

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

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**Agenda Item 4**

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**JOINT FAO/WHO FOOD STANDARDS PROGRAMME**  
**AD HOC CODEX INTERGOVERNMENTAL TASK FORCE ON ANTIMICROBIAL RESISTANCE**  
**Fifth Session**

**AGENDA ITEM 4: PROPOSED DRAFT REVISION OF THE CODE OF PRACTICE TO  
MINIMIZE AND CONTAIN ANTIMICROBIAL RESISTANCE (CAC/RCP 61-2005)**

*Report of the in-session Working Group on Agenda Item 4*

**TFAMR5 In-Session Working Group on Terms of Reference for the Electronic Working Group on the Revised Code of Practice to Minimize and Contain Antimicrobial Resistance and Refinement of Terms of Reference for Scientific Advice - November 28, 2017**

**Terms of Reference for the Electronic Working Group on the Revised Code of Practice (COP) to Minimize and Contain Antimicrobial Resistance**

- Revise the text of the COP using 17/5/5 as the starting point for the discussion taking into account comments from Member and Observers and discussions of TFAMR5
  - Consider comments from Members and Observers on the Introduction and Scope from TFAMR5 and proceed in a stepwise fashion to address the remaining text of the COP
  - Consider alternate proposals for the structure of the second part of the document to broaden the scope as approved by CAC40; consider additional actors including food processors
  - Ensure revised COP is risk-based and based on sound science, uses terminology consistently (e.g. antimicrobial agent or drug); consider standalone document vs. ‘read in conjunction with’, reference to OIE texts with rationale
  - Carefully consider use of terms antimicrobial vs. medically important antimicrobial
  - Consider Objectives 3 & 4 of WHO Global Action Plan; consider strategies to reduce the need for antimicrobials
  - Clarify food chain, One Health approach, medically important antimicrobials, off-label use, environment with respect their meaning in the COP
  - Reconsider the sections on Advocacy and Communication and Responsibilities of Consumers
- Output will be a revised text for consideration at TFAMR6

## **Terms of Reference for Scientific Advice**

Comments on prioritization of areas for scientific advice was sought from delegates, FAO and WHO. An extensive list of questions and topics was generated. Members and Observers provided input highlighting the need for prioritization of data and information on plants/crops, environment, animal feed, and biocides. WHO and FAO would like to retain the list in its entirety.

It was suggested to prioritize the list by category and subject matter type in the context of the needs of the relevant sections of the COP. The list generated was organized under the topic headings listed in the original Terms of Reference from the PWG held in London, December 2016 and other headings as needed.

## **Suggestions for prioritization**

- Suggestion to prioritize environment and crops
- Open questions vs. closed question need to consider.
- Consider cross-resistance and co-selection, alternatives (substances and practices) throughout the food chain.
- Suggestion for prioritization in Canadian comments – focus on medically important antimicrobials (supported by U.S.).
- Support for efficacy of alternatives to antibiotics.
- Data gaps: crops, environment, biocides (what are best practices), and animal feed. What antimicrobials are used on plants and are of highest concern.

## **Animals**

### **Crops**

- Are there any bacteria that colonize plants that have been found to cause foodborne illness in humans?
- Is there data regarding the length of time residues from horticultural applications of antibacterials registered for their use (streptomycin, oxytetracycline, kasugamycin) persist on edible crops and the environment?
- Is there data regarding whether AMR from horticultural applications of these bacteriocides has resulted in resistance in non-target bacteria?
- What scientific information exists regarding human AMR foodborne illness resulting from horticulture uses of antibacterial agents on crops?
  - 1) Crop
    - a. Review of available data on plant protection products with potential for selection of antimicrobial resistance hazards.
    - b. Harmonized methodology to quantify the use of plant protection products with potential for selection of antimicrobial resistance hazards.
    - c. What are current prudent use practices for use of plant protection products with potential for selection of antimicrobial resistance hazards.
    - d. Description and analysis of possible risk mitigation measures that could be effective in the control of antimicrobial resistance hazards.
  - 2) Identify knowledge gaps and research priorities related to antimicrobial resistance hazards in crops and the environment (related to the food chain).

### **Environment**

- Half-life of antimicrobials in the environment?
- What monitoring programs for evaluating AMR in the environment exist?
- What priority bacteria, AMR genes, and mobile genetic elements should be monitored in clinical and agricultural settings in order to correlate specific resistances of concern to individual mobile genetic elements and determine which gene/mobile genetic element/bacteria combinations may contribute the most to agricultural AMR-related human clinical AMR foodborne illness cases?
- To develop a monitoring program for baseline levels of AMR in soil to determine the impact of agriculture interventions, what are appropriate:
  - Methodologies
  - Samples
  - Environments
- Evidence supporting the contribution of the environment (in relation to the food chain) to the problem of antimicrobial resistance hazards, including:
  - Exposure pathways of antimicrobial resistance hazards from the environment to humans (via food chain)
  - Data available on possible sources of antimicrobials resistance hazards\* and their behavior in the environment (related to the food chain).
  - Harmonized methodology to quantify the presence of antimicrobial resistance hazards in the environment (in relation to the food chain)
  - Identify existing possible risk assessments of the contribution of the environment to the problem of antimicrobial resistance hazards.

### **Manure**

- What is the effect of AMR bacteria and genes introduced into manured soils?
- How does manure treatment and agricultural best management practices affect survival of AMR bacteria and associated resistance genes?
- Is there any scientific information regarding manure applications contributing to human AMR foodborne illness?
- What is the impact on AMR status of soil bacteria from land application of waste and how could that affect foodborne AMR illness?

### **Biocides**

- Is there any scientific information regarding human AMR foodborne illness resulting from use of specific biocides?
- What are the risks to development of AMR and resulting AMR foodborne illness versus the benefit of decreased pathogen load from the use of biocides?
- What is the relevant importance of antibacterial drugs, biocides, and metals in selecting for and resulting in foodborne AMR illness?
- What is the impact of biocide use on foodborne AMR?

### **Packaging**

- Is there scientific information regarding whether food packaging contributes to human AMR foodborne illness?

**Production Systems**

- Is there scientific information regarding whether specific production systems and practices (including animal husbandry of nomadic herds and ethno-veterinary use of plants) impact human AMR foodborne illness?

**Food Processing**

- Is there scientific information regarding specific steps within food processing that contribute to human AMR foodborne illness?

**Retail handling**

- Is there scientific information regarding whether specific retail handling procedures cause human AMR foodborne illness?

**Consumption Practices**

- Is there scientific information regarding whether specific consumption practices cause human AMR foodborne illness?

**Alternatives substances to antibiotics**

- Is there scientific data on efficacy of alternatives to antibiotics in treating specific animal diseases?

**Animal Feed**

- Is there any scientific information regarding human AMR foodborne illness linked to meat from an animal consuming contaminated animal feed?
- What is the incidence or prevalence of AMR in animal feed?

**Aquaculture**

- What is the effect of AMR bacteria and genes introduced into aquatic environments?
- What monitoring programs for evaluating AMR in aquatic environments exist?
- What priority bacteria, AMR genes, and mobile genetic elements should be monitored in clinical and aquatic settings in order to correlate specific resistances of concern to individual mobile genetic elements and determine which gene/mobile genetic element/bacteria combinations may contribute the most to agricultural AMR-related human clinical AMR foodborne illness cases?
- To develop a monitoring program for baseline levels of AMR in aquatic environments to determine the impact of interventions, what are appropriate:
  - Methodologies
  - Samples
  - Locations to sample

**Risk management**

- What scientific evidence exist to demonstrate the benefit to people from various AMR risk mitigation measures in animal health and a ranking by effectiveness of interventions?
- Description and analysis of possible risk mitigation measures in the environment (related to the food chain) that could be effective in the control of antimicrobial resistance hazards that have an impact in the food chain. E.g. to determine the efficiency of manure treatment, and water treatment plants at reducing the levels of antibiotics and antimicrobial resistance genes.