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(July 2022 – updated section on 'Acute otitis media (in children)') (September 2022 – updated link to Lymphoedema Wales guidance) (April 2023- updated section on 'Acute rhinosinusitis') This document has been prepared by the All Wales Antimicrobial Pharmacist Group (AWAPG) and the All Wales Antimicrobial Guidance Group (AWAGG), with support from the All Wales Prescribing Advisory Group (AWPAG) and the All Wales Therapeutics and Toxicology Centre (AWTTC), and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG).

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1.0 Audit aims

- To promote antibiotic prescribing in accordance with existing guidelines;
- To support clinicians with quality improvement by promoting review of antimicrobial prescribing in their teams.

2.0 Background

Where an antibiotic is needed, the choice of agent and its use needs to be considered in order to ensure that infections are treated effectively. Broad-spectrum antibiotics such as fluoroquinolones, cephalosporins and co-amoxiclav should be reserved for the treatment of resistant disease only.

This audit is underpinned by agreed All Wales Medicines Strategy Group (AWMSG) guidelines for the management of infection in primary care, and supports the implementation of the All Wales Medicines Strategy Group (AWMSG) antimicrobial stewardship National Prescribing Indicators (NPIs) which were first introduced in 2014–2015^{1,2}. Data for each of the NPIs is available to view (by GP practice, cluster or health board) via the <u>Server for Prescribing Information Reporting and Analysis (SPIRA)</u>. Each audit section is available as a standalone document on the AWMSG website.

At the time of publication, the total use of antibiotic agents is monitored as an NPI in antibacterial items per 1,000 Specific therapeutic group age-sex related prescribing units (STAR-PUs)¹. Use is generally high in Wales when compared with England (see Figure 1)³.

Figure 1. Total antibacterial items per 1,000 STAR-PUs in Welsh health boards and English Clinical Commissioning Groups (CCGs) – Quarter ending September 2021



The term '4C antimicrobials' refers collectively to four broad-spectrum antibiotics, or groups of antibiotics: co-amoxiclav, cephalosporins, fluoroquinolones and clindamycin, The use of simple generic antibiotics and the avoidance of these broad-spectrum antibiotics preserves them from resistance and reduces the risk of *Clostridioides difficile* infection. At the time of publication, the use of 4C antimicrobials is monitored as a separate NPI in 4C antimicrobial items per 1,000 patients¹. Use in Wales is higher than that observed in England (Figure 2)³.





The audits presented in this document can support the quality improvement required for appraisal and revalidation as described in the General Medicine Council (GMC) guide to Good Medical Practice⁴. In addition, any improvements in prescribing practices that are driven by the completion of these audits and any subsequent reauditing will help contribute to the UK Government's 20-year vision for antimicrobial resistance, where the ambitions for change include⁵:

- Ambition 4 Provide safe and effective care to patients
- Ambition 8 Demonstrate appropriate use of antimicrobials.

Delivery of the UK Government's 20-year vision is being managed through complimentary 5-year action plans. The current action plan for 2019–2024 references modelling studies that suggest that at least 20% of the antibiotics prescribed in UK primary care are inappropriate and sets the following target for delivering "optimal use of antimicrobials in humans"^{6,7}:

- To reduce UK antimicrobial use in humans by 15% by 2024, including:
 - a 25% reduction in antibiotic use in the community from the 2013 baseline;
 - a 10% reduction in use of 'reserve' and 'watch' antibiotics in hospitals from the 2017 baseline.

2.1 Key messages for primary care prescribers

The following are key messages for primary care prescribers, based on the key messages developed by the European Centre for Disease Prevention and Control (ECDC)⁸. While these messages were developed some time ago, they are still relevant today:

Growing antibiotic resistance threatens the effectiveness of antibiotics now and in the future

- Antibiotic resistance is an increasingly serious public health problem in Europe.
- While the number of infections due to antibiotic-resistant bacteria is growing, the pipeline of new antibiotics is unpromising, thus presenting a bleak outlook on availability of effective antibiotic treatment in the future.

Rising levels of antibiotic-resistant bacteria could be curbed by optimising judicious antibiotic use in primary care patients

- Antibiotic exposure is linked to the emergence of antibiotic resistance. The overall uptake of antibiotics in a population, as well as how antibiotics are consumed, has an impact on antibiotic resistance.
- Experience from some countries in Europe shows that reduction in antibiotic prescribing for outpatients has resulted in concomitant decrease in antibiotic resistance.
- Primary care accounts for about 80% of all antibiotic prescriptions, mainly for respiratory tract infections.
- There is evidence showing that, in many cases of respiratory tract infection, antibiotics are not necessary and that the patients' immune systems are able to combat simple infections.
- There are patients with certain risk factors such as, for example, severe exacerbations of chronic obstructive pulmonary disease (COPD) with increased sputum production, for which antibiotics are indicated.
- Unnecessary antibiotic prescribing in primary care is a complex phenomenon, but it is mainly related to factors such as misinterpretation of symptoms, diagnostic uncertainty and perceived patient expectation.

Communicating with patients is key

- Studies show that patient satisfaction in primary care settings depends more on effective communication than on receiving an antibiotic prescription and that prescribing an antibiotic for an upper respiratory tract infection does not decrease the rate of subsequent return visits.
- Professional medical advice impacts patients' perceptions and attitude towards their illness and perceived need for antibiotics, in particular when they are advised on what to expect in the course of the illness, including the realistic recovery time and self-management strategies.
- Primary care prescribers are not required to allocate more time for consultations that involve offering alternatives to antibiotic prescribing. Studies show that this can be done within the same average consultation time while maintaining a high degree of patient satisfaction.⁸

2.2 Supporting tools

- Royal College of General Practitioners (RCGP) <u>Treat Antibiotics Responsibly</u>, <u>Guidance</u>, <u>Education and Tools (TARGET) Antibiotics Toolkit</u>:
 - TARGET Guides, Updates and News
 - TARGET Leaflets to share with patients
 - Urinary tract infection (UTI) Resource Suite
 - Leaflets to share with patients
 - Resources for clinical and waiting areas
 - Audit toolkits, self-assessment and action planning
 - Antibiotic and diagnostic quick reference tools
 - Training resources
 - TARGET Trainers and Training
 - Information for commissioners
- AWMSG (2021): Primary Care Antimicrobial Guidelines [in development]
- National Institute for Health and Care Excellence (NICE) (2021): <u>Antimicrobial</u> <u>stewardship</u>
- ECDC: <u>Materials for primary care prescribers</u>

3.0 Audit method

The audits below are for the use of health board medicines management teams, cluster pharmacists, practices pharmacists or individual prescribers. A range of criteria is provided to enable users to focus on specific areas of prescribing; it is not envisaged that all audit options would be undertaken in a general practice in one year. It is recommended that this work is carried out by clinicians to enhance ownership and lead to more effective, broader change.

Prescribing data should be considered and a decision reached as to which elements of the tool are most likely to have a positive impact on prescribing practice. This may mean focusing on antibiotic groups, where specific issues are identified, or looking at prescribing in clinical scenarios where number of antibiotic prescriptions is an issue.

3.1 Setting standards

Setting standards is difficult, and reasonable targets for some of the criteria will vary depending on many factors. Completion of the audit to obtain baseline data may assist prescribers in setting more appropriate standards for future audits; however, any re-auditing should demonstrate movement towards the currently suggested standards.

3.2 Sample size

Prescribers should ensure that an adequate number of consultations are analysed to determine compliance with the audit standards and to provide a basis for discussion.

Consider the following:

- If undertaking an in-depth review of a single specific audit section, consider assessing ten cases per prescriber within the practice.
- If undertaking several audit sections, a smaller case selection may be appropriate.
- Ideally, at least 20 consultations should be analysed to determine overall compliance with current guidelines.

• It is recommended that the sample size for a GP practice should scale with the size of the practice patient list size as follows:

GP practice list size	Recommended sample size
< 5,000	20
5,000-7,499	25
7,500–9,999	30
10,000+	35

3.3 Audit data

It is likely that discussing recent antimicrobial prescribing data with health board prescribing advisors would help to ensure that any focus delivers maximum effect.

Health boards are encouraged to include these audits within their Clinical Effectiveness Prescribing Programme (CEPP). For many, this may be a priority due to the impact of healthcare-acquired infection (HCAI) and increasing antimicrobial resistance (with subsequent treatment failure) placing pressure on unscheduled care.

If possible, please send your anonymised audit results to <u>awttc@wales.nhs.org</u>. This will allow the All Wales Therapeutics and Toxicology Centre (AWTTC) to identify any common trends across Wales and cases of best practice in driving improvement.

4.0 Quantity of prescribing – Primary care

4.1 Antibiotic prescribing for sore throat

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment		
Acute sore throat <u>NICE CKS</u> (2021) <u>NICE NG84</u> (2021) <u>NICE DG38</u> (2021) <u>ESCMID</u> (2012) 	 Avoid antibiotics as 90% resolv Antibiotics to prevent quins Antibiotics to prevent otitis Advise paracetamol, or ibuprofer 	ve in 7 days without, and pain only m sy NNT > 4,000 media NNT 200 n (if suitable). Medicated lozenges m	educed by 16 hours. nay help pain in adults.			
	FeverPAIN criteria (score 1 point each)		Centor criteria (score 1 point each)	Centor criteria (score 1 point each)		
	Fever (during previous 24	hours)	Tonsillar exudate			
	Purulence (pus on tonsils)		Tender anterior cervical lym	phadenopathy or lymphadenitis		
	Attend rapidly (<3 days aft	ter onset of symptoms)	History of fever (over 38°C)			
	Severely Inflamed tonsils		Absence of cough	Absence of cough		
	No cough or coryza (inflam	nmation of mucus membranes in the	e nose)			
	FeverPAIN 0-1 or Centor 0-2:	No antibiotic		When an antibiotic is not prescribed, please		
	FeverPAIN 2 – 3:	No antibiotic (Back-up delayed ant appropriate – please see prescribi	ibiotic prescription can be issued if ng options below)	Infection' leaflet (RCGP), available in multiple languages.		
	FeverPAIN 4 – 5 or Centor 3 – 4:	First line: Phenoxymethylpenicillin	500 mg QDS or 1 g BD (See <u>British National Formulary</u> <u>for Children [BNFc]</u> for dosing in children)	5 days. If patient is immunocompromised, confirmed Group A <i>Streptococcus</i> infection or has a problematic recurrence of infection: 10 days.		
	Consider 2 or 3 day delayed or immediate prescription for antibiotics.	<i>Penicillin allergy:</i> Clarithromycin	250–500 mg BD (See <u>BNFc</u> for dosing in children)	5 days		
		<i>Penicillin allergy and pregnant:</i> Erythromycin	250–500 mg QDS or 500 mg–1 g BD	5 days		

Method

There is a choice of two methods for identifying cases in this audit:

- Method 1 searches by Read Code diagnosis; it therefore identifies all patients who presented with a sore throat. The patients may or may not have received an antibiotic and this method will highlight the choice of antibiotic for sore throat. The figure for percentage of patients receiving antibiotics should be interpreted with caution as this will vary considerably depending on the Read Codes audited.
 - Please note, as and when SNOMED codes are more routinely used across Wales, this document will be updated to include a list of relevant codes.
- Method 2 searches by antibiotic (penicillin) and therefore focuses on patients who have received an antibiotic and the criteria used to inform prescribing

For both methods, only the most recent episode for an individual patient should be considered. Patients with recurrent throat infections should be excluded where another episode has been diagnosed in the previous eight weeks as this may be indicative of treatment failure with first-line treatment. Start the searches using a 3-month window and extend if necessary to reach the required number of cases.

Method 1: Sore throat, search by Read Code diagnosis

Assess a reasonable sample of records with a diagnosis of sore throat (see section on <u>Sample size</u>). To identify the sample, perform a search using an appropriate selection of the following Read Codes:

1C9	Sore throat symptom	H02-3	Throat infection – pharyngitis
1C9-1	Throat soreness	H024	Acute viral pharyngitis
1C92	Has a sore throat	H02z	Acute pharyngitis – NOS
1CB3	Throat pain	H03	Acute tonsillitis
194	Swallowing symptoms	H03-1	Throat infection – tonsillitis
1692	Swollen glands	H03-2	Tonsillitis
A340	Streptococcal sore throat	H031	Acute follicular tonsillitis
H02	Acute pharyngitis	H036	Acute viral tonsillitis
H02-1	Sore throat – not otherwise specified (NOS)	H03z	Acute tonsillitis – NOS
H02-2	Viral sore throat – NOS		

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet (Method 1)

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

	Severity asse	ssment	Pre	escribing strategy	y taken			If ant	ibiotics pre	scribe	ed			Patie infor	nt nation
Patient ID	FeverPAIN or Centor used? • FeverPAIN [FP] • Centor [C] • Neither [Nil]	FeverPAIN or Centor score: (Calculate with information to hand, if not already done)	 No antibiotics (usually FP 0- Back-up delay (usually FP 2- Immediate pro (usually FP 4- 	offered –1 or C≤2) [NIL] yed prescription –3) [BU] escription –5 or C 3–4) [I]	Decisio prescri prescri with gu deviatio • Yes • No [on to ibe/not to ibe in line uidelines OR on justified? [Y] N]	Antibiotic choice (including dose, frequency and duration)	Antib corre • Ye • No	piotic choice ect? es [Y] o [N]	Dose frequ corre • Ye • No	and ency ct? s [Y] o [N]	Durat correc • Ye • No	tion ct? s [Y] [N]	Patier inform or sig inform • Yes • No	nt given nation leaflet nposted to nation? s [Y] [N]
Total														Vec	
%			Z		Yes			Yes		Yes		Yes		res	
Standard						100%			100%		100%		100%		

Method 2: Sore throat, search by antibiotic (penicillin)

Search for adults and children issued phenoxymethylpenicillin (Penicillin V) and identify the cohort prescribed for throat infection (see section on <u>Sample size</u>).

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet (Method 2)

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

	Severity assess	sment		Prescribing strategy taken		Prescribed dos	e and duration
Patient ID	FeverPAIN or Centor used? • FeverPAIN [FP] • Centor [C] • Neither [Nil]	FeverPAIN or Centor score: (Calculate with information to hand, if not already done)	Back-up delayed prescription issued (usually FP 2–3)]? • Yes [Y] • No [N]	Immediate antibiotic given (usually FP 4–5 or C 3–4)? • Yes [Y] • No [N]	Decision to prescribe antibiotic in line with guidelines OR deviation justified? • Yes [Y] • No [N]	Dose and frequency correct? • Yes [Y] • No [N]	Duration correct? • Yes [Y] • No [N]
Total	₽ () =		Vos	Ves	Vas	Vas	Vos
%				103		165	165
Standard					100%	100%	100%

4.2 Antibiotic prescribing for acute rhinosinusitis

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment		
Acute rhinosinusitis <u>NICE CKS</u> (2021) <u>NICE NG79</u> (2017) 	Avoid antibiotics as 80% resolve in 14 days without, and they only offer marginal benefit after 7 days.	No antibiotic	When an antibiotic is not prescribed, please consider using the ' <u>TARGET Treating your</u> Infection' leaflet (RCGP), available in multiple languages.			
	Symptoms for 10 days or less:	First line if symptoms for are indicated	> 10 days and delayed	or immediate antibiotics		
	No antibiotic	Amoxicillin	500 mg TDS 1 g TDS if severe	5 days		
	Symptoms with no improvement for >10 days: No antibiotic.	Penicillin allergy:				
	(Back-up delayed antibiotic prescription can be issued if appropriate – please see prescribing options alongside.) Consider 7-day delayed or immediate antibiotic when purulent nasal	Doxycycline (if >12 years old)	200 mg stat then 100 mg OD			
	discharge.	OR		5 days		
	Systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications:	Clarithromycin (children < 12 years old)	500 mg BD (See <u>BNFc</u>)			
	Immediate antibiotic	OR				
	 Refer to hospital if: Severe systemic infection Intraorbital or periorbital complications 	Erythromycin (preferred if pregnant)	250–500 mg QDS			
	Intracranial complication	First line if systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications OR Second line (worsening symptoms on first choice taken for at least 2 to 3 days):				
		Co-amoxiclav	625 mg TDS	5 days		

Method

Assess a reasonable sample of records with a diagnosis of acute rhinosinusitis (see section on <u>Sample size</u>). Patients with recurrent or chronic sinus infections should be excluded. Search using the following Read Codes:

H010 Acute maxillary sinusitis
H011 Acute frontal sinusitis
H012 Acute ethmoidal sinusitis
H013 Acute sphenoidal sinusitis
H014 Acute rhinosinusitis
H01y Other acute sinusitis
H01z Acute sinusitis

Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Please note, as and when SNOMED codes are more routinely used across Wales, this document will be updated to include a list of relevant codes.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Symptoms recorded as present for 10 days or more? • Yes [Y] • No [N]	Purulent nasal discharge? • Yes [Y] • No [N]	Systemically very unwell, signs of a more serious illness, or high risk of complications? OR worsening symptoms on first line treatment? • Yes [Y] • No [N]	Antibiotic given? • Yes [Y] • No [N]	If an antibiotic given, was there a record of: purulent discharge or symptoms being present for 10 days or more? OR systemically unwell? OR worsening symptoms on first line treatment? • Yes [Y] • No [N]	Back-up delayed prescribing? • Yes [Y] • No [N]	Decision to prescribe/not to prescribe in line with guidelines OR deviation justified? • Yes [Y] • No [N]	Patient given information leaflet or signposted to information? • Yes [Y] • No [N]	Antibiotic prescribed (record name, dose, frequency and duration)	If antibiotic choice deviates from guidance, record reason (if documented)
Total										
% Yes										
Standard					100%		100%			

4.3 Antibiotic prescribing for acute otitis media

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine		Adult dose	Duration of treatment	
Acute otitis media	Otitis media can be caused by viruses and bacteria. It is difficult to distinguish and both are often present at the same time.	If NO immediate antibiotic required, for pain relief offer oral analgesia and consider the use of eardrops below:				
(in children) • <u>NICE</u> <u>NG91</u> (2022)	 Optimise analgesia: Paracetamol or ibuprofen should be used regularly for pain at the right dose (for age or weight) and at the right time; and maximum doses for severe pain. Consider eardrops containing an anaesthetic and an analgesic for pain. For children and young people who may be less likely to benefit from antibiotics, consider NO antibiotic taking account of: Otitis media is mostly self- limiting. Most get better within 3 days without antibiotics, but it can last for up to 1 week. 	Phenazone 40mg lidocaine 10mg/g Use only if all ap • Immediate oral not given • No eardrum pe • No otorrhoea	/g with ply: I antibiotic is erforation	Apply 4 drops two or three times a day	Up to 7 days	
	 Antibiotics make little difference to symptoms. Antibiotics make little difference to the rates of common complications like recurrence of infection, hearing loss (which is usually temporary) and perforated eardrum. 	Consider using the <u>'When Should I Worry?</u> ' booklet or a <u>'TARGET Treating your Infection'</u> leaflet (RCGP), available in multiple languages.				
	• Mastoiditis is rare with or without antibiotics. Antibiotics to prevent mastoiditis NNT > 4000. If a	If an antibiotic required:				
	For children more likely to benefit from antibiotics (i.e. < 2 years with infection in both ears OR children of any age with otorrhoea), consider no antibiotic prescription, back-up delayed		Amoxicillin	See <u>BNFc</u>	5–7 days	
	antibiotics, or immediate antibiotics. For children who are systemically very unwell, have symptoms or signs of a more serious illness, or are at high risk of serious complications because of pre-existing comorbidity, offer	First line	<i>Penicillin</i> <i>allergy</i> : Clarithromycin	See <u>BNFc</u>	5–7 days	
	 immediate antibiotics. Pre-existing comorbidity include: Significant heart, lung, renal, liver or neuromuscular disease Immunosuppression 		Co-amoxiclav	See <u>BNFc</u>	5–7 days	
	 Cystic fibrosis Young children who were born prematurely. Safety netting: No antibiotic – Seek medical help if symptoms worsen rapidly or significantly, do not start to improve after 3 days, or child becomes systemically very unwell. Back-up delayed antibiotic – Advise to use if symptoms do not start to improve within 3 days, or if they worsen rapidly or significantly at any time. Seek medical help if symptoms worsen rapidly or significantly, or child becomes systemically very unwell. Immediate antibiotic – Seek medical help if symptoms worsen rapidly or significantly, or child becomes systemically very unwell. 	Second line (If symptoms worsening on first line option taken for at least 2–3 days)	<i>Pencillin allerg</i> Consult local m	<i>y</i> : nicrobiologist	1	

Method

Assess a reasonable sample of records with a diagnosis of acute otitis media (see section on <u>Sample size</u>). Patients with chronic otitis media should be excluded. Search using the following Read Codes:

2D94.00	O/E - tympanic membrane pink	F510011	Acute secretory otitis media
2D95.00	O/E - tympanic membrane red	F510100	Acute serous otitis media
2D96.00	O/E - tympanic membrane bulging	F510200	Acute mucoid otitis media
F5100	Non-suppurative otitis media + eustachian tube disorders	F510z00	Acute nonsuppurative otitis media NOS
F510.00	Acute non suppurative otitis media	F514.00	Unspecified nonsuppurative otitis media
F510000	Acute otitis media with effusion	F514100	Serous otitis media NOS
F514200	Catarrhal otitis media NOS	F520z00	Acute suppurative otitis media NOS
F514300	Mucoid otitis media NOS	F524.00	Purulent otitis media NOS
F514z00	Nonsuppurative otitis media NOS	F524000	Bilateral suppurative otitis media
F5200	Suppurative and unspecified otitis media	F526.00	Acute left otitis media
F520.00	Acute suppurative otitis media	F527.00	Acute right otitis media
F520000	Acute suppurative otitis media tympanic membrane intact	F528.00	Acute bilateral otitis media
F520100	Acute suppurative otitis media tympanic membrane ruptured	F52z.00	Otitis media NOS
F520300	Acute suppurative otitis media due to disease elsewhere classified	F52z.11	Infection ear

Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Please note, as and when SNOMED codes are more routinely used across Wales, this document will be updated to include a list of relevant codes.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	< 2 years with infection in both ears? • Yes [Y] • No [N]	Child (of any age) with otorrhoea? • Yes [Y] • No [N]	Systemically very unwell, signs of a more serious illness, or high risk of complications? • Yes [Y] • No [N]	Antibiotic given? • Yes [Y] • No [N]	Back-up delayed prescribing? • Yes [Y] • No [N]	Decision to prescribe/not to prescribe in line with guidelines OR deviation justified? • Yes [Y] • No [N]	Patient given information leaflet or signposted to information? • Yes [Y] • No [N]	Antibiotic prescribed (record name, dose, frequency and duration)	If antibiotic choice deviates from guidance, record reason (if documented)
Total									
% Yes									
Standard						100%			

4.4 Antibiotic prescribing for lower urinary tract infections (UTIs) in patients ≥ 65 years

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine Adult dose Duration of treat				
Lower UTI in patients ≥ 65 years	Treat according to sensitivities on recent mid-stream sample of urine (MSU) results if available, otherwise treat empirically. Do not treat asymptomatic bacteriuria except in exceptional		Nitrofurantoin (if estimated glomerular filtration rate [eGFR] ≥ 45 ml/minute)	100 mg m/r BD		
	circumstances after consultation with a relevant specialist team		OR			
	\geq 65 years but is not associated with increased morbidity.	Second line	Trimethoprim (only if recent MSU shows	200 mg BD	Uncomplicated - 3 days Complicated - 7 days	
	Do not dipstick in patients \geq 65 years of age. Diagnosis should be made an approximate of automatical in a dipatiely is performed in		sensitivities)			
	a patient \ge 65 years old, a negative result may exclude a UTI, BUT a positive result has NO value and does not suggest the presence of a UTI		Pivmecillinam (Warning: β-lactam, do not use if allergic to penicillin)	400 mg TDS		
			OR			
	Men : If symptoms mild/non-specific, use negative dipstick to exclude UTI . If infection is indicated, consider prostatitis and send pre-treatment MSU.			3 g sachet	Women: 3 g PO stat (plus additional 3 g dose 3 days later if complicated UTI)	
	Nitrofurantoin is not recommended for men with suspected prostate involvement because it is unlikely to reach therapeutic levels in the prostate.		Fosfomycin		Men: 3 g PO stat plus 3 g dose 3 days later (Prescribing in men and	
	NB: <u>Nitrofurantoin</u> , pivmecillinam and fosfomycin are not appropriate for the treatment of upper UTI/pyelonephritis.				complicated UTIs are both off-label)	
	Resistance to many agents is increasing, particularly in the elderly (≥ 65 years). If high risk of resistance, send urine for microscopy, culture and sensitivity (MC&S).	Complicated infection defined as all males, females with renal impairment, abnormal urinary tract, poorly controlled diabetes or immunosuppression. Use nitrofurantoin first-line as general resistance and the prevalence of community multi-				
	Risk factors for increased resistance include: care home resident; recurrent UTI; hospitalisation > 7 days in the last 6 months; unresolved urinary symptoms; recent travel to a country	resistant extended-spectrum beta-lactamase <i>E. coli</i> is increasing. Trimethoprim should only be used if recent MSU shows sensitivities. Pivmecillinam and fosfomycin are alternative second line agents.				
	with increased antimicrobial resistance (outside Northern Europe and Australasia), previous resistant UTI.	If increased resistance risk, send culture for susceptibility testing & give safety net advice. If eGFR < 45 ml/minute or elderly, consider pivmecillinam or fosfomycin.				

Clinical signs and symptoms of lower UTIs include new onset dysuria alone or two or more signs of infection: Temperature 1.5°C above patient's normal at least twice in 12 hours, new frequency or urgency, new incontinence, new or worsening delirium/debility, new suprapubic pain or visible haematuria. If fever and delirium/debility only, consider other causes before treating for UTI⁹.

If symptomatic, send urine for culture and treat with antibiotics as per guidelines/or consider back-up delayed antibiotics if mild symptoms in women without catheters at low risks of complications.

If asymptomatic: do not send urine for culture.

Method

Assess a reasonable sample of records with a diagnosis of UTI (see section on <u>Sample size</u>). Exclude those under 65 years of age, patients with catheter-associated UTI and patients with acute pyelonephritis. Search using the following Read Codes:

R081DysuriaK15CystitisK190Urinary tract infection1J4Suspected UTI

Following the audit, complete the Review Sheet.

Please note, as and when SNOMED codes are more routinely used across Wales, this document will be updated to include a list of relevant codes.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Date of birth (DD/MM/YYYY)	Gender (optional data field)	Was the diagnosis of lower UTI based on clinical signs or symptoms (i.e. new onset dysuria alone or two or more signs of infection?) • Yes [Y] • No [N]	Was a urine dip stick test used to diagnose the lower UTI? • Yes [Y] • No [N]	Was the antibiotic prescribed following local guidance/ following recent sensitivities? • Yes [Y] • No [N]	Antibiotic prescribed (record name, dose and frequency)	Antibiotic course length (number of days)	Has a midstream specimen of urine (MSU) been sent? • Yes [Y] • No [N] • Unable to obtain sample [N/A]
Total								
% Yes								
Standard				0%	100%			

4.5 Antibiotic prescribing for acute cough/acute bronchitis

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment
Acute cough, bronchitis <u>NICE CKS</u> (2021) <u>NICE NG120</u> (2019) 	 Antibiotics are of little benefit if there is no co-morbidity First line: self-care and safety netting advice. Second line: Consider a back-up delayed antibiotic prescription with safety netting advice and advise that symptom resolution can take 3 weeks. 	No antibiotic	When an antibiotic is not prescribed, please consider using the ' <u>TARGET Treating your Infection</u> ' leaflet (RCGP), available in multiple languages.	
	 Consider immediate antibiotics if patient is ≥ 65 years with TWO or more of the following criteria, or ≥ 80 years with ONE or more of the following criteria: hospitalisation in previous year type 1 or type 2 diabetes history of congestive heart failure serious neurological disorder or stroke 	Amoxicillin	500 mg TDS	5 days
	 current use of oral corticosteroids. If available, consider C-reactive protein (CRP) if antibiotic is being considered: No antibiotics if CRP < 20mg/L and symptoms for >24 hours. Delayed antibiotics if CRP 20–100 mg/L. Immediate antibiotics if CRP > 100mg/L. 	<i>Penicillin allergy</i> : Doxycycline	200 mg stat then 100 mg OD	5 days

Recommendations from NICE Guideline 120 Cough (acute): antimicrobial prescribing¹⁰

Do not offer an antibiotic to treat an acute cough associated with an upper respiratory tract infection in people who are not systemically very unwell or at higher risk of complications. Give advice about why an antibiotic is not needed.

Acute cough associated with acute bronchitis

Do not routinely offer an antibiotic to treat an acute cough associated with acute bronchitis in people who are not systemically very unwell or at higher risk of complications.

Be aware that:

- antibiotics do not improve the overall clinical condition of people with acute bronchitis
- antibiotics make little difference to how long symptoms of acute bronchitis last (on average they shorten cough duration by about half a day)
- antibiotics have possible adverse effects, particularly diarrhoea and nausea.

When no antibiotic prescription is given, give advice about why an antibiotic is not needed.

If an antibiotic prescription is given, give advice about possible adverse effects of the antibiotic, particularly diarrhoea and nausea.

Acute cough in people who are systemically very unwell or at higher risk of complications

For people with an acute cough who are identified as systemically very unwell (ideally at a face-to-face clinical examination), offer an immediate antibiotic prescription.

Be aware that people with an acute cough may be at higher risk of complications if they:

- have a pre-existing comorbidity, such as significant heart, lung, renal, liver or neuromuscular disease, immunosuppression or cystic fibrosis
- are young children who were born prematurely
- are older than 65 years with 2 or more of the following criteria, or older than 80 years with 1 or more of the following criteria:
 - o hospitalisation in previous year
 - type 1 or type 2 diabetes
 - history of congestive heart failure
 - o current use of oral corticosteroids.

For people with an acute cough who are identified as at higher risk of complications (ideally at a face-to-face clinical examination), consider:

- an immediate antibiotic prescription or
- a back-up antibiotic prescription.

When an immediate antibiotic prescription is given, give advice about possible adverse effects of the antibiotic, particularly diarrhoea and nausea.

When a back-up antibiotic prescription is given, give advice about:

- an antibiotic not being needed immediately
- using the back-up prescription if symptoms worsen rapidly or significantly at any time.

Back-up delayed prescribing

It has been suggested that asking the patient to return to the practice reception or a nominated pharmacy is more effective than handing the back-up delayed prescription to the patient. An agreement with the pharmacist to return uncollected prescriptions can be informative for the prescriber.

Information for the patient can be issued during a consultation to support no prescribing or back-up delayed prescribing.

Method

Assess a reasonable sample of records both adults and children, with a diagnosis of acute cough/acute bronchitis (see section on <u>Sample</u> <u>size</u>). To identify the sample, perform a search using an appropriate selection of the following Read Codes:

- 171 Cough Dry cough 1712 1714 Productive cough- green sputum 1719 Chesty cough 171F Cough with fever 171z Cough symptoms Acute upper respiratory tract infection (RTI) H051 H05z Upper respiratory infection NOS H05z-1 Upper RTI Viral upper respiratory tract infection H05z-2 Acute bronchitis H060
- H060-1 Acute wheezy bronchitis
- H060z Acute bronchitis NOS

H062 Acute lower RTI H06z0 Chest infection NOS H06z0-1 Chest infection Lower RTI H06z1 H06z1-2 Acute lower RTI Acute respiratory infection NOS h0z Bronchitis unspecified H30 H30-1 Chest infection - unspecified bronchitis H302 Wheezv bronchitis **Bronchitis NOS** H30z H5vv-1 Respiratory infection NOS R062 [D] Cough

Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Please note, as and when SNOMED codes are more routinely used across Wales, this document will be updated to include a list of relevant codes.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Documented both temperature and chest examination? • Yes [Y] • No [N]	Additional clinical features of severity/systemic upset recorded (pulse, respiratory rate or oximetry)? • 2 or more = Yes [Y] • < 2 = No [N]	Antibiotic prescribed? • No antibiotic offered [Nil] • Immediate prescription [I] • Back-up delayed [BU]	Decision to prescribe/not to prescribe in line with guidelines OR deviation justified? • Yes [Y] • No [N]	If antibiotic supplied, is the antibiotic choice as per guidance? • Yes [Y] • No [N]	Antibiotic prescribed (record name, dose, frequency and duration)
Total			=			
% Yes						
Standard	100%			100%	100%	

5.0 Quality of prescribing – Primary care

5.1 Fluoroquinolone prescribing

Background

AWMSG NPI: 4C items per 1,000 patients

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine		Adult dose	Duration of treatment
Acute pyelonephritis (upper UTI) • <u>NICE CKS</u> (2021)	If admission not needed, send MSU for MC&S and start antibiotics. Reassess the person if symptoms worsen at any time, or	Cefalexin		500 mg BD or TDS (up to 1–1.5 g TDS–QDS for severe infections)	7–10 days
	do not start to improve within 48 hours of taking the antibiotic	OR			
		Trimethopr	rim (if susceptible)	200 mg BD	14 days
	Refer pregnant women with pyelonephritis to secondary care for IV antibiotics.	OR			
		Co-amoxic	lav (if susceptible)	625 mg TDS	7–10 days
		OR			
Treat according to sensitivities on re MSU results if available, otherwise to empirically.		Ciprofloxad (consider s <u>Products R</u>	cin safety issues – see <u>Medicines and Health care</u> Regulatory Agency (MHRA) advice).	500 mg BD	7 days
Acute prostatitis NICE CKS (2020) 	Send MSU for culture and start antibiotics. A 4 week course may prevent chronic prostatitis. Fluoroquinolones achieve higher prostate levels. See <u>MHRA advice</u> for restrictions and precautions for using fluoroquinolones due to very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal, cardiac and nervous systems. Warnings include stopping treatment at first signs of serious adverse		Ciprofloxacin (consider safety issues – see MHRA advice).	500 mg BD	
• <u>NICE NG110</u> (2018)			OR		
		First line	Ofloxacin (consider safety issues – see MHRA advice).	200 mg BD	
			OR		
			Trimethoprim (if unable to take a fluoroquinolone)	200 mg BD	14 days, then
		Second	After discussion with specialist: Co-trimoxazole (when there is C&S and good reasons to prefer this combination to a single antibiotic)	960 mg BD	IEVIEW
	special caution in people over 60 years and	line	OR		
	avoiding co-administration with a corticosteroid (December 2020).		After discussion with specialist: Levofloxacin (consider safety issues – see <u>MHRA advice</u>).	500 mg OD	

Condition	Comments	Medicine		Adult dose	Duration of treatment
Non-specific/non- gonococcal urethritis – first episode	Patients should abstain from sexual intercourse until 14 days after start of treatment and symptoms have resolved	First line	Doxycycline	100 mg BD	7 days
 <u>BASHH</u> (2018) <u>NICE CKS</u> (2019) 	Treat partners and refer to Sexual Health		Azithromycin	1 g stat then 500 mg OD for 2 days	3 days
	Service.	Second line	OR		
			Levofloxacin (consider safety issues – see <u>MHRA advice</u>)	500 mg OD	7 days
Epididymo-orchitis BASHH (2020) NICE CKS (2021) 	bididymo-orchitisUsually due to Gram-negative entericIBASHH (2020)bacteria in men over 35 years old with lowINICE CKS (2021)risk of STI.		years with low risk STI: ;in safety issues – see <u>MHRA advice</u>)	500 mg OD	
	If under 35 years old or STI risk, refer to	OR			
If under 35 years old or STI risk, refer to Genitourinary Medicine (GUM) for addition IM ceftriaxone treatment. Use of an oral cephalosporin instead of IM preparations not recommended due to increasing resistance.	Genitourinary Medicine (GUM) for additional IM ceftriaxone treatment. Use of an oral cephalosporin instead of IM preparations is not recommended due to increasing resistance.	Co-amoxic (If quinolor	elav nes are contra-indicated)	625 mg TDS	10 days
Pelvic inflammatory disease	Refer patient and contacts to Sexual Health	Metronidaz	zole	400 mg BD	14 days
 <u>BASHH</u> (2019) <u>NICE CKS</u> (2019) 	chlamydia and test for Mycoplasma genitalium. 28% of gonorrhoea isolates are now resistant to quinolones, therefore if	PLUS Levofloxac (consider s	in safety issues – see <u>MHRA advice</u>)	500 mg OD	14 days
	symptoms, sex abroad) use ceftriaxone	lf high risl	k of gonorrhea:		
	Use of an oral cephalosporin instead of IM	Ceftriaxone	e	1 g IM	Stat
	preparations is not recommended due to increasing resistance.	PLUS			
	Exclude : ectopic pregnancy, appendicitis,	Metronidaz	zole	400 mg BD	14 days
	complicated ovarian cyst, functional pain.	PLUS			
		Doxycyclin	e	100 mg BD	14 days

Fluoroquinolones may also be required in response to sensitivity results where a preferred agent is not suitable due to resistance.

Method

Assess a reasonable sample of records per prescriber with prescription of a fluoroquinolone (see section on <u>Sample size</u>). Exclude prescriptions given for traveller's diarrhoea or *Helicobacter pylori* eradication.

Identify prescriptions for the following oral medicines:

- Ciprofloxacin
- Levofloxacin
- Ofloxacin

Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Fluoroquinolone prescribed (Name)	Pyelonephritis? • Yes [Y] • No [N]	Pelvic inflammatory disease? • Yes [Y] • No [N]	Acute prostatitis? • Yes [Y] • No [N]	Epididymo- orchitis? • Yes [Y] • No [N]	Non-specific/ non-gonococcal urethritis – first episode, second line? • Yes [Y] • No [N]	Laboratory sensitivity? • Yes [Y] • No [N]	Other indication (Please list)	Decision to prescribe is according to national/local guidance or lab sensitivity? • Yes [Y] • No [N]
Total									
% Yes									
Standard									100%

5.2 Cephalosporin prescribing

Background AWMSG NPI: 4C items per 1,000 patients

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment
Acute pyelonephritis (upper UTI) • <u>NICE CKS</u> (2021)	If admission not needed, send MSU for MC&S and start antibiotics.	Cefalexin	500 mg BD or TDS (up to 1–1.5 g TDS–QDS for severe infections)	7–10 days
	If no response within 24 hours, admit. Refer pregnant women with pyelonephritis to secondary care for intravenous (IV) antibiotics.	OR		
	Refer pregnant women with pyelonephritis to secondary care for intravenous (IV) antibiotics.	Trimethoprim (if susceptible)	200 mg BD	14 days
		OR		
MSU results if available, otherwise empirically.	MSU results if available, otherwise treat empirically.	Co-amoxiclav (if susceptible)	625 mg TDS	7–10 days
		OR		
		Ciprofloxacin (consider safety issues – see <u>MHRA</u> <u>advice</u>).	500 mg BD	7 days
Acute pyelonephritis in pregnancy • <u>NICE CKS</u> (2021)	Referring or seeking specialist advice for people with acute pyelonephritis if they are pregnant is recommended. If admission not needed, send MSU for culture and sensitivities and start antibiotics. If no response within 24 hours, admit. Advise patient to seek medical help if symptoms worsen at any time or do not start to improve within 48 hours of taking the antibiotic, or become systemically very unwell.	Cefalexin	500 mg BD or TDS (up to 1–1.5 g TDS–QDS for severe infections)	7–10 days

Condition	Comments	Medicine		Adult dose	Duration of treatment
 <u>PHE – UTI:</u> <u>diagnostic tools for</u> <u>primary care</u> (2021) <u>NICE CKS</u> (2021) 	Send MSU for culture and start antibiotics. Short-term use of <u>nitrofurantoin in pregnancy</u> is unlikely to cause problems to the foetus. Avoid at term and close to or during labour or delivery	First line	Nitrofurantoin (if eGFR ≥ 45 ml/minute. Avoid at term - may produce neonatal haemolysis)	100 mg m/r BD	
	due to risk of neonatal haemolysis. This		OR		
	includes patients with threatened pre-term labour.		Amoxicillin (If susceptible MC&S results)	500 mg TDS	7 days
	Treatment of asymptomatic bacteriuria in pregnant women: base choice on recent urine MC&S results. If group B <i>Streptococcal</i> bacteriuria is identified ensure antenatal services are made aware as in addition to treatment at the time of diagnosis intrapartum antibiotic prophylaxis will be required.	Second line	Cefalexin	500 mg BD	
 Lower UTI in children PHE – UTI: 	Send pre-treatment MSU for all children with suspected UTI.		Trimethoprim		3 days
diagnostic tools for	Child < 3 months: refer urgently for assessment. Child ≥ 3 months: use positive nitrite to guide antibiotic use. Imaging: only refer if child < 6 months, or recurrent or atypical UTI.	First line	OR		
primary care (2021) NICE CKS (2019) NICE CG54 (2018)			Nitrofurantoin (if eGFR ≥ 45 ml/minute) (Note high cost of liquid formulation - £452.09 per bottle, at the time of writing. Consider crushing tablets [off-license use] for whole tablet doses and where there is patient/carer acceptance)	See <u>BNFc</u>	
			Cefalexin (consider if trimethoprim not appropriate and liquid preparation required)		
			OR		
			Amoxicillin (If susceptible MC&S results)		

Condition	Comments	Medicine	Adult dose	Duration of treatment	
Upper UTI in children	Refer all cases to a paediatrician for further investigation.				
• <u>NICE CG54</u> (2018)	Send pre-treatment MSU for all children with suspected UTI.	Co-amoxiclav (if susceptible)			
	Child < 3 months: refer urgently for assessment.	OR	See <u>BNFc</u>	7–10 days	
	Child \geq 3 months: use positive nitrite to guide antibiotic use.				
	Imaging: only refer if child < 6 months, recurrent or atypical UTI.	Cefalexin			
Acute diverticulitis <u>NICE NG147</u> (2019) 	People with mild, uncomplicated diverticulitis can be managed at home with paracetamol, clear fluids and	Cefalexin	500 mg TDS (up to 1.5 g TDS for severe infections)		
	antibiotics.	PLUS			
	For people who are systemically well following clinical	Metronidazole	400 mg TDS		
	assessment consider a no antibiotic prescribing strategy	OR		5 days	
	worsen.	Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen).	625 mg TDS		
		OR			
		Co-trimoxazole	960 mg BD		
		PLUS			
		Metronidazole	400 mg TDS		
Biliary infection (cholecystitis/	Urgent referral to secondary care is recommended for all cases of cholecystitis to assess the need for	Cefalexin	500 mg TDS (up to 1.5 g TDS for severe infections)		
cholangitis) NICE CKS (2017)	cholecystectomy.	PLUS			
	Please note high mortality rate (up to 10%) associated with	Metronidazole	400 mg TDS		
	Acute Cholecystitis.	OR			
	If for any reason, you are unable to comply with this advice recommendation for antibiotic treatment for mild cases is outlined below.	Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen).	625 mg TDS	5–7 days	
	Biliary colic with no associated infection does not require	OR			
	antibiotics.	Co-trimoxazole	960 mg BD		
		PLUS			
		Metronidazole	400 mg TDS		

Method

Assess a reasonable sample of records per prescriber with prescription of a cephalosporin against national guidelines (see section on <u>Sample size</u>). Exclude prescriptions for IV cephalosporins. Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Cephalosporin prescribed (Name)	Acute pyelonephritis? • Yes [Y] • No [N]	Acute pyelonephritis in pregnancy? • Yes [Y] • No [N]	Lower UTI in children – second line? • Yes [Y] • No [N]	Upper UTI in children? • Yes [Y] • No [N]	UTI in pregnancy? • Yes [Y] • No [N]	Acute diverticulitis? • Yes [Y] • No [N]	Biliary infection (cholecystitis/ cholangitis)? • Yes [Y] • No [N]	Laboratory sensitivity? • Yes [Y] • No [N]	Other indication (Please list)	Decision to prescribe is according to national/local guidance or lab sensitivity? • Yes [Y] • No [N]
Total											
% Yes											
Standard											100%

5.3 Co-amoxiclav prescribing

Background AWMSG NPI: 4C items per 1,000 patients

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment	
Acute rhinosinusitis • <u>NICE CKS</u> (2021) • <u>NICE NG79</u> (2017)	Avoid antibiotics as 80% resolve in 14 days without, and they only offer marginal benefit after 7 days.	No antibiotic	When an antibiotic is not prescribed, please consider using the ' <u>TARGET Treating your</u> Infection' leaflet (RCGP), available in multiple languages.		
	Symptoms for 10 days or less: No antibiotic	First line if symptoms for are indicated	> 10 days and delayed or imme	diate antibiotics	
		Amoxicillin	500 mg TDS 1 g TDS if severe	5 days	
	Symptoms with no improvement for >10 days: No antibiotic.	Penicillin allergy:			
	(Back-up delayed antibiotic prescription can be issued if appropriate – please see prescribing options alongside.)	Doxycycline (if >12 years old)	200 mg stat then 100 mg OD		
	Consider 7-day delayed or immediate antibiotic when purulent nasal discharge. Systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications: Immediate antibiotic Refer to hospital if: • Severe systemic infection • Intraorbital or periorbital complications • Intracranial complication	OR			
		Clarithromycin (children < 12 years old)	500 mg BD (See <u>BNFc</u>)	5 days	
		OR			
		Erythromycin (preferred if pregnant)	250–500 mg QDS		
		First line if systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications OR Second line (worsening symptoms on first choice taken for at least 2 to 3 days):			
		Co-amoxiclav	625 mg TDS	5 days	

Condition	Comments	Medicine	Adult dose	Duration of treatment
Acute infective exacerbation of COPD	 Assessment Send Sputum for culture in cases of recurrent or severe 	Doxycycline	200 mg stat/100 mg OD	5 days total
 <u>NICE NG114</u> (2018) <u>GOLD</u> (2020) 	 exacerbation Consider chest radiograph in cases of severe exacerbation, or the patient is presenting with chest signs or they fail to improve 	lf doxycycline unsuitable:		
• <u>RHIG</u> (2020)	Antibiotics are not required for exacerbation without increased	Amoxicillin	500 mg TDS	5 days
	sputum purulence	OR		,
	Consider the need for an antibiotic taking into account:	Clarithromycin	500 mg BD	
	 sputum colour changes and increased volume or thickness beyond normal Risk of complications Previous sputum culture and susceptibility results 	If patient exposed to antibiotics in the past 3 months or at higher risk of treatment failure:		
	 Risk of antimicrobial resistance and current antibiotic prophylaxis (treatment should be with an antibiotic from a different class) 	Co-trimoxazole	960 mg BD	5 days
	If CRP testing available (see table below) CRP < 20 Antibiotics unlikely to be helpful CRP 20–40 Consider antibiotics CRP > 40 Prescribe antibiotics	OR		
		Co-amoxiclav	625mg TDS	
Upper UTI in children <u>NICE CG54</u> (2018) 	Refer all cases to a paediatrician for further investigation. Send pre-treatment MSU for all children with suspected UTI.	Co-amoxiclav (if susceptible)		7–10 days
	Child < 3 months: refer urgently for assessment.	OR	See <u>BNFc</u>	
	Child \geq 3 months: use positive nitrite to guide antibiotic use.	Cefalexin		
Acute pyelonephritis	If admission not needed, send MSU for MC&S and start antibiotics.	Cefalexin	500 mg BD or TDS (up to 1 g TDS for severe infections)	7–10 days
 <u>NICE CKS</u> (2021) 	If no response within 24 hours, admit.	OR		
	Refer pregnant women with pyelonephritis to secondary care for IV antibiotics.	Trimethoprim (if susceptible)	200 mg BD	14 days
	Treat according to sensitivities on recent MSU results if	OR		
	available, otherwise treat empirically.	Co-amoxiclav (if susceptible)	625 mg TDS	7–10 days
		OR		
		Ciprofloxacin (consider safety issues – see <u>MHRA advice</u>).	500 mg BD	7 days

Condition	Comments	Medicine	Adult dose	Duration of treatment
Cellulitis & Erysipelas <u>NICE CKS</u> (2021) <u>NICE NG141</u> (2019) 	 If patient afebrile and healthy other than cellulitis, use oral flucloxacillin. If river or sea water exposure, discuss with Consultant Microbiologist. 	Flucloxacillin	500 mg–1 g QDS Use higher doses in obesity (Body Mass Index > 30kg/m ²) or severe infections.	
	 If febrile and ill, admit for IV treatment. Erysipelas: often facial and unilateral. Use flucloxacillin for non-facial erysipelas. 	Penicillin allergy: Clarithromycin	500 mg BD	5-7 days If slow response,
	 Infection around the eyes or the nose (the triangle from the bridge of the nose to the corners of the mouth, or immediately around the eyes including periorbital cellulitis) is of more concern because of risk of a serious intracranial complication 	Doxycycline	200 mg stat, then 100 mg OD	continue for a further 7 days
	For active MRSA infection : use antibiotic sensitivities to guide treatment; if severe infection or no response to monotherapy after 24– 48 hours, seek advice from Consultant Microbiologist on combination therapy	OR Erythromycin (if pregnant)	500 mg QDS	
		MRSA known or suspected (check recent cultures and adapt therapy as needed):		5-7 days If slow
		Doxycycline	200 mg stat, then 100 mg BD	response, continue for a further 7 days
		OR	060 mg RD	
		Facial (inside the triangle treat as below – if outside of the triangle treat as above):		
		Co-amoxiclav	625 mg TDS	
		OR (if penicillin allergic)		7 days
		Clarithromycin	500 mg BD	
		PLUS		
		Metronidazole	400 mg TDS	

Condition	Comments		Medicine		Adult dose	Duration of treatment						
Bites	Type of bite	Bite has not broken the skin	Bite has broken the skin but not draw	n blood	Bite has I	broken the skin an	d drawn blood					
(human/cat/dog) • <u>NICE CKS</u>	Human bite	Do not offer antibiotics.	Consider antibiotics if it is in a high-risk a the person is high risk**.	area* or if	Offer antik	piotics.						
(2020)	Cat bite	Do not offer antibiotics.	Consider antibiotics if the wound could b	e deep. Offer antibiotics.								
• <u>NICE NG184</u> (2020)	Dog or other traditional pet bites	Do not offer antibiotics.	Offer antibiotics if it has caused considerable deep tissue damage or is visibly contaminat Consider antibiotics if it is in a high-risk area person at high risk**.			ed considerable, bly contaminated. high-risk area* or						
	* High-risk area = ha ** High-risk Person =	* High-risk area = hands, feet, face, genitals, skin overlying cartilaginous structures or an area of poor circulation. ** High-risk Person = those at risk of serious wound infection (e.g immunosuppression, asplenia, decompensated liver disease, diabetes).										
	 Increased risk of would Nature of the bite destruction) Site of injury (e.g. or near a prosthet Wound penetration 	nd becoming infected due to: (deep, contaminated wounds; put hands, feet, face or genitals; area ic joint or implant)	ncture or crush wounds; significant tissue as of poor perfusion or lymphatic return;	Prophylax treatment Co-amoxi	kis or :: clav	625 mg TDS						
	 Delayed presenta Associated medic status, chronic live Patient age (neon 	al conditions (e.g. diabetes mellitu er disease, prosthetic heart valve ates, infants and elderly patients	Penicillin Metronida	<i>allergy</i> azole	400 mg TDS	5 days (prophylaxis) 5 days (treatment)						
	Do not offer antibiot broken the skin. • Human: – Thorough irri – Assess risk c • Cat / Dog: – Thorough irri – Assess risk c – Antibiotic pro to band / foot	ic prophylaxis to people with a gation is important. If tetanus, HIV and Hepatitis B an gation is important. If tetanus and rabies. phylaxis is advised in the followin (face / joint / tendon / ligament; t	PLUS Doxycycli (cat / dog (N.B. Not for childre years)	ne / human) suitable m < 12	200 mg stat followed by 100 mg OD–BD	Course length can be increased to 7 days (with review) based on clinical assessment of the wound, for example, if there is significant						
	 wounds required immunocompion / patient Bat: Urgent treatment Bat: Urgent treatment Please see PHE or information leaflet When to offer antibiotic (se or animal bite if there inflammation, fever, domention) 	iring surgical debridement; wound promised / diabetic / asplenic / cirr at risk of serious wound infection nent required. All patients should tection team or the duty virologist <u>quidance (for advice on Rabies)</u> a <u>otics:</u> e the recommendations on choice are symptoms or signs of infectio ischarge or an unpleasant smell.	<i>lf child < </i> Co-trimox	12 years azole	See <u>BNFc</u>	tissue destruction or it has penetrated bone, joint, tendon or vascular structures.						

Condition	Comments	Medicine	Adult dose	Duration of treatment	
Acute diverticulitis <u>NICE NG147</u> (2019) 	People with mild, uncomplicated diverticulitis can be managed at home with paracetamol, clear fluids and antibiotics.	Cefalexin	500 mg TDS (up to 1.5 g TDS for severe infections)		
	For people who are systemically well following clinical	PLUS			
	advise the person to re-present if symptoms persist or worsen.	Metronidazole	400 mg TDS		
		OR			
		Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen).	625 mg TDS	5 days	
		OR			
		Co-trimoxazole	960 mg BD		
		PLUS			
		Metronidazole	400 mg TDS		
Biliary infection (cholecystitis/ cholangitis)	Urgent referral to secondary care is recommended for all cases of cholecystitis to assess the need for cholecystectomy.	Cefalexin	500 mg TDS (up to 1.5 g TDS for severe infections)		
 <u>NICE CKS</u> (2017) 	Please note high mortality rate (up to 10%) associated with	PLUS			
	acute cholecystitis. If you are unable to comply with this advice for any reason, a recommendation for antibiotic treatment for mild cases is outlined alongside. Biliary colic with no associated infection does not require	Metronidazole	400 mg TDS		
		OR			
		Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen).	625 mg TDS	5–7 days	
	antibiotics.	OR			
		Co-trimoxazole PLUS	960 mg BD		
		Metronidazole	400 mg TDS		
Epididymo-orchitis BASHH (2020) NICE CKS (2021) 	Usually due to Gram-negative enteric bacteria in men over 35 years with low risk of STI. If under 35 years old or STI risk, refer to GUM for additional	If over 35 years with low risk STI: Levofloxacin (consider safety issues – see <u>MHRA advice</u>).	500 mg OD	10 davs	
	cephalosporin instead of IM preparations is not recommended	OR			
	due to increasing resistance.	Co-amoxiclav (If quinolones are contra-indicated)	625 mg TDS		

Condition	Comments	Medicine	Adult dose	Duration of treatment
Non-lactational mastitis • <u>NICE CKS</u> (2021)	 Refer to <u>NICE CKS</u> for self-care advice to manage pain and discomfort. <i>Staphylococcus aureus</i> is the most common infecting pathogen. Suspect if woman has a painful breast, fever/general malaise, a tender/red breast. Breastfeeding: oral antibiotics are appropriate where indicated; women should continue feeding, including from the affected breast. In lactational mastitis - prescribe an oral antibiotic if the woman has a nipple fissure that is infected, symptoms have not improved (or are worsening) after 12–24 hours despite effective milk removal. 	Co-amoxiclav	625mg TDS	10–14 days

Method

Assess a reasonable sample of records per prescriber with prescription of co-amoxiclav against national guidelines (see section on <u>Sample</u> <u>size</u>). Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Patient ID	Systemically very unwell with rhinosinusitis, signs of a more serious illness, or high risk of complications? OR worsening symptoms of rhinosinusitis on first line treatment? • Yes [Y] • No [N]	COPD with resistance factors? • Yes [Y] • No [N]	Upper UTI in children / Acute pyelonephritis? • Yes [Y] • No [N]	Human/ cat/dog bite? • Yes [Y] • No [N]	Facial cellulitis? • Yes [Y] • No [N]	Acute diverticulitis? • Yes [Y] • No [N]	Biliary infection (cholecystitis/ cholangitis)? • Yes [Y] • No [N]	Epididymo- orchitis? • Yes [Y] • No [N]	Non- lactational mastitis? • Yes [Y] • No [N]	Laboratory sensitivity? • Yes [Y] • No [N]	Other indication (Please list)	Decision to prescribe is according to national/local guidance or lab sensitivity? • Yes [Y] • No [N]
Total												
% Yes												
Standard												100%

5.4 Clindamycin prescribing

Background AWMSG NPI: 4C items per 1,000 patients

Information from AWMSG Primary Care Antimicrobial Guidelines:

Condition	Comments	Medicine	Adult dose	Duration of treatment
 Bacterial vaginosis BASHH (2012) NICE CKS (2018) 	 Oral metronidazole is as effective as topical treatment and is cheaper. Less relapse with 7 days' treatment than 2 g stat at 4 weeks. 	Oral metronidazole	400 mg BD or 2 g	7 days stat
	Treating partners does not reduce relapse.	OR		
		Metronidazole 0.75% vaginal gel	5 g applicatorful at night	5 nights
		OR		
		Clindamycin 2% cream	5 g applicatorful at night	7 nights
		Pregnant or breastfeeding:		
		Oral metronidazole	400 mg BD	7 days
		OR		
		Metronidazole 0.75% vaginal gel	5 g applicatorful at night	5 nights
		OR		
		Clindamycin 2% cream	5 g applicatorful at night	7 nights

Condition	Comments	Medicine	Adult dose	Duration of treatment	
Acne vulgaris <u>NICE</u> 	Minocycline is not recommended.	Any acne severity:		12 weeks then review. If acne	
NG198 (2021) NICE CKS	 monotherapy with a topical antibiotic monotherapy with an oral antibiotic 	tretinoin (0.025%) with topical clindamycin (1%)	Apply once daily in the evening	fails to respond adequately consider alternative topical treatment choice.	
(2021)	 a combination of a topical antibiotic and an oral antibiotic. 	Mild to moderate acne:		12 weeks then review. If acne	
	Some people may not require treatment with topical or oral antibiotics, please refer to <u>NICE</u> guidelines for all treatment recommendations.	Fixed combination of topical	Apply once daily in	fails to respond adequately consider alternative topical treatment choice. If acne fails	
	When choosing a first line treatment option take into account the severity of the acne, the person's preferences, and discuss the advantages and disadvantages of the various treatment options. When discussing treatment choices with a person with childbearing potential,	benzoyl peroxide (3% or 5%) with topical clindamycin (1%)	the evening	to respond adequately to 2 different 12 week courses of treatment options, consider referral to dermatology.	
	Cover that topical retinoids and oral tetracyclines are contraindicated during pregnancy and when planning a pregnancy and that they will need to use effective contraception, or choose an alternative treatment to these options.MiDiscuss the importance of completing the course of treatment as positive effects can take 6 to 8 weeks to become noticeable.GiConsider referring people to a consultant dermatologist-led team if their acne of any severity, or acne-related scarring, is causing or contributing to persistent psychological distress or a mental health disorder.AzIf a person receiving treatment for acne wishes to use hormonal contraception, consider using the combined oral contraceptive pill in preference to the progestogen-only pill.Do	Moderate to severe acne: Fixed combination of topical adapalene (0.1% or 0.3%) with topical benzoyl peroxide (2.5%)	Apply once daily in the evening		
		OR	12 weeks then review. If the acne has completely cleared	12 weeks then review. If the acne has completely cleared.	
		Azelaic acid (15% or 20%)	Apply twice daily	consider stopping the antibiotic but continuing the topical treatment. If their acne	
		Doxycycline	100 mg OD	nas improved but not completely cleared, consider continuing the oral antibiotic, alongside the topical	
	For people with polycystic ovary syndrome and acne; treat their acne	OR		treatment, for up to 12 more weeks. If acne fails to respond	
	using one of the treatment options listed here. If the chosen first-line treatment is not effective, consider adding ethinylestradiol with cyproterone acetate (co-cyprindiol) or an alternative combined oral contraceptive pill to their treatment.	Lymecycline	408 mg OD	adequately consider referral to dermatology.	
		OR			
	Only continue a treatment option that includes an antibiotic (topical or oral) for more than 6 months in exceptional circumstances. Review at 3-monthly intervals, and stop the antibiotic as soon as possible. Topical or oral antibiotics are not recommended for maintenance treatment.	Erythromycin (If tetracycline contraindication)	500 mg BD		
	Oral antibiotics only recommended for moderate to severe acne.				

Illness	Comments	Medicine	Adult dose	Duration of treatment
Cellulitis in patients with lymphoedema <u>Lymphoedema Wales</u> (2022) – Note: currently only	All patients with lymphoedema / chronic oedema and cellulitis should be referred to the Lymphoedema Service. Please refer to <u>Cellulitis Pathway for People with Lymphoedema or</u> <u>Chronic Oedema in NHS (Note: this is currently only available for</u>	Flucloxacillin	500 mg – 1g QDS	
accessible to staff within NHS Wales	<u>staff within NHS Wales</u>) for further information.Be aware that skin can take some time to return to what is normal for the patient.	Penicillin allergy:	500 mg PD	
	Consider steroid emollient if there are signs of inflammation after	Clarithromycin	500 mg BD	7–14 days
	antimicrobial treatment. Consider cellulitis prophylaxis in patients with > 2 episodes of cellulitis in the past 12 months affecting limbs only.	after initial course of antibiotics: Clindamycin	300–450 mg QDS	
Dental abscess Scottish Dental Clinical 	 Regular analgesia should be first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for 	Amoxicillin	500 mg – 1 g TDS	
<u>Effectiveness</u> <u>Programme</u> (2021)	 abscess are not appropriate. Repeated antibiotics alone, without drainage, are ineffective in preventing spread of infection. Antibiotics are recommended if there are signs of severe infection, systemic symptoms or high risk of complications. 	OR		
		Phenoxymethylpenicillin	500 mg – 1 g QDS	Up to 5 days. Review at 3 days.
	sepsis; difficulty in swallowing; impending airway obstruction; or Ludwig's angina), should be referred urgently for hospital	Penicillin allergy:		
	admission to protect airway, achieve surgical drainage and IV antibiotics.	Clarithromycin	500 mg BD	
	 The empirical use of cephalosporins, co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients and should only be used if no response to 	Severe infection (see 'Comments'):		
	first-line drugs when referral is the preferred option.If pus is present, this should be drained by a dentist by incision,	ADD Metronidazole	400mg TDS	
	tooth extraction or via root canal and a sample sent to microbiology.	OR		5 days
	 True penicillin allergy: use clarithromycin and if severe infection, refer to hospital. If spreading infection (lymph node involvement, or systemic signs i.e. fever or malaise): ADD metronidazole. 	(if allergy to metronidazole): Clindamycin monotherapy	300mg QDS	

Clindamycin may also be required in response to sensitivity results where a preferred agent is not suitable due to resistance.

Method

Assess a reasonable sample of records per prescriber with prescription of clindamycin against national guidelines (see section on <u>Sample</u> <u>size</u>). Start the searches using a 3-month window and extend it if necessary to reach the required number of cases.

Following the audit, complete the <u>Review Sheet</u>.

Data collection sheet

An Excel version of this data collection sheet is available on the <u>AWTTC website</u>.

Standard							100%
% Yes							
Total							
Patient ID	Bacterial vaginosis? • Yes [Y] • No [N]	Acne vulgaris? • Yes [Y] • No [N]	Cellulitis in patients with lymphoedema, failure of treatment? • Yes [Y] • No [N]	Severe dental abscess and metronidazole allergy? • Yes [Y] • No [N]	Laboratory sensitivity? • Yes [Y] • No [N]	Other indication (Please list)	Decision to prescribe is according to national/local guidance or lab sensitivity?? • Yes [Y] • No [N]

6.0 Review of patients on long-term antibiotics

Background

AWMSG NPI: Antibacterial items per 1,000 STAR-PUs

The development of antibiotic NPIs supports one of the core elements of the Welsh Antimicrobial Resistance Programme: to inform, support and promote the prudent use of antimicrobials.

As this review may result in the need to amend the medication of individual patients, if the audit is undertaken by an external auditor, agreement to undertake the review must be obtained from the practice before commencing. Any changes to a patient's medication must be agreed by the practice prior to implementing the changes.

This audit is based on the 'Review of patients on long-term antibiotics' audit originally developed in Hywel Dda University Health Board.

Aims

- To promote the safe and appropriate prescribing of long-term antibiotics for patients in primary care.
- To aid the appropriate prescribing of long-term antibiotics for patients, encouraging practices to examine their prescribing in line with the current evidence base and current guidelines.
- To reduce the risk of patients developing *C.difficile* infection.
- To reduce the risk of patients acquiring antibiotic resistant organisms.
- To ensure that patients initiated on long-term antibiotic are reviewed at 6 months to discourage inappropriate prescribing, and to minimise long-term repeat prescriptions.
- To identify prescribing practice for individual patients, and change where appropriate.

Method

- A patient search should be designed and run to identify patients with antibiotics on repeat in the last 6 months.
- The search should include:
 - patients over 18 years of age with repeat issue antibiotics in the last 6 months.
- Patients identified using the search, except those included in the exclusion criteria, should have a data from completed.
- A review should be carried out twelve months from the date of the last audit.

Exclusion/Referral Criteria

The patient's medical history must be reviewed in order to exclude:

- Patients under 18 years
- Patients who have had a splenectomy
- Patients on azithromycin prophylaxis for respiratory tract infection
- Patients on rifaximin for prevention of hepatic encephalopathy

- Patients on demeclocycline for syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- Haematology/Oncology patients on prophylaxis under specialist advice
- Patients on antibiotic prophylaxis for recurrent cellulitis in lymphoedema
- Patients on long-term treatment with antibiotics that are currently under the care and review of a specialist
- Patients who have not received a repeat prescription within the last 6 months, to eliminate one-off repeat prescriptions from previous history.

Good practice points

- Refer to local antibiotic guidelines where appropriate.
- All long-term antibiotics should be followed up at 6-monthly intervals to confirm effectiveness, or sooner if clinically indicated.
- Check culture results for any recent resistance to inform the choice of antibiotic. For patients with previous multi-drug resistant (MDR) organisms, seek advice from Microbiology.
- Regular antibiotics may have adverse effects.
- Any medically significant adverse drug reactions to long-term antibiotics should be reported via the Yellow Card Scheme. Information on how to submit a Yellow Card can be found online at <u>yellowcard.mhra.gov.uk/</u>.

Data collection sheet

Name:									
Date of birth:									
Antibiotic (including	preso dose	cribed , quant	tity & f	requency):					
Date initia	ted:								
Indication	:								
Has the in	dicati	ion bee	en code	ed in the clinic	al syste	m?	Yes:	No:	
Initiated	Pri	imary		Secondary		Oth (ple	er	λ	
by: care: care: (please specify) Has there been adequate regular monitoring for the chosen antibiotic? (See AWMSG Primary Care Antimicrobial Guidelines for guidance on recurrent UTI, and refer to summary of product characteristics/BNE) Yes: No:									
Has the pa long-term	atient antib	been c iotic tre	ounse eatmer	lled on the ris nt?	k of		Yes:	No:	
Has there	been	a revie	w in th	ne last 6 mont	hs?		Yes:	No:	
Is the chose renal or he	sen a epatic	ntibioti : functi	c appr on?	opriate accor	ding to		Yes:	No:	
Comment	s (tick	c as ap	propria	ate)					
	Conti monit	inue if c toring a	clear ind Ind revi	dication for trea	atment ar at 6 mon	nd er ths.	sure there is	s appropri	ate
	If no consi for ac	clear in ider oth dvice if	dication er option require	n and started ir ons such as sta d.	n primary and by ar	r care ntibio	e, review ant tics. Contact	ibiotic use t microbiol	now; ogy
		Disc	ontinue)					
-		Stan	d-by ar	ntibiotic					
		Chai	nge of a	antibiotic					
	Refe	r back o	or conta	act secondary o	care/initia	ating	prescriber fo	or advice.	
Other (please provide details):									
GP comment (rationale for decision):									

Audit Summary Sheet

An Excel version of this data collection sheet is available on the <u>AWTTC</u> <u>website</u>.

	Number	Percentage of practice population
Practice list size.		100%
Number of patients on long-term antibiotic.		

		Number	Percentage of the audit sample	Suggested audit standard
Sample size (i.e. number of p term antibiotic in audit).	patients on long ncluded in the		100%	
	18–40 years			
	41–60 years			
Number of patients (by age)	61–80 years			
	81–100 years			
	100+ years			
Number of pres initiated in prima	criptions ary care.			
Number of patie adequate regula the chosen antil	ents with ar monitoring for biotic.			100%
Number of patients counselled on the risk of long-term antibiotic treatment				100%
Number of patients with a documented review in the last 6 months.				100%
Number of patie dose is appropr to renal/hepatic	ents where the iate according function.			100%

7.0 Feedback forms

7.1 Review sheet

This review sheet is to be completed and included alongside any relevant data collection sheets.

- 1. How do the results of the data collection compare with the standards set?
- 2. What discussion/activities were undertaken as a result of the audit?
- 3. Provide a summary of the discussion and of the changes it has been agreed to implement as a result of this audit.

Audit cycle

Prescribers are reminded that a second data collection in comparison with the standards set will support the identification of quality improvement. (See next page for document to support revalidation for your own records.)

Is a second data collection of selected criteria planned? If so, which criteria have been selected?

This audit was completed by:

Name(s):

Signature(s):

Location (name and address):

Please forward the response sheet to <u>awttc@wales.nhs.uk</u> if you would like to share your findings with the All Wales Therapeutics and Toxicology Centre. Responses will be treated anonymously and used to enable the identification of key learning points, and inform the ongoing development of the audit pack.

Glossary

AWMSG:	All Wales Medicines Strategy Group
BASHH:	British Association for Sexual Health and HIV
BD:	Twice-daily;
BNF:	British National Formulary
BNFc:	British National Formulary for children
CCG:	Clinical Commissioning Group
CEPP:	Clinical Effectiveness Prescribing Programme
CKS:	Clinical Knowledge Summary
COPD:	Chronic obstructive pulmonary disease
CRP:	C-reactive protein
ECDC:	European Centre for Disease Prevention and Control
ESCMID:	European Society for Clinical Microbiology and Infectious Diseases
eGFR:	Estimated glomerular filtration rate
GMC:	General Medical Council
GOLD:	Global Initiative for Chronic Obstructive Lung Disease
GUM:	Genitourinary medicine
HCAI:	Healthcare-acquired infection
IM:	Intra-muscular
IV:	Intra-venous
MC&S:	Microscopy, culture and sensitivity
MHRA:	Medicines and Healthcare products Regulatory Agency
M/R:	Modified-release
MRSA:	Methicillin-resistant Staphylococcus aureus
MSU:	Mid-stream sample of urine
NICE:	National Institute for Health and Care Excellence
NNT:	Number needed to treat
NPI:	National Prescribing Indicator
OD:	Once-daily
PHE:	Public Health England
PO:	By mouth (per os)
QDS:	Four times a day
RCGP:	Royal College of General Practitioners
RHIG:	Respiratory Health Implementation Group
SIGN:	Scottish Intercollegiate Guidelines Network
SPIRA:	Server for Prescribing Information Reporting and Analysis
STAR-PU:	Specific therapeutic group age-sex related prescribing units
TARGET:	Treat Antibiotics Responsibly, Guidance, Education and Tools
TDS:	Three times a day
UTI:	Urinary tract infection

References

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- Public Health Wales. All-Wales Start Smart then Focus audit tool: Instructions for Use. 2020. Available at: <u>https://sstf.cymru.nhs.uk/Documents/SSTFProtocol.pdf</u>. Accessed September 2021.

Updates

Date of update publication	Details of update
April 2023	Updated 'Antibiotic prescribing for acute rhinosinusitis' and 'Co-amoxiclav prescribing' audit sections to align with updates made to the 'Primary care antimicrobial guidelines' document.