

## Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Acute Kidney Injury

- For detailed information on antimicrobial dosing in Acute Kidney Injury, please see 'Critical Illness' reference on Medicines Complete, [www.medicinescomplete.com](http://www.medicinescomplete.com) . This is available free of charge on all HSE desktops and is also available on your smartphone via [www.hselibrary.ie](http://www.hselibrary.ie) , please contact the HSE Library directly for an account if you do not already have one.
- A loading or initial dose of antimicrobial therapy should be administered as soon as possible in sepsis or septic shock (ideally within the first hour of presentation).
- Even in renal dysfunction, **the full dose of beta-lactams should be used for at least the first dose and potentially the first 24 to 48 hours** unless patient is frail, elderly, or has very low body-weight (Critical Illness). Contact Pharmacy for advice if needed.
- **Any dose reduction of beta-lactams in response to AKI needs to be undertaken with caution** ; much AKI seen in critical care is related to sepsis. The apparent Vd of beta-lactams can increase in sepsis and septic shock. The therapeutic consequences of underdosing antimicrobials in these patients may be severe and there is generally considered to be a wide margin of error before toxicity. Underdosing may lead to treatment failure and resistance. Due to these factors, it is common practice within critical care areas to administer standard doses for the first 24 to 48 hours.
- **For potential nephrotoxins** , e.g. [gentamicin](#) , [vancomycin](#) , check LH Guidelines as well as Critical Illness Reference. Also use clinical judgement with regard to dose. Contact Pharmacy for advice if needed.
- In patients presenting with an AKI, it is the acute changes in kidney function that must be considered and used to guide dose adjustments, rather than categories of function.
- **During AKI, serum creatinine levels lag behind the development of the injury and progress of recovery. As creatinine rises, estimates of GFR will overestimate renal function and as creatinine falls and kidney function improves, estimates of GFR will underestimate renal function (BNF).**

### References:

- Critical Illness, [www.medicinescomplete.com](http://www.medicinescomplete.com), accessed 4/3/24
- British National Formulary, [www.medicinescomplete.com](http://www.medicinescomplete.com), accessed 4/3/24.