Role of clinical microbiology services in monitoring emerging resistances in small animals and their hospital environment

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The development of antimicrobial resistance (AMR) is one of the most important public health challenges which has highlighted the critical role that clinical microbiology laboratories play in driving antimicrobial stewardship. Despite the recognition of its importance, there are several areas of improvement which need to be addressed in this field, starting with the need for standardized training of clinical microbiologists and harmonization of diagnostic procedures across veterinary microbiology diagnostic laboratories. Bacterial culture, identification and antimicrobial susceptibility testing (C&ID and AST) are key tools for antimicrobial therapy guidance and the lack of specific guidelines for processing companion animal clinical specimens for microbiology testing is a serious challenge to the profession. Similarly, the lack of guidelines or programmes for AMR surveillance in companion animals and the use of multiple standards is a major limitation when comparing susceptibility data between laboratories or countries. Both aspects have multiple implications for the diagnosis and management of infections, and impact overall on antimicrobial stewardship. Furthermore, surveillance in veterinary hospitals of healthcare associated infections (HCAIs) associated with multidrug resistant (MDR) bacteria is less well-established than in human hospitals and needs further development. Therefore, our infection control studies at University of Liverpool should generate sufficient veterinary-specific data to enable the development of evidence-based infection control policies to help prevent veterinary HCAIs.
In this talk, I will cover the developments which we implemented in my laboratory to address these challenges. In addition, I will include findings from the ongoing European Network for Optimization of Veterinary Antimicrobial Treatment (ENOVAT), an EU Cost Action project which is addressing these issues, including findings from a recent survey which investigated the range of methodologies used by veterinary microbiology laboratories for performing C&ID and AST for bacterial isolates from companion animals. In addition, I will touch on how in ENOVAT we are now planning the next steps towards developing united approaches and implementation of a common strategy for the veterinary clinical microbiology profession.