Global and Regional Overview of NZD
Outline

• Introduction
• Updates
• Why control NZDs
• FAO’s approach
• Tripartite initiatives
• Conclusions
Acknowledgement

• FAO [HQ, RAP, ECTAD]
• OIE [AP, SRR]
• WHO
NZDs

• Remain major causes of ill-health and mortality across Africa, Asia, and Latin America.

• Neglected as a consequence of under-reporting, resulting in an underestimation of their global burden that downgrades their relevance to policy-makers and funding agencies.
Distribution of reported zoonotic events in 2014, by agent type

2014 REPORTED EVENTS IN ASIA PACIFIC, By AGENT TYPE

Viral zoonoses
29 events (41%)

Bacterial zoonoses
29 events (41%)

Parasitic zoonoses
13 events (18%)

Avian influenza, CCHF, Japanese encephalitis, MERS-CoV, Nipah virus, rabies, TBE

Anthrax, brucellosis, leptospirosis, E. coli, Lyme disease, plague, S. suis, TBR, tuberculosis

Anisakiasis, cysticercosis, echinococcosis, schistosomiasis, toxoplasmosis, trichinellosis

FAO-APHCA/OIE/USDA Regional Workshop on Prevention and Control of Neglected Zoonoses in Asia, Obihiro, Japan, 15-16 July 2015
<table>
<thead>
<tr>
<th>Zoonosis</th>
<th>Reported in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabies</td>
<td>12 countries</td>
</tr>
<tr>
<td>Avian influenza</td>
<td>10 countries</td>
</tr>
<tr>
<td>Anthrax</td>
<td>7 countries</td>
</tr>
<tr>
<td>Leptospirosis</td>
<td>6 countries</td>
</tr>
<tr>
<td>Brucellosis</td>
<td>5 countries</td>
</tr>
<tr>
<td>Japanese encephalitis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Echinococciosis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Cysticercosis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Streptococcus suis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Toxoplasmosis</td>
<td>2 countries</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>2 countries</td>
</tr>
</tbody>
</table>
Nearly two-thirds of human infectious diseases arise from pathogens shared with wild or domestic animals

Global distribution of relative risk of an EID event

Source: Jones et al. (2008) Nature 451, 990-993

Asia is a “hotspot” for zoonotic pathogens from wildlife
Global distribution of relative risk of an EID event

Source: Jones et al. (2008) Nature 451, 990-993
### Priority Transboundary Animal Diseases for Asia

<table>
<thead>
<tr>
<th>Poultry</th>
<th>Pig</th>
<th>Cattle</th>
<th>Goat / Sheep</th>
<th>Multi-species</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avian Influenza</strong></td>
<td>African Swine Fever</td>
<td>Anthrax</td>
<td>Peste des Petits Ruminants</td>
<td>Brucellosis</td>
</tr>
<tr>
<td><strong>Newcastle Disease</strong></td>
<td>Classical Swine Fever</td>
<td>BSE</td>
<td></td>
<td>Salmonellosis</td>
</tr>
<tr>
<td><strong>Porcine Respiratory and Reproductive Syndrome</strong></td>
<td>Tuberculosis</td>
<td></td>
<td></td>
<td>FMD</td>
</tr>
<tr>
<td><strong>Nipah Virus Infection</strong></td>
<td>Hemorrhagic Septicemia</td>
<td></td>
<td></td>
<td>Leptospirosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rabies (dogs and cats)</td>
</tr>
</tbody>
</table>
Relevance of NZD control

• Addressing NZDs by targeting the animal reservoir can deliver a double benefit, as enhanced animal health means a reduced risk of infection for humans, as well as improved livelihoods through increased animal productivity.

• Evidence of the disease burdens imposed on communities by the NZDs and demonstration of the cost-effectiveness of integrated control can strengthen the case for a One Health approach to endemic zoonotic disease control.
Factors to consider on NZD control

• Ecological and evolutionary perspectives can provide valuable insights into pathogen ecology and can inform zoonotic disease control programmes

• Anthropogenic practices, such as changes in land use and extractive industry actions, animal production systems and widespread antimicrobial applications affect zoonotic disease transmission

• Risks are not limited to low income countries; as global trade and travel expands, zoonoses are increasingly posing health concerns for the global medical community
FAO’s focus

- Promoting the development and adoption of adequate international, regional and national regulatory frameworks;
- Enhancing communication and cooperation between animal and human health sectors;
- Assisting on improving service delivery and strengthening capacities;
- Increasing professional and public awareness on NZD control in particular;
- Developing and providing relevant information;
- Fostering partnerships, coordination and collaboration among stakeholders;
- Developing policy-making tools.
FAO-OIE-WHO Initiatives on Zoonoses Control
The Tripartite addresses health threats at the Human-Animal-Ecosystems Interface through applying the One Health concept of cross-sectoral collaboration.

Cross-sectoral collaboration bringing together various sectors and levels (eg socio-economic, government, IGO, academia, NGOs financing bodies, civil society, private sector)
The FAO-OIE-WHO Collaboration

Sharing responsibilities and coordinating global activities to address health risks at the animal-human-ecosystems interfaces

A Tripartite Concept Note

April 2010

Common Vision

A world capable of preventing, detecting, containing, eliminating animal and public health risks attributable to zoonoses and animal diseases with an impact on food security through multi-sectoral cooperation and strong partnerships.

Released at the International Ministerial Conference on Avian and Pandemic Influenza, April 2010, Hanoi, Vietnam
Promotion of Human – Animal Health Sector collaboration (One Health) for the enhanced control and prevention of endemic zoonotic diseases (particularly rabies) and early detection of emerging zoonoses
• Tripartite collaboration on zoonoses (FAO, OIE, WHO)

• One Health promotion in the Pacific countries

• Rabies as a priority disease under One Health
Tripartite (FAO-OIE-WHO) Collaboration at Regional Level

- Joint activities under:
  - EUHPED and IDENTIFY
  - Support joint coordination at regional and country levels
  - Laboratory aspect
  - Training (FETP at regional and country levels)
- National OH events
- Disease specific activities
  - Avian Influenza
  - Rabies
  - AMR

Regional Workshop on Collaboration between Human-Animal Health Sectors on Zoonoses Prevention and Control:
- First Meeting (WPRO) – Sapporo
- Second Meeting (FAO) – Chiang Mai
- Third Meeting (OIE) – Bali
- Fourth Meeting (SEARO) – Nepal
- Fifth Meeting (FAO) – Bangkok, Thailand
Generic enhancement of national disease control systems through capacity building
Field Epidemiology Training Program for Veterinarians (FETPV):

- Regional program hosted by Department of Livestock Development, Thailand
- Concept - Training through providing services
- Jointly supported by FAO, USAID, USCDC and others

-Closely linked with FETP for public health sector:
  - Multidisciplinary approach
  - Engagement of wildlife health sector
  - One Health Approach

-Expanded to country level in SE Asia – China, Cambodia, Laos, Viet Nam
-Expanded to South-Asian sub-region – India, Nepal
How to apply epidemiology capacity for effective zoonoses control?

• Epidemiology applied in isolation is not sufficient for effective zoonoses control

• Epidemiology within a holistic approach is:
  – Cross-sectoral link at the human-animal interface
  – Inter-disciplinary links with
    • Laboratory diagnosis
    • Value chain analysis
    • Risk communication
    • Policy and practices
What Institutional Epidemiology Capacity is Required for Effective Disease Control?

Evidence Based Policies: Human-Animal Interface

Disease Intelligence Network: Four-Way Linking

Disease Control: Joint Rapid Response Teams
Building Epidemiology Capacity Within Government Services

Inputs
- Assessment
- Investigation
- Case Finding

Outputs
- Analysis
- Descriptive Data
- Reporting

National
Sub-national
Village/Local

Outcome: Science Based Recommendations

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Technical Scopes for Laboratory Capacity Building

- Workshops/Trainings
- Provision of reference books, software, sample referral, equipment, reagents and supplies

Strengthen diagnosis capacity

- Laboratory assessment
- Proficiency testing program

Assure the quality of laboratory services

- Biosafety risk assessment
- Biosafety cabinet testing and calibration

Improve laboratory biosafety

- National and Regional laboratory network meetings (LDF, Lab-TAG)
- Laboratory partnerships

Facilitate laboratory networking at national and regional level

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Fostering regional cooperation and the development of regional approaches and coordination capacity for the control of priority transboundary and emerging diseases
• Establishment of regional support units in ASEAN and SAARC

• Assistance on the establishment of the ASEAN Collaborating Center on Animal Health and Zoonoses (ACCAHZ)

• Development of regional strategic frameworks for ASEAN and SAARC (aimed at strengthening the policy and coordination for laboratory and epidemiology capacity development at the regional level)

• Conduct of regular GF-TADs Steering Committee Meeting for Asia (WHO is invited)

• Conduct of annual WHO TAG (regional and bi-regional meetings discussing APSED and IHR capacities);
Strengthening the Policy and Coordination for Laboratory and Epidemiology Capacity Development and Networking at Regional Level

Partners engagement
- Technical Advisory Group (TAG) Meeting
- Epidemiology Consortium Meeting
- Donors, Implementing partners, including the Director of the Regional Reference labs and RRL
- Technical Meeting and training
- Joint Animal Health and Public Health Laboratory Meeting

Policy advocacy
- Laboratory Directors’ Forum Meeting
- Directors of the RLN members, RRL, RLDL
- CVO Meeting for epidemiology development

ASEAN SAARC Regional Strategic Frameworks
Support to national efforts to control selected ‘high impact’ diseases present in the country and / or to respond to the risk of specific emerging / re-emerging diseases
• Rabies elimination strategy (FAO, OIE, WHO, GARC, JTF, STANDZ)
• HPED (EU)
• Brucellosis (OIE, FAO-APHCA)
• Avian Influenza (USAID, JTF)
Information generation and dissemination
• Websites of partners
• Zoonoses Network Asia (FAO)
• Benchmark documents (rabies c/o OIE)
• Guidance documents (avian influenza)
Joint guidelines and manuals on various neglected zoonotic diseases

List

• Trichinella
• Cysticercosis
• Anthrax
• Brucellosis
• Echinococcosis
Conclusion

1. Address the root causes of zoonotic diseases and associated health risks - more prevention, less reaction.

1. A holistic, interdisciplinary approach to agriculture and health research and risk management - horizontal cooperation and coordination.

1. Improved national early warning /disease reporting systems and disease control (vertical cooperation and coordination).

1. Increasing awareness about the causes of NZDs and how they can be prevented could reduce the incidence of many endemic zoonoses.
Thank you very much