NHS
in Greater Manchester
Strategic Medicines Optimisation
Greater Manchester Joint
Commissioning Team

Greater Manchester Antimicrobial Guidelines

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DOCUMENT CONTROL

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Copies of this document can be obtained from:

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Revision history

The latest and master version of this document is held by Greater Manchester Health and Care Commissioning Medicines Optimisation team:

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23/06/2020	E Radcliffe	Final Formatting	7.0
8/10/2020	E Radcliffe	Added Inscet Bites and Stings section and amendments made to Cellulitis and Lymme Disease entries following NICE NG182 Insect Bites and Stings:Antimicrobial Guidance	7.1
20/10/2020	E Radcliffe	Amended draft 7.1 following 'Antimicrobial Stewardship SG comments	7.2
23/11/2020	E Radcliffe A White	Updated to incorporate NICE NG 184 human and animal bites	7.3
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Approvals

This document has been provided for information to:

NAME	DATE OF ISSUE	VERSION
GMMMG webpage	23/6/2020	7.0
AMSSG	13/10/2020	7.1
AMSSG	01/12/2020	7.3
MGSG	15/12/2020	8.0

Changes to version 7.0 – see end of document.

Aims

- to provide a simple, empirical approach to the treatment of common infections
- to promote the safe and effective use of antibiotics
- to minimise the emergence of bacterial resistance in the community

Principles of Treatment

1. This guidance is based on the best available evidence, but use professional judgement and involve patients in decisions.
2. Please ensure you are using the most up to date version. The latest version will be held on the GMMMG website.
3. Prescribe an antibiotic only when there is likely to be a clear clinical benefit.
4. When recommending analgesia or treatment with products available from pharmacies please follow the guidance issued by NHS England (Conditions for which over the counter items should not routinely be prescribed in primary care: Guidance for CCGs [Gateway approval number: 07851]). See the guidance for exceptions to recommending self-care.
5. Consider a no, or delayed, antibiotic strategy for acute self-limiting infections e.g. upper respiratory tract infections.
6. When prescribing an antibiotic it should be based on the severity of symptoms, risk of developing complications, previous laboratory tests and any previous antibiotic use.
7. Limit prescribing over the telephone to exceptional cases. Except during COVID-19 pandemic where face-to-face contact should be minimised by using telephone or video consultations
8. A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight and renal function. In severe or recurrent cases consider a larger dose or longer course.
9. Unless treatment choice is listed separately for children, then choices given are considered appropriate for adults and children; bearing in mind any specific age limitations for use listed in the BNF for Children.
10. Lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
11. Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (eg co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase risk of Clostridium difficile, MRSA and resistant UTIs.
12. Where Off-label use is recommended: Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtaining and documenting informed consent. See the GMC's Good practice in prescribing and managing medicines for more information.
13. Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations, e.g. fusidic acid).
14. In pregnancy AVOID tetracyclines, aminoglycosides, quinolones and high dose metronidazole.
15. We recommend clarithromycin as the preferred macrolide as it has less side-effects than erythromycin, greater compliance as twice rather than four times daily & generic tablets are similar cost. The syrup formulation of clarithromycin is only slightly more expensive than erythromycin and could also be considered for children. Erythromycin remains the drug of choice in pregnancy and should be used where clarithromycin is indicated.
16. Always advise to seek medical help if symptoms worsen at any time or do not improve within 48 hours of starting an antibiotic or the person becomes systemically unwell.
17. Review antibiotic choice once culture and susceptibility results are available.
18. **Where an empirical therapy has failed or special circumstances exist, microbiological advice can be obtained from your local hospital microbiology department.**
19. This guidance should not be used in isolation; it should be supported with patient information about back-up/delayed antibiotics, infection severity and usual duration, clinical staff education, and audits. Materials are available on the RCGP TARGET website.
20. This guidance is developed alongside the NHS England Antibiotic Quality Premium (QP). In 2017/19 QP expects: at least a 10% reduction in the number of E. coli blood stream infections across the whole health economy; at least a 10% reduction in trimethoprim:nitrofurantoin prescribing ratio for UTI in primary care, and at least a 10% reduction in trimethoprim items in patients > 70 years, based on CCG baseline data from 2015/16; and sustained reduction in antimicrobial items per STAR-PU.
21. This guidance should be facilitated by the adoption of Antibiotic Stewards from front line to board level within organisations, in line with NICE NG15: Antimicrobial stewardship, August 2015 . This sets out key activities and responsibilities for individuals and organisations in responding to the concern of antimicrobial resistance.
22. Please note MHRA safety alert (issued 21 March 2019): Fluoroquinolone antibiotics: ciprofloxacin, levofloxacin,moxifloxacin, ofloxacin: New restrictions and precautions due to very rare reports of disabling and potentially long-lasting or irreversible side effects. Key details are below and referenced where the relevant antimicrobials are advised in the guideline. Full letter can be viewed at DDL_fluoroquinolones_March-2019_final.pdf.

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UPPER RESPIRATORY TRACT INFECTIONS

Influenza treatment

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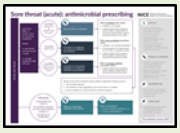
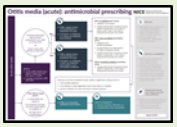
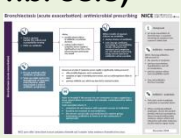
Annual vaccination is essential for all those at risk of influenza. For otherwise healthy adults antivirals not recommended.
Treat 'at risk' patients, when influenza is circulating in the community and ideally within 48 hours of onset (do not wait for lab report) or in a care home where influenza is likely. At risk: pregnant (including up to two weeks post-partum), 65 years or over, chronic respiratory disease (including COPD and asthma) significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, chronic neurological, renal or liver disease, morbid obesity (BMI 40 or greater). See **PHE seasonal influenza guidance** for current treatment advice and: **GMMMG: GP guide - Influenza outbreak in an adult care homes, January 2019**

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Acute sore throat  NICE Visual Summary NG 84 *Back to Contents*	**Avoid antibiotics as 90% resolve in 7 days without, and pain only reduced by 16 hours.** **Advise self-care in line with NHS England guidance.**		
	Use **FeverPAIN** Score (this has replaced CENTOR): ▪ ***F***ever in last 24 hours ▪ ***P***urulence ▪ ***A***ttend rapidly under 3days ▪ severely ***I***nflamed tonsils ▪ ***N***o cough or coryza Score: 0 to 1: 13 to 18% streptococci. **Do not offer an antibiotic.** 2 to 3: 34 to 40% streptococci. **Consider* no antibiotic or a back-up antibiotic prescription.** Greater than 4: 62 to 65% streptococci. **Consider* an immediate antibiotic or a back-up antibiotic prescription**. See **NICE NG84** (Sore throat (acute): antimicrobial prescribing).	Phenoxymethylpenicillin 500mg four times a day or 1g twice a day Duration: 10 days Phenoxymethylpenicillin is first choice due to a significantly lower rate of resistance in Group A streptococcus compared with clarithromycin.	***Penicillin Allergy***: Clarithromycin 500mg twice a day Duration: 5 days
Acute otitis media  NICE Visual Summary NG 91 *Back to Contents*	**No antibiotics – 80% resolve without antibiotics. Advise self-care in line with NHS England guidance.**		
	Recommend appropriate analgesia. **60% are better in 24hrs without antibiotics, which only reduce pain at 2 days and do not prevent deafness.** Consider 2 or 3-day delayed or immediate antibiotics for pain relief if: ➢ Less than 2 years AND bilateral acute otitis media or ➢ any age with otorrhoea See **NICE NG91** (Otitis media (acute): antimicrobial prescribing).	Amoxicillin 500mg to 1g three times a day Duration: 5 days	***Penicillin Allergy***: Clarithromycin 500mg twice a day Duration: 5 days
Acute otitis externa *Back to Contents*	**Mild infection: No antibiotics. Advise self-care in line with NHS England guidance.**		
	First recommend analgesia. Cure rates similar at 7 days for topical acetic acid or antibiotic plus or minus a steroid.	**Moderate infection:** Acetic acid 2% 1 spray three times a day Duration: 7 days	**Moderate infection:** Neomycin sulphate with corticosteroid 3 drops three times a day Duration: 7 to 14 days
	If cellulitis or disease extends outside ear canal, or systemic signs of infection.	**Severe infection:** Flucloxacillin 250mg/ 500mg four times a day Duration: 7 days	

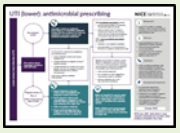
ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Acute Sinusitis  NICE Visual summary NG 79 *Back to Contents*	**No antibiotics – 80% resolve in 14 days and only 2% are complicated by bacterial infection. Advise self-care in line with NHS England guidance.**		
	Symptoms less than 10 days: No antibiotics. **Recommend self-care.** Paracetamol / ibuprofen for pain / fever. Nasal decongestant may help. **Symptoms greater than 10days**: Only consider back-up antibiotics if no improvement in symptoms. Consider* high dose nasal steroid if older than 12 years. **At any time if the person is:** ▪ systemically very unwell, ▪ or has symptoms and signs of a more serious illness or condition, ▪ or has high risk of complications Offer* immediate antibiotic or investigate and manage in line with NICE guidance on respiratory tract infections (self-limiting) See **NICE NG79** (Sinusitis (acute): antimicrobial prescribing)	Amoxicillin 500mg to 1g three times a day Duration: 5 days *Mometasone 50microgram nasal spray.* Two actuations (100mcg) in each nostril twice a day for 14 days (off-label use) ***Preferred choice if systemically very unwell, symptoms and signs of a more serious illness or condition, or at high risk of complications:*** Co-amoxiclav 625mg three times a day Duration: 5 days	***Penicillin allergy:*** Doxycycline (not for under 12 years) 200mg stat then 100mg daily Duration: 5 days **For children under 12 years:** Clarithromycin Duration 5 days
LOWER RESPIRATORY TRACT INFECTIONS			
Low doses of penicillins are more likely to select out resistance, we recommend at least 500mg of amoxicillin. Do not use quinolone (ciprofloxacin, ofloxacin) first line due to poor pneumococcal activity. Reserve all quinolones for proven resistant organisms.			
Acute cough bronchitis  NICE Visual summary NG 120 *Back to Contents*	**Only offer* / consider* treatment if:** **Acute cough and higher risk of complications[$] (at face-to-face examination):** consider* immediate or back-up antibiotic. **Acute cough and systemically very unwell (at face to face examination):** offer* immediate antibiotic.		
	Acute cough with upper respiratory tract infection: no antibiotic. **Acute bronchitis:** no routine antibiotic. Advise self-care in line with NHS England guidance. Do not offer a mucolytic, an oral or inhaled bronchodilator, or an oral or inhaled corticosteroid unless otherwise indicated.	Doxycycline 200mg stat then 100mg daily Duration: 5 days ***Preferred choice for children less than 12 years:*** Amoxicillin Duration 5 days	Amoxicillin 500mg three times a day. Duration: 5 days **For children less than 12 years with Penicillin allergy:** Clarithromycin Duration 5 days
	[$]Higher risk of complications includes people with pre-existing comorbidity; young children born prematurely; people over 65 with 2 or more of, or over 80 with 1 or more of: hospitalisation in previous year, type 1 or 2 diabetes, history of congestive heart failure, current use of oral corticosteroids.		
Acute exacerbation of Bronchiectasis (non-cystic fibrosis)  NICE Visual summary NG 117 *Back to Contents*	An acute exacerbation of bronchiectasis is sustained worsening of symptoms from a person's stable state. Send a sputum sample for culture and susceptibility testing. When results available, review choice of antibiotic. Offer* an antibiotic When choosing antibiotics, take account of: ▪ the severity of symptoms ▪ previous exacerbations, hospitalisations and risk of complications ▪ **previous sputum culture and susceptibility results**	Amoxicillin 500mg three times a day Duration[#]: 7 to 14 days[#]	Doxycycline 200mg stat, then 100mg daily OR Clarithromycin 500mg twice a day Duration[#]: 7 to 14 days[#]

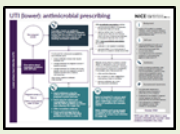
		[#]Course length based on an assessment of the person's severity of bronchiectasis, exacerbation history, severity of exacerbation symptoms, previous culture and susceptibility results, and response to treatment. Where a person is receiving antibiotic prophylaxis, treatment should be with an antibiotic from a different class. **Prophylaxis should only be offered on specialist advice.**

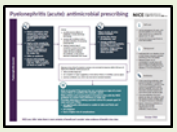
ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Acute exacerbation of COPD  NICE Visual summary NG 114 *Back to Contents*	**Many exacerbations (including some severe exacerbations) are not caused by bacterial infections so will not respond to antibiotics.**		
	Sending sputum samples for culture is not recommended in routine practice. Consider* an antibiotic: ▪ Based on the severity of symptoms, particularly sputum colour changes and increases in volume or thickness from the patient's normal. ▪ Previous exacerbations and hospital admission history, and the risk of developing complications ▪ Previous sputum culture and susceptibility results where available. ▪ The risk of AMR with repeated courses of antibiotics.	Doxycycline 200mg stat, then 100mg daily or Amoxicillin 500mg three times a day Duration: 5 days.	In severe infection: Doxycycline 200mg stat, then 100mg twice a day or Amoxicillin 1g three times a day Duration 5 days
	Patients identified as suitable for having 'rescue packs' should normally only be provided with steroids, as these have been shown to improve lung function alone, with advice to seek medical attention if symptoms suddenly worsen or do not improve within 48 hours of starting treatment. Any decision to include antibiotics should be based on clinical need, do not use the higher dose in 'rescue packs'. Patients will need to notify prescribers when they use their 'rescue pack' medication, and to ask for replacements.		
Acute exacerbation of COPD – PROPHYLAXIS *Back to Contents*	**Refer to a respiratory specialist** for a decision to prescribe oral prophylactic antibiotic therapy in patients with COPD. Consider* treatment only for people if they: ▪ **do not smoke and** ▪ have optimised non-pharmacological management and inhaled therapies, relevant vaccinations and (if appropriate) have been referred for pulmonary rehabilitation **and** ▪ continue to have 1 or more of the following, particularly if they have significant daily sputum production: • frequent (typically 4 or more per year) exacerbations with sputum production • prolonged exacerbations with sputum production • exacerbations resulting in hospitalisation. NICE guidance - Chronic obstructive pulmonary disease in over 16s: diagnosis and management (NG115)	Duration: Review treatment after the first 3 months and then at least every 6 months. Only continue treatment if continued benefits outweigh the risks. Before starting prophylactic antibiotics, ensure that the person has had: ▪ sputum culture and sensitivity (including tuberculosis culture), to identify other possible causes of persistent or recurrent infection that may need specific treatment ▪ training in airway clearance techniques to optimise sputum clearance ▪ a CT scan of the thorax to rule out bronchiectasis and other lung pathologies. Also carry out the following: ▪ an electrocardiogram (ECG) to rule out prolonged QT interval and ▪ baseline liver function tests. For people who are still at risk of exacerbations, provide an antibiotic from a different class. to keep at home as part of their 'rescue pack' Be aware that it is not necessary to stop prophylactic treatment during an acute exacerbation of COPD. **Monitoring for long-term therapy: See BNF**	

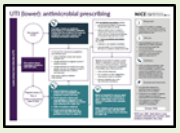
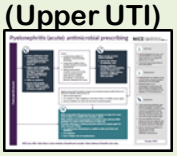
ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
COVID-19 Community acquired pneumonia treatment in the community (Adults) **[DURING COVID-19 pandemic]** *Back to Contents*	If a patient shows typical COVID 19 symptoms, follow UK government guidance on investigation and initial clinical management of possible cases. This includes information on testing and isolating patients. For patients with know or suspected COVID-19 follow UK guidance on infection prevention and control Minimise face-to-face contact. Use the BMJ remote assessment tools. • The clinical diagnosis of community-acquired pneumonia of any cause in an adult can be informed by clinical signs or symptoms such as:temperature >38°C • respiratory rate >20 breaths per minute • heart rate >100 beats per minute • new confusion Assessing shortness of breath (dyspnoea) is important but may be difficult via remote consultation. Use online tools such as dyspnoea scale, or CEBM review. Where pulse oximetry is available use oxygen saturation levels below 92% (below 88% in people with COPD) on room air at rest to identify seriously ill patients. Use of the NEWS2 tool in the community for predicting the risk of clinical deterioration may be useful. However a face to face consultation should not be arranged solely to calculate a NEWS2 score.	As COVID-19 pneumonia is caused by a virus, antibiotics are ineffective. Do not offer an antibiotic for treatment or prevention of pneumonia if: • COVID-19 is likely to be the cause and • symptoms are mild. Offer an oral antibiotic for treatment of pneumonia in people who can or wish to be treated in the community if: • the likely cause is bacterial or • it is unclear whether the cause is bacterial or viral and symptoms are more concerning or • they are at high risk of complications because, for example, they are older or frail, or have a pre-existing comorbidity such as immunosuppression or significant heart or lung disease (for example bronchiectasis or COPD), or have a history of severe illness following previous lung infection. **Doxycycline 200mg stat then 100mg daily** **Duration: 5 days** Doxycycline is preferred because it has a broader spectrum of cover than amoxicillin, particularly against Mycoplasma pneumoniae and Staphylococcus aureus, which are more likely to be secondary bacterial causes of pneumonia during the COVID-19 pandemic. **Doxycycline should not be used in pregnancy** **In Pregnancy** Erythromycin 500 mg 4 times a day Duration: 5 days	Alternative : Amoxicillin 500mg three times a day Duration: 5 days If atypical pathogens suspected AND moderately severe symptoms based on clinical judgement (or CRB =1 or 2): Amoxicillin 500 mg 3 times a day (higher doses can be used – see BNF) Duration: 5 days PLUS Clarithromycin 500 mg twice a day Duration: 5 days If high severity based on clinincal judgement (or CRB65 = 3 or 4) & patient able to take oral medicines and safe to remain at home Co-amoxiclav 500/125mg three times a day Duration: 5 days AND Clarithromycin 500mg twice a day Duration 5 days OR Erythromycin (in pregnancy) 500 mg 4 times a day orally Duration: 5 days If penicillin allergy AND high severity Levofloxacin (consider safety issues) 500 mg twice a day orally Duration: 5 days If preferred choice not suitable consult microbiology or consider* urgent referral to hospital. If unable to take oral medication refer urgently to hospital.

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Community acquired pneumonia treatment in the community (Children and young people under 18 years)	Offer an antibiotic(s) within 4 hours of establishing a diagnosis. Severity is assessed by clinical judgement. Give advice about: ▪ possible adverse effects of antibiotics ▪ seeking medical help if symptoms worsen rapidly or significantly, or do not improve within 3 days, or the person becomes systemically very unwell. Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.	**Children aged 1 month and over -** if non-severe symptoms or signs (based on clinical judgement) Amoxicillin Duration: 5 days ***If severe symptoms or signs*** (based on clinical judgement); guided by microbiological results when available: Co-amoxiclav ***PLUS (if atypical pathogen suspected)*** Clarithromycin Duration: 5 days	**Children aged 1 month and over -** if non-severe symptoms or signs (based on clinical judgement) Clarithromycin Duration: 5 days **Alternative choice for children aged 12 years to 17 years.** Doxycycline 200mg on first day, then 100mg once a day. Duration: 5 days

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
MENINGITIS			
Suspected meningococcal disease *Back to Contents*	**Transfer all patients to hospital immediately.** If time before hospital admission and if suspected meningococcal septicaemia or non-blanching rash, give intravenous or intramuscular benzylpenicillin as soon as possible. Do not give antibiotics if there is a definite history of anaphylaxis; rash is not a contraindication.	Benzylpenicillin by intravenous or intramuscular injection Age 10 plus years: 1200mg Children 1 to 9 years: 600mg Children less than 1 years: 300mg Stat doses Give by intramuscular injection if vein cannot be found.	
Prevention of secondary case of meningitis. Only prescribe following advice from Public Health England North West: ☎ 03442250562 option 3 (9 to 5 Mon to Fri) Out of hours contact ☎ 0151 434 4819 and ask for PHE on call.			
URINARY TRACT INFECTIONS			
As antimicrobial resistance and E. coli bacteraemia is increasing use nitrofurantoin first line. Always give safety net and self-care advice and consider risks for resistance. Give the appropriate **TARGET Treat Your Infection UTI** *leaflet.* ***Do not perform urine dipsticks – For men and women over 65 years*** *Dipsticks become more unreliable with increasing age over 65 years. Up to half of older adults, and most with a urinary catheter, will have bacteria present in the bladder/urine without an infection. This "asymptomatic bacteriuria" is not harmful, and although it causes a positive urine dipstick, antibiotics are not beneficial and may cause harm.* *For guidance on diagnosing UTIs and the need for dipsticks, in all ages, see PHE's quick reference tool for primary care.*			
Lower UTI in Non-pregnant Women  NICE Visual summary NG 109 *Back to Contents*	**Treat women with severe/or 3 or more symptoms.** **Women mild/or 2 or less symptoms advise self-care in line with NHS England guidance and consider* back up / delayed prescription.** **People over 65 years: do not treat asymptomatic bacteriuria;** it is common but is not associated with increased morbidity. Treat if fever AND dysuria OR 2 or more other symptoms. ***In treatment failure: always perform culture.***	Nitrofurantoin MR (if eGFR 45 ml/minute or greater) 100mg twice a day Duration: 3 days ***If low risk⁺ of resistance and preferably if susceptibility demonstrated & no risk factors£ (below):*** Trimethoprim 200mg twice a day Duration: 3 days	***If preferred choice unsuitable:*** Pivmecillinam 400mg initial dose then 200mg three times a day Duration: 3 days **CHECK AVAILABILITY AS NOT ALL PHARMACIES HOLD STOCK.**
	Symptoms: Increased need to urinate. Pain or discomfort when urinating. Sudden urges to urinate. Feeling unable to empty bladder fully. Pain low down in your tummy. Urine is cloudy, foul-smelling or contains blood. Feeling unwell, achy and tired.	**⁺A lower risk** of resistance may be more likely if not used in the past 3 months, previous urine culture suggests susceptibility (but this was not used) or it is the first presentation of a UTI, and in younger women. **£Risk factors for increased resistance include:** care home resident, recurrent UTI, hospitalisation for greater than 7 days in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased resistance, previous known UTI resistant to trimethoprim, cephalosporins or quinolones. **If risk of resistance** send urine for culture for susceptibility testing & give safety net advice.	

<table>
<tr><th>ILLNESS</th><th>GOOD PRACTICE POINTS</th><th>PREFERRED CHOICE</th><th>ALTERNATIVE</th></tr>
<tr><td rowspan="5">Catheter associated UTI
 
NICE Visual summary NG 113
Back to Contents</td><td rowspan="4">DO NOT DIPSTICK
Do not treat asymptomatic bacteriuria in people with a catheter.
Advise paracetamol for pain.
Advise drinking enough fluids to avoid dehydration.
Advise seeking medical help if symptoms worsen at any time or do not start to improve within 48 hours, or the person becomes systemically very unwell
Consider* removing or, if not possible, changing the catheter if it has been in place for more than 7 days. But do not delay antibiotic treatment if considered appropriate.
Send a urine sample for culture and susceptibility testing.
When results of urine culture are available:
▪ review choice of antibiotic
▪ change antibiotic according to susceptibility results if bacteria are resistant, using narrow spectrum antibiotics when possible</td><td colspan="2">Lower UTI symptoms</td></tr>
<tr><td>Nitrofurantoin MR (if eGFR 45 ml/minute or greater) 100mg twice a day
Duration: 7 days
OR
Trimethoprim (if low risk▼ of resistance) 200mg twice a day
Duration: 7 days</td><td>Pivmecillinam
400mg initial dose, then 200mg three times a day
Duration: 7 days</td></tr>
<tr><td colspan="2">Upper UTI symptoms</td></tr>
<tr><td>Cefalexin 500mg twice or three times a day (up to 1g to 1.5g three times a day or four times a day for severe infections)
Duration: 7 to 10 days</td><td>Ciprofloxacin 500mg twice a day
Duration: 7 days
(See MHRA Safety Alert - note 21 page 3)</td></tr>
<tr><td colspan="2">Pregnant women aged 12 years and over</td></tr>
<tr><td>Cefalexin 500mg twice or three times a day (up to 1g to 1.5g three times a day or four times a day for severe infections)
Duration: 7 to 10 days</td><td>If vomiting, unable to take oral antibiotics or severely unwell refer to hospital.</td></tr>
<tr><td colspan="4">▼Low risk of resistance is likely if not used in the past 3 months and previous urine culture suggests susceptibility (but this was not used) or it is the first presentation of a UTI . Higher risk of resistance is likely with recent use.</td></tr>
<tr><td>Lower UTI in pregnancy
 
NICE Visual summary NG 109
Back to Contents</td><td>Send MSU for culture and start antibiotics.
Short-term use of nitrofurantoin in pregnancy is unlikely to cause problems to the foetus but avoid at term (from 34 weeks onwards).
Treatment of asymptomatic bacteriuria in pregnant women: choose from nitrofurantoin (avoid at term), amoxicillin or cefalexin based on recent culture and susceptibility results.</td><td>Up to 34 weeks
Nitrofurantoin MR (if eGFR 45 ml/minute or greater) 100mg twice a day
Duration: 7 days
After 34 weeks use alternative</td><td>Amoxicillin (only if culture results available and susceptible)
500mg to 1g three times a day
OR
Cefalexin 500mg twice a day
Duration: All for 7 days</td></tr>
<tr><td>Lower UTI in Men
 
NICE Visual summary NG 109
Back to Contents</td><td>Consider prostatitis and send pre-treatment MSU
Consider STIs.</td><td>Trimethoprim 200mg twice a day
Duration: 7 days
Or
Nitrofurantoin MR (if eGFR 45 ml/minute or greater and no prostate involvement) 100mg twice a day
Duration: 7 days</td><td>Consider alternative diagnoses basing antibiotic choice on recent culture and susceptibility results</td></tr>
</table>

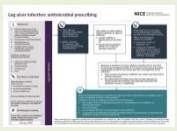
ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Recurrent UTI in non pregnant women having 3 or more UTIs per year  NICE Visual summary NG 112 *Back to Contents*	First advise about behavioural and personal hygiene measures, and self-care (with D-mannose or cranberry products) to reduce the risk of UTI. For postmenopausal women, if no improvement, consider vaginal oestrogen (review within 12 months). If no improvement, consider single-dose antibiotic prophylaxis for exposure to a trigger (review within 6 months). If no improvement or no identifiable trigger consider a trial of daily antibiotic prophylaxis (review within 6 months). Advice to be given: ▪ how to use (in particular for single dose prophylaxis) ▪ possible adverse effects of antibiotics, particularly diarrhoea and nausea ▪ returning for review within 3 to 6 months ▪ seeking medical help if symptoms of an acute UTI develop	**Choice should be based on culture and susceptibility results.** *Single dose when exposed to a trigger* Trimethoprim 200mg (off-label) Or Nitrofurantoin MR (if eGFR 45 ml/minute or greater) 100mg (off-label) *Continuous prophylaxis* Trimethoprim 100mg at night Or Nitrofurantoin MR (if eGFR 45 ml/minute or greater) 50mg to 100mg at night Duration for all: 3 to 6 months **then review** **Monitoring for long-term therapy: See BNF**	*Single dose when exposed to a trigger* Amoxicillin 500 mg (off-label) Or Cefalexin 500 mg (off-label) *Continuous prophylaxis* Amoxicillin 250mg at night (off-label) Or Cefalexin 125mg at night (off-label) Duration for all: 3 to 6 months **then review**
Acute prostatitis  NICE Visual summary NG 110 *Back to Contents*	Send MSU for culture and start antibiotics. 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).	Ciprofloxacin (See MHRA Safety Alert – note 21 page 3) 500mg twice a day Duration: up to 28 days	***If unable to take quinolone:*** Trimethoprim 200mg twice a day Duration: up to 28 days
Acute pyelonephritis in adults (Upper UTI)  NICE Visual summary NG 111 *Back to Contents*	Send MSU for culture & susceptibility. Offer an antibiotic. When prescribing antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to resistant bacteria. If no response within 24 hours, admit for IV antibiotics.	Cefalexin 500mg twice a day or three times a day (up to 1g to 1.5g three times a day or four times a day for severe infections) Duration: 7 to 10 days If known ESBL positive in urine, please discuss with microbiologist. **Pregnant women:** Consider referral. If cefalexin contraindicated or not tolerated consult microbiologist.	Co-amoxiclav (only if culture results available and susceptible) 500/125mg three times a day Duration: 7 to 10 days Or Trimethoprim (only if culture results available and susceptible) 200mg twice a day Duration: 14 days Or Ciprofloxacin (See MHRA Safety Alert – note 21 page 3) 500mg twice a day Duration: 7 days

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Lower UTI in children  NICE Visual summary NG 109 *Back to Contents*	**Child under 3 mths: refer urgently for assessment.**		
	Child ≥ 3 mths: use positive nitrite to guide. Start antibiotics, also send pre-treatment MSU. **If recurrent UTI, refer to paediatrics. If antibiotics required in recurrent UTI, seek specialist advice.**	**3 months and over** Nitrofurantoin (if eGFR 45 ml/minute or greater) [If children can swallow them, 100mg M/R capsules (older than 12yrs) should be used in preference to the liquid formulation. 50mg tablets can be considered for lower doses. **Do not crush tablets or open capsules**] OR Trimethoprim (if low risk of resistance$^{\Omega}$) Duration: 3 days	**3 months and over** Amoxicillin (only if culture results available and susceptible) OR Cefalexin Duration: 3 days
	$^{\Omega}$A lower risk of resistance may be more likely if not used in the past 3 months and previous urine culture suggests susceptibility (but this was not used) or it is the first presentation of a UTI . A higher risk of resistance may be more likely with recent use.		
Acute pyelonephritis in children under 16 years (Upper UTI)  NICE Visual summary NG 109 *Back to Contents*	**Refer children under 3 months to paediatric specialist**		
	Send a urine sample for culture and susceptibility testing in line with the NICE guideline, Urinary tract infection in under 16s: diagnosis and management (CG54). Offer* an antibiotic. When prescribing antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to resistant bacteria. If no response within 24 hours, admit for intravenous antibiotics.	Cefalexin Duration: 7 to 10 days	Co-amoxiclav (only if culture results available and susceptible) Duration: 7 to 10 days
		Assess and manage fever in under 5s in line with NICE guidance - Fever in under 5s: assessment and initial management (CG160)	
GASTRO INTESTINAL TRACT INFECTIONS			
Oral candidiasis *Back to Contents*	**Oral candidiasis is a minor condition that can be treated without the need for a GP consultation or prescription in the first instance.** **Advise self-care in line with NHS England guidance.**		
	Topical azoles are more effective than topical nystatin. Oral candidiasis rare in immunocompetent adults.	Fluconazole capsules 50mg to 100mg daily Duration: 7 days & further 7 days if persistent Or Miconazole oral gel 2.5ml four times a day after meals Duration: 7 days or until 2 days after symptoms.	If miconazole not tolerated: Nystatin suspension 100,000 units four times a day after meals Duration: 7 days or until 2 days after symptoms
Eradication of Helicobacter pylori *Back to Contents*	Refer to **BNF** or **GMMMG** **Do not offer eradication for GORD. (PPI for 4 weeks).** Do not use clarithromycin, metronidazole or quinolone if used in past year for any infection. Retest for *H.pylori* post DU/GU or relapse after second line therapy: using breath or stool test OR consider endoscopy for culture and susceptibility.		
Infectious diarrhoea *Back to Contents*	Refer previously healthy children with acute painful or bloody diarrhoea to exclude *E. coli* 0157 infection. **Antibiotic therapy usually not indicated unless systemically unwell.** If systemically unwell and campylobacter suspected consider Clarithromycin 250 to 500mg twice a day for 7 days, if treated within 3 days of onset.		

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Clostridium difficile *Back to Contents*	***Consult microbiology for all cases.*** Stop unnecessary antibiotics and/or PPIs. If severe symptoms or signs (below) should treat, review progress closely and/or consider hospital referral. **Definition of severe:** Temperature greater than 38.5^{o}C, or WCC greater than 15, or rising creatinine or signs/symptoms of severe colitis.	***First episode:*** Vancomycin 125mg four times a day Duration: 10 to 14 days **CHECK AVAILABILITY AS NOT ALL PHARMACIES HOLD STOCK.**	***If recurrent or severe then seek microbiology advice.***
Acute Diverticulitis *Back to Contents*	**Consider watchful waiting if person**: ▪ Systemically well ▪ No co-morbidities ▪ No suspected infection. Advise analgesia (**avoid** NSAIDs and opioids), clear liquids with gradual reintroduction of solid food if symptoms improve. Consider checking for raised white cell count and CRP, which may suggest infection. Patients should be reviewed after 72 hours and if there is no improvement, and/or fever and leukocytosis persist, urgent hospital admission is advised.	***For patients who do not require urgent hospital admission and infection is suspected:*** Co-amoxiclav 625mg three times a day Duration: 7 days	Ciprofloxacin (See MHRA Safety Alert – note 21 page 3) 500mg twice a day PLUS Metronidazole 400mg three times a day Duration: 7days
		Arrange immediate urgent hospital admission for those with: Rectal bleeding Unmanageable abdominal pain Dehydrated or at risk of dehydration Unable to take or tolerate oral antibiotics (if needed) at home Frail / significant co-morbidities and or / is immunocompromised.	
Traveller's diarrhoea *Back to Contents*	**Prophylaxis rarely, if ever indicated. Only consider standby antibiotics for** high risk areas for people at high-risk of severe illness.	If standby treatment appropriate give azithromycin 500mg each day for 3 days on a **private prescription**.	If prophylaxis / treatment consider bismuth subsalicylate (Pepto Bismol) (**Private purchase**) 2 tablets four times a day for 2 days.

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
GENITAL TRACT INFECTIONS			
STI screening *Back to Contents*	People with risk factors should be screened for chlamydia, gonorrhoea, HIV, syphilis. Refer individual and partners to GUM service. **Risk factors:** less than 25 years, no condom use, recent (less than 12momths)/frequent change of partner, symptomatic partner, area of high HIV.		
Chlamydia trachomatis/ urethritis *Back to Contents*	Opportunistically screen all sexually active patients aged 15 to 24 years for chlamydia annually and on change of sexual partner. If positive, treat index case, refer to GUM and initiate partner notification, testing and treatment. As single dose azithromycin has led to increased resistance in GU infections, doxycycline should be used first line for chlamydia and urethritis. Consider referring all patients with symptomatic urethritis to GUM as testing should include Mycoplasma genitalium and Gonorrhoea. If M.genitalium is proven, use doxycycline followed by azithromycin using the same dosing regimen and advise to avoid sex for 14 days after start of treatment and until symptoms have resolved.	Doxycycline 100mg twice a day Duration: 7 days	*Pregnant, breastfeeding, allergy, or intolerance:* Azithromycin 1g stat, then 500mg daily for the following 2 days.
		Advise patient with chlamydia to abstain from sexual intercourse until doxycycline is completed or for 7 days after treatment with azithromycin (14 days after azithromycin started and until symptoms resolved if urethritis). If chlamydia, test for reinfection at 3 to 6 months following treatment if under 25 years; or consider if over 25 years and high risk of re-infection. As lower cure rate in pregnancy, test for cure at least 3 weeks after end of treatment.	
Epididymitis *Back to Contents*	For suspected epididymitis in men over 35 years with low risk of STI. (**High risk, refer to GUM)**	Ofloxacin 200mg twice a day (See MHRA Safety Alert – note 21 page 3) Duration : 14 days	Doxycycline 100mg twice a day Duration: 14 days
Vaginal candidiasis *Back to Contents*	All topical and oral azoles give 75% cure. **In pregnancy:** avoid oral azoles and use intravaginal treatment for 7 days.	Clotrimazole 500mg pessary or 10% cream stat *Pregnant:* Clotrimazole 100mg pessary at night Duration: 6 nights	Fluconazole 150mg orally stat *Pregnant:* Miconazole 2% cream, 5g intravaginally twice a day Duration: 7 days
Bacterial vaginosis *Back to Contents*	Oral metronidazole is as effective as topical treatment and is cheaper. Less relapse with 7 day than 2g stat. **Pregnant/breastfeeding:** avoid 2g stat. Treating partners does not reduce relapse.	Metronidazole 400mg twice a day Duration: 7 days Or Metronidazole 2g stat (use 5 x 400mg tablets)	Metronidazole 0.75% vaginal gel 5g applicator at night Duration: 5 nights or Clindamycin 2% cream 5g applicator at night. Duration: 7 nights
Gonorrhoea *Back to Contents*	**Refer to GUM for treatment.**		
	Antibiotic resistance is now very high.	Ceftriaxone 1g stat, by intramuscular injection	Ciprofloxacin 500mg stat **[ONLY IF KNOWN TO BE SENSITIVE]** (See MHRA Safety Alert – note 21 page 3)
Trichomoniasis *Back to Contents*	Treat partners and refer to GUM service. In pregnancy or breastfeeding: avoid 2g single dose metronidazole. Consider clotrimazole for symptom relief (not cure) if metronidazole declined.	Metronidazole 400mg twice a day Duration: 7 days OR Metronidazole 2g stat (use 5 x 400mg tablets)	Clotrimazole 100mg pessary at night Duration: 6 nights

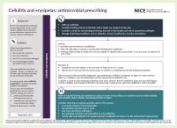
<table>
<tr><th>ILLNESS</th><th>GOOD PRACTICE POINTS</th><th>PREFERRED CHOICE</th><th>ALTERNATIVE</th></tr>
<tr><td rowspan="2">Pelvic inflammatory disease
Back to Contents</td><td colspan="3">Children under 12 years must be referred to a paediatrician.</td></tr>
<tr><td>Refer woman and contacts to GUM service for treatment.
Raised CRP supports diagnosis, absent pus cells in HVS smear good negative predictive value.
Exclude: ectopic pregnancy, appendicitis, endometriosis, UTI, irritable bowel, complicated ovarian cyst, functional pain.
Moxifloxacin has greater activity against likely pathogens, but always test for gonorrhoea, chlamydia, and M. genitalium.
Ofloxacin and moxifloxacin should be avoided in patients who are at high risk of gonococcal PID.</td><td>Ceftriaxone 1g stat by intramuscular injection [This is an essential part of treatment – refer patients to local services if injection not available via GP practice]
PLUS
Metronidazole 400mg twice a day
PLUS
Doxycycline 100mg twice a day
Duration : 14 days</td><td>These treatment choices should only be used for true cephalosporin allergy and a low risk of gonococcal PID.
Metronidazole 400mg twice a day
PLUS
Ofloxacin 400mg twice a day
Or
Moxifloxacin 400mg daily alone.
(If M. genitalium tests positive use moxifloxacin as an alternative.)
(See MHRA Safety Alert – note 21 page 3)
Duration : 14 days</td></tr>
<tr><td colspan="4">SKIN INFECTIONS</td></tr>
<tr><td>MRSA
Back to Contents</td><td colspan="3">For active MRSA infection, refer to microbiology and only treat according to antibiotic susceptibilities confirmed by lab results.
If identified as part of pre-op screening, treatment should be provided at that time by secondary care.</td></tr>
<tr><td rowspan="6">Impetigo
 
NICE Visual summary NG 153
Back to Contents</td><td rowspan="6">Advise people with impetigo, and their parents or carers if appropriate, about good hygiene measures to reduce the spread of impetigo to other areas of the body and to other people.
Do not prescribe mupirocin (reserved for MRSA), unless advised by microbiology.
Do not offer combination treatment with a topical and oral antibiotic to treat impetigo.
Advise people with impetigo, and their parents or carers if appropriate, to seek medical help if symptoms worsen rapidly or significantly at any time, or have not improved after completing a course of treatment.
See NICE NG153 (Impetigo: antimicrobial prescribing) for further guidance.
§A 5-day course is appropriate for most people with impetigo but can be increased to 7 days based on clinical judgement, depending on the severity and number of lesions.
¥Dosage can be increased to 500 mg twice a day, if needed for severe infections.</td><td colspan="2">Localised non-bullous impetigo (not systemically unwell or at high risk of complications)</td></tr>
<tr><td>Consider*:
Hydrogen peroxide 1% cream
Apply two or three times a day
Duration: 5 days§</td><td>If hydrogen peroxide unsuitable (e.g., if impetigo is around eyes) or ineffective:
Fusidic acid 2% cream
Apply thinly three times a day
Duration: 5 days§</td></tr>
<tr><td colspan="2">Widespread non-bullous impetigo who are not systemically unwell or at high risk of complications.</td></tr>
<tr><td>Fusidic acid 2% cream
Apply thinly three times a day
Duration: 5 days§
Or:
Flucloxacillin 500mg four times a day
Duration: 5 days§</td><td>Penicillin allergy or flucloxacillin unsuitable:
Clarithromycin 250mg¥ twice a day
Duration: 5 days§</td></tr>
<tr><td colspan="2">Bullous impetigo or impetigo in people who are systemically unwell or at high risk of complications</td></tr>
<tr><td>Flucloxacillin 500mg four times a day
Duration: 5 days§</td><td>Penicillin allergy or flucloxacillin unsuitable:
Clarithromycin 250mg¥ twice a day
Duration: 5 days§</td></tr>
<tr><td>Eczema
Back to Contents</td><td colspan="3">If no visible signs of infection, do not use antibiotics (alone or with steroids) as this encourages resistance and does not improve healing.
If visible signs of infection, treat as for impetigo.</td></tr>
</table>

<table>
<tr><th>ILLNESS</th><th>GOOD PRACTICE POINTS</th><th>PREFERRED CHOICE</th><th>ALTERNATIVE</th></tr>
<tr><td rowspan="3">Leg ulcer
 
NICE Visual summary NG 152
Back to Contents</td><td rowspan="2">Background:
▪ There are many causes of leg ulcer; any underlying conditions, such as venous insufficiency and oedema, should be managed to promote healing
▪ Few leg ulcers are clinically infected
▪ Most leg ulcers are colonised by bacteria
▪ Antibiotics don't promote healing when a leg ulcer is not clinically infected
Symptoms and signs of an infected leg ulcer include:
▪ redness or swelling spreading beyond the ulcer
▪ localised warmth
▪ increased pain
▪ fever
When choosing an antibiotic, take account of:
▪ the severity of symptoms or signs
▪ the risk of complications
▪ previous antibiotic use

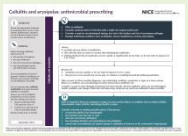
Reassess if symptoms worsen rapidly or significantly at any time, do not start to improve within 2 to 3 days, or the person becomes systemically unwell or has severe pain out of proportion to the infection.</td><td colspan="2">If active infection</td></tr>
<tr><td>Flucloxacillin 500mg to 1g four times a day#
Duration: 7 days☒</td><td>If penicillin allergic:
Clarithromycin 500mg twice a day
or
Doxycycline 200mg stat then 100mg twice a day
Duration: All 7 days☒</td></tr>
<tr><td colspan="3">Do not take a sample for microbiological testing at initial presentation, even if the ulcer might be infected.

Refer to hospital if there are symptoms or signs of a more serious illness or condition such as sepsis, necrotising fasciitis or osteomyelitis

Consider* referring or seeking specialist advice if the person:
▪ has a higher risk of complications because of comorbidities such as diabetes or immunosuppression
▪ has lymphangitis
▪ has spreading infection not responding to oral antibiotics
▪ cannot take oral antibiotics (to explore possible options for intravenous or intramuscular antibiotics at home or in the community)
☒A longer course (up to a further 7 days) may be needed based on clinical assessment. However, skin does take some time to return to normal, and full resolution of symptoms at 7 days is not expected.

The upper dose of 1 g four times a day would be off-label. Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtaining and documenting informed consent. See the GMC's Good practice in prescribing and managing medicines for more information.</td></tr>
<tr><td rowspan="3">Diabetic Foot
 
NICE Visual summary NG 19
Back to Contents</td><td rowspan="2">In diabetes, all foot wounds are likely to be colonised with bacteria.
Diabetic foot infection has at least 2 of:
▪ local swelling or induration
▪ erythema
▪ local tenderness or pain
▪ local warmth
▪ purulent discharge

Severity is classified as:
▪ Mild - local infection with 0.5 to less than 2 cm erythema
Refer the following to hospital:
▪ Moderate - local infection with more than 2 cm erythema or involving deeper structures (such as abscess, osteomyelitis, septic arthritis or fasciitis)
▪ Severe - local infection with signs of a systemic inflammatory response.</td><td>Flucloxacillin 500mg to 1g four times a day#
Duration: 7 days☒</td><td>If penicillin allergic:
Clarithromycin 500mg twice a day
or
Doxycycline 200mg stat then 100mg twice a day
Duration: All 7 days☒</td></tr>
<tr><td colspan="2">Refer to hospital immediately and inform multidisciplinary foot care service if there are limb- or life-threatening problems such as:
▪ ulceration with fever or any signs of sepsis, or
▪ ulceration with limb ischaemia, or
▪ suspected deep-seated soft tissue or bone infection, or
▪ gangrene
For all other active diabetic foot problems, refer to foot service within 1 working day
☒A longer course (up to a further 7 days) may be needed based on clinical assessment. However, skin does take some time to return to normal, and full resolution of symptoms at 7 days is not expected.</td></tr>
<tr><td colspan="3"># The upper dose of 1 g four times a day would be off-label. Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtaining and documenting informed consent. See the GMC's Good practice in prescribing and managing medicines for more information.</td></tr>
</table>

<table>
<tr><th>ILLNESS</th><th>GOOD PRACTICE POINTS</th><th>PREFERRED CHOICE</th><th>ALTERNATIVE</th></tr>
<tr>
<td rowspan="2">Cellulitis and erysipelas
 
NICE Visual summary NG141
Back to Contents</td>
<td rowspan="2">Exclude other causes of skin redness (inflammatory reactions or non-infectious causes).
Consider marking extent of infection with a single-use surgical marker pen.
Offer an antibiotic. Take account of severity, site of infection, risk of uncommon pathogens, any microbiological results and MRSA status.
Infection around eyes or nose is more concerning because of serious intracranial complications.
Consider referring to hospital or seeking specialist advice if the person:
▪ is severely unwell or has lymphangitis
▪ has infection near the eyes or nose
▪ may have uncommon pathogens e.g. after a penetrating injury, exposure to water-borne organisms, or an infection acquired outside the UK
▪ has spreading infection not responding to oral antibiotics
▪ cannot take oral antibiotics (to explore giving IV antibiotics at home or in the community if appropriate)
Refer people to hospital if they have any symptoms or signs suggesting a more serious illness or condition, such as orbital cellulitis, osteomyelitis, septic arthritis, necrotising fasciitis or sepsis.
[#] The upper dose of 1 g four times a day would be off-label. Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtaining and documenting informed consent. See the GMC's Good practice in prescribing and managing medicines for more information.</td>
<td>Flucloxacillin 500mg to 1g four times a day[#]
Give oral unless person unable to take oral or severely unwell. Flucloxacillin 1 to 2 four times a day IV

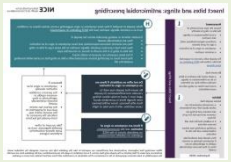
If infection near eyes or nose (consider seeking specialist advice):
Co-amoxiclav 625mg three times a day

Duration: All 7 days[◈].</td>
<td>If penicillin allergic:
Clarithromycin 500mg twice a day
Give oral unless person unable to take oral or severely unwell.
Clarithromycin 500mg twice a day IV
or
Doxycycline 200mg stat then 100mg twice a day

Pregnancy:
Erythromycin 500mg four times a day

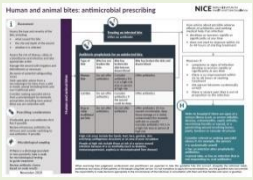
If infection near eyes or nose (Consider seeking specialist advice):
Clarithromycin 500mg twice a day AND
Metronidazole 400mg three times a day (only add in children if anaerobes suspected).
Duration: All 7 days[◈].</td>
</tr>
<tr>
<td colspan="2">[◈]A longer course (up to 14 days in total) may be needed but skin takes time to return to normal, and full resolution at 5 to 7 days is not expected.
If not responding after 14 days of antibiotic therapy then a holistic review of the wound and prescribing to date should be undertaken.
Consider:
▪ other possible diagnoses, such as an inflammatory reaction to an immunisation or an insect bite, gout, superficial thrombophlebitis, eczema, allergic dermatitis or deep vein thrombosis
▪ any underlying condition that may predispose to cellulitis or erysipelas, such as oedema, diabetes, venous insufficiency or eczema
▪ any symptoms or signs suggesting a more serious illness or condition, such as lymphangitis, orbital cellulitis, osteomyelitis, septic arthritis, necrotising fasciitis or sepsis
▪ any results from microbiological testing
▪ any previous antibiotic use, which may have led to resistant bacteria.</td>
</tr>
<tr>
<td rowspan="2">Mastitis – Lactational
Back to Contents</td>
<td rowspan="2">Most cases of lactational mastitis are not caused by an infection and do not require antibiotics.
Advice is to take paracetamol or ibuprofen to reduce pain and fever, drink plenty of fluids, rest and apply a warm compress.

Breastfeeding: oral antibiotics are safe and appropriate, where indicated. Women should continue feeding, including from the affected breast and be advised to monitor the child for adverse drug reactions e.g. diarrhoea and thrush.</td>
<td>Flucloxacillin 500mg to 1g four times a day
Duration: 7 to 14 days</td>
<td>If penicillin allergic:
Clarithromycin[♦] 500mg twice a day
Duration: 7 to 14 days</td>
</tr>
<tr>
<td colspan="2">[♦]Epidemiologic evidence indicates that the risk of hypertrophic pyloric stenosis in infants might be increased by use of maternal macrolides, especially in infants exposed in the first 2 weeks after birth. The risk may be greater with erythromycin, which is why clarithromycin is recommended here.</td>
</tr>
</table>

Mastitis – Non-Lactational *Back to Contents*	If immediate admission or referral is not indicated then prescribe an oral antibiotic for ***all*** women with non-lactational mastitis. Advise the woman to seek immediate medical advice if symptoms worsen or fail to settle after 48 hours of antibiotic treatment.	Co-amoxiclav 500/125mg three times a day Duration: 10 to 14 days	Clarithromycin 500 mg twice a day **PLUS** Metronidazole 400 mg three times a day Duration: 10 to 14 days.
ILLNESS	**GOOD PRACTICE POINTS**	**PREFERRED CHOICE**	**ALTERNATIVE**
Insect Bites and Stings  NICE Visual summary NG 182 *Back to Contents*	Assessment Assess the type and severity of the bite or sting to identify: • a local inflammatory or allergic skin reaction • erythema migrans (bullseye rash), a sign of Lyme disease • symptoms or signs of an infection a systemic reaction Most insect bites or stings will not need antibiotics. Do not offer an antibiotic if there are no symptoms or signs of infection Consider oral antihistamines to relieve itching (refer to a pharmacy for self-care) **Refer people to hospital if they have symptoms or signs suggesting a more serious illness or condition, such as a systemic allergic reaction.** **Advice:** • see a community pharmacist for self-care options such as antihistamines • redness and itching are common and may last up to 10 days • avoid scratching to reduce inflammation and infection	**For people with a known or suspected tick bite**, follow the guidance on Lyme disease **If there are symptoms or signs of infection,** follow the guidance on cellulitis and erysipelas	

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE

Bites- Human and Animal



NICE Visual Summary NG 182

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- Be aware of potential safeguarding issues
- Seek specialist advice from a microbiologist for bites from a wild or exotic animal.
- Swab for microbiological testing to guide treatment if there is discharge.
- Offer an antibiotic for people with a human or animal bite if there are symptoms or signs of infection, such as increased pain, inflammation, fever, discharge or an unpleasant smell.
- Reassess bite if
  - symptoms or signs of infection develop or worsen rapidly or significantly at any time, or do not start to improve within 24 to 48 hours of starting treatment **or**
  - the person becomes systemically unwell **or**
  - the person has severe pain that is out of proportion to the infection.

*High-risk bite areas include the hands, feet, face, genitals, skin overlying cartilaginous structures or an area of poor circulation
People at high risk include those at risk of a serious wound infection because of a co-morbidity (such as diabetes, immunosuppression, asplenia or decompensated liver disease)

Thorough irrigation and debridement is important.

Assess risk of tetanus, rabies, or bloodborne viral infections e.g. HIV, hepatitis B/C.

Human:
NON-Broken skin: Do NOT offer antibiotics
Broken skin but no blood: CONSIDER antibiotics if wound or patient is high risk*
Broken skin and drawn blood: OFFER antibiotics

Cat:
NON-Broken skin: Do NOT offer antibiotics
Broken skin but no blood: CONSIDER antibiotics if wound is deep
Broken skin and drawn blood: OFFER antibiotics

Dog or other traditional pets:
NON-Broken skin: Do NOT offer antibiotics
Broken skin but no blood: Do NOT offer antibiotics
Broken skin and drawn blood: CONSIDER antibiotics if wound or patient is high risk *

Antibiotics for prophylaxis and treatment in adults aged 18 years and over

Prophylaxis or treatment: Co-amoxiclav 625mg three times a day Duration: Prophylaxis 3 days Treatment 5 days	***If penicillin allergic or co-amoxiclav unsuitable:*** Doxycycline 200 mg on first day, then 100 mg or 200 mg daily **PLUS** Metronidazole 400mg three times a day Duration: Prophylaxis 3 days Treatment 5 days

Antibiotics for prophylaxis and treatment in children and young people under 18 years

Under 1 MONTH: Seek specialist advice **For Prophylaxis or treatment:** Co-amoxiclav three times a day 1 month to 11 months: 0.25ml/kg of 125/31 susp 1 year to 5 years: 5ml or 0.25ml/kg of 125/31 susp 6 years to 11 years: 5ml or 0.15mk/kg of 250/62 susp 12 years to 17 years: 250/125 mg or 500/125mg Duration: Prophylaxis 3 days Treatment 5 days	***If penicillin allergic or co-amoxiclav unsuitable:*** ***UNDER 12 years:*** Co-trimoxazole (off-label use) 6 weeks to 5 months: 120 mg or 24 mg/kg twice a day 6 months to 5 years: 240 mg or 24 mg/kg twice a day 6 years to 11 years: 480 mg or 24 mg/kg twice a day ***12 years to 17 years:*** Doxycycline 200 mg on first day, then 100 mg or 200 mg daily **PLUS** Metronidazole 400mg three times a day Duration: Prophylaxis 3 days Treatment 5 days

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Lyme disease – Tick bites  NICE Visual summary NG 95 *Back to Contents*	**Most tick bites do not transmit Lyme disease and prompt, correct removal of the tick reduces the risk of transmission. For correct tick removal and how to do this see the Public Health England website for information on removing ticks and supporting information.**		
	Treat erythema migrans empirically; serology is often negative early in infection. For other suspected Lyme disease such as neuroborreliosis (CN palsy, radiculopathy) seek advice. See NICE guideline [NG95]	Doxycycline 100mg twice a day Duration: 21 days	*Where preferred option is contraindicated or not licensed:* Amoxicillin 1g three times a day Duration: 21 days
Dermatophyte infection - skin *Back to Contents*	**Athlete's foot and ringworm are not serious fungal infections and are usually easily treated with over the counter treatments. Advise self-care and good hygiene in line with NHS England guidance.**		
	Most cases: use terbinafine as fungicidal, so treatment time shorter and more effective than with fungistatic imidazoles or undecanoates. If candida possible, use imidazole. **If intractable or scalp**: send skin scrapings and if infection confirmed, use oral terbinafine/itraconazole. **Scalp**: discuss with specialist, oral therapy indicated.	Terbinafine cream 1% twice a day Duration: 1 to 2 weeks plus 2 weeks after healing	Imidazole: Clotrimazole cream 1% or Miconazole cream 2% twice a day or (athlete's foot only): topical undecanoates twice a day (Mycota®) Duration: 1 to 2 wks plus 2 weeks after healing
Dermatophyte infection - nail *Back to Contents*	Take nail clippings: start therapy only if infection is confirmed by laboratory. Oral terbinafine is more effective than oral azole. Liver reactions rare with oral antifungals. If candida or non-dermatophyte infection confirmed, use oral itraconazole. For children, seek specialist advice. **Do not prescribe amorolfine 5% nail lacquer as very limited evidence of effectiveness.**	First line: Terbinafine 250mg daily Duration: Fingers: 6 to 12 weeks Toes: 3 to 6 months	Second line: Itraconazole 200mg twice a day Duration: 7 days per month Fingers: 2 courses Toes: 3 courses
Varicella zoster/chicken pox *Back to Contents*	**Most patients do not require treatment**		
	Pregnant/immunocompromised/ neonate: seek urgent specialist advice If onset of rash less than 24hrs & older than 14 years or severe pain or dense/oral rash or secondary household case or steroids or smoker consider aciclovir.	If indicated: Aciclovir 800mg 5 times a day Duration: 7 days	
Herpes zoster/shingles *Back to Contents*	Treat if older than 50 years and within 72 hours of rash (PHN rare if less than 50 years); or if active ophthalmic or Ramsey Hunt or eczema.	If indicated: Aciclovir 800mg five times a day Duration: 7 days	Second line for shingles **only if compliance a problem** (as high cost): Valaciclovir 1g three times a day Duration: 7 days

ILLNESS	GOOD PRACTICE POINTS	PREFERRED CHOICE	ALTERNATIVE
Scarlet Fever (GAS) *Back to Contents*	**Optimise analgesia and give safety netting advice**		
	Prompt treatment with appropriate antibiotics significantly reduces the risk of complications. Vulnerable individuals (immunocompromised, the comorbid, or those with skin disease) are at increased risk of developing complications.	Phenoxymethylpenicillin 500mg four times a day Duration: 10 days	***Penicillin Allergy***: Clarithromycin 250mg to 500mg twice a day Duration: 5 days
Cold sores *Back to Contents*	Cold sores resolve after 7 to 10 days without treatment. Topical antivirals applied prodromally reduce duration by 12 to 24hours. **For infrequent cold sores of the lip advise self-care in line with NHS England guidance.**		
Acne & Rosacea *Back to Contents*	GMMMG guidance Topical antibiotics and oral antibiotics should not be combined together, as this combination is unlikely to confer additional benefit and may encourage the development of bacterial resistance. For acne, recommend non-antibiotic topical bactericidal products (e.g. benzyl peroxide first line for up to 2 months. **Patients should be encouraged to manage mild acne in line with NHS England self-care guidance.**		

PARASITES			
ILLNESS	**GOOD PRACTICE POINTS**	**PREFERRED CHOICE**	**ALTERNATIVE**
Scabies *Back to Contents*	Treat whole body from ear/chin downwards and under nails. If under 2 or elderly, also face/scalp. Treat all home and sexual contacts within 24 hours.	Permethrin 5% cream Duration: 2 applications 1 week apart	***If allergy:*** Malathion 0.5% liquid Duration: 2 applications 1 week apart
Head lice *Back to Contents*	**Chemical treatment is only recommended in exceptional circumstances and self-care should be advised in line with NHS England guidance.**		
	Head lice can be removed by combing wet hair meticulously with a plastic detection comb.	Dimeticone 4% lotion Duration: 2 applications 1 week apart	Malathion 0.5% liquid Duration: 2 applications 1 week apart
Threadworms *Back to Contents*	**A prescription should not be routinely offered as this condition is appropriate for self-care.**		
	All household contacts should be advised to treat at the same time PLUS advise hygiene measures for 2 weeks (hand hygiene, pants at night, morning shower (include perianal area) PLUS wash sleepwear & bed linen, dust and vacuum.	**All patients over 6 months**: Mebendazole 100mg stat (off-label if less than 2yrs) **Pregnant women and children under 6 months:** Use hygiene measures alone for 6 weeks and perianal wet wiping or washes 3 hourly during the day.	
EYE INFECTIONS			
Conjunctivitis *Back to Contents*	**No antibiotics – most are viral or self-limiting. Advise self-care in line with NHS England guidance.**		
	Only treat if severe. Bacterial conjunctivitis is usually unilateral and also self-limiting. 65% resolve by day five. Fusidic acid has less Gram-negative activity.	***If severe:*** Chloramphenicol eye drops 0.5% One drop every 2 hours for 2 days then reduce to 4 hourly and / or eye ointment 1% Apply at night if used with drops or 3 -4 times a day if used alone. Duration: for 48 hours after healing.	Second line: Fusidic acid 1% gel twice a day Duration: for 48 hours after healing.

Adapted from NICE / PHE – Summary of antimicrobial prescribing guidance - managing common infections: October 2019 and respective NICE guidance.

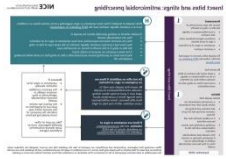
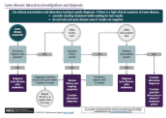
To discuss treatment options or any concerns, please discuss with local microbiologist.
For training resources and patient information leaflets please see RCGP Target antibiotics toolkit.

APPENDIX 1

Changes to version 7.0 - *Back to Contents*

Section	Change made	Detail
Planned review date		April 2020
Principles of Treatment	Added Off label statement and reference to GMC Good Practice in Prescribing	12. Where Off-label use is recommended: Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtaining and documenting informed consent. See the GMC's Good practice in prescribing and managing medicines for more information.
Contents	Combined Human Bites and Animal Bites to Bites –Human and Animal Added Insect Bites and Stings as a new section	Bites - Human and Animal **Insect Bites and Stings**
Cellulitis	Added severely unwell option of IV Flucloxacillin to preferred choice and IV Clarithromycin to Alternative choice Added alternative treatment in pregnancy if patient is penicillin allergic as per NICE NG141; not in current document	**Preferred Choice** Give oral unless person unable to take oral or severely unwell. Flucloxacillin 1 to 2 four times a day IV **Alternative** Give oral unless person unable to take oral or severely unwell. Clarithromycin 500mg twice a day IV **Pregnancy:** Erythromycin 500mg four times a day
Bites- Human and Animal	Previously this was split into 2 sections which have been combined and updated to reflect NICE NG184	**Complete re-write of the section to follow NICE NG184** **Main messages:** **Human:** **<u>NON-Broken skin:</u> Do NOT offer antibiotics** **<u>Broken skin but no blood</u>: CONSIDER antibiotics if wound or patient is high risk*** **<u>Broken skin and drawn blood</u>: OFFER antibiotics** **Cat:** **<u>NON-Broken skin:</u> Do NOT offer antibiotics** **<u>Broken skin but no blood</u>: CONSIDER antibiotics if wound is deep** **<u>Broken skin and drawn blood</u>: OFFER antibiotics** **Dog or other traditional pets:** **<u>NON-Broken skin:</u> Do NOT offer antibiotics** **<u>Broken skin but no blood</u>: Do NOT offer antibiotics** **<u>Broken skin and drawn blood</u>: CONSIDER antibiotics if wound or patient is high risk ***

		Adults **Prophylaxis or treatment:** **Co-amoxiclav 625mg three times a day** **Duration:** **Prophylaxis 3 days** **Treatment 5 days** **If penicillin allergic or co-amoxiclav unsuitable:** **Doxycycline** **200 mg on first day, then 100 mg or 200 mg daily** **PLUS** **Metronidazole 400mg three times a day** **Duration:** **Prophylaxis 3 days** **Treatment 5 days** **Under 18** Under 1 MONTH: Seek specialist advice For Prophylaxis or treatment: Co-amoxiclav three times a day 1 month to 11 months: 0.25ml/kg of 125/31 susp 1 year to 5 years: 5ml or 0.25ml/kg of 125/31 susp 6 years to 11 years: 5ml of 250/62 susp 12 years to 17 years: 250/125 mg or 500/125mg Duration: Prophylaxis 3 days Treatment 5 days If penicillin allergic or co-amoxiclav unsuitable: UNDER 12 years: Co-trimoxazole (off-label use) 6 weeks to 5 months: 120 mg or 24 mg/kg twice a day 6 months to 5 years: 240 mg or 24 mg/kg twice a day 6 years to 11 years: 480 mg or 24 mg/kg twice a day 12 years to 17 years: Doxycycline 200 mg on first day, then 100 mg or 200 mg daily PLUS Metronidazole 400mg three times a day Duration: Prophylaxis 3 days Treatment 5 days
Insect Bites and	Assessment Assess the type	**For people with a known or suspected tick**

Stings  NICE Visual summary *Back to Contents*	and severity of the bite or sting to identify: • a local inflammatory or allergic skin reaction • erythema migrans (bullseye rash), a sign of Lyme disease • symptoms or signs of an infection • a systemic reaction Most insect bites or stings will not need antibiotics. Do not offer an antibiotic if there are no symptoms or signs of infection Consider oral antihistamines to relieve itching (refer to a pharmacy for self-care) **Refer people to hospital if they have symptoms or signs suggesting a more serious illness or condition, such as a systemic allergic reaction.** **Advice:** • see a community pharmacist for self-care options such as antihistamines • redness and itching are common and may last up to 10 days • avoid scratching to reduce inflammation and infection	**bite**, follow the guidance on Lyme disease **If there are symptoms or signs of infection,** follow the guidance on cellulitis and erysipelas
Lyme disease – Tick bites  NICE Visual summary Back to Contents	Reviewed but no changes	