Workshop on European Surveillance of Veterinary Pathogens:

Conclusions on Surveillance Programme Design

Proposed programme objectives:

To provide harmonised epidemiological information on patterns of antibiotic resistance in veterinary pathogens in order to:

- Enable veterinarians to make evidence based decision on appropriate prescribing
- Provide baseline data to inform risk analysis and risk management activities
- Monitor the effects of interventions intended to reduce/minimise development of AMR
- Demonstrate trends in changes in susceptibility over time
- Drive direction of pharmaceutical research programmes and investment in drug development
- Aid communication and education of; policy makers, animal keepers, and general public

Scope:

Species – While ideally all species would be covered, the workshop concluded that food producing species of pan-European importance should be prioritised; Pigs, Poultry and Cattle. Given that the population densities of minor food producing species vary considerably by EU MS, the selection of additional species should be based on level of antibiotic consumption, (i.e. ESVAC data). In addition, consideration should be given to prioritisation within the selected species of the production categories of highest antibiotic consumption.

Pathogens - Should be selected according to prevalence and impact of associated disease. One approach would be to select key disease syndromes (e.g. respiratory, enteric etc) and to monitor the major pathogens, i.e. those which comprise a predefined threshold percentage of the total number of pathogens isolated from animals demonstrating those symptoms. Care should be taken If for clinical decisions, should look at high prevalence disease per country. Since this an EU programme, how comparable are husbandry conditions across EU – so how useful a programme anyway?
Antibiotic selection for sensitivity testing – Consider selection by clinical importance, (as monitored by consumption), and by critical importance, (as defined in the OIE CIA list). An alternative approach would be the selection of all drugs which have an SPC indication for a specific pathogen. However, this basis of selection would not capture antibiotics that are currently being used on the cascade.

Antibiotic panels should be tailored according to the animal species of origin of the pathogen.

Number of isolates - The isolate sample size per pathogen: animal species combination and per EU MS should be calculated based on the statistical power required - i.e. would be dependent on an agreed definition of sensitivity and reliability of the data. In addition, a minimum number of samples per EU MS could be specified.

Principles of Methodology:

- Methodology should be harmonised across all EU MS for the selected pathogens. A single protocol should be developed for all countries, covering data collection and analysis.

- Consideration should be given to the source of the selected isolates, i.e. on farm vs abbatoir. On farm collection may be more appropriate for the monitoring of veterinary pathogens, compared to monitoring schemes designed for zoonotic bacteria.

- While active surveillance allows a greater understanding of the prevalence of resistance in veterinary pathogens within a particular species, consideration should be given to the available resource, and the cost:benefit of conducting active surveillance programmes over and above data obtained through passive schemes. Passive schemes lack denomination data but are able to highlight significant disease issues at an early stage. However, passive schemes may over represent resistance present in target pathogens. Consideration should be given to development of strong protocols on collection of contextual data when designing passive surveillance schemes.

- Active and passive surveillance schemes could be combined, as demonstrated in human monitoring schemes which use passive data supplemented by active data collection on a targeted basis.

- A single EU laboratory could be nominated for process and analysis of specific pathogens. However, a more practical approach would be to nominate one reference laboratory per EU MS. Ring testing and quality control procedures should be clearly
• defined and conducted by all nominated laboratories, in order to detect outlying data. A representative number of isolates should be stored as a reference source, to facilitate future testing should available capacity and/ or methodologies undergo revision.

• Interpretative criteria should also be harmonised across participant countries. Consideration should be given to provision of MIC data so that target audiences can interpret according to own criteria. Provision of MIC data would also ease comparison of data through time, should interpretative criteria change.

**Surveillance outputs:**

• A common IT resource and database should be utilised for data collation. There should be central responsibility for collection and reporting of data.

• The presentation format(s) of the data collated should be driven by the specific target audience; veterinarians, policy makers, animal keepers and the general public.

• Negative findings should be included to highlight pathogens in which resistance is not of concern at present, which may influence policy making, e.g. guidance issued on responsible use.

• Consideration should be made to the level of data confidentiality that needs to be applied.