

1996, issue 29 - Abstracts

Special issue, in tribute to Professor Louis Massé

ANIMALS' EPIDEMIOLOGY AND PUBLIC HEALTH'S PROTECTION

The Office international des epizooties, international system of notification of animal diseases

Chillaud (T)

After summarising the reasons for the existence of the international animal disease reporting system of the Office International des Epizooties (OIE), the author describes how the system operates and how the information thus obtained is disseminated. Lastly, he outlines the various avenues being explored by the OIE in the field of informatics and telecommunications with a view to facilitating access to this information.

French animal epidemiosurveillance networks and public health

Dufour (B)

After some general information about definitions, aims and the principles of a classification of animal épidémiosurveillance networks, the main animal epidemiosurveillance networks used in public health (zoonosis and food hygiene) are presented with their characteristics (geographical area, sampling or not, direct or indirect data collecting, independent or included granting). For each of them, a management scheme is shown.

National network of Public Health: a new device of epidemiology

Drucker (J) & Decludt (B)

The National Public Health Network has a general aim dedicated to coordinate and to reinforce intervention epidemiology in France: epidemics investigation, surveillance, evaluation, training and applied research in the fields of transmissible diseases and environment linked pathologies. From the central core of Saint-Maurice and its (Inter) Regional epidemiological satellites, cooperation networks, durable or not are developed with institutions or actors concerned by public health field. The Network is made of three units: Infectious diseases unit, Environmental health unit and Information systems unit. This paper presents the missions of the Network, its architecture and its actions.

Using geographical information system in a monitoring animal diseases system

Dubuc (M), Savard (F) & Raymond (J)

In the years of information technologies, several tools in computer statistics and communications are born in various scopes, like animal health or other scopes of interest. Various applications of information systems were worked out to promote and improve the working of surveillance system. This article presents a geographic information system developed by the "*Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec*" used in his monitoring disease system called "RAIZO" and various applications of this geographic information system.

Limitations of animal disease surveillance in Canada

Vaillancourt (JP) & Kellar (J)

Animal disease surveillance in Canada is facing numerous limitations. These are economic, political, socio-cultural, technological, as well as related to human resources and the transfer of information. It is in this context that the Ministry for Agriculture and Agri-food of Canada is proposing a partnership between the federal and the provincial governments, the food animal industries and the Universities.

The objective is to create a surveillance network designed to respond to the needs generated by the GATT and the North American Free Trade Agreement.

Epidemiology of listeriosis

Stainer (F) & Maillot (E)

Listeriosis epidemics which have occurred in France for some years have shown the actuality of risk in foodstuff. Epidemiological data we have point out the zero risk doesn't exist but options have to be envisaged by all the intervening parties involved in this set of problems: listeriosis prevention towards communication and management of risk and crisis if it happens.

Seroprevalence of *Coxiella burnetii* within a domestic cat population in Québec

Vallieres (A), Goyette (M), Bigras-Poulin (M), Morier (E), Artsob (H), Poirier (A) & Bouchard (J)

Following and outbreak of Q fever in Mauricie region, Québec, a seroprevalence study was carried out with the aim of finding the passible vectors of this zoonosis. The results show that 23.3 p. cent and 32.1 p. cent of the cats of two areas of Mauricie region gave positive results to an indirect immunofluorescence assay when the complement fixation test gave 16.9 p. cent and 17.9 p. cent of positive, respectively, on the same animals. This study puts into light the potential importance of domestic cat in the epidemiology of Q fever in Mauricie region.

Uremic haemolytic syndrome and infections by *E. coli* verotoxins producing

Decludt (B)

Verotoxins producing *Escherichia coli* (VTEC) infections have been known since about 15 years as a new public health problem in North America and Europe. Clinical signs of VTEC infections are diverse: diarrhoea, haemorrhagic colitis, haemolytic and uremic syndrome (SHU). The SHU is the main cause of acute kidney failure in the child, and its incidence within children under 15 years is from 1 to 2 per 100,000 inhabitants, following the countries. A transmission through bovine products in human alimentation seems to be the main cause for most of the epidemics linked to this bacteria, whose dominant serotype is O 157:H7. However, waterborne, animal or human linked transmission have also been described. The situation in France is not well known, but some SHU epidemics have been recently notified. A survey, linking together the National Public Health Network, the paediatric Nephrology Society, Institut Pasteur and Robert Debré Hospital microbiology laboratory is just now running. The aim of this survey will be to estimate the incidence of SHU, to investigate which strains are present and to analyse duster cases to identify the food origin.

Epidemiology of salmonellosis of animal origin

Lahellec (C)

Salmonellosis of animal strains have known, in the last years a present revival, because of different events. Among these events we may quote within others: The appearance of the phenomenon of *Salmonella enteritidis* in poultry. The outbreak of cases of salmonella in cattle but also the consumer's awareness (more and more important) of safety food problems. Different points are to be taken into consideration: The effect of carriage, or clinical salmonellosis in different animal species. The influence of breeding ways and the different stages of production on final infection of products. The measures of control are evoked, the stress-accent falls upon the importance of the cold chain. However, despite achieved efforts, the idea of admissible risk must be considered. The consumer's information must have a priority subject of concern.

Cat scratch disease and bacillary angiomatosis: recent developments

Chomel (B)

Cat scratch disease (CSOJ) was first described in France by Debré in 1950, yet the causative bacterial agent of CSD remained obscure until 1992, when *Bartonella* (formerly *Rochalimaea*) *henselae* was implicated in CSD by serological and microbiologic studies. *B. henselae* had been linked initially to bacillary angiomatosis (BA), a vascular proliferative disease most commonly associated with longstanding human immunodeficiency virus infection or other significant immunosuppression, but also bacillary peliosis, relapsing bacteraemia and endocarditis. Cats are healthy carriers of *B. henselae*, and can be bacteremic for months to years. We demonstrated that cat to cat transmission of the organism involves the cat flea in absence of direct contact transmission. Present knowledge on the etiologic, clinical features and epidemiological characteristics of cat scratch disease/bacillary angiomatosis are presented.

The wildlife zoonosis in Québec: from reality to an integrated interdisciplinary program, an opportunity

Belanger (D)

In Quebec, there are numerous and various wildlife habitats. A network of parks have been created in order to preserve and valorise the elements of the natural heritage, and make them accessible to the public. In the highly urbanized territories, parks have also been created in order to protect habitats under human pressure. The ecosystems called natural are visited more and more by tourists interested in ecology. In cities, the presence of wildlife could represent the last contact with realities of nature. Public health authorities are concerned with emerging zoonosis, such as Hantavirus and rabies in raccoon (*Procyon lotor*). Data on ecology and epidemiology on wildlife zoonosis are often incomplete in order to make risk assessment. There is a need to maximize data collection in the field and to archive tissues in order to understand the evolution of zoonosis in time and space, and be able to predict outbreaks. Interdisciplinary consultation meeting is a must, but we have to stay grounded to the preoccupation and ideas of concerned communities. Risk management has to be done with the respect of wildlife species in mind, their habitat and man.

Trichinellosis outbreaks in France (1975-1995). How to improve alert, control and prevention

Ancelle (T)

In 1975, trichinellosis became of Public Health importance in France. Between 1975 and 1995, six outbreaks occurred, and more than 1 700 cases were identified. These outbreaks were due to horsemeat consumed raw or poorly cooked. The carcasses had been imported from East Europa or North America, where trichinellosis is endemic among wild fauna. How horses became infected is still not known. In 1985, international rules imposed to examine for *Trichinella* all horse carcasses. Despite of these inspections, new outbreaks occurred. Therefore, vigilance should be maintained by improving alert, control and prevention.

Epidemiology of animal trichinellosis

Soulé (C) & Barrat (J)

Trichinellosis is one of the most widespread parasitic zoonosis in the world. It has been reported from about 150 mammalian species and also in birds. At present, five species have been recognised in the genus *Trichinella* and three populations have an uncertain taxonomic level. Trichinellosis is transmitted from one animal to another through the ingestion of flesh containing *Trichinella larvae*. Carnivores and scavengers have an important role in wildlife. In domestic animals, transmission occurs in pigs and rats. Herbivorous can be infected, especially equines. *Trichinella* distribution is reviewed in the five continents.

Microbiological surveillance and classification of shell-fish producing zones of French littoral

Catherine (M) & Raffin (B)

The French coastal microbiological monitoring network REMI is briefly described. The spatial coverage of the French coastline corresponds to 415 sites, extending over the shellfish production areas and wild stocks of the French seashore. The recent evolution of European and French sanitary regulations for the grading of shellfish production areas in shellfish groups, leads to an increase of the sampling activity. The shellfish will be sent either for direct selling or depurated function of the grade given to the shellfish production area. This grading will be changed according to the measured bacteriological levels.

Survey of antimicrobial resistance in pathogenic bacteria in animals

Martel (JL)

A national network, based on 40 regional veterinary diagnosis laboratories, is managed by a central reference laboratory in CNEVA Lyon. Highly standardized methods are used in these diagnosis laboratories. This network collects up-to-date information on antimicrobial resistance in veterinary isolates and gathers strains relevant for analysis of mechanisms of resistance to antibiotics. It could be connected to other compatible systems developed in other fields such as human medicine, food and environment, to evaluate importance of resistance and resistance factors spread for public health.

Epidemiology and control of fox rabies in France and Europe

Aubert (M)

The red fox (*Volpes vulpes*) is the reservoir and vector of rabies in Western Europe. Field trials to vaccinate it with vaccine-baits dispatched in the fields were carried out in Switzerland since 1985. When repeated twice a year in spring and autumn, for at least two years successively, this method was proven to be more efficacious to eliminate rabies than the destruction of fox population by shooting or gassing. Since 1986, the same technique was used and adapted in France with baits carrying various vaccines. By establishing an immunological barrier from the English Channel to the national border with Switzerland more than 630 km long and 35 to 80 km wide, the advance of the disease towards south was stopped. During the following years, the vaccination plan has been extended to cover the whole contaminated area in France (almost 141 700 sq. km). From 1989 to 1995, the rabies incidence has been decreased by 99 p. cent. Elimination of rabies in France is now depending on the treatment of the disease in the neighbouring countries. At least, 13 other European countries are vaccinating foxes against rabies. Currently over 14 million vaccine baits are dropped annually from aeroplanes or distributed by hunters. As a result of oral immunisation, there has been a sharp decrease in the number of rabies cases in animals in Western Europe. A complete elimination of rabies has been achieved over large areas where vaccination is no longer needed. Summing up the results of oral vaccination programs carried out in Europe, it appears that reinfections have occurred due to various causes: budgetary restrictions limiting either the number of campaigns or the size of the possible vaccination zones and also cross-border contamination. Today the clearing of the Western European peninsula from west to east appears technically possible but the increase of fox population, and the cost of these operations, are new challenge to be tackled.

National or interdepartmental epidemics of human salmonellosis: from surveillance to investigation

Desenclos (JC), Maillot (E) & Rebière (I)

Besides Salmonella surveillance from collective foodstuff toxi-infections legal notifications, the enterobacteriaceae reference national centre of "Institut Pasteur" realizes a Salmonella surveillance from the strains sent by medical biology analysis laboratories. Any unusual increase of one strain is notified to General Direction of Health and to National public health network. The network starts

immediately an exploratory survey to find out if it may be an epidemic phenomenon, with the possibility of a single origin. If this turns to be the case, a case-control study is realized to look for the origin. These surveys need the strong collaboration of the laboratories of the National Centre for Veterinary and Food Studies, who monitor Salmonella in farm productions, environment and food stuffs, as well as with General Direction for Food for foodstuff investigation.

The microbiologist physician and zoonosis

Jutras (P)

Zoonosis are a large group of infection diseases that are frequently underestimated. The clinicians must suspect, identify and treat the zoonosis accordingly. Numerous contributors are involved. The emerging zoonotic diseases must also be considered.

HACCP – Statistical Process Control applied to post mortem inspection and Risk analysis in Canadian abattoirs

Bisaillon (JR), Charlebois (R), Feltmate (T) & Labbé (Y)

Control measures currently used in federally registered abattoirs are briefly described. New inspection tools are being developed. The application of HACCP (Hazard Analysis Critical Control Point), covering all steps at the abattoir in the processing of animals into meat products, allows better control over microbial, physical and chemical hazards related to food production. Control of zoonotic conditions per se is still best achieved through organoleptic inspection (post-mortem inspection). The later may be subject to considerable change in Canada. Among changes under consideration are the utilisation of Statistical Process Control to assess the application of policy related to pathological defects and the use of Risk Analysis in the development of these policies.

Chemical contaminants in foods of animal origin

McEwen (SA)

Residues of chemical contaminants in foods are no longer of major public health concern, but they are important with respect to international trade and consumer confidence. The most contentious residues that occur in meat milk and eggs are antibacterial drugs, hormonal growth promoters and certain pesticides, heavy metals and industrial chemicals.

Unappreciated roles of the veterinarian in public health: social medicine versus individual medicine

Bigras-Poulin (M)

The Human-Animal relationship offers many advantages and some risks. The many changes that have occurred in human societies during the present century necessitates a re-evaluation of our attitudes toward public health. The objective of this presentation is to show the importance of the positive aspects of the Human-Animal relationship and of the veterinary profession on public health, which is different from the prevention of zoonosis. Veterinary public health is underdeveloped and a new mode of communication and dialogue must be found to allow the veterinary profession to play its complete role.

Human-animal interactions: research trends and examples relation animal-humans

Bonnett (B)

The main subject of this conference is public health aspects of human's exposure to animals. In focusing on food-borne and zoonotic disease it may be easy to lose sight of the many, more positive aspects of our relationship with animals. This paper will give a brief account of the multiple ways in which human lives, cultures and health are affected and enriched by the presence of and relationships

with other species, especially pets. Examples of current research in the area of human-animal interaction will be highlighted.

Animal origin psychosocial aspects

Gagnon (AC), Benoit (H) & Benoit (A)

This paper deals with two striking aspects of the human-animal bond: the place of the animals in the media (newspapers and television) and how pets have taken such an increasing importance, at the beginning of the 70th, making the wild and the farm animals becoming nonsense; from our own experiences, the relationship between children and their dogs, depending from the age of the children and the special behaviours they have from 1 to 6 years.