

7. Highest Priority Critically Important Antimicrobials

These are the classes of drugs that met all three priorities (1.1, 1.2 and 2.1): Fluoroquinolones, 3rd and 4th generation cephalosporins, Macrolides, and Glycopeptides.

Fluoroquinolones are known to select for fluoroquinolone-resistant *Salmonella* spp. and *E.coli* in animals. At the same time, fluoroquinolones are one of few available therapies for serious *Salmonella* spp. and *E.coli* infections. Given the high incidence of human disease due to *Salmonella* spp. and *E. coli*, the absolute number of serious cases is substantial.

3rd and 4th generation cephalosporins are known to select for cephalosporin-resistant *Salmonella* spp. and *E. coli* in animals. At the same time, 3rd and 4th generation cephalosporins are one of few available therapies for serious *Salmonella* and *E. coli* infections, particularly in children. Given the high incidence of human disease due to *Salmonella* spp. and *E. coli*, the absolute number of serious cases is substantial.

Macrolides are known to select for macrolide-resistant *Campylobacter* spp. in animals, especially *Campylobacter jejuni* in poultry. At the same time, macrolides are one of few available therapies for serious campylobacter infections, particularly in children, in whom quinolones are not recommended for treatment. Given the high incidence of human disease due to *Campylobacter* spp., especially *Campylobacter jejuni*, the absolute number of serious cases is substantial.

Glycopeptides are known to select for glycopeptides-resistant *Enterococcus* spp. in food animals (e.g., when avoparcin was used as a growth promoter, vancomycin resistant enterococcus (VRE) developed in food animals and were transmitted to people). At the same time, glycopeptides are one of the few available therapies for serious enterococcal infections. Given the high number of cases, the previously documented occurrence of transmission of VRE to people from food animals and the very serious consequences of treatment failures in such cases, this class was re-classified as being of highest priority in the 3rd revision of the List.