East Region Formulary

Infections Chapter (Adult)

16/02/2022

/1 /2 etc.	First line, second line, etc. choice(s) within the pathway
	Key information to note for these recommendations
SI	Specialist Initiation: may be continued in a primary care setting
SUO	Specialist Use Only: must only be prescribed by a specialist
UM	Unlicensed Medicine: a medicine with no UK marketing authorisation
UI	Unlicensed Indication: licensed medicine being used outside the terms of its licence

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Group	Cardiovascular
Condition	Endocarditis

Pathway 1	Prevention of endocarditis

Prescribing notes	• Prevention of endocarditis in patients with heart-valve lesion, septal defect, patent ductus, or prosthetic valve: see BNF for full details.

Group	Central nervous system
Condition	Meningococcal disease

Pathway 1	Treatment of suspected meningococcal disease

/1

Parenteral antibiotics should be given at the earliest opportunity, either in primary or secondary care, but urgent transfer to hospital should not be delayed in order to give the parenteral antibiotic.

	Benzylpenicillin	Benzylpenicillin 1.2g powder for solution for injection vials	Intramuscular or intravenous 1.2g
OR	**Cefotaxime**	Cefotaxime 1g powder for solution for injection vials	Intramuscular or intravenous 1g

Prescribing notes	• If meningococcal disease is suspected, general practitioners should give a single dose of benzylpenicillin or cefotaxime before urgent transfer to hospital. The only contra-indication is a history of true penicillin anaphylaxis; in this case, giving penicillin or an alternative antibiotic may carry increased risk of anaphylactic reactions, and **urgent transfer to hospital is the most important measure**. Patients with mild allergy (i.e. rash, not anaphylaxis) may receive cefotaxime. • Public Health should be notified to arrange antibiotic prophylaxis for close (household and kissing) contacts of meningococcal disease. • For further information including advice on vaccination of the index case and close contacts refer to Public Health England guidance - Meningococcal disease: guidance on public health management

Pathway 2	Chemoprophylaxis for contacts

/1

Public Health should always be contacted in the first instance.

Ciprofloxacin	Ciprofloxacin 500mg tablets	500mg given immediately

Prescribing notes	• Ciprofloxacin chemoprophylaxis for contacts is recommended for all ages and in pregnancy. • Refer to important safety information for all quinolones prior to prescribing. • Where an individual is at risk of potential side-effects from ciprofloxacin discuss risk versus benefit and possible alternative options with Public Health. • Public Health should be notified to arrange antibiotic prophylaxis for close (household and kissing) contacts of meningococcal disease. • For further information including advice on vaccination of the index case and close contacts refer to Public Health England guidance - Meningococcal disease: guidance on public health management

Group	Dental
Condition	Dental infections

Opening text	Refer to the Scottish Dental Formulary
Guidance links	Scottish Dental Formulary

Pathway 1	Treatment of dental abscess

/1

Immediate drainage

/2

Phenoxymethylpenicillin	Phenoxymethylpenicillin 250mg tablets Phenoxymethylpenicillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 5 days

OR

If penicillin allergic

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

Prescribing notes	• Antibiotics are only required if immediate drainage is not achieved with local measure or in case of spreading infection (swelling, cellulitis, lymph node involvement) or systemic involvement (fever, malaise.)

Pathway 2	Treatment of acute necrotising ulcerative gingivitis (Vincent's infection)

/1

Hydrogen peroxide	Hydrogen peroxide 6% solution	Rinse or gargle with 15mL every 8-12 hours for 2-3 minutes, to be diluted in half a tumblerful of warm water.

Group	**Ear, nose and oropharynx**
Condition	**Oral candidiasis**

Pathway 1	**Treatment of oral candidiasis**

/1

Nystatin	Nystatin 100,000units/ml oral suspension sugar free	100,000 units every 6 hours usually for 7 days and continued until 2 days after symptoms resolve

/2

Miconazole	Miconazole 20mg/g oromucosal gel sugar free	2.5mL every 6 hours should be continued for at least 7 days after symptoms resolve

/3

For extensive severe infection or immunosuppressed patients

Fluconazole	Fluconazole 50mg capsules	In extensive, severe infection 50mg daily for 7 days; in immunosuppressed patients 100mg daily for 7 days, with further 7 days if symptoms persist.

Prescribing notes	• In unexplained oral candidiasis HIV testing should be offered. • Consider use of spacer device, rinse mouth and clean teeth if oral thrush is related to inhaled corticosteroids.

Group	Ear, nose and oropharynx
Condition	Otitis externa

Pathway 1	Treatment of acute otitis externa

/1

Analgesia and localised heat

/2

Acetic acid	Acetic acid 2% ear spray	One spray every 8 hours for 7 days

OR

Otomize ear spray should only be used if the eardrum is not perforated

Otomize	Otomize ear spray	One spray every 8 hours for 7 days

/3

If fungal infection

Clotrimazole	Clotrimazole 1% solution	Apply every 8-12 hours continuing for at least 14 days after disappearance of infection

/4

If cellulitis or disease extending outside ear canal.

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg 6 hourly for 7 days

OR

If allergic to penicillin

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

Prescribing notes	• Many cases respond to ear toilet alone, with or without the addition of astringent drops. • In recurrent or persistent otitis externa, send a swab; recurrent cases may be due to fungal or *Pseudomonas* infection. • In mild inflammation or infection topical acetic acid 2% may be used to treat otitis externa. In more severe cases with suspected bacterial infection and eczematous inflammation a topical antibiotic with steroids is indicated. • If cellulitis/disease extending outside ear canal refer to ENT to exclude malignant otitis externa. • In patients with severe infection consider malignant otitis externa due to *Pseudomonas*. This requires prompt systemic antibiotics; Refer to ENT specialist.

Group	Ear, nose and oropharynx
Condition	Otitis media

Pathway 1	Treatment of acute otitis media

/1

Analgesia, no antibiotic treatment (majority resolve in 24 hrs)

/2

Amoxicillin	Amoxicillin 500mg capsules Amoxicillin 250mg/5ml oral suspension sugar free	500mg every 8 hours for 5 days

OR

If penicillin allergic, prescribe doxycycline

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

OR

For penicillin allergy in pregnancy

Erythromycin	Erythromycin 250mg gastro-resistant tablets	500mg every 6 hours for 5 days
	Erythromycin ethyl succinate 500mg/5ml oral suspension sugar free	500mg every 6 hours for 5 days

Prescribing notes	• Antibiotics do not reduce pain in the first 24 hours, and make no difference to the likelihood of a further infection or hearing difficulty. • Consider antibiotics if any of the following are present: systemic toxicity, otorrhoea, recurrent ear infection, immunocompromised, debilitated or prolonged illness (more than 2-3 days). In other cases consider withholding prescription or give delayed prescription.

Group	Ear, nose and oropharynx
Condition	Parotitis

Pathway 1	Treatment of parotitis

/1

Consider mumps or other non-infective causes as a diagnosis

/2

If there are no signs of sepsis

	Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 7 days
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 7 days

/3

If penicillin allergic, or previous MRSA infection

	Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 7 days
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 7 days

Prescribing notes	
	• Most cases of bacterial parotitis are in frail elderly patients with dehydration. • Patients with persistent (>2weeks) symptoms or unexplained parotid swelling or suspected parotid duct calculi should be referred to ENT.

Group	**Ear, nose and oropharynx**
Condition	**Scarlet fever**

Pathway 1	**Treatment of scarlet fever**

/1

Phenoxymethylpenicillin	Phenoxymethylpenicillin 250mg tablets Phenoxymethylpenicillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 10 days

OR

If penicillin allergic, prescribe clarithromycin.

Clarithromycin	Clarithromycin 500mg tablets Clarithromycin 250mg/5ml oral suspension	500mg every 12 hours for 10 days

Group	**Ear, nose and oropharynx**
Condition	**Sinusitis**

Pathway 1	**Treatment of sinusitis**

/1

Analgesia, no antibiotic treatment (majority resolve in 14 days) refer to prescribing notes.

/2

Beclometasone	Beclometasone 50micrograms/dose nasal spray	2 sprays every 12 hours into each nostril.

/3

If there is no response after 2 weeks, continue beclometasone and consider antibiotic treatment.

Phenoxymethylpenicillin	Phenoxymethylpenicillin 250mg tablets Phenoxymethylpenicillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 5 days

OR

If penicillin allergic, prescribe doxycycline.

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

OR

In pregnancy and penicillin allergic.

Erythromycin	Erythromycin 250mg gastro-resistant tablets	500mg every 6 hours for 5 days
	Erythromycin ethyl succinate 500mg/5ml oral suspension sugar free	500mg every 6 hours for 5 days

Prescribing notes	• Ensure adequate use of analgesics.
	• Evidence of benefit from nasal saline or nasal decongestants is lacking but may be considered for symptomatic relief.
	• The role of antibiotics in the treatment of sinusitis is controversial.
	• Antibiotics are not recommended for patients who are systemically well, not at risk of complications and symptom duration of less than 10 days. If there is no improvement after 10 days consider delayed antibiotic prescription depending on likelihood of bacterial cause.
	• Consider prescribing an intranasal corticosteroid for people with prolonged or severe symptoms.
	• Antibiotics can be considered for patients with suspected acute bacterial sinusitis when at least three of the following are present (or if the patient is at high risk of complications)
	  ○ discoloured or purulent discharge (with unilateral predominance)
	  ○ severe local pain (with unilateral predominance)
	  ○ a fever greater than 38 degrees Celsius
	  ○ a marked deterioration after an initial milder form of the illness (so-called 'double-sickening')
	  ○ elevated ESR/CRP (although the practicality of this criterion is limited).

Group	Ear, nose and oropharynx
Condition	Sore throat

Pathway 1	Treatment of acute sore throat

/1

Analgesia, no antibiotic treatment (majority resolve in 7 days).

/2

Phenoxymethylpenicillin	Phenoxymethylpenicillin 250mg tablets Phenoxymethylpenicillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 5 days

OR

If penicillin allergic, prescribe clarithromycin.

Clarithromycin	Clarithromycin 500mg tablets Clarithromycin 250mg/5ml oral suspension	500mg every 12 hours for 5 days

OR

In pregnancy and penicillin allergic.

Erythromycin	Erythromycin 250mg gastro-resistant tablets	500mg every 6 hours for 5 days
	Erythromycin ethyl succinate 500mg/5ml oral suspension sugar free	500mg every 6 hours for 5 days

Prescribing notes	
	• The majority of sore throats are viral and self-limiting. Do not prescribe an antibiotic for simple sore throats - only use antibiotics when there is evidence of bacterial infection. • Serious *streptococcal* complications are rare and there is little evidence of benefit from prescribing antibiotics. If Modified Centor Criteria is 3 or 4 points, consider 2-3 day delayed or immediate antibiotics. Score 1 point for each of (lymphadenopathy, no cough, fever, tonsillar exudate). Age <15 years add 1 point, age >44 years subtract 1 point. • Consider glandular fever if sore throat persists or patient is debilitated and not responding to antibiotics.

Group	**Ear, nose and oropharynx**
Condition	**Staphylococcal carriage**

Pathway 1	**Eradication or prevention of nasal carriage of staphylococci**

/1

Neomycin + Chlorhexidine	Naseptin nasal cream	Apply to nostrils every 6 hours for 10 days

/2

For resistant cases

Mupirocin	Mupirocin 2% nasal ointment	Apply every 8-12 hours for 5 days

Prescribing notes	• Elimination of organisms such as staphylococci from the nasal vestibule can be achieved by the use of Naseptin cream. • Mupirocin 2% nasal ointment (Bactroban Nasal) is also available for eradication of staphylococci from the nose but should be reserved for resistant cases only and used for no longer than 10 days to avoid resistance. In hospital, it should be reserved for eradication of methicillin–resistant *Staphylococcus aureus* (MRSA). • Refer to local MRSA guidance for additional information.

Group	Eye
Condition	General information on eye drops [Content from Eye chapter]

Pathway 1	Administration of drugs to the eye
Prescribing notes	• Drugs administered as eye drops penetrate directly into the globe through the cornea. Absorption may also occur into the general circulation via conjunctival vessels or from the nasal mucosa after drainage of excess preparation down through the tear ducts; this can produce systemic side effects. Systemic absorption can be reduced by 'punctal occlusion', i.e. pressing tightly with a finger on the inside corner of the eye for about half a minute after instilling the eye drop. • Eye drops should be instilled by pulling down the lower eyelid and putting one drop into the pocket that is formed. The eye should then be closed tightly for about a minute (or see 'punctal occlusion' above). The conjunctival fornix can only accommodate one drop; since any extra will overflow (possibly leading to systemic absorption), only one drop should be used. • Eye ointments may be applied to the inside of the lower eyelid when a prolonged action is required. • Eye ointments are applied by starting at the inside corner of the eye and squeezing a thin line (about half a centimetre) along the inside of the lower lid, then blinking the eye. • Subconjunctival injection may be used to administer anti-infective drugs, mydriatics or corticosteroids for conditions not responding to topical therapy. • Soft contact lenses should not generally be worn while using eye drops containing preservatives, or eye ointments. For further information see BNF or the product literature. • If using different eye products, leave a period of about 5 minutes between applications. Instil 'thinnest to thickest' (i.e. aqueous drop, then suspension, then gel drop, then ointment last). • After using eye drops or eye ointment, patients should be advised not to drive or perform skilled tasks until vision is clear. • A preservative-free formulation may be prescribed, if available, for all formulary products if clinically necessary as an alternative option.

Pathway 2	Control of microbial contamination of eye drops
Prescribing notes	• Eye drops in multi-use containers for use in the community should be discarded 4 weeks after opening to avoid contamination, unless otherwise stated by the manufacturer. • Single dose units should be used once only and not re-used unless stated by manufacturer. They should not be used for more than one patient. Preservative-free preparations may be single use only or discarded a set time after opening as per manufacturer's instructions. Specially manufactured (usually unlicensed medicine) preservative-free eye drops usually keep for 1 week in the fridge after first opening. Newer commercially manufactured preservative-free drops can keep for longer depending on the particular manufacturer's instructions. • It is not generally necessary to use separate bottles for each eye (except immediately after eye surgery), but care should be taken to avoid touching the eye(s) during use to avoid contamination. Most drops do not need to be kept in a fridge, unless directed otherwise.

Group	Eye
Condition	Bacterial conjunctivitis

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.
Guidance links	NICE CKS: Conjunctivitis - infective

Pathway 1	Treatment of bacterial conjunctivitis

/1

No treatment (see prescribing notes)

/2

Chloramphenicol	Chloramphenicol 0.5% eye drops	1 drop usually every 2 hours for 2 days, then every 6 hours for up to a week, continue for 48 hours after resolution.
	Chloramphenicol 1% eye ointment	Usually every 6-8 hours daily, or at night (with drops during the day). Course length up to 1 week, continue for 48 hours after resolution.

/3

If swab for culture and sensitivities identifies that isolate is susceptible OR chloramphenicol has already been tried or is contra-indicated.

Fusidic acid	Fusidic acid 1% modified-release eye drops	One drop every 12 hours. Course length up to 1 week, continue for 48 hours after resolution.

Prescribing notes	• Most cases of acute bacterial conjunctivitis are self-limiting and resolve within 5-7 days without treatment. Treat with topical antibiotics if severe. A delayed treatment strategy may be appropriate - advise the person to initiate topical antibiotics if symptoms have not resolved within 3 days. • Self care is the recommended first line treatment for conjunctivitis. Bathe clean eyelids with cotton wool dipped in sterile saline or boiled and cooled water to remove crusting. • Fusidic acid does not give Gram-negative cover. • Chloramphenicol ointment and drops are available to buy in pharmacies to treat bacterial conjunctivitis. The pharmacist will assess the patient to ascertain suitability before deciding whether to supply the medicine. • Refer to NICE CKS guidance on infective conjunctivitis for advice on when to refer to ophthalmology and for conjunctivitis in contact lens wearers. • Antibacterials are not helpful in managing viral conjunctivitis. Viral (non-herpetic) conjunctivitis usually resolves within 1-2 weeks without treatment. • Simple lubricants are often helpful for comfort. • Bacterial keratitis and cellulitis require treatment by or under instruction of a consultant ophthalmologist.

Group	Eye
Condition	Blepharitis

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.
Guidance links	NICE CKS: Blepharitis

Pathway 1	Treatment of blepharitis

/1

Self-care (see prescribing notes)

/2

Chloramphenicol	Chloramphenicol 1% eye ointment	One application every 12 hours trial for 6 weeks. Frequency and duration of treatment is guided by severity and response to treatment.

/3

If signs of meibomian gland dysfunction or rosacea also a problem

Doxycycline	Doxycycline 100mg capsules	100mg once daily for 4 weeks (initial), then 8 weeks (maintenance)

Prescribing notes	• Bathing eyes and increased hygiene may be all that is necessary to treat blepharitis. • The eyelid can be cleansed by wetting a cloth with cleanser (for example, baby shampoo diluted 1:10 with warm water) and gently wiping along the lid margins to clear any lid debris. • Eyelids should be cleaned twice daily initially, then once daily as symptoms improve. • In addition, a warm compress (a clean cloth warmed with hot water) should be applied to closed eyelids for 5-10 minutes once or twice daily; compresses should not be too hot as this may burn the skin. • Eyelid hygiene should be continued even when symptoms are well controlled to minimise number and severity of relapses.

	• For posterior blepharitis, a brief gentle eyelid massage following the use of a warm compress can help improve expression of Meibomian gland secretions. Care must be taken to prevent mechanical irritation. • Pressure on the eye area should be avoided in people with glaucoma. • For further information, see NICE CKS guidance on blepharitis. • Cosmetics should be avoided. • If hygiene measures are ineffective after 2 weeks offer a trial of chloramphenicol eye ointment.

Group	**Eye**
Condition	**Chlamydia conjunctivitis**

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.

Pathway 1	**Treatment of chlamydia conjunctivitis**

/1

Refer patient to sexual health services for STI screening (see prescribing notes below). Doxycycline is contraindicated in pregnancy.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 7 days

/2

Azithromycin	Azithromycin 250mg capsules Azithromycin 200mg/5ml oral suspension	1g single dose followed by 500mg daily for 2 days

Prescribing notes	• For proven chlamydial infection, appropriate systemic therapy should be prescribed. Refer the patient to sexual health services for STI screening. See also chlamydia recommendations.

Group	Eye
Condition	Corneal abrasions

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.

Pathway 1	Treatment of corneal abrasions

/1

Refer to community optometrist

Chloramphenicol	Chloramphenicol 1% eye ointment	Every 6-8 hours for 3-7 days. Frequency and duration is guided by severity and response to treatment.

WITH/ WITHOUT

Lubricating ointment

Xailin Night	Xailin Night eye ointment preservative free	Frequency and duration is guided by severity and response to treatment.

Prescribing notes	• Corneal abrasions may be treated with chloramphenicol eye ointment +/- lubricants. Optional lubricating ointment (e.g. Xailin Night) may be added in-between, i.e. alternating with the chloramphenicol. • Simple analgesics such as paracetamol or ibuprofen may be required for pain relief. • Following healing, local ophthalmologists recommend lubricating eye ointment at night for 3–6 months in most cases. This is important when there is underlying pathology such as trauma or map-dot-fingerprint (MDF) corneal dystrophy to prevent recurrent erosion syndrome. Lubricating eye drops (e.g carbomer, sodium hyaluronate) may also be recommended, with the frequency of administration to be decided based on initial presentation and previous history of corneal abrasion. Lubricant eye drops and ointments can be purchased 'over the counter' in pharmacies. For more information on formulary choices see recommendations for dry eyes.

Group	Eye
Condition	Corneal infection

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.
Guidance links	NICE CKS: Herpes simplex - ocular

Pathway 1	Herpes simplex corneal infection

/1

Treat with ganciclovir eye gel with or without oral aciclovir. Oral aciclovir is used where the ophthalmologist notes deeper ocular involvement or recurrent HSV infections.

	Ganciclovir	Ganciclovir 0.15% eye gel	Apply 5 times a day until healing complete, then apply 3 times a day for a further 7 days, treatment does not usually exceed 21 days.
WITH/ WITHOUT	**Aciclovir**	Aciclovir 200mg tablets Aciclovir 400mg tablets Aciclovir 400mg/5ml oral suspension sugar free	200mg 5 times daily for 7 days (increase to 400mg 5 times daily if immunocompromised.) 400mg twice daily maintenance dose to prevent recurrence.

Prescribing notes	• During treatment with ganciclovir women of childbearing age should use effective contraception and men with partners of childbearing age should be advised to use barrier contraception during and for at least 90 days after treatment. • NICE CKS guidance on ocular herpes simplex advises to refer all cases of suspected ocular herpes simplex infection to Eye Casualty or an emergency eye service for same-day assessment and specialist management. Do not initiate drug treatment while awaiting specialist ophthalmology assessment.

Group	Eye
Condition	Ophthalmic zoster

Opening text	For general guidance on administration of drugs to the eye and on control of microbial contamination of eye drops, please see the 'General information on eye drops' recommendations.

Pathway 1	Treatment of ophthalmic zoster

/1

Treat with oral aciclovir with or without ganciclovir eye gel. Ganciclovir used where on examination there is ocular epithelial involvement.

	Aciclovir	Aciclovir 800mg tablets Aciclovir 400mg/5ml oral suspension sugar free	800mg 5 times daily for 7 days.
WITH/ WITHOUT	**Ganciclovir**	Ganciclovir 0.15% eye gel	Apply 5 times a day until healing complete, then apply 3 times a day for a further 7 days, treatment does not usually exceed 21 days.

Prescribing notes	• Oral aciclovir should be prescribed immediately for ophthalmic zoster. • During treatment with ganciclovir eye gel, women of childbearing age should use effective contraception, and men with partners of childbearing age should be advised to use barrier contraception during and for at least 90 days after treatment.

Group	Gastro-intestinal
Condition	Cholecystitis

Pathway 1	Acute mild cholecystitis

/1

No antibiotic treatment.

Group	Gastro-intestinal
Condition	Clostridium difficile

Pathway 1	Treatment of C Diff infection

Prescribing notes	• Health Protection Scotland guidance contains algorithms for management of first episode, first recurrence and second/subsequent recurrences. These include information on the choices of treatment and non-antimicrobial strategies. • Public Health England have recently reviewed C Diff guidance and a review of HPS guidance is expected. • Stop unnecessary antibiotics. • Loperamide and constipating drugs should not be used. • Proton Pump Inhibitor drugs (PPIs) are recognised as a risk factor for the development of *C.difficile* and relapses. PPIs should therefore only be continued when there is clear indication. Ranitidine may be used as an alternative to PPI for gastric acid suppression. All forms of ranitidine are currently out of stock with no date of recovery – please see the national MSAN information for further guidance. • The patient should be isolated until symptoms have resolved for 48 hours. • Clearance samples **should not** be sent. • If patient has underlying bowel pathology that may contribute to diarrhoea, this should be recorded on sample lab requests. • If the patient is a care home resident and has CDI then consult with the health protection team in Public Health for advice regarding reducing the risk of transmission to other residents. • In recurrent CDI contact infectious diseases to discuss whether faecal transplant is an option.

Group	Gastro-intestinal
Condition	Diarrhoea

The pathways for this condition sit within the Gastro-intestinal system chapter.

Group	Gastro-intestinal
Condition	Diverticulitis

Pathway 1	Uncomplicated diverticulitis

/1

No antibiotic treatment, if systemically well

/2

If systemically unwell, immunocompromised or significant comorbidity

	Co-trimoxazole	Co-trimoxazole 80mg/400mg tablets Co-trimoxazole 160mg/800mg tablets	960mg every 12 hours for 5 days
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 5 days

Prescribing notes	• Current guidelines advising the use of antibiotics in uncomplicated diverticulitis are not evidence based. In the majority of patients.

Group	**Gastro-intestinal**
Condition	**Giardiasis**

Pathway 1	**Treatment of giardiasis**

/1

Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	2g once daily for 3 days, alternatively 400mg every 8 hours for 5 days.

Prescribing notes	• Recurrence of giardiasis is high even with optimal treatment, therefore follow-up with a stool sample is advised.

Group	Gastro-intestinal
Condition	Shigella

Pathway 1	Treatment of shigella

/1

No antibiotic treatment for healthy people with mild disease

/2

Consider antibiotic treatment for people with severe disease, immunocompromised or bloody diarrhoea. Initiate treatment only on the advice of a microbiologist.

Ciprofloxacin	Ciprofloxacin 500mg tablets Ciprofloxacin 250mg/5ml oral suspension	500mg every 12 hours for 1 day only. Continued for 5 days if organism is Shigella dysenteriae.

Prescribing notes	• Antibiotic treatment is not recommended for healthy people with mild shigellosis. Consider antibiotic treatment for people: with severe disease, immunocompromised or bloody diarrhoea. • If antibiotic treatment is indicated, seek advice from the local microbiologist regarding antibiotic management. Consider safety issues regarding ciprofloxacin and potentially long lasting side-effects prior to prescribing. Amoxicillin or trimethoprim can be used if organism is sensitive.

Group	Gastro-intestinal
Condition	Threadworms

Guidance links	NICE CKS: Threadworm

Pathway 1	Treatment of threadworms

/1

Mebendazole	Mebendazole 100mg chewable tablets sugar free Mebendazole 100mg/5ml oral suspension	100mg single dose

Prescribing notes	
	• Antihelmintics should be used in combination with hygienic measures (hand washing, pants at night, morning shower) to break the cycle of auto-infection. On day 1 wash sleepwear and bed linen, dust and vacuum. All members of the family should be treated at the same time. • Washing hands and scrubbing nails before each meal and after each visit to the toilet is essential. A bath taken immediately after rising will remove ova laid during the night. • One dose of mebendazole is usually sufficient for treatment of threadworms; if infection persists a second dose may be repeated after 2 weeks. • Mebendazole should not be used if <6 months of age. Use in age 6 months to 2 years is off label. • Mebendazole is available over-the-counter. • In pregnant women (at least in the first trimester) only use hygiene measures (for 6 weeks), mebendazole should not be used. • For more information refer to the NICE CKS for threadworm

Group	Genital system
Condition	Bacterial vaginosis

Pathway 1	Treatment of bacterial vaginosis

/1

Topical treatment with either metronidazole or clindamycin, or oral metronidazole.

	Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 12 hours for 7 days or 2g stat
		Metronidazole 0.75% vaginal gel	One applicatorful daily for 5 days, dose to be administered at night
OR	**Clindamycin**	Clindamycin 2% vaginal cream	One applicatorful daily for 7 nights, dose to be administered at night

Prescribing notes	• Offer self-care advice to minimise contributing factors, e.g. reduce exposure to vaginal douching and the use of antiseptics, bubble baths, or shampoos in the bath. A trial of lactic acid vaginal gel may be considered, a proprietary preparation (Relactagel) is available for sale to the public. • Relapse is less frequent with 7-day treatment of metronidazole than STAT dose. • Bacterial vaginosis reflects altered vaginal flora; recurrence is frequent but this is not a sexually transmissible condition and treatment of the sexual partner is not necessary. • Clindamycin cream can weaken condoms. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to the sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Balanitis

Pathway 1	Treatment of balanitis

/1

Balanitis will often respond to saline washes 3 times daily (one teaspoonful of salt to a pint of water).

Prescribing notes	• With any genital symptoms always consider the possibility of sexually transmitted infection (STI). Primary syphilis can present as balanitis, always consider this possibility and perform syphilis serology and syphilis PCR if in doubt. Refer the individual and partners to sexual health service.

Group	Genital system
Condition	Bartholin's gland infection

Pathway 1	Treatment of Bartholin's gland infection

/1

Surgical intervention should be sought.

Prescribing notes	• First line treatment of Bartholin's abscess is surgical drainage. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Chlamydia

Pathway 1	Treatment of chlamydia

/1

Doxycycline is contraindicated in pregnancy.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 7 days

/2

Suitable for use in pregnancy/breastfeeding and in allergy or intolerance to doxycycline.

Azithromycin	Azithromycin 250mg capsules Azithromycin 200mg/5ml oral suspension	1g (4 x 250mg) single dose followed by 500mg daily for 2 days

Prescribing notes	• Azithromycin may be used in pregnancy. There is limited data on human use in pregnancy, but clinical experience suggests that it is safe and effective. • See UK BASHH National Guidelines for the management of genital tract infection with *Chlamydia trachomatis* for further information. • Patients should be advised to avoid sexual intercourse (including oral sex) until they and their partner(s) have completed treatment (wait 7 days if treatment with azithromycin). Advice regarding appropriate action if using hormonal contraceptives is also required. • See also recommendations for chlamydia conjunctivitis. • For chlamydial epididymo-orchitis where gonorrhoea is excluded, use doxycycline 100mg twice daily for 14 days. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Epididymo-orchitis

Pathway 1	Treatment of bacterial epididymo-orchitis (STI cause suspected)

/1

If STI suspected refer to GUM. I Consider important safety issues and potentially long-lasting side-effects prior to prescribing (see prescribing notes).

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 14 days

Prescribing notes	• Send an MSU in all patients and consider a urine NAAT to exclude chlamydia and/or gonorrhoea. • Torsion of the spermatic cord (testicular torsion) is the most important differential diagnosis. It is a surgical emergency. It should be considered in all patients and should be excluded first as testicular salvage **IS REQUIRED WITHIN 6 HOURS** and becomes decreasingly likely with time. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Pathway 2	Treatment of bacterial epididymo-orchitis (UTI cause suspected)

/1

In patients with no sexual risk factors, older patients, or catheter in situ treatment choice is based on urine culture, see prescribing notes. Consider important safety issues and potentially long-lasting side-effects prior to prescribing (see prescribing notes).

	Ofloxacin	Ofloxacin 200mg tablets	200mg every 12 hours for 14 days
OR	**Trimethoprim**	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 14 days

Prescribing notes	• Refer to important safety information for all quinolones prior to prescribing. • Send an MSU in all patients and consider a urine NAAT to exclude chlamydia and/or gonorrhoea. • Torsion of the spermatic cord (testicular torsion) is the most important differential diagnosis. It is a surgical emergency. It should be considered in all patients and should be excluded first as testicular salvage **IS REQUIRED WITHIN 6 HOURS** and becomes decreasingly likely with time. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	**Genital system**
Condition	**Genital herpes**

Pathway 1	**Treatment of genital herpes**

/1

Treatment should start within 5 days of new lesions or systemic symptoms.

Aciclovir	Aciclovir 400mg tablets Aciclovir 400mg/5ml oral suspension sugar free	400mg every 8 hours for 5 days

Prescribing notes	• With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Pathway 2	Treatment of recurrent genital herpes

/1

Mild recurrences should be treated symptomatically

/2

Intolerable recurrences

Aciclovir	Aciclovir 800mg tablets Aciclovir 400mg/5ml oral suspension sugar free	800mg every 8 hours for 2 days

Prescribing notes	• Mild recurrences: treat symptomatically with saline bathing and analgesia. • Frequent recurrences >6 per year, refer to BASHH Guideline anogenital herpes, 2014. Can consider suppressive treatment with aciclovir 400mg twice daily for 6-12 months then review. Refer to BASHH guideline for further information. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Genital warts

Pathway 1	Treatment of genital warts

/1

Podophyllotoxin as detailed below, or liquid nitrogen applied every 2-3 weeks.

Podophyllotoxin	Podophyllotoxin 0.5% solution Podophyllotoxin 0.15% cream	Applied every 12 hours for 3 consecutive days, repeated at weekly intervals if necessary for a total of 4-5 courses depending on product used.

Prescribing notes	• Podophyllotoxin is contra-indicated in pregnancy. For small numbers of discrete warts liquid nitrogen is an alternative to podophyllotoxin and could be administered every 2-3 weeks. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Gonorrhoea

Pathway 1	Treatment of uncomplicated gonorrhoea

/1

Refer to sexual health services

Ceftriaxone	Ceftriaxone 1g powder for solution for injection vials	1g by intramuscular injection (ceftriaxone in lidocaine)

Prescribing notes	• Refer all patients with a potential diagnosis of gonorrhoea to sexual health services, for diagnosis and treatment. • Other sexually transmitted diseases often occur in association with gonorrhoea. Chlamydia may be present in 40-50% of sufferers. • A full STI screen will be done, with antibiotic sensitivity testing, partners notified and treated and test of cure performed 3-4 weeks after initial treatment. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Pelvic inflammatory disease

Pathway 1	Treatment of pelvic inflammatory disease

/1

	Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 12 hours for 14 days
AND	**Doxycycline**	Doxycycline 100mg capsules	100mg every 12 hours for 14 days

Prescribing notes	• Refer to important safety information for all quinolones prior to prescribing. • The commonest cause of pelvic inflammatory disease is Chlamydia. Co-amoxiclav has poor activity against chlamydia and is therefore inappropriate as monotherapy for the treatment of pelvic inflammatory disease. • If infection with gonorrhoea is suspected (partner has it, sex abroad, severe symptoms) the patient should be referred to Sexual Health Services for ceftriaxone regimen. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Prostatitis

Guidance links	NICE NG110: Prostatitis (acute)

Pathway 1	Treatment of acute prostatitis

/1

Send urine for culture. Consider important safety issues and potentially long-lasting side-effects prior to prescribing (see prescribing notes).

Ciprofloxacin	Ciprofloxacin 500mg tablets Ciprofloxacin 250mg/5ml oral suspension	500mg every 12 hours for 14 days. Reassess at 14 days, if symptoms completely resolved stop otherwise complete 28 days total.

/2

Only if urine culture shows sensitivity.

Trimethoprim	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 14 days

Prescribing notes

- Refer to important safety information for all quinolones prior to prescribing.
- Refer to NICE guideline NG110 – Prostatitis (acute): antimicrobial prescribing.
- Send MSU for culture and start treatment.
- Advise paracetamol (+/- low-dose weak opioid) for pain, or ibuprofen if preferred and suitable.
- Review antibiotic treatment after 14 days and either stop antibiotics or continue for a further 14 days if needed (based on assessment of history, symptoms, clinical examination, urine and blood tests).
- Intravenous antibiotics may be indicated if unable to take oral antibiotics or severely unwell, refer to NICE guideline above.
- With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Trichomoniasis

Pathway 1	Treatment of trichomoniasis

/1

	Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 12 hours for 7 days or 2g STAT dose

Prescribing notes	• With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Urethritis

Pathway 1	Treatment of non-specific urethritis (NSU)

/1

Doxycycline is contraindicated in pregnancy.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 7 days

/2

Azithromycin	Azithromycin 250mg capsules Azithromycin 200mg/5ml oral suspension	1g (4 x 250mg) single dose followed by 500mg daily for 2 days

Prescribing notes	• If first episode of NSU, refer to sexual health service. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: younger patient, a new sexual partner or more than one sexual partner in the past year, lack of consistent condom use and a contact of a sexually transmitted infection.

Group	Genital system
Condition	Vaginal candidiasis (thrush)

Pathway 1	Treatment of vaginal candidiasis

/1

Fluconazole is contraindicated in pregnancy.

Fluconazole	Fluconazole 150mg capsules	150mg orally as a single dose

/2

Clotrimazole	Clotrimazole 500mg pessaries	500mg to be inserted vaginally at night for 1 night

Prescribing notes	• Clotrimazole and fluconazole are available over-the-counter. • There is no evidence that treating the partner of women suffering from candidiasis is helpful. • Patients who are inserting intravaginal cream or pessaries into the vagina, may also apply topical clotrimazole cream to the vulva. • With any genital symptoms always consider the possibility of sexually transmitted infection (STI). People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer the individual and partners to sexual health service. Risk factors: <25yrs, no condom use, recent (<12mth)/frequent change of partner, symptomatic partner.

Group	Respiratory
Condition	Bronchitis

Pathway 1	Treatment of acute cough and bronchitis

/1

In otherwise healthy individuals no antibiotic treatment

/2

If >80 years of age and one of: hospitalisation in past year; taking oral steroids; insulin-dependent diabetics; congestive heart failure; or >65 years with 2 of the above.

Amoxicillin	Amoxicillin 500mg capsules Amoxicillin 250mg/5ml oral suspension sugar free	500mg every 8 hours for 5 days

OR

For penicillin allergy or no response to amoxicillin.

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

Prescribing notes	• Do not prescribe an antibiotic for uncomplicated coughs and colds when the infection is likely to be viral in nature- only use antibiotics when there is evidence of bacterial infection. • A higher dose of amoxicillin (1g every 8 hours) may be required for haemophyllus infections, please consult any susceptibility reports. • The vast majority of respiratory tract illness is self-limiting and it is recommended that the term “infection” is avoided. Purulent sputum alone is not a marker for antibiotic treatment. • Antibiotics are of limited benefit in acute cough and bronchitis if there are no other significant co-morbidities. Symptom resolution can take 3 weeks. • Most infective exacerbations of asthma do not require antibiotics.

Group	Respiratory
Condition	Chronic Obstructive Pulmonary Disease (COPD)

Pathway 1	Acute infective exacerbation of COPD

Please refer to the COPD section of the Respiratory formulary chapter for recommendations.

Group	Respiratory
Condition	Pneumonia - community acquired (CAP)

Pathway 1	Treatment at home - CRB-65 score of 0

/1

Amoxicillin	Amoxicillin 500mg capsules Amoxicillin 250mg/5ml oral suspension sugar free	500mg every 8 hours for 5 days

OR

For penicillin allergy, or if atypical infection is suspected.

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

Prescribing notes	The **CRB-65** scale can be used in community in conjunction with clinical judgement to help assess the need for hospital admission and risk of death due to pneumonia. One point is given for each indicator; 0 low risk, consider home based care, 1-2 intermediate risk, consider hospital assessment or admission, ≥3 urgent hospital admission. • **C**onfusion AMT <8 • **R**espiratory Rate ≥ 30/min • **B**P diastolic ≤ 60mmHg or systolic <90mmHg • **65** years or older Additional notes: • The vast majority of respiratory tract illness is self-limiting and it is recommended that the term “infection” is avoided. Purulent sputum alone is not a marker for antibiotic treatment. • A higher dose of amoxicillin (1g every 8 hours) may be required, please consult any susceptibility reports. • Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course is needed or the person is not clinically stable (fever in past 48 hours or more than one sign of clinical instability [systolic blood pressure <90 mmHg, heart rate >100/minute, respiratory rate >24/minute, arterial oxygen saturation <90% or PaO2 <60 mmHg in room air]).

	• Mycoplasma pneumoniae infection occurs in outbreaks approximately every 4 years. • CURB-65 is used in hospital to assess the severity of infection and includes the same criteria above and in addition Urea level >7mmol/L. • May be diagnosed at home (in the absence of chest X-ray) if there are symptoms of lower respiratory tract illness plus systemic features plus focal signs. • Patients that fail to improve within 48 hours should be considered for hospital admission or chest X-ray. • If clinically required courses may be extended to 10 days in total. • Ciprofloxacin has no activity against *Streptococcus pneumoniae* and should be restricted to the treatment of proven persistent pseudomonal infections i.e. sputum cultures will have grown pseudomonas with demonstrated sensitivity to ciprofloxacin (more often in patients with bronchiectasis). Consider important safety issues and potentially long lasting side-effects prior to prescribing ciprofloxacin. • In pneumonia following influenza, *Staph aureus* infection is possible and doxycycline, clarithromycin, co-trimoxazole or co-amoxiclav may be considered. Co-amoxiclav should be avoided in the over 65 age group when possible.

Pathway 2	Treatment at home - CRB-65 score of 1-2

/1

Amoxicillin	Amoxicillin 500mg capsules Amoxicillin 250mg/5ml oral suspension sugar free	500mg every 8 hours for 5 days

OR

If penicillin allergic, or if atypical infection suspected.

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days treatment in total

Prescribing notes	The **CRB-65** scale can be used in community in conjunction with clinical judgement to help assess the need for hospital admission and risk of death due to pneumonia. One point is given for each indicator; 0 low risk, consider home based care, 1-2 intermediate risk, consider hospital assessment or admission, ≥3 urgent hospital admission. • **C**onfusion AMT <8 • **R**espiratory Rate ≥ 30/min • **B**P diastolic ≤ 60mmHg or systolic <90mmHg • **65** years or older Additional notes: • The vast majority of respiratory tract illness is self-limiting and it is recommended that the term “infection” is avoided. Purulent sputum alone is not a marker for antibiotic treatment. • A higher dose of amoxicillin (1g every 8 hours) may be required, please consult any susceptibility reports. • Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course is needed or the person is not clinically stable (fever in past 48 hours or more than one sign of clinical instability [systolic blood pressure <90 mmHg, heart rate >100/minute, respiratory rate >24/minute, arterial oxygen saturation <90% or PaO2 <60 mmHg in room air]). • Mycoplasma pneumoniae infection occurs in outbreaks approximately every 4 years. • CURB-65 is used in hospital to assess the severity of infection and includes the same criteria above and in addition Urea level >7mmol/L.

	• May be diagnosed at home (in the absence of chest X-ray) if there are symptoms of lower respiratory tract illness plus systemic features plus focal signs. • Patients that fail to improve within 48 hours should be considered for hospital admission or chest X-ray. • If clinically required courses may be extended to 10 days in total. • Ciprofloxacin has no activity against *Streptococcus pneumoniae* and should be restricted to the treatment of proven persistent pseudomonal infections i.e. sputum cultures will have grown pseudomonas with demonstrated sensitivity to ciprofloxacin (more often in patients with bronchiectasis). Consider important safety issues and potentially long lasting side-effects prior to prescribing ciprofloxacin. • In pneumonia following influenza, *Staph aureus* infection is possible and doxycycline, clarithromycin, co-trimoxazole or co-amoxiclav may be considered. Co-amoxiclav should be avoided in the over 65 age group when possible.

Pathway 3	**Treatment of MRSA chest infection**

/1

Check sensitivities, if possible before starting systemic antibiotics.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 5 days

Prescribing notes	• MRSA, like other *Staphylococcus aureus* strains, may be part of normal colonising flora, for example, on skin, on a leg ulcer, in urine in an asymptomatic catheterised patient. The criteria for treating MRSA are the same as for any other pathogen, i.e. clinical evidence of chest infection, soft tissue infection, or systemic illness in a catheterised patient. • Most MRSA locally is sensitive to doxycycline. • If severe infection or no response to monotherapy after 24-48 hours, seek advice from Microbiology.

Group	Respiratory
Condition	Tuberculosis (TB)

Pathway 1	Treatment of tuberculosis

Prescribing notes	• Treatment for tuberculosis infection should be initiated in consultation with respiratory or infection specialists. • Tuberculosis should be considered if there is a lack of response to first line antimicrobial treatment. • Tuberculosis is treated in two phases - an initial phase using 4 drugs and a continuation phase using 2 drugs in fully sensitive cases. • The concurrent use of 4 drugs during the initial phase is designed to reduce the bacterial population as rapidly as possible and to prevent the emergence of drug-resistant bacteria. The initial phase drugs should be continued for 2 months. After the initial phase, treatment is continued for a further 4 months. • Drug administration needs to be **fully supervised** (directly observed therapy, DOT) in patients who cannot comply reliably with the treatment regimen.

Group	Respiratory
Condition	Upper respiratory tract illness

Pathway 1	Treatment of upper respiratory tract illness

/1

No antibiotic treatment

Prescribing notes	• The vast majority of respiratory tract illness is self-limiting and it is recommended that the term “infection” is avoided. Purulent sputum alone is not a marker for antibiotic treatment. • Also see Ear, nose and oropharynx chapter of the formulary.

Group	Ulcers and osteomyelitis
Condition	Ulcers

Guidance Links	NHS Borders [LINK BEING UPDATED] NHS Fife: Diabetic foot guidance NHS Lothian: Diabetic foot infection guidance

Pathway 1	Treatment of foot ulcers

Prescribing notes

- Please refer to local guidance on management of foot ulcers.
  - NHS Borders [LINK BEING UPDATED]
  - NHS Fife diabetic foot guidance
  - NHS Lothian diabetic foot infection guidance
- When selecting an antibiotic consider risk factors for *Clostridium difficile* infection (CDI). Treatment with co-amoxiclav or ciprofloxacin or clindamycin has a higher association with subsequent CDI, than flucloxacillin or doxycycline or co-trimoxazole.
- Antibiotics are not required for ulceration without surrounding skin infection.
- Consider need to investigate bone infection in diabetic patients or those with chronic ulceration.
- Antibiotics alone will not heal diabetic foot ulcers. **All patients with diabetic foot ulcers should be managed in a multidisciplinary foot-care setting**. Attention must also be given to diabetic control, peripheral circulation, pressure relief, suitable dressings and regular debridement by a podiatrist. Antibiotic therapy should be initiated in the diabetic foot clinic guided by specimens taken by the diabetic podiatrist.
- Superficial swabs may grow colonising organisms and not reflect the infecting organism.
- Occasionally polymicrobial infection is present and may require antibiotics to cover *Pseudomonas*, *S. aureus* and anaerobes unless pathogen is known from deep sample.
- Seven days of antibiotics are usually sufficient for superficial skin infection associated with skin ulceration. If bony infection is confirmed treatment may need to be based on response up to 4-6 weeks.

Group	Urinary tract
Condition	Urinary tract infection (UTI)

Guidance Links	RCGP TARGET Antibiotics - UTI

Pathway 1	Lower UTI in non-pregnant women

/1

IMPORTANT – Please refer to prescribing notes for guidance on first line choice.

	Trimethoprim	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 3 days
OR	**Nitrofurantoin**	Nitrofurantoin 100mg modified-release capsules	100mg MR every 12 hours for 3 days

/2

No improvement in lower UTI symptoms on first-choice taken for at least 48 hours, or when first-choice not suitable.

	Cefalexin	Cefalexin 250mg capsules	500mg every 12 hours for 3 days

/3

For use on the advice of a microbiologist in confirmed multi-antibiotic resistant enterobacteriaceae.

	Fosfomycin SI	Fosfomycin 3g granules sachets	3g single dose
OR	**Pivmecillinam** SI	Pivmecillinam 200mg tablets	400mg every 8 hours for 3 days

Prescribing notes	Guidance on first line choices:

- First choice is trimethoprim, however if one of the following is present then use nitrofurantoin:
  - Hospital inpatient in previous 12 months
  - Nursing/Care home resident
  - Patient >65 years
  - Received trimethoprim in past 3 months
  - Trimethoprim resistant organism in any of the last 3 urine culture (up to 12 months ago)
- If renal function prevents use of nitrofurantoin, then use cephalexin.
- If a urine culture has shown an organism resistant to trimethoprim, nitrofurantoin and cefalexin in the last three months and the patient presents with new symptoms, then send a repeat urine culture and consider using one of the antibiotics listed on the microbiology report to which the organism was sensitive.
- If a patient remains symptomatic despite initial antibiotics send a urine culture (consider starting one of the alternatives if severe symptoms whilst awaiting the result) if culture negative stop antibiotics and re-assess.

Other prescribing notes:

- Asymptomatic bacteriuria does not require treatment, except in pregnancy.
- A short course of antibiotics, for women with severe/>3 symptoms (dysuria, urgency, frequency, polyuria, suprapubic tenderness), is usually sufficient for uncomplicated UTIs in women.
- Give TARGET UTI leaflet.
- Women with mild/≤2 symptoms; give pain relief and consider delayed antibiotic.
- See the following SAPG link for more information on alternative management of lower urinary tract infection in non-pregnant women.
- Nitrofurantoin should be avoided in patients with an estimated glomerular filtration rate (eGFR) of less than 45mL/min/1.73m^2. However, a short course (3 to 7 days) may be used with caution in patients with an eGFR of 30 to 44mL/min/1.73m^2 to treat uncomplicated lower urinary tract infection caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk.
- Trimethoprim should be used with caution in patients with eGFR less than 30mL/min/1.73m^2, refer to BNF for dose adjustments in renal impairment.
- A transient increase in serum creatinine may occur with trimethoprim treatment.
- See BNF for dosing instructions for other antibiotics in renal impairment.
- Do not use dipstick urine testing in the diagnosis of UTI in older people. See SAPG guidance for diagnosis and management of suspected UTI in people aged 65 and over.

Pathway 2 Lower UTI in pregnant women

/1

Should be avoided at term in pregnancy. Nitrofurantoin should be avoided if eGFR ≤ 45mL/minute, see prescribing notes below for more information.

Nitrofurantoin	Nitrofurantoin 100mg modified-release capsules	100mg MR every 12 hours for 7 days (avoid at term)

/2

Cefalexin	Cefalexin 250mg tablets Cefalexin 250mg capsules	500mg every 12 hours for 7 days

/3

Amoxicillin for use only if culture results available and susceptible.

Amoxicillin	Amoxicillin 500mg capsules Amoxicillin 250mg/5ml oral suspension sugar free	500mg every 8 hours for 7 days

Prescribing notes

- Send urine for culture before starting antibiotics; and another 7 days after completion of antibiotics to check for cure.
- Asymptomatic bacteriuria in pregnancy; confirm culture result with second urine culture before treating. Choose from nitrofurantoin (avoid at term), amoxicillin or cefalexin based on recent culture and susceptibility results.
- Give TARGET UTI leaflet.
- Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly.
- Nitrofurantoin should be avoided in patients with an estimated glomerular filtration rate (eGFR) of less than 45mL/min/1.73m^2. However, a short course (3 to 7 days) may be used with caution in patients with an eGFR of 30 to 44mL/min/1.73m^2 to treat uncomplicated lower urinary tract infection caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk.
- See BNF for dosing instructions for other antibiotics in renal impairment.
- Send urine for culture before starting antibiotics; and another 7 days after completion of antibiotics to check for cure.
- Contact microbiology for advice if the formulary choices are unsuitable.

Pathway 3	Lower UTI in men

/1

Nitrofurantoin should be avoided if eGFR ≤ 45mL/minute, see prescribing notes below for more information.

	Nitrofurantoin	Nitrofurantoin 100mg modified-release capsules	100mg MR every 12 hours for 7 days
OR	**Trimethoprim**	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 7 days

/2

Consider alternative diagnosis basing antibiotic choice on recent culture and susceptibility results.

/3

For use on the advice of a microbiologist in confirmed multi-antibiotic resistant enterobacteriaceae.

	Fosfomycin SI	Fosfomycin 3g granules sachets	3g stat and then 3g after 72 hours (note this dose is off label)
OR	**Pivmecillinam** SI	Pivmecillinam 200mg tablets	400mg every 8 hours for 3 days

Prescribing notes	• Give TARGET UTI leaflet. • Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly. • Resistance to trimethoprim may be more likely if used in the past 3 months or if previous urine culture suggests resistance. • Nitrofurantoin should be avoided in patients with an estimated glomerular filtration rate (eGFR) of less than 45mL/min/1.73m^2. However, a short course (3 to 7 days) may be used with caution in patients with an eGFR of 30 to 44mL/min/1.73m^2 to treat uncomplicated lower urinary tract infection caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk. • Trimethoprim should be used with caution in patients with eGFR less than 30mL/min/1.73m^2, refer to BNF for dose adjustments in renal impairment.

	• A transient increase in serum creatinine may occur with trimethoprim treatment. • See BNF for dosing instructions for other antibiotics in renal impairment. • It is always necessary to strive to establish the cause of male UTIs. An MSSU should always be obtained prior to treatment but treatment need not be deferred pending the result. • Do not use dipstick urine testing in the diagnosis of UTI in older people. See SAPG guidance for diagnosis and management of suspected UTI in people aged 65 and over.

Pathway 4	Recurrent UTI

/1

Advise simple measures (see prescribing notes), including hydration and analgesics. Try additional steps (see prescribing notes). When ongoing UTI recurrent then consider post trigger treatment doses, self-start antibiotics (3 day course depending on recent sensitivities or short term prophylaxis).

Prescribing notes

- A recurrent UTI is defined as two positive MSU in last 6 months or three positive MSU in last 12 months. If MSU is not possible then ALL of the symptoms (frequency, dysuria, urgency +/- bladder pain and prompt resolution with antibiotics).
- Refer to NICE guideline NG112: Urinary tract infection (recurrent): antimicrobial prescribing.
- Refer to SAPG guidance for Management of recurrent urinary tract infection in non-pregnant women.
- NHS Lothian RefHelp has a useful page with guidance on recurrent UTIs.
- First advise about behavioural and personal hygiene measures, and self-care to reduce the risk of UTI.
- If antibiotics are prescribed, discontinue at 6 months, unless continuation is clinically indicated
- Refer or seek specialist advice for men, people with recurrent upper UTI, recurrent upper UTI when the underlying cause is unknown, pregnant women and people with suspected cancer.

Additional steps

- For postmenopausal women with risk factors such as atrophic vaginitis, consider prescribing topical oestrogen, review in 12 months.
- Non pregnant women may wish to purchase and try D-mannose (if *E.coli* UTI) or cranberry products, note the sugar content of these products.
- Methenamine tablets 1g twice daily and over the counter high dose vitamin C 1000mg can be tried for a period of 6 months.
- For non-pregnant women, if no improvement, consider single-dose antibiotic prophylaxis for exposure to a trigger (review within 6 months) or alternatively self-start antibiotics – a 3-day course of antibiotic as per recent sensitivities, depending on patient's circumstances.
- For non-pregnant women (if no improvement or no identifiable trigger) or with specialist advice for pregnant women and men, consider a trial of daily antibiotic prophylaxis (review within 6 months).
- If there is evidence that the organisms have developed resistance to the agent being used for prophylaxis it should be stopped.
- Nitrofurantoin should not be used for long term treatments; it has been associated with serious lung and liver adverse effects.

Pathway 5	Pyelonephritis in non-pregnant women and men

/1

Co-amoxiclav	Co-amoxiclav 500mg/125mg tablets Co-amoxiclav 250mg/62mg/5ml oral suspension sugar free	625mg every 8 hours for 7 days

OR

Consider important safety issues and potentially long lasting side effects before prescribing ciprofloxacin.

Ciprofloxacin	Ciprofloxacin 500mg tablets Ciprofloxacin 250mg/5ml oral suspension	500mg every 12 hours for 7 days

OR

Trimethoprim can only be used in susceptible infections.

Trimethoprim	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 14 days

Prescribing notes	• Refer to important safety information for all quinolones prior to prescribing. • Complicated UTI refers to patients with systemic toxicity, flank pain and rigors; haematuria alone does not constitute a complicated UTI. • If admission to hospital not required, send MSU for culture and sensitivities and start antibiotics. If no response within 24 hours admit to hospital. • If no oral treatment options are available due to resistance or intolerance, consider IV antibiotics. These may be available via OPAT service. • Pregnant women with pyelonephritis should be treated in hospital.

Pathway 6	Treatment of catheter-associated UTI

/1

Antibiotic for symptomatic infection, if there are no symptoms of upper UTI. Nitrofurantoin should be avoided if eGFR ≤ 45mL/minute, see prescribing notes below for more information.

Nitrofurantoin	Nitrofurantoin 100mg modified-release capsules	100mg every 12 hours for 7 days

Prescribing notes	• Refer to NICE guideline NG113: Urinary tract infection (catheter- associated): antimicrobial prescribing. • Dipstick urinalysis is of no diagnostic value in determining if a catheterised patient has a urine infection. • In catheterised patients, pyuria and bacteriuria are common and do not merit antibiotics. Bladder spasm and dysuria are usually catheter associated. • Signs and symptoms compatible with catheter-associated UTI include new onset or worsening of fever, rigors, new onset delirium, flank pain; costo-vertebral angle tenderness; acute haematuria; and pelvic discomfort. • Nitrofurantoin should be avoided in patients with an estimated glomerular filtration rate (eGFR) of less than 45mL/min/1.73m^2. However, a short course (3 to 7 days) may be used with caution in patients with an eGFR of 30 to 44mL/min/1.73m^2 to treat uncomplicated lower urinary tract infection caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk. • For alternative choices of antibiotic refer to the NICE UTI (catheter): antimicrobial prescribing visual summary. • Obtain a urine sample before antibiotics are taken. Take the sample from the catheter via a sampling port if provided (using aseptic technique). If the catheter has been changed take the sample from the new catheter. If the catheter has been removed obtain a midstream specimen of urine. • Remove or change the catheter if it has been in place for more than 7 days. But do not delay antibiotic treatment. • Check CSU result to ensure appropriate antibiotics are being given. If a change of antibiotic is required, ideally change the catheter again. • Advise adequate fluid intake and paracetamol for pain. • Gentamicin should not be used routinely when catheters are changed. • Where patients have developed sepsis related to changing a long-term urinary catheter, prophylaxis may be considered. Previously documented antimicrobial resistance should be considered when choosing an appropriate antimicrobial.

Pathway 7	Treatment of MRSA - UTIs

/1

Check sensitivities, if possible before starting systemic antibiotics.

Trimethoprim	Trimethoprim 200mg tablets Trimethoprim 50mg/5ml oral suspension sugar free	200mg every 12 hours for 3 days for women and 7 days for men

/2

Check sensitivities, if possible before starting systemic antibiotics.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 3 days for women and 7 days for men

Prescribing notes	• If the patient is catheterised, treatment is only indicated if systemically unwell. If antibiotics are commenced, then the catheter should be changed. • MRSA, like other *Staphylococcus aureus* strains, may be part of normal colonising flora, for example, on skin, on a leg ulcer, in urine in an asymptomatic catheterised patient. The criteria for treating MRSA are the same as for any other pathogen, i.e. clinical evidence of chest infection, soft tissue infection, or systemic illness in a catheterised patient. • Most MRSA locally is sensitive to doxycycline. • If severe infection or no response to monotherapy after 24-48 hours, seek advice from Microbiology.

Group	Viral infections
Condition	Herpes simplex (cold sores)

Recommendations for the treatment of this condition are contained in the Pharmacy First chapter.

Group	**Viral infections**
Condition	**Herpes zoster (shingles)**

Pathway 1	**Treatment of herpes zoster**

/1

Treatment needs to be started within 72 hours of onset of rash.

Aciclovir	Aciclovir 800mg tablets	800mg 5 times daily for 7 days started within 72 hours of onset of rash

/2

Treatment needs to be started within 72 hours of onset of rash.

Valaciclovir	Valaciclovir 500mg tablets	1g every 8 hours for 7 days started within 72 hours of onset of rash

Prescribing notes

Consider treatment for anyone aged 50 years and over, age less than 50 years with any of the following criteria:

- Immunocompromised
- non-truncal involvement (such as shingles affecting the neck, face, limbs or perineum)
- involvement of multiple dermatomes
- eczema
- moderate or severe pain
- moderate or severe rash
- seek immediate specialist advice regarding antiviral treatment for people with ophthalmic involvement; severely immunocompromised people; immunocompromised people who are systemically unwell, or have a severe or widespread rash or multiple dermatomal involvement; immunocompromised children; or pregnant or breastfeeding women.

Further notes:

- Aciclovir reduces the symptoms of acute herpes zoster (duration of pain, time to healing of lesions), complications (especially serious eye complications) and may reduce progression to postherpetic neuralgia.

	• Valaciclovir is substantially more expensive than aciclovir, therefore it should be used where aciclovir is ineffective or not tolerated. • Offer a trial of paracetamol alone or in combination with codeine or a non-steroidal anti-inflammatory drug (such as ibuprofen). • If this is not effective, or the person presents with severe pain, consider offering amitriptyline (off-label use). • Early use of amitriptyline may prevent or reduce progression to postherpetic neuralgia in elderly patients with acute herpes zoster.

Group	**Viral infections**
Condition	**Human immunodeficiency virus (HIV)**

Pathway 1	**Treatment of HIV**

Prescribing notes	• Antiretroviral therapy for chronic HIV infection should be initiated or altered only with the help of specialist advice available from the Regional Infectious Diseases Unit (RIDU) or sexual health service. • Antiretroviral therapy following an inoculation injury (post-exposure prophylaxis or PEP) if indicated should be commenced if possible within 2 hours and at the latest 48 hours after injury. • All treatments for HIV should be restricted to use by HIV specialists only. • Combination products may be used where considered appropriate to aid compliance. • HIV treatment should be prescribed in line with BHIVA Guidelines and recommendations from the SMC and NICE Multiple Technology Assessments. • HIV therapies have a narrow therapeutic range, therefore patient adherence must be supported and drug interactions avoided. When prescribing concurrent medication drug interactions should be checked at the HIV Drug Interactions website.

Group	Viral infections
Condition	Influenza

Opening text	Refer to Health Protection Scotland advice.
Guidance links	Health Protection Scotland: Influenza NHS Fife: Adult Treatment of Influenza

Group	Viral infections
Condition	Varicella zoster (chickenpox)

Pathway 1	Treatment of varicella zoster

/1

>14 years old, treatment needs to be started within 24 hours of onset of rash.

Aciclovir	Aciclovir 800mg tablets	800mg 5 times daily for 7 days started within 24 hours of onset of rash

Prescribing notes	• Specialist advice should be sought for chickenpox in immunocompromised patients. • Seek specialist advice for treatment in pregnancy. • NSAIDs should be avoided in individuals suffering from varicella due to a suggested link between NSAIDs and skin and soft tissue complications of varicella. • Consider parenteral therapy for disseminated infection.

Group	Wound and skin
Condition	Bites

Pathway 1	Animal and human bites

/1

	Co-amoxiclav	Co-amoxiclav 500mg/125mg tablets Co-amoxiclav 250mg/62mg/5ml oral suspension sugar free	625mg every 8 hours for 3 days (for prophylaxis) or 5 days (for treatment)

/2

If allergic to penicillin

	Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 3 days (for prophylaxis) or 5 days (for treatment)
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 3 days (for prophylaxis) or 5 days (for treatment)

Prescribing notes	• Thorough irrigation of wound is important. • Assess risk of tetanus, hepatitis B, hepatitis C and HIV. • All human, cat and puncture bites should be treated with antibiotics. Antibiotic treatment should also be given for animal bites to hand, foot and face, wounds involving joints, tendons, ligaments or when patient is asplenic, diabetic, immunocompromised or cirrhotic or in presence of prosthetic valves or joints. If the bite occurred abroad, consider rabies and refer patients to Infectious Disease. • Full information on any required vaccinations can be found in Immunisation against infectious disease - 'The Green Book'. • All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection. • Prescription of antibiotics should not delay appropriate surgical management e.g. drainage or aspiration of an abscess. • There is currently deemed to be no risk from rabies from contact with terrestrial mammals (other than imported animals) in the UK. Bats in the UK may carry rabies-like viruses and contact with them needs to be assessed. Scottish Health Protection Network guidance is currently being updated. In the meantime, Public Health England guidance is available on the GOV.UK website.

Group	Wound and skin
Condition	Cellulitis

Pathway 1	Treatment of cellulitis (no systemic symptoms)

/1

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	1g every 6 hours for 5 days

/2

If allergic to penicillin

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 5 days in total.

Prescribing notes

- Flucloxacillin has adequate streptococcal cover; therefore it is not necessary to prescribe penicillin in addition, for empirical treatment of non-severe cellulitis. If there has been exposure to river or sea water, discuss treatment with a microbiologist.
- All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection.
- Prescription of antibiotics should not delay appropriate surgical management e.g. drainage or aspiration of an abscess.
- See also Wound Management section.
- Panton-Valentine Leukocidin (PVL) is a toxin produced by some Staphylococcus aureus isolated from boils/abscesses. This can very rarely cause severe necrotising pneumonia. If found topical suppression therapy should be given after wound healing. Send swabs if recurrent boils/abscesses. At risk: close contact in communities or sport; poor hygiene.

Skin and soft tissue infections in drug users:

- Initial oral treatment is advised with flucloxacillin 500mg 6 hourly or oral clindamycin 450mg 6 hourly (in penicillin allergy or intolerance). Alternatively consider clindamycin 600mg three times daily. The dose of clindamycin can be reduced if the patient is responding well or if the infection appears mild. Clindamycin should be stopped and specialist infection advice sought if diarrhoea develops on treatment.
- Please take a wound swab, indicating that the infection is in a drug user.

Pathway 2 Treatment of orbital cellulitis

/1

Urgent referral to ENT, Ophthalmology and Microbiology.

Group	Wound and skin
Condition	Episiotomy infection

Pathway 1	Treatment of episiotomy infection

/1

	Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 5 days
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 5 days

/2

If allergic to penicillin, erythromycin (tablets or oral suspension) AND metronidazole.

	Erythromycin	Erythromycin 250mg gastro-resistant tablets	500mg every 6 hours for 5 days
		Erythromycin ethyl succinate 500mg/5ml oral suspension sugar free	500mg every 6 hours for 5 days
AND	**Metronidazole**	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 5 days

Prescribing notes	• Flucloxacillin has adequate streptococcal cover; therefore it is not necessary to prescribe penicillin in addition, for empirical treatment of non-severe cellulitis. • All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection. • Prescription of antibiotics should not delay appropriate surgical management e.g. drainage or aspiration of an abscess. • See also Wound Management section of the formulary.

Group	Wound and skin
Condition	Fungal nail infections

Guidance links	NICE CKS: Fungal nail infection

Pathway 1	Treatment of fungal nail infections

/1

Treatment for cosmetic reasons is not justified

Terbinafine	Terbinafine 250mg tablets	250mg daily (6 weeks for fingernails or 3 months for toenails)

/2

Itraconazole	Itraconazole 100mg capsules	200mg every 12 hours for 7 days repeated after 21 days: fingernails, 2 courses; toenails, 3 courses

Prescribing notes	

- Refer to NICE CKS: Fungal nail infection.
- In view of the long duration of treatment, possible significant side-effects and high costs, cosmetic treatment is not justified. Treatment should not be initiated until mycological confirmation of infection has been received.
- Itraconazole and terbinafine have been associated with liver damage.
- Topical agents such as amorolfine should be reserved for cases where the infection is confined to the distal edge of the nail in the very early stages of distal and lateral subungual onychomycosis or in superficial white onychomycosis. As superficial infections may not require treatment and topical agents are relatively expensive, it is difficult to justify their use.

Group	**Wound and skin**
Condition	**Fungal skin infections**

Pathway 1	**Treatment of dermatophyte infection**

/1

	Terbinafine	Terbinafine 1% cream	Apply 1-2 times daily for 1-4 weeks, continue for 1-2 weeks after healing
OR	**Clotrimazole**	Clotrimazole 1% cream	Apply every 8-12 hours for 4-6 weeks, continue for 1-2 weeks after healing

/2

Athletes foot, alternative choice

Zinc undecenoate + Undecenoic acid	Mycota cream	Apply every 12 hours for 4-6 weeks, continue for 7 days after healing

Prescribing notes	• If intractable dermatophyte skin infection or scalp infection send skin scrapings and if infection confirmed use oral terbinafine or itraconazole. Discuss scalp infection with dermatology.

Pathway 2	Treatment of candida infection

/1

Clotrimazole	Clotrimazole 1% cream	Apply every 8-12 hours for 1-2 weeks after healing

Prescribing notes	• Miconazole 2% cream is recommended for the treatment of breast and nipple thrush in lactating women; apply after every breastfeed for 2 weeks. Continue 10 days after improvement is noted. Any residual cream should be gently wiped off before the next feed. • Infection can spread easily between mother and infant, therefore mother and infant should be treated simultaneously even if no oral lesions are present. See child formulary recommendations on treatment of oral candidiasis. • In Lothian, for more information refer to RefHelp or the NHS Lothian intranet guideline: ‘Guidelines for the topical treatment of thrush in the breastfeeding mother’.

Group	**Wound and skin**
Condition	**Impetigo**

Pathway 1	**Treatment of non-bullous impetigo**

/1

Topical treatment may be appropriate in very localised lesions

Fusidic acid	Fusidic acid 2% cream	Apply every 8 hours for 5 days

OR

For people who are not systemically unwell or at a high risk of complications

Hydrogen peroxide	Hydrogen peroxide 1% cream	Apply two or three times daily for 5 days

Prescribing notes	• Increasing concerns about the development of resistance have led to topical antibiotic therapy being discouraged. • Topical antiseptics may be used to remove crust and to prevent spread of infection, but there is no evidence to support their use in preference to washing with soapy water. • All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection.

Pathway 2 Treatment of extensive, severe or bullous impetigo

/1

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 5 days

/2

For penicillin allergy

Clarithromycin	Clarithromycin 500mg tablets Clarithromycin 250mg/5ml oral suspension	500mg every 12 hours for 7 days

Prescribing notes	• Increasing concerns about the development of resistance have led to topical antibiotic therapy being discouraged. Fusidic acid, three times daily for 5 days, may be appropriate in very localised lesions. • When MRSA is isolated by Microbiology follow suppression advice in the Infection Control Manual. • Flucloxacillin has adequate streptococcal cover; therefore it is not necessary to prescribe penicillin in addition, for empirical treatment of non-severe cellulitis. If there has been exposure to river or sea water, discuss treatment with a microbiologist. • All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection. • Prescription of antibiotics should not delay appropriate surgical management e.g. drainage or aspiration of an abscess.

Group	**Wound and skin**
Condition	**Mastitis**

Pathway 1	**Treatment of mastitis/ breast abscess associated with lactation**

/1

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 10 days

/2

If allergic to penicillin, prescribe erythromycin.

Erythromycin	Erythromycin 250mg gastro-resistant tablets	500mg every 6 hours for 10 days
	Erythromycin ethyl succinate 500mg/5ml oral suspension sugar free	500mg every 6 hours for 10 days

Pathway 2 Treatment of mastitis/ breast abscess not associated with lactation

/1

See 2nd choice, for choice for frail/elderly

Co-amoxiclav	Co-amoxiclav 500mg/125mg tablets Co-amoxiclav 250mg/62mg/5ml oral suspension sugar free	625mg every 8 hours for 7 days

/2

For the frail/elderly

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 7 days
AND		
Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 7 days

/3

If allergic to penicillin

Clarithromycin	Clarithromycin 500mg tablets Clarithromycin 250mg/5ml oral suspension	500mg every 12 hours for 7 days
AND		
Metronidazole	Metronidazole 400mg tablets Metronidazole 200mg/5ml oral suspension	400mg every 8 hours for 7 days

Group	Wound and skin
Condition	Wound infections

Pathway 1	Surgical wounds, abscesses and wound infection

/1

Flucloxacillin	Flucloxacillin 500mg capsules Flucloxacillin 250mg/5ml oral solution sugar free	500mg every 6 hours for 7 days

/2

If allergic to penicillin

Doxycycline	Doxycycline 100mg capsules	200mg on day 1, then 100mg daily for 7 days in total

Prescribing notes	• Flucloxacillin has adequate streptococcal cover; therefore it is not necessary to prescribe penicillin in addition, for empirical treatment of non-severe cellulitis. If there has been exposure to river or sea water, discuss treatment with a microbiologist. • All wounds have potential for bacterial infection and may become colonised but swabs should only be taken if there are clinical signs of infection. • Prescription of antibiotics should not delay appropriate surgical management e.g. drainage or aspiration of an abscess. • See also Wound Management section of the formulary.

Pathway 2	MRSA soft tissue infections (moderate/severe)

/1

Choice of treatment depends upon the extent of infection and sensitivity result for the MRSA isolated from patient.

Doxycycline	Doxycycline 100mg capsules	100mg every 12 hours for 5 days

Prescribing notes	• MRSA, like other *Staphylococcus aureus* strains, may be part of normal colonising flora, for example, on skin, on a leg ulcer, in urine in an asymptomatic catheterised patient. The criteria for treating MRSA are the same as for any other pathogen, i.e. clinical evidence of chest infection, soft tissue infection, or systemic illness in a catheterised patient. • Check sensitivities, if possible before starting systemic antibiotics. • Most MRSA locally is sensitive to doxycycline. • If severe infection or no response to monotherapy after 24-48 hours, seek advice from Microbiology.