

AGISAR Pilot Project on Integrated Surveillance of AMR in Uganda

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1. Background

- Concern for AMR is now worldwide
- Most developed countries address this problem by instituting national surveillance programs
- Such programs generate data and evidence required to identify appropriate interventions
- Such data also guide evidence-based policies and guidelines to control use of antimicrobial agents in humans and animals
- Most developing countries lack such data

2. Scope of the project

- A country level pilot 2 year project
- Primary focus on cattle and broiler chicken value chains, as well as humans.
- The target foodborne pathogens and indicator organisms *Salmonella* and *E. coli*

2. Overall Objective

- To determine the occurrence of antimicrobial resistance in bacterial isolates from humans, select food producing animals and retail animal source foods in Uganda

3. Specific Objectives

- To establish the trends in quantities of anti-microbial agents imported to Uganda in the period 2009-14
- To identify the major distribution pathways and geographic destinations of anti-microbial agents imported to Uganda
- To isolate *Salmonella* and *E. coli* in samples from: a) humans, b) cattle and broiler chicken, and c) retail chicken meat and beef in Uganda
- To test antimicrobial susceptibility of bacterial isolates stated in iii) above.

4. Methodology

- Objectives i) and ii)

Import records from NDA and major drugs companies and importers (Vet drugs)

Use social network analysis

4. Methodology (cont)

Objectives iii

- Samples to be collected:
 - a) fecal samples of on-farm cattle (district of Kirihura, western Uganda)
 - b) cloaca swabs of on-farm broiler chicken (Kawempe division, Kampala)
 - c) fecal samples of children under 10 years presenting with diarrhea (Kampala district)
 - d) chicken meat from supermarkets and beef from butcher shops (Kampala city)

4. Methodology (cont)

Objective iv

- Susceptibility testing will be done against antibiotics recommended by WHO.
- Sero typing for Salmonella

5. Data Analysis

- WHONET software

6. Snapshot of Preliminary Findings

- Out of the 50 samples tested, *E. coli* was isolated in 46 (92%) samples
- No Salmonella isolated

6. Snapshot of Preliminary Findings (Contd)

- Multiple drug resistance was recorded in 43% (20/46) of the isolates.
- All the isolates were resistant to erythromycin.
- Least resistance of 0.02% (1/46) was recorded for gentamycin.

6. Snapshot of Preliminary Findings (Contd)

- Resistance to other antibiotics was recorded in the isolates as follows:
 - ampicillin (24%, 11/46),
 - ceftriaxone (0.04%, 2/46),
 - chloramphenicol (13%, 6/46),
 - nalidixic acid (11%, 5/46),
 - tetracycline (35%, 16/46) and trimethoprim/sulphamethoxazole (22%, 10/46)

7. Expected output

- Capacity of select labs strengthened
- Inter-sectoral collaborations on One Health approach strengthened
- Empirical data on AMR to inform government gathered and synthesized
- Generic guidelines on prudent use on AM drugs produced and shared with stakeholders

8.Acknowledgments

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