SAVSNET: Collating Veterinary Electronic Health Records for Research and Surveillance

Philip H. Jones*, Alan D Radford, Peter-John M Noble, Fernando Sánchez-Vizcaíno, Tarek Menacere, Bethaney Heayns, Susan Bolan, Maya Wardeh, Rosalind M Gaskell and Susan Dawson

University of Liverpool, Neston, United Kingdom

Objective

SAVSNET—the Small Animal Veterinary Surveillance Network—collects and collates real-time data from veterinary diagnostic laboratories and veterinary practices across the UK to support research and disease surveillance in companion animals.

Introduction

Statutory veterinary disease surveillance generally focuses on food animals with only minimal resources committed to companion animals. However, the close contact between owners and pets suggests that disease surveillance in these species could benefit both animal and human health.

Following a successful pilot, SAVSNET Ltd. was set up as a joint venture between the University of Liverpool (UoL) and the British Small Animal Veterinary Association (BSAVA) to deliver companion animal health data for research and surveillance. SAVSNET consists of two projects: the first collates results from commercial diagnostic laboratories whilst the second collects data from enrolled veterinary practices for consultations where owners have provided consent by opt-out. Both projects have been approved by the UoL's Research Ethics Committee and the aims are supported by the Royal College of Veterinary Surgeons (RCVS), the UK's regulatory body for the veterinary profession.

Applications to use the data are encouraged and are assessed by a panel consisting of BSAVA, UoL and independent members. Data access attracts a nominal fee that is used for long-term sustainability. Currently, SAVSNET data is being used for a wide range of projects by academic collaborators, PhD researchers, undergraduate students and commercial companies.

Methods

The data collected from laboratories is provided in a variety of formats using different protocols. The supplied data is parsed using bespoke algorithms and stored in a common database. The data includes available animal signalment, postcode area of the submitting veterinary practice (121 areas in the UK), tests performed, results and the interpretation of those results.

The data from veterinary practices is collected in real-time directly from the consultation room. SAVSNET works closely with practice management software (PMS) providers so that, at the end of a consultation, the system displays a modal window that displays web-content retrieved from SAVSNET servers. The window requires that the veterinarian characterises the reason for the animal's presentation using a panel of simple buttons. In a small random sample of consultations (5–10%), additional questions are asked to further characterise the consultation. The data submitted to the database includes the syndrome code and questionnaire data, animal and practice identifiers, signalment, full owner's postcode (street level) and the free text entered by the veterinarian. In theory, this mechanism allows two-way communication directly into the consultation room although the full potential of this has not yet been explored.

In order to maintain interest in the project and ensure data quality, data providers—both laboratories and veterinary practices—receive summaries of the data they have provided through interactive, real-time web-based portals that display a range of statistics, tables, graphs and other graphics, relating to the data they have supplied. For veterinary practices, the portal displays such data in comparison to other anonymous practices.

Results

The experiences of SAVSNET to-date indicate that commercial laboratories and veterinary practices are prepared to provide large volumes of data. Such collaboration is largely altruistic but is likely to be enhanced by SAVSNET's independence, the minimal effort required to contribute data and the benefits provided by the data portals. In addition, our experiences show that PMS providers are prepared to co-operate to modify their software to present a modal window at the end of a consultation to enable data to be collected in real-time.

Conclusions

Collecting data from commercial laboratories and veterinary practices is feasible and provides an important data resource for research and surveillance. The model used by SAVSNET is well-tolerated by data-providers, is scalable and provides the potential for two-way communication into the consultation room. Many of the techniques and methods being used and developed could easily be cascaded to other veterinary fields.

Keywords

Companion animals; Electronic health records; Surveillance; Informatics; Database

Acknowledgments

*Philip H. Jones
E-mail: p.h.jones@liverpool.ac.uk