How can retrospective AMR data be used to influence policy and advocacy?

Lessons learned from the CAPTURA project

Jenny Joh, MSc
International Vaccine Institute
● CAPTURA project – brief description (consortium, aim, scope, activities)

● Mapping and evaluating data sources (capacity and availability)
  • Relevance to national surveillance planning

● Examples of national data displays
  • AMR
  • AMC

● Added value to national surveillance systems
  • Baseline
  • Network expansion
  • Capacity building

● Lessons learnt incl. gaps in data

● How can these be used to influence and policy?
CAPTURA Consortium

Lead grantee  
International Vaccine Institute

Partners
- WHONET, Brigham & Women’s Hospital (Harvard University)
- Big Data Institute, Oxford University
- Public Health Surveillance Group Ltd, US

CAPTURA kick off meeting Seoul, 2019
Aim and approach

Expanding the volume of historical and current data on antimicrobial resistance and usage in Asia

- 2016-2019 data identification, collation, grading and analysis
- Substantial capacity building activities underpinning the program

South Asia
- Bhutan
- Bangladesh
- Nepal
- Sri Lanka
- Pakistan
- India

South East Asia
- Laos
- Timor Leste
- Papua New Guinea
- Vietnam
- Indonesia
- Myanmar
Scope of work

<table>
<thead>
<tr>
<th>CAPTURA Activities</th>
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<tr>
<td>Stakeholder Engagement</td>
</tr>
<tr>
<td>✓</td>
</tr>
<tr>
<td>✓</td>
</tr>
</tbody>
</table>

Limited activities such as desktop review on current AMR surveillance networks

Non CAPTURA countries
Activities

Planning
Jan 2019 – Jun 2020

- AMR Stakeholder engagement
- Approval & Country Implementation Plan

Implementation
Jul 2020 – Mar 2021

- Data Collection & Warehousing*
- Quality Assessment & Grading of data

Dissemination
Apr – Sep 2021

- Map Generation & Data Analysis*
- Regional Workshops*

*capacity building activities to strengthen data management and analysis
Identifying and mapping data sources
Mapping and evaluating AMR data sources

Information gained
- Location
- Capacity
- Availability
- Data quantity
- Data quality
Laboratory quality assessments

Rapid Laboratory Quality Assessment (RLQA) Tool for AMR

By participating in this laboratory assessment developed by the CAPTURA consortium (as a part of the Fleming Fund Grants Programme managed by Mott MacDonald), you are agreeing for your responses to be stored and utilized for CAPTURA project activities. The responses may be shared with other Fleming Fund stakeholders and partners for purposes relating to Fleming Fund activities. For details on Mott MacDonald’s privacy policy, please see the link to the website: www.mottmac.com/privacy-policy.

Purpose and use: The information provided will assist the CAPTURA consortium and Ministry of Health in each country to understand the AMR data available at each facility, the methods used to collect it, format of the stored data, and additional indicators that will assist the consortium in understanding laboratory capacities for AMR in the country. The provided information will also be used to map where AMR data exists in the country to further the Ministry of Health’s knowledge for strategic planning.

I agree and understand the above statements

<table>
<thead>
<tr>
<th>Name of Person Conducting Assessment</th>
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</thead>
<tbody>
<tr>
<td>Name of Laboratory</td>
</tr>
<tr>
<td>City, State/Department/Province</td>
</tr>
<tr>
<td>Date of assessment</td>
</tr>
<tr>
<td>Name and contact of responding person</td>
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Laboratory quality assessments
National summary of lab assessments
Current data availability and management - AMR

AMR Laboratory Capacity Survey

Collected Sample Metadata

<table>
<thead>
<tr>
<th>Category</th>
<th>Facility ID</th>
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<tbody>
<tr>
<td>AST Interpretation</td>
<td>✓</td>
</tr>
<tr>
<td>AST Measurement</td>
<td>X</td>
</tr>
<tr>
<td>Admission Date</td>
<td>X</td>
</tr>
<tr>
<td>Antibiotic Prescription</td>
<td>X</td>
</tr>
<tr>
<td>Culture Result</td>
<td>✓</td>
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<tr>
<td>Date of Visit</td>
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<tr>
<td>Death Data</td>
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<tr>
<td>Diagnosed</td>
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<tr>
<td>Other Infections</td>
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<tr>
<td>Other Patient Information</td>
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<tr>
<td>Patient Age</td>
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<tr>
<td>Patient Location</td>
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<tr>
<td>Patient Outcome</td>
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<td>Patient Site</td>
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<td>Specimen Type</td>
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AST Tests PCM

Isolate AMR Data Sharing?

RADAAR
Regional AMR Data Analysis
for Advocacy, Response, and Policy

International Vaccine Institute
### Collected Prescription Metadata

#### Priority metadata

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<thead>
<tr>
<th>Parameter</th>
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<tbody>
<tr>
<td>Anatomical Therapeutic Chemical Gr.</td>
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<tr>
<td>Daily Defined Dose (DDD)</td>
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<tr>
<td>Date of Prescription</td>
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<tr>
<td>Department (ORDO)</td>
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</tr>
<tr>
<td>Formulation Type</td>
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<tr>
<td>Ingredients</td>
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</tr>
<tr>
<td>Manufacturer</td>
<td>X</td>
</tr>
<tr>
<td>Form of Drug (Single)</td>
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</tr>
<tr>
<td>Form of Drug (Complex)</td>
<td></td>
</tr>
<tr>
<td>Form of Drug (Alternative)</td>
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</tr>
<tr>
<td>Form of Drug (Drug Class)</td>
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</tr>
<tr>
<td>Patient Age</td>
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</tr>
<tr>
<td>Patient Sex</td>
<td></td>
</tr>
<tr>
<td>Route of Administration</td>
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<tr>
<td>Strength of Drug</td>
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#### Optional metadata

<table>
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<th>Parameter</th>
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<tbody>
<tr>
<td>Brand Name or Generic</td>
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<tr>
<td>Change to Initial Therapy</td>
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<tr>
<td>Indication for Prescription/Diagnos.</td>
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<tr>
<td>ADRs</td>
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<tr>
<td>Previous Antimicrobial Prescriptions</td>
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<tr>
<td>Product Origin</td>
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</tbody>
</table>

#### Distribution recorded?

- Yes
- No

#### Cultured results available?

- Yes
- No

#### Follow stocking guidelines?

- Yes
- No

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**Current data availability and management - AMU**
National data summary - AMR example

- Pathogens identified
- Spatiotemporal distribution
- Demographic distribution
- Priority alerts
  - Quality
  - Findings

Please note: these data are preliminary, not yet thoroughly validated, and only used as exemplar for visual displays
National data summary - AMR example

- Pathogens identified
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National data summary - AMR example

Please note: these data are preliminary, not yet thoroughly validated, and only used as exemplar for visual displays.
National data summary - AMC example
Gaps in data

Laboratory – clinical ward – pharmacy
- Very few institutions with well-linked data collection and management between all 3 entities
Gaps in data

Sparsity in good AMU data

- hospital setting
- community setting especially
- limited individual level information (e.g., on indication)

ANTIMICROBIAL USE DATA

*preliminary data; samples not necessarily representative
Value added for national surveillance systems

- Baselines
- Network expansions
- Capacity building

Current lab capacity
- equipment
- staffing
- etc.

Available meta-data
- clinical information
- antibiotic prescription
- etc.

Data Analysis and Use
Future surveillance
- Information ON network
- Information FROM network
Value added for national surveillance systems

- Baselines
- Network expansions
- Capacity building
Value added for national surveillance systems
Value added for national surveillance systems

- Baselines
- Network expansions
- Capacity building
  - WHONET training
  - Data management
  - Data digitization
  - Data evaluation
Lessons learnt

- Timing of efforts and readiness of the current system
- Focus on data management capacity development
- Local team working together with authorities on the ground
- High level of government support and priority

Elements of importance to success

- CAPTURA project; a contemporaneous example of what can be achieved in data collation and capacity building for AMR surveillance in Asia
- Added value for national surveillance systems
  - Baselines, Network expansions, Capacity building
- Data quality and sharing issues continue to be a challenge
How to use the data to inform policy?

- Enhanced data quantity and quality
- Enhanced data sharing (incl. into existing initiatives: national networks, GLASS)
- Inform progression in national action plans
  - Generated baseline on current capacity to built on
  - Feedback to improve data management and quality
  - Platforms to be further utilized and expanded in and by countries
- Regional Network in Asia
  - Further and expanded capacity building for enhanced data use
  - Platform maintenance and future expansion
  - Regional collaboration
Thank you

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