Building a public national system for antimicrobial resistance surveillance in Argentina

Marcelo Galas
Buenos Aires
Argentina
SYSTEMIC NEW ANTIBIOTICS APROVED BY FDA BETWEEN 1983-2012

Boucher H. Clinical Infectious Diseases 2013;56(12):1685–94
In **1993**, CIP was recommended as first line drug to treat gonorrhoea by the Ministry of Health of Argetnina and begun the resistance monitoring.

Between **1993 and 1995**, the isolates were highly susceptibles to this drug.

In **1996** was detected the first strain with reduced susceptibility in Buenos Aires National Network for Surveillance of STI. Dr P. Galarza.
Increasing of CIP NS in NG 2007 – 2011 by region

Dissemination of carbapenemases (oxas) responsible for XDR
“To obtain reliable, appropriate and reproducible microbiological data, to be used for the improvement of patient care and the strengthening of the surveillance program through the implementation of sustainable quality guaranty programs”
Surveillance of Antimicrobial Resistance. 
WHONET – Argentina Network

Objectives:

- Orientation of empirical therapy
- Early detection of new resistance mechanisms and dissemination control
- Collaboration in prevention, detection and control of health care associated infections
- Local, Regional and National strategies for antimicrobial agents use
- Design and evaluation of strategies for the antimicrobial resistance control
- Strengthening of Provincial and Regional Reference Centers for AR surveillance and QC for peripherals Hosp
Representative and stable network

WHONET Argentina Network

characteristics and mode of operation
WHONET – Argentina Network 2013

96 laboratories
<table>
<thead>
<tr>
<th>Region</th>
<th>Hospital Name</th>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Río Negro</td>
<td>Hospital Zonal Bariloche</td>
<td>Nestor Blazquez, Sabrina de Bunder</td>
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<tr>
<td></td>
<td>Hospital Area Cirolletti</td>
<td>Mariela Roncallo - Cristina Carranza</td>
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<td></td>
<td>Hospital General Roa</td>
<td>Daniela Alejandra Durany - Gonzalo Crombas</td>
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<td></td>
<td>Hospital Artemides Zatti</td>
<td>Graciela Stafforini</td>
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<td>Salta</td>
<td>Hospital San Vicente de Paul</td>
<td>Silvia Graciela Amador</td>
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<td>Hospital Publico Materno Infantil</td>
<td>Ana Berejnoi - Norma Sponton</td>
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<td>San Juan</td>
<td>Hospital Marcial Quiroga</td>
<td>Hugo Castro - Nancy Ruth Vega</td>
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<td>Hospital Guillermo Rawson</td>
<td>Roberto Navarro</td>
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<tr>
<td>San Luis</td>
<td>Hospital Regional de San Luis</td>
<td>Hugo Armindo Rigo</td>
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<td>Hospital Regional de Villa Mercedes</td>
<td>Carina Chirino</td>
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<tr>
<td>Santa Cruz</td>
<td>Hospital Zonal Caleta Olivia &quot;Padre Tardivo&quot;</td>
<td>Guillermo Ramón García - Josefin ast Vilegas</td>
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<td>Hospital Regional Rio Gallegos</td>
<td>Wilma Krause - Alejandra Viviana Vargas</td>
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<td>Santa Fe</td>
<td>ABC Hospital Español de Rosario</td>
<td>Noemi Borda - Rodolfo Notario</td>
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<td>CEMAR</td>
<td>Monica Borgo - Stella Mura</td>
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<td>Facultad Bioquimica Rosario, HTAL. Centenario</td>
<td>Patricia Marchiato - Ema Sutich</td>
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<td>Hospital de Niños V. J. Vilela</td>
<td>Adriana Ernst - Andrea Badano</td>
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<td>Hospital Roque Saez Pena</td>
<td>Graciela Arciero - Adriana Di Cosco</td>
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<td>Hospital de Niños &quot;Dr. O. Allasia&quot;</td>
<td>Maria Rosa Baroni</td>
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<td>Hospital Dr. Jose Maria Cullen</td>
<td>Emilce Mendez - Analia Mollerach</td>
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<td>Santiago del Estero</td>
<td>Hospital de Niños Eva Peron</td>
<td>Maria Elisa Pavan</td>
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<td>HTAL. Regional &quot;Dr. Ramon Carrillo&quot;</td>
<td>Ana Maria Nanni - Mariana Cragnolino</td>
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<td>Tierra del Fuego</td>
<td>Hospital Regional Río Grande</td>
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<td>Tucumán</td>
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<td>Hospital del Niño Jesús</td>
<td>Ana Cristina Villagra - Jose Daniel Assa</td>
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<td>Hospital Padilla</td>
<td>Amalia del Valle Amilaga</td>
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<td>Hospital Arevalaneda</td>
<td>Norma Mercedes Cudmani</td>
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Evolution of WHONET – Argentina Network
1992 – 2013

Isolates by year (thousands)

17% have VITEK or PHOENIX and account for the 40% of isolates collected
Representative and stable network

Agreed common protocol

WHONET Argentina Network

characteristics and mode of operation
Antibiograma de mínima sólo para diarreas (una placa)

1. Ampicilina
2. Trimetoprima / sulfametoxazol
3. Ciprofloxacina
4. Cefpodoxima
5. Ac. Nalidixico
6. Fosfomicina
7. Cloranfenicol (sólo para Salmonella)
7'. Nitrofurantoína (sólo para Shigella)
Representative and stable network

Agreed common protocol

Standardized methodology (CLSI)

Internal and external Quality Control

WHONET Argentina Network

characteristics and mode of operation
INTERNAL QUALITY CONTROL
Susceptibility Test

Standards ATCC:

- E. coli ATCC ® 25922
- E. coli ATCC ® 35218
- P. aeruginosa ATCC ® 27853
- S. aureus ATCC ® 25923
- E. faecalis ATCC ® 29212

IDEAL WEEKLY

- ACEPTABLE EACH TWO WEEK

Standards ATCC

- K. pneumoniae ATCC ® 700603
- S. aureus ATCC ® 43300
- E. faecalis ATCC ® 51299
- H. influenzae ATCC ® 49247
- H. influenzae ATCC ® 49766
- S. pneumoniae ATCC ® 49619

EACH TIME THE TEST IS PERFORMED

Standards ATCC

- K. pneumoniae ATCC ® 700603
- H. Influenzae ATCC ® 10211

EACH TIME A NEW BACH OF DISKS IS MADE (C3G+CLAV) OR LOT OF HTM IS PREPARED
From 1990...

Funded by Dr. Alicia Rossi
Representative and stable network

Agreed common protocol

Standardized methodology (CLSI)

Internal and external Quality Control

Focus on Improving Clinical Diagnostic

Alerts Systems

Data dissemination

Building capacities and Research projects

WHONET Argentina Network

characteristics and mode of operation
Training strategies

- Courses
- Workshops
- On web
- Bulletins
- Training in LNR
- Technical visits
- Characterization of all the strains that the labs send us
- MIDAS Project – Early Outbreak detection. Modeling Infectious Diseases Agent Study
- Phenotypic and Molecular Characterization of resistance to β-lactamic antibiotics in clinical isolates of Enterobacteriaceae and no fermenters gram - bacilli in Arg
- Characterization study of mechanisms of resistance to quinolones in ETB
- Molecular characterization of serotype 19A of Streptococcus pneumoniae causing invasive infections in children from Arg between the 1994-2013 period
- Epidemiological and molecular characterization of carbapenemase producing clinical isolates. This project collect isolates through the country
- Molecular characterization and virulence factors in methicillin resistant Staphylococcus aureus isolates recovered in hospitals and in the community of Argentina
- Characterization of Enterococci and Staphylococci clinical isolates recovered from national hospitals
- Characterization of ESBLs in Enterobacteriaceae of Argentine
- Characterization of MLS resistance in Staphylococcus and β-haemolitic Streptococcus
Representative and stable network

Agreed common protocol

Standardized methodology (CLSI)

Internal and external Quality Control

Focus on Improving Clinical Diagnostic

Alerts Systems

Data dissemination

Building capacities and Research projects

Referential Diagnostic - Provincial Networks

Data collected monthly
Representative and stable network

Agreed common protocol

Standardized methodology (CLSI)

Internal and external Quality Control

Focus on Improving Clinical Diagnostic

Alerts Systems

Data dissemination

Building capacities and Research projects

Referential Diagnostic - Provincial Networks

Data collected monthly

Software WHONET
Welcome to the WHONET Community website. Our mission is to build and support the community needed for tracking microbial populations worldwide and to provide the information base required for effective containment and control.

On this site, you will find information on the WHONET software and on activities by our collaborators around the world.
Structure of the Argentinian Laboratory Networks System

Ministry of Health

Secretariat of Policies, Regulations and Institutes

National Administration of Laboratories and Health Institutes

National Institute of Infectious Diseases

Thematics Laboratory Networks (Reference Labs)

Thematics network member (Hospitals)

National Centre of Laboratory Networks

Provincial Laboratory Networks

Jurisdictional Coordinators (Prov. Ministry of Health)

Other Health Institutes
Structure of the Argentinian Laboratory Networks System

Jurisdictional Coordinators (Prov. Ministry of Health)

1 by Province

Officials of the Provincial Min of Health

Articulate with national Thematic Networks at INEI and Centre of Laboratory Networks

Coordinate all the public Provincial Laboratories

Administrative functions
Structure of the Argentinian Laboratory Networks System

More than 20 Thematic Networks

Clinical Microbiologist

Articulate with national Thematic Networks at INEI and Jurisdictional coordinators

Referential functions

Technical features

In charge of surveillance of specific infectious diseases

Thematics network member (Hospitals)

WHONET-Argentina Network is one of the Surveillance Networks
Operational Strategy of WHONET-Argentina Network

- Ministry of Health
  - Secretariat of Policies, Regulations and Institutes
    - National Administration of Laboratories and Health Institutes
      - National Centre of Laboratory Networks
      - Other Health Institutes
      - Provincial Laboratory Networks
      - Jurisdictional Coordinators (Prov. Ministry of Health)

ANTIMICROBIAL RESISTANCE SURVEILLANCE SYSTEM AND QUALITY GUARANTY ACROSS THE COUNTRY

FLUX OF TRAINING, INFORMATION AND ADVICE SECURE AND FAST
Flux of training, information and advice
secure and fast

Guaranty of Information
- Reliable
- Standardized
- Homogeneous

\[= \text{EQUITY}\]
Detection of Emergencies

Clinical experience → Lab data

Failure Hypothesis

Characterization of resistance mechanism

Clinical correlation

Prevalence evaluation

Strategies of detection and report

Depth knowledge of circulating mechanisms

Identification of emergency of new profiles
WHONET-ARGENTINA NETWORK

FUNDING

Clinical Labs
-100% Clinical diag
-Prov Min of Health

Jurisdictional Coordinators
-100% Activities
-Prov Min of Health

National Reference Lab
-100% Ref diagnostic
-100% Standards supply
-20% EQAS
-ANLIS/Min of Health
-50% of Research

Private labs
-50% of Research

Min Science and Techn
AMERICAN NETWORKS FOR ANTIMICROBIAL RESISTANCE SURVEILLANCE BY PAHO

- RELAVRA
- SIREVA
- GFN
- PULSENET

Each one with its own EQAS
thank you very much for your attention!!!!!