Monitoring antimicrobial use in livestock in Sierra Leone: challenges, actions, impact

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2019: How it all began in Sierra Leone

Dr Leno Amara
- One of three veterinary doctors in Sierra Leone
- Data Manager for transboundary animal diseases
- Officer in charge of import and export of veterinary antimicrobials
- Advocate for ‘One Health’
STRUCTURED OPERATIONAL RESEARCH AND TRAINING INITIATIVE (SORT IT)
2000 TRAINED; 100 COUNTRIES; 70 INSTITUTIONS: 51% CONTINUE RESEARCH INDEPENDENTLY

PURPOSE: Generate and utilize data for informed-decision making to improve public health
“Data rich, Information rich, Action rich”

Health workers and decision-makers “in the driving seat”
• Government Ministries
• Disease control programmes
• Non Governmental Organizations
Antimicrobial use in livestock

• Antimicrobials are used for prevention and treatment of diseases.
• Overuse of antimicrobials leads to antimicrobial resistance.
• Regular reporting and monitoring of antimicrobial use is necessary for:
  ✓ Evaluating prescribing practices
  ✓ Informing antimicrobial stewardship
Chiefdoms (Group of villages) → Weekly reports

District livestock officer → Monthly reports

National level
Study objectives

On a country-wide level in Sierra Leone, to assess:

- Reporting frequency of antimicrobial use in livestock
- Data quality: completeness and concordance
- Availability of human resources and infrastructure at reporting sites
Methods

**Study design:** Cross-sectional study

**Study sites:** 14 District livestock offices

**Study period:** 2016 to 2021

**Data sources:**
- Review of district and sub-district reports
- Human resources and IT infrastructure
## Findings (challenges)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Gaps</th>
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<tbody>
<tr>
<td><strong>Data reporting</strong> Number of districts</td>
<td>Only 3 of 14 (districts)</td>
</tr>
<tr>
<td>- Completeness</td>
<td>Only 1% of reports were complete</td>
</tr>
<tr>
<td><strong>Human resources</strong> (animal health workers)</td>
<td>72/168 recommended (57% gap)</td>
</tr>
<tr>
<td><strong>Infrastructure / transport</strong></td>
<td>No computer or internet</td>
</tr>
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<td></td>
<td>No motorbike for field supervision</td>
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How did we communicate the findings

- Published the study in an international journal
- Effectively and persuasively communicated the findings to decision-makers
Actions: Ministry of Livestock and FAO

• Country-wide mandatory weekly reporting
• Trainings on data collection in all districts
• Provided 32 computer tablets and 30 motorbikes
• Established district “reporting hubs”
### Impact: Follow-up SORT IT study

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<th>Parameters</th>
<th>Before</th>
<th>After</th>
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<tr>
<td><strong>Data reporting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Number of districts</td>
<td>3 of 14 (21%)</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>- Completeness</td>
<td>1%</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>No computers or internet</td>
<td>Computers / Internet ++</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td>No motorbikes / No supervision</td>
<td>32 motorbikes / Supervision ++</td>
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Wider Impact

- Research has impact and is strengthening health systems against AMR
- Research capacity was built
- Research communication improved
- By embracing a “One Health” approach, comprehensive engagement was established with AMR coordinating committees
- SORT IT activities are aligned with national AMR action plans
I benefited from SORT IT

- Learned the practical skills of conducting operational research
- Developed the skills to mentor others and build a critical mass of researchers
- Published policy relevant papers
- Continue to improve surveillance of antimicrobial use
The region benefited from SORT IT

- Regional SORT IT research networks
- National SORT IT research networks
Sierra Leone benefited from SORT IT: capacity building

17 published studies / 40 trained
University of Sierra Leone: Sustainable capacity building

- Integration of SORT IT: medical and public health curricula
- Many SORT IT alumni became lecturers
Published SORT IT studies: Available at:

Links:
Operational Research and Capacity Building to Tackle Antimicrobial Resistance in Sierra Leone (mdpi.com)
AMR in low- and middle-income countries
Veterinary Healthcare Provision and Quality of Reported Data on Antimicrobial Use in the Treatment of Livestock in Sierra Leone, 2016–2019

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