**Practice points**

- Sensitivity testing of the causative organism is important for deep or invasive infections and/or those not responding to empirical treatment.
- Samples: due to risk of contamination and patient movement, samples should be taken with relevant antisepsis.
- Some antibiotics are restricted e.g. mepenem (postdoc, click here to access).

**Before you call MICRObiology for advice please have the following details to hand:**

**Main complaint & history:** current & recent antimicrobial history

**Initial assessment & investigations:** radiology, samples to determine infection focus

**WCC, results & trends**

**Renal function:**

- **Observations:** (NEWS, SEPSIS 6, CURB65 etc)

**Link for Hospital Antibiotic Man**

**Link for Antibiotic website**

**Rules of ‘thumb”: see note above**

- **Gram negative:**
  - **coform:** (eg E.coli, klebsiella, enterobacter, proteus) & Pseudomonas aeruginosa are usually sensitive to gentamicin. Amoxicillin only covers 47% of E.coli: ensure if you stop gentamicin you might not have good coform cover.
  - **Check sensitivities**
  - **Co-trimoxazole covers about 65% of E.coli**
  - Extended Spectrum Beta Lactamases (ESBLs) are resistant to most penicillins (including co-amoxiclav, piperacillin-tazobactam & aztreonam)
  - Temocillin, pimecillinam (& meropenem) have cover for ESBLs
  - Temocillin & meropenem do not cover pseudomomas
  - Pip-tazobactam, co-amoxiclav (& meropenem) have anaerobic cover so metronidazole is not needed
  - Temocillin & aminoglycosides have no anaerobic or gram positive cover

- **Carbapenem - resistant enterobacteriales (CRE) are resistant to penicillins, cephalosporins, aminoglycosides, carbapenems & often other classes of antibiotics – gentamicin, piperacillin, co-trimoxazole. Early detection (screening/single room of those having healthcare from outside Scotland & screening patients form other Scottish hospitals), strict adherence to standard & transmission based prevention and control precautions & prudent prescribing including meticillin must be in place to reduce impact of spread of these virtually untreatable bacteria.

- **Anaerobes** are generally sensitive to metronidazole (and co-amoxiclav, cildamycin, pip-tazobactam & meropenem)

- **Gram positives like staph aureus (MSSA, MRSA), streps & enterococci are sensitive to vancomycin (except VREs): use restricted to penicillin allergy or penicillin resistant strains**

- MRSA is resistant to all beta-lactams (pencillin, flucloxacillin, pip-tazobactam, cephalosporins & meropenem)

- VRE are resistant to vancomycin & meropenem

- Beta haemolytic streps (groups A C G) are sensitive to penicillin & flucloxacillin

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**Intra-abdominal infection** (infectious diarrhoea like e.g. as C.0157, Campylobacter etc)

**Clostridiosis difficult: refer to protocol, click here to access**

**Peritonitis/abdominal tract infection**

- **Clostridium, anaerobes & enterococci**

**Spontaneous bacterial peritonitis**

- coliforms +/- anaerobes, sometimes Gp pneumonia: refer to protocol, click here to access

**Samples:**
- Send blood cultures, pus or other intra-abdominal samples as appropriate

- **Special notes for e.c0157**

  - **Clostridium perfringens**
    - Anaerobic bacteria with black pigmentation, heat resistant spores & spores which are heat resistant to 121°C.
    - **Rapid diagnosis:**
      - **Separate:** stool, urine and wound swabs. Swab wounds having superficial debris. From open wounds, take 2 sets of blood cultures if patient stable.
      - **Other investigations:**
        - **VLC:**
          - 4 sets blood cultures 6 hours apart if patient stable.
        - **IV therapy**
          - 2 sets blood cultures & start antibiotic
    - **Ancestral:**
      - **Peritonitis**
        - Enterococci/streps more likely: synergistic endocarditis n
          - **Guiding:** with high dose flucloxacillin as valve destruction & emboli are a risk
        - **Best practice:**
          - **Co-trimoxazole**
            - **Cover but co-trimoxazole**
              - *Escherichia coli* are sensitive to temocillin (& meropenem available on
                **Protocol**)
              - *Melissa haemolytica* & *Haemophilus influenzae* are sensitive to doxycycline.
              - **Ampicillin & aminoglycosides** have no anaerobic or gram positive cover

- **MRSA** is resistant to all beta-lactams (pencillin, flucloxacillin, pip-tazobactam, cephalosporins & meropenem)

- **Vancomycin & linezolid** are sensitive to vancomycin (except VREs: use restricted to penicillin allergy or penicillin resistant strains)

- **MAC** & the **Mycobacterium avium complex** (Mycobacterium avium,MAI, M. avium intracellulare complex) (MAI), are sensitive to doxycycline

- **Other guidelines:**
  - Refer to protocol, click here to access

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**MicroGuidance (Hospital Adult)**

*When male and female are stated within this policy, it refers to sex assigned at birth*