Antimicrobial resistance; association of trends and clusters of resistant *S. Typhimurium* in contemporaneous animal and human populations

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Antimicrobial resistance has epidemiological characteristics and consequences paralleled in the domain of emerging diseases. Early detection, surveillance and "freedom from" status are important considerations in both areas of epidemiological endeavour. Over a ten year period, through clinical reporting, Scotland has data on the resistance profiles of enteric pathogens affecting the human population together with a contemporaneous database of similarly typed and profiled animal derived isolates. With a socio-political undercurrent that use of antimicrobials in a veterinary context leads to resistance in pathogens isolated from humans, we investigated over 45,000 isolates collected over a decade to test this hypothesis. As well as analysing temporal trends and spatial clustering at the individual antimicrobial level of resolution, using statistical clustering techniques and the resistance characteristics *of S. Typhimurium* to 10 antimicrobials we identified 12 "profiles" that were chartable in both space and time. Whilst temporal trends for the prevalence of resistance to some individual antimicrobials did appear to vary in both animal and human populations synchronously, there was no evidence either in temporal, spatial or time-space aspects that any of the 12 profiles behaved in a manner that suggested a dependent relationship between animal and human isolates. Importantly, there was no evidence that the emergence resistance and increase in prevalence in the animal isolates predated the emergence or increase in the human isolates. (220)