



Recommendations for Re-dosing Antibiotics for Surgical Prophylaxis

These recommendations have been developed based on current practice in NHS boards, international guidance and information on antibiotic half-lives. Recommendations for re-dosing after 4 or 8 hours are intended to promote safe and effective surgical prophylaxis for procedures lasting > 4 hour and are also applicable to situations where there is intra-operative blood loss of > 1500mls.

While these recommendations will cover the majority of surgical procedures, in cases of extensive blood loss (>3000ml), decisions around re-dosing should be made on an individual patient basis taking account of the risks and benefits of repeat dosing. It is not recommended to give a repeat dose after every subsequent 1500ml blood loss.

Drug	Procedure Duration		Blood Loss above 1500ml (Give <i>after</i> fluid replacement)
	Over 4 hours	Over 8 hours	
Gentamicin *	-	Repeat original dose, if eGFR> 60 ml/min/1.73 m ²	Give half original dose
Metronidazole	-	Repeat original dose	Repeat original dose
Teicoplanin	-	-	Give half original dose, if ≥ 1.5L blood loss within first hour of operation
Amoxicillin**	Repeat original dose	Repeat original dose again	Repeat original dose
Co-amoxiclav**	Repeat original dose	Repeat original dose again	Repeat original dose
Flucloxacillin	Repeat original dose	Repeat original dose again	Repeat original dose
Cefuroxime	Repeat original dose	Repeat original dose again	Repeat original dose
Clarithromycin	-	Repeat original dose	Repeat original dose
Clindamycin	Repeat original dose	Repeat original dose again	Give half original dose

* For complex patients discuss with microbiology in advance to ensure re-dosing is safe and appropriate.

**IDSA suggest re-dosing ampicillin after 2 hours. Consider re-dosing interval reflecting on local current practice and post-operative infection rates.

The following evidence was used in preparation of these recommendations:

[SIGN 104: Antibiotic Prophylaxis in Surgery 2008](#) recommends an additional intra-operative dose of antibiotic for cardiac surgery longer than four hours when using an antibiotic with pharmacokinetics equivalent to cefazolin. The guideline also advises that despite no evidence being identified additional dosage may be indicated for longer surgery or shorter-acting agents to maintain activity for the duration of the operation. [The NICE Clinical Guideline 74: Surgical Site Infection 2008](#) and [The Sanford Guide](#) advise to give a repeat dose of antibiotic prophylaxis when the operation is longer than the half-life of the antibiotic given while the [Infectious Diseases Society of America](#) guideline suggests re-dosing after 2 x half-life.