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AEEMA MEETING - MAY 20th, 2021: WHAT CHANGES FOR THE MANAGEMENT OF ANIMALS' HEALTH CRISES?

The management of animals' health crises: framing and introduction to the meeting

Rivière Julie & Dufour Barbara

The etymology of the word "crisis" refers to the double meaning of the word. First, crisis, in medieval Latin, means violent, brutal manifestation of an illness. Then, the Greek *krisis* means judgment, decision. Even if many definitions exist for crises, without consensus however, they all recognize the notion of an event that disturbs and unbalances the existing management mechanisms, and that requires, with a sense of urgency, a reorganization of these mechanisms, involving the intervention of public authorities and placing the collective interest above the particular interest. Moreover, uncertainty (about the evolution and processes triggered by the change) is also part of the common points of the different existing definitions of crisis.

A crisis can be of various types: sanitary (epidemic, collective food poisoning...), political (bioterrorism, attacks...), environmental (floods, heat waves, hurricanes...), economic (highly pathogenic avian influenza), media (COVID-19) ...

In the context of health crises, a definition is proposed: "any serious health incident that exceeds by its magnitude the planned and applied control methods, accompanied by a great uncertainty".

The management of these crises, and in particular of health crises, covers different fields, from prevention to the fight against the health incident, through surveillance and preparation to the fight. However, the management of health crises can vary from country to country and evolve over time. Indeed, several types of determinants can influence the management of these crises: sociological, technical, economical, political, environmental…

Evolution of society's perception and social acceptability of sanitary control measures

Gardon Sébastien

The issues of perception and social acceptability raise very high expectations on the part of decision-makers, managers and study sponsors. The latter hope to be able to position their cursor as well as possible between what is possible to put in place and what is not in their range of measures or policies that may be more or less acceptable to the populations or certain categories of actors. Conversely, social scientists very rarely ask themselves whether a situation or measure is acceptable or not to a population or actors. This is very rarely a chosen entry point into a research field and will remain at best the question of the study's sponsors. It is therefore a 'false' good question for sociologists and students are advised not to start a social science investigation with this dimension. In sociology, the fact of knowing whether actors accept, accept something or how they accept it, is therefore of little relevance, because it is considered that actors act more by constraint or self-determination (Durkheimian sociology) or in complex and dynamic action contexts over which they have some margin of action (organizational, pragmatic or interactionist sociology).

Considering them as social actors makes it possible to evacuate the question of acceptability because they do not really have the possibility of accepting or not their situation: they live it, appropriate it and adapt to it as best they can with different mechanisms and strategies. This presentation will return to the way in which sociologists deal with the question of the acceptability of control measures, particularly in their relationship with sponsors. We will

draw on the experience of work and surveys conducted over the past 10 years at the *École Nationale des Services Vétérinaires (VetAgro Sup)* as part of the PAGERS Master's programme developed in partnership with *SciencesPo Lyon*. We will then discuss how the unprecedented health context that we have been experiencing for over a year now is upsetting our relationship to acceptability. We will then return to this question from the point of view of public action instruments and biosafety mechanisms for governing health.

Evolution of the Health governance: to adapt the French health system to the new challenges

Angot Jean-Luc

In 2010, the General Health Meetings were held, bringing together all stakeholders, with a view to improving surveillance, prevention and responsiveness in the animal health sector, consolidating and pooling risk analysis tools, to strengthen skills and optimize governance and funding.

The aim was to adapt the French health system, already efficient, to the requirements of new challenges, in European and global contexts.

New challenges for risk management in animal health

Salvat Gilles

Culling of positive herds is still the method used by many countries for keeping their free status for animal infectious diseases of major concern. Increasing social demand for animal welfare, economic burden of eradication policies, more intensive breeding and/or development of free-range breeding, development of more accurate and faster point of care diagnostic and characterization methods, development of more reliable vaccines enabling differentiation of infected and vaccinated animals (DIVA) will probably affects animal health risk management methods in a near future.

Evolution of preparedness for the management of animal disease crisis

Rautureau Séverine

The national contingency plan (PNISU) in animal health is the outcome of the review of emergency plans for animal disease, initiated following the General Assembly of public health in 2010. The PNISU aims to define the national framework for preparedness and response to health hazard threats. This new plan also provides operational tools for its application and appropriation.

Operational preparedness at the local level, particularly for the French *'Département'*, is carried out within the framework of the Civil Security Response Organization (ORSEC). The ORSEC system is based on general measures defining an organization that is able to adapt to any type of event, to which are added specific measures to epizootics. All stakeholders must be prepared to react and quickly implement control measures. Planning the actions to be carried out and regular exercises keep their operationality and coordination. This should therefore allow for control any type of epizootic, or even other health events impacting animal health.

Towards bovine tuberculosis eradication in Republic of Ireland, including European badgers' vaccination - a review

Lesellier Sandrine

Where the epidemiology of bovine tuberculosis (bTB) involves interactions between multi-host species for *Mycobacterium bovis* (for example, livestock and wildlife), progress towards

eradication requires a suite of control measures that addresses all sources of infection to reduce transmission within and between species. The Republic of Ireland (RoI) has recognized the important role that badgers play in the epidemiology of the disease and has made important progresses in the control of TB in badgers (Meles meles) to eradicate bTB from the national herds. Until recently, culling of badgers in areas of high cattle bTB incidence was an integral part of the disease eradication program. However, this policy has proven to be controversial and not considered sustainable in the long-term. Vaccination of badgers is promoted as an alternative strategy to control the disease in this species. Many experimental studies have shown that the BCG vaccine is effective in reducing the severity of disease in captive badgers and vaccine field trials have demonstrated a reduced incidence of disease in vaccinated populations. The injectable BadgerBCG® was licensed for field use in the UK in 2010 and a recent non-inferiority trial in Ireland has shown that the outcome of badgers' vaccination on cattle bTB rates was no worse than culling, in a number of the areas studied.
Vaccination of badgers with injectable BCG is now part of the Irish bTB national eradication strategy and studies are ongoing to assess the impact of badger vaccination on local cattle bTB rates. Replacing susceptible populations of badgers in bTB endemic areas with predominantly vaccinated and immune protected badgers is expected to result in fewer bTB infected badgers, a lower incidence of badgers infecting other badgers or cattle, and contribute to the eradication of tuberculosis from Ireland's cattle population. The bTB testing program can then be re-focused to address and eliminate cattle-cattle spread. The objective of the Irish bTB eradication strategy is to achieve Official TB Free (OTF) status by 2030.

Management of foot-and-mouth disease in Mauritius and Rodrigues: A vaccine strategy for eradication

Cardinale Éric *et al*.

Livestock plays a central place in the economy of Mauritius and Rodrigues and an undeniable social role. Foot-and-mouth disease occurred in Rodrigues on July 7th, 2016 and in Mauritius, the first case was identified on August 1st, 2016. Serotype O was identified by serology and RT-PCR. The control measures decided by the government consisted of the stamping out of animals present in the outbreaks and preventive vaccination for the rest of the sensitive animals. This crisis made it possible to set up effective animal health surveillance in the territory, improve animal traceability and strengthen border controls. A cost / benefit analysis confirmed the effectiveness of the measures taken by the government.

Health and biodiversity during Anthropocene

Moutou François

The many emergences of epidemics, epizootics, or even pandemics during the last two or three decades, ask a lot of questions. How is it possible to understand all these microbial diseases, sometimes quite serious, but always not foreseen in their evolution as well as in their natural history? The field of microbiology is now much broader than last century when taking into account the reality of the existence of such a large diversity of microorganisms, so many being still unknown, to be discovered and to be studied. The difficulty is that two possible points of view are facing each other. On one side, wildlife can be seen as a large reservoir of possible new pathogens, and so, should be observed and managed with caution. On the other side, wild biodiversity is in danger of extinction today and this regression may be the real threat for human health, as well as for the health of domestic animals. What could be the arguments for both positions? Today, what is the importance of human beings in this

confrontation, at the beginning of the 21th century? Is the concept of Anthropocene able to help epidemiology and epidemiologists?

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