

2004 – issue 46, Abstracts

MEETING AEEMA-EPITER, MAY 13th, 2004

Diversity of zoonosis. Definitions and consequences for their surveillance and control

M. Savey & Barbara Dufour

Zoonosis are transmissible diseases between animals and man, of infectious (including prions) or parasitological origin. The classical definition (WHO, 1959) can be improved according to more recent knowledge and present risk perception. A new definition is proposed starting from Teufel and Hubalek contributions. Incorporation of Ashford's definition of reservoir, reservoir host, incidental host, liaison host, provides a new and very useful way of understanding zoonosis epidemiological cycles and zoonotic agents' fate. Factors considered in the appreciation of zoonotic diseases importance both from the human and animal side point of view are reviewed. Three recent emerging or re-emerging zoonotic problems (cow-pox, *Mycobacterium bovis* infection, neurocysticercosis) linked to a major modification in the hosts/reservoir relationship are summarised. Theoretical control possibilities and prerequisite questions before priority setting exercise are summarised in order to implement the best public health decisions for zoonotic diseases.

Importance and prioritisation of zoonosis in public health

Isabelle Capek, Véronique Vaillant, Alexandra Mailles & Henriette de Valk

To quantify the impact of food-borne diseases and non-food-borne zoonosis on health and to set priorities for data collection, prevention and control of these diseases, the *Institut de veille sanitaire* carried out two studies with different methodologies. The first study was a priority setting exercise for non-foodborne zoonosis in 2000-2001: the second one estimated the morbidity and mortality due to food-borne infectious diseases in mainland France in the last decade of the twentieth century. The process of prioritization was carried out by a working group consisting of public health experts from human and veterinary institutions have carried out the process. This process involved group discussions, individual assessment and expert opinions. In the second study, the number of food-borne infections, hospitalisations and deaths due to 23 pathogens, were estimated from multiple different available data sources. For each agent, several estimates were derived from the different data sources using a method adapted to the nature of the available data and to the pathogen and illness under study. Estimates were ranked according to their plausibility, based on an assessment of the characteristics of the data source, comparison with foreign estimates and expert opinion.

Importance and prioritisation of zoonosis in France: the standpoint of the veterinary surgeon

J-P. Ganière

Two criteria make it possible to define the importance of the zoonosis in the livestock: economic impact in animals, gravity and frequency of diseases in humans. With a few exceptions, their hierarchisation shows that zoonosis mainly doesn't form part of the diseases most alarming (by their direct or indirect impact on the health or the zootechnical performances of the animals) in stock breeding. However, the zoonotic risk, in particular when

it is related to the food and even in the absence of impact on the health of animals, compromises more and more the economic future of the breeding. On the contrary, the importance of the diseases (zoonosis or not) in the pets is primarily related to their affective value. With a few exceptions, zoonosis in pets do not appear among the diseases clinically most important and majority are unapparent (crypto-zoonosis).

Diversity of zoonosis methods of control

Barbara Dufour & M. Savey

The most important aim of zoonosis control is the protection of public health. The intensity and the design of action should be linked, on the one hand, to the disease consequences at human (severity and frequency) and, on the other hand, to the analytical epidemiology elements specific to each zoonosis. Thus, good knowledge of the reservoirs, the sources of infection, the methods of transmission as well as the human host receptivity for each zoonosis is essential. In fact, the various actions of control are extremely variable: they can target the reservoir or the liaison hosts (when they exist) control or vector control when it exists or they can be restricted to (hygienic or medical) control at the human level. Most often, the zoonosis control requires various specific ways combined for each disease.

Concerted control of rabies

H. Bourhy, Virginie Bruyère-Masson, Alexandra Mailles & F. Moutou

In the past few years, we have seen a dramatic change in the epidemiology of rabies in France. As a result, the study of rabies control systems and how to modify them according to such epidemiological changes is central to successfully control a zoonosis.

Fasciolosis control

R. Houin

Human fasciolosis is a severe disease. It became quite rare following prevention rules, even if partly applied only. Cattle is the usual reservoir of the parasite. The infective larvae (metacercaria) encyst on a plant, then ingested by the definitive host: watercress is mainly concerned for human contamination. Commercial cress farming is controlled according to local safety rules (*règlement sanitaire départemental*). Epidemics result from its poor application. Cress farms must be protected from any entry of stock breeding sewage. The potentially dangerous snails (*Galba truncatula*) must be detected and destroyed, especially if pullulating. An imported rodent, *Myocastor coypus*, very receptive, was recently demonstrated able to maintain the transmission by itself, to cattle, and to man as well. Fasciolosis control needs an enforcement of safety rules and their strict application. Nutria have also to be destroyed as far as possible, and snails regularly sought.

Concerted control of West Nile infection

S. Zientara, B. Durand & Alexandra Mailles

The West Nile virus has been isolated in 2000 and 2003 in the South of France. A close collaboration between the different actors of the veterinary and human health is needed in order to control this disease. The different partners and the nature of their relationships are described.

COMMUNICATIONS, MAY 14th, 2004

Development methodology of performance indicators of animal disease epidemiological surveillance networks

P. Hendriks & Barbara Dufour

Performance indicators are quantitative tools for assessing the correct operation of epidemiological surveillance networks. They are used by the co-ordinators for the continuous monitoring of their network. Development of indicators proceeds in five stages: (i) description of the environment and the operation of the network, (ii) determination of the top priority of the activities of the network, (iii) construction of the dashboards and the performance indicators, (iv) implementation and follow-up of the system, (v) audit and update of the performance indicators. Similar to a quality insurance procedure, development of performance indicators is an internal project that requires a strategic decision, a qualified person to assume the responsibility of this work and the commitment of all categories of actors of the network. It is therefore a very structuring step for the epidemiological surveillance networks.

The Harvard Model and the Geographical BSE-Risk (GBR): two surrogate major BSE risk assessment models

L. Plée

The Harvard Model was found to address exclusively the consequences of the import of BSE infectivity, either through live infected animals or infected Meat and Bone Meal. Its flexibility allowed determining the main factors (factors of stability) protecting respective countries against the amplification or the spreading of the BSE agent within their borders. On the other hand, the GBR considered only the likelihood of having the BSE agent within the borders, at a certain point of time, in a strictly qualitative way. A link between the Harvard Model and the GBR will have to be implemented in order to assess more accurately and more completely any risk assessment regarding BSE.

The control of zoonosis in wild animals in Romania during the last two years

Ş. Nicolae & A. Stoichici

Zoonosis, in wild animals, are controlled by programs for systematic diagnosis of animal's diseases. They represent a continuous concern for the veterinary services. The incidence and evolution of these diseases have been correlated with the breeding system in the sylvatic environment and the geographic area. Trichinellosis and rabies are diseases frequently diagnosed in wild animals. Trichinellosis in wild animals evolves differently in comparison to domestic pigs but it is the source of infection for many cases in human beings. Rabies in Romania evolves especially in wild animals such as foxes, wolves and cats. The sources of infection are represented by the infected wild boars, bears and foxes either in death agony or already dead. Wild life maintenance of zoonosis was determined by the increase in extensity and intensity of infection in wild animals, deficiencies in collecting the dead wild animals and the uncontrolled movement of wild animals.

BSE in Catalonia: descriptive epidemiology (2001-September 2004) and simulation model

Anna Alba, A. Allepuz, D. Sanchez-Cabré & J. Casal

This paper presents a descriptive epidemiological study on Bovine spongiform encephalopathy (BSE) in Catalonia (Spain) and a simulation model, based on diagnostic data gathered between 2001 and September 2004, to forecast the possible evolution of this epidemic. Data were provided by the Integral Program of Surveillance and Control of spongiform encephalopathy in Catalonia. The proportion of positive animals in 2000-2004 was five cases per every 10,000 cattle analysed. Proportion of confirmed cases among suspected animals was very low in comparison with other countries. In contrast, diagnoses for animals found dead on farm has been increasing between 2001 and 2003. Most positive cases were Holstein-Friesian cattle and the mean age was 6.7 years. The prediction obtained from our model indicates a steady decline of BSE incidence for the next years; however few cases are expected to appear until 2009.

EPIDEMIOLOGY PAPERS

Advisability of a distance learning in epidemiology

J-J. Bénet, Laure Weber, J. Thonnat, Barbara Dufour, F. Roger & B. Toma

Before the set-up of a new offer of distance e-learning in epidemiology directed to French speaking learners, the *Ecole Nationale Vétérinaire d'Alfort* and the Cirad-Emvt have realised an opportunity study to define the needs in France and French speaking Africa. 36 people representative of different professional areas using epidemiology have been interviewed (11 in France and 25 in French speaking Africa, resulting in a questionnaire (closed or open questions). This questionnaire has been used for 51 other people also representative of different professional areas (50 in France and 14 in Africa). The study has confirmed the existence of important needs and the validity of a new offer of distance learning. Moreover, a common formation product offering facilities for individual needs, could satisfy French and African veterinary.

Evaluation of the distance learning 2004 session on the animal epidemiological bases

B. Toma, J-J. Bénet & Barbara Dufour

The fourteen people having finished the distance learning 2004 session on the animal epidemiological bases were questioned using two questionnaires on their level of training objectives success of and on their dissatisfaction or satisfaction degree. The results vary much according to persons. With regard to the training objectives success expressed by the people, the average passed from 8,6/20 before the formation to 16,1/20 afterwards. The range of the profit resulting from the formation goes from a null level (for one people) to a total objectives success. As regards satisfaction/dissatisfaction, the average of the group is 14,8/20, with extremes of 9,9/20 and 20/20. Various difficulties were identified as of the proposals for an improvement which will be made profitable for the preparation of the 2005 session.

HISTORY

History of the FNGDSB Scientific Commission

M. Plommet, A. Blandin, Barbara Dufour & B. Toma

The *Fédération nationale des groupements de défense sanitaire du bétail* (FNGDSB) has settled in 1979 a Scientific Commission, to get lights, knowledge and advises. This Commission gathered seven Scientifics and some members of the FNGDSB. Nineteen meetings have been held between 1979 and 1996. Many actual problems have been approached, mostly about infectious diseases: IBR, rabies, bovine leucosis, paratuberculosis, salmonellosis, abortions, foot and mouth disease, tuberculosis... In many occasions, this Commission has been able to anticipate and prepare the necessary evolution of the sanitary rules. This short story proves how near are the scientific collective expertise and the risk management.