RESPONSIBLE AND PRUDENT USE OF ANTIMICROBIALS
INTERNATIONAL SOLIDARITY TO FIGHT AGAINST AMR
NEED FOR A HARMONISED MULTI SECTORIAL APPROACH
PAN AMERICAN HEALTH ORGANIZATION INITIATIVES

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PAHO/WHO
Outline

• The Strategy in PAHO integrated AMR surveillance
• The country studies
  o Colombia
  o Paraguay
  o Uruguay
  o Venezuela
  o Argentina
  o Costa Rica
  o Andean Community
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WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR)
<table>
<thead>
<tr>
<th>AMR Risk factors</th>
<th>Surveillance in AMR</th>
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<tr>
<td>• Rapid growth of intensive animal production</td>
<td>• Lack of AMR baseline data</td>
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<td>• Emerging economy</td>
<td>• Fragmented knowledge</td>
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<td>• Pressure of infectious diseases</td>
<td>• Multiplicity of actors</td>
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<td>• Volume versus safety issue</td>
<td>• Lack of coordination</td>
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<td>• No integrated surveillance system</td>
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Engagement of all stakeholders

Rigorous implementation and transparency

Building on trust and program extension
Objectives of the *Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR)* country Pilot Projects:

- Supplement the work of AGISAR by providing data from developing countries.
- Contribute to strengthen countries capacity to establish their integrated AMR surveillance and antimicrobial drug use.
- Foster communication and collaboration between animal, food and health sectors,
- Increase awareness and commitment among countries to implement strategies for prevention and control of foodborne diseases and containment of AMR
- Use data generated at country level to influence policy
Colombian Integrated Program for Antimicrobial Resistance Surveillance
Base line data from Poultry Meat Chain

Comparison of genetic diversity and AMR patterns among Isolates from various sources

Risk assessment

Recommendations for integrated AMR surveillance
Colombia
Similar resistance trends in Salmonella isolates from poultry & human in AM used in animals
Colombia
Salmonella isolates from retail poultry showed resistance in critical antimicrobials for human use.
Colombia
% Salmonella isolates from retail poultry
Multi-resistant

Pan American Health Organization
Regional Office of the World Health Organization
Colombia

Identical PFGE patterns in human and retail poultry isolates

Dice (Opt:1.50%) (Tol 1.5%-1.5%) (H>0.0% S>0.0%) [0.0%-100.0%]

PFGE-XbaI

ICA-S.En 190  COICA11JEGX01.0002
ICA-S.En 231  COICA11JEGX01.0010
ICA-S.En 8  COICA11JEGX01.0003
E S179 174  COICA11JEGX01.0004
E S19PP 59  COICA11JEGX01.0005
ICA-S.En 890  COICA11JEGX01.0006
INS-S.En1015  COIN09.JEG.X01.0038
ICA-S.En 191  COICA11JEGX01.0008
INS-S.En1142  COIN09.JEG.X01.0068
ICA-S.En 277/. COICA11JEGX01.0001
INS-S.En1180  COIN09.JEG.X01.0001
ICA-S.En 256  COICA11JEGX01.0007
OBJECTIVES

- Strengthen the integrated surveillance by coordination of existing resources.
- Determine the incidence of Salmonella and Campylobacter in poultry meat at retail.
- Identify phenotypic and genotypic profiles in clinical and food isolates.
- Obtain information for decision-making on the rational use of antibiotics.
- Surveillance system installed and operational.
URUGUAY - Integrated Actions

Inter-institutional Commission

Meat National Institute (INAC)
- Sampling
- Trazability

Food Science Laboratory IMM
- Sample processing
- Test validation

Laboratories Department MSP
- Serotyping
- Testing AMR
- Genotyping
# Preliminary Results Sampling Poultry Chain

**Salmonella enteritidis isolates from retail poultry – low resistance**

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<tr>
<th>Nº. Cepa</th>
<th>Identificación</th>
<th>Serovar</th>
<th>NA</th>
<th>CIP</th>
<th>TE</th>
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<th>GM</th>
<th>CTX</th>
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<tr>
<td>Psal 1</td>
<td>Salmonella enterica</td>
<td>No tipificable</td>
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<td>Psal 2</td>
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<td>Psal 3</td>
<td>Salmonella enterica</td>
<td>Inmovil</td>
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<td>Psal 4</td>
<td>Salmonella enterica</td>
<td>Typhimurium</td>
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<td>Psal 5</td>
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<td>Psal 7</td>
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<td>Psal 12</td>
<td>Salmonella enterica</td>
<td>St. Diego</td>
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<tr>
<td>Psal 13</td>
<td>Salmonella enterica</td>
<td>Typhimurium</td>
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Same PFGE patterns in retail poultry and human isolates
Pilot projects under the framework of the WHO-Global Foodborne Infections Network (GFN)

- **Paraguay**
  Prevalence of Salmonella spp and Campylobacter spp, antimicrobial resistance in poultry

- **Venezuela**:
  Identify current patterns of antimicrobial resistance in Salmonella spp. in isolates from the food chain and chicken eggs

- **Argentina**
  Integrated surveillance of Salmonella spp. with emphasis on early detection of outbreaks and antimicrobial resistance study

- **Ecuador**
  Strengthening integrated surveillance of FBDs in 7 provinces.
OBJECTIVES

• Implementation of an integrated AMR surveillance system in Salmonella and Campylobacter through the articulation of national institutions

• Strengthening analytical capacity of national institutions responsible for monitoring FBD pathogens (detection and phenotypic characterization of Salmonella and Campylobacter)

• Assess resistance profiles of Salmonella and Campylobacter in different points in the food chain
Paraguay

Established an Interagency Working Group:

- Regional Epidemiology Unit
- Central Public Health Laboratory
- National Animal Health Services (SENACSA)
- National Institute for Food & Nutrition (INAN)

Same PFGE patterns in retail poultry and human Salmonella and Campylobacter isolates
Paraguay

Antimicrobial resistance in Campylobacter Human Isolates
Paraguay
Antimicrobial resistance in Campylobacter isolates from poultry (cloaca)
Paraguay
Antimicrobial resistance in Campylobacter isolates from retail poultry

Same PFGE patterns in retail poultry and human isolates
Venezuela

Determine the patterns of Antimicrobial Resistance circulating in Salmonella spp., isolates in the food chain (eggs and poultry).
Argentina

- Evaluate the implementation of SaTScan software for real-time detection of outbreaks caused by Salmonella spp. and the prevalence of antimicrobial resistance in poultry isolates and their relationship to human isolates.
- Stage 1: A retrospective study for understanding the status and configuration parameters SaTScan
- Stage 2: A prospective pilot for the implementation of the system.
Some final thoughts

- High frequency of AMR along the food chain
- DNA fingerprinting of isolates revealed similar genotypes in farms, retail outlets, and human isolates
- Fundamental to continue with the projects towards the consolidation of the integrated surveillance systems
- Use data generated at country level to change policies and normative work towards a responsible and prudent use of antimicrobial agents for animals
"In terms of new replacement antibiotics, the pipeline is virtually dry. But much can be done. This includes prescribing antibiotics appropriately and only when needed, following treatment correctly, restricting the use of antibiotics in food production to therapeutic purposes and tackling the problem of substandard and counterfeit medicines."
Food quality, health and equity impacts of agricultural policies:
• presence of bacteria, pathogenic or resistant to antibiotics in food, prevalence of food borne diseases; and incidence of foodborne disease outbreaks
• countries that have phased out use of antibiotics as growth promoters;
• Proportion of foods marketed that comply with international trade standards for hormone, pesticide, antibiotic residues as well as other food safety parameters.
• health impact assessment in agricultural policies, trade plans.
For more information on AMR initiatives in LAC
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Building Global Capacity...