

## National Workshop: Proposal for a pilot network for the surveillance of antimicrobial resistance in pathogenic and commensal strains of *Escherichia coli* of porcine origin

### Taller Nacional: Propuesta de una red piloto para la vigilancia de resistencia antimicrobiana en cepas patógenas y comensales de *Escherichia coli* de origen porcino



<https://eqrcode.co/a/tBptxO>

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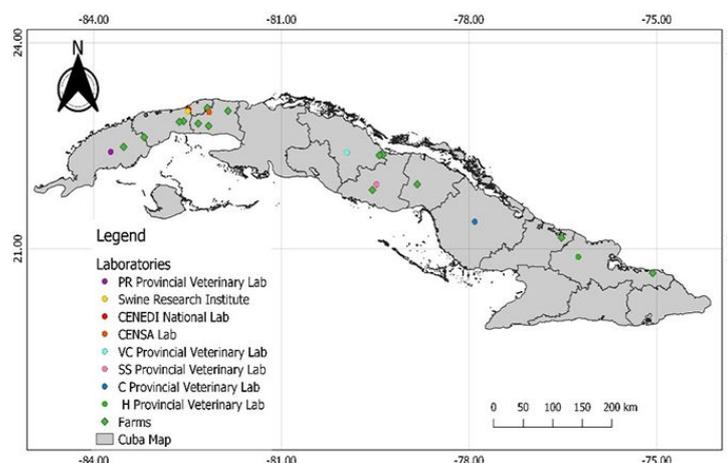
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A National Workshop was held on March 3<sup>rd</sup> - 4<sup>th</sup>, 2020, within the framework of the Cuba-Belgium collaborative project: "Control of antimicrobial resistance in bacteria of animal origin in Cuba, to improve animal and human health". The workshop was convened by the Centro Nacional de Sanidad Agropecuaria (CENSA) (Fig. 1a). Its objectives were to improve knowledge, laboratory skills and to establish the basis for organizing a pilot network of national scope aimed at the surveillance of antimicrobial resistance (AMR) in *Escherichia coli* of porcine origin, under the support of the Latin American Selection Commission VLIR-USO. Specialists from CENSA, Universidad Central de las Villas (UCLV), Dirección de Salud Animal (DSA), Unidad de Laboratorios Centrales de la Sanidad Agropecuaria (ULCSA), Ministerio de la Agricultura de Cuba (MINAGRI), Instituto de investigaciones porcinas (IIP), Ministerio de Ciencia, Tecnología y Medio Ambiente (CITMA), and Instituto Nacional de Higiene de los Alimentos (INHA) participated in the workshop, as well as specialists from the laboratories and the different directions of animal health corresponding to the following provinces: Pinar del Río, Villa Clara, Camagüey, Holguín, Granma, Sancti Spiritus, Santiago de Cuba, and Guantánamo (Fig. 1b).

Emphasis was placed on the versatile character of *E.coli*, a species that groups pathogenic and commensal strains. Enterotoxigenic strains cause frequent enteric infections in pigs, therefore, diagnosis and use of appropriate antibiotics are required for their control. Commensal strains resistant to 3<sup>rd</sup>-generation cephalosporins may colonize healthy animals and disseminate resistance genes in the animal food production chain, therefore their surveillance is a priority. Different methods for diagnosis and antimicrobial susceptibility testing (AST) for *E.coli* were also discussed. In this regard, specific technical requirements were defined for the agar disk diffusion test, for its harmonization according to the international standards defined by the Clinical Laboratory Standards Institute (CLSI) and the European Committee on Antimicrobial Susceptibility Testing (Eucast), besides operational procedures were delivered to each laboratory. An interlaboratory study was proposed, having CENSA as coordinator for the AST. Additionally, the collection of antibiotic consumption data at the farm level was emphasized, according to the forms established by the OIE. Finally, the use of autogenous vaccines was proposed as a possible strategy for the control of enterotoxigenic pathogenic *E.coli*, under the support of its typification and would have the UCLV as coordinator. The Workshop was a contribution to the strengthening of capacities for the control of Antimicrobial Resistance in animal health in Cuba and promoted collaboration between different stakeholders in the frame of the project.



**Figure 1.** a) Start of the National Workshop "Proposal for a pilot network for the surveillance of antimicrobial resistance in pathogenic and commensal strains of *Escherichia coli* of porcine origin", b) Participants in National Workshop: Proposal for a pilot network for the surveillance of antimicrobial resistance in pathogenic and commensal strains of *Escherichia coli* of porcine origin. / a) Comienzo del Taller Nacional "Propuesta de una red piloto para la vigilancia de resistencia antimicrobiana en cepas patógenas y comensales de *Escherichia coli* de origen porcino, b) Participantes en el Taller Nacional "Propuesta de una red piloto para la vigilancia de resistencia antimicrobiana en cepas patógenas y comensales de *Escherichia coli* de origen porcino.



**Figure 2.** Representation of the location of laboratories corresponding to different provinces of Cuba called to participate in a pilot network for the surveillance of antimicrobial resistance in pathogenic and commensal strains of *Escherichia coli* of porcine origin. / Representación de la localización de los laboratorios correspondientes a diferentes provincias de Cuba y convocados a participar en una red piloto para la vigilancia de resistencia antimicrobiana en cepas patógenas y comensales de *Escherichia coli* de origen porcino.

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**Authors' contributions:** IEC is the promoter in Cuba of the referred project and coordinated the workshop in collaboration with YLD, who also presented the international standards for ASTs. SH cooperated in the organization. PYF is the local promoter of the project and commented on *E. coli* enterotoxigenic and autogenous vaccines. While ELR, MAB and REHF commented on the national plan in Cuba for the control of AMR, the use of antibiotics and the characteristics of *E. coli* multiresistant.

**Conflict of interests:** The authors declare no conflict of interests related to this article.

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