European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food 2012 published

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On 25 March, EFSA and ECDC jointly published 'The European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food 2012' [1]. The report features *Salmonella*, *Campylobacter*, *E. coli* indicator bacteria and *Staphylococcus aureus*.

Salmonella and *Campylobacter* are the most common causes of zoonotic foodborne infections. According to the report, antimicrobial resistance was detected commonly in isolates from human cases as well as from food-producing animals and food in the European Union (EU). Almost half of the isolates from clinical cases were resistant to at least one antimicrobial and 28.9% were multidrug-resistant.

Levels of clinical resistance in *Salmonella* spp. isolates from humans to critically important antimicrobials in human medicine, such as cefotaxime and ciprofloxacin, were relatively low, and co-resistance across the countries that submitted data was very low. *Salmonella* spp. isolates of food and animal origin from fattening turkeys, broiler meat, turkeys and broilers of *Gallus gallus*, showed the highest resistance to ciprofloxacin varying from 46.0 % to 86.2 % in the reporting countries.

In *Campylobacter* spp. isolates from human cases, clinical resistance to common antimicrobials was frequently detected. Very high proportions of *Campylobacter* spp. isolates (47.4% EU average) were resistant to ciprofloxacin, with increasing trends observed in several countries. High to extremely high resistance to fluoroquinolones was also observed in *Campylobacter* isolates of food and animal origin such as *Gallus gallus* and broiler meat, pigs and cattle (ranging from 32.0 % in isolates from pigs to 82.7 % in isolates from broiler meat).

Among indicator (commensal) *E. coli* isolates from animals, resistance to ampicillin, streptomycin sulfonamides and tetracyclines, was commonly reported in

Gallus gallus and pigs (29.5 %–54.7 %) and levels were lower in cattle (24.5 %–30.6 %). Resistance to ciprofloxacin and nalidixic acid was highest among *E. coli* isolates from *Gallus gallus* and lower in pigs and cattle.

Antimicrobial resistance in humans was determined using clinical breakpoints, whereas epidemiological cut-off values (ECOFFs) were used to interpret the food and animal data. The use of ECOFFs aims to detect early resistance development to enable actions to be taken before the bacteria become impossible to treat. The use of different types of interpretive criteria limits the direct comparison of resistance data obtained for humans and food/animals.

The levels of clinical resistance to antimicrobials in humans showed a great variability across participating countries, partly due to the use of different methods and criteria for interpreting data. To obtain improved data quality and comparability in the future, ECDC is launching the EU protocol for harmonised monitoring of antimicrobial resistance in *Salmonella* and *Campylobacter* isolates from humans [2].

References

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