

### III. Reporting Methods

[WHONET 5](#), a free microbiology laboratory database software program, was used to categorize MICs as resistant, intermediate (when applicable), and susceptible according to CLSI established interpretive criteria (when available). The 95% confidence interval was calculated using the Wilson interval with continuity correction method in WHONET 5. Resistance percentages by food animal source and organism are presented from 1997 through 2010 for *Salmonella*, from 1998 through 2010 for *Campylobacter*, from 2000 through 2010 for *E. coli* and from 2003 through 2010 for *Enterococcus*. It should be noted that *Enterococcus* data has not been reported since 2006. Since then, antimicrobial susceptibility analysis has been completed on additional isolates not previously tested in 2003-2006. Hence, a difference in the number of isolates tested can be observed for years 2003 through 2006 when compared to the last reported *Enterococcus* results and some differences in susceptibility testing may be observed.

MIC distributions are presented for 2010. For *Salmonella*, MIC distributions were tabulated on both macro and micro levels. At the macro level, all *Salmonella* serotypes were combined and analyzed for MIC distributions. At the micro level, isolates were grouped by serotype prior to analysis. Results were tabulated for the top serotypes from chickens, turkeys, cattle, and swine. MIC distributions were tabulated separately for *C. coli* and *C. jejuni*. For *Enterococcus*, MIC distributions were calculated separately for each of the top species. The change in sample collection methods by FSIS in 2006 limits meaningful trend comparison between pre-2006 and post-2006. Similarly, these changes limit year-to-year comparisons post-2006.<sup>1</sup>

In this report, multiple drug resistance (MDR) is reported as resistance to more than one antimicrobial class (i.e. multiple antimicrobials may be included in a class and resistance to any one antimicrobial within a class results in the designation of the class being resistant).

The antimicrobial classes used for MDR tabulations for *Salmonella* and *E. coli* were aminoglycosides (amikacin, gentamicin, kanamycin and streptomycin),  $\beta$ -lactam/ $\beta$ -lactamase inhibitor combinations (amoxicillin-clavulanic acid), cepheims (cefoxitin, ceftiofur and ceftriaxone), penicillins (ampicillin), folate pathway inhibitors (sulfonamides and trimethoprim/sulfamethoxazole), phenicols (chloramphenicol), quinolones (ciprofloxacin and nalidixic acid), and tetracyclines (tetracycline). The antimicrobial classes used for MDR tabulations for *Campylobacter* were aminoglycosides (gentamicin), ketolidides (telithromycin 2005-2009), lincosamides (clindamycin), macrolides (azithromycin and erythromycin), phenicols (chloramphenicol 1998-2004 and florfenicol 2005-2009), quinolones (ciprofloxacin and nalidixic acid) and tetracyclines (tetracycline). The antimicrobial classes used for MDR tabulations for *Enterococcus* were aminoglycosides (gentamicin, kanamycin and streptomycin), glycopeptides (vancomycin), glycolylines (tigecycline 2006-2010), lincosamides (lincomycin), lipopeptides (daptomycin 2004-2010), macrolides (erythromycin and tylosin), nitrofurans (nitrofurantoin), oxazolidinones

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<sup>1</sup> USDA/FSIS. 2008. Serotypes Profile of Salmonella Isolates from Meat and Poultry Products. Available at [http://www.fsis.usda.gov/Science/Serotypes\\_Profile\\_Salmonella\\_Isolates/index.asp](http://www.fsis.usda.gov/Science/Serotypes_Profile_Salmonella_Isolates/index.asp).

(linezolid), penicillins (penicillin), phenicols (chloramphenicol), phosphoglycolipid (flavomycin), quinolones (ciprofloxacin), streptogramins (quinupristin/dalfopristin), and tetracyclines (tetracycline). Where appropriate, antimicrobials are reported by class in all tables for ease of analysis.