



AMR One Health Network Meeting

29 February & 1 March 2024- Brussels

Implementing a One-Health Action Plan on AMR: the Spanish example



Plan Nacional
Resistencia
Antibióticos

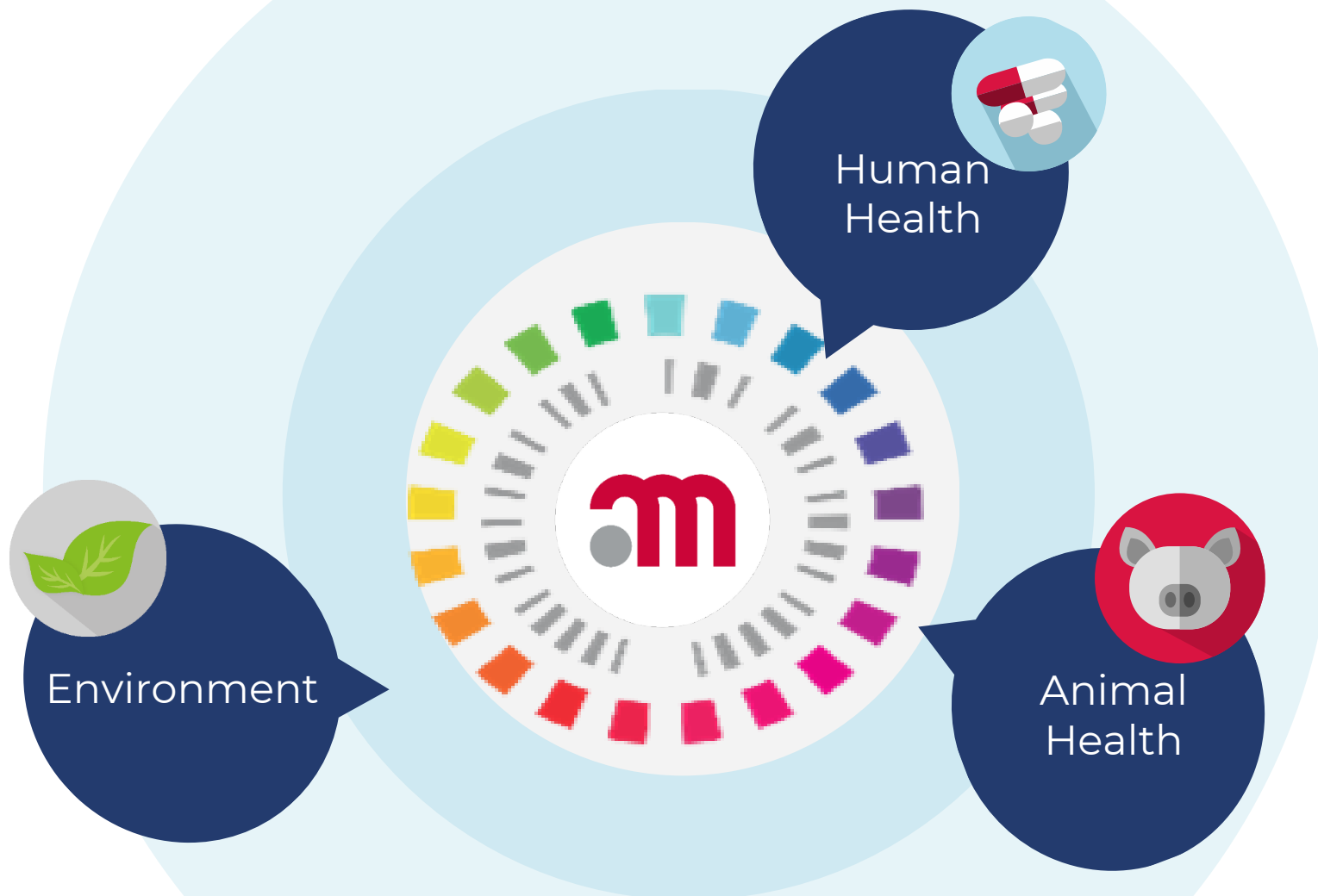
Complex problems
require equally
complex solutions!



 **ONE**
Health



PRAN is One Health





2014 2018 **FIRST PRAN**

Start-up and involvement of the largest number of agents in human and animal health



2019 2021 **SECOND PRAN**

- Development of projects and concrete actions in human and animal health
- Development of IT solutions
- Inclusion of the environmental area
- PRAN quality assessment

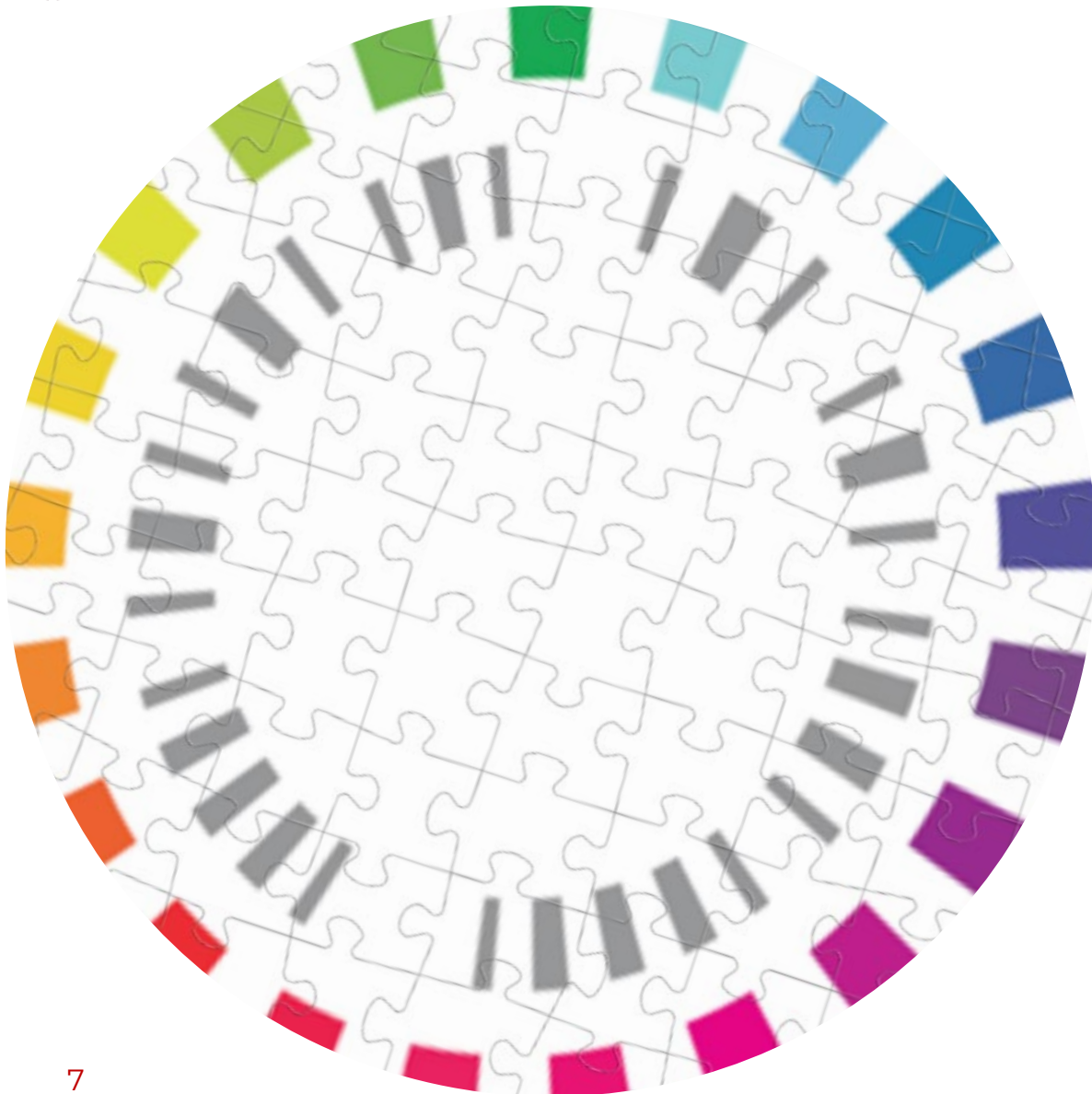
2022 2024 **THIRD PRAN**

- Focused on the One Health approach
- Continuity of main projects
- Start of new initiatives identified in the evaluation



**+60 DOCUMENTS
80 ACTIONS**





10 MINISTRIES

Health, Agriculture, Environment,
Consumption, Economy, Education,
Universities, Interior, Defense, Science,

AUTONOMOUS REGIONS

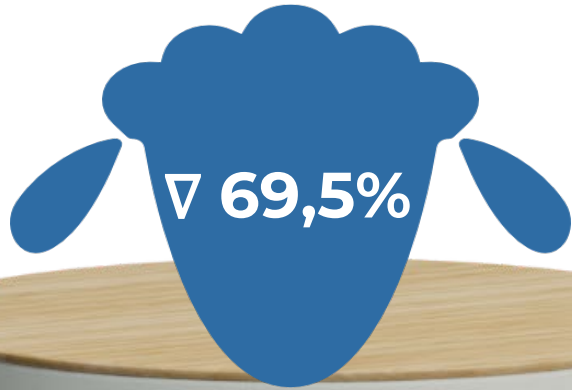
+ 70 ENTITIES

Scientific societies, universities,
professional associations...

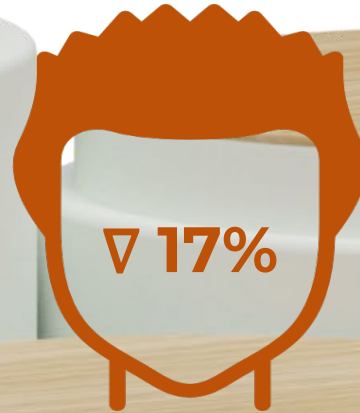
+ 300 EXPERTS



MAIN RESULTS



Greatest reduction in Europe in the consumption of antibiotics in animal health

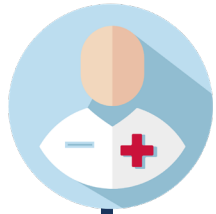


Third greatest reduction in Europe in the consumption of antibiotics in human health

Human Health

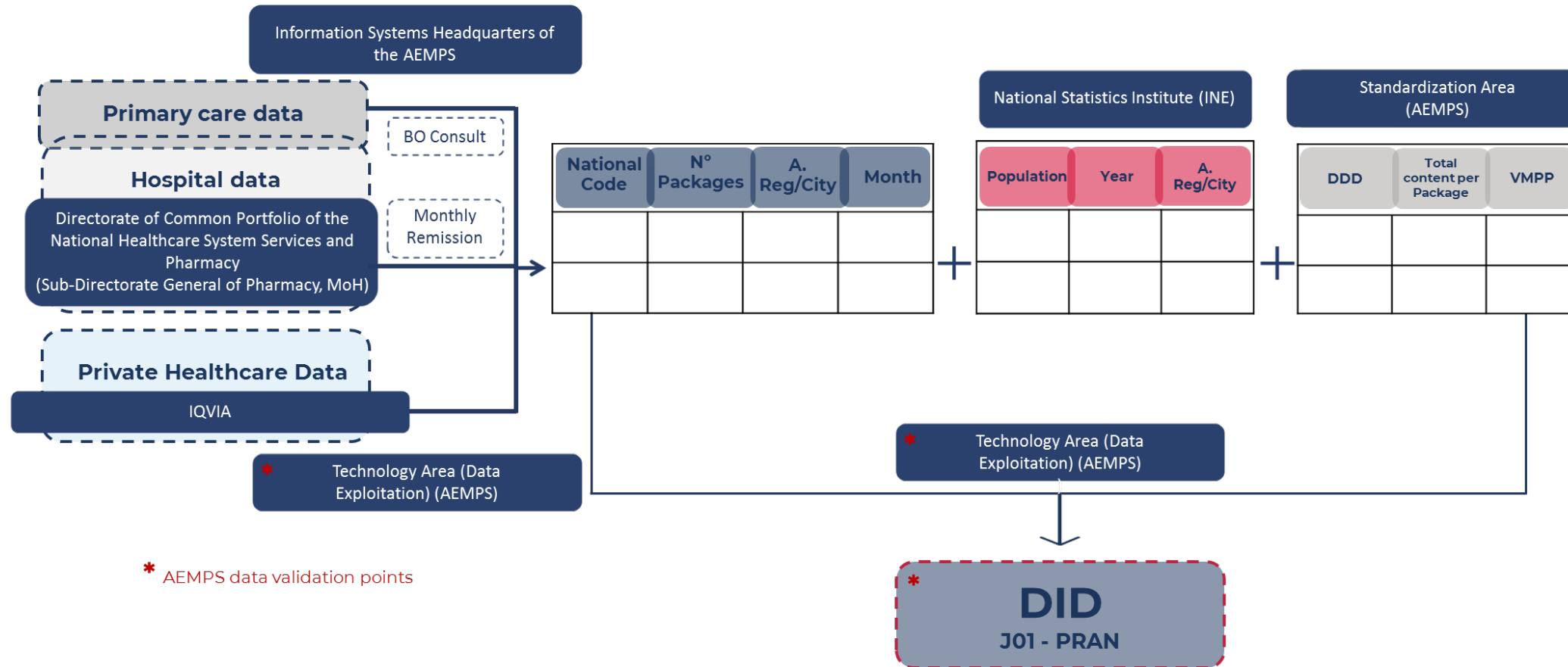


PRAN – HUMAN HEALTH



- AMC surveillance
- AMR surveillance
- Antimicrobial Stewardship Programmes
- National Antimicrobial Therapeutic Guidelines
- Recommendations and IPC programmes

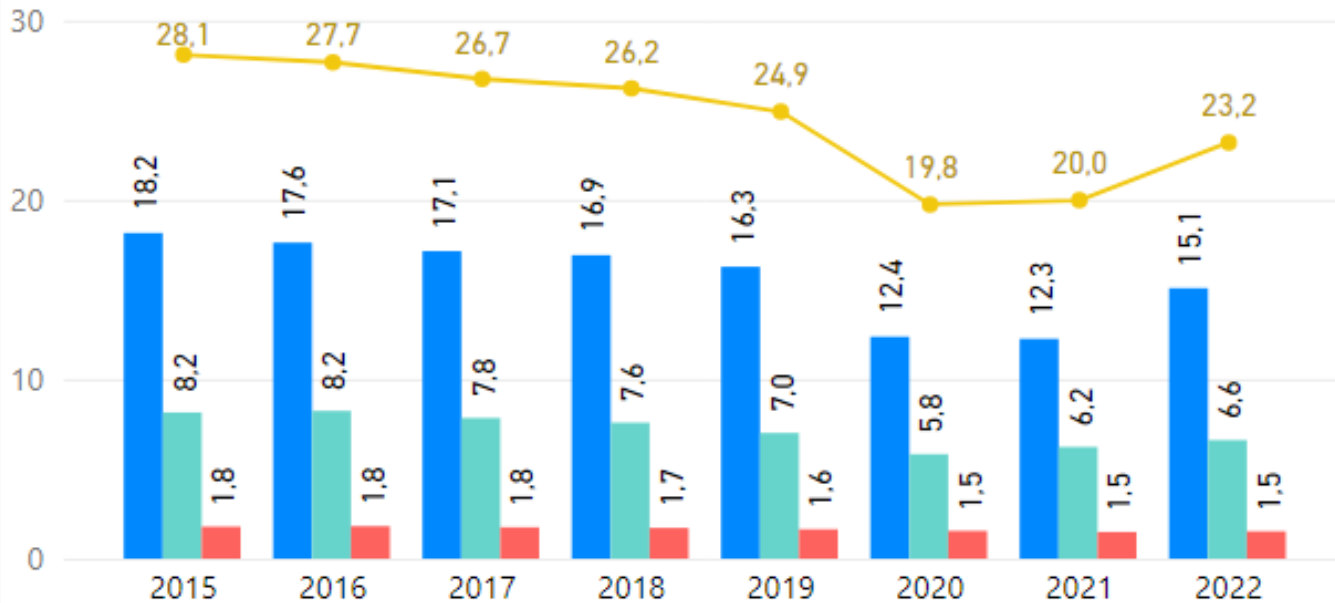
SURVEILLANCE: CONSUMPTION



SURVEILLANCE: CONSUMPTION

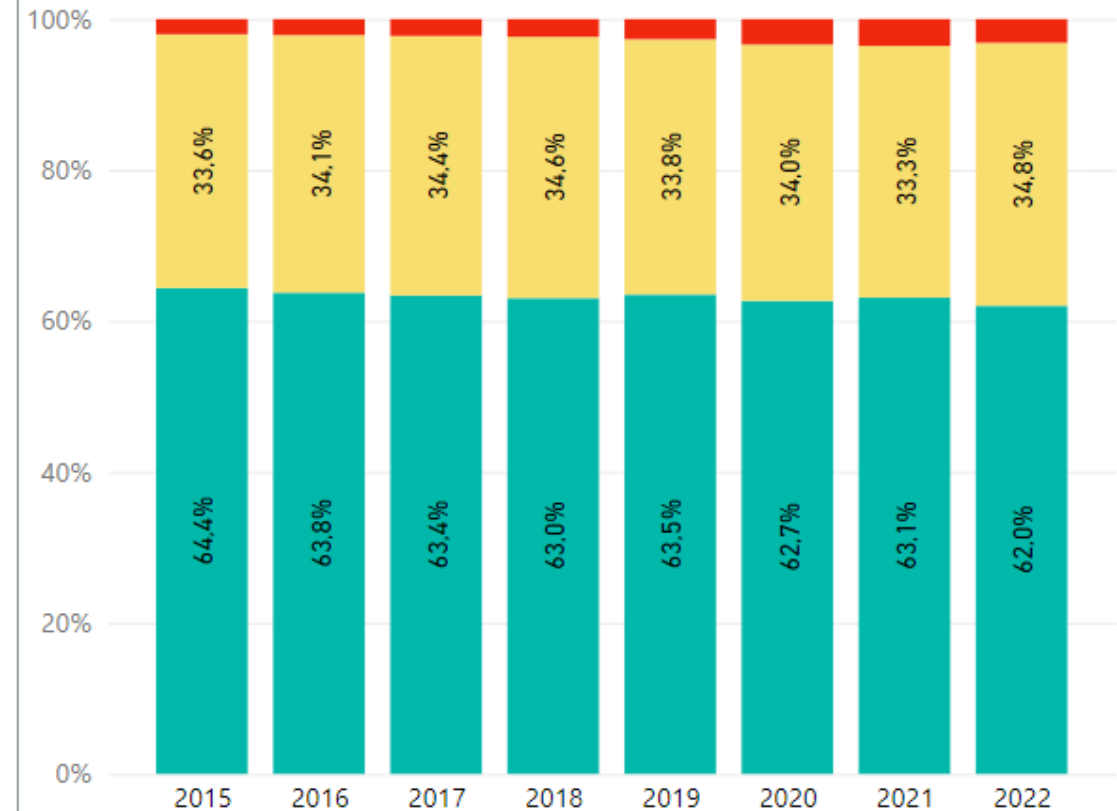
Consumos Antibióticos Global (AP y H) en DHD

● Receta Oficial ● Receta Privada ● DHD Hospitales Global ● Consumo Global



Consumos Antibióticos Global (AP y H) en DHD en %

Category ● Access ● Watch ● Reserve

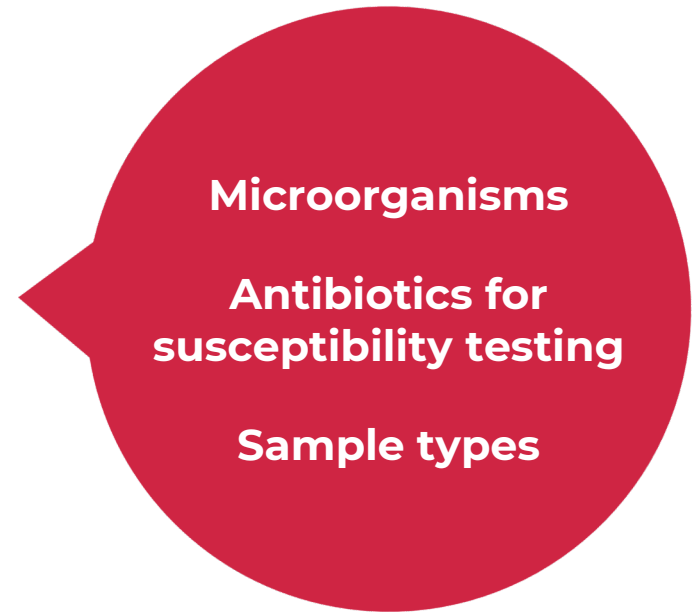


SURVEILLANCE: RESISTANCE



Tabla 1. Microorganismos, antibióticos para pruebas de sensibilidad y tipos de muestras

Microorganismos	Antibióticos para las pruebas de sensibilidad	Tipos de muestra
<i>Enterobacterales, excluyendo Salmonella y Shigella</i>	ampicilina, amoxicilina-ácido clavulánico, piperacilina-tazobactam, cefazolina, cefotaxima, ceftazidima, cefepima, ceftazidima-avibactam, aztreonam, imipenem, meropenem, ertapenem, gentamicina, tobramicina, amikacina, ciprofloxacino, trimetoprim-sulfometoxazol, tetraciclina, tigeciclina, fosfomicina, nitrofurantoína (sólo en aislados urinarios), colistina	Sangre
<i>Pseudomonas aeruginosa</i>	piperacilina-tazobactam, ceftazidima, cefepima, ceftolozano-tazobactam, ceftazidima-avibactam, aztreonam, imipenem, meropenem, gentamicina, tobramicina, amikacina, ciprofloxacino, levofloxacino, colistina	Sangre
<i>Acinetobacter baumannii</i>	ampicilina-sulbactam, piperacilina-tazobactam, imipenem, meropenem, gentamicina, tobramicina, amikacina, ciprofloxacino, tigeciclina, colistina	Sangre
<i>Shigella spp</i>	ampicilina, amoxicilina-clavulánico, cefotaxima, ceftazidima, ciprofloxacino, azitromicina, trimetoprim-sulfometoxazol, tetraciclina	Muestra clínica



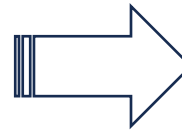
SURVEILLANCE: RESISTANCE



PRAN

RedlabRA

Red de Laboratorios para la Vigilancia
de Microorganismos Resistentes



Level 3 Laboratories (Centro Nacional de Microbiología - CNM): whole genome sequencing. Reference for levels 1 and 2.

Level 2 Laboratories: every characterisation test, including molecular characterisation.

Level 1 Laboratories: phenotypic characterisation

Effective implementation of Antimicrobial Stewardship Programs (ASP)

1°
Europe



Certification Standards for ASP in **hospitals** and **primary care**

CertificaPROA

Tool for self-certification and audit



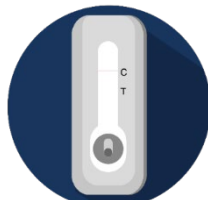
Digital tool to support ASP in hospitals



Regional specialist



AWaRe



Rapid Diagnostic Tests



RAVARA



Integral approach to infection in LTFCs



National Antimicrobial Therapeutic Guidelines



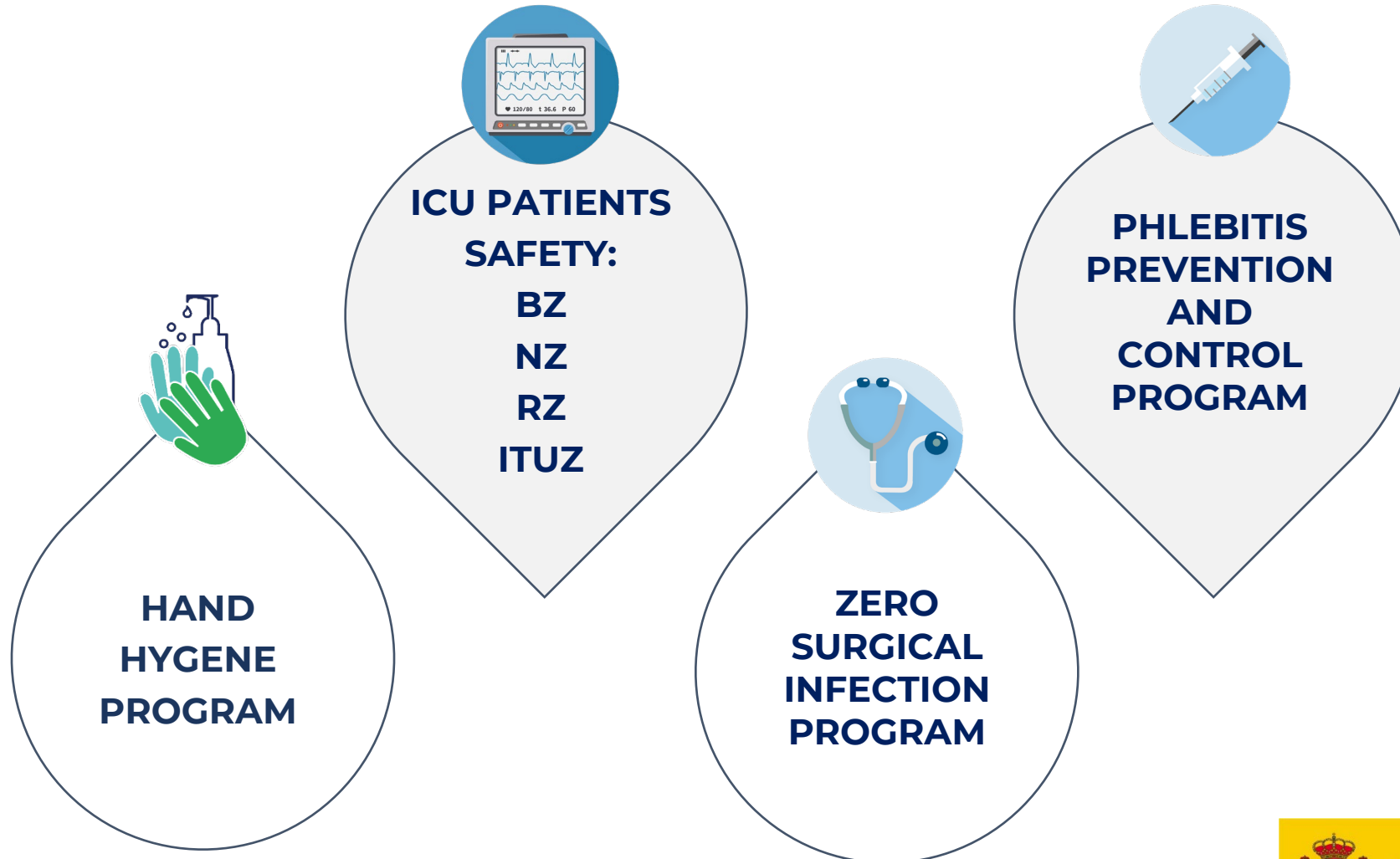
App (iOs and Android) +
web app to guide
antimicrobial prescription
in primary care

Empirical evidence-based
management of the most common
infections

Additional info: aetiology, important
observations, safety notes and
criteria for hospital referral

AWaRe 

RECOMMENDATIONS AND PROGRAMS TO REDUCE THE RISK OF INFECTION AND RESISTANCE TRANSMISSION



Animal Health





AMC Surveillance (ESVAC – ESUAVET)

Clinical pathogens Surveillance

REDUCE programmes

Availability of veterinary AM

Therapeutic Guidelines (app)



**IMPROVING THE
AVAILABILITY OF
VETERINARY
DRUGS AND THEIR
ALTERNATIVES**



**CONSUMPTION
SURVEILLANCE**



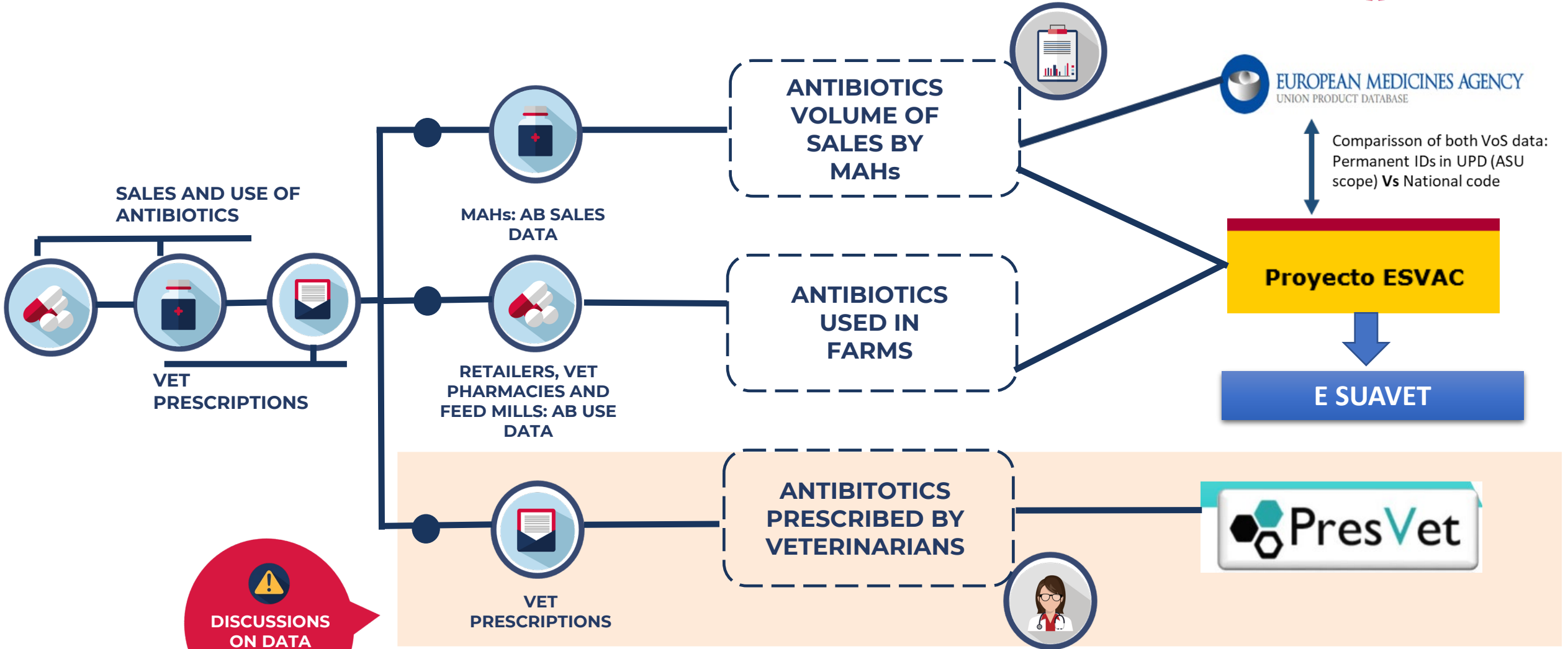
**RESISTANCE
SURVEILLANCE**

PRAN 2022-2024



**“GRUPOS
REDUCE” BY
SPECIES**

NATIONAL SURVEILLANCE: SALES AND USE DATA COLLECTION



DISCUSSIONS ON DATA AVAILABILITY

REDUCE PROGRAMS



**Reduce use of
antibiotics**



**Management,
biosecurity and
hygiene**



**Implement
management and
treatment
guidelines**

**Antimicrobial
Stewardship
Programs on a
voluntary basis**

REDUCE PROGRAMS

Pig Working Group



Rabbit Working Group



Cattle Working Group



Meat Sheep & Goats
Working Group



Horses Working Group



Poultry Working Group



Dairy animals Working Group



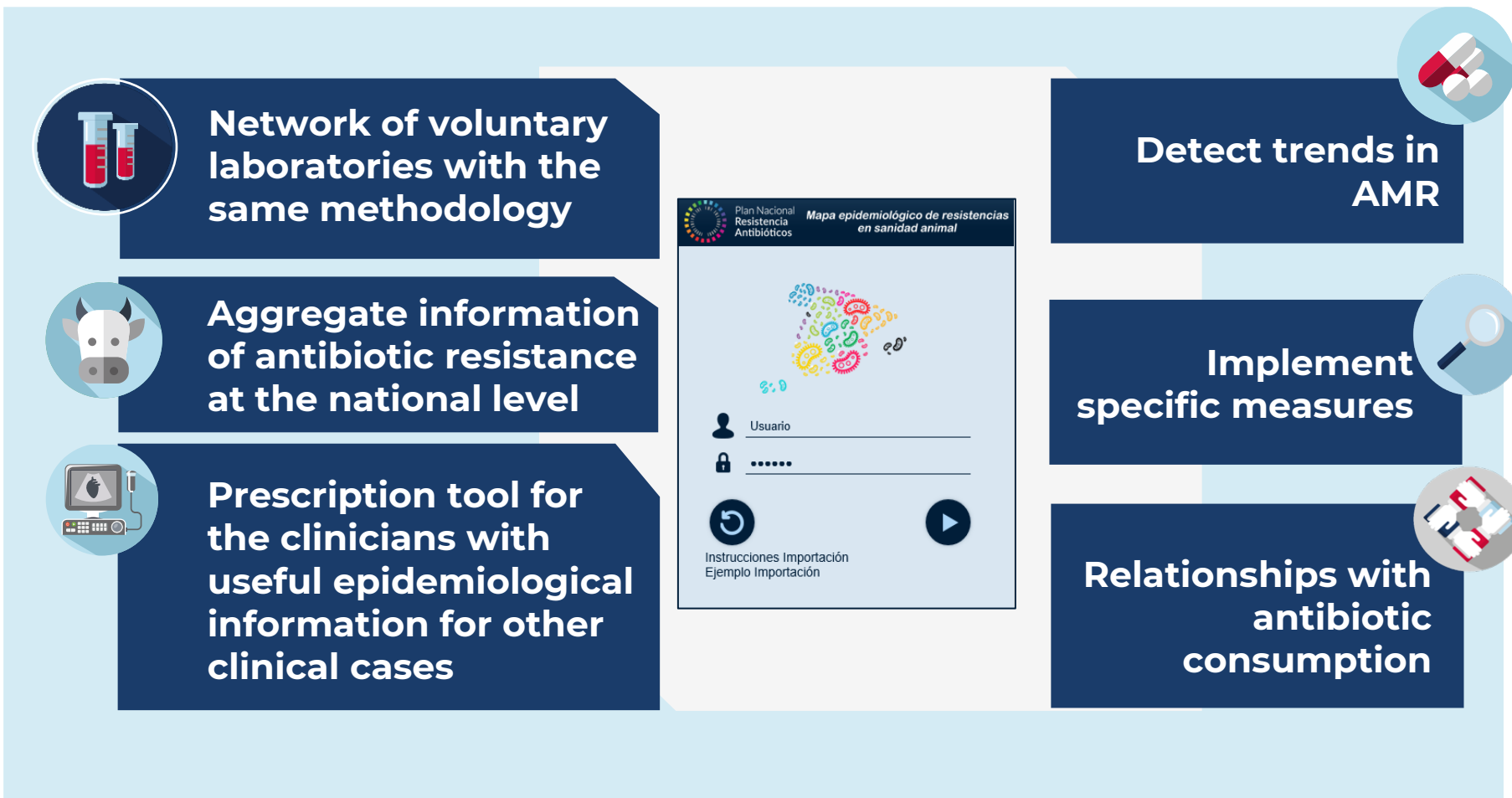
Pet Working Group

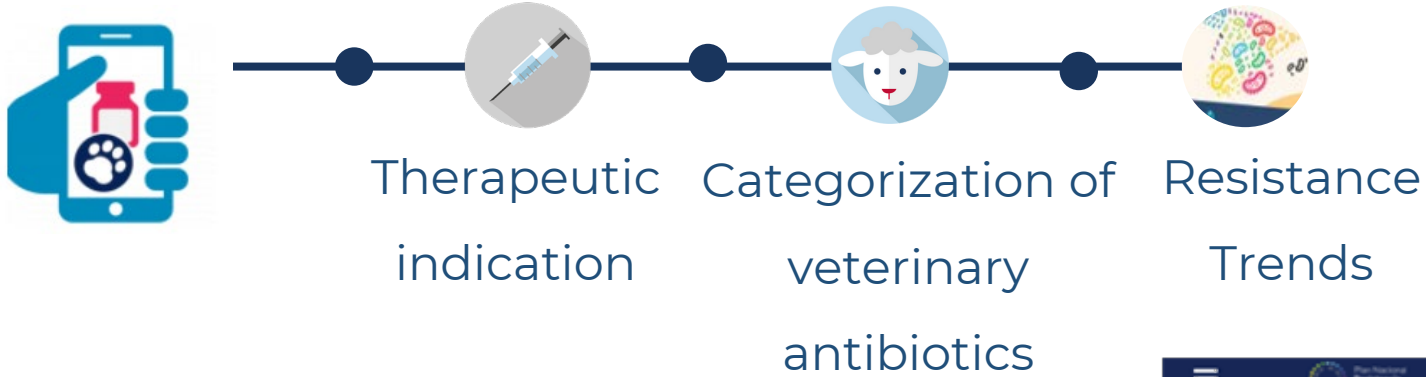


Aquiculture Working Group



NATIONAL SURVEILLANCE: EPIDEMIOLOGICAL PATHOGENS DATA





OBJECTIVES

- Facilitate the daily practice of clinical veterinarians.
- Safety when prescribing antibiotics.
- Special attention to exceptional prescription



WORKING GROUP ON AVAILABILITY



**Working Group on
Availability of AM
Medicinal Products
and Alternatives to
their Use**



Plan Nacional
Resistencia
Antibióticos



Fish farming

External parasitosis:

- **Formaldehyde:** authorized only in other species (e.g. salmon) or in specific tubercles. Furthermore, the use of this substance may be restricted due to safety problems. Thus, it is urgent to have other active substances authorized for its substitution.
- **Other needs:**
 - **Oxytetracycline:** review and update of the Summary of Product Characteristics (SPC) to include other target species, indications and dosages.
 - **Authorisation of other antibiotics,** considering their indication, number of uses, pharmacovigilance substances, and safety related vaccines.

Cattle:

- **Coccidiosis:**
 - **Decoquinone** information to be administered with milk or in place of drinking water (individual administration), currently only authorized as pre-mix.
- **Respiratory infections:**
 - **Fluoreniline** as injectable forms (currently authorized in other species).
- **Leptospirosis:**
 - **Vaccines (L. pomona).**
- **Other needs:**
 - **Review and adjustment** of the SPC (of all products) to accept **penicillins**.
 - **Alternative to group A vaccines** for dairy cattle (options with shorter withdrawal time milk) from group B and C.
 - **Topical antibiotic forms** (oral injectables and local use).

Rabbit Farming

- **Epizootic enteropathy:**
 - **Other antibiotics** available for the treatment of this disease. Antiseptics as an alternative.
 - **Authorisation of digestive enzyme complexes** to improve digestibility in young rabbits.
- **Coccidiosis:** **Other veterinary medicinal products (VMPs)** (new VMPs).
- **Staphylococcal mastitis:** **Authorisation of long acting penicillins.**
- **Myxomatosis:** **Review and update** of the SPC of the available vaccines.
- **Respiratory infections:** **vaccines.**
- **Dermatomycosis:** **vaccines and VMPs.**

Dogs and Cats

- **Septic:**
 - **Availability of intravenous formulations,** such as penicillin G, ampicillin, cefazolin and meropenem.
- **Viral eye infections:**
 - **Availability of penciclovir** effective against herpes simplex virus (HSV) eye drops on eye treatments.
- **Bacterial eye infections:**
 - **Availability of chloramphenicol and pefloxacin** eye drops on eye treatments.
- **Other needs:**
 - **VMPs on keratoconjunctivitis sicca** (condition for mixed breed dog - Bull Terrier).
 - **Isolated results of the research:**
 - **Antimicrobials for topical use.**

Bees

- **Verruosis:**
 - **Importation of new VMPs.**

Note: This list of priorities is provided only for guidance. For more information please keep in touch with: pram@anis.es



Small Ruminants

- **Sheep**
- **Ovine respiratory complex:**
 - **Polyvalent vaccines** with the three most pathogens involved, not considering the latest scientific advances.
- **Goats**
- **Mycoplasmosis:**
 - **Authorisation of antibiotics** as a possible effective option (M. capri) on goats.
 - **Vaccines** with good characteristics and distribution (M. capri) on goats.
- **Coccidiosis:**
 - **Decoquinone** extension of the authorized use ready available for sheep and goats.
 - **Respiratory diseases** vaccines.
- **Common needs:**
 - **Cryptosporidiosis** other VMPs available.
 - **Vaccines:** **Availability of intramuscular tubes** with short needles, such as those already accepted in the productive system of these species.
 - **There are no self-administrations authorized** essential to increase the effectiveness of some treatments and to promote animal health.

Broilers and turkeys

- **Salmonellosis:**
 - **In vivo vaccines** against other serotypes (e.g. chicken) in vivo, in accordance with current regulations.
- **Respiratory and enteric bacterial infections:**
 - **Availability of other antibiotics** with shorter duration of treatment to reduce antibiotic use.
- **Haemorrhagic enteritis (turkeys):**
 - **Vaccines** to prevent this pathology. Study and review of these (black head) in turkeys.
- **Other needs:**
 - **VMPs against salmonellosis** (Aseptic) and other vaccines for other diseases.

Laying birds

- **Respiratory infections:**
 - **Vaccines** authorized to prevent the risk of egg shell defects.
 - **Regulation of VMPs with limited other antimicrobial activity** to reduce the use of antibiotics (and extracts have advantages).
 - **Need for anti-inflammatory VMPs** with appropriate HPLC, in case of eggs.
- **Bacterial infections:**
 - **Availability of other active substances** on vaccines to prevent the spread.
- **Topeworm infections:**
 - **Availability of active substances** (e.g. ivermectin) for use against the eggs of the use of benzimidazole (eggs).

Pig Farming

- **Diarrhoea caused by Rotavirus in piglets:**
 - **Vaccines** already authorized in these countries.
- **Neonatal diarrhoea (caused by Streptococcus spp.) and post-weaning colibacillosis:**
 - **There is a need of pharmacological VMPs as alternative.**
- **Swine dysentery:**
 - **VMPs with Bacillus subtilis** as probiotics and vaccines.
- **Other needs:**
 - **Tetracycline** review and update of the SPC (age for duration of treatment).
 - **Performance review** of the SPC: formulate the treatment of enteric problems (susceptibility: Zoonosis) on pig.

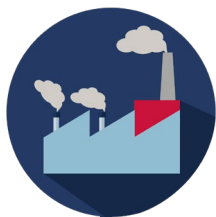
Horses

- **Equine tetraeriosis:** **Supervisors** already available (MMP + 1000 U/ml).
- **Septic:** **Availability of antibiotics** (in vivo) (forms never authorized others from group B and C).
- **Other needs:**
 - **Antiparasiticide** other VMPs available.
 - **Antimicrobials for topical use.**



Environment





Defining emission sources

Defining environmental destination

Monitoring

AMR and AMG surveillance

Options for health impact risk assessment



Training and Communication



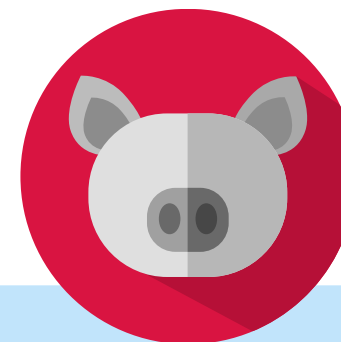
Training



**Prudent use
of antibiotics
in Primary
Care**



**Certified expert
training course in
AMR stewardship,
Stewardship in ICU
patients and
Infeccion Prevention
and Control
Specialist**



**Prudent use
of antibiotics
in
companion
animals**



PRANteca

New campaign - general public



ANTIBIÓTICOS
PROTEGERNOS ES SU TRABAJO.
EL TUYO, **USARLOS BIEN.**

Plan Nacional
Resistencia
Antibióticos

GOBIERNO DE ESPAÑA
MINISTERIO DE SANIDAD
agencia española de medicamentos y productos sanitarios

AGENDA 2030

Your job is to use them wisely. Government of Spain



ANTIBIOTICS
THEIR JOB IS TO **PROTECT US.**
YOUR JOB IS TO **USE THEM WISELY.**

Plan Nacional Resistencia Antibióticos

Awareness campaign - professionals

Think before you ink!

Al recetar FLUOROQUINOLONAS DE USO SISTÉMICO O INHALADO, SOPESA CUIDADOSAMENTE LOS RIESGOS

Posibles reacciones adversas incapacitantes y de duración prolongada en:

- Sistema musculoesquelético
- Sistema nervioso

NO PRESCRIBIR EN:

- Infecciones leves o autolimitadas
- Infecciones de leves a moderadas*
- Infecciones no bacterianas
- Profilaxis de la diarrea del viajero o de las infecciones recurrentes de las vías urinarias bajas
- Antecedentes de reacciones adversas graves

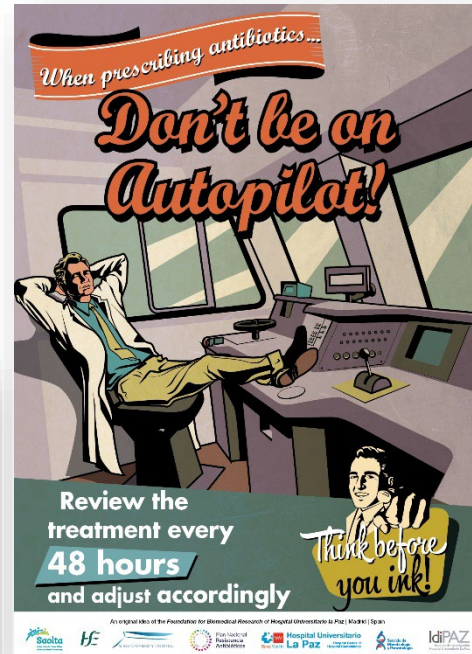
*A menos que se considere inadecuado utilizar otros antibióticos que se recomiendan habitualmente para estas infecciones

RIESGOS vs BENEFICIOS

Plan Nacional Resistencia Antibióticos

When prescribing antibiotics...

Don't be on Autopilot!



Review the treatment every 48 hours and adjust accordingly

Think before you ink!

Original idea of the Foundation for Biomedical Research of Hospital Universitario de Puig i Marqués (Spain)

WHO IS CAUSING THE INFECTION? ROUND UP THE USUAL SUSPECTS!



Send the cultures... Find the culprits!

Think before you ink!

Original idea of the Foundation for Biomedical Research of Hospital Universitario de Puig i Marqués (Spain)

Reduce la colistina sin sustituirla por otro antibiótico



El abuso de antibióticos disminuye la eficacia de estos medicamentos

Plan Nacional Resistencia Antibióticos

Al hora de prescribir un antibiótico...

No agotes a tu estrella

Tienes excelentes alternativas en tu equipo.



S SENSIBLE, CUANDO SE USA DOSIFICACIÓN ESTÁNDAR
Alta probabilidad de éxito terapéutico con un régimen antibiótico de dosificación estándar.

I SENSIBLE, CUANDO SE INCREMENTA LA EXPOSICIÓN
Alta probabilidad de éxito terapéutico incrementando la exposición al antibiótico (ajuste del régimen de dosificación o concentración fisiológica en el lugar de infección).

R RESISTENTE
Alta probabilidad de fracaso terapéutico.

¡Mejor, ¡¡¡ más !!
Tú decides!

Plan Nacional Resistencia Antibióticos

Running against resistance

I



~1000
participants

II



~2000
participants

III



More than 2200
participants





Social media
and web PRAN



EAAD and
WAAW

The Spanish National Action Plan on AMR (PRAN)

World Hand
Hygiene Day
campaign



JAMRAI
materials
dissemination

Debate kit
and
PRANteca



PRAN
Awards





One Health High-Level Meeting on Antimicrobial Resistance in Pamplona

Attended by key
representatives of AMR
at the European and
international level



Keys to success



- **One Health Approach**
- Surveillance (**DATA**)
- **Stakeholder** representation **from the beginning**
- **Participation** in EU/global initiatives
- **Measurable** and **achievable** objectives
- **Communication** and training



Plan Nacional
Resistencia
Antibióticos



Thank you for your attention!