



SAVSNET

Research Surveillance Benchmarking

Summer 2021



Not one, but two sayings for you. “Variety is the spice of life”... and also a good description of our recent science. The data we are very grateful to receive from participating laboratories and practices is wonderfully rich and diverse allowing it to be used to address many important issues. Patient work on tumours is coming to publication soon including on transmissible venereal cell tumours and where we import them from. We are also putting the finishing touches to what we believe will be one of the largest tumour registries for pets in the world. Other bits of work in the pipeline include risk factors for grass seeds, and on life as old dogs. However, many will know that one of our main research themes is antibiotic use and resistance. We were delighted to have a paper published in Nature Communications no less, about how simple interventions informed by data can help practices improve their use of the most critical antibiotics. Such science is vital to develop the best stewardship programmes for the future. Not content with this, we also have a wonderful piece of work looking at risk factors for antibiotic resistance in companion animals across the UK, linking laboratory data to sequencing, allowing us to identify important resistance genotypes in companion animals for the first time. This collaboration with labs that we are calling a “National Virtual Biobank” has also been used for canine parvovirus and most recently SARS-CoV2.

That brings me to our second motto, that of the scouts ... “Be prepared!”. As we approach what for many of us is the summer holiday period, the news still reminds us daily of the real impacts of the current pandemic. But increasingly governments are beginning to look to the future, and a new term has come to my ears – pandemic preparedness. If governments were scouts, then this is the new badge they need. How to mitigate against the impact of the next pandemic. It is clear that data will play a big role in that future preparedness...but not in isolation. Data will need to be increasingly linked between animals and humans, and incorporating other big data such as sequence information and socio economic data. These networks of data will be largely useless unless linked in one direction to clinicians, in another to policy makers, and in another to researchers. And this is where we want SAVSNET to be. We want to be, or perhaps are even becoming, a vital part of UK health preparedness. Of course, none of this is possible without your patient and altruistic support as data providers, collaborators and scientists. We only wish we could give you all your own badge.

I can however thank you again for your massive support, and wish you all, whatever you do, a wonderful holiday season ... and go and prepare for mine!

Alan and the SAVSNET Team



What's Inside?

Updates from our post-grad researchers

SAVSNET-Agile update

Publications to date

Rapid Disease Investigations



In light of the increase in enquiries SAVSNET has received this year regarding suspected increases in disease, we have created a Rapid Disease Investigation (RDI) page summarising our findings. To date we have investigated data on parvovirus, kennel cough and dogs eating face masks.

These RDI's currently receive no funding but we will try our absolute best to respond to concerns where the data allows, and we hope they are useful to you.

Visit the page [here](#)

Jodie Jackson - Old Age Pets Project funded by PetSavers

I'm coming towards the final stages of my Old Age Pets project. I have so far been finalising the first two stages, which involved identifying when a vet described an animal as having reached old age using 5 key search words (Ageing, Elderly, Geriatric, Senior, and Old). I then read 1000 consultations to determine what issues were recorded in the electronic health record of an old age animal when they presented to practice. These issues were categorised using a modified ICD-10 WHO system. The most common issues of old age dogs were; weight (35%), musculoskeletal (33%), dental (31%), integumentary (28%), and digestive (22%). As a result of this process, one specific commonly recorded issue will be investigated further. As a team we've decided to investigate dental issues, specifically - tartar, plaque, and calculus. In the next steps of the project, I'll be examining the current preventative healthcare and treatment options offered for this specific issue, to highlight whether there is a gap in the advice offered to owners to reduce the occurrence of dental issues in old age dogs.



Shona Bloodworth - Vaccine hesitancy funded by PetSavers

The first ten months of my PhD have absolutely flown by! I'm using SAVNET data to explore whether there is any evidence of emerging vaccine hesitancy in the canine and feline population. In 2019 the PDSA PAW report gave evidence of reduced uptake in vaccination in dogs and cats and forays into pet owner Facebook groups also suggest some owners are showing signs of vaccine hesitancy when it comes to their pets. The first stage of my project involves using SAVSNET data to quantify vaccination uptake. The second stage which will take place from the autumn of 2021 onwards will involve interviewing pet owners and vets. Over the last few months I've classified the labels that are listed in the SAVSNET database for vaccination consultations so that I will be able to discern what animals have been vaccinated against. This will aid my analysis when it comes to looking at the uptake of specific vaccinations. The uptake of the L4 vaccine will be of particular interest here since anecdotal evidence of adverse events has stoked fear in some dog owners. Vaccine hesitancy is multi-faceted and I'll also be exploring if there is a link between owner's level of predicted deprivation and the decisions owners make when vaccinating their pets. This is something that will be followed up in qualitative interviews I will be doing with pet owners and vets that will focus on decisions that are made about preventative health for pets with a particular focus towards vaccination. At present I'm preparing the dataset containing the vaccination information for analysis that will begin in the coming weeks. I'm looking forward to being able to share the results of this analysis to provide interesting insights into trends in canine and feline vaccination.



Heather Davies - Identification and reporting of adverse drug reactions funded by the VMD

I'm now in the third year of my PhD - time flies! So far I've completed a survey of UK veterinary professionals to gain an understanding of adverse drug reaction (ADR) reporting in veterinary practice. This work highlighted some factors that may make it easier for vets and nurses in practice to report ADRs. One of these facilitators was the ability to report suspected ADRs directly from the practice management system. If you use Robovet you may have noticed a new button on your SAVSNET window. The 'Adverse Drug Reaction' button allows you to report suspected ADRs directly to the VMD via SAVSNET and contains some useful features such as pre-population of animal and drug information. This year I've also been busy with the text-mining element of my project. I'm building search terms to identify mentions of specific clinical signs in the clinical records of animals in SAVSNET who have received particular drugs. In the next stage of my project, this data will be used to explore if SAVSNET can be used to calculate incidence rates for these suspected ADRs.





SAVSNET-Agile is an exciting multi-organisation collaboration funded by Dogs Trust which focuses on improving canine health by linking SAVSNET data with state-of-the-art informatics, statistics and genomics.

The ultimate aim of the project is to provide veterinary practices with near-realtime actionable health resources, including the detection and response of disease outbreaks and identifying patients at risk of becoming obese and/or diabetic. The project has three post-graduate researchers based at University Bristol, Liverpool and Lancaster supported by a multi-disciplinary supervisory team across the organisations.

The canine vomiting outbreak of 2020 threw us in at the deep end in terms of outbreak detection and response, giving us a great opportunity to put into practice what we'd learnt about outbreak response and develop follow-up monitoring. The work on outbreak detection as part of SAVSNET-Agile is being led by Dr Carmen Tamayo at University of Bristol who has identified canine disease surveillance priorities. Carmen is now assembling a panel of vets to help identify how often and in what format they'd like to get surveillance alerts. We're very conscious that too many alerts risks 'outbreak fatigue' and a likely lack of response. We also need to make sure we get the information to you in a way that suits - it must be accessible otherwise it's useless. If you're interested in shaping how we get outbreak information to you, please drop Carmen an email carmen.tamayo@bristol.ac.uk



Carmen



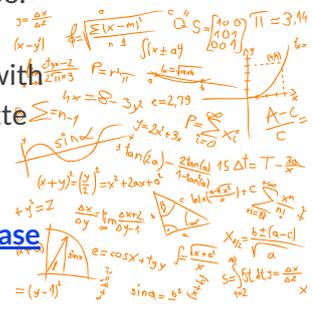
Ivo

Dr Ivo Fins based at University of Liverpool has been working hard with the text entered by vets and nurses in consultations to develop tools that identify dogs classed as obese and diabetic. By understanding the language used when describing these patients, we can more easily identify them at scale - a necessary first step to allow us to identify risk factors for developing obesity and diabetes, thereby facilitating early interventions. We are using a similar approach with cases of vomiting dogs to build on our work responding to the vomiting outbreak last year too.



Charlotte

And last but by no means least, Charlotte Appleton at Lancaster has been working with SAVSNET data to apply advanced statistics identifying potential outbreaks. Charlotte and her supervisors analysed SAVSNET data in response to concerns relating to a suspected increase in canine parvovirus back in March, and more recently concerns about an increase in Kennel Cough. These have formed the basis for our [Rapid Disease Investigations](#).



Shirley

Now in its second year, we're really starting to see this project come together exactly how we envisaged it would... and we look forward to providing resources to veterinary practice to transform elements of canine health.



PS. can you help us research distemper?

As part of this grant, we are researching canine distemper and we need samples! If you see a case in practice or have tested positives in laboratories and would be willing to forward samples, please let us know at savsnet@liverpool.ac.uk



This research is kindly funded by Dogs Trust. Find out more [here](#)

Latest publications in 2021

Thank you to all veterinary practices, independent and CVS, and laboratories for making this work possible

Temporal, Spatial, and Genomic Analyses of Enterobacteriaceae Clinical Antimicrobial Resistance in Companion Animals Reveals Phenotypes and Genotypes of One Health Concern.

Published: [Frontiers in Microbiology](#).

SARS-CoV-2 neutralising antibodies in Dogs and Cats in the United Kingdom.

Published: [BioRxiv](#).

A virtual biobank for companion animals: A parvovirus pilot study.

Published: [The Veterinary Record](#).

Small animal disease surveillance 2020/21: SARS-CoV-2, syndromic surveillance and an outbreak of acute vomiting in UK dogs.

Published: [The Veterinary Record](#).

A randomised controlled trial to reduce highest priority critically important antimicrobial prescription in companion animals.

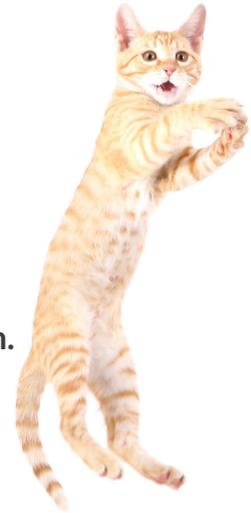
Published: [Nature Communications](#).

Backyard poultry cases in UK small animal practices: Demographics, health conditions and pharmaceutical prescriptions.

Published: [The Veterinary Record](#).

Outbreak of severe vomiting in dogs associated with a canine enteric coronavirus in the United Kingdom.

Published: [Emerging Infectious Diseases](#).



 Full publication list available [here](#)



Data are available for research! Find out more [here](#).

As always, thank you for your continued support of SAVSNET, especially over these challenging times. We really hope that you manage to take some time over the summer to relax and recharge.

We have sent you our newsletter because you opted in to the mailing list. If you would prefer to not receive our quarterly newsletter anymore, please contact us at savsnet@liverpool.ac.uk