Workstream 2: AMR Surveillance

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Discussion points

1. Individual data reporting
For the next stage, GLASS offers the option of submitting individual, line-listed anonymized AMR data

   What are the major challenges for implementing the individual level data reporting and how to overcome them? What is expected from WHO to support the implementation? What should be the roadmap for incorporation of the individual data submission into GLASS 2.0?

2. Inclusion of molecular markers
For the next stage, GLASS offers the option for submission of data generated by molecular AMR diagnostics to complement phenotypic AMR diagnostics data and improve understanding of the underlying mechanisms responsible for resistance

   How GLASS should proceed with the inclusion of the molecular markers? How can WHO support the implementation?

3. Improving data quality and representativeness
To improve the “routine” surveillance, GLASS is developing protocols to help enhance its precision and representativeness. Additionally, other surveillance approaches can be implemented. A promising approach might be addition of data collected by population-based studies (e.g. repeated surveys) designed to fill in the gaps left by the routine surveillance

   What needs to be done by GLASS and Countries to improve the quality and representativeness of the AMR surveillance? What would be preferred approaches? How can WHO support the implementation?
Results 1: Individual data reporting

What are the major challenges and how to overcome them?

- **IT resources and infrastructure**
  - Manual data entry may be time-consuming
  - Exporting data from LIMS to WHO IT platform may be a challenge in some cases
  - Automated data extraction is the preferred solution for data management (especially if data already shared with another network)

- **Confidentiality, legal and ethical considerations**
  - This could be addressed with proper encryption
  - More difficult to obtain permission from each participating hospital than for aggregated data

CROSS CUTTING ISSUE: Some expressed concerns that there is too much focus on advanced countries when many are not yet reliably submitted aggregated data in a comparable way
Results 1: Individual data reporting

What is expected from WHO to support the implementation?

- **IT resources and infrastructure**
  - Training on WHONET
  - Support use WHONET as LIS or develop LIS that can interact with WHONET
  - GLASS IT platform to accommodate different data formats from different international networks

- **Confidentiality, legal and ethical considerations**
  - Provide legal advice
Results 1: individual data reporting

What should be the roadmap for incorporation of the individual data into GLASS 2.0?

- Give visibility to countries that are already performing individual data surveillance
- Greater advocacy should be given for the submission of individual data to demonstrate its benefits
- Implement WHONET training and develop new IT solutions (together with partners)
- Start with selected pathogen-antimicrobial combinations before expanding. A core obligatory set of antibiotics for the pathogens should be selected
Results 2. Inclusion of molecular markers

How GLASS should proceed with the inclusion of the molecular markers?

- Methodology should be standardized
- Include QC
- Concerns about representativeness and likely biases related to numerator/denominator of tested isolates
- “WGS is excellent tool for the right question”, - WGS part of focused surveys that complement basic resistance surveillance (e.g. Tricycle project)
- Limiting factor for some would be the access/affordability of equipment and esp. reagents/consumables particularly in LMICs
- CROSS CUTTING ISSUE: Some stated that inclusion of molecular markers in GLASS should not be a priority at this stage but should be envisioned
Results 2. Inclusion of molecular markers

How can WHO support the implementation?

• Technical guidance on standardized methods and protocols
• Access to affordable and reliable laboratory supplies (WHO catalogue)
• Trainings and technical support on testing, analysis and data management (WHO CC)
• Advocacy to convince governments to invest in advancing this surveillance

• Proceed in a stepwise manner with select standardized markers
Results 2. Inclusion of molecular markers

• Poll results

1. 2. Which of the following molecular targets should be included in GLASS? (Multiple choice)

- Broad-spectrum cephalosporin resistance (ESBLs) (22/28) 79%
- Carbapenem resistance (Carbapenemases) (25/28) 93%
- Colistin resistance (mcr) (23/28) 82%
- Meticillin resistance (mec) (13/28) 64%
- Fluoroquinolone resistance (chromosomal or plasmidic) (9/28) 32%
- Penicillin resistance (modified pbp) (3/28) 29%
- Macrolide resistance (erm) (3/28) 29%
- Linezolid resistance (cfr) (13/28) 46%
- Other targets (describe on the chat) (1/28) 4%

2. 3. Will your country consider reporting molecular markers in the next stage of GLASS implementation?

- Yes (14) 50%
- No (4) 14%
- I don’t know (10) 36%
Results 3. Improving data quality and representativeness

What needs to be done by GLASS and Member States to improve the quality and representativeness of the AMR surveillance and what would be the preferred approaches?

- Strengthen national health systems – … – improve laboratory capacity and good quality reagents procurement
- Training and technical support
- Implement EQA with regular feedback to countries to improve data quality
- Define minimal requirements, core drug-bug combinations and stepwise expansion of data to be collected

- Introduce complementary approaches to routine resistance surveillance in clinical isolates
  - Case-based surveillance
  - Population based studies (repeated surveys with well defined denominators)
  - Include screening samples
Results 3. Improving data quality and representativeness

How can WHO support the implementation?

- Provide guidelines for national surveillance protocols, sampling methodologies and sample sizes to achieve representative data
- Provide webinars and training
- Develop quality indicators
- Provide greater support for implementation of EQA standards
- Introduce complementary projects (e.g. Tricycle project)
### Poll results

3.4. What do you think is needed for AMR routine surveillance in patients seeking care to enhance the quality of collected data? (Multiple choice)

<table>
<thead>
<tr>
<th>Option</th>
<th>Votes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial distribution</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>Level of care distribution</td>
<td>6</td>
<td>38%</td>
</tr>
<tr>
<td>Defined minimum testing coverage</td>
<td>12</td>
<td>75%</td>
</tr>
<tr>
<td>Collection of clinical and epidemiological data</td>
<td>6</td>
<td>50%</td>
</tr>
<tr>
<td>Improved diagnostic stewardship</td>
<td>4</td>
<td>25%</td>
</tr>
<tr>
<td>Link to AMC/AMU data</td>
<td>4</td>
<td>25%</td>
</tr>
</tbody>
</table>

4.5. What might be the priority complementary approaches to routine AMR surveillance that can improve data quality and representativeness of the national AMR estimates? (Multiple choice)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Votes</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Case-based (syndromic-based) surveillance</td>
<td>9</td>
<td>38%</td>
</tr>
<tr>
<td>Population based studies for AMR incidence and prevalence (e.g., repeated surveys)</td>
<td>12</td>
<td>73%</td>
</tr>
<tr>
<td>Studies of the demographic characteristics of patients seeking care with comparison to census data.</td>
<td>7</td>
<td>44%</td>
</tr>
<tr>
<td>Studies of the diagnostic and reporting practices of the health service.</td>
<td>9</td>
<td>50%</td>
</tr>
<tr>
<td>Studies on health-seeking behavior among the public.</td>
<td>1</td>
<td>6%</td>
</tr>
</tbody>
</table>

5.6.1. What should be the priority target populations for developing AMR surveys?

<table>
<thead>
<tr>
<th>Population</th>
<th>Votes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-patients</td>
<td>9</td>
<td>56%</td>
</tr>
<tr>
<td>Out-patients</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Community</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Overall national population</td>
<td>6</td>
<td>38%</td>
</tr>
</tbody>
</table>

6.6.2. What should be the priority conditions/types of AMR to address with the surveys? (Multiple choice)

<table>
<thead>
<tr>
<th>Condition/Type</th>
<th>Votes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDG indicators</td>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>AMR bloodstream infections</td>
<td>15</td>
<td>94%</td>
</tr>
<tr>
<td>AMR urinary tract infections</td>
<td>11</td>
<td>69%</td>
</tr>
<tr>
<td>AMR gastroenteric infections</td>
<td>4</td>
<td>25%</td>
</tr>
<tr>
<td>AMR respiratory infections</td>
<td>4</td>
<td>25%</td>
</tr>
<tr>
<td>AMR gonorrhoea</td>
<td>6</td>
<td>38%</td>
</tr>
</tbody>
</table>
Thank you