# WHO list of Critically Important Antimicrobials for Human Medicine (WHO CIA list)

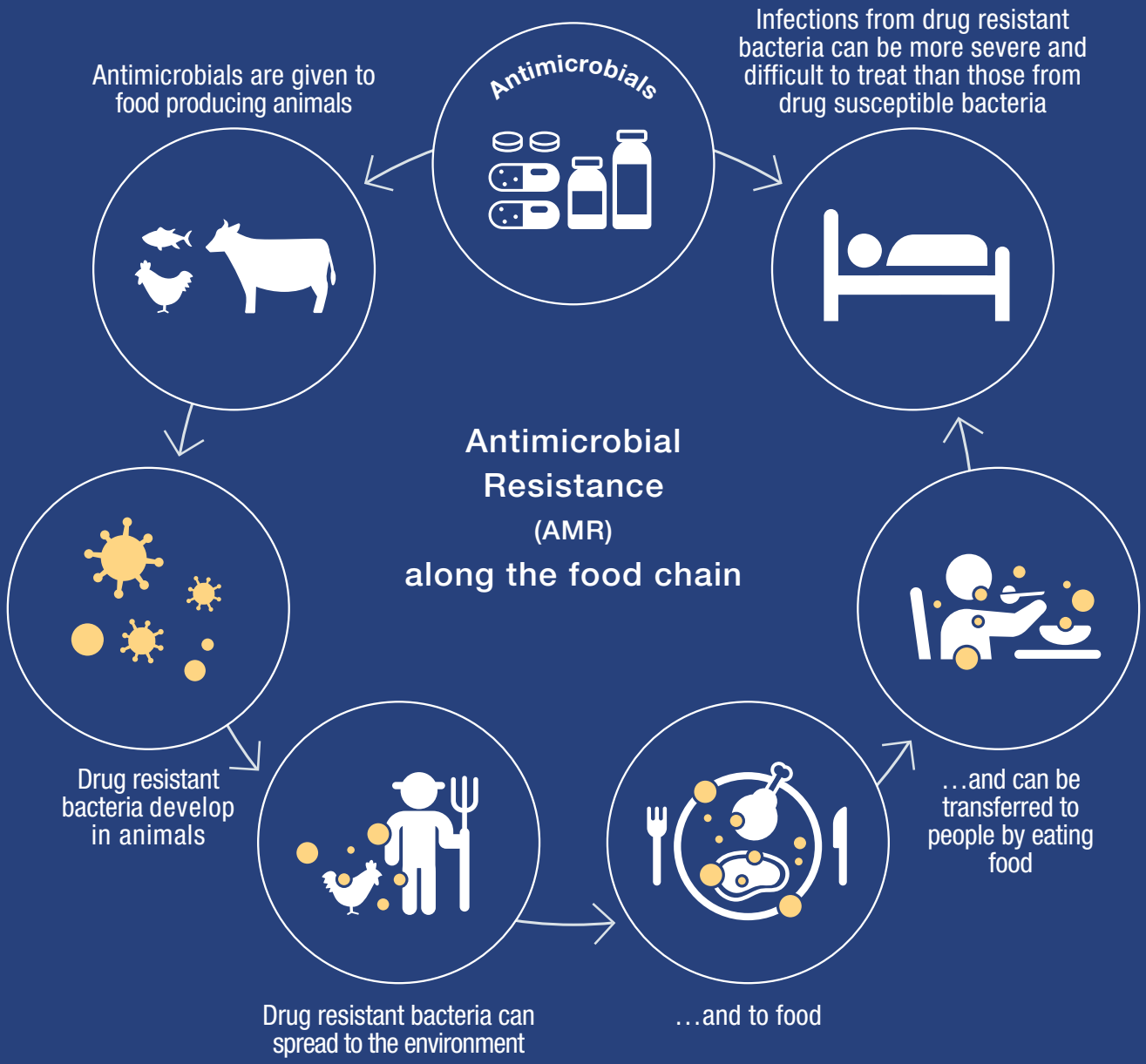
WHO CIA list categorizes all antimicrobials used in human medicine into 3 groups based on their importance to human medicine. The current scope is limited to antibacterial drugs of which most are also used in veterinary medicine. The list assists in managing antimicrobial resistance, ensuring that all, especially critically important antimicrobials, are used prudently both in human and veterinary medicine.

**Prioritization**
by Prioritization Factors 1, 2, 3

- Critically Important
- Highly Important
- Important

→ Highest Priority
→ High Priority

**Categorization**
by Criterion 1, 2




**WHO supports optimization of the use of antimicrobial medicines in human and animal to preserve their effectiveness by taking a One Health approach**

World Health Organization

# *WHO Critically Important Antimicrobials for Human Medicine 6th revision*

*Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR)*

*November 2018*

*Summary of categorization and prioritization of antimicrobials categorized as Critically Important, Highly Important and Important*

**Medically Important Antimicrobials**

**Critically Important**

| Antimicrobial class | Criterion / Prioritization factor (Yes = ●) | | | | |
|---|---|---|---|---|---|
| CRITICALLY IMPORTANT ANTIMICROBIALS | C1 | C2 | P1 | P2 | P3 |
| *HIGHEST PRIORITY* | | | | | |
| Highest Priority — *Cephalosporins (3rd, 4th and 5th generation)* | ● | ● | ● | ● | ● |
| Highest Priority — *Glycopeptides* | ● | ● | ● | ● | ● |
| Highest Priority — *Macrolides and ketolides* | ● | ● | ● | ● | ● |
| Highest Priority — *Polymyxins* | ● | ● | ● | ● | ● |
| Highest Priority — *Quinolones* | ● | ● | ● | ● | ● |
| *HIGH PRIORITY* | | | | | |
| *Aminoglycosides* | ● | ● | | ● | ● |
| *Ansamycins* | ● | ● | ● | ● | |
| *Carbapenems and other penems* | ● | ● | ● | ● | |
| *Glycylcyclines* | ● | ● | ● | | |
| *Lipopeptides* | ● | ● | ● | | |
| *Monobactams* | ● | ● | ● | | |
| *Oxazolidinones* | ● | ● | ● | | |
| *Penicillins (antipseudomonal)* | ● | ● | | ● | |
| *Penicillins (aminopenicillins)* | ● | ● | | ● | ● |
| *Penicillins (aminopenicillins with ß-lactamase inhibitors)* | ● | ● | | ● | ● |
| *Phosphonic acid derivatives* | ● | ● | ● | ● | |
| *Drugs used solely to treat tuberculosis / mycobacterial diseases* | ● | ● | ● | ● | |

**Highly Important**

| HIGHLY IMPORTANT ANTIMICROBIALS | C1 | C2 | P1 | P2 | P3 |
|---|---|---|---|---|---|
| *Amphenicols* | | ● | NA | | |
| *Cephalosporins (1st and 2nd generation) and cephamycins* | | ● | | | |
| *Lincosamides* | | ● | | | |
| *Penicillins (amidinopenicillins)* | | ● | | | |
| *Penicillins (anti-staphylococcal)* | | ● | | | |
| *Penicillins (narrow spectrum)* | | ● | | | |
| *Pseudomonic acids* | | ● | | | |
| *Riminofenazines* | ● | | | | |
| *Steroid antibacterials* | | ● | | | |
| *Streptogramins* | | ● | | | |
| *Sulfonamides, dihydrofolate reductase inhibitors and combinations* | | ● | | | |
| *Sulfones* | ● | | | | |
| *Tetracyclines* | ● | | | | |

**Important**

| IMPORTANT ANTIMICROBIALS | C1 | C2 | P1 | P2 | P3 |
|---|---|---|---|---|---|
| *Aminocyclitols* | | | NA | | |
| *Cyclic polypeptides* | | | | | |
| *Nitrofuran derivatives* | | | | | |
| *Nitroimidazoles* | | | | | |
| *Pleuromutilins* | | | | | |

**C1 Criterion 1**

The antimicrobial class is the sole, or one of limited available therapies, to treat serious bacterial infections in people.

**C2 Criterion 2**

The antimicrobial class is used to treat infections in people caused by either: (1) bacteria that may be transmitted to humans from nonhuman sources, or (2) bacteria that may acquire resistance genes from nonhuman sources.

**P1 Prioritization factor 1**

Large number of people in the community or in certain high-risk populations (e.g. patients with serious infections in health care settings), who are affected by diseases for which there are very limited antimicrobial choices.

**P2 Prioritization factor 2**

High frequency of use of the antimicrobial class for any indication in human medicine or in certain high-risk groups (e.g. patients with serious infections in health care settings), since use may favour selection of resistance.

**P3 Prioritization factor 3**

The antimicrobial class is used to treat infections in people for which there is already extensive evidence of transmission of resistant bacteria (e.g. non-typhoidal *Salmonella* spp. and *Campylobacter* spp.) or resistance genes (high for *E. coli* and *Enterococcus* spp.) from non-human sources.

WHO CIA list 6th rev.:https://www.who.int/foodsafety/publications/antimicrobials-sixth/en/

AGISAR: http://who.int/foodsafety/areas_work/antimicrobial-resistance/agisar/en



WHO/NMH/FOS/FZD/19.1

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