

**ADVISORY COMMITTEE ON THE MICROBIOLOGICAL
SAFETY OF FOOD**

**REPORT FROM THE DEFRA ANTIMICROBIAL RESISTANCE
COORDINATION GROUP (DARC)**

1. The Defra Antimicrobial Resistance Coordination Group has prepared the attached paper summarising the actions taken to address the recommendations in the ACMSF 1999 Report on Microbial Antibiotic Resistance in Relation to Food Safety. Members may wish to read this paper in conjunction with the recommendations and Government's response paper which has been circulated as an Information Paper (ACM/736) for this meeting.

**Secretariat
March 2005**

Report on the Government's Actions to address the Recommendations of the ACMSF report on Microbial Antibiotic Resistance In Relation To Food Safety

1 Introduction

1.1 During 1995 the Advisory Committee on the Microbiological Safety of Food (ACMSF) took stock of the position in relation to antibiotic resistance in enteric bacteria infecting animals and man. This was with a view to deciding whether the Committee needed to involve itself further in assessing the situation, given the work already being undertaken in the area by other bodies and agencies. Following these considerations the Committee decided to embark upon an in-depth review of the role of the food chain in transferring microbial antibiotic resistance. A Working Group was set up to assess the risks to humans from antibiotic resistant micro-organisms entering the food chain and to consider the need for any action to protect public health. The committee's report was published in 1999 and listed a series of recommendations most of which were for the Government to consider taking forward.

1.2 The Defra Antimicrobial Resistance Coordination (DARC) Group was established in 1999, and part of its remit was to track and update the Government's response to the ACMSF Report. The DARC Group secretariat has summarised below the actions taken over the last five years to address the ACMSF recommendations. For ease of reference, the summary provided below is arranged according to the order of chapters in the ACMSF Report. The paper has not considered the recommendations made by the ACMSF in Chapter 12 of their report on research, as this was not the remit of the DARC Group. The recommendations from the ACMSF Report are not included in the summary and Members should consult the original report or the Government response, which is included with this paper for information.

2 Progress to meet recommendations made in Chapter 3: Patterns of antibiotics resistance in bacteria isolated from food animals

2.1 Surveys have been carried out by the Veterinary Laboratories Agency (VLA), Department of Agriculture and Rural Development in Northern Ireland (DARDNI), and Scottish Agricultural College (SAC) to determine the prevalence, subtypes and antimicrobial resistance of foodborne pathogens including *Salmonella*, *Campylobacter* and *E. coli* O157. The results of the GB surveys have been published on the Defra web site and were released at Open Meetings in February 2002 and January 2005, held at the National Agricultural Centre Stoneleigh. These surveys included collection of data on the prevalence of resistant *Escherichia coli*

and resistance in key anaerobes. Follow up surveys to this work are planned.

- 2.2 Health Protection Agency (HPA) and VLA have organised harmonisation ring trials of methods to test for antimicrobial resistance in *Salmonella* and *Campylobacter* to determine if the methods used showed any regional differences. Thirteen human and veterinary laboratories from across the UK participated in the trials. Results from the trials will be published independently.
- 2.3 Research has been funded which examined the emergence and disappearance of multi-resistant strains of *Salmonella* and others on antimicrobial resistance in *Campylobacter*. Details about all projects are available from the Defra website at http://www2.defra.gov.uk/research/project_data/Default.asp and the VMD web site at www.vmd.gov.uk. The Food Standards Agency (FSA) has funded the HPA to provide typing, antimicrobial resistance testing and archiving of pathogens and other organisms isolated during FSA food surveys.
- 2.4 The Government has developed and published a Strategy for developing and implementing a programme of surveillance for Antimicrobial Resistance in animals in England and Wales to address how data are collected. This report is available from the VMD website at www.vmd.gov.uk. This strategy is in line with similar documents prepared for Scotland and Northern Ireland.
- 2.5 A paper jointly co-authored by the HPA and VLA, comparing and contrasting drug-resistant strains of *Salmonella* from cases of human infection and from food-producing animals has been published.
- 2.6 The DARC Group are leading a cross-Departmental and cross-Agency Working Group to consider how to develop the current individual reports on antimicrobial resistance issues across the UK, into a single UK-wide report covering all aspects of veterinary and human antimicrobial resistance issues and antimicrobial resistance in the food chain.

3 Progress to meet recommendations made in Chapter 4: Patterns of antibiotic resistance in bacteria isolated from foodstuffs

- 3.1 The FSA priorities for national food surveys have been eggs and poultry. Results from FSA surveys, which include information on subtypes and antimicrobial resistance are available from the FSA website at www.food.gov.uk. National food surveys covering a wider range of foods have also been undertaken by HPA / LACORS and the findings published in the literature.
- 3.2 The FSA recognises there are a paucity of data on antimicrobial resistance of *E. coli* isolates from food and will include work to address this in future food surveys where appropriate.

- 3.3 The HPA has developed an archive of foodborne pathogens that were isolated from food as part of FSA food surveys. These have been sub-typed and screened for antimicrobial resistance.
- 3.4 The committee recommended to research funding organisations, that studies be undertaken to assess the effects of food processing, storage conditions and food preparation on antimicrobial resistant microflora of foods and transfer of resistance between food bacteria. The FSA does not consider this to be a current priority but will review the situation when deciding future research requirements and in the light of work commissioned by other funders.
- 3.5 The DARC Group are leading a cross-Departmental and cross-Agency Working group to consider how to develop the current individual reports on antimicrobial resistance issues across the UK, into a single UK-wide report covering all aspects of veterinary and human antimicrobial resistance issues and antimicrobial resistance in the food chain.

4 Progress to meet recommendations made in Chapter 5: Human infections associated with antibiotic resistance foodborne pathogens

- 4.1 R&D has been funded which examined the emergence and disappearance of multi-resistant strains of *Salmonella* and others on antimicrobial resistance in *Campylobacter*. Details about all projects are available from the Defra website at http://www2.defra.gov.uk/research/project_data/Default.asp and the VMD web site at www.vmd.gov.uk.
- 4.2 The HPA and VLA have organised and participated in a harmonisation ring trial of methods to test for antimicrobial resistance in *Salmonella* and *Campylobacter* to determine if the methods used showed any regional differences. Thirteen laboratories from across the UK were involved in the trial. Results from the trial will be published independently. HPA and VLA are involved in developing and participating in an EU-wide trial to standardise antimicrobial testing methods.
- 4.3 The Strategy for developing and implementing a programme of surveillance for Antimicrobial Resistance in animals in England and Wales also details the work to harmonise antimicrobial resistance methods internationally.
- 4.4 The DARC Group are leading a cross-Departmental and cross-Agency Working group to consider how to develop the current individual reports on antimicrobial resistance issues across the UK, into a single UK-wide report covering all aspects of veterinary and human antimicrobial resistance issues and antimicrobial resistance in the food chain.

5 Progress to meet recommendations made in Chapter 6: Evidence of the food chain contributing to human infections with antibiotic-resistance microorganisms

- 5.1 The annual veterinary antimicrobial sales data collected by the VMD illustrates that 1- 2 tonnes of fluoroquinolones are sold for use each year in animals. This confirms a reasonably stable use of fluoroquinolones in the veterinary field over the last six years. Data for 2003 sales of veterinary antimicrobials have recently been published and show that 1.39 tonnes of fluoroquinolones were sold for use in that year. This report is available from the VMD website at www.vmd.gov.uk.
- 5.2 Guidelines on the Responsible Use of Antimicrobials in Food Producing Species have been published by the Responsible Use of Medicines in Agriculture (RUMA) Alliance and are supported by Government. A Code of Practice on the Responsible Use of Animal Medicines on the Farm has been published by VMD. All of these documents are available from the VMD web site at www.vmd.gov.uk.
- 5.3 On the relative contribution of different foods as vehicles for antibiotic-resistant enterococci, the FSA will consider including these microorganisms when planning any future surveys of meats, dairy products, raw vegetables and fruits.
- 5.4 Bacitracin zinc, spiramycin, tylosin and virginamycin were all phased-out across the EU in 1999 and remain banned from use. All remaining antibiotic growth promoters (avilamycin, monensin, flavophospholipol and salinomycin) will be banned from sale or use across the EU from 1 January 2006 on a precautionary basis. To date no new antibiotic growth promoting ingredients have been developed.

6 Progress to meet recommendations made in Chapter 7: Approval, prescribing and control measures relating to veterinary medicines

- 6.1 The supply of data derived from the testing of the antimicrobial concerned for antimicrobial resistance in the target animal species, under the intended conditions of use, is a standard requirement of the application process for veterinary medicinal products across the EU.
- 6.2 Full details of all post-marketing surveillance in relation to antimicrobial resistance are published to make them available to the veterinary and medical professions.
- 6.3 The VMD publish an annual report that details the amounts of veterinary antimicrobials sold for use in the UK, to inform others about the amounts of antimicrobials used in UK food animals. The report breaks down the sales into the categories suggested by the ACMSF, but also in additional ways to take on board comments from Stakeholders. These reports are all available from the VMD web site at www.vmd.gov.uk.

7 Progress to meet recommendations made in Chapter 8: The use of antibiotics in farm animals

- 7.1 The Government has developed and published its Animal Health and Welfare Strategy which includes medicines record keeping and encourages Herd Health Planning as part of a provision to provide more information on the prevalence of disease on farms and how to prevent it. One of the key aims of the Strategy is to encourage disease prevention rather than disease treatment.
- 7.2 Guidelines on the Responsible Use of Antimicrobials in Food Producing Species have been published by the Responsible Use of Medicines in Agriculture (RUMA) Alliance and are supported by Government. A Code of Practice on the Responsible Use of Animal Medicines on the Farm has been published by VMD. All of these documents are available from the VMD web site at www.vmd.gov.uk.
- 7.3 Defra has funded an R&D project entitled "Proactive Health Management and the influence of Antibiotic usage in Pigs". Details of the project findings were released in open meetings around the UK during 2004. Details about the project are available from the Defra web site at http://www2.defra.gov.uk/research/project_data/Default.asp and the VMD web site at www.vmd.gov.uk.
- 7.4 In accordance with EU legislation, all antimicrobial veterinary medicinal products are Prescription Only Medicines (POM). Prescribing is permitted only by veterinarians for animals under their care. Vets who use antimicrobials under the prescribing cascade system have to keep detailed records. (The prescribing cascade is a decision tree to allow vets to use other products where there is no authorised product for the disease and species they are treating). The UK is supporting the re-classification of coccidiostats as veterinary medicinal products under EU legislation. This would bring coccidiostats into the POM category.
- 7.5 The British Veterinary Association have run courses for veterinary practitioners on veterinary pharmacy to better inform veterinary prescribing and use of antibiotics. All Veterinary Schools have been approached and have reviewed their syllabuses to further take antibiotic prescribing into account. The Royal College of Veterinary Surgeons has also been approached and the Education Committee is reviewing the position.
- 7.6 The importance of record keeping has been retained in revised EU legislation and will be included in new National Legislation. Enforcement issues are being reviewed as part of the arrangements for establishing the State Veterinary Service as an Agency of Defra. HACCP principles are already largely covered by legislation requirements to record the use of antimicrobials on farms. The proposed new hygiene regulations will assist with the production of new codes.

8 Progress to meet recommendations made in Chapter 9: Medicated animal feedingstuffs

- 8.1 All feed mills are inspected on a regular basis and the adequacy of the current arrangements is being reviewed. All on farm mixers using medicinal additives and intermediate medicated feedingstuffs are all registered and inspected on a regular basis. Government is further considering, as part of the review of the enforcement arrangements, whether feed manufacturers who do not comply with United Kingdom Agricultural Supply Trade Association's (UKASTA) Feed Assurance Scheme should be suitable for registration by the enforcement authorities.
- 8.2 Government recognises the importance of an appropriate balance between the disposal or controlled use of surplus medicated feed additives to ensure human and animal safety, animal welfare and environmental accumulation are safeguarded. Introduction of quality assurance schemes permit the use of surplus materials only at levels that cannot be detected by current analytical methods. Government has taken no steps to amend these arrangements as it considers that the current arrangements are appropriate and address known risks.

9 Progress to meet recommendations made in Chapter 10: The use of antibiotics as growth promoters in food animal production

- 9.1 Bacitracin zinc, spiramycin, tylosin and virginamycin were all phased-out across the EU in 1999 and remain banned from use. All remaining antibiotic growth promoters (avilamycin, monensin, flavophospholipol and salinomycin) will be banned from use across the EU from 1 January 2006 on a precautionary basis. No new antibiotic growth promoting ingredients have been developed.
- 9.2 The UK Government is supporting the re-classification of coccidiostats as veterinary medicinal products under EU legislation. This would bring coccidiostats into the POM category.

10 Progress to meet recommendations made in Chapter 11: Aquaculture

- 10.1 Under revisions to EU legislation, all marketing authorisations have to be renewed once after 5 years and after renewal, remain valid indefinitely. It would not be possible for the UK to only authorise fish antibiotics for as short a period as possible and remain within the bounds of EU legislation.
- 10.2 Government are in agreement with the Ornamental Aquatic Trade Association Guidelines, which are primarily aimed at traders, on public advice warnings of the potential transfer of antibiotic resistant bacteria through direct contact with ornamental fish.

11 Progress to meet recommendations made in Chapter 12: Research on antibiotic resistance in relation to food safety

- 11.1 The ACMSF report included a substantial number of research recommendations and the majority of these are included in chapter 12. Since the report was published research funders have commissioned a significant amount of work in the area of microbial antibiotic resistance some of which is now being reviewed. In December 2004 Defra held a 3-day review of its funded research in this area and the meeting included presentations by other funders. A report on the Defra review is expected to be published later this year on the Defra website.