

EFSA and ECDC publish new European Union summary report on antimicrobial resistance

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The European Food Safety Authority (EFSA) in collaboration with the European Centre for Disease Control (ECDC) recently released the 2010 European Union (EU) Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food. This article focuses on the findings for two zoonotic bacteria, *Campylobacter* and *Salmonella*.

Bacteria responsible for causing zoonoses (diseases and/or infections that are transmissible between animals and humans) are known as zoonotic bacteria. They can be transmitted directly (e.g. by direct contact with infected animals or animal excreta) or indirectly (e.g. via the consumption of contaminated food or water). The severity of illness in humans can vary from mild to life-threatening. *Campylobacter* and *Salmonella* were the two most frequently reported zoonotic bacteria in the EU in 2010. Over 212,000 confirmed cases of campylobacteriosis (illness caused by *Campylobacter*) and over 99,000 confirmed cases of salmonellosis (illness caused by *Salmonella*) were reported in that year.

Antimicrobials, such as antibiotics, are commonly used in human and veterinary medicine to treat zoonoses. They target the bacteria responsible for the disease/infection and either kill the bacterial cells or inhibit their growth (antibiotics are also effective against certain fungal infections and parasites; however, they do not work against viruses). The overuse or misuse of antimicrobials has been linked to the emergence and spread of bacteria that are resistant to them. Examples of overuse or misuse of antibiotics include prescription against viruses and failure to take antibiotics exactly as prescribed. Zoonotic bacteria which develop resistance to antimicrobials are of special concern as the treatment of human infections may be compromised. This has raised concern at both European and global level.

In order to monitor the occurrence of antimicrobial resistance in zoonotic bacteria, data is collected by EU Member States (MS). This data is analysed by EFSA in collaboration with the ECDC and an EU summary report on antimicrobial resistance is produced annually. The 2010 summary report which was published on 14th March 2012 shows that isolates of *Campylobacter* and *Salmonella* were resistant to several antimicrobials. However, for both bacteria there were no major changes between the antimicrobial resistance reported in 2010 and earlier years (2005-2009).

Campylobacter isolated from humans with campylobacteriosis were highly resistant to ciprofloxacin (antibiotic used to treat severe infection); however, resistance to erythromycin (the most important drug for the treatment of campylobacteriosis) was low. A similar pattern was found for *Campylobacter* isolated from food-producing animals and meats. Of particular importance was the finding that *Campylobacter* isolated from broiler flocks (i.e. chicken flocks) showed the highest levels of resistance to quinolones and fluoroquinolones (these are broad spectrum antibiotics which are effective against a wide range of disease causing bacteria). This raises concern, as chicken meat is one of the most common sources for human cases of campylobacteriosis.

Salmonella isolated from humans with salmonellosis were highly resistant to commonly used antimicrobials such as tetracyclines, ampicillin and sulphonamides; however, resistance to the clinically important antimicrobials ciprofloxacin and cefotaxime was relatively low. Resistance to tetracyclines, ampicillin and sulfonamides was also frequently reported for Salmonella isolated from food (meat) and animals. The highest occurrence of resistance to ciprofloxacin was recorded in Salmonella isolates from turkeys, which were analysed at EU level for the first time in 2010.

The report concluded that there is a need for further harmonisation to enable better comparison of antimicrobial resistance data between MS and between humans, animals and food.

More information

European Food Safety Authority and European Centre for Disease Prevention and Control. 2012. [The European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in the European Union in 2010](#). EFSA Journal 10(3):2598.