



RESEARCH USING SAVSNET DATA

A VIRTUAL BIOBANK FOR COMPANION ANIMALS: A PARVOVIRUS PILOT STUDY

Full paper published in the Veterinary Record available [here](#)

1



LINKING DATA

There is a lack of national population data concerning infectious disease in companion animals. Here we show how linking veterinary diagnostic laboratories, population surveillance and modern sequencing technologies can act as a novel route to better understand national epidemiology of major small animal pathogens.

2



STUDY

Faecal samples tested for canine or feline parvovirus were requested from a national veterinary diagnostic laboratory contributing data to SAVSNET. Samples were linked to electronic health data from veterinary practices participating in SAVSNET using approximate geographic location, species and test results for parvovirus.

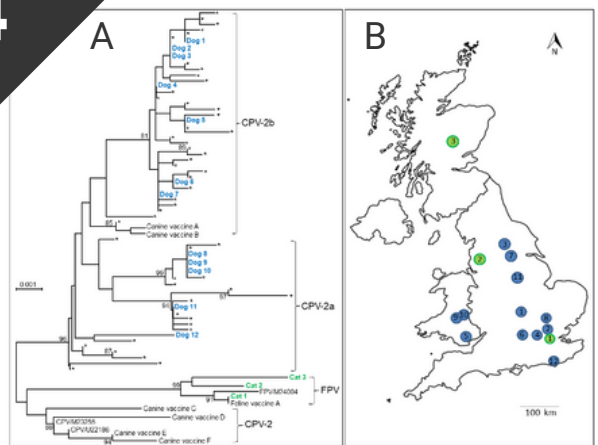
3



VIRUS SEQUENCING

Virus sequence was generated using Sanger or next generation sequencing. Sequences obtained from positive samples, together with associated metadata provided insights into the recent geographical distribution of different types of canine and feline parvovirus in the UK.

4



PARVOVIRUS

Image showing the different types of parvovirus obtained. A compares sequences of part of the parvovirus genome called the VP2 gene from the different cat (green) and dog (blue) samples sequenced in this study with previously sequenced viruses. B shows the geographical location of the cats and dogs whose samples were sequenced in this study.

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CANINE PARVOVIRUS

Although only 15 samples were sequenced, we were able to make several observations of relevance to parvoviruses in cats and dogs. We found only CPV-2a and -2b in the canine samples, not -2c. However, CPV-2c is highly prevalent in other parts of the world, and has been detected in mainland Europe and in one dog in the UK. A larger study of this kind could determine whether CPV-2c does circulate in the UK.
We found no CPV-2 in these samples.

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VIRTUAL BIOBANK

This pilot study shows how samples obtained from diagnostic laboratories can act as a valuable 'National Virtual Biobank' that can rapidly be called on to add new layers of epidemiological information of relevance to animal health.

“ At the University of Liverpool, we have worked hard to acquire the expertise needed to sequence pathogens from pets. The scope here is huge, and we have other studies ongoing on antimicrobial resistance and distemper...all seeking to answer a key question of who is infecting who? ”

Dr Shirley Bonner, SAVSNET Research Associate

“ Diagnostic laboratories like Idexx receive many 1000s of samples a day which are used to diagnose disease in the animals they came from. Working with the SAVSNET team, the data from these anonymised samples contributes to better understanding of the distribution and transmission of microorganisms. Such a virtual biobank can be deployed rapidly, and helps fill a current gap in national surveillance of companion animal disease. ”

Dr Larry Roberts, Head of Microbiology, Idexx Laboratories

