Overview of the “Stepwise Approach Towards Rabies Elimination” and recent improvements

On behalf of the Global Alliance for Rabies Control

2nd sub-Regional PARACON meeting
13 – 15 September 2017
The value of the “Stepwise Approach Towards Rabies Elimination” assessment
WHO. 2017. Weekly epidemiological record / Relevé épidémiologique hebdomadaire
The use of the SARE tool

• Where to start the process of eliminating rabies?

• How far is a country really in their efforts?
Achievable and Actionable Priority activities Country:

After determining the gaps, the participants should identify the main actions required to move their country forward. Five priority activities from now to the next PARACON (2018) should be determined below for both short- and medium-term.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Short-term plan (now to 2018)</th>
<th>Objective targeted</th>
<th>Indicators (e.g., measures of progress)</th>
<th>Responsible Department(s) responsible</th>
<th>Potential supporting partners (national, international)</th>
<th>Process (how will the activity be achieved?)</th>
<th>Estimated date of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 1</td>
<td></td>
<td></td>
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<tr>
<td>Activity 2</td>
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<tr>
<td>Activity 4</td>
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<tr>
<td>Activity 5</td>
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</table>
How does the “Stepwise Approach Towards Rabies Elimination” assessment work
Demonstration of the SARE tool
SARE assessment outputs
The SARE score

• The SARE score shows clear progress (or lack thereof)

• Allows countries/regions to measure their progress on any time frame
Example of incremental SARE increase
### Stepwise Approach towards Rabies Elimination - Example Country

#### STAGE 1,5

**Activity Summary**

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>PENDING ACTIVITIES</th>
<th>ACCOMPLISHED ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collection and analysis</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Prevention and Control</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Laboratory diagnosis</td>
<td>7</td>
<td>6</td>
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<tr>
<td>Dog population related issues</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Information, Education, Communication</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Cross-cutting issues</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Legislation</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Total number of activities for each component:
- Data collection and analysis: 22
- Prevention and Control: 26
- Laboratory diagnosis: 13
- Dog population related issues: 13
- Information, Education, Communication: 21
- Cross-cutting issues: 12
- Legislation: 13

**Stage Summary**

<table>
<thead>
<tr>
<th>STAGE</th>
<th>PENDING ACTIVITIES</th>
<th>ACCOMPLISHED ACTIVITIES</th>
<th>STAGE COMPLETED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>6</td>
<td>COMPLETED</td>
</tr>
<tr>
<td>0,5</td>
<td></td>
<td></td>
<td>COMPLETED</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>34</td>
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<tr>
<td>1,5</td>
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<td></td>
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</tr>
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<td>2</td>
<td>21</td>
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<td>2,5</td>
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<td></td>
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<tr>
<td>3</td>
<td>22</td>
<td>1</td>
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<tr>
<td>3,5</td>
<td></td>
<td></td>
<td>PENDING</td>
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<tr>
<td>4</td>
<td>10</td>
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<td>4,5</td>
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<td></td>
<td>PENDING</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>0</td>
<td>PENDING</td>
</tr>
</tbody>
</table>

Total number of activities for each stage:
- Stage 0: 6
- Stage 0,5: 0
- Stage 1: 44
- Stage 1,5: 0
- Stage 2: 31
- Stage 2,5: 0
- Stage 3: 23
- Stage 3,5: 0
- Stage 4: 13
- Stage 4,5: 0
- Stage 5: 6

* Scores in increments of 0.5 show progress along a particular stage.
<table>
<thead>
<tr>
<th>STAGE</th>
<th>DATA COLLECTION &amp; ANALYSIS</th>
<th>PREVENTION &amp; CONTROL</th>
<th>LABORATORY DIAGNOSIS</th>
<th>DOG POPULATION RELATED ISSUES</th>
<th>INFORMATION, EDUCATION, COMMUNICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pending</td>
<td>Accomplished</td>
<td>Pending</td>
<td>Accomplished</td>
<td>Pending</td>
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<tr>
<td>0</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>1</td>
<td>Are dog rabies cases reported from a local to the national level?</td>
<td>Are vaccines for human rabies prophylaxis available in one or more parts of the country?</td>
<td>Is there capacity to conduct rabies diagnosis in at least one national laboratory or international collaborating reference laboratory?</td>
<td>Have discussions been held with stakeholders to create a dog population management strategy at a local level?</td>
<td>Has an assessment been done to determine what messaging should be communicated to the target audience at a local level?</td>
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<tr>
<td></td>
<td>Are all human or animal rabies testing results being reported to a relevant international database (such as WHO, OIE or PPRCOV)?</td>
<td>Are dog rabies vaccines available in at least one location in the country?</td>
<td>Is animal rabies diagnosis conducted in at least one national laboratory?</td>
<td>Have you involved officials to advise management in your stakeholder meetings?</td>
<td>Have the target audiences been identified at a local level (e.g., wildlife communities, dog owners, children)?</td>
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<tr>
<td></td>
<td>Is there capacity to analyze dog rabies data at the national level?</td>
<td>Are dog rabies cases have been reported in some parts of the country?</td>
<td>Are animal or humans submitted to an international laboratory and analysed?</td>
<td>Has an RCP plan been developed and implemented on a small scale?</td>
<td>Has broad public awareness messaging stared at a national level?</td>
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</tr>
<tr>
<td></td>
<td>Is there a rabies surveillance system been established at the national level?</td>
<td>Has the Integrated Risk Case Management (IRCMI) been implemented at a local level?</td>
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</tbody>
</table>
What is new in the current version

• The activities have been reworded and updated

• The "Summary" page has been updated and improved

• The prioritization of activities is much easier
Global SARE uptake
Countries endemic for canine-mediated rabies
Countries where the SARE assessment has been done
Online SARE Requests

Breakdown of online SARE requests:
- National-level assessment: 41%
- Province/Region-level assessment: 42%
- Pilot area assessment: 17%
The next steps

• Look at additional tools that support the SARE assessment

• Determining the SARE score

• Prioritizing the pending activities
THANK YOU
PLANNING RABIES ELIMINATION: TOOLS FOR A COMPREHENSIVE RABIES APPROACH

PARACON
September 13, 2017
RABIES

Zero deaths by 2030

99% human cases result from dog bites

One death every 15 minutes worldwide

4 out of 10 deaths are in children

2030

VACCINATE TO STOP TRANSMISSION

VACCINATE TO SAVE LIVES

100% vaccine preventable

TODAY

no bite no rabies

#rabies

28 September
World Rabies Day

World Health Organization
www.who.int/rabies/en
Does the country have a list of prioritized zoonotic diseases?

- YES
  - Conduct a CDC One Health Zoonotic Disease Prioritization Workshop

- NO
  - OR
    - Conduct a multi-sector collaborative zoonotic disease prioritization

Rabies is listed as a prioritized zoonotic disease? OR
County committed to controlling or eliminating Rabies?

- YES
  - Conduct SARE Evaluation AND Set Country-Specific Goals
One Health Zoonotic Disease Prioritization Workshop

What is the purpose of the One Health Zoonotic Disease Prioritization Workshop?

Effective mitigation of the impact of endemic and emerging zoonotic diseases of public health importance requires multi-sectoral collaboration and interdisciplinary partnerships.

- Conducting this workshop allows a country to:
  - Bring together multi-sectoral One Health representatives to connect human, animal (both livestock and wildlife), and environmental health sectors.
  - Prioritize endemic and emerging zoonoses of greatest national concern using equal input from all represented sectors.
  - Support the creation of national One Health platforms to improve health outcomes for humans and animals.
  - Focus the use of limited resources to build capacity and reduce the impact of prioritized zoonoses.

Why conduct a One Health Zoonotic Disease Prioritization Workshop?

Workshop participation supports the creation of a national One Health platform to strengthen multi-sectoral collaborations.

- Prioritized zoonoses can focus limited financial and personnel resources to:
  - Build laboratory capacity.
  - Conduct efficient and effective surveillance.
  - Develop joint outbreak response plans.
  - Create prevention and control strategies for both human and animal health.
  - Zoonotic diseases can be prioritized even in the absence of reliable prevalence data.
  - Provide outcomes in a timely manner so that participants may give immediate feedback and capitalize on collaborations built during the prioritization process.

Who are the recommended workshop participants?

Creating an interdisciplinary response requires contributions from all sectors and identification of common priorities.

- Two core writing members representing each of the following sectors typically 8 to 12 stakeholders:
  - Ministry of Health.
  - Ministry of Agriculture, Livestock, and Fisheries (or similar agency).
  - Ministry of Wildlife (or similar agency).
  - Ministry of Environment (or similar agency).
  - Other government agencies active in zoonotic disease work.
- Observers representing CDC, WHO, FAO, USAID, key academic partners, and non-governmental institutions working in the area of zoonotic diseases typically 10 to 15 observers.

For information and the latest resources, contact OneHealth@cdc.gov

Available at:
www.cdc.gov/onehealth/pdfs/zoonotic-disease-prioritization-workshop.pdf
AFRICA OHZDP WORKSHOPS (N=10) 2014 – AUGUST 1, 2017

Cameroon
- Rabies
- Anthrax
- Avian Influenza
- Rift Valley Fever
- Brucellosis
- Sleeping sickness
- Rabies

Senegal
- Rabies
- Avian Influenza
- Zoonotic Tuberculosis
- Hemorrhagic Fevers (Ebola/Marburg)
- Anthrax
- Rift Valley Fever

Democratic Republic of Congo
- Rabies
- Hemorrhagic fevers (Ebola, Marburg, Rift Valley fever)
- Avian Influenza
- Salmonellosis
- Monkeypox
- Arboviruses (Yellow fever, West Nile Virus, Chikungunya, Zika)

South Africa
- M. bovis
- Salmonella
- Brucella abortus
- Brucella melitensis
- Zoonotic Avian Influenza

Côte d’Ivoire
- Mycobacterium spp
- Brucella spp
- Rabies, Viral
- Hemorrhagic Fevers and Arboviruses,
  - Highly Pathogenic Avian Influenza, SARS CoV and MERS CoV

Rwanda
- Viral Hemorrhagic fevers (Ebola, Yellow Fever, Yellow Fever & Marburg)
- Highly Pathogenic Avian Influenza
- Rift Valley Fever
- Brucellosis
- Sleeping sickness
- Rabies

Ethiopia
- Rabies
- Anthrax
- Brucellosis
- Leptospirosis
- Echinococcosis

Kenya
- Anthrax
- Trypanosomiasis
- Rabies
- Brucellosis
- Rift Valley Fever

Tanzania
- Rabies
- Rift Valley Fever and other viral hemorrhagic fevers
- Zoonotic influenza viruses
- Anthrax
- Trypanosomiasis
- Brucellosis

Uganda
- Anthrax
- Zoonotic Influenza Viruses
- Viral Hemorrhagic Fevers
- Brucellosis
- Trypanosomiasis
- Plague
- Rabies

Rwanda
- Anthrax
- Zoonotic Influenza Viruses
- Viral Hemorrhagic Fevers
- Brucellosis
- Trypanosomiasis
- Plague
- Rabies

Senegal
- Rabies
- Avian Influenza
- Zoonotic Tuberculosis
- Hemorrhagic Fevers (Ebola/Marburg)
- Anthrax
- Rift Valley Fever
Thailand
- Influenza
- Rabies
- Ebola

Azerbaijan
- Anthrax
- Brucellosis
- Rabies
- CCHF virus
- Influenza (zoonotic)

Bangladesh
- Anthrax
- Brucellosis
- Nipah
- Rabies
- Zoonotic Influenza
- Zoonotic Tuberculosis

Thailand
- Influenza
- Rabies
- Ebola

EUROPE/ASIA OHZDP WORKSHOPS (N=3)
2014 – 2017
COMMONLY PRIORITIZED ZOONOTIC PATHOGENS:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Percent of Countries that Prioritized</th>
<th># of Countries (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabies</td>
<td>92%</td>
<td>12</td>
</tr>
<tr>
<td>Avian Influenza</td>
<td>82%</td>
<td>9</td>
</tr>
<tr>
<td>Ebola</td>
<td>73%</td>
<td>8</td>
</tr>
<tr>
<td>Anthrax</td>
<td>64%</td>
<td>7</td>
</tr>
<tr>
<td>Brucellosis</td>
<td>64%</td>
<td>7</td>
</tr>
<tr>
<td>Marburg</td>
<td>64%</td>
<td>7</td>
</tr>
</tbody>
</table>
Decision-Making Tree for Strategizing Rabies Activities
Part I
STEPWISE APPROACH TOWARD RABIES ELIMINATION (SARE)

COUNTRY FREE FROM DOG-TRANSMITTED RABIES

STAGE 5
MAINTENANCE

STAGE 4
ELIMINATION

STAGE 3
CONTROL

STAGE 2
STRATEGIC PLANNING

STAGE 1
ASSESSMENT

STAGE 0
NO DATA

COUNTRY ENDEMIC FOR DOG-TRANSMITTED RABIES
Decision-Making Tree for Strategizing Rabies Activities Part 2
EXAMPLE - ETHIOPIA

- 2015 SARE workshop
- Began workforce training, capacity building and data collection
  - Small scale vaccination campaigns and dog population studies focused on training local staff and collecting baseline data
- Began building laboratory diagnostic capacity
  - Establish relationship with international reference laboratory
- Began working to phase out nerve tissue vaccine
- Established Rabies Technical Working group
  - Developing national rabies control guidelines
  - Intersectoral collaboration
• 2014-2016 Wildlife rabies focused
• 2016 CDC lab confirmed canine variant circulating in dogs, cattle and jackal in Georgia
• 2017 Georgia requested SARE assessment to restructure current rabies program to focus on canine rabies elimination
• 2017 SARE workshop
  • Formed Intersectoral Rabies Task Force
  • Draft SOP’s for canine rabies control and elimination
  • Expand training for local healthcare staff
  • Plan dog population study
  • Refine current vaccination strategies based on results
Decision-Making Tree for Strategizing Rabies Activities
Part 2

RABIES ELIMINATION PROGRAM
- Eliminate canine rabies

Has resources to execute
- No resources to execute

RABIES CONTROL PROGRAM
- Reduce PEP cost and/or human rabies deaths

Has resources to execute
- No resources to execute

Potential to incorporate human rabies surveillance into existing surveillance programs

Has neither AFI NOR Encephalitis Surveillance

Recommended Project Focus
- Describe the dog population
- Evaluate current mass vaccination strategies
- Develop vaccine programs reaching at least 70% of the dogs

Integrated Bite Case Management
- Develop laboratory capacity
- Evaluate bite surveillance system, animal rabies surveillance system, and rabies PEP treatment recommendations
- Establish protocols
- Pilot projects to show feasibility, utility, and cost effectiveness

CASE DETECTION
- Integration of human rabies surveillance into existing AFI or encephalitis programs

IMPROVE DATA QUALITY
- KAP surveys to elucidate rates of dog bites, healthcare seeking behavior, and human rabies deaths
GLOBAL DOG RABIES ELIMINATION PATHWAY (GDREP)

- Macro-costing tool
- Emphasizes long-term sustainability
- Used at national level or higher
- Provides estimates of resources needed to eliminate canine-mediated human rabies deaths by 2030
  - Infrastructure
  - Dog population estimates
  - Vaccines
  - Vaccinators
Customizable GDREP Tool

**INPUT**
- Country-specific parameters
- Direct comparison to values used in GDREP

**OUTPUT**
- Time to elimination
- Vaccination personnel needed
- Cost to eliminate
GDREP Audience and Goals

• Who is the intended audience?
  • High-level stakeholders, policy-makers, national rabies control programs

• What are the goals?
  • Highlight the monetary and fiscal commitment that are required for rabies elimination
  • Initiate discussions about funding continuity
  • Establish a strong foundation for multi-year government commitment
Vaccine Calculator

• GDREP is a **broad** estimate

• How do you make it easier to plan a successful **local** campaign?

• **Dog populations** differ between communities

• **Vaccination methods** are more appropriate in certain settings

• **Costs** vary between programs
Different Dog Populations

<table>
<thead>
<tr>
<th>Never Confined</th>
<th>Semi-Confined</th>
<th>Confined</th>
</tr>
</thead>
</table>

![Flag of the United States](image1)

![Man walking a large group of dogs](image2)
Different Dog Populations

- Never Confined
- Semi-Confined
- Confined
# Vaccine accessibility by dog population

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Confinement Status</th>
<th>Contribution to Enzootic Rabies Transmission</th>
<th>Central Point</th>
<th>Door-to-Door</th>
<th>CVR</th>
<th>ORV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Owned</td>
<td>Always Confined</td>
<td>LOW</td>
<td>HIGH</td>
<td>HIGH</td>
<td>LOW</td>
<td>HIGH</td>
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<tr>
<td></td>
<td>Sometimes Confined</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>HIGH</td>
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<td></td>
<td>Never Confined</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>Community Owned</td>
<td>Sometimes Confined</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>HIGH</td>
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<tr>
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<td>HIGH</td>
<td>LOW</td>
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<td>HIGH</td>
<td>HIGH</td>
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<tr>
<td>Feral</td>
<td>Never Confined</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW</td>
<td>HIGH</td>
<td>MEDIUM</td>
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</tbody>
</table>
Mass Vaccination Calculator: a planning aid

Central Point
- Dog population
- Oral vaccines prepared (number)
- Vaccination strategy (doses)
- Vaccine utilization

Door to Door
- Capture/Vaccinate/Release
- Door to Door Vaccination Program Calculator

Capture/Vaccinate/Release

Oral Vaccination

Vaccination Program Calculator

<table>
<thead>
<tr>
<th>Required Input</th>
<th>Central Point</th>
<th>Door to Door</th>
<th>Capture/Vaccinate/Release</th>
<th>Oral Vaccination</th>
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<tbody>
<tr>
<td>Dog population</td>
<td>100,000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed dogs (n, %)</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed dogs (n, %)</td>
<td>20,000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Oral vaccines prepared (number)</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination strategy (doses)</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off Central Point</td>
<td>20,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral vaccines, vaccine, vaccine + vaccine + vaccine</td>
<td>5,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected Vaccination Coverage by Method 1</td>
<td>50,000</td>
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<tr>
<td>Vaccination strategy</td>
<td>CP</td>
<td>DP</td>
<td>CVR</td>
<td>ORV</td>
</tr>
<tr>
<td>Confirmed</td>
<td>60%</td>
<td>80%</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td>Sometimes Confirmed</td>
<td>40%</td>
<td>80%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Never Confirmed</td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
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<tr>
<td>How confident are you in your responses to the</td>
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<tr>
<td>probability table?</td>
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</table>

Suggested values for probability table

<table>
<thead>
<tr>
<th>Current country vaccination coverage [%]</th>
<th>Suggested values:</th>
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</thead>
<tbody>
<tr>
<td>55%</td>
<td>Confirmed: 60%</td>
</tr>
<tr>
<td></td>
<td>Sometimes Confirmed: 40%</td>
</tr>
<tr>
<td></td>
<td>Never Confirmed: 20%</td>
</tr>
</tbody>
</table>

Vaccination campaign costs per vaccinated dog

<table>
<thead>
<tr>
<th>Average cost per dog vaccinated</th>
<th>Confirmed</th>
<th>Sometimes Confirmed</th>
<th>Never Confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$4.15</td>
<td>$3.28</td>
<td>$2.86</td>
</tr>
<tr>
<td>Vaccine usage</td>
<td>21.4%</td>
<td>15.8%</td>
<td>13.6%</td>
</tr>
</tbody>
</table>

Vaccination coverage by type of dog confinement

<table>
<thead>
<tr>
<th>Confirmed</th>
<th>Sometimes Confirmed</th>
<th>Never Confirmed</th>
<th>Total</th>
<th>Forecasing</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td>40%</td>
<td>20%</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>30%</td>
<td>60%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Vaccine wastage by dog vaccination strategy (100s)
## INPUT: Design your campaign:

### Required input

<table>
<thead>
<tr>
<th>Dog population</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of dogs in program area (n, %)</td>
<td>140,000, 100.0%</td>
</tr>
<tr>
<td>Confined dogs (n, %)</td>
<td>29,400, 21.0%</td>
</tr>
<tr>
<td>Sometimes confined dogs (n, %)</td>
<td>75,600, 54.0%</td>
</tr>
<tr>
<td>Never confined dogs (n, %)</td>
<td>35,000, 25.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dog vaccination campaign</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenteral vaccines procured (number)</td>
<td>15,000, 100.0%</td>
</tr>
<tr>
<td>Oral vaccines procured (number)</td>
<td>0, 0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccination strategy (doses)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CP Central Point</td>
<td>3,750, 25.0%</td>
</tr>
<tr>
<td>DD Door to Door</td>
<td>9,750, 65.0%</td>
</tr>
<tr>
<td>CVR Capture, Vaccinate, Release</td>
<td>1,500, 10.0%</td>
</tr>
<tr>
<td>ORV Oral Vaccine Handouts</td>
<td>0, 0.0%</td>
</tr>
</tbody>
</table>

### Expected Vaccination Coverage by Method

<table>
<thead>
<tr>
<th>CP</th>
<th>DD</th>
<th>CVR</th>
<th>ORV</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0%</td>
<td>65.0%</td>
<td>10.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

### Suggested values for probability table

| Current country vaccination coverage (%) | 5% |
| GDREP§ phase: | Phase I |

### Suggested values:

<table>
<thead>
<tr>
<th>Confined</th>
<th>Sometimes Confined</th>
<th>Never Confined</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>5%</td>
<td>5%</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Vaccination campaign costs per vaccinated dog

<table>
<thead>
<tr>
<th></th>
<th>Estimate value</th>
</tr>
</thead>
</table>

- Design your own campaign
- Enter your dog population
- Enter the vaccines you will procure
- Enter the vaccine methods you choose
- Estimate the success of those methods
INPUT: Estimate your costs

- Estimate the cost to run your campaign!
- Change costs to improve efficiency
- Change duration of your campaign
- Customizable
- Identifies where bulk of costs are allocated
Will this be a successful campaign?

- Predicts:
  - Utilization of vaccine doses by vaccination method
  - Expected vaccine wastage
  - Vaccination coverage in Confined and Free-Roaming dogs
  - Total vaccination coverage
  - Cost per dog Vaccinated
  - Total Campaign Cost
GDREP and Vaccine Calculator Tools: How can they be used?

• WORKSHOPS

• SARE

• ONLINE?

canine-rabies-blueprint.org

a blueprint for the control of rabies in dog populations
Conclusions

• Multiple tools that should be used together for rabies control and elimination activities

• We need to start discussing rabies control in terms of multiple years of commitment

• We need to use available tools to engage governments and enable them to advocate
Thank you!

- Government Partners
  - Haiti Ministry of Agriculture
  - Haiti Ministry of Health
  - Ethiopia Public Health Institute
  - Ethiopia Ministry of Livestock and Fisheries
  - Vietnam Department of Animal Health
  - Kenya ZDU

- Universities
  - University of the Valley – Guatemala
  - Ohio State University

- Partners
  - Georgia State University
  - GARC
  - Christian Veterinary Mission
  - Mission Rabies
  - Humane Society International
  - World Health Organization
  - OIE
  - PAHO
ADDITIONAL RABIES RESOURCES


• For protocol of Haiti Animal Rabies Surveillance Program and other Activities for Rabies Control in Animals, please contact Ryan Wallace in CDC Poxvirus and Rabies Branch ([euk5@cdc.gov](mailto:euk5@cdc.gov))


Experiences with the SARE tool
- Mozambique -

Dr Chongo and Dr Chilengue
Overview of last SARE workshop

• Current SARE Score: 0.5 (Oct 2016)

• Setting: GARC-WAP Joint Rabies Elimination Planning Workshop
Past experience

• SARE tool has given a broader picture of the real situation of rabies in Mozambique as well as the steps to follow to fill the identified gaps.

• The tool has been used as a guide to improve the approach in eliminating the transmission of rabies from animal to humans.

• It help focus on:
  • IEC - Awareness campaigns messages
  • Dog populations management – design of a plan
  • Data collection and analyses – conduct field investigation and laboratory confirmation.
PARACON 2017

- We intend to acquire more subsidies to better plan the activities to be developed in order to achieve better results
Thank you

This work is made possible by the generous support of World Animal Protection. The contents, however, is the responsibility of the Global Alliance for Rabies Control and the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (Zanzibar) and do not necessarily reflect the views of World Animal Protection.
Experiences with the SARE tool - Zimbabwe -

Dr P. Manangazira  Ministry of Health
Mr L. Gwenhure  Ministry of Agriculture
Overview of last SARE workshop

• Current SARE Score: 1.5 (Oct 2016)
  • Failing to implement proven effective control measures of yesteryear
    • Responsible dog (pet) ownership
    • Enforcement of municipal by-laws (Public Health Act)
    • Control of garbage
    • Tattooing of vaccinated dogs (human rabies vaccine)
    • Collaboration between vet and health on management and follow up of dog bite cases
      • Reporting zoonotic cases on DHIS in order to view both animal and human rabies cases

• Setting: GARC-WAP Joint Rabies Elimination Planning Workshop
Past experience

• The exposure to Paracon (GARC) has opened us to the huge gap in the prevention and management animal and human rabies;
  • *Key messages for advocacy and community mobilization on rabies*
  • *The possibility of moving towards rabies elimination*
  • *SARE tool to start measuring progress as well as compare ourselves with more progressive countries in the management, control and elimination trajectory for rabies*
  • *Stimulate the one health approach within government and nation, and integrated approach within Agriculture and Health Ministries, (Epidemiology, pharmacy, laboratory, data and surveillance)*

**How has the SARE tool been used since the last workshop?**
• Used to stimulate the dialogue within Health and Agriculture Ministries to appreciate the magnitude of the rabies problem in Zimbabwe
• To review past practices on dog control, rabies reporting in animals and humans and to address the current challenges
• To develop joint reporting indicators and start marking the milestones towards rabies elimination

**Did it help you focus on specific activities?**
• Yes indeed. To ensure national and sub-national commemorations of the World Rabies Day annually and use it as a platform to raise awareness on One Health, and stimulate the relevant actions for rabies elimination especially responsible dog ownership, management and vaccination
• Maintained dialogue on rabies within animal and human health, not yet with local authorities
• Enforcement of legislation remains elusive, commitment remains low
Take aways from the SARE workshop at the current PARACON workshop;

• The urgent need for strategies for improving surveillance, data and reporting for rabies under one health in government and private sectors of animal and human health
  • Coordinated reporting platform
  • Joint publication/bulleting on rabies prevention, management, control actions

• Strategies for addressing the disease burden in animals and humans and move towards elimination
  • Central, Local government, technical and funding partners, communities
  • Joint implementation, management and control guidelines
  • Affordability of anti-rabies vaccination for population coverage
Thank you

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Experiences with the SARE tool
- Sierra Leone -

Mohamed S. BAH and Mrs. Amba R. M. COKER
# MILE STONES AND DATES 1: (FUNDING AGENCY—WAP)

<table>
<thead>
<tr>
<th>DATE</th>
<th>MILE STONE</th>
<th>OUTPUT AND / OR OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>30&lt;sup&gt;th&lt;/sup&gt; July 2014</td>
<td>National Livestock Animal Welfare and Rabies Control Consultative workshop held at Hill Valley, Freetown</td>
<td>NLAWRCT established</td>
</tr>
<tr>
<td>Septembe r 2015</td>
<td>National Livestock Animal Welfare &amp; Rabies Control Taskforce (NLAWRCT) was formalized.</td>
<td>DLAWRCT and (RCWG) were established</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; July 2016</td>
<td>The NLAWRCT was commissioned and the National Rabies Elimination and DPM project launched.</td>
<td>The need to eliminate rabies throughout Sierra Leone was recognized by government and other key stakeholder institutions viz; FAO, WHO. KAP Survey and DDC Conducted and reports produced in pilot wards of F/T.</td>
</tr>
</tbody>
</table>
# MILE STONES AND DATES 2: (FUNDING AGENCY—WAP)

<table>
<thead>
<tr>
<th>DATE</th>
<th>MILE STONE</th>
<th>OUTPUT AND / OR OUTCOME</th>
</tr>
</thead>
</table>
| 30<sup>th</sup> June – 1<sup>st</sup> July 2017 | 1. Planning workshop held by the NLAWRCT for setting up of systems and structures within FCC for the implementation of the pilot project.  
2. Training conducted for vaccinators and animal handlers. Also Two staff trained as human resource. | 1. Systems and structure set up - DPM Unit established and it is embedded within the Environment and Social Department of FCC.  
2. Two staff designated to the unit (human resource) |
| 10<sup>th</sup> August 2017 | National stakeholders` workshop conducted to share work plan and World Rabies Day (WRD) activity plan and budget 2017 to get national consensus. | National consensus of the documents enhanced. FAO committed to supports 16% of the total budget for the WRD celebration which include launching of the National Rabies elimination Strategy – scheduled for 26<sup>th</sup> September 2017 |
| 17<sup>th</sup> August 2017 | National Consensus workshop held at the Conference Hall of the Ministry of Agriculture, Forestry and Food Security (MAFFS) to validate the National Rabies Elimination Strategy | The National Rabies Elimination Strategy validated to be endorsed by both Directors of the Veterinary and Medical Services. The strategic document is due to be launched on 26<sup>th</sup> September 2017 |
Overview of last SARE workshop

• Current SARE Score: 0 (Feb 2017) = analysis in table below;

• Setting: In-country workshop with rabies task force members

✓ NLAWRCT = National Livestock, Animal Welfare and Rabies Control Taskforce

✓ Multi-sectoral Taskforce {MAFFS, MoHS, SLAWS, MEST, Local Council (FCC), MIC, MLGRD, MIA, Academic institutions (NU & MMCET), FAO, WHO and the Media}

✓ DLAWRCT = District Livestock, Animal Welfare and Rabies Control Taskforce

✓ RCWG = Rabies Control Working Groups
# SARE ACTIVITY SUMMARY (SL) REVIEW

<table>
<thead>
<tr>
<th>SARE Assessment Requirement</th>
<th>Total Number of Targeted Activities</th>
<th>Number of Activities Accomplished</th>
<th>Number of Pending Activities</th>
<th>Comments / Progress made over the Months since Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information, education and communication</td>
<td>21</td>
<td>11</td>
<td>10</td>
<td>To Commenced AW &amp; RC Education in FCC Controlled schools</td>
</tr>
<tr>
<td>Dog population management</td>
<td>12</td>
<td>2</td>
<td>10</td>
<td>AWP &amp; B developed to pilot</td>
</tr>
<tr>
<td>Prevention and control</td>
<td>25</td>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Data collection and analysis</td>
<td>21</td>
<td>6</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Laboratory diagnosis</td>
<td>12</td>
<td>2</td>
<td>10</td>
<td>Agreement reached with GARC to establish diagnosis</td>
</tr>
<tr>
<td>Cross cutting issues</td>
<td>12</td>
<td>5</td>
<td>7</td>
<td>NRES &amp; DPM proposal developed and validated</td>
</tr>
<tr>
<td>Legislation</td>
<td>15</td>
<td>11</td>
<td>4</td>
<td>AD &amp; AWP Bills with LO for p</td>
</tr>
</tbody>
</table>
## SARE STAGE SUMMARY

<table>
<thead>
<tr>
<th>STAGE</th>
<th>TOTAL NUMBER OF ACTIVITIES</th>
<th>ACCOMPLISHED ACTIVITIES</th>
<th>CRITICAL ACTIVITIES ACCOMPLISHED</th>
<th>PENDING ACTIVITIES</th>
<th>STAGE COMMENTERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0.5</td>
<td>6</td>
<td>3</td>
<td>1 +</td>
<td>3</td>
<td>No data</td>
</tr>
<tr>
<td>1 1.5</td>
<td>42</td>
<td>30</td>
<td>8 +</td>
<td>12</td>
<td>Assessment</td>
</tr>
<tr>
<td>2 2.5</td>
<td>33</td>
<td>9</td>
<td>1 +</td>
<td>24</td>
<td>Development of rabies elimination strategy</td>
</tr>
<tr>
<td>3 3.5</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>Implementation of the strategy in pilot areas</td>
</tr>
<tr>
<td>4 4.5</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>Large scale national implementation</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>Maintenance and freedom from rabies</td>
</tr>
</tbody>
</table>
Past experience

Benefits of the SARE tool to our Country

• Willingness to adopt the tool by all stakeholders in the country to follow the guide lines for the development of the national rabies elimination strategy

• It has enhanced systematic planning and consistent progress in the rabies elimination process for the country

• Before the SARE tool we had wanted to do all at the same time, but with the tool, we have learned that we start a small pilot project, reports successes, take note of lessons learned and scale up later to replicate best practices
Use of the SARE tool since the last workshop (assessment)

The tool has been use to develop activities for the strategic document and at the same time, it is use to identify gaps and assess progress in the rabies elimination programme.

The tool has served as self assessment measure which has kept us on track and consistently made progress over the past few months since the last country assessment by GARC.

It helped us with the next relevant steps based on priority.
Specific Activities undertook since last Assessment

• The tool helped us focus on key activities along the SARE six stages that were accomplished; progress from stage 0.5, from our last assessment to now stage 1/2, based on the current score, these activities include:

1. A finalized national rabies elimination strategy
2. Developed activity plan to pre-test the strategic model in pilot areas
3. Expedite facilitation of animal disease, animal welfare and protection legal instruments review and enactment
What to take back home from the current PARACON workshop

• Key to take back home is the effective use of the SARE score sheet by acquiring knowledge of using and applying the software.

• The tool is very good, I will thus like to encourage all delegate present here, that are not familiar with the tool to adopt it today and apply it when back home. It is a very good tool.

• On behalf of the NLAWRCT, the LVSD (MAFFS), MOHS and our country (S/L), we will like to express our sincere appreciation for introducing us to such a good tool.
Thank you

This work is made possible by the generous support of World Animal Protection. The contents, however, is the responsibility of the Global Alliance for Rabies Control and the Sierra Leone governemnt and do not necessarily reflect the views of World Animal Protection.