

Antimicrobial resistance as a global public health concern

Latin America overview and initiatives

Dr. Simone M. Raszl

**Food Safety Regional Coordinator / AMR
Integrated Surveillance Focal Point -
PANAFTOSA/VPH-PAHO/WHO**



PANAFTOSA

Pan American Foot-and-Mouth Disease Center
Veterinary Public Health

Who we are

- Pan American Health Organization (**PAHO**) funded in 1902 (52 countries/territories)
- World Health Organization (**WHO**) funded in 1942.
- PAHO *serves* as WHO Regional Office for the Americas
- **PANAFTOSA** is the specialized CDE-PAHO/WHO Pan American Center as well as OIE Reference Center for Veterinary Public Health (VPH) – the single one in the world. Areas: foot and mouth disease, zoonosis and food safety.



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PANAFTOSA Food Safety Team



Dr. Sandra Vokaty



Dr. Marco Vigilato



Dr. Simone Raszl



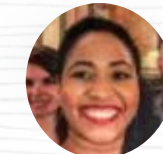
Dr. Margarita Corrales



Bruno Thon
(internship, vet)



Vet. MSc. Frida Sparaciari



Rosana Ferreira
Assistant



Antimicrobial Resistance and the UN Sustainable Development Goals (SDGs)



AMR strongly affects poverty. Resistance is higher in absence of accessible treatment.



The cumulated cost of AMR for 2050 is expected to be USD 120 trillions.*



AMR in sick animals threatens food production.



For the containment of AMR, it is essential to balance access, innovation and conservation of antimicrobial activity.



Antimicrobials are essential for all health systems.



All these require multisectoral associations.

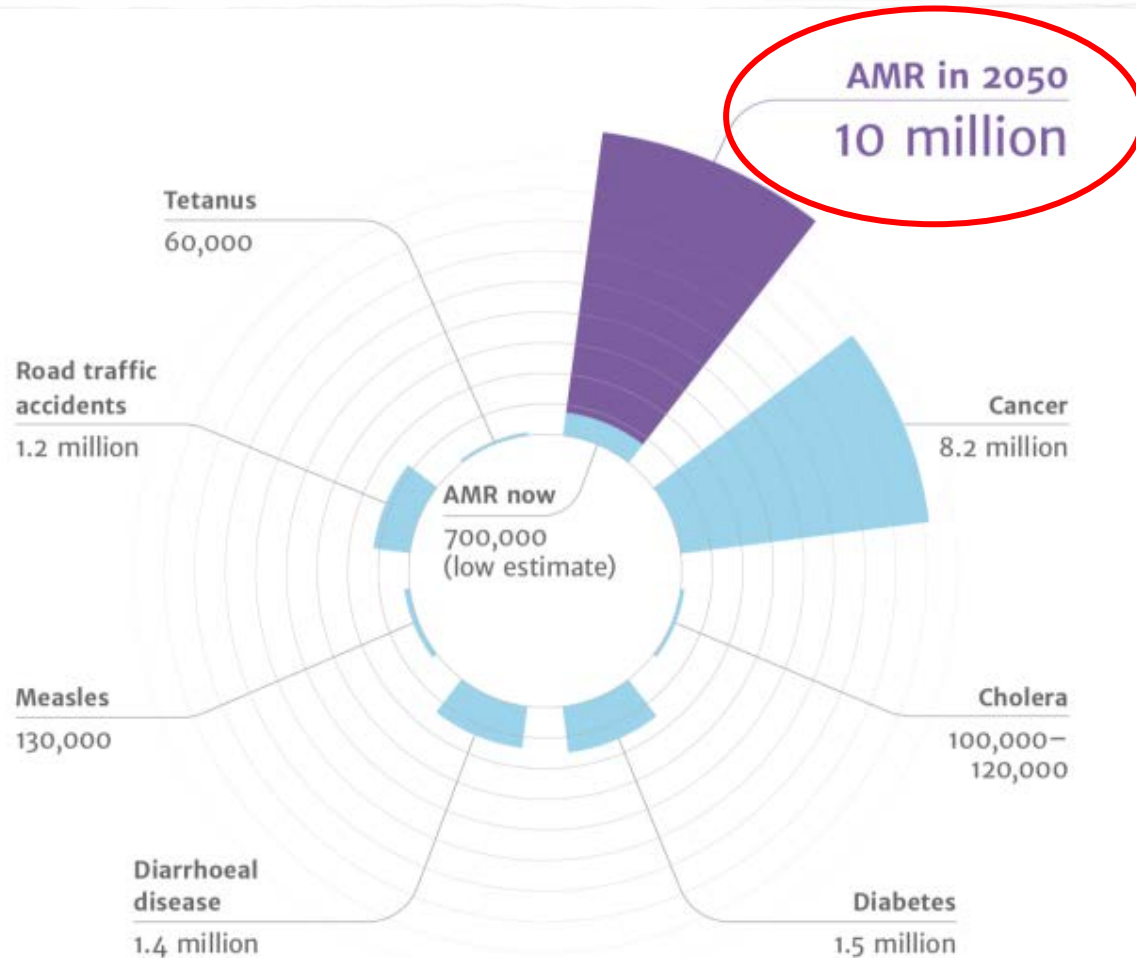


Antimicrobial residues from hospitals, pharmaceutical companies and agriculture pollute water.



*World Bank Group Report on Drug-Resistant Infections (March 2017)

Deaths attributable to AMR every year (World Bank, 2016)



From the global perspective



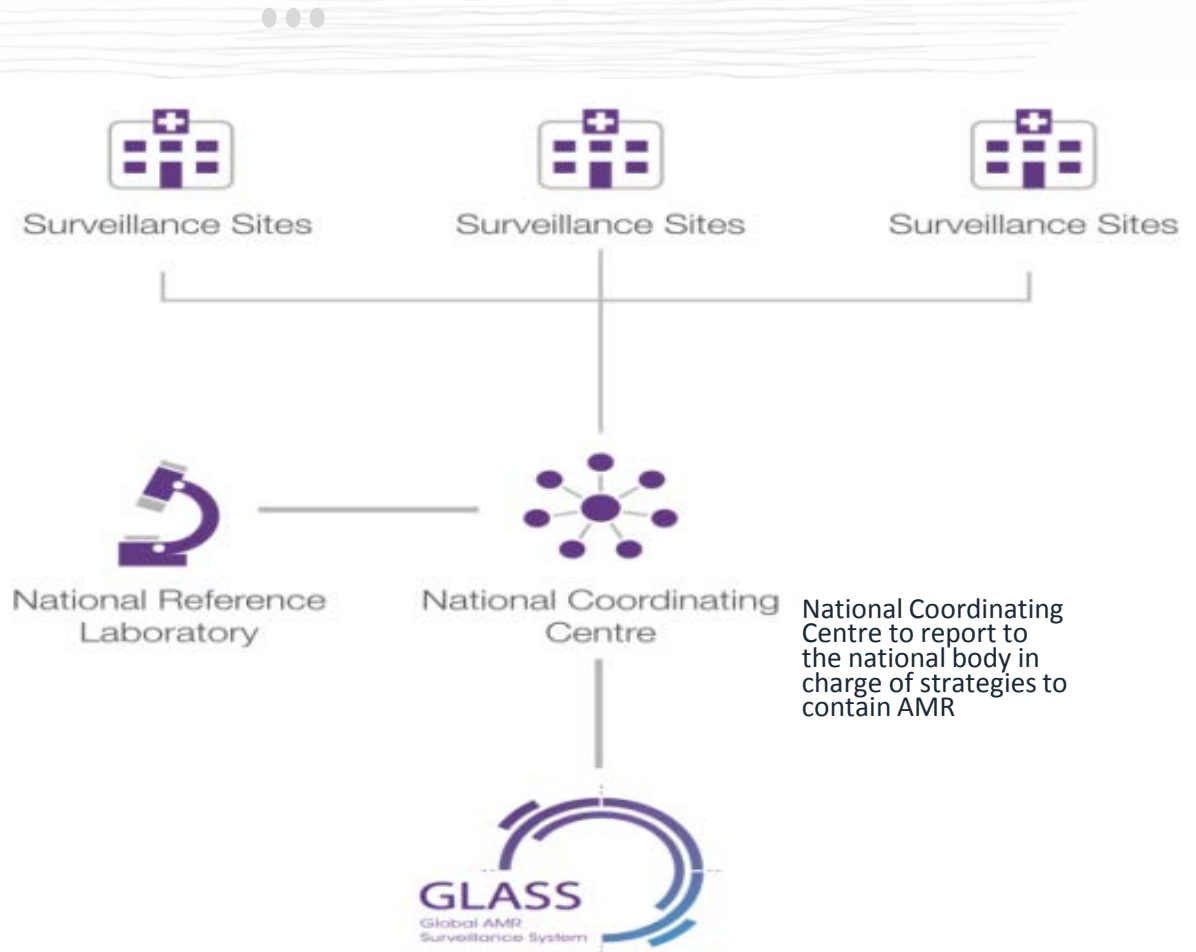
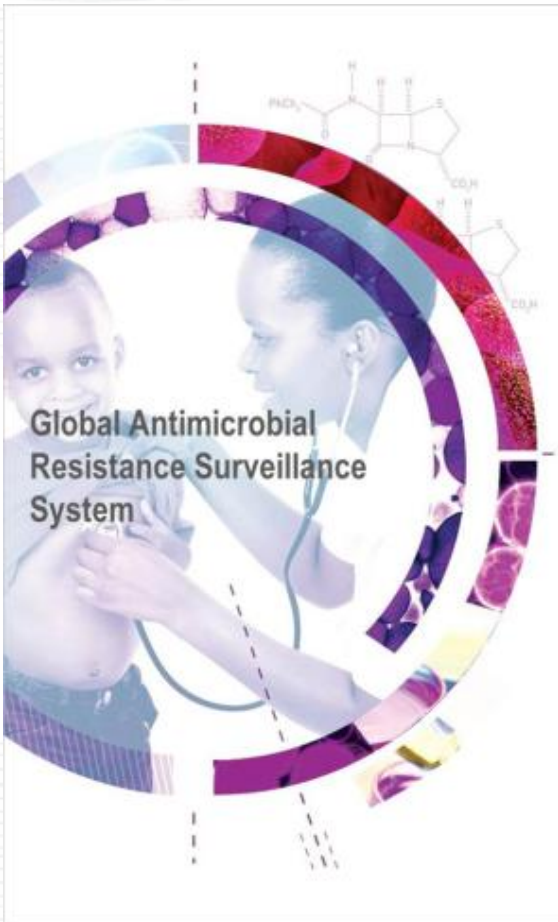
2015 World Health Assembly

Global Action Plan on AMR

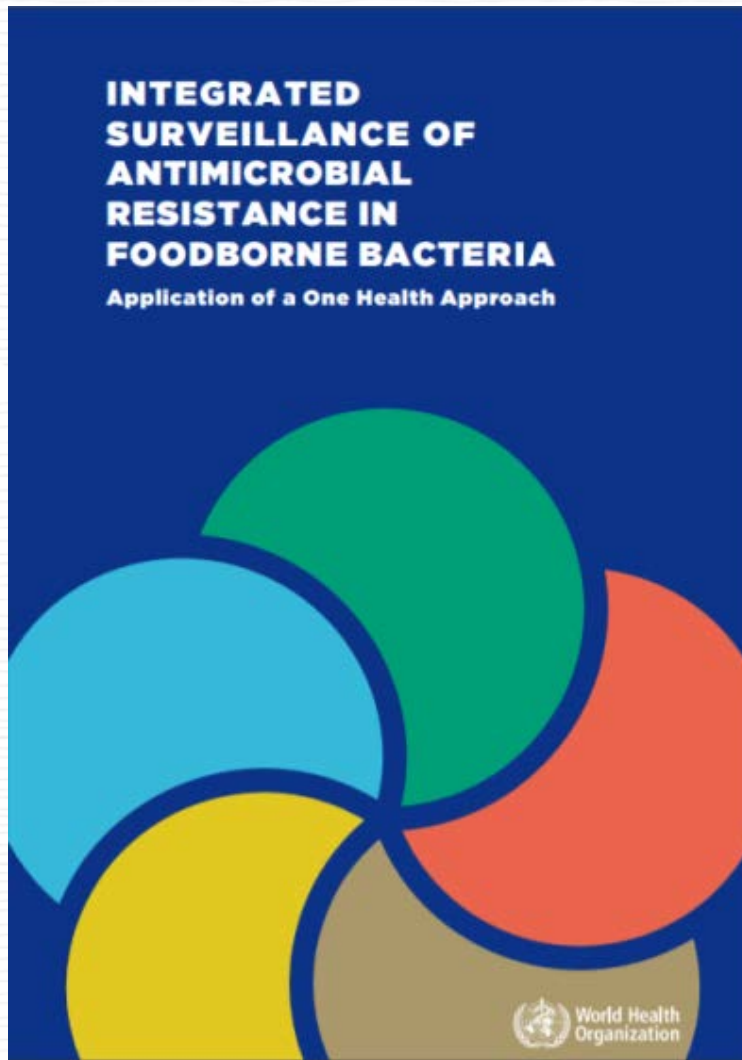


- to improve awareness and understanding of antimicrobial resistance;
- to strengthen knowledge through surveillance and research;
- to reduce the incidence of infection;
- to optimize the use of antimicrobial agents; and
- develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions.

PANAFTOSA-PAHO/WHO



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WHO guidelines on use of medically important antimicrobials in food-producing animals

Authors:

WHO




Publication details

Publication date: 2017

Languages: English

ISBN: 978-92-4-155013-0

Downloads

- [Full guidelines](#)
- [Web Annex A. Evidence base](#)
- [Web Annex B. From evidence to recommendations](#)
- [Journal publication](#) 

Executive Summary

[عربي](#) | [中文](#) | [English](#) | [Français](#) | [Русский](#) | [Español](#)

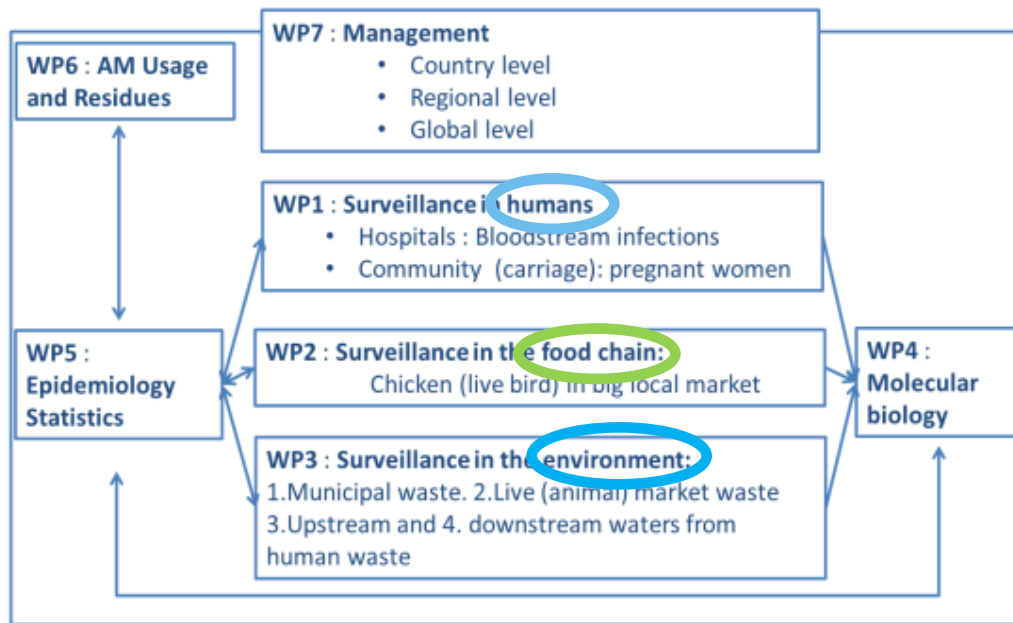


Figure 1. ESBL Ec Tricycle project.
WP Working Package

PANAFTOSA-PAHO/WHO

WHO list of Critically Important Antimicrobials

Antimicrobial class		Criterion / Prioritization factor (Yes=●)				
CRITICALLY IMPORTANT ANTIMICROBIALS		C1	C2	P1	P2	P3
<i>HIGHEST PRIORITY</i>						
Highest Priority	<i>Cephalosporins (3rd, 4th and 5th generation)</i>	●	●	●	●	●
	<i>Glycopeptides</i>	●	●	●	●	●
	<i>Macrolides and ketolides</i>	●	●	●	●	●
	<i>Polymyxins</i>	●	●	●	●	●
	<i>Quinolones</i>	●	●	●	●	●

WHO supports optimization of the use of antimicrobial medicines in human and animal to preserve their effectiveness by taking a One Health approach.

The logo of the WHO is a symbol for antibiotic drug production.

World Health Organization

http://www.who.int/foodsafety/areas_work/antimicrobial-resistance/cia/en/

		C1	C2	P1	P2	P3		
Medically Important	Highly Important	HIGHLY IMPORTANT ANTIMICROBIALS						
		Amphotericin B	●	●				
		Colistin	●	●				
		Linezolid	●	●				
		Polymyxins	●	●				
		Vancomycin	●	●				
	Important	Important	IMPORTANT ANTIMICROBIALS					
			Amoxicillin	●	●			
			Clarithromycin	●	●			
			Clindamycin	●	●			
			Trimethoprim-sulfamethoxazole	●	●			
			Fluoroquinolones	●	●			

patients with serious infections in health care settings affected by bacterial diseases for which the antimicrobial class is the sole or one of few alternatives to treat serious infections in humans.

P2 | Prioritization criterion 2

High frequency of use of the antimicrobial class for any indication in human medicine, or also high proportion of use in patients with serious infections in health care settings, since use may favour selection of resistance in both settings.

P3 | Prioritization criterion 3

The antimicrobial class is used to treat infections in people for which there is evidence of transmission of resistant bacteria or resistance genes from non-human sources.

World Health Organization



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From the regional perspective



2015 PAHO Directive Council Regional Strategic Plan on AMR

- 1- Integration of TB, HIV and malaria programs;
- 2- “One Health” approach;
- 3 - Objectives and indicators appropriated to the Region;
- 4 - Multi-sectoral approach

2016 RIMSA 17

Intersectoral contribution to health, agriculture and SDG



PAHO regional strategies



- Support in development and implementation on NAPs
- Human health surveillance
 - ReLAVRA
- Integrated surveillance
 - Pulsenet
 - ReLAVRA + INFAL (RILAA)
- Tripartite +



Status of the National Action Plans (NAPs) on Antimicrobial Resistance in LAC

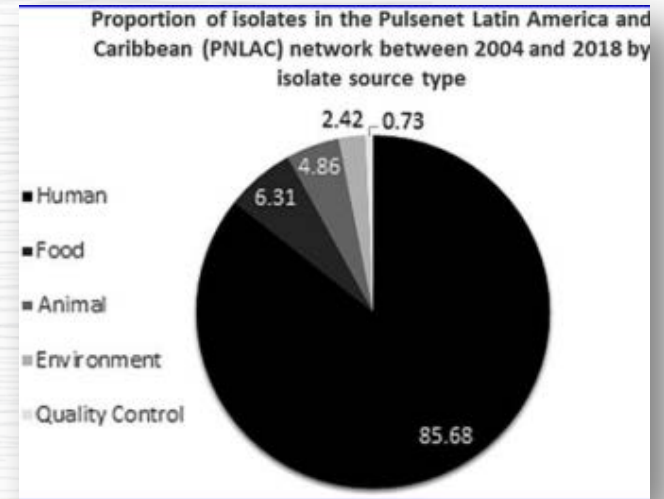
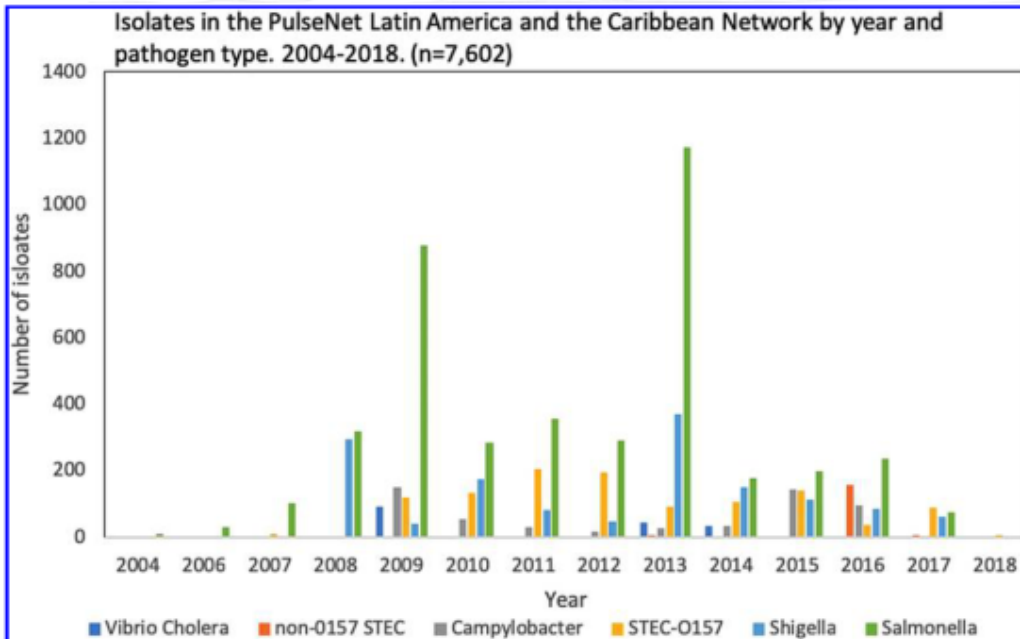




Pulsenet LAC



- From PFGE to WGS



Chinen et al, 2019



Latin American Network for Antimicrobial Resistance Surveillance - ReLAVRA



**PAHO
coordinates**

RELAVRA surveillance 1996-2019



Community pathogens

- *Salmonella* spp.
- *Shigella* spp.
- *Vibrio cholerae*
- *Escherichia coli*
- *Neisseria meningitidis*
- *Neisseria gonorrhoeae*
- *Streptococcus pneumoniae*
- *H. influenzae*
- *Campylobacter*
- *S. β hemolítico*
- *S. aureus*

Nosocomial pathogen

- *Enterococcus* spp.
- *Klebsiella pneumoniae*
- *Acinetobacter* spp.
- *Pseudomonas aeruginosa*
- *Staphylococcus aureus*
- *Escherichia coli*
- *Enterobacter* spp.



RILAA
INFAL



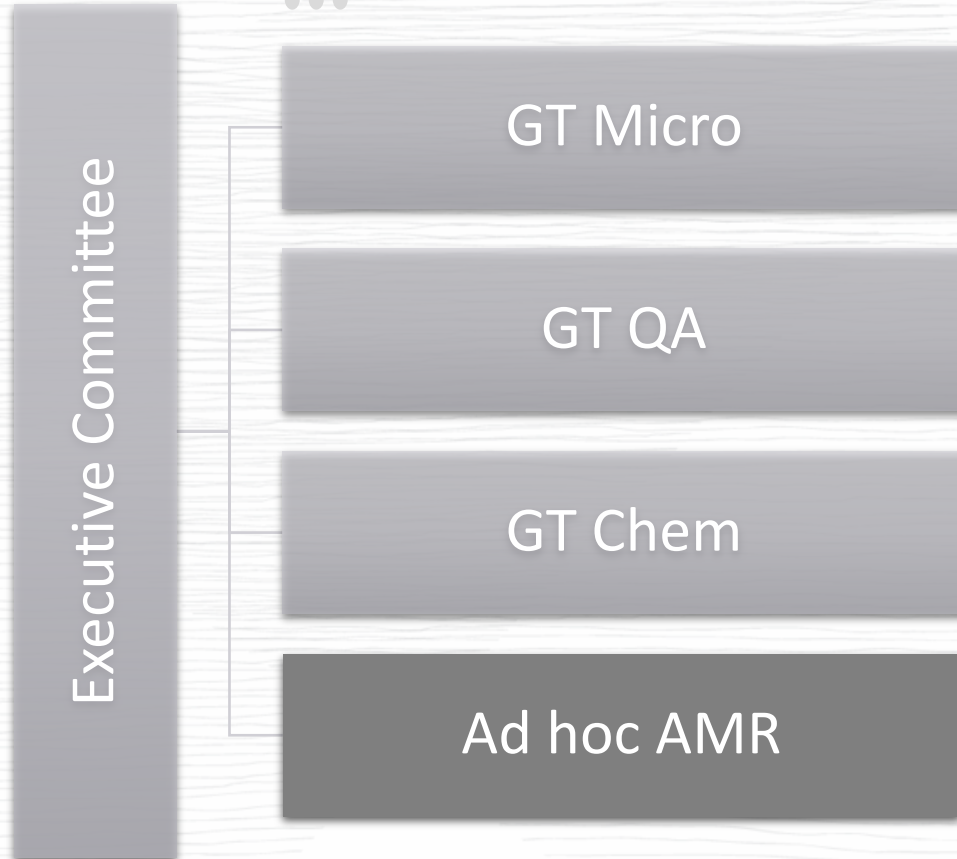
Members INFAL (RILAA):

 30 countries
(170 labs)

 *Ex officio secretariat*



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	<i>Glycopeptides</i>	●	●	●	●	●
	<i>Macrolides and ketolides</i>	●	●	●	●	●
	<i>Polymyxins</i>	●	●	●	●	●
	<i>Quinolones</i>	●	●	●	●	●

Priority	Antimicrobial class	Criterion / Prioritization factor (Yes=●)					Notes	
		C1	C2	P1	P2	P3		
Medically Im	Highly Important	Amylinoids	●	●	●	●	●	NA
		Capitazones (3 rd and 2 nd generation) and cephalosporins	●	●	●	●	●	
		Lincomides	●	●	●	●	●	
		Penicillin penicillins	●	●	●	●	●	
		Penicillins acids	●	●	●	●	●	
		Streptogramins	●	●	●	●	●	
		Substrates, dihydrofolate reductase inhibitors and cotrimoxazole	●	●	●	●	●	
		Sulfonamides	●	●	●	●	●	
		Tetracyclines	●	●	●	●	●	
		Trimethoprim	●	●	●	●	●	
Important Antimicrobials	Important	C1	C2	P1	P2	P3	NA	
Amoxicillin	●	●	●	●	●	●	NA	
Carbapenems	●	●	●	●	●	●		
Moxifloxacin	●	●	●	●	●	●		
Fluoroquinolones	●	●	●	●	●	●		

P2 | Prioritization criterion 2
High frequency of use of the antimicrobial class for any indication in human medicine, or also high proportion of use in patients with serious infections in health care settings, since use may favour selection of resistance in both settings.

P3 | Prioritization criterion 3
The antimicrobial class is used to treat infections in people for which there is evidence of transmission of resistant bacteria or resistance genes from non-human sources.

WHO CIA list 8th rev. | http://who.int/foodsafety/publications/antimicrobials_8th_rev/
 AGISAR: http://who.int/foodsafety/areas_work/antimicrobial-resistance/agisar/
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 WHO/MSD/EPI/2017.1

http://www.who.int/foodsafety/areas_work/antimicrobial-resistance/cia/en/



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Colisitin use in the Americas and in the Caribbean



Da plataforma Bing
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Intersectoral and interdisciplinary activities

- Global level (Tripartite agreement):



- Regional level (Tripartite +)

PANAFTOSA-PAHO/WHO

FAO

OIE

IICA

OIRSA





EU PROJECT: Working Together to Fight Antimicrobial Resistance (AMR)

Argentina, Brazil, Chile, Colombia,
Mexico*, Paraguay, Peru, Uruguay

3-year project

€9 million

Tripartite +



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FOOD SAFETY RISK ANALYSIS NETWORK (FSRisk)



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Organización de las Naciones Unidas
para la Alimentación y la Agricultura



ORGANISMO INTERNACIONAL REGIONAL
DE SANIDAD AGROPECUARIA





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YOU!

raszlsim@paho.org

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