General points

- Document the action taken in the medical notes and on the gentamicin prescribing chart.
- Undertake pre-prescribing checks (Boxes 3 & 4 on page 5) to assess the risk of renal toxicity and ototoxicity.
- Prescribe the next dose as appropriate.
- If a blood sample is not taken, is lost or is taken at wrong time ***and*** if there is any concern about patient's renal function, take a sample 20-24 hours after the start of the gentamicin infusion and wait for the result before giving the next dose. Otherwise, take a blood sample after next dose.

If the measured concentration is unexpectedly HIGH or LOW, consider the following:

- Were dose and sample times recorded accurately?
- Was the correct dose administered?
- Was the sample taken from the line used to administer the drug?
- Was the sample taken during drug administration?
- Has renal function declined or improved?
- Does the patient have oedema or ascites?

If in doubt, take another sample before re-prescribing and / or contact pharmacy for advice

STEP 3: Assess daily the ongoing need for gentamicin and signs of toxicity

- Take a further sample 6-14 hours after the dose at least every 3 days. If the concentration is unexpectedly high, or if renal function alters, daily sampling may be necessary.
- If the patient is receiving 36 or 48 hourly dosing, a level should be checked after each infusion.
- To minimise the risk of toxicity, duration of treatment should normally be limited to 72 hours. All gentamicin prescriptions that continue beyond 3-4 days of treatment must be discussed with microbiology or an infection specialist. Consider changing to an oral alternative - refer to the IV to Oral switch policy.

Box 3: Renal toxicity

- Monitor creatinine daily. Seek advice if renal function is unstable (change in creatinine level).
- Signs of renal toxicity include increase in creatinine or decrease in urine output / oliguria.
- Consider an alternative agent if creatinine is rising or the patient becomes oliguric.

Box 4: Ototoxicity

- Ototoxicity secondary to gentamicin is independent of drug concentration. It is suggested by any of the following: new tinnitus, dizziness, poor balance, hearing loss or oscillating vision.
- Toxicity is associated with prolonged aminoglycoside use (usually > 10 days but may be > 72 hours) and is secondary to drug accumulation within the inner ear. Multiple courses of gentamicin are also a risk factor for ototoxicity.
- Stop treatment if ototoxicity is suspected and refer to microbiology or an infection specialist for advice on future therapy and refer to ENT for assessment.
- If gentamicin continues for > 7 days, consider referral to audiology for assessment.