MANAGEMENT OF INFECTION GUIDANCE FOR PRIMARY CARE
DRAFT FOR CONSULTATION & LOCAL ADAPTATION

Aims

- to provide a simple, best guess approach to the treatment of common infections
- to minimise the emergence of bacterial resistance in the community
- to encourage the rational and cost-effective use of antibiotics

Principles of Treatment

1. This guidance is based on the best available evidence but its application must be modified by professional judgement.
2. Prescribe an antibiotic only when there is likely to be a clear clinical benefit
3. Do not prescribe an antibiotic for viral sore throat, simple coughs and colds.
4. Limit prescribing over the telephone to exceptional cases.
5. Use simple generic antibiotics first whenever possible.
6. The use of new and more expensive antibiotics (eg quinolones and cephalosporins) is inappropriate when standard and less expensive antibiotics remain effective
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, trimethoprim (in first trimester, as folate antagonist) and nitrofurantoin (at term, risk of neonatal haemolysis).
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
    *************** ☎ **************

ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
UPPER RESPIRATORY TRACT INFECTIONS				
Pharyngitis / sore throat / tonsillitis	**The majority of sore throats are viral, however there is clinical overlap between viral and streptococcal infections.** Patients with more severe symptoms or history of otitis media may benefit more from antibiotics.[D] Antibiotics only shorten duration of symptoms by 8 hours.[A+] Antibiotics can prevent non-suppurative complications of beta-haemolytic streptococcal pharyngitis but, in developed societies, such complications are rare.[A+] You need to treat 30 children or 145 adults to prevent one case of otitis media.[A+] Seven days treatment is better than 3 days.[B+]			
	Recent evidence indicates that penicillin 500 mg TDS for 7 days is more effective than 3 days.[B+] BD dosing can also be used.[A-] QDS may be appropriate if severe.[D]	penicillin V *first line*	500 mg BD-QDS	7-10 days
		erythromycin *if allergic to penicillin*	500 mg BD or 250 mg QDS (QDS less side-effects)	5-10 days
Otitis media **(child doses)**	Resolves in 80% without antibiotics.[A+] Poor outcome more likely if recurrent. Use NSAID or paracetamol.[B+] 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+]	amoxicillin *first line*	0-11 yrs : 125 mg TDS 6-12 yrs : 250 mg TDS	3-7 days* 3-7 days*
:		erythromycin *if allergic to penicillin* clarithromycin azithromycin	<2 yrs 125 mg QDS 2-8 yrs 250 mg QDS Other: 250-500 mg TDS <8 kg 7.5mg/kg BD 1-2 yrs 62.5 mg BD 3-6 yrs 125 mg BD 10 mg/kg OD	3-7 days* 3-7 days* 3-7 days* 3 days
Sinusitis	Many are viral. 69% resolve without & 84% with antibiotics.[A+] Reserve for severe or persistent symptoms. Cochrane review concludes penicillin V is as good as other antibiotics.	penicillin V[A+] amoxicillin [A+] or oxytetracycline or erythromycin or doxycycline	500 mg TDS 500 mg TDS 250mg QDS 250mg QDS/500mg BD 200 mg stat/100 mg OD	3-7 days* 3-7 days* 3-7 days* 3-7 days* 3-7 days*
	Second line antibiotics	co-amoxiclav cefaclor	625 mg TDS 250 mg TDS	3-7 days* 3-7 days*

* Standing Medical Advisory Committee guidelines suggest 3 days but longer courses of 5-7 days may be needed to prevent relapse. Relapse at 10 days is higher with a 3 day course in otitis media, but long-term outcome is similar.[A+.]

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

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ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
LOWER RESPIRATORY TRACT INFECTIONS				
Acute bronchitis	Systematic reviews indicate benefits of antibiotics are marginal in otherwise healthy adults.[A+]	amoxicillin or erythromycin or oxytetracycline or doxycycline	250-500 mg TDS 250 mg QDS 250–500 mg QDS 200 mg stat/100 mg OD	5 days 5 days 5 days 5 days
Acute exacerbation of COPD	**Many cases are viral** – consider whether antibiotics are needed	amoxicillin or oxytetracycline or doxycycline	250–500 mg TDS 250 mg QDS 200 mg stat/100 mg OD	5 days Up to 10 days 5-10 days
Note: ***In acute bronchitis and COPD consider clarithromycin 250-500 mg BD or co-amoxiclav 625 mg TDS only if failure to respond***				
Community acquired pneumonia	**If no response in 48 hours** consider admission or add erythromycin or a tetracycline (only 5% of mycoplasma are in over 65s. The last 3/4 yearly rise was in 98/99). Seek risk factors for Legionella and *Staph. aureus* in severely ill.[D]	amoxicillin or erythromycin oxytetracycline doxycycline	500 mg TDS 500 mg QDS 250-500 mg QDS 200 mg stat 100 mg OD	Up to 10 days Up to 10 days Up to 10 days Up to 10 days
Note: ***Avoid tetracyclines in pregnancy. The quinolones ciprofloxacin and ofloxacin have poor activity against pneumococci. However, they do have use in PROVEN pseudomonal infections.***				
MENINGITIS				
Suspected meningococcal disease	**Administer antibiotic prior to rapid admission to hospital.**[B-] Ideally IV, IM is less effective in shocked patients but should be used if a vein cannot be found.	IV or IM benzylpenicillin	Adults and children 10 years and over: 1200 mg Children 1 to 9 years: 600 mg Children under 1 year: 300 mg	
Note: ***If there is a history of penicillin anaphylaxis transfer to hospital immediately***				
Prevention of secondary case of meningitis	Only prescribe following advice from Public Health Doctor 9 am – 5 pm ☎ ********* Out of hours Contact on-call doctor via ……… switchboard ☎ *********			
URINARY TRACT INFECTIONS				
Uncomplicated UTI ie no fever or flank pain	Avoid trimethoprim in first trimester of pregnancy	trimethoprim nitrofurantoin	200 mg BD 50-100 mg QDS	3 days 3 days
	Positive nitrites on dipstick increases likelihood of UTI	2nd line - depends on sensitivity of MSU e.g. cephalexin, amoxycillin, co-amoxiclav, quinolone		
Note: ***Asymptomatic bacteriuria occurs in 25% of women and 10% of men >65 years. In the presence of a catheter, antibiotics will not eradicate bacteria.***				
UTI in men, recurrent and pregnancy	Suggest MSU for sensitivities Avoid trimethoprim in first trimester and nitrofurantoin at term. Amoxicillin if sensitive	nitrofurantoin trimethoprim cephalexin amoxicillin	50 mg – 100 mg QDS 200 mg BD 500 mg BD 250 mg TDS	7 days 7 days 7 days 7 days

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ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
Acute pyelonephritis	A recent RCT showed 7 days ciprofloxacin was as good as 14 days co-trimoxazole.[A-] If no response within 48 hours consider referral.	ciprofloxacin co-amoxiclav trimethoprim	500 mg BD 500/125 mg TDS 200 mg BD	7 days 14 days 14 days
Acute prostatitis	4 weeks treatment may prevent chronic infection. Quinolones are more effective.	ofloxacin[C] or norfloxacin ciprofloxacin trimethoprim[C]	200 mg BD 400 mg BD 500 mg BD 200 mg BD	28 days 28 days 28 days 28 days
GASTRO-INTESTINAL TRACT INFECTIONS				
Eradication of *Helicobacter pylori*	Triple or quadruple treatment attain >85% eradication.[A-] As resistance is increasing, avoid clari or metro if used in past year for any infection.[C] In treatment failure consider endoscopy for culture & sensitivities.[C] Substitute oxytet for clari or metro and add bismuth salt	lansoprazole or omeprazole or pantoprazole Pylorid plus 2 of these antibiotics: amoxicillin, clarithromycin, metronidazole tetracycline	30 mg BD 20 mg BD 40 mg BD 400 mg BD 1 g BD 500 mg BD 400 mg BD 500 mg QDS	**All for 7 days**
Note: ***To promote ulcer healing, patients with active ulcer should receive 4 weeks of PPI, H_2 Ant or Pylorid.***				
Gastroenteritis	Fluid replacement essential. Antibiotic therapy is not usually indicated as it only reduces diarrhoea by 1-2 days[B+] and can cause resistance.[B+] Initiate treatment, on advice of microbiologist, if the patient is systemically unwell. Please notify suspected cases of food poisoning to, and seek advice on exclusion of patients from, Public Health Doctor ☎ ************. Send stool samples in these cases.			
GENITAL TRACT INFECTIONS – UK NATIONAL GUIDELINES				
Candidiasis	All topical and oral azoles give 80-95% cure.[A-] In pregnancy avoid oral azole.[B]	clotrimazole 10% or clotrimazole or fluconazole	5 g vaginal cream 500 mg pessary 150 mg orally	stat stat stat
Bacterial vaginosis	A 7 day course of oral metronidazole is slightly more effective than 2 g stat.[A-] Avoid 2g stat dose in pregnancy	metronidazole[A+] metronidazole 0.75% vag gel[A+] clindamycin 2% cream[A+]	400 mg BD 5 g applicatorful at night	7 days 5 days 7 days
Chlamydia trachomatis	Contra-indicated in pregnancy (doxycycline, oxytetracycline) erythromycin is less efficacious than doxycycline Treat partners Refer contacts to GUM	doxycycline[A+] or oxytetracycline[A-] or erythromycin[A-] or azithromycin[A+]	100 mg BD 500 mg QDS 500 mg BD 500 mg QDS 1 g stat	7 days 7 days 14 days 7 days 1 hr before or 2 hrs after food
Trichomoniasis	Treat partners simultaneously *Avoid high dose metronidazole in pregnancy or use clotrimazole for SYMPTOMATIC relief and treat post-natally.*	metronidazole[A-] *clotrimazole*	400 mg TDS or 2 g stat *100 mg pessary*	7 days *6 days*
Pelvic Inflammatory Disease (PID)	Test for Chlamydia and *N. gonorrhoea* Refer contacts to GUM	metronidazole + doxycycline[B] *or* metronidazole + ofloxacin[B]	400 mg BD 100 mg BD 400 mg BD 400 mg BD	14 days 14 days 14 days 14 days
Note: ***Refer patients with STDs, including trichomoniasis, for contact tracing.***				

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ILLNESS	COMMENTS	DRUG	DOSE	DURATION OF Tx
SKIN / SOFT TISSUE INFECTIONS				
Impetigo	Topical use should be minimised to reduce development of resistance. *For minor infections only*	flucloxacillin or erythromycin *mupirocin or fusidic acid*	Oral 500 mg QDS Oral 500mg QDS Topically QDS	7 days 7 days *5 days*
Cellulitis	Facial cellulitis consider co-amoxiclav 500/125 mg TDS or add metronidazole.[C]	penicillin V plus flucloxacillin or erythromycin	500 mg QDS 500 mg QDS 500 mg QDS	7 – 14 days 7 – 14 days 7 – 14 days
Leg ulcers	**Routine swabs are not recommended.** Antibiotics are **only** indicated if cellulitis is present.			
Animal bite Human bite	Antibiotic prophylaxis advised, especially if >50 yrs, puncture or hand wound.[C] Assess rabies risk. Assess HIV/hepatitis B risk	*First line animal and human* co-amoxiclav[B-] *If penicillin allergic:* *oxytetracycline or erythromycin and review*[C]	375-625 mg TDS 250-500 mg QDS	7 days 7 days
Dermatophyte infection of the proximal fingernail or toenail	**Take nail clippings**: Start therapy only if infection is confirmed by microscopy or culture**.** Idiosyncratic liver reactions occur rarely with terbinafine.	amorolfine (Loceryl) paint[B-] terbinafine[A-]	1-2x/weekly fingers toes 250 mg OD fingers toes	6 months 12 months 6 – 12 weeks 3 – 6 months
	Pulsed itraconazole monthly is recommended for infections with yeasts and non-dermatophyte moulds.[C]	itraconazole	200 mg BD fingers toes	7 days monthly 2 courses 7 days monthly 3 courses
Skin	Administer for 14 days after symptomatic resolution. If intractable consider oral itraconazole.	Topical undecenoic acid or 1% azole[A+] If failure: Topical 1% terbinafine [A+]	1-2x/daily OD - BD	4 – 6 weeks[A+] 1 week[A+]
Note: ***Seek specialist advice for children with nail infections.***				
VIRAL INFECTIONS				
Herpes zoster/ Chicken pox & Varicella zoster/ shingles	Clinical value of antivirals minimal unless secondary household case of chicken pox, facial/ophthalmic shingles, or severe pain, **and** if treatment started < 2 days of rash. If pregnant seek advice.	aciclovir or valaciclovir Child – see BNF	800 mg 5x/day 1 g TDS	7 days 7 days
PARASITIC INFECTIONS				
Threadworm	Treat household contacts. Use piperazine in children under 2.	mebendazole or piperazine	100 mg 15 ml OD	stat 7 days

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