EVALUATING CHANGES IN SALMONELLA SEROVARS ASSOCIATED WITH SWINE OVER THE PAST 20 YEARS

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The aim of this project was to described changes in Salmonella serotypes prevalence over the past 20 years in the datasets from Iowa State University Veterinary Diagnostic Laboratory (ISU VDL), The National Antimicrobial Resistance Monitoring System (NARMS animal based isolates only), and the CDC Laboratory-based Enteric Disease Surveillance (LEDS) Program. We calculated the proportion with the numerator being the count of the serovar and the denominator is the total count of serovars. Linear regression was then conducted with the yearly proportion change regressed on year to obtain an estimate of the change in proportion for the given serotype over the years within each data set i.e. the slope of the regression line. Based on the slope of the line, S. Typhimurium, S. Derby, S. Heidelberg, where associated with decreases in proportion over the years. S. Typhimurium also appears to be decreasing in other data sets: NARMS-FDA retail, NARMS-USDA and CDC-LEDS data-sets. For other serotypes that appear to be decreasing in prevalence in swine submitted to the ISU VDL, the patterns were less consistent. For S. Derby, the decrease was observed in the ISU VDL, NARMS-S, and CDC-LEDS, but the prevalence appears to be increasing for S. Derby in NARMS-R (based on only 27 isolates). S. Heidelberg appeared to have a common pattern of decreasing across the data sets. Over time, S. serovar 4,[5],12:i:, S. Infantis and S. Johannesburg were associated with increases in proportion in ISU-VDL swine. It is interesting to note that scale of the increase observed in S. serovar 4,[5],12:i:, Expressed as a percentage, the change is around 2 % (95% CIs [1.02, 2.98]) each year, which is a rapid change.