THE SWISS ANIMAL HEALTH INFORMATION CENTRE

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A l'initiative de l'Office Vétérinaire Fédéral Suisse, un centre d'information sur la santé animale a été créé. Ce centre a pour objectif principal la collecte et centralisation des données en provenance de différentes sources (élevages, vétérinaires praticiens, laboratoires, abattoirs) avec des méthodes épidémiologiques appropriées dans le but de produire une information fiable et aussi exhaustive que possible sur la santé animale. Cette information est régulièrement retournée aux collecteurs de données ci-dessus mentionnés, ainsi que publiée et mise à disposition des autorités vétérinaires par le réseau électronique "InfoVet".

Des études épidémiologiques à court terme ainsi que des réseaux d'épidémiosurveillance permanents sont réalisés pour atteindre cet objectif. Des travaux préliminaires pour un réseau de surveillance permanent dans la production laitière ont été effectués. Ce réseau permettra la collecte de paramètres de santé des vaches et d'en étudier l'association avec certains facteurs d'influence dont l'appartenance à un programme de production particulier. Un réseau centralisant les données de tous les laboratoires de diagnostic vétérinaire en Suisse est également en développement. Une première phase de mise en route pour l'échange des données a été réalisée avec les données d'un seul laboratoire.

Ce centre répond au besoin croissant d'obtenir et de gérer des informations actualisées sur la santé animale, notamment concernant ses implications pour la santé publique et le bien-être animal.

INTRODUCTION

Objectives for animal health information systems have been presented (Morris, 1991; Dufour, 1995) as well as possible ways for its realisation in Switzerland (Stärk et al., 1996). It was a need of information on animal health that let the Swiss Federal Veterinary Office (FVO) initiate an Animal Health Information Centre (AHIC). All scientific information on animal health and its potential public health concerns will be centralised. Based on a growing public interest the AHIC will not exclusively concentrate on animal health but document the animal welfare status as well.

GENERAL CONCEPT

The AHIC produces information on animal health, animal well-being and the quality of animal products using epidemiological methods. This information is based on data collected at different levels, i. e. farms, veterinary practitioners, diagnostic laboratories, and slaughterhouses. As far as possible already collected data such as herd books, data bases of animal health services, agriculture census database as well as laboratory data are used (Figure 1). Beside livestock, wildlife and pets are important populations due to their importance in zoonoses and as potential reservoirs for infectious diseases. Data collected from various projects are verified and centralised in databases.

Used methods in epidemiological projects are depending on the respective questions. Epidemiosurveillance networks are of a particular importance. The AHIC intends to establish and support epidemiosurveillance networks in different animal populations. Epidemiological studies are carried out to establish new methods for data recording and data management and to get valuable information within a restricted time and budget frame.

It is one main task of the AHIC to disseminate the gained information and to collaborate to extension activities. Results from various networks and studies are combined in order to build an actual and reliable image of the animal health in Switzerland, its economic importance and its pertinence for public health. The information is used as an important scientific foundation to evaluate control and eradication programs. Veterinary services have access to electronic form of the information via the network InfoVet, an intranet for all government veterinary services in Switzerland (http://www.admin.ch/bvet/d/InfoVet/Index.html). Regular publications will contribute to sensitise the Society about animal and public health concerns.
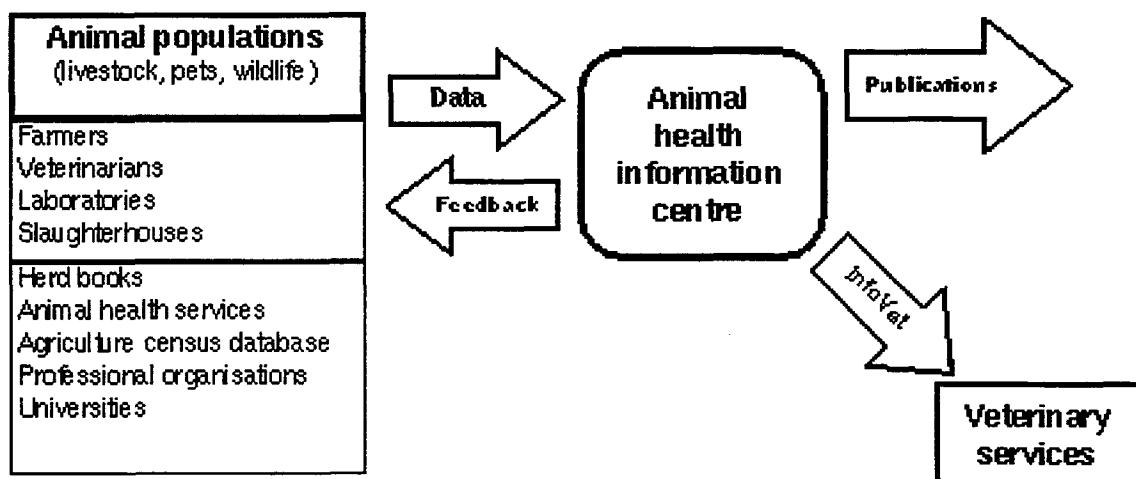
EPIDEMIOLOGICAL STUDIES

Cross sectional studies are used to document the prevalence of infectious diseases. Freedom of infection in brucellosis, tuberculosis, IBR and bovine leucosis is proved using an randomised sample of farms on an yearly basis. The seroprevalence of Newcastle disease virus in small chicken flocks and wild birds is being investigated (Schelling et al., 1997).

In addition longitudinal studies in the main livestock species let to health and productivity profiles for dairy cows (Frei-Stäheli et al., 1997) and pigs (Conzelmann et al., 1997).

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Figure 1
Data and information flows in the animal health information centre

EPIDEMIOSURVEILLANCE NETWORKS

Suspicion cases of a wide range of infectious diseases must be reported by veterinary practitioners, laboratories, animal holders and slaughterhouses (Anonymous, 1995). These reports are collected at the FVO, they are published in its official bulletin and reported to the OIE as appropriate.

To survey contagious diseases in horses, the surveillance network EQUINELLA has been established (Meier and Hauser, 1995). A selection of veterinary practitioners reports the occurrence of a range of diseases to the FVO. Weekly statistics are being reported in the official bulletin.

Dairy herd monitoring network

Dairy farming is the most important branch of swiss agriculture contributing more than 36 percent to the gross income of swiss farmers. Stärk and coworkers (1997) have shown that animal health in dairies causes great expenses. They amount 140 swiss francs per cow and year for direct disease related costs. Thus monitoring of animal health has been identified as an important task with a large potential benefit in reducing losses due to diseases in dairy farms.

A method to record animal health data on dairy farms in a long term monitoring network has been established (Krebs et al., 1997). In close collaboration with field veterinarians, farmers record disease events, preventive treatments and management practices. In addition animal welfare parameters are being monitored, to investigate the effect of subsidised production programs aimed at developing animal-friendly farming systems.

Diagnostic laboratory network

Diagnostic laboratories are important partners of veterinary practitioners, government veterinary services and animal health services in animal and public health surveillance. In various countries surveillance networks based on diagnostic laboratories have been established since a long time (Hall et al., 1980; McKenzie and Thompson, 1991; Bush and Gardner, 1995). The swiss network aims to connect all of the diagnostic laboratories, to collect data from selected investigations on a regular basis and to produce updated information.

In a first phase, availability and usability of data were investigated and an interface for data exchange proposed. For this purpose, all data of one diagnostic laboratory have been analysed. During one year, samples from 37'672 animals (61% from cows, 21% from cats and dogs, 8.3% from horses, 9.7% from others) have been processed in that laboratory. Among analyses performed, 72.4% concern bacteriology, 15.1% virology and serology and 12.5% others. The information available to these samples included identification of customers (mostly veterinary practitioner), identification of animal holders, types of material (blood, milk, etc), anamnesis, species, animal identifications, breed, age, sex, types of examination, results. Not all of the data were complete for all samples nor had all relevance for animal health surveillance.

Concentrating on the use of the data in epidemiosurveillance and taking into account the completeness of the existing data the following interface for data exchange has been proposed: identification of the customer, postal code of the location of the animal, general anamnesis, species, identification of the laboratory, examination, date and result of the examination. As a unique identification system for all animals is lacking in Switzerland, the postal code of the location of the animal gives a roughly indication where in the country an animal has been investigated. The general anamnesis enables to distinguish between samples taken from animals under the suspicion of a certain disease, control investigations in the context of animal trade and samples taken as part of

disease control programs. Examined infectious diseases are respected according to the federal ordinance for infectious diseases (Anonymous, 1995) which contains the List A and the relevant part for Switzerland of list B diseases of the international animal health code (O.I.E., 1996). But the system is basically open to any other disease relevant to Switzerland.

When submissions arrive in the laboratory a part of the information needed to each investigation is indicated on the accompanying forms used by veterinary practitioners. Laboratories are completing data records and report them to the central database. In order to obtain data of good quality the laboratories are encouraged to motivate their customers to send orders with accurate and fully completed forms. The existing laboratory information and management systems usually are not designed to collect data for epidemiological purposes. To accomplish the needs of the laboratory network modifications of laboratory information and management systems have been proposed. The publication of the interface for data exchange helps the laboratories to accomplish these modifications.

Communication follows the general concept of the AHIC. As an internal feedback each participating laboratory is served with tailored statistics which may be used for management purposes. Periodically published reports provide information on intensity of investigations as well as on trends of diseases in time and space. Government veterinary services access dynamically to the aggregated data using InfoVet. This intranet enables to compile statistics per disease, time period and region upon individual requests.

In a further phase, this network is being initiated with six out of 42 swiss veterinary diagnostic laboratories.

The laboratory network is an important part of the AHIC. Specific products of the laboratory network, e.g. up-to-date information on infectious disease status, trends in development of epidemics and information on examination activity complete the existing knowledge on animal health. Concentrating information on animal health from various sources within a centre will improve the decision making of the government veterinary services and will further enable a trustworthy communication of animal health issues.

ACKNOWLEDGEMENTS

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