Antibacterial use in our practice

**Defensive Concept:**

- **Prescribe only when necessary**
  - Consider non-bacterial disease (e.g., viral, immune, allergic) before antibiotics.
  - Remember that some bacterial diseases will resolve without antibiotics.
  - Offer a non-prescription form (see below right).

- **Reduce prophylaxis**
  - Prophylactic antibiotics are NOT a substitute for surgical asepsis.
  - Prophylactic antibiotics are only appropriate in some immunocompromised patients.

- **Offer other options**
  - Consider therapeutic alternative (e.g., surgery, herbal approaches, fluid therapy, nutritional modification).
  - Use culture results to support de-escalation (switching antibiotics).
  - Use effective hygiene techniques and antibiotics to prevent infections.

- **Treat effectively**
  - Consider which bacteria are likely to be involved.
  - Consider drug penetrations of the pathogen.
  - Use the shortest effective course and avoid underdosages.
  - Use compliance with appropriate formulation and provide clear instructions.

- **Employ narrow spectrum**
  - Unnecessarily broad-spectrum antibiotics could promote antibiotic resistance.
  - The use of narrow-spectrum antibiotics limits effects on the normal microbiota.
  - Use culture results to support de-escalation (switching antibiotics).

- **Cultivate appropriately**
  - A sample for culture should be collected before starting antibiotic therapy whenever possible.
  - Culture is essential when prolonged (i.e., 5-day) treatment courses are anticipated, when resistance is likely, or when prior antibacterial courses and infections and in the treatment of infections.
  - Effective surgical asepsis is not enough: use an antibiotic-agnostic approach to support culture and sensitivity results.

- **Tackle your practice policy**
  - A customized practice guideline can provide antibiotic selection to address the bacterial infections and the antibiotic of choice.
  - Consider resistance patterns that you encounter, minimizing inappropriate use.
  - This list is not comprehensive: there is an endless number of specific antibacterial regimens.

- **Educate others**
  - Share this important message to reduce the threat hom multi-resistant strains of bacteria and improve the health of pets and people.

### Antibacterial use in our practice

**Respiratory infections**

- **Antibiotics not indicated for:**
  - Infections due to viruses (e.g., influenza), fungi (e.g., histoplasmosis), or parasites.
  - Self-limiting conditions (e.g., bronchitis due to a viral upper respiratory tract infection, URI, cystitis caused by fluoroquinolones).

- **Respiratory infections due to bacterial pathogens:**
  - Infections with significance included in the interest of minimizing the development of resistance, particularly when culture and sensitivity test data indicate this is particular and effective against a particular pathogen.
  - Antibiotics are not indicated for viral infections unless secondary infection occurs.

- **Catastrophic respiratory disease complex (CD):**
  - **Influenza**
  - **Bacterial pneumonia**

- **Flu-like upper respiratory tract infection (URTI):**
  - **Doxycycline**
  - **Cephalosporins (e.g., ceftiofur)**

- **Surgical use:**
  - **Amoxicillin (± clavulanate)**
  - **Fluoroquinolones**

### Gastrointestinal infections

- **Antibiotics not indicated for:**
  - Non-infectious gastrointestinal conditions (e.g., nausea, vomiting, diarrhea, constipation).
  - Gastrointestinal conditions without a bacterial etiology.
  - Gastrointestinal conditions effectively treated by non-antibacterial means (e.g., probiotics, dietary changes).

- **Enteropathogenic infections:**
  - **Salmonella**
  - **Enterotoxigenic E. coli**

- **Uncomplicated acute enteritis:**
  - **Amoxicillin (± clavulanate)**

### Urinary tract infections

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., pollakiuria, stranguria).
  - Urinary tract conditions without bacterial etiology.
  - Urinary tract conditions effectively treated by non-antibacterial means (e.g., diuretics).

- **Urinary tract infection:**
  - **Amoxicillin (± clavulanate)**
  - **Trimethoprim/sulfonamide**

### Urological infections

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., urethral stricture, urinary catheterization).
  - Urological conditions without a bacterial etiology.
  - Urological conditions effectively treated by non-antibacterial means (e.g., surgery, instrumentation).

- **Calculi:**
  - **E taxpayers**
  - **Topical treatment only**

### Musculoskeletal infections

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., arthrosis, osteoarthritis).
  - Musculoskeletal conditions without a bacterial etiology.
  - Musculoskeletal conditions effectively treated by non-antibacterial means (e.g., physical therapy, analgesics).

- **Non-infectious conditions (e.g., osteoarthritis):**
  - **Non-steroidal anti-inflammatory drugs (NSAIDs)**

### Skin and soft tissue infections

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., burns, insect bites).
  - Skin and soft tissue conditions without a bacterial etiology.
  - Skin and soft tissue conditions effectively treated by non-antibacterial means (e.g., debridement, surgical asepsis).

- **Skin infections:**
  - **Bacterial**:
  - **Staphylococcus aureus**
  - **Streptococcus**

- **Soft tissue infections:**
  - **Fusiformis necrophorum**
  - **Fusobacterium necrophorum**

- **Proliferative infections:**
  - **Streptomyces**
  - **Actinomyces**

### Wound infections

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., wounds associated with trauma, surgical procedures).
  - Wound conditions without a bacterial etiology.
  - Wound conditions effectively treated by non-antibacterial means (e.g., debridement, surgical asepsis).

- **Wound infections:**
  - **Staphylococcus aureus**
  - **Streptococcus**

### Topical treatment

- **Topical antibacterials:**
  - **Mometasone furoate**
  - **Flucinolone acetonide**
  - **Budesonide**

- **Topical treatment only:**
  - **Amoxicillin (± clavulanate)**
  - **Fluoroquinolones**

### Miserable conditions

- **Antibiotics not indicated for:**
  - Non-infectious conditions (e.g., malignancy, chemotherapy).
  - Miserable conditions without a bacterial etiology.
  - Miserable conditions effectively treated by non-antibacterial means (e.g., chemotherapy, radiation therapy).

- **Miserable conditions:**
  - **Corticosteroids**
  - **Steroids**

### Adverse reactions to antibiotics

- **Antibiotics:**
  - **Nephrotoxicity**
  - **Osteoporosis**

- **Drug interactions:**
  - **Opioids**
  - **Anticoagulants**

- **Drug-food interactions:**
  - **Caffeine**
  - **Alcohol**

- **Drug-drug interactions:**
  - **Cimetidine**
  - **Warfarin**

- **Drug-herb interactions:**
  - **Grapefruit**
  - **Herbal supplements**

### First-line antibiotics

- **Community-acquired infections:**
  - **Amoxicillin (± clavulanate)**
  - **Cephalosporins**

- **Hospital-acquired infections:**
  - **Vancomycin**
  - **Linezolid**

### Responsible antibiotic use under the Cascade

- **Cascade antibiotic stewardship:**
  - A cascade antibiotic stewardship is the strategy in the interests of minimizing the development of resistance, particularly when culture and sensitivity test data indicate this is particular and effective against a particular pathogen.
  - Antibiotics are not indicated for viral infections unless secondary infection occurs.

- **Influenza:**
  - **Oseltamivir**

- **Antimicrobial stewardship:**
  - Antibiotics should be used only when necessary and effective.

- **Antibiotic use in the boxes below:**
  - **See our antibacterial formulary.**
  - **For more information on individual drugs and their effects, see the AMR Formulary.**

### Highest priority critically important antibiotics

- **Carbapenems**:
  - **Imipenem**
  - **Meropenem**

- **Macrolides**:
  - **Azithromycin**

- **Imipenem**

- **Meropenem**

- **Fluoroquinolones**:
  - **Enrofloxacin**
  - **Marbofloxacin**

### Monitoring and surveillance

- **Antimicrobial use and resistance data:**
  - **Amoxicillin (± clavulanate)**
  - **Cephalosporins**

- **Antimicrobial stewardship:**
  - **Oseltamivir**

### Outbreaks

- **Antibiotic use in the boxes below:**
  - **See our antibacterial formulary.**

### Drug information

- **Antimicrobial stewardship:**
  - Antibiotics should be used only when necessary and effective.

- **Antibiotic use in the boxes below:**
  - **See our antibacterial formulary.**

### For more information on individual drugs and their effects, see the AMR Formulary.