Situation of Zoonoses and One Health Approach in the sub-region SAARC

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Inception Meeting of the OIE/JTF Project for Controlling Zoonoses in Asia under One Health Concept, Tokyo, Japan, 19-20 December, 2013
Summary:

Outline of the Presentation

- Introduction: SAARC sub-region
- Major zoonotic diseases
- Situation of zoonoses
- SAARC initiatives for zoonoses control
- One Health approach
  - Promotion
  - Prevention
  - Partnership
- Conclusion
SAARC sub-region: Major Zoonotic diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Emergence</th>
<th>Public Health Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rabies</td>
<td>Thousand years</td>
<td>Approx. 55 thousands annual burden mostly in SE Asia</td>
</tr>
<tr>
<td>2. Avian Influenza</td>
<td>2007</td>
<td>7 cases; 1 death (Bangladesh) 3 cases; 1 death (Pakistan)</td>
</tr>
<tr>
<td>3. Nipah</td>
<td>2001</td>
<td>Few deaths annually in Bangladesh</td>
</tr>
</tbody>
</table>
SAARC: South Asian Association for Regional Cooperation

- Member states: 8
- Total area: 2.95% of global land mass
- Total Population: Approx. 23.4% of global burden
- GDP: 6.66% of Total World GDP
- Home to various communicable diseases
Rabies

- 100% fatal but 100% preventable
- Transmission: Mostly mediated by dogs; few by cat, fox
- Affected: Mostly children
- Rural burden: High (65%)
- Non-notifiable and neglected disease
Rabies: Epidemiology

1.5 billion people are living in 8 Rabies endemic countries

WHO. International Travel and Health 2011: http://gamapserver.who.int/mapLibrary/Files/Maps/Global_Rabies_IHRiskMap.png
## Distribution of human rabies in countries of the South-East Asia Region

<table>
<thead>
<tr>
<th>Countries</th>
<th>Reported human cases (2008)</th>
<th>Estimated human cases</th>
<th>Human cases per million population</th>
<th>Estimated no. of dog bites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>181</td>
<td>1500-2000</td>
<td>13</td>
<td>2000000</td>
</tr>
<tr>
<td>Bhutan</td>
<td>2</td>
<td>&lt;10</td>
<td>3</td>
<td>5000</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>India</td>
<td>259</td>
<td>18,000-20,000</td>
<td>18</td>
<td>17400000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>73</td>
<td>150-300</td>
<td>1.3</td>
<td>100,000</td>
</tr>
<tr>
<td>Maldives</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Myanmar</td>
<td>180</td>
<td>1000</td>
<td>22</td>
<td>6000000</td>
</tr>
<tr>
<td>Nepal</td>
<td>32</td>
<td>100</td>
<td>4</td>
<td>1000000</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>51</td>
<td>&lt;100</td>
<td>3</td>
<td>600000</td>
</tr>
<tr>
<td>Thailand</td>
<td>9</td>
<td>30</td>
<td>0</td>
<td>4000000</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20,890- 23,540</strong></td>
<td></td>
<td><strong>18,866,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: WHO and National reports, NA – Not available
Rabies: Goal & Strategies

• Goal:
  – To reduce human rabies burden by 90% by 2015 and to eliminate the disease by 2020

• Strategies:
  – Advocacy, communication and social mobilization
  – Animal/dog-bite management
  – Mass dog vaccination
  – Dog population management
## Good Practice: Changes Brought in Bangladesh

<table>
<thead>
<tr>
<th>Areas</th>
<th>Before 2010</th>
<th>After 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>National strategy</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Committees</td>
<td>No</td>
<td>NSC, NTWG</td>
</tr>
<tr>
<td>Multisectoral collaboration</td>
<td>No</td>
<td>Health, Livestock, LG, WHO, FAO, OIE, WSPA, HSI</td>
</tr>
<tr>
<td>Fund Allocation</td>
<td>No</td>
<td>• 0.5 m USD (2011-12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 2.0 m USD (2012-13)</td>
</tr>
<tr>
<td>Vaccine</td>
<td>NTV</td>
<td>TCV &amp; RIG</td>
</tr>
<tr>
<td>Accessibility of vaccine</td>
<td>NTV: 25 thousand</td>
<td>TCV: 200 thousand</td>
</tr>
<tr>
<td>Dog bite management centre</td>
<td>No</td>
<td>65 (all districts)</td>
</tr>
<tr>
<td>Trained Physician Nurses</td>
<td>Few</td>
<td>&gt;250</td>
</tr>
<tr>
<td>Mass dog vaccination (MDV)</td>
<td>No</td>
<td>• 54 municipalities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 1 in 2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 36 in 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 17 in 2013</td>
</tr>
<tr>
<td>Dog population management</td>
<td>One union</td>
<td>• Dhaka City North</td>
</tr>
</tbody>
</table>
Rabies: Control Program in the SAARC sub-region

• Most of the member countries have
  – prioritized Rabies as a public health interest and expressed commitment to eliminate the disease by 2020
  – developed/strengthen National Rabies control and elimination program
  – Phased out NTV (except Afghanistan, Pakistan, Maldives)
  – been working through multi-sectoral collaboration
  – FAO, OIE, WHO are working together to support the regional initiatives
Avian Influenza (AI)

Avian influenza A(H5N1)
Pandemic influenza H1N1 (2009)
Avian influenza A (H7N9) (in china)
AI: Poultry outbreak

- Poultry industry of SAARC countries: one of the world’s largest

- Poultry outbreaks have been reported in 63 countries including Bangladesh, Nepal, Pakistan, India, Afghanistan and Bhutan

- Risk factor: direct exposure to sick/dead poultry

Source: OIE
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Human AI (H5N1): Epidemiology

As of 8 Aug 2013

- 15 countries affected including Bangladesh and Pakistan
- 633 confirmed cases; 7 from Bangladesh; 1 from Pakistan
- 377 deaths
- CFR = 59.6%
- Age: Median (18, range 0-81)
AI: control at Risk region

- Disease surveillance (laboratory /field)-Capacity building for rapid detection
- Emergency preparedness plans
- Public awareness creation
- Surveillance of migratory bird flyway patterns
- Risk assessment of potential dangers of disease spread
- Risk communication
- Support to diagnostics
- Design strategies and contingency planning
- Training equipment
AI: Response to outbreak

- Rapid surveillance and early detection
  - to determine extent of spread, close and disinfect markets.
  - Sick and dead birds should not enter the human food chain: Culling, quarantine

- Quarantine and movement control:
  - Movement of farm workers who keep poultry at home

- Risk assessment and & risk communication

- Biosecurity Measures Disinfection processes
  - Bioexclusion

- Vaccination
Nipah

• Newly emerging viral zoonotic disease
• Transmission: mediated by fruit bat;
• Human to human transmission also occur
• High case fatality rate
• Risk factor:
  • drinking of raw date palm sap
  • Close physical contact

Nipah virus transmission

The boundaries and name shown on this map do not imply any expression of any opinion concerning the legal status of any country, territory, city or area of its authorities or concerning the delimitation of its frontiers or boundaries.

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Nipah Virus in Bangladesh

- 24 cases of Nipah virus infection reported in Bangladesh since the beginning of 2013, of which 21 have died
- The age distribution of cases is from 8 months to 60 years (average 26 yrs)
- Sixteen cases are male and eight are females
- Risk factors
  - Drinking of raw date palm sap (kancha khejurer rosh) contaminated with NiV
  - Close physical contact with Nipah infected patients
Zoonoses Control: initiatives/supports by SAARC
Collaboration and coordination and building partnership

- FAO
- OIE
- WHO
- US AID
- EU
First Technical Workshop on HPED, Thimphu (Bhutan) in April 2010

SAARC-WHO collaboration for implementation of EU funded HPED Project
SAARC Inception Workshop, Kathmandu (Nepal) 9-10 Dec 2010

First SAARC Regional Workshop on Strengthening Surveillance and Response Capacity for Highly pathogenic and Emerging & Re-emerging Diseases in SAARC Countries

(Under WHO/EC Project)

SAARC Secretariat, Kathmandu
9-10 December, 2010
• Medical and veterinary experts from SAARC countries attended
• Appealed for a regionally coordinated rabies elimination program and recommended phasing out of nerve tissue vaccine and promotion of cost-effective rabies vaccination
SAARC project proposal for rabies elimination was discussed. Sri Lanka has been identified as a lead country.

Consultant report on assessment of cross-border collaboration in SAARC region was discussed in details.
SAARC Expert Group Meeting, Colombo, Sri Lanka on 30 March 2012
SAARC Rabies elimination project has been finalized
Opportunities

• Better understanding and coordination among multiple partners through collaborative activities

• SAARC Secretariat moves forward with public health agenda for regional health security and acts as a common platform of the member states for collaboration and coordination.

• SAARC Community came up with a Regional Strategy for Prevention and Control of Communicable Diseases

• HPED Programme encourages animal health and human health sectors to work together through activities of common interest at the country level
Zoonoses control: One Health approach

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Rabies: One Health Model

Partnership for rabies elimination

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One Health approach: Challenges

• Ownership
• Coordination among networks
• Joint programme and implementation
• Prioritization of activities
• Funding mechanism
• Sustainability
• Monitoring and evaluation
• International partnership
• Involvement of the SAARC Secretariat
Conclusions

• Emergence and re-emergence of zoonotic diseases anticipate better surveillance, early diagnosis by laboratory testing and proper management through intersectoral collaboration between human and animal health.

• Establishment of regional vaccine bank (Human & Animal) for smooth & efficient control measures in the SAARC sub-region

• Integrated One Health approach through multi-disciplinary involvement is essential for controlling zoonoses at the human-animal interface
Thank you