

## TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION

## FEBRUARY 2011 REPORT

## CHAPTER 6.8.

**MONITORING OF THE  
QUANTITIES AND USAGE PATTERNS OF  
ANTIMICROBIALS AGENTS USED IN  
FOOD PRODUCING ANIMALS ANIMAL HUSBANDRY**

## Article 6.8.1.

**Purpose**

The purpose of these recommendations is to describe an approach to the monitoring of the quantities of antimicrobials agents used in food producing animals animal husbandry.

~~These recommendations are intended for use by OIE Members to collect objective and quantitative information to evaluate usage patterns by animal species, antimicrobial class, potency and type of use~~

In order to evaluate antimicrobial exposure in food producing animals, quantitative information should be collected to monitor usage patterns by animal species, antimicrobial agents/class, type of use and route of administration.

## Article 6.8.2.

**Objectives**

The information provided in these recommendations is essential for antimicrobial resistance risk analyses and planning purposes and should be read in conjunction with *Terrestrial Code* Chapters 6.7. and 6.10.. This information; is necessary can be helpful in for interpreting antimicrobial resistance surveillance data and can assist in the ability to responding to problems of antimicrobial resistance in a precise and targeted way. The continued collection of this basic information will also help to give an indication of trends in the use of antimicrobial agents in animals over time and potential associations with antimicrobial resistance in animals. This information may also assist in risk management to in evaluating the effectiveness of efforts to ensure prudent use and mitigation strategies (for example, by identifying changes in veterinary prescribing practices for veterinarians) and to indicate where change alteration of antimicrobial usage prescribing practices might be appropriate. The publication of some or all of these data may be helpful for risk communication purposes. ; or if changes in prescription practice have altered the pattern of antimicrobial use.

~~The continued collection of this basic information will also help give an indication of trends in the use of animal antimicrobials over time and the role of these trends in the development of antimicrobial resistance in animals.~~

~~For all OIE Members, the minimum basic information collected should be the annual weight in kilograms of the active ingredient of the antimicrobial(s) used in food animal production. In addition, the type of use~~

~~(therapeutic or growth promotion) and route of administration (parenteral or oral administration) should be recorded.~~

~~Members may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food animal, agricultural and other antimicrobial use data in a single programme. A consolidated programme would also facilitate comparisons of animal use with human use data for relative risk analysis and help to promote optimal usage of antimicrobials.~~

#### Article 6.8.3.

### Development and standardisation of antimicrobial monitoring systems

Systems to monitor antimicrobial usage consist of the following elements:

#### 1. Sources of antimicrobial data

##### a) Basic sources

Sources of data will vary from country to country. Such sources may include customs, import and export data, manufacturing and ~~manufacturing~~ sales data.

##### b) Direct sources

Data from ~~animal~~ veterinary medicinal product drug registration authorities, wholesalers, retailers, pharmacists, veterinarians, feed stores, feed mills and ~~organised pharmaceutical~~ industry associations ~~in these countries can might~~ be efficient and practical sources. A possible mechanism for the collection of this information is to make the provision of appropriate information by pharmaceutical manufacturers to the regulatory authority one of the requirements of antimicrobial registration.

##### c) End-use sources (veterinarians and food animal producers)

This may be appropriate when basic or direct sources cannot be used for the routine collection of ~~this the~~ information and or when more accurate and locally specific information is required (such as off label use).

Periodic collection of this type of information may be sufficient.

~~It may be important when developing writing recommendations on antimicrobial resistance usage to take into account factors such as seasonality and disease conditions, species and age affected, agricultural systems and animal movements (e.g. extensive range conditions and feedlots), dose rate, duration and length of treatment with antimicrobials.~~

Collection, storage and processing of data from end-use sources should be carefully designed, well managed and ~~are likely to be inefficient and expensive processes unless carefully designed and well managed, but should~~ have the capability to produce ~~advantage of producing~~ accurate and targeted information.

##### d) Other sources

Non-conventional sources including internet sales data related to antimicrobial agents could be collected where available.

Members may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food producing animal, agricultural and other antimicrobial use data in a single programme. A

consolidated programme would also facilitate comparisons of animal use with human use data for risk analysis purposes and help to promote optimal usage of antimicrobials.

2. Types and reporting formats of antimicrobial usage data ~~Categories of data~~

a) Type of Requirements for antimicrobial use data ~~on antimicrobial use~~

The ~~minimal~~ data collected at minimum should be the ~~annual~~ weight in kilograms of the active ingredient of the antimicrobial(s) used in food animal production per year. ~~This should be related to the scale of production (see point 3 below). It is possible to estimate total usage by collecting sales data, prescribing data, manufacturing data, export/import data or any combination of these.~~

The total number of food producing animals by species, type of production and their weight in kilograms for food production per year (as relevant to the country of production) is essential basic information.

Information on dose regimes and duration of administration are elements to include when estimating antimicrobial usage in food producing animals.

b) Reporting formats of antimicrobial use data

The antimicrobial agents/classes/sub-classes to be included in data reporting should be based on current known mechanisms of antimicrobial activity and antimicrobial resistance data.

Nomenclature of antimicrobials should comply with international standards where available.

For active ingredients present in the form of compounds or derivatives, the mass of active entity of the molecule should be recorded. For ~~antibiotics~~ antimicrobial agents expressed in International Units, the calculation required to convert these units to mass of active entity should be stated.

The reporting of antimicrobial use data may be further organised by species, by route of administration (specifically in-feed, in-water, injectable, oral, intramammary, intra-uterine and topical) and by type of use (therapeutic/non-therapeutic).

Regarding data coming from end-use sources, further breakdown of data for analysis of antimicrobial use at the regional, local, *herd* and individual veterinarian/veterinary practice levels may be possible.

If a Member has the infrastructure for capturing basic animal antimicrobial use data for a specific antimicrobial, then additional information can be considered to cascade from this in a series of subdivisions or levels of detail. Such a cascade of levels should include the following:

- ~~i) The absolute amount in kilograms of active antimicrobial used per antimicrobial family per year, or for a specific antimicrobial chemical entity when this information is required.~~
- ~~ii) Therapeutic and growth promotion use in kilograms of the specific active antimicrobial.~~
- ~~iii) Subdivision of antimicrobial use into therapeutic and growth promotion use by animal species.~~
- ~~iv) Subdivision of the data into the route of administration, specifically in feed, in-water, injectable, oral, intramammary, intra-uterine and topical.~~
- ~~v) Further subdivision of these figures by season and region by a Member may be useful. (Note: This may be especially management conditions, or where animals are moved from one locality to another during production.)~~

vi) Further breakdown of data for analysis of antimicrobial use at the regional, local, *herd* and individual veterinarian levels may be possible, using veterinary practice computer management software as part of specific targeted surveys or audits. Analysis of this information with the local or regional context could be useful for individual practitioners and practices where specific antimicrobial resistance has been identified and feedback is required.

b) ~~Classes of antimicrobials~~

~~Nomenclature of antimicrobials should comply with international standards where available.~~

~~Decisions need to be made on what classes of antimicrobials should be considered and what members of various antimicrobial classes should be included in the data collection programme. These decisions should be based on currently known mechanisms of antimicrobial activity and resistance of the particular antimicrobial and its relative potency.~~

e) ~~Species and production systems~~

~~Countries should keep a register of all animal use of antimicrobials for individual food animal species (cattle, sheep, goats, pigs, poultry, horses and fish) and for specific diseases. This will help to identify possible nonauthorised usage.~~

3. ~~Other important information~~

~~Breakdown of farm livestock into species and production categories, including total live weights, would be most useful in any *risk analysis* or for comparison of animal antimicrobial use with human medical use within and between countries. For example, the total number of food *animals* by category and their weight in kilograms for food production per year (meat, dairy and draught cattle, and meat, fibre, poultry and dairy sheep) in the country would be essential basic information.~~

Article 6.8.4.

**Interpretation**

According to the OIE risk assessment guideline (refer to Chapter 6.10), factors such as the number/percentage of animals treated, treatment regimes, type of use and route of administration are key elements to consider.

When comparing antimicrobial use data over time, changes in the size and composition of animal populations should also be taken into account.

The interpretation and communication of results should take into account factors such as seasonality and disease conditions, animal species and age affected, agricultural systems (e.g. extensive range conditions and feedlots), animal movements, dose regimes and duration of treatment with antimicrobial agents.