

## SVETPET: A SURVEILLANCE SYSTEM OF DISEASES OF COMPANION ANIMALS IN THE VENETO REGION (ITALY)

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### Summary

This paper presents the features of a system for collection, analysis, interpretation and dissemination of data regarding the health status of pets in the Veneto Region (Italy). The system provides the construction of a web-based database containing the diagnoses of transmittable and non-transmittable diseases of dogs and cats made by veterinarians in their practices, in hospitals, in kennels and catteries. Each diagnosis constitutes a single record, also containing data on the identification of the individual animal and on several characteristics of epidemiological relevance. The International Classification of Diseases (ICD-10) for human diseases has been adapted to canine and feline diseases to standardize the diagnostic nomenclature. A software for on-line data entry and data management has been specifically created. At present no institutional surveillance system of health of pets exists and veterinarians joining this project and sharing the outcomes of their clinic activity act on a voluntary basis. The first report, based on 209 cases collected from 15 veterinary practices during the initial 6 weeks of use of the system, has been brought out and disseminated through private and public veterinarians, experts and decision makers. The feedback on this report by professionals has been extremely positive and encouraging.

Key words: *dog, cat, disease surveillance*

### INTRODUCTION

The populations of pets kept in households have reached worldwide a relevant size. Recent estimates suggest that in 2012 there were 70 million dogs and 74 million cats in the United States (<https://www.avma.org>) and 61 million dogs and 66 million cats in the European Union (<http://www.fediaf.org>). Nearly half of the households in industrialised countries own at least one pet animal. These animals are kept in close interaction with humans. Out of the emerging pathogens, 75% are zoonotic (Taylor *et al.*, 2001). Companion animals can serve as sources of zoonotic infections, as intermediate hosts between livestock or wildlife reservoirs and humans, as sentinels for emerging diseases. Against these facts, there are worldwide only few examples of surveillance systems of diseases of small companion animals (*e.g.* SAVSNET, <http://www.savsnet.co.uk>). Most surveillance in these species focuses some specific disease, such as rabies, or operates at a regional level as part of specific and finite research programs without standardization and without representing routine institutional activity of public veterinary services (Day *et al.*, 2012). This article presents the SVETPET project which is addressing this serious One Health issue and which is carried out in cooperation by two Departments of the University of Padua and funded by the Veneto Region (Italy).

### MATERIALS AND METHODS

SVETPET is aimed at implementing the surveillance of diseases of pets of the Veneto Region. A system consisting of a database and a web application that allows network users to access, enter, update and display diagnostic data has been designed and built. Data are entered on-line as records by public and private veterinarians voluntarily joining the initiative without profit from practices, hospitals, kennels and catteries. At present only dogs and cats are considered. Each record contains the identification of the single animal (species, breed, gender, size, owner's post-code and microchip code, compulsory for the registry of dogs), age, weight, house-sharing with other animals, type of shelter (outdoor/indoor), type of diet (home cooking/commercial/mixed), travels, vaccinations, treatments, primary and secondary diagnosis. Data entry is

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entirely computer-assisted and a drop-down menu is provided for each item. The diagnosis is selected according to a standardized nomenclature, resulting from the adaptation to dog and cat diseases of the International Classification of Diseases (ICD-10) endorsed by WHO (<http://www.who.int/classifications/icd/>) for human diseases. Each veterinarian has a personal account and is allowed to have access for consultation to all data stored in the database. Main criteria for inclusion of veterinarians in the network were motivation and availability. SVETPET has been promoted through regional practitioners, veterinary associations, veterinary public services, decision makers, experts by general meetings, educational events and personal contacts. After an inner trial carried out at the Veterinary Teaching Hospital of the University of Padua, and after several public demonstrations, the software set up to support the system has been released in the middle of March 2015.

## RESULTS AND DISCUSSION

The SVETPET project started in July 2013 and has reached most of its expected results. A specific software allowing a menu-assisted, easy and quick data entry and data management has been created; a standardized nomenclature of dog and cat diseases has been implemented; the first epidemiological report, based on 209 cases (160 dogs and 49 cats) from 15 out of the 45 practices forming the project network at that moment has been brought out on the first of May 2015. The development of the project has involved a relevant part of the regional veterinary profession in all its components (private, public, institutional, academic). As of the first of July 2015, 61 veterinarians have joined the project, representing about the 10% of the 546 practices and the 46 hospitals of the Veneto Region. As the active participation in SVETPET is voluntary, the representativeness of the diagnostic data has to be carefully evaluated in several respects (*e.g.* number and type of animals and geographical distribution).

## CONCLUSIONS

SVETPET represents a pioneering effort to establish a surveillance system of companion animal diseases, zoonoses first of all, which is a key goal of One Health-One Medicine, as stated by international institutions WHO, OIE, FAO, CDC, ISID, WSAVA (Day *et al.*, 2012) and by experts (*e.g.* Callisto Project, <http://www.callistoproject.eu>). SVETPET is the result of a multidisciplinary synergy and demonstrates once again the central role of veterinary medicine in enhancing public health. Its development is still in progress in order to involve the largest possible number of veterinarians, to improve interactions within the network and to promote general awareness of the public health relevance of companion animals. Expected outcomes are to monitor disease frequencies and their behaviour in time and space, to identify associated risk factors and to produce disease and risk maps, thus providing epidemiological knowledge supporting the everyday clinical practice. Further expected outcomes are to assess the risk of transmission to humans and to set off the possible role of pets as early sentinels of emerging health threats and as models for the study of the effects of the exposure to environmental risk factors. The perspective is to promote collaboration and networking within the veterinary profession and between human and animal health professionals and to provide a useful tool to scientists and health policy makers.

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