

COOPERATION BETWEEN THE CODEX ALIMENTARIUS COMMISSION AND THE OIE ON FOOD SAFETY THROUGHOUT THE FOOD CHAIN

OIE Working Group on Animal Production Food Safety

1. Introduction

Food safety is an issue of increasing concern world wide and prioritisation of food safety as an essential public health function was advocated recently by the World Health Assembly. Better monitoring and surveillance demonstrates that the main burden of food-borne disease is due to microbiological pathogens of animal origin and this has important implications for the veterinary profession at both the international and the national level. The possibility of chemical residues in food is also causing growing anxiety amongst consumers.

In a contemporary food safety environment, veterinarians and other health professionals have an essential and rapidly changing role in the prevention and control of food-borne zoonoses (even when animals are not clinically affected), other sources of food-borne disease and chemical contaminants of foods. In many situations, this role is achieved in parallel to prevention and control of diseases and conditions of animal health importance.

A 'production-to-consumption', risk-based approach to food control demands integrated involvement throughout the food chain¹. Where zoonoses are concerned, it is clear that there is an overlap between public health and animal health objectives, and a duality of veterinary functions. Veterinary competence can also be shared even when public health and animal health objectives are separate and distinct, and a number of countries are exploring such synergies in the reform of regulatory systems.

The World Organization for Animal Health (OIE) has a SPS responsibility for elaborating standards and related texts for the prevention, control and eradication of animal diseases and zoonoses, while the Codex Alimentarius Commission (CAC) elaborates standards and related texts for both safety and suitability aspects of food control. CAC and the OIE have strategies and mechanisms in place to co-ordinate and integrate food safety activities across the production to consumption continuum and so enhance the safety of foods of animal origin on a world-wide basis. A part of OIE's strategy was the setting up of a permanent Working Group on Animal Production Food Safety to review, develop and/or contribute to international food safety standards and guidelines, incorporating good animal production practice (including veterinary aspects) as it relates to food safety and taking into account a risk-based 'production to consumption' approach.

With regard to strategies and mechanisms to integrate and implement food safety activities and develop good animal production practices, the OIE and the CAC work in close collaboration and with the support of the specialised services in FAO and WHO².

¹ Production could be interpreted in such a broad manner as to cover food producing animals, feed, fertilisers, pesticides, veterinary drugs and any input of plant or animal origin, etc. If relevant for specific applications of traceability/product tracing to food.

² A tripartite FAO/WHO/OIE mechanism has been established for improved cooperation between the three organisations.

The OIE Working Group on Animal Production Food Safety has developed a work programme to enhance the effectiveness of Veterinary Services³ in improving food safety at both the international and national levels. The Working Group will advise the Director General on implementation of the OIE strategy regarding⁴:

- a) considering all food-borne hazards arising from animals according to global food safety priorities;
- b) reviewing OIE outputs to ensure animal production food safety is integrated in OIE Specialist Commissions and *ad hoc* Group activities;
- c) fully contributing to food standards development by CAC.

This paper proposes an approach on the inter-related roles and functionality of Veterinary Services in the outputs of OIE and CAC.

2. Elements of the contemporary food safety environment

2.1 Risk analysis

The emergence of risk-based approaches in elaboration of international standards has been highly influenced by the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). A primary tenet of this Agreement is that “Members shall ensure that their sanitary and phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal, or plant life or health, taking into account risk assessment techniques developed by the relevant international organisations”.

In developing the OIE *Terrestrial Animal Health Code*, OIE focuses on standards for specified hazards of biological origin. In contrast, CAC has primarily addressed biological hazards in food by developing general hygiene provisions e.g. codes of practice for different food commodities, as well as addressing chemical hazards by establishing maximum limits and codes of practice for the reduction of levels of chemical hazards.

Risk analysis offers new opportunities to OIE and CAC in the elaboration of optimal sanitary measures, either as international standards or as technical advice to national governments. In the case of food safety, improvements must be brought about in the face of ever-changing patterns of primary production, processing technology and consumer behaviour.

The application of a generic risk management framework is increasingly being recognised as a cross-sectoral means of bringing about a reduction in risks to human and animal health⁵ (see below).

2.2 Assessment and management of hazards and risks

Consideration of all food-borne hazards and their significance in terms of risks to human health is an essential food safety activity and a core component of HACCP. Most food-borne hazards of animal origin will be either intrinsic to the live animal (as a result of production or environmental factors) or introduced during handling and processing of the product.

³ For the purposes of this paper, ‘Veterinary Services’ is an Official Inspection System as defined in the CAC Guidelines for the Design, Operation, Assessment and Accreditation of Food Import and Export Inspection and Certification Systems. In OIE, “Veterinary Services” means the Veterinary Administration, all the Veterinary Authorities, and all persons authorised, registered or licensed by the Veterinary statutory body.

⁴ Report of the meeting of the OIE *ad hoc* Group on Food Safety. Paris, 18-19 April 2002.

⁵ Risk Analysis in Biosecurity for Food and Agriculture by S. C. Hathaway. *In*: Report of an Expert Consultation on Biosecurity in Food and Agriculture. FAO, Rome 10-13 September 2002.

Food safety hazards arising from animals can be grouped into several categories e.g. zoonoses resulting from clinical disease in animals, zoonoses resulting from asymptomatic infections in animals, and chemical sources.

Hazards can also be introduced into the food chain from environmental sources, and can obviously result from occupational exposure. As some food-borne risks may occur independently of the consumption of animal products e.g. contamination via irrigation of vegetables with animal-derived pathogens, these pathways also need to be considered in terms of prevention and control.

At the same time, hazards of animal health significance that can be detected in animal populations need to be identified and managed.

Management of all these hazards by Veterinary Services needs to be carried out in a way which optimises the use of available resources.

2.3 'Production-to-consumption' approach

Currently, Codex General Principles of Food Hygiene and other Codex codes of practice relevant to food of animal origin constitute one expression of a 'production-to-consumption' approach to food control. However, for the most part, they only include general references to primary production at the farm level.

The Code of Hygienic Practice for Meat (CAC/RCP 58-2005) identifies a number of generic segments in the food chain and these could be used as a partial template in the elaboration of standards for veterinary⁶ involvement in meat hygiene activities throughout the food chain. It should be noted that many aspects of meat hygiene require iterative loops between different segments in the food chain for optimal risk management. Effective functioning of good hygienic practice (GHP) and HACCP is reliant on such information exchange.

Several other OIE and Codex standards can be utilised to describe veterinary involvement in food safety throughout the food chain e.g., Principles for Food Import and Export Inspection and Certification (CAC/GL 20 - 1995), Code of Practice on Good Animal Feeding (CAC/RCP 54-2004). A range of stakeholders may be involved in the implementation of food safety controls e.g. regulatory authorities, industry and the public, and measures that are decided on may not necessarily be mandatory regulatory controls e.g. consumer education in safe food handling practices.

There should be an integrated approach to the design and implementation of regulatory systems covering the 'production-to-consumption' continuum. This approach should include:

- a) monitoring and surveillance at the farm level, including consideration of data from non-regulatory sources, and monitoring at other steps in the food chain, including meat inspection;
- b) monitoring and risk management of the use of veterinary drugs, including antimicrobial resistance;
- c) exchange of monitoring information with all interested parties;

⁶ The same principles that apply to *Veterinary Services* should also apply in countries where the responsibility for establishing or applying animal health measures is exercised by an organisation other than the *Veterinary Services* or by an authority or agency on behalf of the *Veterinary Services*. (See Article 1.3.3.1 of the *Terrestrial Code*.)

- d) animal identification systems and traceability of animal products;
- e) utilisation of diagnostic tests;
- f) assessment / recognition of the competence of food safety authorities in exporting countries;
- g) certification and official assurances;
- h) emergency response capability;
- i) integrated database management, epidemiological investigations and predictive microbiology;
- j) potential effects on food safety of the transport of live animals.

2.4 Risk assessment and risk management

Food-borne hazards to human health

At present, there is room for significant improvement in many aspects of food safety, especially in the areas of ante- and post-mortem inspection and microbiological process control. Measures should be tailor-made to the range and prevalence of hazards in the particular animal population, focused on the most significant risks to human health, and focused at those steps in the 'production-to-consumption' continuum where they have the highest likelihood of reducing food-borne risks.

Other aspects include:

- a) performance-based inspection for process control;
- b) establishing decision criteria for the outcome of risk reductions;
- c) risk-based surveillance of live animals and monitoring of animal products throughout the food chain;
- d) effective information exchange and risk communication between all interested parties.

Animal health hazards

In determining the role and functionality of Veterinary Services in food safety throughout the 'production-to-consumption' continuum, hazards of animal health significance that can be detected in animal populations must first be identified, the risks assessed and properly managed, so as to optimise use of the available resources of Veterinary Services.

Veterinarians involved in food safety can also make a significant contribution to achieving animal health goals through application of animal health measures, and the extent to which animal health risk management functions should be carried out by veterinarians involved in food safety should be fully assessed, in order to maximise benefits to both sectors.

2.5 Food suitability

Beyond the assessment and management of food safety risks, assuring food suitability is a component of food hygiene.

CAC describes food hygiene as all conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain, and suitability as the assurance that food is acceptable for human consumption according to its intended use. As a result, the detection and removal of abnormalities in animal products that are not of public health significance or should be integral part of food safety programmes. Other aspects of suitability relating to consumer expectations include certification requirements e.g. Codex General Guidelines for Use of the Term ‘Halal’ (CAC/GL 24-1997).

2.6 Functionality

Effective food safety requires a high level of interaction and risk communication with many interested parties. Veterinarians, and other health professionals, may be called on to play a major role in these processes, especially in respect of the interface between different Veterinary Services and other government agencies that may be involved in food safety.

Further, food safety regulatory reform in a number of countries is changing the traditional roles of such parties. In an increasing number of countries, industry now has the primary responsibility for implementing food safety measures, and regulatory authorities are increasingly moving towards verification and audit roles. This provides new opportunities and responsibilities for veterinarians.

2.7 Animal welfare

Although animal welfare is beyond the mandate of CAC, it is a part of the OIE’s mandate and international standards on this issue are included in the OIE *Terrestrial Animal Health Code*.

2.8 Multidisciplinary framework

“Effective food control requires multidisciplinary scientific and technical inputs. Further, utilising risk assessment in a contemporary food safety environment is a multidisciplinary responsibility”⁷.

Any standard resulting from OIE/CAC cooperation will benefit from multidisciplinary inputs to food safety.

3. Standards

OIE has identified that co-operation with CAC will enhance the scope and scientific quality of international standards, guidelines and related texts, especially in regard to food safety measures applicable at the farm level⁸.

According to its Statutes, CAC should “promote coordination of all food standards work undertaken by intergovernmental and non-governmental organisations” (Article 1[b]). Objective 3 of the CAC Strategic Framework recognises that CAC needed to interact closely with OIE.

The cooperation between the CAC and the OIE currently include:

- a) cooperation⁹ through mutual exchange of information and participation in meetings;

⁷ Future Trends in Veterinary Public Health. Report of a WHO Study Group. WHO, Geneva 2002.

⁸ Resolution No. XV. 70th General Session of the OIE, 2003.

⁹ FAO, WHO and OIE also cooperate in providing expert advice on the basis of which international standards are developed both in the CAC and in the OIE.

- b) the use of a common text in the elaboration of a standard and harmonisation of definition;
- c) cross-referencing to the other organisation's standards;
- d) the construction of complementary texts taking into account the existing standards.

4. Development of an OIE document on Veterinary Services' involvement in food safety activities

Building on its cooperation with the CAC, the OIE proposes to develop a document on the roles and functionality of Veterinary Services in food safety. This document should cover the involvement of Veterinary Services in food safety activities which encompass food safety and suitability and zoonoses. Activities in these areas will variably contribute to 'reducing food-borne risks to human health by preventing, eliminating or controlling hazards arising from animals prior to primary processing of animals and animal products'¹⁰. Further, the document should cover veterinary competence in other aspects of food safety risk management e.g. public health policy, integrated design of surveillance systems for chemical hazards, certification and risk communication.

In addition, functionality aspects of Veterinary Services must be considered in respect of animal health activities that have no bearing on food safety or suitability.

4.1 Format

The suggested format for elaboration of the OIE document is:

- a) Overarching principles for the involvement of Veterinary Services and other veterinary activities in food safety
- b) A 'code of practice' format that progresses through a 'production-to-consumption' approach to food safety
- c) Subsections that develop principles and guidelines according to the particular segment of the food chain
- d) Specific linkages to other OIE and Codex texts describing detailed aspects of possible veterinary inputs e.g. on antimicrobial resistance, animal feeding.

4.2 Criteria

Suggested criteria for elaboration of the OIE document are:

- a) Consideration of food-borne risks to human health as a result of hazards arising from animals prior to primary processing of animals and animal products
- b) Inclusion of animal health and welfare functions (including epidemiological surveillance) that may be carried out by veterinarians whose primary focus is food safety
- c) Representation of a 'production-to-consumption' approach to food safety
- d) Reflection on effective use of Veterinary Services and other competent authorities

¹⁰ Report of the Meeting of the OIE Working Group on Animal Production Food Safety. Paris, 18-20 November 2002.

- e) Utilisation of risk assessment wherever possible and practical
- f) Inclusion of HACCP where appropriate
- g) Inclusion of food suitability¹¹ as well as food safety
- h) Identification of the contributions of public and private sector veterinarians, and para-professionals.

Many of the above criteria are 'horizontal' in nature will need to be applied at each segment of the 'production-to-consumption' continuum, with a description of iterative loops to veterinary inputs at other segments.

4.3 *Ad hoc* Groups

The Working Group is proposing that several *ad hoc* Groups be formed to draft different modules for the OIE document. Each *ad hoc* Group should apply a generic framework for managing food-borne risks to consumers and describe veterinary inputs.

Each *ad hoc* Group should consider modular and 'horizontal' aspects of:

- a) regulatory frameworks and responsibilities;
- b) veterinary activities relating to food safety and suitability, zoonoses and animal health, and welfare;
- c) the relative contributions of public and private sector veterinarians, and para-professionals, and other stakeholders;
- d) the functionality of sharing veterinary competence to meet public health and animal health goals.

The Working Group proposes that *ad hoc* Groups be set up to address specific issues:

Scope, terms of reference and membership for the *ad hoc* Groups will be developed by the Working Group as appropriate.

¹¹ Food suitability is described by CAC 'as assurance that food is acceptable for human consumption according to its intended use'.

Appendix

Generic framework for managing public and animal health risks

To the greatest extent possible and practicable, design and implementation of sanitary measures should be based on application of four components of a generic framework:

Preliminary activities by the risk manager

Following identification of a public health or animal health issue by the risk manager, this initial process may include establishment of a risk profile to place the issue within a particular context, and provide as much information as possible to guide further action. The risk manager may commission a detailed risk assessment as an independent scientific process to inform decision-making, and if so, risk assessment policy should be established¹². Once a risk assessment has been received, the last step in preliminary risk management activities is to consider the results for completeness and appropriateness.

Evaluation of risk management options

This is the process whereby potential risk management options are identified, and then selected according to appropriate decision-making criteria. It will usually involve balancing expectations in light of scientific information on risks and available measures. “Optimisation” of selected measures in terms of their efficiency, technological feasibility and practicality is an important goal.

Implementation of measures

Implementation of public or animal health measures will usually involve regulatory requirements, with a particular focus on HACCP. Flexibility in choice of individual measures applied by industry is a desirable element, as long as the overall programme can be objectively shown to achieve stated goals. On-going verification of sanitary measures by the competent authority is an essential action.

Monitoring and review of appropriateness of options chosen

This is the gathering and analysing of public and animal health data. Monitoring (which includes surveillance) should identify new problems as they emerge. Where there is evidence that required public and animal goals are not being achieved, redesign of measures will be needed.

¹² Risk assessment policy refers to the documented guidelines (provided by the risk manager) for policy choices and scientific value judgements that may be necessary at specific points in the risk assessment.