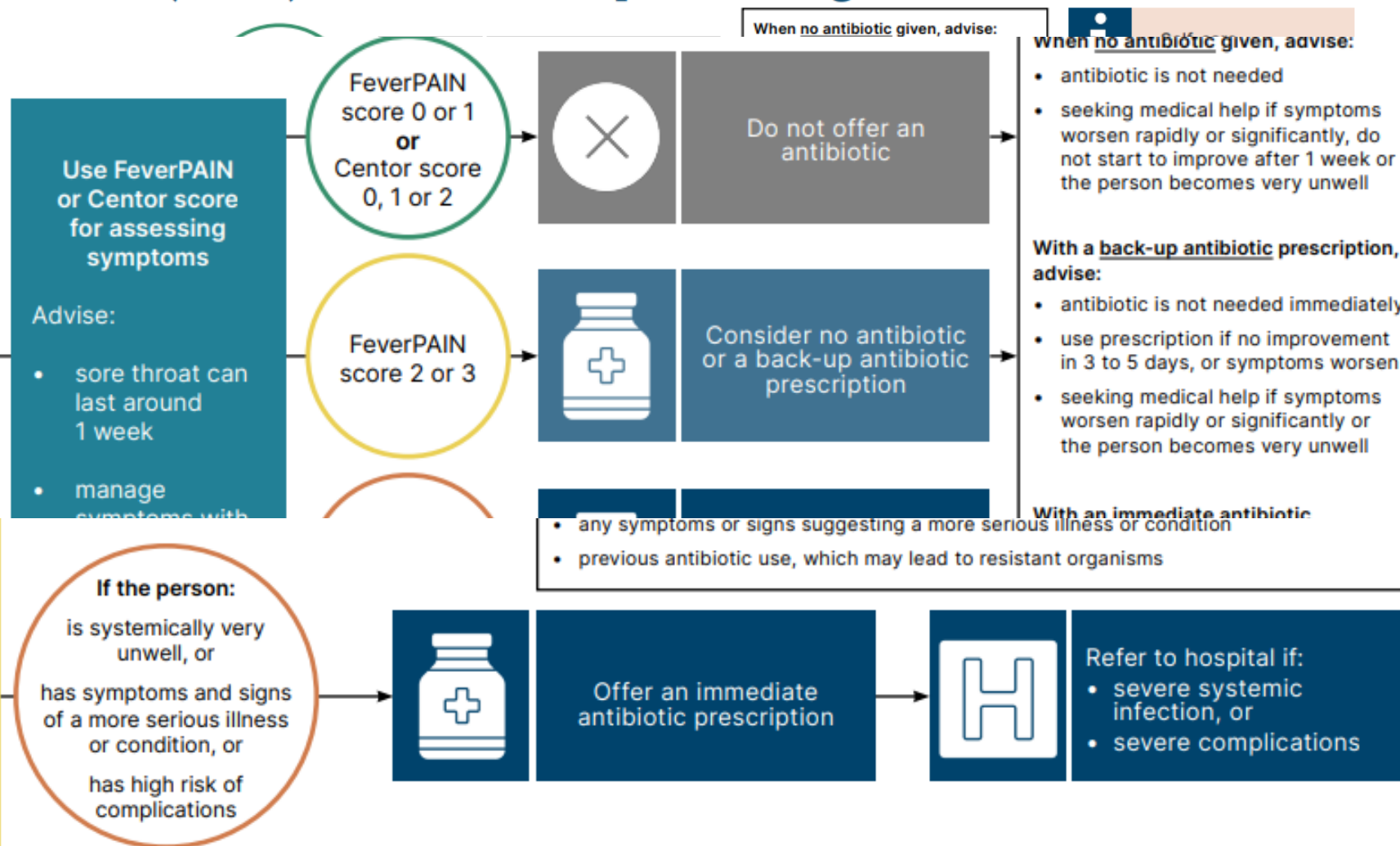
Sore throat (acute): antimicrobial prescribing

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Acute sore throat

roa



1

Self-care

- Consider paracetamol for pain or fever, or if preferred and suitable, ibuprofen
- Drink adequate fluids
- Some evidence that medicated lozenges can help reduce pain in adults
- No evidence was found for non-medicated lozenges, mouthwashes, or local anaesthetic mouth spray on its own



Evidence on antibiotics

- Fever; purulence; attend within 3 days or less; severely inflamed tonsils; no cough or coryza
1 point for each

Centor score

- Tonsillar exudate; tender anterior cervical lymphadenopathy or lymphadenitis; history of fever ($>38^{\circ}\text{C}$); no cough
1 point for each

Updated February 2023

NICE National Institute for Health and Care Excellence



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Clinical scoring systems

Acute sore throat

Centor criteria (scores 0-4)

- Tonsillar exudate
- Tender anterior cervical lymphadenopathy or lymphadenitis
- History of fever (over 38°C)
- Absence of cough

FeverPAIN criteria (scores 0-5)

- **F**ever (in last 24 hours)
- **P**urulence (pus on tonsils)
- **A**ttend rapidly (within 3 days of symptom onset)
- (severely) **I**nflamed tonsils
- **N**o cough or coryza (inflammation of mucus membranes in the nose)



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Feedback: FeverPAIN

Acute sore throat

- 18 year old girl
- 4/7 days sore throat, “high” fever last night, tiredness, cough, difficulty swallowing
- Temp 37.5°C
- Slough on swollen red tonsils, palatal petechiae
- Cervical and axillary lymphadenopathy
- ‘Antibiotics helped’ for tonsils last year

3 of the 5 FeverPAIN criteria– **34-40%** likelihood of a beta haemolytic streptococcus.

Could warrant a back-up/delayed antibiotic.

FeverPAIN 0-1

Only 13-18% have streptococcus, close to background carriage.
NO antibiotic strategy appropriate with discussion

FeverPAIN 2-3

34-40% have streptococcus. **Back-up/ delayed prescription** appropriate with discussion

FeverPAIN ≥ 4

62-65% have streptococcus, consider **immediate** antibiotic if severe symptoms, or **short delayed** prescription strategy may be appropriate (48 hrs)



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Feedback: Centor

Acute sore throat

- 18 year old girl
- 4/7 days sore throat, "high" fever last night, tiredness, cough, difficulty swallowing
- Temp 37.5°C
- Slough on swollen tonsils, palatal petechiae
- Cervical and axillary lymphadenopathy
- 'Antibiotics helped' for tonsils last year

3 of the 4 Centor criteria - more likely to have a group A beta haemolytic Streptococcus.

Could warrant an immediate or back-up/delayed antibiotic.

Centor criteria: History of fever; absence of cough; tender anterior cervical lymphadenopathy and tonsillar exudates.

Centor 0-2

High negative predictive value (80%), low chance of Group A Beta Haemolytic Streptococci

Centor 3 or 4

Chance of GABHS is 40%.

Unwell +
Centor 3 or 4

Chance of developing Quinsy is 1:60.



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NICE antimicrobial prescribing guidelines for acute sore throat in adults

Acute sore throat

Antibiotic

1

Dosage and course length for adults aged 18 and over

First choice

Phenoxymethylpenicillin

500 mg four times a day or 1000 mg twice a day for 5 to 10 days

Five days of phenoxymethylpenicillin may be enough for symptomatic cure, but a 10-day course may increase the chance of microbiological cure

Alternative first choice for penicillin allergy or intolerance (for people who are not pregnant)

Clarithromycin

250 mg to 500 mg twice a day for 5 days

Alternative first choice for penicillin allergy in pregnancy

Erythromycin

250 mg to 500 mg four times a day, or
500 mg to 1000 mg twice a day for 5 days

Erythromycin is preferred if a macrolide is needed in pregnancy, for example, if there is true penicillin allergy and the benefits of antibiotic treatment outweigh the harms. See the [Medicines and Healthcare products Regulatory Agency \(MHRA\) Public Assessment Report on the safety of macrolide antibiotics in pregnancy](#)

1

Note: see the [BNF](#) for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding.

NEW guidance: Direct-to-consumer point-of-care *in vitro* diagnostic devices for group A streptococcal infections

Best practice principles to support clinician-led decision making

- adopt a patient-centric approach
- historical performance suggest validity of result cannot always be assured
- significance of GAS in the pharynx can be difficult to determine
- take account of clinical scoring systems
- if uncertain consider sending a swab for culture if it would impact management
- regardless of outcome ensure clear safety netting information is provided
- Scarlet Fever remains a clinical diagnosis



Direct-to-consumer point-of-care in vitro diagnostic devices for group A streptococcal infections

Document first published: 22 January 2024
Page updated: 22 January 2024
Topic:
Publication type: [Guidance](#)

This document provides consensus best practice principles to support clinician-led decision making when assessing patients with sore throat who present with a direct-to-consumer point-of-care in vitro diagnostic device result for group A streptococcus. It will also aid subsequent management conversations with the patient or their caregiver.

Link



[Direct-to-consumer point-of-care in vitro diagnostic devices for group A streptococcal infections](#)

Summary

Published 22 January 2024.



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Acute sore throat

Acute sore throat summary

- Symptoms last around 1 week but most improve before this without antibiotics
- Use Centor or Fever PAIN to guide antibiotic management
- Refer to guidance on direct-to-consumer point-of-care in vitro diagnostic devices for group A streptococcal infections



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RTI management and shared decision making

The patient perspective: what do patients do when they have an RTI?

74% reported RTI in 2022- 23



55% self managed
(did not consult)



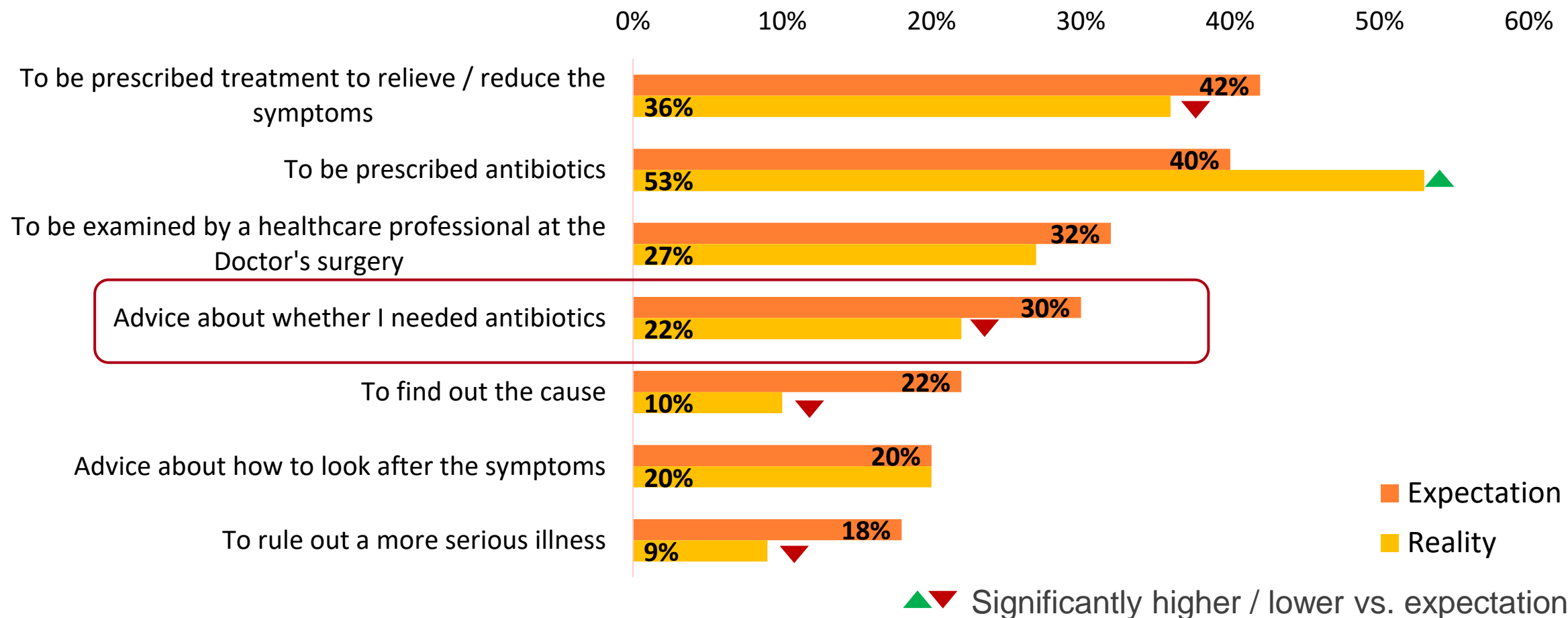
20% consulted
GP surgery



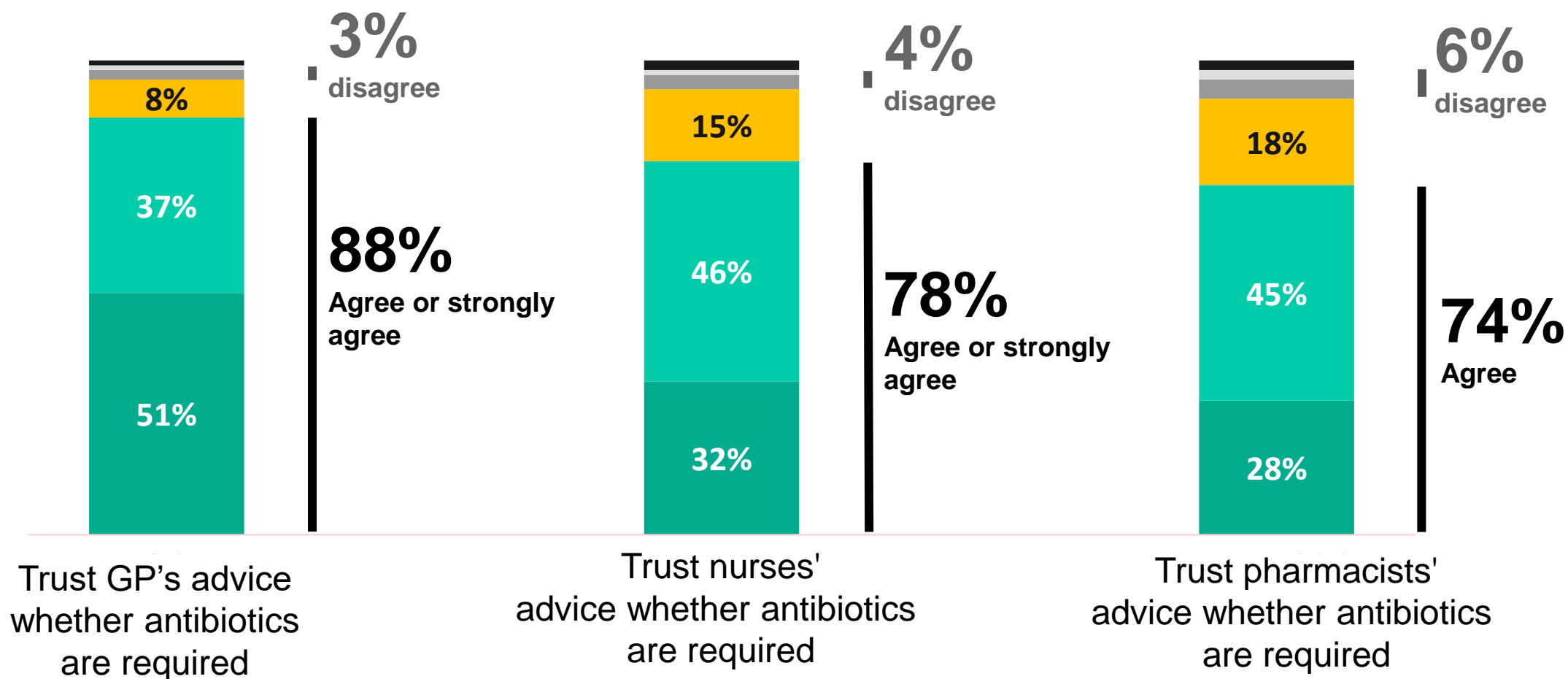
12% consulted
community pharmacy

Patient expectations compared to reality

What did you expect from your contact or visit to the Doctor's surgery, for this most recent illness?
Vs What happened when you contacted or visited the Doctor's surgery [multiple choice question]



Patients generally trust the advice from their healthcare professional



CHESTSSS can help frame discussions about antibiotics

C: Ask specifically about **concerns**

H: Discuss **history** and **exam results/findings**

E: Ask specifically about **expectations**

S: Explain the cause of **symptoms**

T: Be specific about illness **timeline**/usual course

S: Explain **shortcomings** of antibiotics

S: **Self-care** advice

S: **Safety-netting** advice

First 5 min of the
consultation

Covered in the
TARGET patient
information leaflets

TARGET Treating Your Infection RTI leaflet

TREATING YOUR INFECTION – RESPIRATORY TRACT INFECTION (RTI)

NHS

Your infection	Most are better by	How to look after yourself and your family	When to get help
<input type="checkbox"/> Middle-ear infection	8 days	<ul style="list-style-type: none"> Have plenty of rest. Drink enough fluids to avoid feeling thirsty. Ask your local pharmacist to recommend medicines to help your symptoms or pain (or both). Fever is a sign the body is fighting the infection and usually gets better by itself in most cases. You can use paracetamol if you or your child are uncomfortable because of a fever. Use a tissue and wash your hands with soap to help prevent spread of your infection to your family, friends and others you meet. 	<p>If you or your child has any of these symptoms, are getting worse or are sicker than you would expect (even if your/their temperature falls), trust your instincts and seek medical advice urgently from NHS 111 or your GP. If a child under the age of 5 has any of symptoms 1–3 go to A&E immediately or call 999.</p> <ol style="list-style-type: none"> If your skin is very cold or has a strange colour, or you develop an unusual rash. If you have new feelings of confusion or drowsiness or have slurred speech. If you have difficulty breathing. Signs that suggest breathing problems can be: <ul style="list-style-type: none"> breathing quickly turning blue around the lips and the skin below the mouth skin between or above the ribs getting sucked or pulled in with every breath. If you develop a severe headache and are sick. If you develop chest pain. If you have difficulty swallowing or are drooling. If you cough up blood. If you are passing little to no urine. If you are feeling a lot worse. <p>Less serious signs that can usually wait until the next available appointment:</p> <ol style="list-style-type: none"> If you are not starting to improve a little by the time given in 'Most are better by' Children with middle-ear infection: if fluid is coming out of their ears or they have new deafness. Mild side effects such as diarrhea: seek medical attention if you are concerned.
<input type="checkbox"/> Sore throat	7-8 days		
<input type="checkbox"/> Sinusitis	14-21 days		
<input type="checkbox"/> Common cold	14 days		
<input type="checkbox"/> Cough or bronchitis	21 days (a cough caused by COVID-19 may differ)		
Other infection: days		

If you think you may have COVID-19 then please visit <http://www.gov.uk/coronavirus> or <http://www.nhs.uk> for the latest guidance and information

Back-up antibiotic prescription to be collected after ☐ days only if you are not starting to feel a little better or you feel worse, from:

- Colds, most coughs, sinusitis, ear infections, sore throats, and other infections often get better without antibiotics, as your body can usually fight these infections on its own.
- Taking any antibiotics makes bacteria that live inside your body more resistant. This means that antibiotics may not work when you really need them.
- Antibiotics can cause side effects such as rashes, thrush, stomach pains, diarrhoea, reactions to sunlight, other symptoms, or being sick if you drink alcohol with metronidazole.
- Find out more about how you can make better use of antibiotics and help keep this vital treatment effective by visiting www.nhs.uk/keepantibioticsworking

Never share antibiotics and always return any unused antibiotics to a pharmacy for safe disposal.

Keep Antibiotics Working

Timelines: 'Most are better by' section to help patients know when to (re) consult

Safety netting

COVID-19 information


Back-up prescription

Information about antibiotics & AMR

TARGET pictorial TYI RTI leaflet

1. HOW TO HELP MAKE YOURSELF BETTER

Whatever your infection, you can do the following to help.



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RESPIRATORY TRACT INFECTION

A step-by-step guide on how to manage your infection

SELF-CARE STEPS

1. How to help yourself feel better
2. Check how long your symptoms last
3. Look out for serious symptoms
4. Where to get help

If you think you may have **COVID-19** then please visit <http://www.gov.uk/coronavirus> or <http://www.nhs.uk> for the latest guidance and information.

Version: 3.3 Published: October 2018 Revision date: November 2020

Developed in collaboration with professional medical bodies. TARGET is operated by the UK Health Security Agency.

Always
take your
medication

Rest
better

Don't
stop

Wash your
hands

Visit the NHS website: www.nhs.uk

Don't
stop

Wash your
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Ask your
pharmacist
for advice
on your
symptoms



Drink enough
to avoid
dehydration



Wash your
hands
properly



Wash your
hands
properly



Wash your
hands
properly



Wash your
hands
properly



Wash your
hands
properly



2. CHECK HOW LONG YOUR SYMPTOMS LAST



Earache
Most get
better by
8 days

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Sore throat
Most get
better by
7-8 days

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Cold
Most get
better by
14 days

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Cough
Most get
better by
21 days

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

ing to improve a little by the times given
e from your GP practice.

lot worse, phone
rect Wales or NHS 24 (see step 4).

3. LOOK OUT FOR SERIOUS SYMPTOMS

If you have an infection and develop any of the symptoms below, you should be **seen urgently by a doctor**. Ring your GP practice or call NHS 111, NHS Direct Wales or NHS 24.



Severe headache



Very cold skin



Trouble breathing



Feeling confused



Chest pain



Problems swallowing



Coughing blood



Feeling a lot worse


If you have **COVID-19** and start to feel worse, including showing the signs above, seek immediate medical help from NHS 111 (call 111 or visit www.111.nhs.uk)

4. WHERE TO GET HELP



If you have an **EMERGENCY**, call 999 immediately.

Back-up/delayed antibiotic prescriptions



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Back-up/delayed antibiotic prescriptions Why and how to use them in primary care settings

TARGET webinar series:
Effective antibiotic prescribing: shared decision-making & delayed prescriptions
part 2

Presented by: Dr Linda Strettle
25 November 2021

25/11/2021 V1 www.rcgp.org.uk/targetantibiotics 1

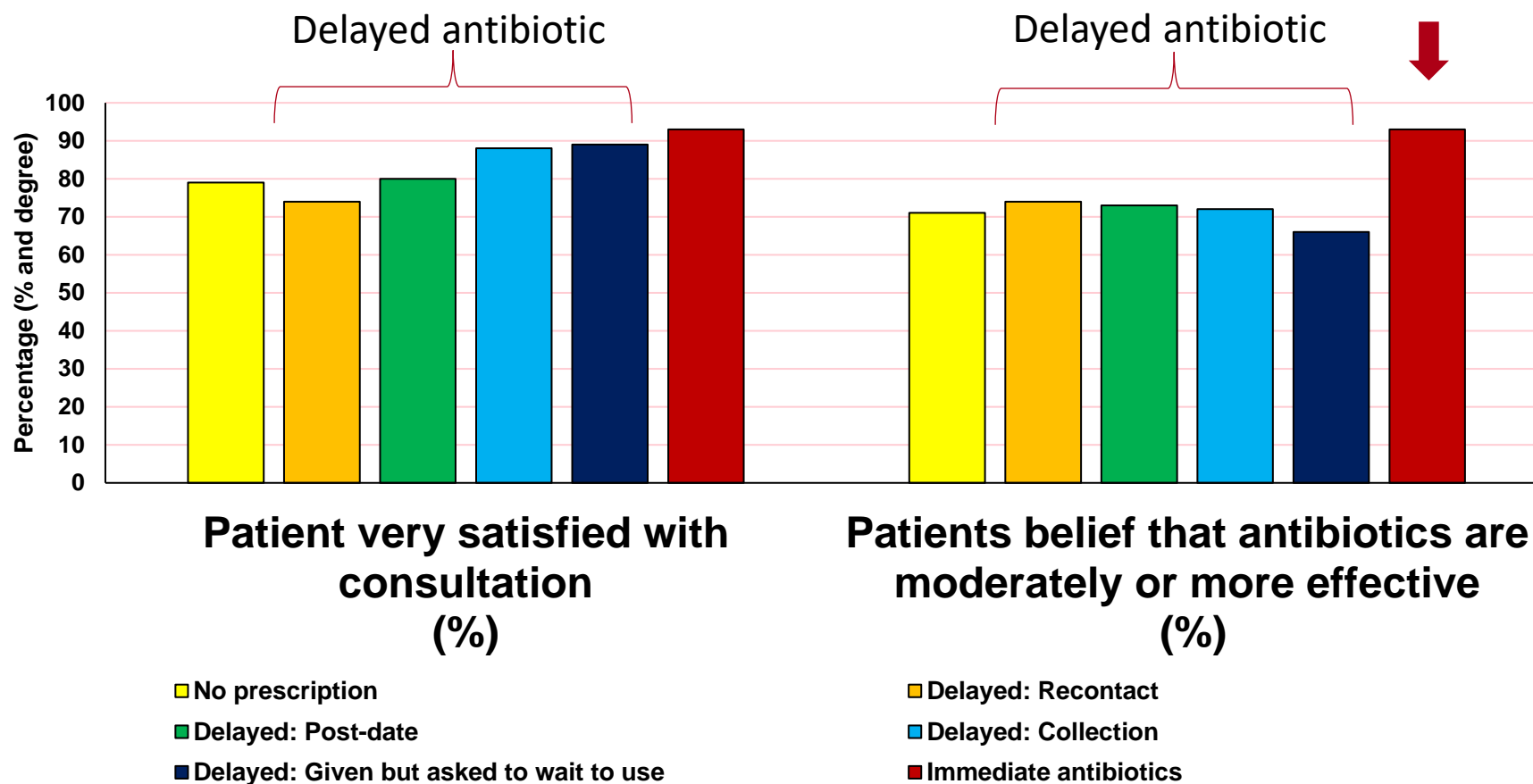


www.rcgp.org.uk/TARGETantibiotics

-> Visit 'learning resources for prescribers' to access the recording and slide deck

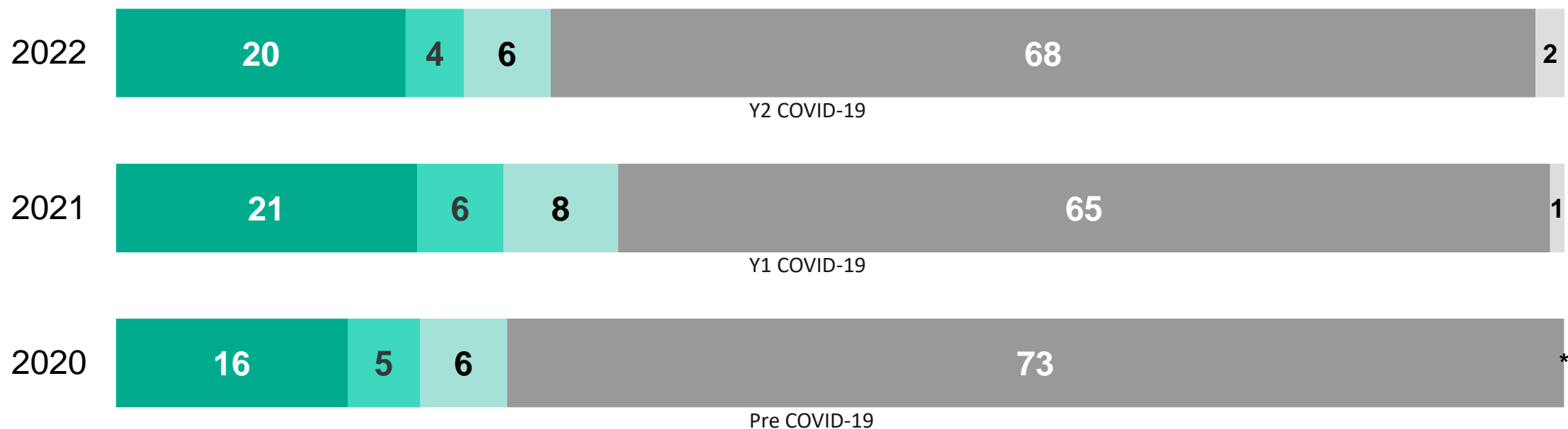
Prescribing can influence patients understanding and expectations

English RCT comparing treatment strategies for respiratory tract infection (n=889)



Public awareness of delayed/back up prescribing has increased but is still low

- % I was fully aware
- % I was aware of the term 'delayed/back-up antibiotic' but didn't know exactly what it was
- % I was aware of the practice of giving 'delayed/back-up' antibiotics but didn't know what it was called
- % I was not aware

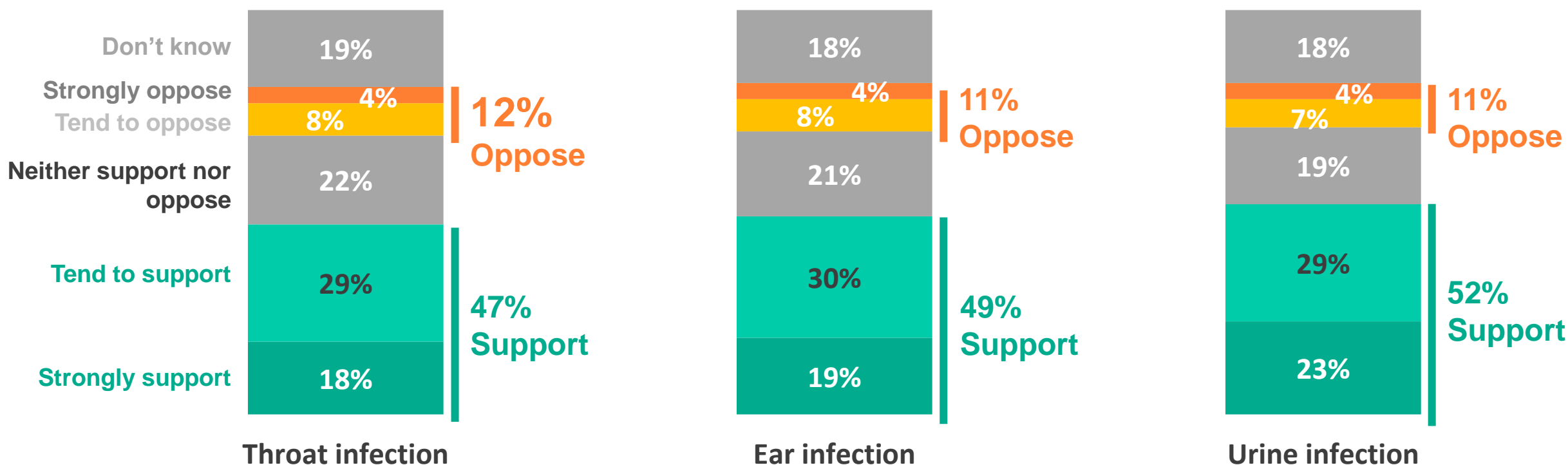


Base: All adults aged 18+ in England: 2022 (1663), 2021 (1676); 2020 (2052) :

Awareness of delayed prescribing has increased

Around half of members of the public support the prescription of delayed antibiotics for a variety of different infections

Support of delayed antibiotic prescription



Base: All respondents (n=5390)

Coding back-up antibiotic prescriptions

Don't forget to code your treatment choice

READ codes (Emis, Vision)	SNOMED code (System One)	Definition
8BP0	2549788011	Deferred antibiotic therapy
8CAk	406111000000113	Patient advised to delay filling of prescription
8OAN	2462831000000113	Provision of <u>TARGET Managing Your Common Infection (Self-Care) Leaflet</u> with back-up antibiotic prescription issued

TARGET audit toolkits

- Acute otitis media
- UTI
- Acute sore throat
- Acute cough
- Otitis externa
- Acute rhinosinusitis

Excel templates auto calculates prescribing compliance for you!



Antibiotic stewardship tools, audits and other resources

Book More ▾



Resources to support antimicrobial stewardship in your practice, including audit templates and tools to support reviewing patients on long term and repeat antibiotics, self assessment checklists, action planning templates and posters and videos for clinical waiting areas.

Version 1.0, November 2021.

Previous

Next

Audit toolkits

Use these audit templates to assess your management of infection against current prescribing guidelines developed by National Institute for Health and Care Excellence (NICE) / Public Health England (PHE, now UK Health Security Agency (UKHSA)). The audits are designed to measure compliance against this guidance. For ease of use, each audit is available in both Microsoft Word and Excel format; the Excel version will automatically calculate your percentage compliance against guidelines

- [4Cs Antibiotic Audit V1 \(Word\)](#)
- [4Cs Antibiotic Audit V1 \(Excel\)](#)
- [Cough Audit V11 \(Word\)](#)
- [Cough Audit V11 \(Excel\)](#)
- [Otitis Media Audit V7 \(Word\)](#)
- [Otitis Media Audit V7 \(Excel\)](#)
- [Rhinosinusitis Audit V5.1 \(Word\)](#)
- [Rhinosinusitis Audit V5.1 \(Excel\)](#)
- [Sore Throat Audit V11 \(Word\)](#)
- [Sore Throat Audit V11 \(Excel\)](#)

Acknowledgements

Bharat Patel - Clinical Pharmacist

Sanjay Patel - Consultant in Paediatric Diseases and Immunology

Manish Verma – General Practitioner

Mariyam Mirfenderesky - Consultant in Infectious Diseases and Medical Microbiology

Eirwen Sides – UKHSA

Emily Cooper – UKHSA

Donna Lecky – UKHSA

Catherine Hayes - UKHSA

Harry Ahmed – General Practitioner

Philippa Moore – Consultant microbiologist

Dharini Shanmugabavan – RCGP

Joseph Besford – RCGP

Lizzie Richmond - RCGP

Thank you

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Panel discussion



Bharat Patel
Clinical Pharmacist

Speaker



Dr Manish Verma
General Practitioner

Panellist



Dr Sanjay Patel
Consultant in Paediatric
Diseases and Immunology

Panellist



Dr Mariyam Mirfenderesky
Consultant in Infectious Diseases
and Medical Microbiology

Panellist