Rabies Situation & Progress of Control Programme in SAARC Countries

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Outlines of presentation

• Background
• Situation analysis
• Key achievements
• Way forward
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

100% vaccine preventable

No bite no rabies

28 September
World Rabies Day

#rabies
www.who.int/rabies/en
GLOBAL FRAMEWORK FOR THE ELIMINATION OF DOG-MEDIATED HUMAN RABIES

Dog-mediated human rabies kills tens of thousands of people every year worldwide. Freedom from dog-mediated human rabies is a global public good and is feasible with currently available tools.

The five pillars of rabies elimination (STOP-R)

1. **Socio-cultural**
   - Strategic vision: zero human deaths from dog-mediated rabies by 2030 in participating countries
   - Pillar 1. Socio-cultural
   - Pillar 2. Technical
   - Pillar 3. Organizational
   - Pillar 4. Political
   - Pillar 5. Resources

2. **Technical**
   - Pillar 2. Technical
   - Critical success factors:
     - Long-term political and social commitment
     - Community engagement
     - Sustainable vaccination of 70% of the at-risk dog population
     - Proof of concept: start small, scale up
     - Sufficient resources, logistics, and infrastructure
     - Promote evidence-based strategic and operational frameworks
     - Conduct performance measurement at all levels
     - Maintain trained and motivated implementation personnel

3. **Organizational**
   - Pillar 3. Organizational
   - Strategic vision: zero human deaths from dog-mediated rabies by 2030 in participating countries

4. **Political**
   - Pillar 4. Political

5. **Resources**
   - Pillar 5. Resources
   - Critical success factors:
     - Long-term political and social commitment
     - Community engagement
     - Sustainable vaccination of 70% of the at-risk dog population
     - Proof of concept: start small, scale up
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Includes activities for:
- Vaccination: ensure safe, efficacious and accessible dog and human vaccines and immunoglobulins, and promote and implement mass dog vaccination as the most cost-effective intervention to achieve dog-mediated human rabies elimination
- Logistics: collect data on needs forecasts to inform the vaccine procurement system and to create and sustain the logistics and infrastructure required for effective delivery and implementation of mass dog rabies vaccination programmes
- Diagnostics: ensure capacity and capability for rapid and accurate rabies diagnosis through accessible, well-equipped laboratoires and trained personnel
- Post-exposure prophylaxis: increase awareness and understanding of post-exposure prophylaxis (PEP) imperatives and options
- Intradermal administration
- Community engagement: encourage community involvement and engagement in activities to eliminate dog-mediated rabies
S - Stepwise
A - Approach towards
R - Rabies
E - Elimination

[Diagram showing a stepwise approach towards rabies elimination with stages from no data to country free from dog-transmitted rabies.]
“0 by 30”

The goal of reaching zero human deaths from canine-mediated rabies by the year 2030

WHO RABIES EXPERT MEETING

WHO SAGE process

Bangkok, Thailand, 26-28 April 2017
Rabies situation in SAARC MS

- All SAARC countries except Maldives are rabies endemic
- Except Sri Lanka & Bhutan, there has not been any substantial decrease in the rabies incidence in SAARC countries
- Canine rabies is the major epidemiological pattern and dog is a primary source of rabies
- Economic impact of rabies in livestock production is considered high but surveillance data are missing
- Rabies is a cross-border issue and requires cross-border collaboration
Rabies situation in SAARC MS

- The SAARC MS contribute 45% of global burden of human rabies (global estimated human death -59,000 per year)

  **India:**
  - 17 million animal bites and 20,565 human rabies deaths/year
  - Estimated 2.3 million people receive rabies PEP annually
  - one rabies death every thirty minutes and one animal bite every two seconds in India
  - India accounts for about 36% of global rabies burden

- More than 1.5 billion people are at potential risk of rabies infection in SAARC MS

Source: Indian Rabies Position Paper, 2011
# Human Rabies in South Asia (2010)

<table>
<thead>
<tr>
<th>Countries</th>
<th>Estimated dog bite cases</th>
<th>Estimated human rabies cases</th>
<th>Human cases per 100,000 population</th>
<th>% of dog bite in total animal bite cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>0.05 million</td>
<td>2000 - 3000</td>
<td>5.7</td>
<td>N/A</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>0.3 million</td>
<td>1500 - 2000</td>
<td>1.5</td>
<td>95%</td>
</tr>
<tr>
<td>Bhutan</td>
<td>0.005 million</td>
<td>&lt;2</td>
<td>0.28</td>
<td>99%</td>
</tr>
<tr>
<td>India</td>
<td>17.4 million</td>
<td>18000 - 20565</td>
<td>3</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.1 million</td>
<td>100 - 150</td>
<td>0.21</td>
<td>98.5%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>0.15 million</td>
<td>2000 - 5000</td>
<td>1.3</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>0.25 million</td>
<td>&lt;50</td>
<td>0.26</td>
<td>95%</td>
</tr>
</tbody>
</table>

Source: Gongal, WHO-SEARO
Rabies situation in SAARC MS

- Rabies is not a **notifiable** disease in most countries

- There is **no comprehensive rabies control programme** in many countries

- **Motivation** for rabies control is lacking due to competing priorities and lack of burden data

- **NGOs and INGOs** are involved in ABC & rabies control programme but confined to **limited** areas
Rabies problem in SAARC countries

- Prevention of human rabies (supply of human rabies vaccine)
- Ownership of dog rabies control
- Coordination and ownership of dog rabies control
- Political commitment and ownership
- Cross-border rabies transmission
- Expansion of MDV programme & sustainability
- Historically free, but biosecurity & border control is essential to maintain freedom status
- Strategy & policy for rabies elimination
Key Achievement

Nervous tissue vaccines will be history in SAARC MS

✓ Sri Lanka (1995)
✓ Bhutan (1996)
✓ India (2005)
✓ Nepal (2006)
✓ Bangladesh (2011)
✓ Pakistan (Dec 2015)

Intradermal rabies vaccine is being used in India, Sri Lanka, Bhutan…

Source: Dr Gongal, WHO-SEARO
SAARC Initiatives for Rabies Control

• The Government of Sri Lanka hosted a SAARC level workshop on Rabies Control in 2003 in Colombo

• Rabies in Asia Foundation in collaboration with WHO and the SAARC Secretariat hosted SAARC Rabies Meeting in 2011 in Mysore, India

• SAARC technical workshop on Highly Pathogenic and Emerging Diseases held in Thimphu in August 2011 recommended regionally coordinated rabies elimination programme & recommended WHO to draft a ‘SAARC Rabies Elimination Project’
SAARC Initiatives for Rabies Control

- The SAARC Health Ministers’ meeting held in Malé in April 2012 has recognized rabies elimination as a “regional public good” & recommended submission of the project proposal to the SAARC Development Fund for consideration.

- The draft proposal was discussed during the SAARC Consultation on Epidemiological and Laboratory Networking held in Colombo in March 2012, and Sri Lanka was identified as a coordinator for SAARC Rabies Elimination Project.

- SAARC Rabies Meeting held in Dhaka, 2013 finalized the SAARC Rabies Elimination Project proposal.
SAARC Initiatives for Rabies Control

• US$ 10 million project for **nine identified activities (2014-2020)**

• The project proposal was submitted to the SAARC Development Fund (SDF) through the SAARC Secretariat

• Discussed at the **SDF Board Meeting in Kabul in December 2013**. However, there is no consensus among the SDF Board Members to approve funding for this project
SAARC Initiatives for Rabies Control

• SAARC Rabies Meeting was held in Colombo in August 2015

• An annual event of ‘World Rabies Day’ in SAARC countries since 2006 has had a positive impact on rabies awareness and education at the policy, professional and public levels
International partnership for rabies control in SAARC region

- **WHO:**
  - Strategic Framework for Elimination of Human Rabies transmitted by Dogs in the South East Asia Region
  - Supported US$ 120,000 (2006-07) to institutionalize rabies control program (Bhutan)
  - Supported US$ 5000 for 4 years to reinforce awareness by observing World Rabies Day and MDV (Bhutan)
  - Rabies diagnostic kits (FAT conjugate and rapid rabies test kits) - Bhutan and other MS
  - Supported pilot MDV in Cox Bazar, Bangladesh in 2011
  - Supported/supporting technical mission

- **OIE:**
  - Supplied dog rabies vaccines under the regional vaccine bank (Bangladesh, Bhutan, Nepal)
  - Supporting Rabies Control programme (Bhutan)

- **FAO:**
  - Developed SARE Tools to evaluate Progressive Control Pathway towards rabies elimination

- **NGOs & INGOs – Humane way of dog population management**
Positive development on Rabies control in SAARC

- There are success stories within the region which needs to be replicated
  - Bhutan and Sri Lanka may achieve zero human rabies by 2020 provided that political and administrative challenges are met
  - Bangladesh, Bhutan and Sri Lanka have developed National Strategy for Rabies Elimination in line with WHO Regional Strategic Framework
  - WHO/GAVI has funded India and Bhutan to assess health seeking behavior and PEP delivery system to consider human rabies vaccine in GAVI vaccine investment strategy 2018
Sri Lanka takes action towards a target of zero human rabies death by 2020

- **Human PEP**
  - 1992: 100,000 treatment/year
  - 2002-2004: 400,000/year
  - Current: 300,000/year

- **Dog vaccination**
  - 1990: 400,000 dogs/year
  - 2015: 1.5 M stray & 1.3 M pet/year
  - 2020: 2.4 million estimated

- **Human rabies deaths**
  - Decrease in human rabies
  - 1975: 350 cases
  - 2014: 20 cases
  - 2015: 24 cases
  - 2016: 20 cases
  - 2017: 4 cases (till date)

- Few districts have been rabies free since 2012

*Harischandra et al., 2016: Sri Lanka takes action towards a target of zero rabies death by 2020. WHO South East Asia J Pub Health 5(2);113-115*
Bhutan is determined for ‘0’ human rabies death by 2020 but **cross-border transmission is a concern**

- 2009-Jun 2015: 60,993 dogs and 3354 cats vaccinated & neutered
- Estimated coverage: 64% in urban areas & 45% in rural Bhutan
- Of 20 districts, five districts are endemic for rabies & 15 districts have been rabies free but occasional rabies incursion from bordering town is a concern
Current practices in SAARC

- Bhutan, Sri Lanka, India (limited areas), Nepal (limited areas), Bangladesh (Dhaka city) focusing on Animal Birth Control
- Sterilization (ABC) is resource intensive & time consuming
- Dog population stabilization may require long years
- **Mass dog vaccination** is cost-effective towards rabies elimination

Dog densities in Asia
Knobel et al., 2007
Rabies elimination drive under Pan American Health Organization (PAHO)

• Dog-mediated rabies are being brought under control after 20 years of PAHO coordinated activities

• Mass dog vaccination has been the main focus of the regional rabies elimination programme
  • 45-50 million dogs vaccinated against rabies every year
  • Vaccination completed within 1 month, 80% vaccination coverage
  • 1 million people seek health care/year
  • Rabies cases in human have declined by 95% since 1980
Impact of rabies elimination in PAHO Region
Way forward: possible solutions

• Make Rabies a ‘notifiable disease’ in every country to understand the burden of rabies for intervention measures

• Each SAARC country should develop a roadmap for rabies elimination/control considering country specific situation

• Need to reach consensus among stakeholders to establish a regionally coordinated rabies elimination programme in the SAARC region

• SAARC MS should focus on mass dog vaccination to target 0 human death by 2020
Way forward: possible solutions

• Establish laboratory diagnostic facilities, strengthen capacity & conduct active rabies surveillance

• Make PEP/RIGs accessible and affordable to the people
  • Adopt intradermal vaccine to reduce the cost
  • One week PEP course under trail

• Apply SARE tools to evaluate rabies control program

• Rabies virus and stray dogs does not obey national boundaries. Establish Cross-border rabies transmission control program
Way forward: possible solutions

- Need strong political commitment and support, and allocation of resources

- Public awareness and education

- Requires effective international collaboration and partnership

- Rabies control to be tackled locally and advanced regionally in the SAARC Region
Paradigm shift needed for rabies control

Conventional Control Approach  
‘Silo Approach’

- Dog Rabies Control
- Dog Population Management
- Animal Welfare
- Human Rabies Prophylaxis
- Advocacy, Awareness and Education

Integrated One Health Approach  
(No Barriers – Joint Human and Animal Health Activities)

ONE HEALTH APPROACH
- Advocacy, Awareness and Education
- Mass Dog Vaccination
- Dog Population Management
- Human Rabies Prophylaxis
- Active Surveillance

We need to break the ‘SILO’ barrier
Thank you