CLINICAL GUIDELINE

Infection Management in Adults, Primary Care, NHSGGC

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Aims

- To provide a simple, best guess approach to the most clinically effective and cost effective use of antimicrobials
- To minimise the emergence of bacterial resistance and *healthcare associated infection*

Principles of Treatment

1. Guidance is based on best available evidence but may be modified by professional judgement. Where 'best guess' therapy fails or special circumstances exist, advice can be obtained via your local hospital **microbiology** department or from the **Infectious Diseases Unit, Ward 5 c, Queen Elizabeth University Hospital (Tel: 0141 201 1100 and page on-call ID consultant).** Prescribe an antibiotic **only** when there is likely to be a **clear clinical benefit.**

2. Consider **no or delayed prescribing** for acute self-limiting upper respiratory tract infection (sore throat, cough, cold, sinusitis, ear infection).

3. Do not treat **asymptomatic bacteriuria** except in pregnancy.

4. Unless contraindicated consider **NSAID plus fluid hydration** as an alternative to antibiotics for uncomplicated lower urinary tract symptoms in pre-menopausal women.

5. **Limit** prescribing over the **telephone** to exceptional cases. (See urinary tract section for guidance on treatment in patients presenting with symptoms suggestive of infection).

6. Use simple, **narrow-spectrum,** generic antibiotics whenever possible. The use of antibiotics such as **co-amoxiclav, quinolones, clindamycin** and **cephalosporins** should be avoided when there is an option to use alternative antibiotics. These agents increase the risk *of healthcare associated infections, and the emergence of resistant bacteria*.

7. **Prolonged** antibiotic therapy i**ncreases risk of adverse events.** Patients at higher risk of **Clostridioides difficile infection (CDI)** are those with previous CDI, age > 65years, previous antibiotic therapy in the past 3 months, those receiving proton pump inhibitors, contact with patients with CDI and recent hospital admission. **Avoid** widespread use of **topical antibiotics** (especially those agents also available as systemic preparations).

8. **Antibiotics in pregnancy:** Take specimens to inform treatment. Avoid tetracyclines, aminoglycosides, quinolones, high dose metronidazole (2g) unless benefit outweighs risk. Short term nitrofurantoin (at term, theoretical risk of neonatal haemolysis) is unlikely to cause problems to the foetus. Trimethoprim is contraindicated in pregnancy. If used off label it should be avoided where possible in first trimester or in those with poor dietary folate intake, or taking another folate antagonist e.g. antiepileptic. If used off label supplementation with folic acid 5mg until week 12 is required. See toxbase, bumps and NHSGGC Antibiotic Policy for Obstetric Patients.

9. **Drug interactions (Consult BNF for full information):**
   Macrolides (e.g. clarithromycin): Multiple potential drug interactions (e.g. statins) and risk of cardiac conduction problems (QT prolongation). See medicines update for information on assessing and managing QT risk. Where possible consider alternative drug choice, and avoid concomitant use with other drugs known to prolong QT Consider alternative e.g. doxycycline.
   Quinolones can cause cardiac conduction problems (QT prolongation) plus rarely other disabling conditions (see MHRA advice). The simultaneous administration of quinolones and multivalent cation-containing drugs and mineral supplements (e.g. calcium, magnesium, aluminium, iron), phosphate binders (e.g. sevelamer or lanthanum carbonate), sucralfate or antacids, and highly buffered drugs containing magnesium, aluminium, or calcium reduces absorption. Quinolones should be administered either 1-2 hours before or at least 4 hours after these preparations, and should not be taken with dairy products (e.g. milk, yoghurt) or mineral-fortified fruit-juice (e.g. calcium-fortified orange juice).
   Tetracyclines: Absorption of tetracyclines may be impaired by concurrent administration of antacids containing aluminium, calcium, magnesium or other drugs containing these cations; oral zinc, iron salts or bismuth preparations. Avoid within two hours before or after taking. In some cases e.g. iron it may be more practical to withhold during treatment with tetracyclines. Doxycycline and lymecycline absorption is not modified by administration with meals and milk has little effect (although may be affected by oral nutritional supplements).
   Warfarin: INR may be altered by many antibiotics, particularly if a course is prolonged.
   Oral contraceptive pill: Guidance from the UK Faculty of Sexual and Reproductive Health states that additional contraceptive precautions are **NOT** required during or after antibiotic courses unless the antibiotic is a liver enzymes inducer (such as rifampicin, rifabutin). Note that some product / patient information may, however, still recommend additional precautions. Women should be advised of the importance of correct contraceptive practice during periods of illness.

Doses are for oral therapy in adults unless otherwise stated. Please check BNF for accurate dosing.

Locally adapted from Public Health England Management and Treatment of Common Infections

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
UPPER RESPIRATORY TRACT INFECTIONS: Consider delayed antibiotic prescriptions. See RCGP TARGET toolkit				
Seasonal Influenza https://www.gov.uk/government/publications/influenza-treatment-and-prophylaxis-using-anti-viral-agents	• **Annual vaccination** is essential for all those at risk of influenza. • For otherwise healthy adults the use of antivirals is **not usually** recommended **unless** patient is at serious risk of developing complications. Antiviral therapy may reduce overall symptoms and reduces mortality in hospitalised patients. • Consider treating **'at risk' patients, only when influenza is circulating in the community ideally, within 48 hours of symptom onset**, i.e. those aged 65 years or over, chronic respiratory disease (including COPD and asthma) significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, pregnancy, morbid obesity (BMI>40) and chronic neurological, renal or liver disease. A CMO letter authorising use of antivirals in the community is issued in response to national surveillance. Consider use of antivirals in localised flu outbreaks in care homes. For public health advice contact: **0141 201 4917**. • In some circumstances, antivirals may be considered later than 48 hours after symptom onset. Treatment after 48 hours symptom onset is an off label of oseltamivir. For clinical advice/admission contact the Infectious diseases unit, ward 5C at QEUH: **0141 201 1100 and page on-call ID consultant.** Treatment is recommended if "at risk" patient and including pregnancy with oseltamivir 75mg bd for 5 days. If suspected or reported resistance use zanamivir 10mg bd (2 inhalations by diskhaler) for 5 days. Treatment for severely immunocompromised should take into account of the dominant circulating influenza strain. • Prophylaxis maybe used for those in 'at risk' groups following exposure to a person in the same household or residential setting with influenza like illness when influenza is circulating in the community. Prophylaxis should be issued if the contact is not adequately protected by vaccination. For further information on prophylaxis see adjacent link. For public health advice contact: **0141 201 4917** • See guidance below for bronchitis and pneumonia where this is also suspected. Admission usually required where post-influenza pneumonia suspected.			
Acute sore throat/ **pharyngitis/** **tonsillitis** *FeverPAIN calculator https://ctu1.phc.ox.ac.uk/feverpain/index.php*	• **Avoid antibiotics for acute sore throat** as 82% resolve in 7 days without, and pain only reduced by 16 hours • Optimise analgesia. Medicated lozenges may help.**Assess FeverPAIN score** **Fever** past 24 hrs = 1 **P**urulent tonsils = 1 **A**ttending rapidly (≤3 days) = 1 **I**nflammed tonsils = 1 **N**o cough/ coryza = 1 **Score 0-1 (13-18% strep risk)=** No antibiotics **Score 2-3 (34-40% strep risk)=** Delayed (e.g. 3 -5 days) **Score ≥4 (62-65% strep risk) =** Delayed/ immediate if severe • Antibiotics to prevent Quinsy NNT >4000 • Antibiotics to prevent Otitis media NNT 200	***Where antibiotic definitely required:*** Phenoxymethylpenicillin OR Clarithromycin *If allergic to penicillin*	500 mg QDS OR 1g BD 500mg BD	10 days (high risk of Group A strep) 5 days (lower risk of Group A strep but antibiotic required) 5 days
Scarlet fever (GAS)	• May be severe, fulminant illness; Group A beta haemolytic streptococcus infection characterised by generalised erythema, fever and pharyngitis. • Admit if concern e.g. systemic inflammatory response (SIRS), hypotension or dehydration for IV antibiotic therapy. SIRS = 2 or more of the following: Temp >38 or <36ºC, Heart rate > 90	Phenoxymethylpenicillin OR Clarithromycin *if allergic to penicillin*	500 mg QDS or 1G BD 500 mg BD	10 days 5 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	beats per minute, Respiratory rate > 20/min.			
Acute Otitis Media (AOM) See also NHSGGC *paediatric infection management guidance*	• Usually lasts about 3 to 7 days • Resolves in **60%** in 24 h **without antibiotics**, which only reduce pain at 2 days (NNT15) and does not prevent deafness • **Optimise analgesia** and target antibiotics • Immediate antibiotics may be require if systemically very unwell, high risk of complications, or signs and symptoms of a more serious illness or rapid deterioration • Those with otorrhoea (NNT3) or <2 years ***AND*** *bilateral AOM* not in the above category - consider either no antibiotic, or delayed treatment if concern about worsening (NNT=4) • Antibiotics to prevent Mastoiditis NNT >4000	***Where antibiotic definitely required:*** Amoxicillin OR Clarithromycin *if allergic to penicillin*	500mg TDS (1g if severe) 500 mg BD	5 days 5 days
Acute Otitis Externa	**First line**: • Analgesia for pain relief and localised heat (e.g. warm flannel). Avoid promoting factors *e.g. cotton buds, shampoo, water, swimming, leave hearing aid out if used* • Follow up and culture recalcitrant cases • Refer to local ENT early if diabetic, immunocompromised, cellulitis or disease extending outside ear canal, recent ear surgery, systemic upset, severe infection/canal stenosis with excess debris	**If infection/inflammatory change and first line measures failed:** Neomycin/Betamethasone drops (Betnesol N®) (1st choice) **or** Acetic acid spray 2% **or** Neomycin/dexamethasone spray (Otomize®) **If cellulitis/disease extends outside ear canal:** Flucloxacillin	3 drops TDS 1 spray TDS 1puff TDS 500mg QDS	7 -14 days 7 days 7 days 5 days
Acute sinusitis	• **Symptoms ≤10 days:** avoid antibiotics. 80% resolve in 14 days without, and they only offer marginal benefit after 7 days NNT15 • **Self-care:** paracetamol/ ibuprofen for pain/ fever. Consider high dose nasal steroid if >12 years. Nasal decongestants (e.g. xylometazoline 0.1% nasal spray) up to 8 hourly or saline may help some. • **Symptoms >10 days:** no antibiotic or back up only if several of: purulent nasal discharge (NNT 8); severe localised unilateral pain; fever; marked deterioration after initial milder phase. High dose nasal	***Where antibiotic definitely required:*** Doxycycline OR Amoxicillin	 200mg stat/100mg OD 500 mg TDS	 5 days 5 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	corticosteroid for 14 days may help some. • **Systemically very unwell or more severe signs and symptoms or high risk of complications**: give immediate antibiotics. Refer to secondary care if suspected complications.			
LOWER RESPIRATORY TRACT INFECTIONS See RCGP TARGET toolkit				
• **Low doses of penicillins** are more likely to select out resistance (e.g. amoxicillin 500mg rather than 250mg is recommended in adults for LRTI). • **Quinolones** can very rarely cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. See MHRA advice on avoiding use in all self-limiting, non-severe infections, and non-bacterial conditions. Quinolones **should not** be used for uncomplicated cystitis or mild to moderate respiratory infections unless no other options are available. • Obtain sputum for culture if possible but do not delay starting treatment. MRSA in sputum usually colonisation and does not require antibiotic therapy in the community. MRSA pneumonia is unusual and very severe infection with patients likely to have been hospitalised before culture results are available. • Penicillin allergic patients on statins should have doxycycline rather than clarithromycin due to risk of drug interaction. (Avoid tetracyclines in pregnancy). • Note drugs and food containing cations can affect absorption of doxycycline (see introductory section above)				
Acute Bronchitis	• Many infections are not caused by bacteria so will not respond to antibiotics • **Antibiotic little benefit if no co-morbidity even in bacterial infection** • **First line** –self-care and safety netting advice • **Second line** – delayed antibiotic by 7 days, safety net and advise symptoms can last 3 weeks. • **Consider immediate antibiotics if > 80yr and ONE of:** hospitalisation in past year, oral steroids, type 1 or 2 diabetic , congestive heart failure. **OR> 65yrs with 2 of above** • NNT >12,000 to prevent 1 admission with pneumonia	**Where antibiotic definitely required:** Amoxicillin OR Doxycycline OR Clarithromycin	 500 mg TDS 200mg stat/then 100mg OD 500 mg BD	 5 days 5 days 5 days
Acute exacerbation of COPD	• Many infections are not caused by bacterial infections so will not respond to antibiotics. • An antibiotic should only be considered after taking severity of symptoms into account - particularly **sputum** colour changes and increases in volume or thickness beyond person's normal variation - need for **hospitalisation** -previous **exacerbations**, **hospitalisations** and risk of **complications** - previous **sputum culture** and susceptibility results, and - risk of **resistance** with repeated courses.	Doxycycline OR Amoxicillin OR Clarithromycin	200mg stat/then 100mg OD 500 mg TDS 500 mg BD	5 days 5 days 5 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	Send sputum sample for testing if symptoms have not improved after antibiotics.			
Community-acquired pneumonia	Use CRB65 score to help guide and review:[1] Each scores 1: • **C**onfusion (AMT<8); • **R**espiratory rate ≥30/min • **B**P systolic <90 or diastolic ≤60; • **A**ge ≥65 years **Score 0: suitable for home treatment**; use antibiotics for 5 days (review response at 3 days) **Score 1-2: hospital assessment or admission** NHSGGC secondary care guidance supports 5 days antibiotics as above in the absence of sepsis **Score 3-4: urgent hospital admission** Mycoplasma infection is rare in over 65s If post influenzal pneumonia suspected, admission usually required due to disease severity. - Give advice on likely symptoms including persistence of cough for up to 6 weeks.	Amoxicillin OR Doxycycline OR Clarithromycin	500 mg TDS 200 mg stat/100 mg OD 500 mg BD	5 days (see comments) 5 days (see comments) 5 days (see comments)
Acute exacerbation of bronchiectasis	Send a sputum sample for general culture, AFB (mycobacteria) and susceptibility testing, specifying brochiectasis as clinical information. Offer an antibiotic. When choosing an antibiotic, take account of severity of symptoms, previous sputum cultures and susceptibility results, previous exacerbations, hospitalisations and risk of complications. Consider mucolytic / optimising sputum clearance Frequent exacerbations should prompt review by respiratory specialists. Steroids are not routinely indicated for infective exacerbations of bronchiectasis.	Amoxicillin OR Doxycycline	500 mg TDS 200 mg stat/ 100mg OD	14 days 14 days
Bronchiectasis (long term antibiotic therapy)	Long term antibiotics should only be started on the recommendation of a respiratory specialist, and monitored and reviewed at regular intervals. For patients in whom a macrolide is recommended (e.g. azithromycin, clarithromycin) it is important to be aware of drug interactions when prescribing, and ensure that any necessary cardiac monitoring is undertaken in patients at risk of QT prolongation. See NHSGGC guidance on long term azithromycin use in COPD and bronchiectasis			
Infection of unclear origin	Where antibiotic treatment is indicated, doxycycline 100mg bd 5 days or co-trimoxazole* 960mg bd for 5 days may be a suitable choice where respiratory and urinary infection is suspected. Rationalise treatment choice as soon as diagnosis is made/ sensitivities available. *See BNF for dosing of co-trimoxazole in renal impairment, if eGFR <20ml/min contact infection specialist.			

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
URINARY TRACT INFECTIONS See RCGP TARGET toolkit (see SIGN 88 Management of suspected bacterial urinary tract infections in adults, July 2012 Update)				
• SIGN 160, the management of suspected bacterial lower urinary tract infections in adult women, was published in September 2020 during the covid-19 pandemic. The content of this guideline differs from current practice with regards to the diagnosis of a UTI in terms of symptoms and the use of dipsticks. Until all stakeholders are in a position to follow the new guidance we encourage prescribers to follow SIGN 88 as detailed below. • Symptoms and signs of a UTI include **dysuria, urgency, frequency, polyuria, suprapubic tenderness**. Fever and flank pain are suggestive of an upper urinary tract infection. • When considering an antibiotic, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results/ previous antibiotic use. • Overuse of antibiotics is associated with increased risk of C. *difficile,* particularly in the elderly**. Do not treat asymptomatic bacteriuria** (except in pregnancy see NHSGGC Antibiotic Policy for Obstetric Patients.); it occurs in 25% of women and 10% of men and is not associated with increased morbidity. • In the presence of a catheter, antibiotics will not eradicate bacteriuria. Catheter exchange therefore is usually required; in these circumstances only administer antibiotics if systemically unwell or pyelonephritis is likely, in which case admission is usually required. • Amoxicillin resistance is common, therefore ONLY use if culture confirms susceptibility. • Nitrofurantoin is contraindicated in patients with eGFR < 30ml/min/1.73m^2. Use with caution in eGFR 30-44ml/min/1.73m^2 for short term treatment of lower UTI involving resistant pathogens, when the benefits outweigh the risks of undesirable effects. Do not use nitrofurantoin alongside alkalinising agents (eg potassium citrate). • Trimethoprim can exacerbate hyperkalaemia and cause transient rises in serum creatinine (and falls in eGFR). Caution should be exercised when prescribing to patients with eGFR < 30 ml/min/1.73m^2. • Infections due to multi-resistant organisms including but not limited to Extended-spectrum Beta-lactamase (ESBL) *E. coli* are increasing in the community. **Pivmecillinam** (a penicillin antibiotic) and/or **fosfomycin sensitivity** may be reported when there is resistance to first line antibiotics. Both antibiotics are available on the GGC formulary**.** Empirical treatment against resistant infection may be appropriate in patients in whom resistance has been documented recurrently or in the previous 3 months. Susceptibility results are essential to guide treatment. • Quinolones can very rarely cause long-lasting (up to months or years), disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. See MHRA advice on avoiding use in all self-limiting, non-severe infections, and non-bacterial conditions. Quinolones should not be used for uncomplicated cystitis or mild to moderate respiratory infections unless no other options are available. • In **pregnancy** take specimens to inform treatment. Short term nitrofurantoin (at term, theoretical risk of neonatal haemolysis) is unlikely to cause problems to the foetus. Avoid trimethoprim where possible. See toxbase, bumps and NHSGGC Antibiotic Policy for Obstetric Patients • Pharmacy First service is available in community pharmacy to assess and manage uncomplicated UTI in suitable patients 16-65 years.				
Uncomplicated lower UTI in women (not pregnant)	• In patients with only mild symptoms advise adequate **hydration and analgesia** e.g. anti-inflammatories like ibuprofen to alleviate symptoms • Consider **delayed prescription** only to be taken if no improvement/ worsening after 48 hours. • **Do not prescribe** antibiotics if asymptomatic bacteriuria. • Treat empirically if: **≥ 3** signs / symptoms of UTI or if severe (UTI probability > 90 % if no vaginal symptoms). There is **no need to urine dipstick** • If vaginal itch or discharge, explore **alternative diagnoses** and consider pelvic examination (genital tract infections, Page 13 of Guidelines). • **Urine dipstick** to confirm diagnosis only where ≤2 signs /	Trimethoprim OR Nitrofurantoin (see **Note** above on renal function)	200mg BD 50mg QDS or 100 mg m/r BD	3 days 3 days
		2nd line - depends on susceptibility of organism isolated and clinical status / need for parenteral therapy. See notes above. *If fosfomycin is required, as per sensitivities, give one 3g sachet as a single dose.* *If pivmecillinam required, as per sensitivities, give 400mg initial dose then 200mg TDS for 3 days.*		

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	symptoms (for protein, blood, leucocytes and nitrites) • Do not take samples for **'test of cure'** • **Perform cultures in all treatment failures** (persistent/ recurrent), and where possible await results before issuing further antibiotics. • **Risk factors for increased resistance include**: care home resident, recurrent UTI, hospitalisation >7d in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased antimicrobial resistance (outside Northern Europe and Australasia), previous known UTI resistant to trimethoprim, cephalosporins or quinolones. **Send culture to confirm sensitivities in at risk patients.**			
Lower UTI in adult men (see also Prostatitis below; and epidydimitis under genital tract) SAPG advice on management of UTIs in men	• **Always perform urine culture.** • Consider: prostatitis, chlamydial infection, epididymitis (see relevant section)**.** • If recurrent UTI or no response to antibiotic, investigate for prostatitis and refer for urological investigation.	Trimethoprim OR Nitrofurantoin (see **note** above)	200mg BD 50mg QDS or 100 mg m/r BD	7 days 7 days
		2nd line - depends on susceptibility of organism isolated and clinical status / need for parenteral therapy. See note above. *If fosfomycin required, as per sensitivities, give one 3g sachet as a single dose, repeated 3 days after the first dose (total of two doses).* *If pivmecillinam required, as per sensitivities, give 400mg initial dose then 200mg TDS for 7 days*		
Upper Urinary Tract Infection (UUTI)/ pyelonephritis in non-pregnant women and men	• Signs and symptoms include loin pain, flank tenderness, fever, rigors or "sepsis" (as per scarlet fever above). • UUTI can be accompanied by bacteraemia, making it potentially a life-threatening condition. • **If systemic symptoms or no response after 24 hours treatment, admit to hospital**. • Urine should be taken for culture before immediate empirical treatment is started. • Nitrofurantoin is not effective in UUTI as does not achieve effective concentrations in blood	Trimethoprim (if sensitive organism suspected) (see **note** above) OR: Co-amoxiclav or if true penicillin allergy/ resistance OR Ciprofloxacin (consider safety issues)	200mg BD 625mg TDS 500mg BD	7 days 7 days 7 days
Lower UTI in pregnancy See also toxbase and NHSGGC Antibiotic Policy for Obstetric Patients.	• **Always culture urine if suspected.** • Asymptomatic bacteriuria occurs in 4% of pregnancies. • Perform culture at first antenatal visit in all. • Women without bacteriuria in first trimester should not have repeat urine cultures unless symptomatic. • Confirm positive with second culture and treat • Repeat at each antenatal visit until delivery if initial positive.	Nitrofurantoin (1st or 2nd trimester) (see **note** above) OR Cefalexin	50mg QDS or 100 mg m/r BD 500MG TDS	7 days 7 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	• Short-term nitrofurantoin unlikely to cause problems to the foetus (at term, theoretical risk of neonatal haemolysis). • Trimethoprim is contraindicated in pregnancy. • Contact microbiology if further advice required on treatment options			
Upper UTI in pregnancy See also NHSGGC Antibiotic Policy for Obstetric Patients.	• See above (upper UTI) • Nitrofurantoin is not effective in UUTI as does not achieve effective concentrations in blood. • Ciprofloxacin and trimethoprim are contra-indicated in pregnancy. • If pyelonephritis and clinically unwell consider admitting for IV antibiotics • Contact microbiology if further advice required on treatment options	Co-amoxiclav OR Cefalexin	625mg TDS 500mg TDS	7-10 days 7-10 days
Acute prostatitis SAPG advice on management of UTIs in men (includes prostatitis)	• **Always perform urine culture** • Review 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). • Contact microbiology for advice if further treatment options required.	Ciprofloxacin (see safety information) **Or** Trimethoprim (if sensitive) (see **note** above)	500 mg BD 200mg BD	14 days then review 14 days then review
Recurrent UTI women **(≥ 3 in 12 months or 2 in 6 months)** See SAPG guidance on management of recurrent UTIs in non-pregnant women	• Encourage **self care** and advice about **personal and behavioural hygiene measures** to reduce UTI risk before considering prescribing (e.g. hydration, voiding, cranberry products) • For **post-menopausal women** consider vaginal oestrogen (review within 12 months) • If antibiotics are required consider **post coital or standby antibiotics** • If the above fails, give trial of antibiotic prophylaxis for **3- 6 months** and then consider stopping • **Do not rotate antibiotics** • Nitrofurantoin: be aware of pulmonary toxicity longer term	***Where other options have been tried and failed:*** Nitrofurantoin **or** Trimethoprim (see **note** above)	50 mg at night or 100mg stat dose 100 mg at night or 200mg stat dose	Stat when exposed to trigger or one at night for 3- 6 months then review
Catheter associated UTI See SAPG guidance for diagnosis and management of suspected UTIs in people with indwelling catheters	• High incidence bacteruria with catheters. **Asymptomatic patients** should **not be treated or investigated** and antibiotic **prophylaxis is not recommended**. • **Frank haematuria** in isolation of other symptoms is not an indication for antibiotics • Treatment if new onset costo-vertebral tenderness or rigors or new-onset delirium or fever > 37.9 or 1.5 ^{o}C above baseline on 2 occasions during 12 hours.	Nitrofurantoin OR Trimethoprim (see **notes** above) *If fosfomycin required, as per sensitivities, give one 3g sachet as a single dose, repeated 3 days after the first dose (total of 2 doses. (off label)*	50mg QDS or 100 mg m/r BD 200 mg BD	7 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	• **Remove or change catheter** if been in for more than 7 days before antibiotic treatment whenever possible. • **Do not use antibiotics for catheter changes** unless history of catheter associated UTI or trauma	*If pivmecillinam required, as per sensitivities, give 400mg initial dose and 200mgTDS for 7 days*		
Catheter associated UTIs with upper UTI symptoms See SAPG guidance on diagnosis and management of suspected YTIs in people with indwelling catheters	• As per information above	Trimethoprim OR Co-amoxiclav OR Ciprofloxacin	200mg BD 625mg TDS 500mg BD	14 days 7-10 days 7 days
Infection of unclear origin	Where antibiotic treatment is indicated, doxycycline 100mg bd 5 days or co-trimoxazole* 960mg bd for 5 days may be a suitable choice where respiratory and urinary infection is suspected. Rationalise treatment choice as soon as diagnosis is made/ sensitivities available. *See BNF for dosing of co-trimoxazole in renal impairment, if eGFR <20ml/min contact infection specialist.			
MENINGITIS				
Suspected meningococcal disease or bacterial meningitis	• **Transfer all patients to nearest (acute) hospital immediately**. • If time before admission, and non blanching rash, administer benzyl penicillin prior to admission, unless definite history of anaphylaxis, NOT allergy. • Ideally IV but IM if vein cannot be found.	IV or IM Benzyl penicillin Or IV or IM Cefotaxime	1200mg stat 1g stat	
Prevention of secondary case of meningitis	All confirmed and suspected cases of meningococcal disease should be notified by telephone, to the **Public Health Department at Tel: 0141 201 4917. Out of Hours: via 0141 211 3600**. Public Health will advise on prophylaxis			
GASTRO-INTESTINAL TRACT INFECTIONS				
Eradication of *Helicobacter pylori*	• Always test for H. Pylori before giving antibiotics. • Treat all patients if know duodenal ulcers, gastric ulcers, or low grade MALToma.NNT 14 in non-ulcer dyspepsia • **DO NOT offer eradication for GORD** • Do not use clarithromycin or metronidazole if used in the past year for any infection. • DU/GU: Re-test (breath test **not** serology) 28 days after completing treatment for helicobacter if symptomatic. • Functional dyspepsia/ non ulcer dyspepsia: **Do not re-test**, treat as functional dyspepsia (PPI/ H2 antagonist). • In confirmed treatment failure, consider referral to Gastro-enterologist for endoscopy and culture	**First line** PPI Lansoprazole or Omeprazole + Amoxicillin (In penicillin allergy use metronidazole 400mg BD) +Clarithromycin **2nd line** Substitute clarithromycin with metronidazole	 30 mg BD 20mg BD + 1g BD + 500mg BD 400mg BD	 First line 7 days ; 14 days MALToma)

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Gastroenteritis	• Antibiotics are usually not required. The aim of antibiotic therapy in gastroenteritis is to treat those with invasive *Salmonella* infection to prevent life-threatening complications - this can be predicted by those with dysenteric symptoms plus another risk factor such as achlorhydria, age>65, immunosuppression, inflammatory bowel disease or vascular disease. There is also a small (but statistically significant) effect on reducing duration in non-life threatening *campylobacter*. • *Campylobacter* is usually a self limiting illness however in the extremes of age, immunosuppression or cases with protracted symptoms may require a short course of antibiotic therapy. Samples should be sent and discussed with microbiology/ID. • Antibiotics increase the risk of haemolytic uraemic syndrome in E coli 0157 • Consider stool culture where ongoing symptoms, or blood/mucous present. • If the patient is systemically unwell and admission is required contact the **Infectious Diseases Unit, Ward 5 c, Queen Elizabeth University Hospital (Tel: 0141 201 1100 page On call ID consultant).** • Please notify suspected cases of food poisoning to public health, and seek advice on exclusion of patients from work. • Consider tropical infections in patients returning from foreign travel.			
***Clostridioides difficile* associated diarrhoea** NHSGGC guideline	• Definition; Loose/ watery stools of increased frequency from normal + *C.difficile* toxin positive in stool. • If suspected treat empirically and change antibiotic pending stool results. • Stop acid suppressive therapy if non-essential (PPIs, H2 antagonists or Antacids), laxatives, motility stimulants & any implicated concomitant antibiotic if possible. • For non-severe, non-dehydrated, younger patients with no significant co-morbidity treat with oral **Vancomycin 125mg four times daily, for 10 days.** • Metronidazole may be prescribed in the community setting if delays in supply of oral vancomycin would result in delayed initiation of treatment. Metronidazole should be substituted with oral vancomycin as soon as availability is resolved to complete a total of 10 days treatment. • If given oral vancomycin and patient fails to improve after 7 days or worsens, or ≥ 1 severity marker (see below), discuss with infection specialist as choice may depend on clinical setting. • **Severity markers** – Acute rising serum creatinine >1.5 x baseline, WBC >15 x 10^9L, Temperature > 38.5ºC, Evidence of severe colitis in CT scan or X-ray and Suspicion of/confirmed pseudomembranous colitis, toxic megacolon or ileus.			
Traveller's diarrhoea	Prescribe advance supplies via **private prescription. Limit prescription of antibacterial to be carried abroad** and taken if illness develops to people travelling to remote areas and for people in whom an episode of infective diarrhoea could be dangerous. Recommendation would be Azithromycin 500mg once daily for 1-3 days. See 'Fit for Travel'			
Oral Candidiasis	• Identify any underlying medical cause (e.g. malignancies/ HIV: test where appropriate). • Please note first line miconazole oral gel is available from community pharmacy via 'Pharmacy First' for eligible patients. • Topical azoles are more effective than topical nystatin. • Give advice where drug induced (e.g. good oral hygiene with inhaled corticosteroid). • Clean dentures thoroughly – remove as much as possible during treatment, particularly at night. • Check for interacting drugs before prescribing.	Miconazole oral gel **If miconazole not tolerated:** Nystatin oral suspension Fluconazole capsules (extensive/ severe)	2.5ml of 24mg/ml QDS (or small amount to localised infection / dentures) after food 100,000 units QDS after food (half in each side) 50mg daily (100mg daily if HIV/ immunocompromised	7 days/ continue for 7 days after resolved 7 days/ continue for 48 hours after lesions have healed 7-14 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Threadworm	• Treat all household contacts at the same time. • Please note oral mebendazole is available from community pharmacy via 'Pharmacy First' for eligible patients • Advise hygiene measures for 2 weeks (hand hygiene, pants at night, morning shower, including perianal area). Wash sleepwear, bed linen and dust and vacuum. • Treatment failure likely to be hygiene related as opposed to failed drug therapy	Mebendazole	100mg stat	One dose, repeat in 2 weeks if persistent.

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
SKIN / SOFT TISSUE INFECTIONS				
Impetigo	• Consider oral antibiotics only for extensive, severe, or bullous impetigo. • Please note Fusidic acid 2% cream is available from community pharmacy via 'Pharmacy First' for eligible patients. • Reserve topical antibiotics for very localised lesions to reduce the risk of resistance • Reserve Mupirocin for MRSA on specialist advice only.	**Small localised infection** Fusidic acid 2% cream **More severe:** Flucloxacillin or Clarithromycin *if allergic to penicillin*	 Topically thinly TDS 500 mg QDS 500mg BD	 5 days 5 days 5 days
Acne Vulgaris See SAPG guidance NICE 198 – Acne Vulgaris	• Lifestyle advice, wash with non-alkaline (skin pH neutral or slightly acidic synthetic detergent) cleansing product twice daily on acne-prone skin. • Urgent referral should be made if patients have acne fulminans. • Referral should be made to dermatology if any of the following apply – diagnostic uncertainty, patient has acne conglobata or patient has noduklo-cystic acne. • If no response and mild to moderate acne offer another option from the treatment choices. • If no response and moderate to severe acne and treatment did not include an oral antibiotic offer another option which includes an oral antibiotic from the treatment choices. • Consider referring patients with mild to moderate acne that have not responded to 2 completed courses of treatment. Or patients with moderate-severe acne which has not responded to previous treatment that contains an oral antibiotic. Or patients that have acne with scarring or acne with persistent pigmentary changes. • If skin irritation occurs, with topical treatment, the frequency of application may need to be reduced and gradually increased as tolerated. • DO NOT USE the following to treat acne – monotherapy with a topical antibiotic, monotherapy with an oral antibiotic or a combination of a topical antibiotic and an oral antibiotic. • Only continue oral antibiotics for more than 6 months in exceptional circumstances.	**Any severity of acne** Fixed combination of topical adapalene with topical benzoyl peroxide OR **Any severity of acne** Fixed combination of topical tretinoin with topical clindamycin OR **Mild to Moderate acne only** Fixed combination of topical benzyl peroxide with topical clindamycin OR **Moderate to severe only** Fixed combination of topical adapalene with topical benzoyl peroxide PLUS Oral Lymecycline OR Oral Doxycycline OR **Moderate to severe only** Topical azelaic acid PLUS Oral Lymecycline OR Oral Doxycycline	Apply once daily in the evening Apply once daily in the evening Apply once daily in the evening Apply once daily in the evening 408mg OD 100mg OD Apply twice daily 408mg OD 100mg OD	Review treatment at 12 weeks. If acne clear or almost clear, consider maintenance treatment. At 12 week review if acne has completely cleared consider stopping oral antibiotic but continuing the topical treatment. If acne not completely cleared, consider continuing oral antibiotic + topical treatment for up to 12 more weeks. Review at 3 monthly intervals and stop oral antibiotic as soon as possible.

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Rosacea See SAPG guidance	**Mild to moderate** papulopustular rosacea • Prescribe topical agents • If the treatment is effective it may be stopped but advice the patient that rosacea may relapse and treatment may need to be repeated. • If treatment is ineffective, consider switching to an alternative topical treatment or adding an oral antibiotic	Metronidazole gel/cream 0.75% OR Azelaic acid 15%	BD BD	Review at 8-12 weeks
	Moderate to severe papulopustular rosacea • Prescribe oral antibiotic and a topical agent • If oral antibiotic alone is ineffective, consider adding a topical agent or refer to a dermatologist based on clinical judgement.	Ivermectin cream And/Or Oxytetracycline or tetracycline (Both licensed) OR Doxycycline	OD 500mg BD 100mg OD	Review at 8-12 weeks Up to 16 weeks (should be discontinued if no improvement at 6 weeks). Then review at minimum 6mthly intervals.
	Rosacea with erythema as the predominant symptom • Brimonidine gel can be helpful in addition to ongoing lifestyle changes. • Brimonidine gel has no effect on papules, pustules or phymatous changes**.**	Brimonidine 0.5% gel (Mirvaso)	Apply once daily until erythema subsides, apply thinly, max. 1 g of gel per day.	If no improvement, consider a referral to cosmetic camouflage service
Cellulitis or mild surgical wound infection HIS resources management suspected infection chronic wounds	• If afebrile and healthy other than cellulitis use **single drug** treatment. • Please note Flucloxacillin is available from community pharmacy via 'Pharmacy First' for eligible patients for the following indications only – infected insect bite, cellulitis patient afebrile and otherwise healthy) and acute paronychia with signs of cellulitis. • If extensive, progressive, complicating recent surgery or patient febrile or unwell **admit** to local hospital for IV treatment. • Infection near eyes or nose more concerning because of serious intracranial complications. • If ambulant with transport consider referral for outpatient IV therapy via QEUH **OPAT service (tel 0141 452 3107 Monday- Friday 0800-1600)** or discuss with your local hospital. • If a wound infection or deep infection is suspected in a patient with a joint replacement please contact the orthopaedic on-call team at the operating hospital for	Flucloxacillin OR *In penicillin allergy* Doxycycline	500mg QDS 100mg BD	5 days (if slow response continue for another 5 days)

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	further advice prior to commencing antibiotics unless patient is in extremis			
Leg ulcers HIS resources management suspected infection chronic wounds	**Antibiotics do not improve healing.** Bacteria will always be present. Culture swabs and antibiotics are only indicated if diabetic or there is evidence of clinical infection such as inflammation/redness/cellulitis; increased pain; purulent exudate; rapid deterioration of ulcer or pyrexia. If antibiotic therapy required treat as for cellulitis and refer for specialist opinion following clinical review and if judged to be severe.			
Cellulitis complicating lymphoedema	• Often caused by Beta haemolytic Streptococci and *Staph.aureus.* • Patients with persistent infection or frequent recurrence may require prophylactic phenoxymethylpenicillin.	Amoxicillin or Flucloxacillin (If evidence of Staph.aureus - folliculitis, pus, crusting) Clindamycin *if allergic to penicillin*	500mg TDS 500mg QDS 450 mg TDS	14 days
Animal or human bite	**Surgical toilet most important. Assess tetanus, rabies risk, and if human, blood borne virus.** Antibiotic prophylaxis advised for – all human and cat bites and for dog bites if puncture wound; bite involving hand, foot, face, joint, tendon, ligament; immunocompromised, cirrhotic; asplenic or presence of prosthetic valve/ joint. Seek specialist advice from microbiology for bites from a wild or exotic animal because the spectrum of bacteria involved may be different and may be risk of other serious non-bacterial infections.	Co-amoxiclav (alone) *If penicillin allergic:* Metronidazole **PLUS** Doxycycline (cat/dog/human)	625 mg TDS 400 mg TDS 100 mg BD	**Prophylaxis** 3 days **Treatment** 5 days BUT review at 24 & 48 hrs
Blepharitis	Ensure patient undertaking effective lid hygiene Ensure adequate treatment of seborrhoeic dermatitis or acne rosacea If no improvement after at least a couple months of practising good lid hygiene, and clear signs of staphylococcal infection give trial of topical antibiotic. If topical antibiotics are ineffective or if signs of Meibomian cyst/ dysfunction or acne oral antibiotics (tetracyclines) may be required. Consider referral to optometry/ophthalmology for review and advice.	If adequate trial of lid hygiene ineffective first line **Second line** Chloramphenicol 1% ointment	BD to lid margin (reduced to once daily as condition improves)	Up to 6 week trial (continue for 1 month after inflammation subsides)
Conjunctivitis	**First line:** bathe/clean eyelids with cotton wool dipped in sterile saline or boiled (cooled) water to remove crusting. Most cases are viral or self-limiting (65% and 74% resolve on placebo by days 5 and 7). Bacterial conjunctivitis: usually unilateral and also self-limiting, with yellow-white mucopurulent (not watery) discharge. Please note chloramphenicol drops/ointment is available from	**Second line after eye cleaning:** Chloramphenicol 0.5% drops (OR 1% ointment at night) **Third line** Fusidic Acid 1% Gel	1 drop 2 hrly Reduce to QDS with clinical improvement (usually after 2 days) BD	Continue all for 48 hours after resolution

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	community pharmacy via 'Pharmacy First' for eligible patients. Treat only if severe. Fusidic acid should be reserved for third line as it has less gram negative activity. Refer patients to optometry as required			
Scabies	Treat whole body from ear/chin downwards, and under nails if using permethrin (if <2yrs, elderly or immunocompromised also treat face and scalp, or if using malathion). Treat household & sexual contacts. Please note permethrin and malathion available from community pharmacy via 'Pharmacy First' for eligible patients	Permethrin 5% cream **If allergy:** Malathion 0.5% liquid	2 applications one week apart	
Head Lice	Treatment is available through the community pharmacy Pharmacy First service for eligible patients.	Dimeticone lotion 4%	2 applications one week apart	
Pubic Lice	Treat all body hair, except head, eyebrows and eyelashes. Treat all sexual contacts within last 3 months and household contacts. Treatment is available from community pharmacy via Pharmacy First.	Malathion 0.5% liquid **2nd line** Permethrin 5% cream	2 applications one week apart	
Dermatophyte infection of the proximal fingernail or toenail	Take nail clippings: Start therapy only if infection is confirmed by laboratory**.** Monitor hepatic function before treatment and then periodically after 4–6 weeks of treatment—discontinue if abnormalities in liver function tests. If candida or non-dermatophyte infection confirmed use oral itraconazole. Topical nail lacquer is not as effective. Stop treatment when continual new, healthy, proximal nail growth. To prevent recurrence weekly 1% topical antifungal cream can be applied to entire toe area.	Terbinafine	250 mg OD	6 weeks (fingers) 12 weeks (toes)
In-growing toenail	Common source of antibiotic misuse. **Do not treat with antibiotics**. Refer for urgent podiatry review.			
Diabetic Foot infection	As for cellulitis (see above) except use **flucloxacillin 1g QDS** as first line in penicillin non-allergic. Refer to local diabetes clinic for further advice if: **ulcer, peripheral vascular disease, neuropathy or no improvement after treatment course.**			
Dermatophyte infection of the skin	Take skin scrapings for culture if intractable, or on scalp. Treatment: 1 week terbinafine is as effective as 4 weeks azole. If intractable consider oral itraconazole. Discuss scalp infections with specialist.	Topical 1% terbinafine or 1% azole (Clotrimazole or Miconazole)	1-2 x daily 1-2 x daily	1 to 2 weeks 4-6 weeks (for 1 to 2 weeks after healing)
Herpes zoster/ Chicken pox & Varicella zoster/ Shingles	**Chicken pox:** Clinical value of antivirals minimal unless immunocompromised, severe pain, dense/oral rash, adult, on steroids, smoker **AND** treatment started <24h of onset of rash. **Shingles**: Always treat ophthalmic and refer for ophthalmology review. Non-ophthalmic: Treat > 50years if < 72 h of onset of rash, as post-herpetic neuralgia rare in < 50yrs but occurs in 20%>60yr Treatment should only be considered between 72 hours and 7 days if high risk of severe shingles, continued vesicle formation, older age, immunocompromised or severe pain.	*1st line* - Aciclovir	800 mg 5x/day	7 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	Adjust dose in renal impairment – see BNF for details. If pregnant or immunocompromised and exposed to chicken pox; seek advice re treatment and prophylaxis **(Infectious Diseases Unit, Ward 5 c, Queen Elizabeth University Hospital (Tel: 0141 201 1100 page on-call ID consultant)**			
Mastitis NHSGGC Antibiotic Policy for Obstetric Patients.	S. Aureus is the most common infecting pathogen. Suspect if a women has: a painful, tender, red breast; fever and/ or general malaise. Treat where indicated with flucloxacillin 1g QDS 5 days (or clarithromycin 500mg BD in penicillin allergy) If breast feeding antibiotics are appropriate where indicated. Women should continue feeding, including from the affected breast.			
Pilonidal sinus	**Drainage or wide excision usually required**. If evidence of discharge or cellulitis consider starting co-amoxiclav 625mg TDS, or clindamycin 450mg TDS for 7 days and surgical referral			
Skin/ Breast abscess	**Antibiotics are not usually helpful.** Drainage is normally required. Reserve antibiotics for those with surrounding cellulitis (see treatment choices under 'Cellulitis')			
DENTAL INFECTIONS – derived from the Scottish Dental Clinical Effectiveness Programme (SDCEP), Drug Prescribing for Dentistry: Latest update published June 2021, SDCEP Guidelines				
This guidance is not designed to be a definitive guide to oral conditions. It is for GPs for the management of acute oral conditions pending being seen by a dentist or dental specialist. GPs should not routinely be involved in dental treatment and, if possible, advice should be sought from the patient's dentist, who should have an answer-phone message with details of how to access treatment out-of-hours, or NHS 24 on 111				
Mucosal ulceration and inflammation (simple gingivitis)	• Temporary pain and swelling relief can be attained with saline mouthwash • Use antiseptic mouthwash: If more severe & pain limits oral hygiene to treat or prevent secondary infection. • The primary cause for mucosal ulceration or inflammation (aphthous ulcers, oral lichen planus, herpes simplex infection, oral cancer) needs to be evaluated and treated.	Simple saline mouthwash Chlorhexidine 0.12-0.2% *(Do not use within 30 mins of toothpaste)* Hydrogen peroxide 6% *(spit out after use)*	½ tsp salt dissolved in glass warm water Rinse mouth for 1 minute BD with 5ml diluted with 5ml water. Rinse mouth for 2 mins TDS with 15ml diluted in ½ glass warm water	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene
Acute necrotising ulcerative gingivitis[C]	• Refer to dentist for scaling and oral hygiene advice • Use in combination with antiseptic mouthwash if pain limits oral hygiene • Commence oral metronidazole only in severe cases (amoxicillin, is a suitable alternative).	Chlorhexidine or hydrogen peroxide Metronidazole (severe cases)	see above dosing in mucosal ulceration 400 mg TDS	Until pain allows for oral hygiene 3 days
Pericoronitis[1B]	• Refer to dentist for irrigation & debridement. • If persistent swelling or systemic symptoms use metronidazole (amoxicillin, is a suitable alternative) • Use antiseptic mouthwash if pain and trismus limit oral hygiene	Metronidazole Chlorhexidine or hydrogen peroxide	400 mg TDS see above dosing in mucosal ulceration	3 days Until pain allows for oral hygiene

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Dental abscess	• Regular analgesia should be first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for abscess are not appropriate. Repeated antibiotics alone, without drainage are ineffective in preventing spread of infection. • Antibiotics are only required if immediate drainage is not achieved using local measures or in cases of spreading infection (swelling, cellulitis, lymph node involvement) or systemic involvement (fever, malaise), all of which suggest that the immune system alone is not able to adequately manage the infection. • Severe odontogenic infections; defined as cellulitis plus signs of sepsis, difficulty in swallowing, impending airway obstruction, Ludwigs angina. Refer urgently for admission to protect airway, achieve surgical drainage and IV antibiotics • The empirical use of cephalosporins, co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients and should only be used if no response to first line drugs when referral is the preferred option. • When an antibiotic is unavoidable, phenoxymethylpenicillin is now recommended as the preferred first line antibiotic. This is due to its narrower spectrum of activity, which is less likely to drive antimicrobial resistance.			
	If pus drain by incision, tooth extraction or via root canal. Send pus for microbiology. *True penicillin allergy*: use clarithromycin *If spreading infection* (lymph node involvement, or systemic signs i.e. fever or malaise) refer to hospital.	**1st Line** Phenoxymethylpenicillin **2nd Line** Amoxicillin *True penicillin allergy:* Clarithromycin	**500 mg QDS** **500mg TDS** **500 mg BD**	Up to 5 days review at 48 hours

INFECTIONS WHERE SPECIALIST ADVICE IS ALWAYS ADVISED	
Fever in a returning traveller	Commonest acute tropical infections are typhoid and paratyphoid fever, malaria and dengue fever. Usually within 1 month of travel except malaria which may cause fever >1 month after return from tropics ***Refer to the Infection unit, ward 5c, QEUH (tel; 0141 2011100) or local acute hospital***
Fever in the immunocomp-romised host	Patients on long term steroids, biological agents, other immunosuppressive agents or recent chemotherapy are prone to a variety of infections ***Refer for detailed assessment in local acute hospital or patient's specialist or Infection unit, ward 5c QEUH or Beatson oncology centre (for patients receiving chemotherapy).***
HIV-infection and infective complications	HIV is often unrecognised. Long term complications can be reduced by earlier recognition and testing. Practitioners are encouraged to lower their threshold for HIV testing which should always be carried out after verbal patient consent. Consider HIV testing in the indicator conditions listed below. HIV-positive patients are prone to the same infections as the rest of the population plus opportunistic infections when CD4 counts are < 300/ mm3. **Indicator conditions:** tuberculosis, herpes zoster, mucosal candidiasis, difficult to treat fungal infections, sexually transmitted infections, Hepatitis B or C, mononucleosis, pneumonia, chronic diarrhoea, unexplained fever or weight loss, recurrent infections, unexplained lymphopenia or thrombocytopenia. ***Refer newly diagnosed HIV-positive patients to the Brownlee centre outpatients, Gartnavel General hospital for rapid, specialist follow up and care (tel; 0141 211 3000). If acutely unwell and requiring hospital admission refer to the Infection unit, ward 5c, QEUH (tel: 0141 201 1100 page On Call ID consultant.***

GENITAL TRACT INFECTIONS. Adapted from British Association of Sexual Health and HIV (BASHH)

Note: Positive results for syphilis, Chlamydia, gonorrhoea, HIV and Hepatitis B are supported by the Sandyford STI Failsafe system, where specialist sexual health advisers support the requesting practitioner in appropriate management. For specialist advice and contact tracing following the diagnosis/ suspicion of a sexually transmitted infection GPs and practice nurses should call **0141 211 8639** (M-F 9-4.30) or email the Sandyford website: ggc.sandyfordprofessionalsupport@nhs.scot Please phone for appointments at Sandyford clinic rather than asking patients to 'walk-in' for triage.

Patients should call **0141 211 8130**. Acute symptomatic STIs include: male dysuria, penile discharge, rectal discharge or pain, purulent vaginal discharge, acute ano-genital ulceration, suspected pelvic infection, acute symptomatic syphilis. Consultant GUM referral at Sandyford Central / Sandyford Renfrewshire via SCI Gateway 'Sandyford: Genitourinary Medicine' for on-going management if: recurrent vaginal discharge / candida, uncontrolled recurrent herpes, non-responding warts, positive syphilis serology. **Any STI occurring in pregnancy requires specialist referral.**

The Sandyford also have a website detailing advice and guidance for professionals on all topics below, see link Sandyford guidelines

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Syphilis	Consider if new genital lesion(s) or widespread skin rash (often including palms). Positive syphilis tests are supported by the Sandyford STI Failsafe system. Refer to Sandyford for specialist assessment, parenteral management and partner notification. Test and treat partners also. NB screening tests will remain positive after initial infection, for advice re future serology results then contact Sandyford Failsafe helpline.			

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Gonorrhoea	There have been cases of high level azithromycin resistant strains of gonorrhoea reported in Glasgow. Decreasing sensitivity of gonorrhoea to cephalosporins and azithromycin is now a real threat. Treatment of gonorrhoea requires **parenteral treatment** with **1g IM stat ceftriaxone** unless genetic prediction test shows sensitivity to quinolones. Refer to Sandyford to check antibiotic sensitivities, administer treatment, and arrange partner notification. Test of cure will be arranged two weeks after treatment, to ensure treatment success. **DO NOT attempt blind treatment with oral azithromycin, cefixime or ciprofloxacin**. Unregulated online treatment for gonorrhoea may be accessed by patients and may be ineffective. If patients disclose using such services be aware that infection may be unresolved, and check they have enough information about local free sexual health services that can offer better treatment.			
Non-specific Urethritis (male)	Dysuria and visible or evoked mucoid/ mucopurulent urethral discharge in the absence of chlamydia or gonorrhoea. Requires Sandyford unscheduled care appointment for specialist evaluation (including near-patient microscopy and testing for *Mycoplasma genitalium*). Refer urgently to Sandyford for assessment within 48 hours (patients can also self refer. Syndromic treatment is now challenging due to gonococcal drug resistance and macrolide resistance in *Mycoplasma genitalium*. Least harm likely from **doxycycline 100mg BD x 7 days** if treatment cannot be deferred. Partner notification is then difficult without a clear diagnosis so in all settings take a urine sample for chlamydia/gonorrhoea NAAT testing (to be handed in at GP if in OOH) any positive results will be intercepted by the failsafe service .			
Epididymitis	**Under 35 years old** usually sexually transmitted (Chlamydia, gonorrhoea). **Over 35 years old** usually Gram-negative enteric, but a sexual history is essential to assess risk. Exclude **testicular torsion** esp if <20 yrs old Consider mumps. Send urine for GC/Chlamydia NAAT as well as urine culture. Urethral swab for GC if discharge Seek advice from Sandyford: partner notification required if STI is the cause and near-patient microscopy can help management. Refer to Sandyford for *Mycoplasma genitalium* testing. Please note safety concerns with quinolones.	**If probably due to STI where gonorrhoea is likely:** Ceftriaxone 1g IM stat PLUS Doxycycline **If gonorrhoea suspected refer to Sandyford as parenteral ceftriaxone, and careful partner notification are required** **If probably due to Chlamydia or other non-gonococcal organism:** Doxycycline OR Ofloxacin **If probably due to enteric organisms:** Ofloxacin	 100mg BD 100mg BD 200mg BD 200mg BD	 14 days 14 days 14 days 14 days
Chlamydia trachomatis	Samples should be taken before treatment. Patients with symptoms, i.e. pelvic pain in women, scrotal pain or urethral or rectal discharge in men, refer as soon as possible to Sandyford unscheduled care (0141) 211 8639 or professional email for advice (address on website).Test and treat partners. Avoid doxycycline in pregnancy. **Doxycycline is now the preferred first line treatment due to increased macrolide resistance in *Mycoplasma genitalium* (M gen) and gonorrhoea**	Doxycycline *Only if tetracycline contraindicated*: Azithromycin	100mg BD 1 g stat followed by 500mg od for 2 further days	7 days 3 days
Pelvic Inflammatory Disease (PID)	Patients with symptoms should be referred to a Sandyford clinic or local emergency department (if severe, e.g. T>38ºC) by telephone without treatment. Should be seen same or next day. Test for *N. gonorrhoeae* (as increasing resistance) and chlamydia. Micro and	**1st line:** Refer to Sandyford for: Ceftriaxone 1g IM stat **PLUS** Doxycycline **AND** Metronidazole	 1g IM 100mg BD 400mg BD	 stat 14 days 14 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
	clinical cure greater with ofloxacin than with doxycyline Can be referred to Sandyford for Mycoplasma genitalium testing.	**2nd line:** Metronidazole **AND** Ofloxacin (note safety concerns with quinolones) (if gonorrhoea unlikely)	 400mg bd 400mg bd	 14 days
Genital Herpes	Treat immediately. Don't attempt speculum if primary attack. Take a swab for genital ulcer PCR to virus lab. Consider syphilis. Direct to online patient information. Refer to Sandyford clinic if further support required. NB patients with HIV and immunosuppresion may need a higher dose and longer course - seek specialist guidance from Sandyford Consider self-start treatment for infrequent recurrences or daily suppressive treatment for troublesome or frequent recurrences (likely to be >6 episodes per year)	**First episode:** Aciclovir **Recurrent infection:** Aciclovir **Suppressive treatment if likely to be >6 recurrences per year:** Aciclovir	 400mg TDS 800mg TDS 400mg BD	 5 days 2 days 6-12 months and review
Vaginal candidiasis	**Consider** genital herpes before making diagnosis of candida infection. All topical and oral azoles give over 80% cure. In pregnancy avoid oral azole Refer Sandyford if multiple attacks or not improving. Please note treatment is available from community pharmacy via 'Pharmacy First' for eligible patients.	Fluconazole or Clotrimazole	150 mg orally 500 mg pessary	stat stat
Bacterial vaginosis (BV)	If few symptoms do not require treatment. Treatment with oral metronidazole results in similar cure rates (93% 400mg bd and 85% 2g stat) and is less expensive than topical treatment, Metronidazole 0.75% vaginal gel can be considered where oral treatment is not suitable. Clindamycin 2% cream is higher cost, non-formulary, and may mask gonorrhoea and weaken condoms. Women with recurrent symptomatic BV may benefit from regular suppressive treatment. Sandyford can provide advice if required. Symptomatic pregnant women should be treated in the usual way. See BASHH guidelines.	Metronidazole *or* Metronidazole 0.75% vaginal gel (in those unable to take oral) **Recurrent Symptomatic** Metronidazole 0.75% vaginal gel	400 mg BD (2g stat if adherence issues) 5 g applicator full at night 5g applicator full at night twice per week	5 days stat 5 days For 10 days then twice weekly for 3-6 months
Trichomoniasis	Refer to Sandyford. Treat current partners and any partners in past 4 weeks, irrespective of results.	Metronidazole	400 mg BD	7 days
Proctitis	Rectal discharge, pain, constipation & tenesmus following unprotected receptive anal sex (which may be undisclosed). Causes include gonorrhoea,chlamydia, lymphogranuloma venereum, herpes and syphilis. Refer **urgently** to Sandyford for proctoscopy and specialist management.			
Balanitis	Usually settles with simple salt water bathing / avoidance of irritants, soap substitutes. Exclude diabetes if repeat presentation. Refer to Sandyford for specialist advice if recurrent: consider pre-malignant lesions, other skin conditions such as psoriasis, candida, anaerobic infection, herpes, circinate balanitis with Chlamydia, secondary syphilis.			

ILLNESS	COMMENTS	DRUG	DOSE	DURATION
Genital warts	Refer to Sandyford if pregnancy with distress or significant irritation or recalcitrant symptoms after consistent use with above agents to maximum license.	**First line** Self-applied podophyllotoxin 0.5% liquid (avoid in pregnancy). Or **Second line** **Cataphen 10% ointment (Camellia sinensis-green tea leaf)** – Licensed for all external warts up to 16 weeks in >18years. License is for immunocompetent individuals but use in all adults	BD TDS	3 days per week for 4-6 weeks but repeat courses advised if >50% response For up to 16 weeks