East London NHS
NHS Foundation Trust

Infections in Primary Care

These guidelines have been taken from the Public Health Laboratory website (**www.phls.org.uk**) and have been adapted for local use.

The guidelines are mainly for use in primary care. For further information on prescribing in the hospital, please refer to the Hospital Anti-infective guidelines.

All online references and guidelines are highlighted in red.

Aims

- To provide a simple, best guess approach to the treatment of common infections.
- To promote the safe, effective and economic 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 its application must be modified by professional judgement.
2. A does and during of treatment is suggested. In severe or recurrent cases consider a larger dose or longer course.
3. Prescribe an antibiotic only when there is likely to be a clear clinical benefit.
4. Do not prescribe an antibiotic for viral sore throat, simple coughs and colds.
5. Limit prescribing over the telephone to exceptional cases.
6. **Use simple generic antibiotics first whenever possible. Avoid broad spectrim antibiotics (e.g. co-amoxiclav, quinolones and cephalosporns) when standard and less expensive antibiotics remain effective, as they increase risk of** Clostridiym difficile, **MRS and resistant UTIs.**
7. Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations).
8. In pregnancy AVOID tetracyclines, aminoglycosides, quinolones, high dose metronidazole. Short-term use of trimethoprim (theoretical risk in first trimester in patients with poor diet, as folate antagonist) or nitrofurantoin (at term, theoretical risk of neonatal haemolysis) is unlikely to cause problems to the foetus.
9. Clarithromycin is an acceptable alternative in those who are unable to tolerate erythromycin because of side effects.
10. Where a “best guess” therapy has failed or special circumstances exist, microbiological advice can be obtained from tel. 020 8510 7185, or bleep 092 through the Homerton switchboard, tel. 020 8510 5555. For out-of-hours advice, please contact the Microbiology Registrar on-call through the Homerton Hospital switchboard.

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF TX
UPPER RESPIRATORY TRACT INFECTIONS: Consider delayed antibiotic prescriptions				
Influenza Influenza HPA	**Annual vaccination is essential for all those at risk of influenza.** For otherwise healthy adults, antivirals are not recommended. Treat "at risk" patients, only when influenza is circulating in the community, within 48 hours of onset. At risk: 65 years or over, chronic respiratory disease (including COPD and asthma) significant cardiovascular disease (no hypertension), immunocompromised, diabetes mellitus, chronic renal disease and chronic liver disease. Patients over 12 years use oseltamivir 75mg oral capsule BD (for OD prophylaxis see Influenza NICE) or zanamivir 10mg (2 inhalations by diskhaler) BD for 5 days.			
Pharyngitis / sore throat / tonsillitis Prodigy SIGN	**The majority of sore throats are viral; most patients do not benefit from antibiotics**. Patients with 3 or 4 centor criteria (history of fever, purulent tonsils, cervical adenopathy, absence of cough) or history of otitis media may benefit more from antibiotics. [A-] Antibiotics only shorten duration of symptoms by 8 hours.[A+] You need to treat 30 children or 145 adults to prevent one case of otitis media.A+ Seven days treatment gives less relapse than three days.[B+]			
	Recent evidence indicates that phenoxymethylpenicillin 500mg (TDS) **for 7 days is more effective than 3 days**.[B+] Twice daily higher dose can also be used.[A-] QDS may be more appropriate if severe.[D]	First line Phenoxymethlpenicillin	500mg BD-QDS	10 days
		Erythromycin If allergic to penicillin	500mg BD or 250mg QDS (QDS less side-effects)	10 days
Otitis media (child doses) Prodigy	**Many are viral. Resolves I 80% without antibiotics.[A+]** Poor outcome unlikely if no vomiting or temp <38.5°C.[A-] Use NSAID or paracetamol.[A-] Antibiotics do not reduce pain in first 24 hours, subsequent attacks or deafness.[A+] Need to treat 20 children >2y and seven 6-24m old to get pain relief in one at 2-7 days.[A+B+] Haemophilus is an extracellular pathogen, thus macrolides, which concentrate intracellularly, are less effective treatment.	Amoxicillin First line	<2yrs 125mg TDS 2-10 yrs 250mg TDS >10 yrs 500mg TDS	5 days 5 days 5 days
		Erythromycin If allergic to penicillin Co-amoxiclav Second line	<2 yrs 125mg QDS 2-8 yrs 250mgs QDS Other: 250-500mg QDS 1-6 yrs 156mg TDS 6-12 yrs 312mg TDS	5 days 5 days 5 days 5 days 5 days
Rhinosinusitis Acute of chronic Prodigy	**Many are viral. Symptomatic benefit of antibiotics is small** – 69% resolve without antibiotics; and 84% resolve with antibiotics.[A+] Reserve for severe.[B+] or symptoms (>10 days). Cochrane review concludes that amoxicillin and phenoxymethylpenicillin have similar efficacy to the other recommended antibiotics. If failure to respond use another first line antibiotic then second line.	amoxicillin[A+] OR doxycycline OR oxytetracycline OR erythromycin OR phenoxymethylpenicillin[A+] second line: co-amoxiclav OR ciprofloxacin PLUS metronidazole	500mg TDS 200 mg stat/100mg OD 250mg QDS 250mg QDS/500mg BD 500mg TDS 500/125mg TDS 250-500mg BD 400mg BD	7 days 7 days 7 days 7 days 7 days 7 days 7 days 7 days
* Standing Medical Advisory Committee guidelines suggest 3 days. In otitis media, relapse rate is slightly higher at 10 days with a 3 days course but long-term outcomes are similar.[A+]				
LOWER RESPIRATORY TRACT INFECTIONS				
Note: Avoid tetracyclines in pregnancy. Low doses of penicillins are more likely to select our resistance. The quinolones ciprofloxacin and ofloxacin have poor activity against pneumoccocci. However, they do have use in PROVEN pseudomonal infections. Levofloxacin has some anti-Gram-positive activity but should not be needed as first line treatment.				
Acute bronchitis Prodigy	Systematic reviews indicate antibiotics have marginal benefits in otherwise healthy adults.[A+] Patient leaflets can reduce antibiotic use.[B+]	Amoxicillin OR oxytetracycline OR doxycycline	500mg TDS 250-500mg QDS 200mg stat/100mg OD	5 days 5 days 5 days
Acute exacerbation of COPD NICE Prodigy	30% viral, 30-50% bacterial, rest undetermined. **Antibiotics not indicated in absence of purulent/mucopurulent sputum.**[B+] Most valuable if increased dyspnoea and increased purulent sputnum.[B+] In penicillin allergy use erythromycin if tetracycline contraindicated. If clinical failure to first line antibiotics,	Amoxicillin OR oxytetracycline Or doxycycline Erythromycin Co-amoxiclav	500mg TDS 250mg QDS 200mg stat/100mg OD 250-500mg QDS 625mg TDS	5 days 5 days 5 days 5 days 5 days
Community-acquired pneumonia – treatment in the community BTS BTS pdf	**Start antibiotics immediately.**[B+] If no response in 48 hours consider admission or add erythromycin first line or a tetracycline[C] to cover Mycoplasma infection (rare in over 65s). In severely ill give parenteral benzylpenicillin before admission[C] and seek risk factors for Legionella and Staph. aureus infection.[D]	Amoxicillin OR erythromycin	500mg – 1g TDS 500mg QDS	Up to 10 days Up to 10 days
		Oxytetracycline OR doxycycline	250-500mg QDS 200mg stat/100mg OD	Up to 10 days Up to 10 days

Note: Doses are oral and for adults unless otherwise stated. Please refer to BNF for further information.

Letters indicate strength of evidence: A+ = systematic review D = informal opinion

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MENINGITIS				
Suspected meningococcal disease HPA pdf	**Transfer all patients to hospital immediately.** Administer benzylpenicillin prior to admission, unless history of anaphylaxis.[B-] NOT allergy. Ideally IV but IM if a vein cannot be found. Note: meningitis is a notifiable disease. Please notify the HPA of any cases on 020 7220 4500 and discuss prevention of secondary cases.	IV or IM benzylpenicillin	Adults and children 10 yr and vr: 1200ng Children 1-9 yr: 600mg Children<1 yr: 300mg	
Prevention of secondary case of meningitis: Only prescribe following advice from the HPA/Public Health Doctor: 9am – 5pm 020 7220 4500. Out of hours: Follow the instructions on the above number or via website: www.hpa.org.uk/london				
URINARY TRACT INFECTIONS UTI quick reference guide EDBLs Prodigy				
Note: Amoxicillin resistance is common, therefore ONLY use if culture confirms susceptibility. In the elderly (>65 years), do not treat asymptomatic bacteriuria; it occurs in 25% of women and 10% of men and is not associated with increased morbidity.B+ In the presence of a catheter, antibiotics will not eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely.				
Uncomplicated UTI i.e. no fever or flank pain	Use urine dipstick to exclude UTI – ve nitrie and leucocyte 95% negative predictive value. There is less relapse with trimethoprim than cephalosporins or privmecillinam.[A-] Community multi-resistant E.coli with ESBLs are increasing so perform culture in all treatment failures. ESBLs are multi-resistant but remain sensitive to nitrofurantoin.	Trimethoprim[B+] OR nitrofurantoin[A-]	200mg BD 50-100 mg QDS }	3 days [B+]
UTI quick reference guide		Second line – depends on susceptibility of organism isolated e.g. nitrofurantoin, amoxicillin, cefalexin, co-amoxiclav, quinolone.		
UTI in pregnancy and men	Send MSU for culture. Short-term use of trimethoprim or nitrofurantoin in pregnancy is unlikely to cause problems to the foetus.[B+]	nitrofurantoin OR trimethoprim Second line Cefalexin OR amoxicillin	50mg – 100mg QDS 200mg BD 500mg BD 250mg TDS	7 days 7 days 7 days 7 days
Children	Send MSU for culture and susceptibility. Waiting 24 hours for results is not detrimental to outcome.[A-]	Trimethoprim OR nitrofurantoin OR cefalexin If susceptible, amoxicillin	Seen BNF for Children for dosage	7 days[A+]
Acute pyelonephritis	Send MSU for culture. A recent RCT showed 7 days ciprofloxacin was as good as 14 days co-trimoxazole.[A-]. If no response within 24 hours admit.	Ciprofloxacin[A-] OR co-amoxiclav If susceptible, trimethoprim	500mg BD 500/125mg TDS 200mg BD	7 days[A-] 14 days 14 days
Recurrent UTI women≥3/yr	Post coital prophylaxis is as effective as prophylaxis taken nightly. Prophylactic doses	Nitrofurantoin OR trimethoprim	50mg 100mg	Stat post coital OR od at night

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GASTRO-INTESTINAL TRACT INFECTIONS				
Eradication of Helicobacter pylori NICE HP quick reference guide Managing symptomatic relapse	Eradication is beneficial in DU, GU and low grade MALTOMA, but NOT in GORD.[A] In NUD; 8% of patients benefit. Triple treatment attains >85% eradication.[A+] Do not use clarithromycin or metronidazole if used in the past year for any infection.[C] DU/GU: Retest for helicobacter if symptomatic NUD: Do not retest, treat as functional dyspepsia. In treatment failure consider endoscopy for culture and susceptibility.[C] Use 14d BD PPI PLUS 2 antibiotics. Consider adding bismuth salt. **Note: There is widespread resistance to metronidazole in Hackney. Regimens containing clarithromycin plus amoxicillin are therefore recommended as first line as opposed to those containing metronidazole.**	First line[A+] cheapest option lansoprazole PLUS clarithromycin AND Amoxicillin Alternative regimes[A+] PPI OR Ranitidine bismuth citrate PLUS 2 antibiotics: Amoxicillin clarithromycin[A+] metronidazole Oxytetracycline	 30mg BD 500mg BD 1g BD BD 400mg BD 1g BD 500mg BD 400mg BD 500mg QDS	 All for 7 days[A] 14 days in relapse or maltoma
Gastroenteritis Prodigy	Check travel, food, hospitalisation and antibiotic history (C. difficile is increasing). Fluid replacement essential. **Antibiotic therapy is not usually indicated as it only reduces diarrhoea by 1-2 dayB+** and can cause antibiotic resistance.B+ Initiate treatment, on advice of microbiologist, if the patient is systemically unwell. Please send stool specimens from suspected cases of food poisoning and post antibiotic use. Notify and seek advice on exclusion of patients from Public Health Doctor 020 7220 4500. Send stool sample in these cases.			
Traveller's diarrhoea	**Limit prescription of antibacterial to be carried abroad** and taken if illness develops (ciprofloxacin 500mg single dose) to people travelling to remote areas and for people in whom an episode of infective diarrhoea could be dangerous. Note: antibiotics for traveller's diarrhoea cannot be prescribed on NHS prescriptions. A private prescription needs to be issued if an antibiotic is required.			
Threadworms Prodigy	Treat household contacts. Advise morning shower/baths and hand hygiene. Use piperazine in children under 2.	Mebendazole or piperazine	100mg 1-6 yrs 5ml spoon 3-12 months 2.5ml spoon	Stat Stat, repeat after 2 weeks
GENITAL TRACT INFECTIONS – UK NATIONAL GUIDELINES Vaginal discharge quick reference guide BASHH				
Note: Refer patients with risk factors for STIs (<25y, no condom use, recent (<12mnth) or frequent change of sexual partner, previous STI, symptomatic partner) to GUM clinic or general practices with level 2 or 3 expertise in GUM.				
Vaginal candidiasis	All topical and oral azoles give 80-95% cure.[A-] In pregnancy avoid oral azole.[B]	Clotrimazole 10% OR clotrimazole OR fluconazole	5g vaginal cream 500mg pessary 150mg orally	Stat Stat Stat
Bacterial vaginosis	A 7 day course of oral metronidazole is slightly more effective than 2g stat.[A+] Avoid 2g stat dose in pregnancy. Topical treatment gives similar cure rates[A+] but is more expensive.	Metronidazole.[A+] OR metronidazole 0.75% vag gel[A+] OR Clindamycin 2%cream[A+]	400mg BD 5g applicatorful at night 5g applicatorful at night	7 days 5 days 7 days
Chlamydia trachomatis Chlaymydia quick reference guide	Tetracyclines are contra-indicated in pregnancy. Erythromycin and ciprofloxacin are less efficacious than doxycycline. Treat partners Refer contacts to GUM clinic	Doxycycline[A+] OR oxytretracycline[A-] erythromycin[A-] Azithromycin[A+]	100mg BD 500mg QDS 500mg BD Or 500 mg QDS 1g stat	7 days 7 days 14 days 7 days 1 hr before or 2 hrs after food
Trichomonaisasis	Refer to GUM. Treat partner simultaneously In pregnancy avoid 2g single dose metronidazole. Topical clotrimazole gives symptomatic relief (not cure).	Metronidazole[A-] Clotrimazole	400mg BD Or 2g in single dose 100mg pessary	5 days 6 days
Pelvic Inflammatory Disease (PID)	Essential to test for N.gonorrhoea (as increasing antibiotic resistance) and Chlamydia. Microbiological and clinical cure are greater with ofloxacin than with doxycycline.[A+] Refer contacts to GUM clinic	Metronidazole+ ofloxacin[B] Or Metronidazole+ Doxycycline[B]	400mg BD 400mg BD 400mg BD 400mg BD	14 days 14 days 14 days 14 days
Acute prostatitis	4 weeks treatment may prevent chronic infection. Quinolones are more effective.	Ofloxacin[C] Or norfloxacin Or ciprofloxacin Or trimethoprim[C]	200mg BD 400mg BD 500mg BD 200mg BD	28 days 28 days 28 days 28 days

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF TX
SKIN / SOFT TISSUE INFECTIONS				
Impetigo Prodigy	Systematic review indicates topical and oral treatment produces similar results.[A+] As resistance is increasing reserve topical antibiotics for very localised lesions[CorD] Only reserve Mupirocin for MRSA	First or second line Flucloxacillin Erythromycin Fusidic acid	 Oral 500mg QDS Oral 500mg QDS Topically QDS	 7 days 7 days 5 days
Eczema Prodigy	Using antibiotics, or adding them to steroids, in eczema does not improve healing unless there are visible signs of infection.			
Cellulitis	If patient afebrile and healthy other than cellulitis fluclozacillin may be used as single drug treatment. If febrile and ill, admit for IV treatment In facial cellulitis use co-amoxiclav[C]	Flucloxacillin If penicillin allergic: erythromycin alone Co-amoxiclav	500mg QDS 500mg QDS 500/125mg TDS	7-14 days 7-14 days 7-14 days
Leg ulcers Prodigy	Bacterial will always be present. **Antibiotics do not improve healing**.[A+] Culture swabs and antibiotics are only indicated if there is evidence of clinical infection such as inflammation/redness/cellulitis; increased pain; purulent exudate; rapid deterioration of ulcer or pyrexia.			
	Diabetic leg ulcer Refer for specialist opinion if severe infection.	Co-amoxiclav	500/125mg TDS	7 day and review
Animal bite Prodigy **Human Bite**	Surgical toilet most important. Assess tetanus and rabies risk. Antibiotic prophylaxis advised for – puncture wound; bite involving hand, foot, face, joint, tendon, ligament; immunocompromised, diabetics, elderly, asplenic Antibiotic prophylaxis advised. Assess HIV/hepatitis B & C risk	First line animal & human prophylaxis and treatment co-amoxiclav.[B-] If penicillin allergic: metronidazole PLUS doxycycline Or oxytetracycline (animal) Or erythromycin (human) and review at 24& 48 hrs	 375-625mg TDS 200-400mg TDS 100mg BD 250-500mg QDS 250-500mg QDS	 7 days 7 days 7 days 7 days
Conjunctivitis Prodigy	**Most bacterial infections are self-limiting** (64% resolve on placebo[A+]). They are usually unilateral with yellow-white mucopurulent discharge. Fusidic acid has less Gram-negative activity.	Chloramphenicol 0.5% drops and 1% ointment Fusidic acid 1% gel	2 hrly reducing to QDS At night BD	 All for 48 hours after resolution
Scabies Prodigy	Treat whole body including scalp, face, neck, ears, under nails. Treat all household contracts.	permethin[A+] 5% cream	2 applications one week apart	
Dermatophyte infection of the proximal fingernail or toenail. For children seek advice	Take nail clippings: start therapy only if infection is confirmed by laboratory. Idiosyncratic liver reactions occur rarely with terbinafine. For infections with yeasts and on-dermatophyte moulds use itraconazole.[C] Itraconazole can also be used for dermatophytes.	5% amorolfine nail lacquer[B] (for superficial) terbinafine[A-] Itraconazole	1-2 x weekly fingers toes 250mg OD fingers toes 200mg BD fingers toes	6 months 12 months 6-12 weeks 3-6 months 7 days monthly 2 course 7 days monthly 3 courses
Dermatophyte infection of the skin Prodigy	The skin scrapings for culture. Treatment: 1 week terbinafine is as effective as 4 weeks azole.[A-] If intractable consider oral itraconazole. Discuss scalp infections with specialist.	Topical 1% terbinafine[A+] Topical undecenoic acid or 1% azole[A+]	OD-BD 1-2 x daily	1 week[A+] 4-6 weeks[A+]
Varicella zoster / Chicken pox Prodigy **&** **Herpes zoster / shingles** Prodigy	If pregnant seek advice re: treatment and prophylaxis. Chicken pox: Clinical value of antivirals minimal unless immunocompromised, severe pain, adult, on steroids, secondary household case **AND** treatment started <24h of onset of rash.[A-] Shingles: Always treat ophthalmic. Non-ophthalmic: Treat>60 yrs if <72h of onset of rash, as post-herpetic neuralgia rare in <50 yrs but occurs in 20%>60y[A+].	Aciclovir	800mg 5x/day	7 days