

Exploring environmental, lifestyle and demographic factors associated with canine cancers

Collette Taylor¹, Dan O'Neill¹, Sandra Guillen², Dave Brodbelt¹
¹ Pathobiology and Population Sciences, RVC ² Clinical Science and Services, RVC



Background

- Cancer is a leading cause of death in dogs, with 50% of dogs over 10 years old dying from the disease^{1,2}
- Canine cancer associations, particularly environmental ones, are not well understood
- Dogs may be suitable sentinels for environmental exposures for human cancers³

Study objectives

- Identify which cancers are most common
- To explore environmental and clinical factors associated with diagnosis and survival
- Identify potential shared exposures with human cancers

Datasets

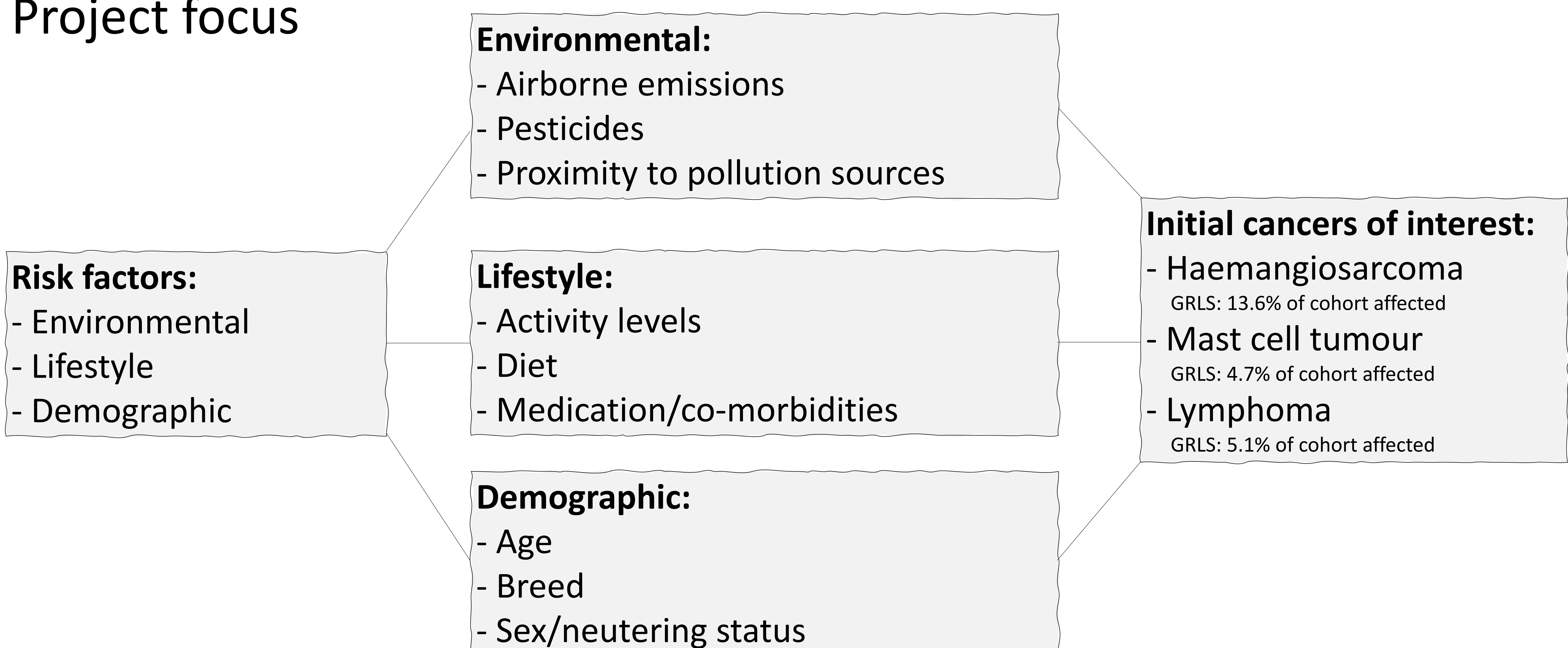


- Clinical records from ~13 million dogs in the UK
- Dog signalment, clinical notes, treatments and partial postcode



- Lifetime, cohort study of US Golden Retrievers (GRLS)⁴
- ~3000 dogs (cancer recorded at death in 34.5% of cohort that has died)
- Owner and vet questionnaires, clinical notes, tumour histopathology

Project focus



ACKNOWLEDGEMENTS

The authors are grateful to Morris Animal Foundation for their funding of this research. Thanks to Noel Kennedy (RVC) for VetCompass software and programming development. We acknowledge the practices who collaborate in VetCompass and the dogs, owners and veterinarians contributing to the GRLS study.

CONTACT INFORMATION

Collette Taylor, BVSc MRes MRCVS
 MAF Cancer Epidemiologist
 email: ctaylor18@rvc.ac.uk



REFERENCES

- ¹ Fleming, J. M., Creevy, K. E., & Promislow, D. E. (2011). Mortality in north american dogs from 1984 to 2004: an investigation into age-, size-, and breed-related causes of death. *Journal of veterinary internal medicine*, 25(2), 187–198.
- ² Davis, B. W., & Ostrander, E. A. (2014). Domestic dogs and cancer research: a breed-based genomics approach. *ILAR journal*, 55(1), 59–68. <https://doi.org/10.1093/ilar/ilu017>
- ³ Schiffman, J. D., & Breen, M. (2015). Comparative oncology: what dogs and other species can teach us about humans with cancer. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 370(1673)
- ⁴ Guy, M. K., Page, R. L., Jensen, W. A., Olson, P. N., Haworth, J. D., Searfoss, E. E., & Brown, D. E. (2015). The Golden Retriever Lifetime Study: establishing an observational cohort study with translational relevance for human health. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 370(1673)