

Reducing unnecessary antibiotic prescribing - important for antimicrobial stewardship.

'Overuse and incorrect use of antibiotics are major drivers of antibiotic resistance; a major threat to safe and effective healthcare. It is important to have appropriate use and preserve antibiotics.' (CMO, 2015).

Principles of Appropriate Prescribing by PHE (to minimise resistance & ↓ risk of C diff & MRSA)

- **Prescribe an antibiotic only when there is likely to be a clear clinical benefit** (*giving alternative self-care advice, as approp., supported with info. on safety netting, delayed script etc*). Doses of antibiotics may need modification for age, weight & renal function. In severe/recurrent cases consider a larger dose or longer course. Lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
- **Consider a no, or delayed, antibiotic strategy for acute self-limiting upper RTIs & mild UTI symptoms.**
- **Always consider possibility of sepsis. Most common source of infection is UTI (45%). See p2 for more info.**
- **Limit prescribing over the telephone to exceptional cases**
- **Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they ↑ risk of C. difficile, MRSA and resistant UTIs** (multi-resistant ESBL E. coli UTIs are ↑ in the community).

RTIs & Use of Antibiotics (RTIs account for approx. 70% of all antibiotic scripts in primary care).

- 120 million cases of RTIs / year in UK
- ¼ of population visit GP each year with RTI symptoms, often expecting an antibiotic.
- RTIs account for approx. 70% of all antibiotic scripts in primary care. However, RTIs are usually self-limiting – thus, withholding an antibiotic rarely leads to complications.
- Overuse of antibiotics increases resistance problems & also 'super bugs' (C. difficile and MRSA).

No justification for routine use of antibiotics to prevent serious complications of URTIs [Petersen et al. BMJ 2007](#)

Analysis of 3.4million RTI GP visits (URTIs, sore throat, AOM, chest infection) - found NNT with antibiotics to prevent one serious complication i.e. pneumonia, quinsy, mastoiditis following RTI (excluding chest infection) was >4,000 cases. However, in patients with chest infections, antibiotics may be useful in preventing pneumonia for those at ↑ risk of developing it e.g. older people. NNT to prevent one case of pneumonia in ≥ 65 yrs = 39 (NNT = 119 in those aged 16-64 yrs).

NICE Guidance on Antibiotics for RTIs (2008)

Antibiotics provide **no** discernible benefits for most patients with: acute otitis media (AOM); acute sore throat/acute pharyngitis/acute tonsillitis; common cold; acute rhinosinusitis or acute cough/acute bronchitis.

Thus, prescribers are advised to conduct a clinical assessment before agreeing a 'no antibiotic' or 'delayed antibiotic' for most patients (who will also need advice on managing symptoms, how long illness will last and to re-present if symptoms fail to improve / worsen). However, some patients may need immediate scripts (as there are some exclusions e.g. those at risk of developing complications). Please see p.2 & also updated care pathway for RTIs on p.4).

Use of Co-amoxiclav

Included in local guidance as **1st** line treatment option for: - bites; & - facial cellulitis; & **2nd** line for acute pyelonephritis. It is also advised for: - COPD acute exacerbation (*only if at risk of resistance*); - sinusitis (*only if very unwell or worsening*); - mastitis - *only if no improvement after 48hrs with flucloxacillin (or as per culture results or microb. advice)*.

Use of Cephalosporins

Cefalexin is included in local guidance for: UTI in children (2nd line use); & also for UTI in pregnancy (**only** if necessary i.e. 3rd line use, as per PHE). This is because it is broad spectrum and there have been reports of C.difficile in pregnant women (with a few deaths & still-births). Ceftriaxone is included for: Pelvic Inflammatory Disease and gonorrhoea.

Use of Quinolones

Included in local guidance for: - acute pyelonephritis; - H. pylori; - acute prostatitis; - Pelvic Inflammatory Disease (ofloxacin is advised for use with metronidazole if gonorrhoea is low risk); - epididymo-orchitis ([BASHH](#))

Please note. They are **not** recommended (for empirical use) for infections, including: UTIs & lower RTIs. They should be reserved for proven resistant organisms (& recommended by microbiology & only use if no other more suitable option).

New 'Treating your infection' leaflet is a useful tool for clinicians to use within consultations for patients who do not require an antibiotic for their infection. It includes advice on: illness duration; self-care & when to re-consult. It has been approved by PHE, RCGP. It also allows the option of a 'back-up' antibiotic prescription to be collected after..days (only if not feeling better/feeling worse). See: [RCGP leaflet](#). Ask your practice pharmacist for more information

Key messages on antibiotic prescribing - also refer to local [Antimicrob. guidelines](#) & [Diagnosis & management of UTIs](#)

UTIs - As **antibiotic resistance & E. coli bacteraemia (sepsis) in the community is increasing**, use **nitrofurantoin first line**, **always give safety net & self-care advice**, & **consider risks for resistance**. Give **TARGET UTI** leaflet, & refer to **PHE UTI** guidance for diagnostic info. See **Preventing Gram-neg. BSIs, May 17.** for important details.

- **Women <65yrs (non-pregnant)**: use presence of dysuria, new nocturia, cloudy urine – to inform antibiotic use
If 2 or 3 symptoms: treat with immediate antibiotic for 3 days.
If one symptom, or other severe urine symptom: use dipstick to guide treatment, if +ve nitrite, UTI is likely
If mild symptoms or nitrite negative: consider delayed antibiotic, with pain relief & safety netting.
- **Men <65yrs**: Consider prostatitis & send pre-treatment MSU, OR if symptoms mild/non-specific, use negative dipstick to exclude UTI. Note. Treat lower UTIs (with antibiotic) for 7 days in men, as per local [Antimicrob. guidelines](#)
- **Forelderly, >65yrs**: treat if fever $\geq 38^{\circ}\text{C}$, or 1.5°C above base twice in 12 hours, & dysuria or >1 other symptom

Low risk of resistance: younger women with acute UTI and no risk

Risk factors for ↑ resistance include: >65yrs; care home resident; recurrent UTI; hospitalisation for >7 days in last 6 months; unresolving urinary symptoms; recent travel to a country with ↑ antimicrobial resistance; previous UTI resistant to trimethoprim, cephalosporins, or quinolones; and treatment failures. (PHE, 2018).

If risk of resistance: (e.g. >65yrs or recurrent UTI) send urine for **C&S (culture and susceptibilities)**; **safety net**.

C&S also needed if: treatment failure; pregnancy; children; men; renal impairment; pyelonephritis (suspected).

Respiratory Tract Infections

• Acute sore throat

Most sore throats are caused by viruses & are self-limiting. Advise self-care & safety net. Most get better within 1 week without antibiotics (if bacterial/viral). Withholding antibiotics is unlikely to lead to complications, which are rare (PHE)

Use **FeverPAIN** or **Centor** (1 point for each symptom) to assess, as antibiotics more beneficial in people with ↑ score:

Score - Fever Pain 0-1, or Centor 2: no antibiotic. - **Fever pain 2-3**: No or 3-5 day back-up antibiotic.

- **Centor 3-4 or Fever pain 4-5**: immediate antibiotic (if severe symptoms) or 48-hour delayed antibiotic. (PHE, 2018).

Important. See local guidance 'Management & Treatment of Common Infections' for more details on using these scores.

• Acute rhinosinusitis

Symptoms <10 days: do not offer antibiotics as most resolve in 14 days without, and antibiotics only offer marginal benefit after 7 days (NNT15). Advise self-care.

Symptoms >10 days: no antibiotic, or back-up antibiotic if several of: purulent nasal discharge; severe localised unilateral pain; fever; marked deterioration after initial milder phase.

Systemically very unwell, or more serious signs and symptoms: immediate antibiotic (PHE, 2018).

• Acute Otitis Media

Give advice about usual illness course (**3-8 days**), self-care, managing pain, when to seek help.

Optimise analgesia and target antibiotics. AOM resolves in 60% of cases in 24 hours without antibiotics.

Antibiotics reduce pain only at two days (NNT15), and do not prevent deafness.

Consider 2 or 3 day delayed, or immediate antibiotics for pain relief if:

<2 years with bilateral AOM (NNT4).

All ages with otorrhoea NNT3.

Acute complications are rare with or without antibiotics; NNT to prevent mastoiditis >4000. (PHE, 2018).

• Acute cough, bronchitis

Antibiotics have little benefit if no co-morbidity. 2nd line: 7 day delayed antibiotic, safety net and advise that symptoms can last 3 weeks. Note. CRP test may be used (if available) if antibiotic is being considered. (PHE, 2018).

Consider immediate antibiotics if >80yrs & ONE of: -hospitalisation in past year; -taking oral steroids; -insulin dependent diabetic; -congestive heart failure; -serious neurolog.disorder/stroke OR >65yrs with TWO of these.

Risk of antibiotics & assocn with *C. difficile* infecn

- Quinolones, cephs, co-amox. & clindamycin have ↑ risk

- Macrolides & amoxicillin have moderate risk,

- Tetracyclines, trimethoprim, Pen V have low risk

Risk ↑ - with longer duration & multiple courses

Note. All antibiotics have risk-but ↑ risk with broad spectrums.

↑ risk for up to 2 wks after starting antibiotic, but can last for many weeks.

Other risk factors for *C. difficile* infection (CDI).

- Current/recent hospital admission - within past 2 months

- Older age (>65 yrs).

- PPI / acid suppressant use (↑ dosage increases risk).

- Exposure to anticancer chemo; other immunosuppressed pts

Others include: use of feeding tubes; comorbidities; prev episodes of

CDI; admission to ICU; use of laxatives; surgery; G/I procedures e.g. endoscopy.

Useful key messages & tips for reducing antibiotic prescribing

- Prescribing an antibiotic can medicalise illnesses and increase re-consultation rates.
- It is important to only prescribe antibiotics if necessary and not for self-limiting mild infections e.g. colds & most coughs, sinusitis, ear ache and sore throats ([NICE advice 2015](#)). These often get better without antibiotics (EAAD, DH).
- Consider a No, or back-up / delayed, antibiotic strategy for acute self-limiting upper respiratory tract infections, and mild UTI symptoms. Limit prescribing over the telephone to exceptional cases (PHE, 2015).
- Communication is key. Studies show that patients are less likely to ask their GP for antibiotics if they are advised what to expect in the course of an illness and are given self-care advice with realistic recovery times. Discussing details on this one page patient leaflet [Treating infection leaflet](#) can facilitate this process and patients take away useful advice. It is available in several languages (by RCGP & PHE).
- Please see other helpful resources in the [Antibiotic Toolkit](#) (on RCGP website) with videos for patient waiting areas [Videos for patients](#) & [Printable self-assessment checklist for practice meetings or audits](#) for GP practices to check against good practice
- Primary care prescribers do not need to allocate more time for consultations that involve offering alternatives to antibiotic prescribing. Studies show that this can be done within the same average consultation time while maintaining a high degree of patient satisfaction ([EAAD Key Messages](#)).
- It is advised to start reducing prescribing by focusing on the main antibiotic(s) that are being over-used. Check if your practice pharmacist or technician can do a 'snap shot' audit to find out which prescribers are using these and the main reasons for their use.
- Check if any females are receiving prophylactic antibiotics for UTIs, as the local RUTI guidance advises that they should be stopped if they have taken these for >6 months (& not under care of urologist). See [Antimicrob. guidelines](#)
- RCGP has free training module on Managing Acute RTIs [MARTI](#) (2 hrs for CPD- import into RCGP Revalidn portfolio). It enables clinical staff to improve care for patients with acute ear pain, acute sore throat, sinusitis & acute cough.

Tips from two GPs at different practices

1st GP

- Meet as a practice to share the results (from CCG) for antibiotic prescribing and also co-amoxiclav, quinolones and cephalosporins. Ensure ALL prescribers are aware of these results. Revise the 'few' indications for the use of the broad spectrum antibiotics and encourage all the team to ONLY prescribe these if they meet these criteria. Consider whether a discussion is needed with the microbiologist.
- Refer to the antibiotic prescribing guidelines [Antimicrob. guidelines](#) and learn Centor criteria and use them.
- Share the guidelines with patients and counsel them about why it is better NOT to take antibiotics. Many patients need reassurance only and if the reason for you not prescribing is explained, they are grateful and happy to leave without a script.
- Use delayed prescriptions as often as you can. I get patients to return to the surgery to collect their prescription. This takes effort and so they will only return if they really do need to. Allowances have to be made for weekends.
- Organise a team training event with Medicines Management Team and use the available resources.

2nd GP

- Patient expectations are changing and they don't always expect antibiotics. However, they do want to know and receive reassurance that they are caring for themselves or others properly.
- By reducing our prescribing of antibiotics for minor illnesses, patients learn how to self-care and this reduces future attendances at our practice. This releases valuable time for caring for patients with other conditions.
- By giving the patient a leaflet e.g. 'Treating Your Infection', it gives them further advice on their illness, including how long it lasts and how to self-care, including when they should get further help. It also allows prescribers to add details about a delayed prescription, if wanted.
- It is important to have consistency of approach from all prescribers. Otherwise, it confuses patients and they can also discover which prescribers are prescribing antibiotics and can seek appointments with these clinicians.
- I rarely use delayed prescriptions (as I feel that there is a slight conflict in that I am giving an antibiotic prescription, albeit delayed, having previously advised that it is not appropriate). I reassure patients that I'm happy for them to return should their condition not improve or deteriorate. Very few patients do return.
- We do a regular 3 monthly 'computer generated' antibiotic prescribing audit within the practice so we can compare our individual prescribing, of each antibiotic, with our colleagues and look at reasons for variation. We discuss the results to encourage all of us to improve our prescribing.

Care pathway for respiratory tract infections - for self-limiting RTIs in adults & children over 3 months, in primary care

(based on: - [NICE Clinical Guideline 69 – RTIs – antibiotic prescribing, July 2008](#); [and Management of Infection guidance for Primary Care by PHE, March 2018](#)).

