Waterford: Antimicrobial Guidelines - Antimicrobial Guideline: IV to PO Switch

Many patients are commenced on intravenous (IV) antimicrobials when admitted to hospital. With clinical improvement and when the extent and site of infection become evident, it may be appropriate to **DE-ESCALATE** e.g. targeted therapy with narrow spectrum agent or **SWITCH** to an oral route or **STOP** antimicrobials if infection has resolved or been outruled.

A ***Start Smart, Then Focus*** approach is recommended and review antimicrobials at 24-48 hours with culture results. Review patients regularly for suitability for oral switch and apply the criteria below (Table 1).

Table 1: IV to Oral Switch Criteria

In favour of PO switch	Reasons to avoid or delay PO switch
Clinically improving	Not clinically improving/Septic shock
Afebrile for >24 hours and improved/ normalised infective markers	
Tolerating oral fluids, food and medication.	GI absorption issues/oral route compromised
No evidence of deep-seated or high risk infections or specific indication requiring prolonged IV antibiotics	Deep-seated or high risk Infections requiring prolonged IV antibiotic therapy. For examples: • Endocarditis • Meningitis/ CNS infection • Severe skin soft tissue infections/ necrotising fasciitis • Infected implant/ prosthesis • Osteomyelitis/ septic arthritis • Neutropenic sepsis • Certain bloodstream infections (e.g. *Staphylococcus aureus* bacteraemia, Candidaemia) • Inadequate source control (e.g. undrained abscess/empyema)

Antimicrobials with excellent oral bioavailability

Some antimicrobials have excellent oral bioavailability such as:

- Ciprofloxacin
- Clarithromycin
- Clindamycin
- Fluconazole
- Levofloxacin
- Linezolid

If use of these antimicrobials is required, consider the oral route from start of therapy if clinically suitable:

Table 2: Recommended oral agents when switching from IV to oral therapy (For adult patients with normal renal and liver function)	
IV agent	**ORAL switch***
Amoxicillin 1g- 2g TDS/QDS	Amoxicillin 500mg - 1g TDS
Benzylpenicillin 1.2 g - 2.4g QDS	Amoxicillin 500mg - 1g TDS
Cefuroxime 1.5g TDS	Oral cefuroxime has poor bioavailability therefore not recommend as oral switch. Co-amoxiclav 625mg TDS may be suitable alternative if patient is NOT penicillin allergic and according to susceptibilities. If penicillin allergic discuss with Microbiology.
Ciprofloxacin 400mg BD/TDS	Ciprofloxacin 500mg - 750mg BD**
Clarithromycin 500mg BD	Clarithromycin 500mg BD
Clindamycin 600mg - 1.2g QDS	Clindamycin 300mg - 450mg QDS
Co-amoxiclav 1.2g TDS	Co-amoxiclav 625mg - 875/125mg TDS*
Co-trimoxazole	Co-trimoxazole same dose as IV
Flucloxacillin 1-2g QDS	Flucloxacillin 500mg - 1g QDS
Fluconazole 400mg OD	Fluconazole 400mg OD
Levofloxacin 500mg OD/BD	Levofloxacin 500mg OD/BD
Linezolid 600mg BD	Linezolid 600mg BD
Metronidazole 500mg TDS	Metronidazole 400mg TDS
Other: Ceftriaxone, Piperacillin/tazobactam, Meropenem	Please discuss with Clinical Microbiologist

*Higher oral doses may be required in complex/severe infections. Please consult Clinical Microbiologist.

** Please read the HPRA Drug Safety Alert issued in 2018 and the HPRA Drug Safety Newsletter issued in 2023 highlighting restrictions on use of fluoroquinolones (eg. ciprofloxacin, levofloxacin) due to the risk of disabling, long-lasting and potentially irreversible side effects (including tendon damage, QT prolongation, neuropathies and neuro psychiatric disorder). Use of fluoroquinolones in older patients, those with renal impairment, solid organ transplantation or on systemic corticosteroids increases the risk of tendon damage.

Advantages of IV to oral switch include: Reduction of treatment cost, reduction of duration of hospital stay, reduction of the risk of intravascular catheter-associated infections, improved patient comfort, enabling mobility and reduction of nursing and medical time required to administer therapy.