

2007 – Issue 52, Abstracts

AEEMA MEETING, MAY 31st, 2007: EPIDEMIOLOGY, RISK EVALUATION AND COMMUNICATION ON RISKS

Epidemiology, risk evaluation and communication on risks: Definitions, basic concepts and problem setting

Barbara Dufour

The terminology of risk analysis is presented, with emphasis on the difference between risk assessment and risk evaluation. Whereas a clear distinction between risk assessment and risk management was one principle on which the sanitary agencies were created in France, the place of risk evaluation (comparison with an acceptable level of risk) is still debated between scientists and decision makers. Lastly it is pointed out that communication on risks should address all the steps and involve all the actors of risk analysis.

How to inform and communicate in the area of scientific evaluation of health risks

Valérie Leydet

The communication by a scientific organisation involved in health safety should be a rigorous and integrative process based on a number of parameters, the most important of which is the general public who should be given intelligible messages to maintain their trust and attention. In order to produce independent and transparent messages, we should make every effort to improve communication vectors to the outside as well as the content and the presentation of our messages, with consideration to what, when, how and to whom we communicate. We are constantly experiencing difficulties inherent in the subject matter as civil society wants to have immediate access to increasingly varied information while research - especially reviews and collective expert work - require much more time.

A few remarks on the concept of acceptable risk

J. Gayet

In the author's view, acceptable risk should be defined as risk that may be accepted by the general public. As examples, the author discusses a few major crises occurring in France that contributed to the distrust and to emotional reactions of the general public. He also offers suggestions regarding potential solutions, particularly collaboration with the news media and communications on risk.

Risk management and communication

O. Faugère & D. Boisseleau

Based on several recent examples, risk managers review the basic principles of risk analysis and risk management. Suggestions are being made for giving a better definition of acceptable risk, a clearer distribution of responsibilities and a better coordination between risk evaluators and risk managers. Since most decisions have to be made in emergency situations, provisions should be made for a systematic feed-back in order to optimize public action.

Information in an area of uncertainty. The case of mobile phone antennas

Danielle Salomon

In the field of environmental health, a number of subjects and activities raise questions, and generate doubts and anxieties. The expansion of mobile phones antennas sets a remarkable example of a situation where institutional processes were not able to respond properly to public concerns. Social movements have led to conflicting dynamics designed to disqualify the opponents. A detailed analysis of such dynamics and of the strategies of opposing groups demonstrates that each party develops a social and cognitive system of its own, or an autonomous information system, designed to recruit allies and to generate alternative cognitive references. The more acute the conflict is, the less chances there are that data and information produced by either group, - especially scientific and institutional expert reports - can spread and fulfil their mission of serving as a common reference.

Journalism in front of crisis and sanitary difficulties

J-Y. Nau

Starting from two recent crises in health' related problems (mad cow disease and avian flu), the author offers an analysis of the complex interrelations between journalists, experts and politicians and of the role assumed by news media in communications on major sanitary problems.

AEEMA MEETING, JUNE 1st 2007

Influence of efficacy of pig pen cleaning and disinfecting procedures on the prevalence of *Salmonella* carriers among pigs at slaughter from farrow-to-finish farms

Amandine Lurette, Catherine Belloc, Suzanne Touzeau, T. Hoch, H. Seegers & Christine Fourichon

The control of *Salmonella* carriers has been a major objective of the pork industry, particularly since the new European regulation on zoonosis was adopted in 2004. The prevalence of asymptomatic carrier pigs at slaughter age is a critical point in the contamination of the food chain. The objective of this study was to assess the effect of herd management and of the efficacy of cleaning-disinfecting procedures on the prevalence of carriers in groups of pigs delivered to the slaughterhouse. We developed a stochastic mathematical model to simulate the dynamics of the pig population, herd management and *Salmonella* transmission within a farrow-to-finish herd. Transmission between pigs is contingent on the contamination level of the pen floor on which the animals are reared. This contamination level is related to the number of shedder pigs in the pen and to the efficacy of the cleaning-disinfecting procedures. Several scenarios combining various levels of efficacy in the cleaning-disinfecting procedures with two types of batch management systems and with or without batch mixing at the end of the finishing period were tested. The *Salmonella* seroprevalence in groups of pigs at slaughter was significantly higher whenever the efficacy in cleaning-disinfecting was lower. The levels of seroprevalence in groups of pigs at slaughter were close for cleaning-disinfecting efficacies between 99.9% and 90%, whatever the batch management tested. The seroprevalence increased significantly with a decontamination rate of only 80%. This increase was higher when this low level of efficacy was combined with herd management involving batch mixing

rather than straight batch management. Our results suggest that implementation of strict hygiene can effectively keep the prevalence of Salmonella infection at a low level.

Surveillance network for avian influenza in wild birds in Catalonia, Spain

Anna Alba, Natàlia Majo, Nùria Busquets & J. Casal

During 2006 the surveillance of type A avian influenza viruses in wild birds continued, in order to detect the circulation of high and low pathogenicity strains of avian Influenza viruses (LPAIV,HPAIV). The population under study included mostly aquatic bird species of wetlands that pose the greatest risk regarding the number, the origin of the flyway and the likelihood of contact with domestic birds. In year 2006, we sampled a total of 778 birds, among whom 300 individuals were obtained by active surveillance, 293 by passive surveillance and 185 by sentinels. These samples were tested by real time PCR for the presence of the genome of the bird flu virus. Replication and subtyping were then carried out on all positive samples. Of the 593 samples from *Anas platyrhynchos* examined, nine yielded positive results, 44 could not be assessed and 540 gave negative results. All sentinel samples resulted negative. Of the nine positive samples, four were replicated in embryonic eggs and were subtyped, detecting subtypes H4N6, H3N8 and H6N8. The strains of low pathogenicity (H6, H4 and H3) detected in Catalonia were equivalent to the most common viral strains reported in Europe and Canada. The sequencing and comparison showed that, in terms of evolution, the H6N8 virus detected in Spain was close to other H6N8 viruses detected in the Netherlands. The phylogenetic trees of the Spanish H6N8 virus confirmed the similarity of these isolated strains with other strains from other countries located on the same migratory routes (from North and Central Europe to Africa).

EPIDEMIOLOGY PAPERS

Statistical investigation of antibiotics multi-resistance in *Escherichia coli* strains isolated from bovines from 2002 to 2005

Elise Kayser, E. Morignat, Danièle Meunier, J-Y. Madec, D. Calavas & Marie-Anne Botrel

Multi-resistance to antibiotics is increasingly a matter of concern for human and animal health for the maintenance of antibiotic efficacy in the treatment of infectious diseases. However, this problem is not given the proper attention in the surveys published by the antibiotic resistance networks. A quantitative approach in the treatment of the data on antibiotic multi-resistance collected by the networks is proposed. The objective was to identify associated resistance to antibiotics in *Escherichia coli* strains isolated from bovines and to determine if these associations changed between the periods 2002-2003 and 2004-2005. The first aspect was treated by Multiple Correspondence Analysis and Hierarchical Ascending Classification. Changes over time were analysed using a log- linear model. The data were obtained from the Resapath network. Nine antibiotics or groups of antibiotics were studied. Three groups of multi-resistance were identified and bacteriological hypotheses are discussed.

Epidemiological progress of the H5N1 HPAI epizootic throughout Europe between 2005 and August 2007

Julie Poirot & Barbara Dufour

The H5N1 highly pathogenic avian influenza subtype of Asian origin arrived in Europe in the fall of 2005. Since then, the virus has moved from East to West, spreading across 24 countries all over geographic Europe. This article deals with the progress of the epizootic disease within wildlife and domesticated fowl and reviews analytically the various factors that may account for the introduction and the spread of the virus in Europe.

The 2007 Foot-and-Mouth disease epidemic in Great-Britain

Morgane Dominguez & Anne-Marie Hattenberger

Between August 3, 2007, and September 29, 2007, eight farms infected by Foot-and- Mouth disease were found in Surrey, in the south-east of the United-Kingdom. A laboratory was identified as the source of the initial contamination. Secondary cases appeared because of a delay in the detection of one of the primary premises. This outbreak shows that, despite bio-security measures, breaches may occur. Thus, it is critical that all professionals remain alert to exotic and highly communicable diseases such as Foot and Mouth disease.