

# La importancia de la vigilancia nacional de la RAM: resultados de la encuesta sobre recopilación de datos nacionales

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## Dutch agricultural trade in 2014

The Netherlands:  
the 2<sup>nd</sup> largest  
exporter of agricultural  
products in the world



**€80.7**  
billion

Total Dutch  
agricultural  
exports\*

\*Figures  
provided by LEI  
Wageningen UR



**65,505**

businesses in  
agricultural and  
horticultural  
sector



**9%**

of Dutch GDP  
from agrifood  
and horticultural  
sector



**77%**

of agricultural  
exports are to  
other EU  
countries



**8.8%**

of the nation's  
jobs found in  
agrifood and  
horticultural  
sector

Source: [www.agrimatie.nl](http://www.agrimatie.nl). LEI Wageningen UR, 2014

## Top 5 agricultural exports

### Ornamentals

World's top  
exporter



**€8.1**  
billion

### Meat

4<sup>th</sup> largest  
exporter, after  
the U.S., Brazil  
and Germany



**€8**  
billion

### Dairy

3<sup>rd</sup> largest  
exporter, after  
Germany and  
New Zealand



**€7.7**  
billion

### Vegetables

World's top  
exporter



**€6.1**  
billion

### Oils and fats

4<sup>th</sup> largest  
exporter, after  
Indonesia,  
Malaysia and  
Argentina



**€4.9**  
billion

Source: COMEXT

Ministry of Economic Affairs | January 2015

# AMU/AMR Paradox NL

## Human Health

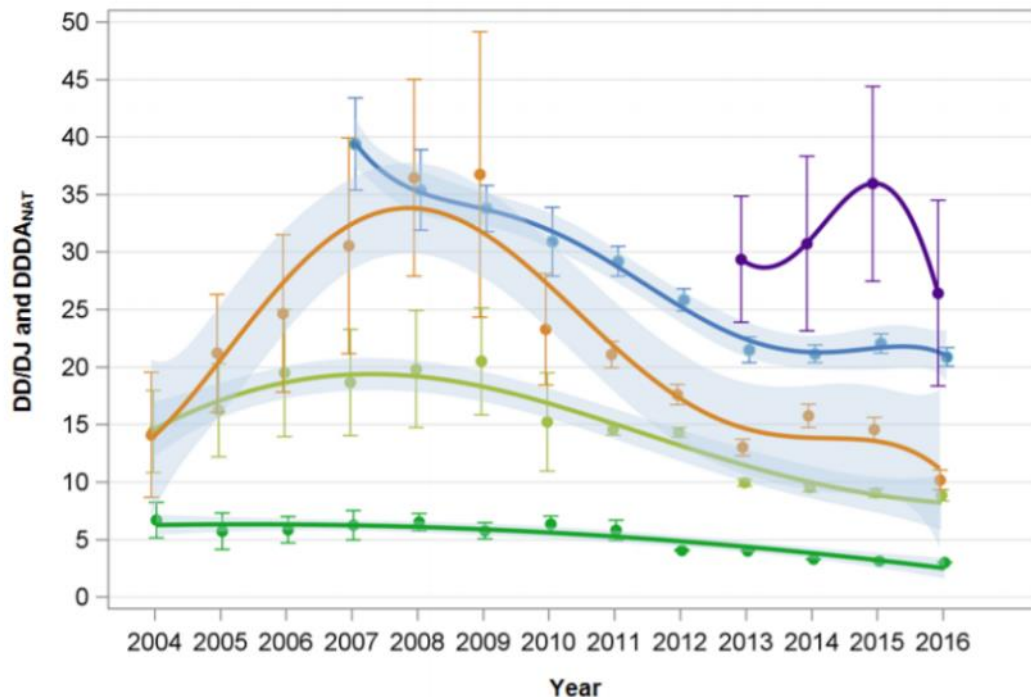
- Low AMU
- Low Resistance
- Search and Destroy policy in Hospitals
- A teams (AMS)

## Animal Health

- High AMU
- High Resistance carriage (ESBL/MRSA)



**Figure 1.** Long-term developments in antibiotic use according to LEI Wageningen UR data (in DD/J, as published in MARAN reports) and SDA data (in  $DDA_{NAT}$ ), based on a spline with 95% CI point estimates for each year. See the appendices for the computational basis. Purple: turkey farming sector; blue: veal farming sector; orange: broiler farming sector; light green: pig farming sector; dark green: dairy cattle farming sector. Due to its width, no confidence band is included for the turkey farming sector's fitted curve



**Table 5.** Reductions in the amount of antibiotics used in agricultural livestock by year compared to 2009

Livestock sector	$DDA_{NAT}$ 2009	Reduction from the 2009 level, in %						
		2010	2011	2012	2013	2014	2015	2016
Broiler farming sector	36.76	37	43	52	65	57	60	72
Pig farming sector	20.51	26	29	30	51	54	56	57
Dairy cattle farming sector	5.78	-10	-1	30	30	43	46	48
Veal farming sector	33.80	9	14	24	36	37	35	38

For the entire observation period, veal and dairy cattle farming sector data have been adjusted for the dosage-related changes implemented in the "Diergeneesmiddelenstandaard" database in 2014. Turkey farming sector data have not been included in this table, as there was no 2009 usage level to which the more recent usage levels could be compared.

Source: Usage of Antibiotics in Agricultural Livestock in the Netherlands in 2016, the Netherlands Veterinary Medicines Institute (SDa).



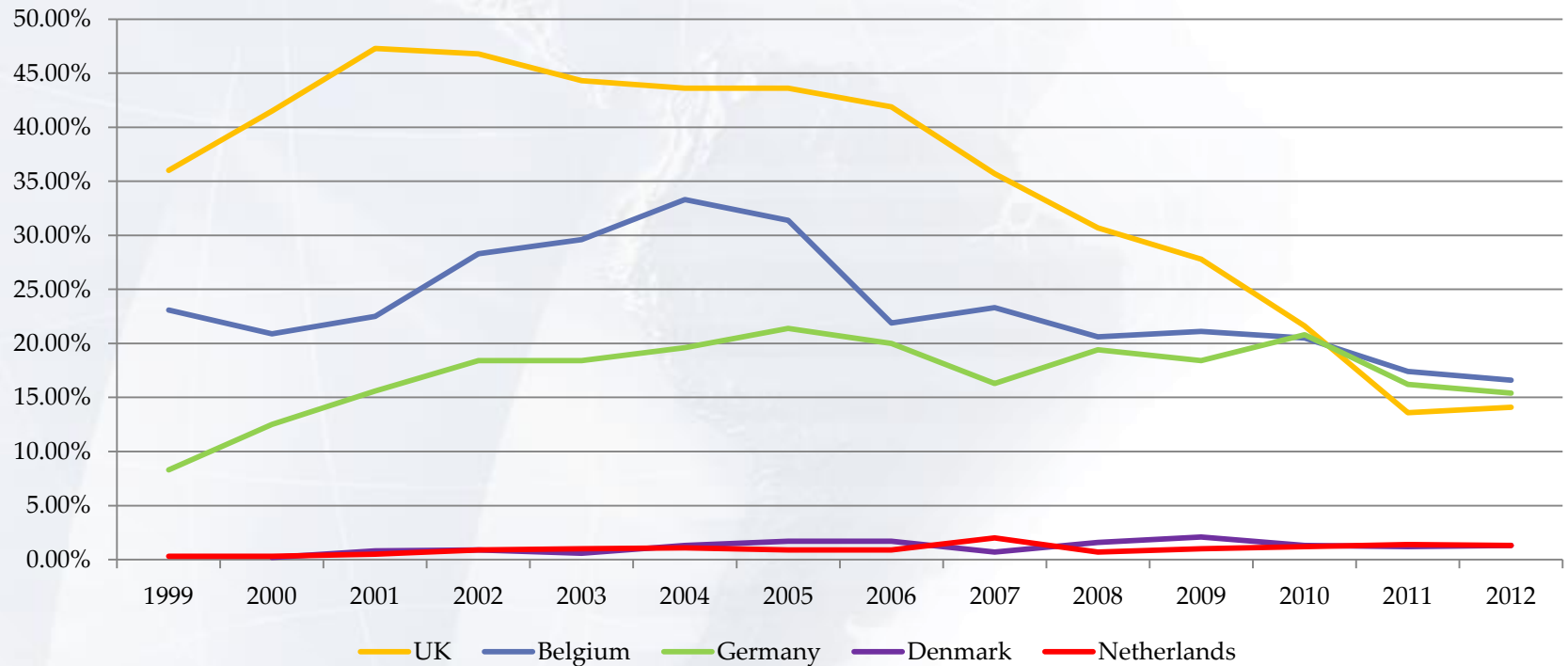
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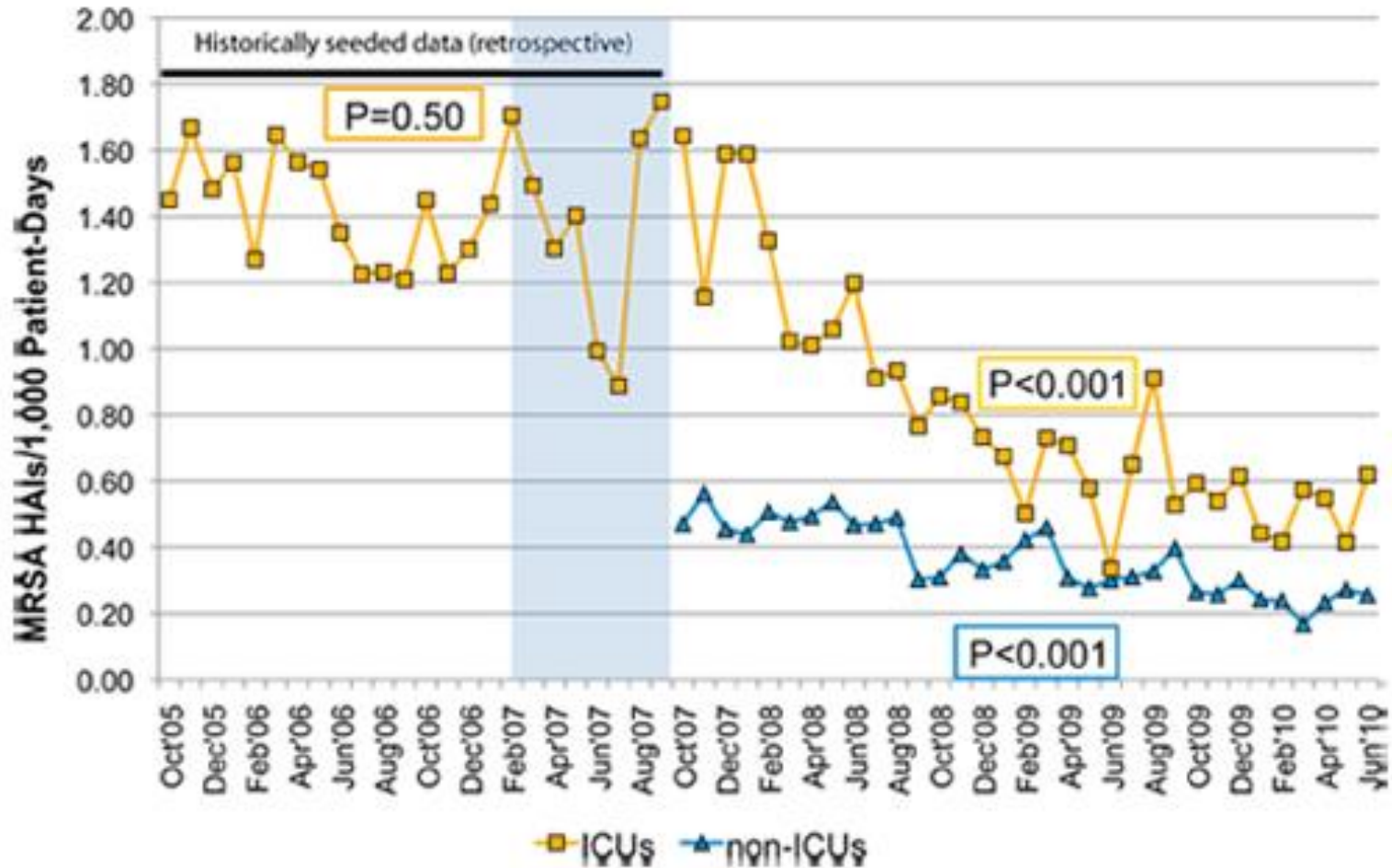
# National policy to control MRSA

MRSA 1999 – 2012  
EARS-Net / ECDC





# Nationwide Rates of Healthcare-Associated MRSA Infections



Source: Resistant Infections Plummet at VA Hospitals Because of MRSA Initiative  
 2011 Issues | Department of Veterans Affairs (VA) | Infectious Disease | May 2011 | Policy



# Local/National AMR surveillance

- Monitor AMR among clinical relevant pathogens for public health policy and (treatment) guidelines for patient care
- Measure interventions
- Detect multi/institutional increases of AMR
- Detect new resistance development
- Facilitate scientific research for public health
- Provide data to improve the quality among participating laboratories (role of NRL)
- Report AMR to authorities/inspection

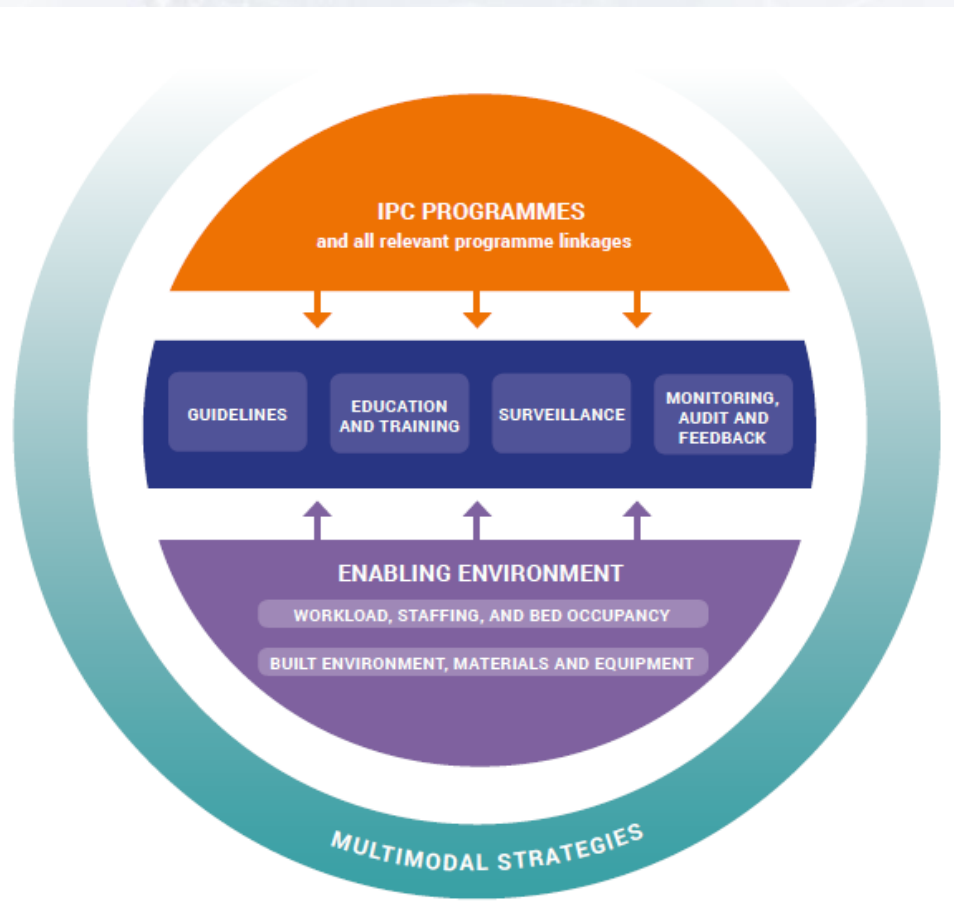


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# AMR surveillance provides the essential information needed for



*Picture source: Interim practical Manual supporting national implementation of the WHO guidelines on Core components of Infection Prevention and Control Programmes*

Improving awareness  
&  
Antibiotic Stewardship  
&  
Infection Prevention

Improves quality and  
safety in health care  
&  
Preserves effectiveness  
of antibiotics



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# Quality of AMR surveillance

- Prerequisites: good quality laboratories, available resources, routine sampling practices, etc.
- Important role of NRL to ensure data quality, confirmation of results, provide feedback, education and training, guidance
- Network, meetings, collaboration, communication,
- Standardized collection of data (person, place and time)
- Data validation, analysis, interpretation and reporting

**Make optimal use of efforts!**



# Data collection & analysis

- Age distribution
- Gender
- Underlying illness
- Isolation source (specimen type)

Person



- Country
- Region
- Hospital
- Department

Place

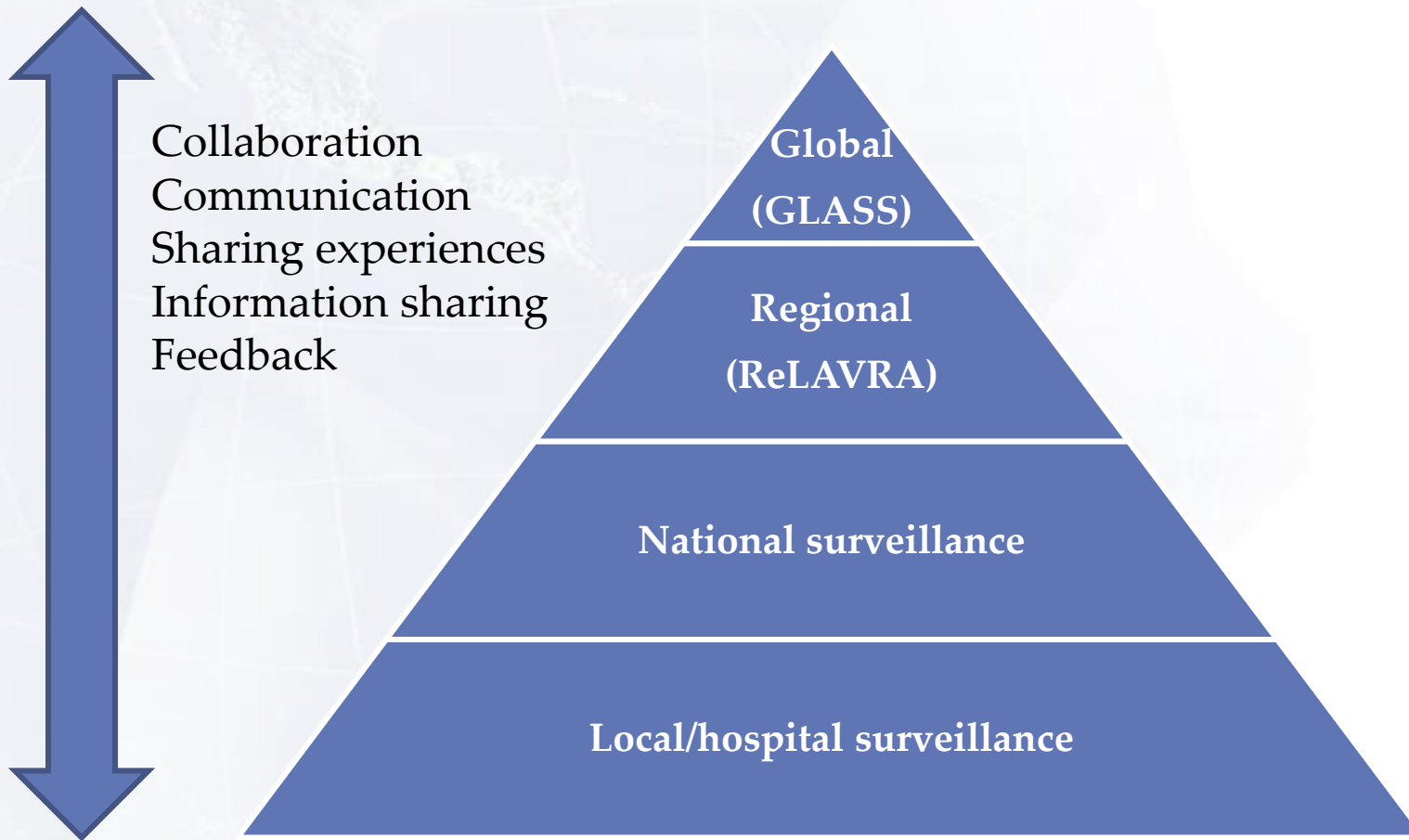


- Changes over time
- Seasonal
- Yearly

Time



# Surveillance levels



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# Survey data collection

To foster the discussion about future perspectives of the ReLAVRA data collection and analyses.

Goal = Get a better understanding of the available data at national level to:

1. Further standardize ReLAVRA data collection to improve data quality and decrease the burden of data collection at national and PAHO level by developing one standard format
2. To facilitate the discussion regarding the proposed additional data variables to be reported to ReLAVRA and GLASS



# Differences between GLASS and RELAVRA methodology

Table 2. Priority specimens and pathogens for surveillance of AMR

Specimen	Laboratory case definition	Surveillance type and sampling setting	Priority pathogens for surveillance
Blood	Isolation of pathogen from blood <sup>a</sup>	Selected sites or national coverage Continuous Patients in hospital and in the community	<i>E. coli</i> <i>K. pneumoniae</i> <i>A. baumannii</i> <i>S. aureus</i> <i>S. pneumoniae</i> <i>Salmonella</i> spp.
Urine	Significant growth in urine specimen <sup>b</sup>	Selected sites or national coverage Continuous Patients in hospital and in the community	<i>E. coli</i> <i>K. pneumoniae</i>
Faeces	Isolation of <i>Salmonella</i> spp. <sup>c</sup> or <i>Shigella</i> spp. from stools	Selected sites or national coverage Continuous Patients in hospital and in the community	<i>Salmonella</i> spp. <i>Shigella</i> spp.
Urethral and cervical swabs	Isolation of <i>N. gonorrhoeae</i>	Selected sites or national coverage Continuous Patients in hospital and in the community	<i>N. gonorrhoeae</i>

Main differences:

1. ReLAVRA does not collect Specimen type
2. ReLAVRA does not structurally collect Gender, Origin (HA/CA) and Agegroup
3. GLASS requests for information of negative samples (not mandatory)

- Any pathogen isolated from a blood culture may be significant for surveillance locally and nationally; only the prioritized pathogens for global surveillance are listed here.
- Pure culture according to local laboratory practice. Catheter samples should be excluded if possible.
- Diarrhoeal surveillance is for non-typhoid salmonella species; for local clinical purposes, typhoid and paratyphoid should be included.



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# GLASS variables

Variable ID	Variables in RIS file	Type of variable	Example
R1	COUNTRY	Coded value*	AFG
R2	YEAR	Coded value	2015
R3	SPECIMEN	Coded value	BLOOD
R4	PATHOGEN	Coded value	ACISPP
R5	GENDER	Coded value	M
R6	ORIGIN	Coded value	HO
R7	AGEGROUP	Coded value	01<04
R8	ANTIBIOTIC	Coded value	AMK
R9	RESISTANT	Integer (≥0)	15
R10	INTERMEDIATE	Integer (≥0)	10
R11	NONSUSCEPTIBLE	Integer (≥0)	5
R12	SUSCEPTIBLE	Integer (≥0)	30
R13	UNKNOWN_NO_AST	Integer (≥0)	5
R14	UNKNOWN_NO_BREAKPOINTS	Integer (≥0)	0
R15	BATCHID	Coded value	DS1

\* The coded values lists for all CV variables are provided in the Annex 1

## ReLAVRA

Yes

Yes

No

Yes

*E.coli*

*E.coli, S.aureus, S. coagul*

*E.coli, S.pneumo, H. influenza*

Yes

Yes

Yes

Yes

Yes

Yes

No

NA



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# Results survey





## País:

Paraguay

Argentina

Cuba

Ecuador-1

Ecuador-2

Panama

Chile

Brasil

Guatemala

Uruguay

Venezuela

Costa Rica

Perú



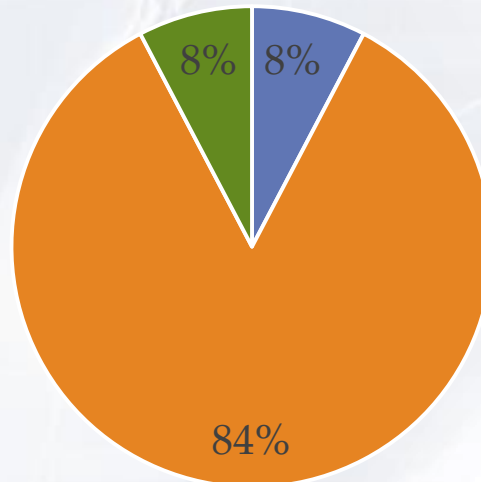
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# 1. Tipo de muestra (sangre, orina, heces etc):

- Klebsiella pneumoniae, Escherichia coli, Pseudomona aeruginosa, Acinetobacter baumannii, Streptococcus pneumoniae, Haemophilus influenzae, Neisseria meningitidis, Salmonella spp, Shigella spp
- Sí, para todos los agentes patógenos.
- Solo para muestras de hospital/enfermo hospitalizado



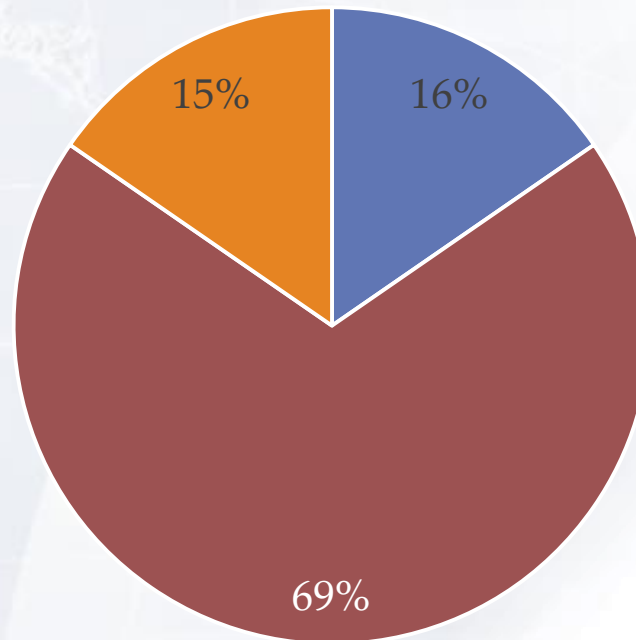
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## 2. Sexo (hombre, mujer):

- No, para ninguno de los agentes patógenos
- Sí, para todos los agentes patógenos
- Solo para muestras de hospital/enfermo hospitalizado



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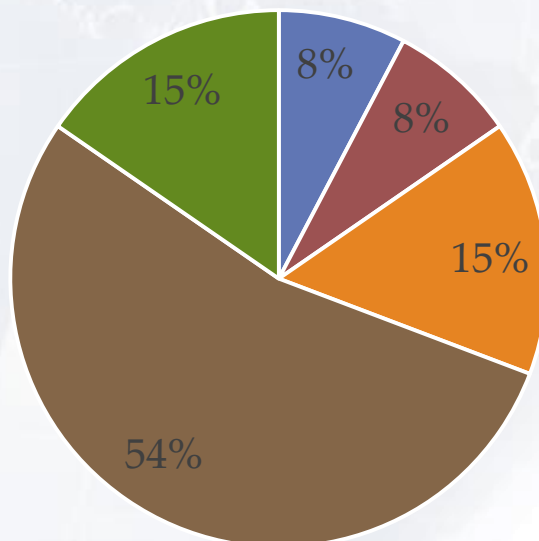


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### 3. Origen (adquirido en el hospital o comunidad):

- En muestras de hospital y comunidad
- No sabe
- No, para ninguno de los agentes patógenos
- Sí, para todos los agentes patógenos
- Solo para muestras de hospital/enfermo hospitalizado



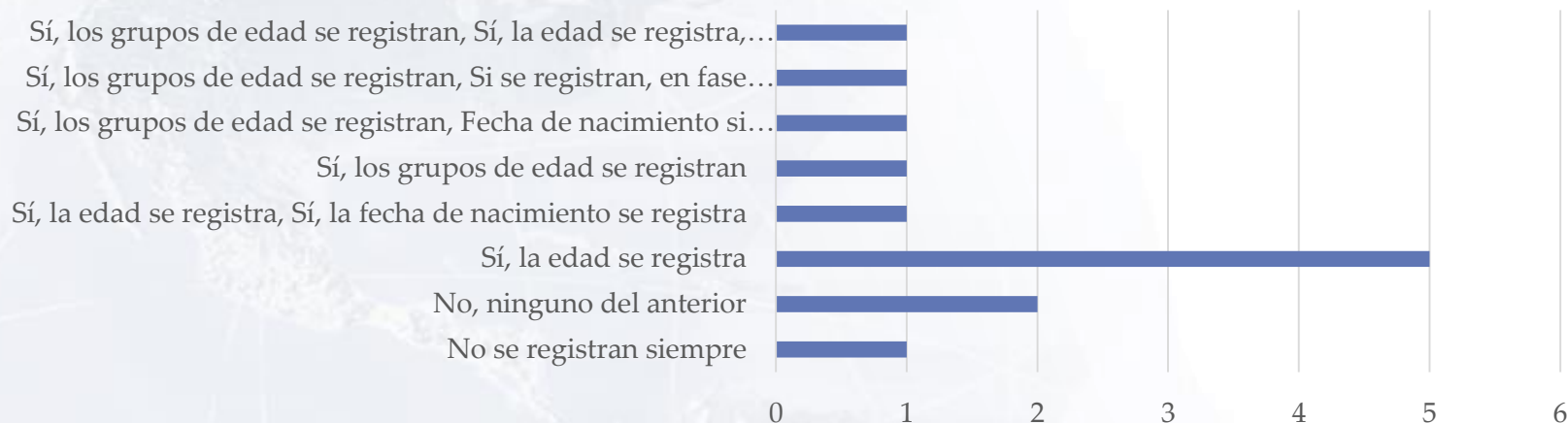
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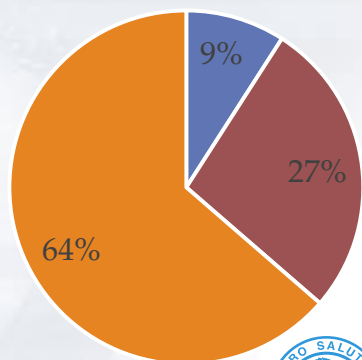
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## 4. Grupos de edad, edad o fecha de nacimiento



### 4.1 En caso afirmativo u "otros", esto aplica para:

- K. pneumoniae, E. coli, P. aeruginosa, Acinetobacter baumannii, S. pneumoniae, Haemophilus influenzae, N. meningitidis, Salmonella spp, Shigella spp.
- Solo para muestras de hospital/enfermo hospitalizado
- Todos los agentes patógenos



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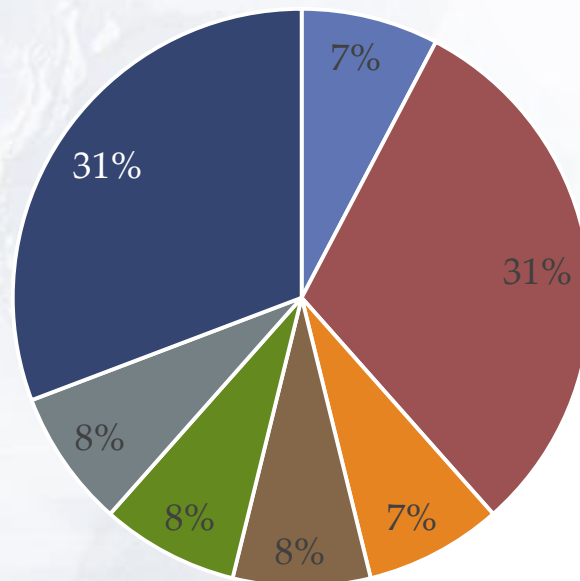
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# 1. Clase de programas

- Desarrollo informático propio
- Excel
- EXCEL E BUSINESS INTELLIGENCE DO SISTEMA GAL/MS
- EXCEL: derivados al centro de referencia. Whonet: vigilancia nacional (PROVENRA)
- Variable
- Vitek 2C
- WHONET



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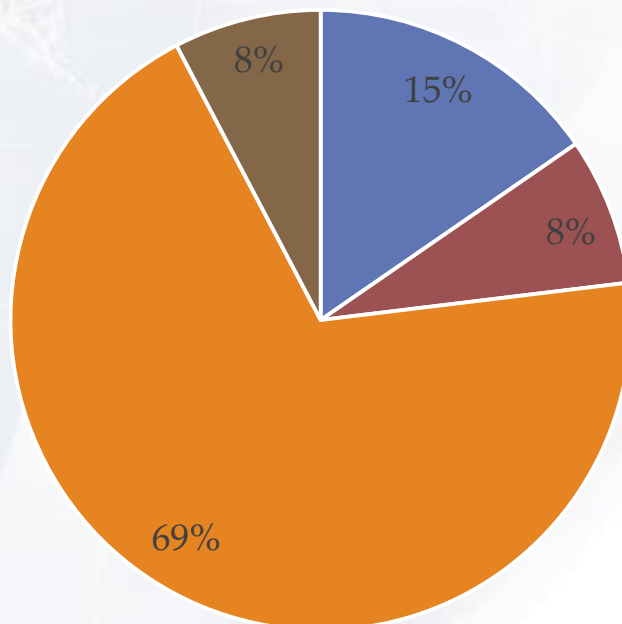


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# 1. Origen de los datos

- Los aislados son compartidos por los laboratorios participantes con el LNR para la confirmación de los resultados
- No sabe
- Todos los resultados de las positivas muestras procesadas por los laboratorios participantes son enviar al Laboratorio de Referencia Nacional (NRL)



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# Discussion points



# Proposed additional variables for ReLAVRA/GLASS

1. **Specimen type** (Blood, Urine, Stool, Genital, Other, Unstratified, Unknown)
2. Gender (Male, Female, Unstratified, Unknown)
3. Origin (Hospital, Community, Unstratified, Unknown)
4. Agegroup (<1, 1<4, 5-14, 15-24, 25-34, 35-44, ..85+, Unstratified, Unknown)

# Further standardization of data collection

- At national and PAHO level.
- One standardized aggregated database:
  - Same set of variables for each pathogen
  - Each variable has a standardized set of values

COUNTRY	YEAR	SPECIMEN	PATHOGEN	GENDER	ORIGIN	AGEGROUP	ANTIBIOTIC	RESISTANT	INTERMEDIATE	NONSUSCEPTIBLE	SUSCEPTIBLE	UNK-AST

- Manual → Automated system
- WHONET export for ReLAVRA





Thank you very much for  
your attention!

