



Presentation: A survey of case-control studies in veterinary science

Author(s): **J.N. Cullen¹, K.M. Makiel斯基², J.M. Sargeant³, A.M. O'Connor¹**;

¹Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, IA, USA, ²Department of Veterinary Clinical Sciences, Iowa State University, Ames, IA, USA, ³Department of Population Medicine, University of Guelph, Guelph, ON, Canada.

Abstract: The case-control study design is commonly used in veterinary sciences owing to the relatively low expense and potentially quick data collection phase. Case-control studies are most useful to clinicians when the disease or outcome of interest is rare or the exposure is expensive to measure. Decisions regarding the approach to selecting cases and controls will affect whether the study estimates the population odds, risk, or rate ratio. For example, cases may be incident or prevalent and controls can be selected at the start of the study, from the risk set, or from survivors. However authors are often unaware of the issues and the impact on the effect measure estimated by the case-control design. This lack of understanding can be an issue when systematic reviews exclude case-control studies that are actually of more similar design to cohort studies. The objective of this study was to understand the magnitude of misclassification of effect measures from case control studies and to describe how case control studies are conducted in the veterinary sciences. Using a randomly selected subset of 100 self-described case-control studies we applied two design classification systems to itemize each report and determine the study design employed. The CABI and MEDLINE databases were searched for all manuscripts labeled as case-control in select companion and livestock animals. Preliminary results suggest that confusion exists in the veterinary literature regarding design descriptions, as a sizable proportion of the sampled reports are actually cohort studies or diagnostic test evaluations. Many authors incorrectly identified the effect measure estimated by the study. Further, authors' descriptions of directionality and timing (prospective, retrospective) were often misleading or incorrect for a number of the sampled reports. The results of the assessment suggest a need for better education of veterinary researchers about observational study design and that excluding studies from reviews based on authors reports of the design may exclude relevant papers.