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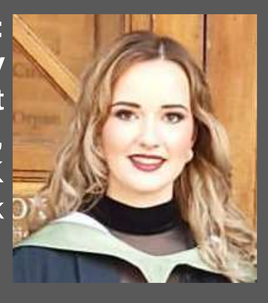

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Identifying risks for gastrointestinal signs in Dogslife puppies

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Background

- Episodes of gastrointestinal (GI) signs in dogs are associated with high morbidity and owner-based prevalence estimates in Labrador Retrievers are up to 25% for diarrhoea and 21% for vomiting[1]
- Previous Dogslife research has reported a high incidence of vomiting and diarrhoea in its cohort[2], but further research is needed to investigate the environmental, microbial, genetic and environmental risks for these presenting signs
- Cross-sectional studies have reported microbial dysbiosis in dogs with both acute and chronic diarrhoea, irritable bowel disease and a range of other GI complaints[3-6] but it is not understood whether these changes precede or proceed the onset of symptoms

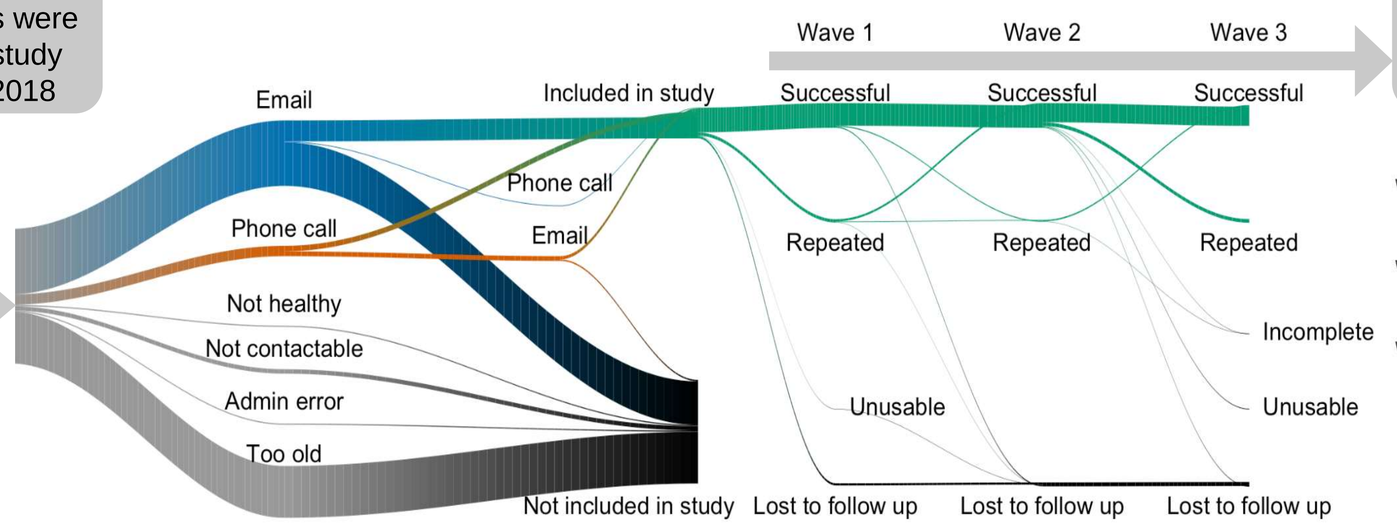
Objectives

1. To recruit Dogslife owners into a sub-study that gathers detailed information about their puppies' GI health longitudinally
2. To identify whether GI signs are associated with alterations in the intestinal microbiota, host genetics, lifestyle or health

Sub-study recruitment and retention

The owners of 363 newly registered Dogslife Labrador Retriever puppies were screened for recruitment to a sub-study between October 2017 and June 2018

Fig 1. The geographical distribution of Dogslife puppies recruited and not recruited to the sub-study



Total recruited: 83 (22.9%)

Total retained: 68 (81.9%)

Recruited owners were asked to fill out GI health questionnaires, collect faecal samples at 3 timepoints (waves) and participate in Dogslife

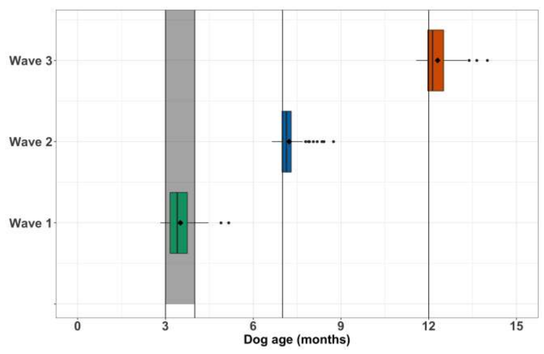


Fig 2. Boxplot puppies' age at each wave of the sub-study: 3 to 4 months, 7 months and 12 months old. The grey box represents the recruitment period age-goal and the vertical lines represent the follow up age-goals.

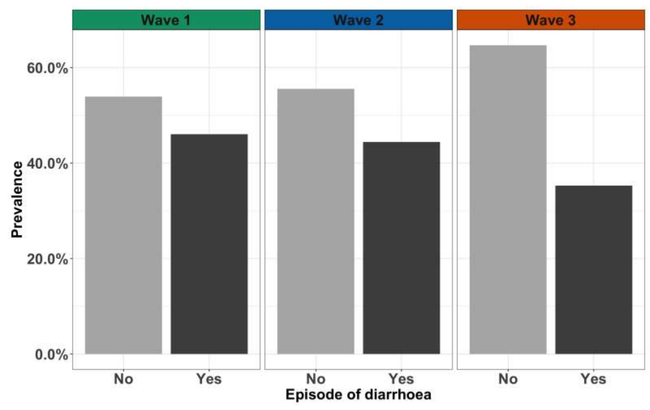


Fig 3. The prevalence of owner-reported diarrhoea in the puppies at each wave of the sub-study

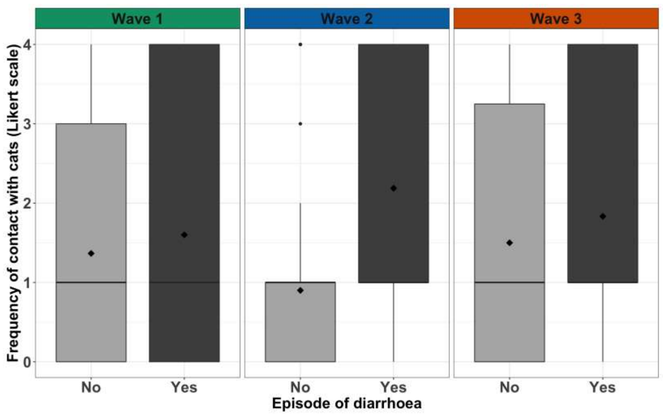


Fig 5. The frequency of contact with cats in puppies with and without diarrhoea at each wave of the sub-study

Data from the sub-study and Dogslife

Microbiome
- 16S data from faecal samples
- Diversity, abundance, taxonomy
- Pedigree information

Diet
- Dietary changes
- Titbits
- Feed type
- Quantity
- Supplementation

Photos

Environment
- Exercise
- Bathing routine
- Sleeping habits
- Contact with animals
- Travel abroad

Behaviour/Training
- Stress levels
- Scavenging
- Pet purpose

Demography
- Geographic location
- Household type
- Smoking status
- Age, sex, colour

Medical
- Illness instances
- Medications
- Vaccinations
- Anti-parasitics
- Neutering
- Breeding info
- Height and weight

Host genetics
- DNA swabs from saliva
- Pedigree information

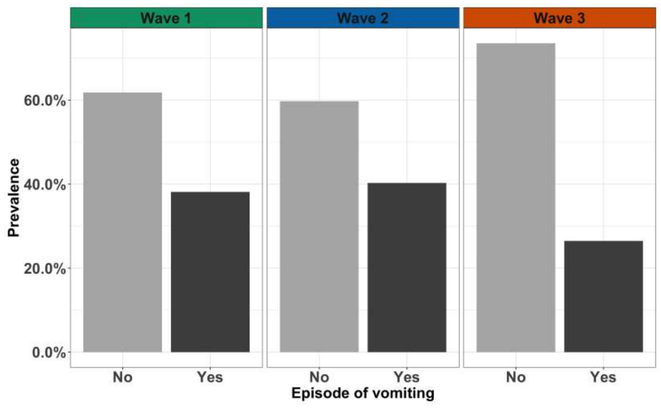


Fig 4. The prevalence of owner-reported vomiting in the puppies at each wave of the sub-study

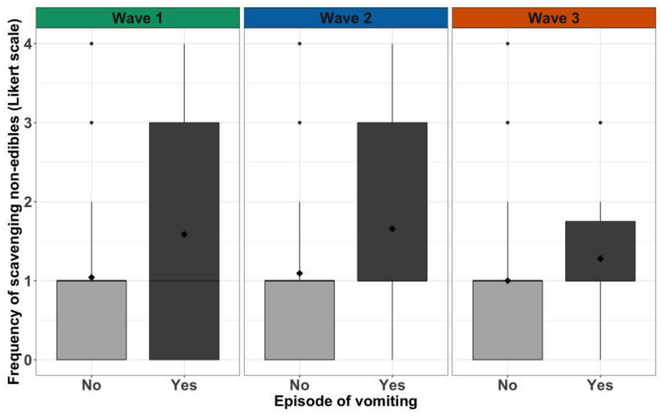


Fig 6. The frequency of scavenging non-edibles in puppies with and without vomiting at each wave of the sub-study

Conclusions

- We successfully recruited a longitudinal sub-study of dog owners who supplied us with detailed GI health information about their puppies
- The prevalence of vomiting and diarrhoea in the sub-study was always above 30% and 20% respectively across all 3 timepoints but appeared to decrease as puppies aged
- Initial data exploration suggests associations between contact with cats and scavenging with GI signs, but further research is needed to investigate these factors in light of the wealth other data that we have collected

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