Management of Infection - Quick Reference Guide (April 2020)

Further detail including doses is available under separate document 'Managing common infections - Guidance for Primary Care'

Somerset Clinical Commissioning Group

Upper Respiratory Tract Infections:

- **Acute Sore Throat:** NICE NG84 2-page visual summary

Avoid antibiotics where possible; advise paracetamol, self-care, and safety net; provide RTI leaflet.

FeverPAIN 0-1 or Centor 0-2: self-care, use no antibiotic strategy.

FeverPAIN 2-3: no or 'back-up/delayed' antibiotic

FeverPAIN 4-5 or Centor 3-4: immediate antibiotic, or 'back-up/delayed' prescription.

Systemically very unwell or high risk of complications: immediate antibiotic.

  - Phenoxymethylpenicillin
  - Clarithromycin (if penicillin allergy) or
  - Erythromycin (preferred if pregnant & penicillin allergy)

- **Influenza:** treat 'at risk' patients in line with PHE Influenza guidance
- **Scarlet Fever**: PHE
  - Phenoxymethylpenicillin
  - Clarithromycin (if penicillin allergy) or
  - Erythromycin (preferred if pregnant & penicillin allergy)
- **Acute Otitis Media:** NICE NG91 2-page visual summary

First line: avoid antibiotics where possible; advise self-care and safety net; provide RTI leaflet

Second line:

  - First option: amoxicillin; if penicillin allergy or intolerance: clarithromycin, or erythromycin (preferred if pregnant)
  - Second option: co-amoxiclav (if worsening symptoms on first antibiotic choice taken at least for 2-3 days)

Consider Otovent® kit for OME

- **Acute Otitis Externa:** CKS

First line: analgesia for pain relief, and apply localised heat (e.g. a warm flannel); provide RTI leaflet

Second line:

  - First option: topical acetic acid 2% (EarCalm®) (✚ available OTC)
  - Second options: topical Betneson-N® drops or Otomize® spray
  - If cellulitis: flucloxacillin

- **Sinusitis (acute):** NICE NG79 2-page visual summary

First line: avoid antibiotics where possible; advise self-care and safety net; provide RTI leaflet

Second line:

  - First option: phenoxymethylpenicillin; if penicillin allergy: doxycycline, clarithromycin, or erythromycin (preferred if pregnant)
  - Second option - If high-risk of complications, or persistent or worsening symptoms: co-amoxiclav

Lower Respiratory Tract Infections:

- **Acute Cough:** NICE NG120 2-page visual summary

First line: avoid antibiotics where possible; advise self-care and safety net; provide RTI leaflet

Second line: 5-day delayed antibiotic, safety net and advise that symptoms can last 3 weeks; provide RTI leaflet; third line: immediate antibiotic:

  - Amoxicillin
  - If penicillin allergy: doxycycline

- **Acute Exacerbation of COPD:** NICE NG114 2-page visual summary. Choose antibiotics accordingly when current susceptibility available.
  - When current First option: doxycycline or amoxicillin
  - If penicillin allergy: clarithromycin
  - Second option (no improvement in symptoms after 2-3 days): use alternative first choice
  - Third option/if risk of resistance: co-trimoxazole
- **Acute Exacerbation of Bronchiectasis (non-cystic fibrosis):** NICE NG117 3-page visual summary. Choose antibiotics accordingly when current susceptibility available.
  - First option: amoxicillin (preferred if pregnant) or doxycycline
  - If penicillin allergy: clarithromycin
- **Managing suspected or confirmed pneumonia during COVID-19 pandemic:** NICE NG165 Use antibiotics only when appropriate as per full guidance
  - First option: doxycycline (not if pregnant / breastfeeding)
  - Alternative: amoxicillin
- **Community Acquired Pneumonia:** NICE NG123 3-page summary
  - CRB65 Score 0 - First option: doxycycline; second option: amoxicillin, or clarithromycin (if penicillin allergy), or erythromycin (preferred if pregnant)
  - CRB65 Score 1,2 & at home – First option: amoxicillin AND (if atypical pathogens suspected) clarithromycin or erythromycin (preferred if pregnant); Second option: doxycycline or clarithromycin
  - CRB65 Score 3-4: IM benzylpenicillin & urgent hospital admission

Meningitis:

- **Suspected Meningococcal Disease:** PHE Meningococcal disease
  - IV or IM benzylpenicillin
  - IV or IM cefotaxime

Sepsis:

- **Suspected 'Red Flag Sepsis':** NICE NG51; UK Sepsis Trust

Transfer all suspected 'red flag sepsis' patients to acute hospital immediately

If time to treatment in hospital is likely to be more than 1 hour it is recommended that the first dose of antibiotic is administered by a primary care clinician (if possible after obtaining blood cultures).

- IV or IM cefotaxime (alternatively, ceftriaxone)

Urinary Tract Infections:

- **Lower UTI in non-pregnant women and men (aged ≥ 16 yrs):** NICE NG109 3-page visual summary, PHE UTI diagnosis

Avoid antibiotics where possible; advise self-care and safety net; provide UTI leaflet.

- Uncomplicated UTI & <70 years-old: First option (if GFR≥45): nitrofurantoin, if low risk of resistance: trimethoprim; Second option: pivmecillinam
- Risk of resistance, frail and/or associated co-morbidity: First option (if GFR≥45): nitrofurantoin; second option: pivmecillinam. Avoid trimethoprim
- If increased risk of resistance (refer to resistance factors in main guidance): fosfomycin (Monuril®)

Perform culture in all treatment failures.

- **Recurrent UTI in non-pregnant women:** (2 in 6mths and/or ≥3 in 12mths): NICE NG112 2-page visual summary, PHE UTI diagnosis

Avoid antibiotics where possible. Provide UTI leaflet

First line: advise simple measures, self-care and safety netting (may wish to try ✚OTC D-mannose or cranberry supplements).

Second line: stand-by or post-coital antibiotics; Third line if recent culture sensitive:

- Nitrofurantoin or trimethoprim

Or consider:

- Methenamine hippurate

- **UTI in pregnancy:** NICE NG109 3-page visual summary, PHE UTI diagnosis
  - First line (if GFR≥45): nitrofurantoin (avoid at term)
  - Second line: amoxicillin (if susceptible) or cefalexin
- **Lower UTI in children and young people:** NICE NG109 3-page visual summary, PHE UTI diagnosis
  - First line: trimethoprim (if low risk of resistance) or nitrofurantoin (if GFR≥45)
  - Second line: pivmecillinam (if ≥40kg), amoxicillin (if susceptible), or cefalexin
- **Upper UTI in children and young people:** NICE NG111 3-page visual summary, PHE UTI diagnosis

Refer to paediatricians to: obtain a urine sample for culture, assess for signs of systemic infection.

  - First line: cefalexin or co-amoxiclav (if susceptible)
  - Second line: consult with microbiology
- **Acute pyelonephritis in non-pregnant women and men (aged ≥ 16 yrs):** NICE NG111 3-page visual summary, PHE UTI diagnosis
  - Cefalexin, or co-amoxiclav (if susceptible); or trimethoprim (if susceptible), or ciprofloxacin (consider safety issues)
  - If ESBL risk: contact microbiologist
- **Acute prostatitis:** NICE NG110 2-page visual summary, PHE UTI diagnosis

First line:

  - First option (if susceptible): ciprofloxacin or ofloxacin
  - Second option (if susceptible): trimethoprim

Second line: (after discussion with specialist)

  - Levofloxacin or co-trimoxazole

Gastro-intestinal Tract Infections:

- **Oral candidiasis:** CKS
  - Miconazole oral gel
  - Nystatin oral gel (if miconazole not tolerated)
  - Fluconazole capsules if extensive/severe
- **Infectious diarrhoea:**

Avoid antibiotics unless systemically unwell or pregnant

  - Clarithromycin if campylobacter suspected,
  - Otherwise, contact microbiologist for advice via Musgrove Park Hospital switchboard: ☎01823 333444
- **Giardiasis:** BNF, BNFc
  - First line: tinidazole
  - Second line: metronidazole
- **Acute diverticulitis**: NICE NG147 2-page visual summary

There is no robust evidence to support the use antibiotics for treating diverticulitis in primary care *It may be* appropriate to treat mild to moderate episodes if 2 or more SIRS criteria: Temp > 38.3ºC or < 36.0ºC, Pulse > 90/min, RR > 20/min, New confusion/drowsy, Glucose > 7.7mmol/L (non-diabetic patient), WBC > 12 or < $4x10^9$/L

  - Doxycycline plus metronidazole
- **Eradication of *H. pylori*:** NICE CG184, NICE PPI doses, PHE *H.pylori*, CKS

Do not use clarithromycin, metronidazole or quinolone if used in the past year for any infection

  - First and second line: PPI with amoxicillin + either clarithromycin or metronidazole
  - Penicillin allergy & previous MZ + clari: PPI WITH bismuth subsalicylate (Pepto-Bismol tab®) 'off-label' + metronidazole + tetracycline
  - Relapse & previous MZ +clari: PPI with amoxicillin + tetracycline or levofloxacin
- ***Clostridioides difficile*:** DoH, PHE

Stop unnecessary antibiotics, PPIs and antiperistaltic agents.

  - First episode & not severe CDI: metronidazole
  - Second episode/severe/type 027: vancomycin
  - Recurrent: fidaxomicin (AMBER drug)
- **Travellers' diarrhoea:** CKS

Only for patients at high risk of severe illness or visiting high risk areas

  - Stand-by: azithromycin

- Prophylaxis/treatment: bismuth subsalicylate (Pepto-Bismol®) (✚available OTC)

- **Threadworms:** CKS
  Treat all household contacts at same time and advise hygiene measures for 2 weeks
  - *≥6 months:* mebendazole ('off label' under the age of 2 years)
  - *<6 months or pregnant (at least in first trimester):* six weeks hygiene measures

Genital Tract Infections:

- **STI Screening:** BASHH
- **Chlamydia trachomatis:** BASHH

First line:
- First option: doxycycline (contraindicated in pregnancy)
- Second option/pregnant or breastfeeding: azithromycin ('off label' use in pregnancy)

Second line:
- First option: erythromycin
- Second option (if pregnant or breastfeeding): amoxicillin

- **Epididymitis:** BASHH, CKS
  - Low STI risk & >35yrs: First line: doxycycline; Second line: ofloxacin or ciprofloxacin
  - STI risk or <35yrs (+refer to GUM): ceftriaxone IM PLUS oral doxycycline
- **Vaginal candidiasis:** BASHH, CKS
  - Topical options: clotrimazole (✚available OTC) fenticonazole, miconazole
  - Oral option (not if pregnancy or breastfeeding): fluconazole (✚available OTC)
  - Recurrent: fluconazole capsule induction followed by maintenance
- **Bacterial vaginosis:** BASHH, CKS
  - First line: oral metronidazole, or topical metronidazole or topical clindamycin
  - Second line: lactic acid gel (Balance Activ BV®) (for treatment; ✚OTC if prophylaxis), or dequalinium chloride (Fluomizin®) vaginal tablet
- **Genital herpes:** BASHH
  Advise: saline bathing, analgesia, or topical lidocaine for pain, and discuss transmission.
  - First episode: treat within five days if new lesions or systemic symptoms, and refer to GUM
  - Recurrent: self-care if mild, or immediate short course antiviral treatment, or suppressive therapy if more than 6 episodes per year
  - If antivirals indicated: first line: aciclovir; second line: valaciclovir; third line: famciclovir
- **Gonorrhoea:** BASHH

Antibiotic resistance is now very high. Please refer to GUM for cultures before treatment, test of cure and partner notification. SWISH contacts: https://swishservices.co.uk/ / booking line 0300 124 5010.
  - Susceptibility NOT known: ceftriaxone IM stat
  - Susceptibility KNOWN: ciprofloxacin po stat
- **Trichomoniasis:** BASHH, CKS
  - Oral metronidazole
  - Topical clotrimazole
- **Pelvic inflammatory disease:** BASHH, CKS

Delaying treatment increases risk of long-term sequelae. Refer woman and sexual contacts to GUM service. SWISH contacts: https://swishservices.co.uk/ / booking line 0300 124 5010.
First line: ceftriaxone IM + doxycycline + metronidazole
Second line:
  - First option: metronidazole + ofloxacin
  - Second option: moxifloxacin
  - *2nd line* Trimethoprim

Skin Infections:

- **Acne:** CKS, Somerset Prescribing Formulary – topical preparations for acne
  - First line: self-care
  - Second line: First option (✚available OTC): benzoyl peroxide 4% or 5% (Panoxyl®, Quinoderm®, Brevoxyl® or Acnecide®); Second: option: adapalene (Differin®)
  - Third line: First option: Epiduo®gel; Second option: Treclin®gel or Duac Once Daily® gel
  - If treatment failure/severe: oral oxytetracycline or oral doxycycline
- **Impetigo:** CKS, PHE
  - Topical ('off-label') options: sulfadiazine cream (Flamazine®); if unavailable, SurgihoneyRO®
  - Topical mupirocin (MRSA only)
  - Oral flucloxacillin
  - Oral clarithromycin (if penicillin allergy)
- **Cold sores:** CKS
  - Only if frequent, severe, predictable triggers – oral acyclovir
- **Eczema:** CKS
  - Only if visible signs of infection – as for impetigo
- **Leg ulcers:** NICE NG152 2-page visual summary
  Only for active infection
  - Flucloxacillin
  - If penicillin allergy: clarithromycin or erythromycin (in pregnancy)
  - If penicillin allergy and taking statins: doxycycline
- **Cellulitis & erysipelas:** NICE NG141 3-page visual summary; CKS
  - Flucloxacillin
  - If penicillin allergy: clarithromycin or erythromycin (in pregnancy)
  - If penicillin allergy and taking statins: doxycycline
  - If facial: co-amoxiclav; if penicillin allergy: clarithromycin AND metronidazole (only add in children if anaerobes suspected)
- **Diabetic foot infection:** NICE NG19 3-page visual summary; MPH & YDH guidance – PEDIS grading and treatment options
  PEDIS Grade 1: no antibiotics

PEDIS Grade 2 (mild infection): flucloxacillin; if allergic to penicillin: doxycycline. Review at 48-72 hours or as appropriate
PEDIS Grade 2 + evidence of ischaemia, and Grade 3 or 4: refer to secondary care

- **Bites (human and animal):** CKS
  - Prophylaxis or treatment: co-amoxiclav
  - If penicillin allergy - human bite: metronidazole + clarithromycin
  - If penicillin allergy – animal bite: metronidazole + doxycycline
  - If pregnant and history of rash after penicillin: ceftriaxone IM or IV
- **Scabies:** BASHH, CKS
  - Permethrin cream
  - If allergic to permethrin: malathion aqueous liquid
- **Mastitis:** CKS
  - Flucloxacillin
  - If penicillin allergy: erythromycin or clarithromycin
- **Fungal skin infection:** CKS body & groin, CKS foot, CKS scalp
  All ✚ available OTC
  - Topical terbinafine OR topical imidazole
  - Topical undecenoates i.e. tolnaftate

  If infection confirmed with skin scrapings
  - Oral terbinafine or itraconazole
- **Fungal nail Infection:** CKS
  - Amorolfine nail lacquer (superficial only)
  - First line: oral terbinafine
  - Second line: oral Itraconazole
- **Varicella zoster(chickenpox):** CKS, PHE
  & Herpes zoster (shingles): CKS, PHE
  - First line for chickenpox and shingles: aciclovir
  - Second line for shingles if poor compliance: valacoclovir
  - Third line for shingles if poor compliance: Famciclovir
- **Lyme disease:** NICE NG95 visual summary, CKS, PHE

First line (suitable for Lyme with or without focal symptoms, and Lyme carditis): doxycycline
Second line:

  - First option (suitable for Lyme with or without focal symptoms): amoxicillin (especially for children, pregnancy and breastfeeding)
- Second option (suitable for Lyme without focal symptoms): azithromycin
- **Epidermoid and pilar cysts:** EBI Benign skin lesion
  Advise self-care measures.
  If infected cyst:
  - Flucloxacillin
  - If penicillin allergy: clarithromycin
- **Boils and carbuncles:** CKS PHE PVL-SA
  Advise self-care measures.
  - Flucloxacillin
  - If penicillin allergy: clarithromycin

Eye Infections:

- **Conjunctivitis:** CKS
  - First line: self-care (✚ available OTC)
  - Second line: chloramphenicol eye drops + eye ointment or chloramphenicol eye ointment alone (✚ available OTC for adults and children ≥ 2yrs old)
- **Blepharitis:** Moorfields Eye Hospital NHS Foundation Trust, BNF, PHE PVL-SA
  - First line/dry eye: hypromellose eye drops (✚ available OTC)
  - Second line: chloramphenicol eye ointment
  - If resistant/recurrent: consider microbiology advice
  - Third line (oral): oxytetracycline or doxycycline
- **Chalazion (meibomian cyst):** Moorfields Eye Hospital NHS Foundation Trust; EBI Benign skin lesion
  Advise self-care measures.
  - Acute infection: chloramphenicol ointment
- **Stye:** Moorfields Eye Hospital NHS Foundation Trust
  - First line: self-care measures
  - Second line: chloramphenicol eye ointment (✚ available OTC for adults and children ≥ 2yrs old)

Dental Infections:

GPs should not routinely be involved in dental treatment

- **Mucosal ulceration and inflammation:**
  - First line: simple saline mouth wash
  - Second line: chlorhexidine gluconate mouth wash (✚ available OTC)
  - Third line: hydrogen peroxide mouthwash BP 6% (✚ available OTC)
- **Acute necrotising ulcerative gingivitis:**
  - First line: metronidazole
  - Second line: amoxicillin**;** *if treatment failure with amoxicillin:* co-amoxiclav

PLUS (if pain limits oral hygiene):

  - First line: chlorhexidine gluconate mouth wash (✚ available OTC)
  - Second line: hydrogen peroxide mouthwash BP 6% (✚ available OTC)
- **Pericoronitis:**
  - amoxicillin or metronidazole

  PLUS (if pain limits oral hygiene):
  - First line: chlorhexidine gluconate mouth wash (✚ available OTC)
  - Second line: hydrogen peroxide mouthwash BP 6% (✚ available OTC)
- **Dental abscess:**
  - Phenoxymethylpenicillin or amoxicillin
  - If spreading infection: add metronidazole
  - If penicillin allergy: metronidazole