Averting Public Health Crises Caused by Emerging Diseases and Pandemics: Current Situation and Future Plan for Bangladesh

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Background Information

- Human Population is about 140 million, majority of population lives in the village with about 60% literacy rate
- Chicken about 210 million, Duck 38 million
- About 22 million cattle and 20 million goat; pigs scattered in hilly part of the country but not in abundance
- Close human and animal proximity
- About 244 species of migratory birds visit Bangladesh
- Human health service is extended to union level (cluster of number of villages) whereas animal health service is extended to Upazila (cluster of Unions) level.
Emerging and Re-emerging Diseases

**Major Emerging Diseases:**

- Highly Pathogenic Avian Influenza (H5N1)
- Nipah
- Dengue

**Major Re-emerging Diseases:**

- Malaria
- Filaria
- Leishmeniosis
- Japanese Encephalitis

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HPAI Situation

First Outbreak : 5 February 2007 in Jamalpur, a northern district
Number of outbreak: 58 outbreak
Pattern of outbreak : Outbreak is sporadic in nature

No of cases reached its peak in March, 2007 and gradually decreased but an increasing trend from September

Responses : After confirmation of H5 in national Reference Laboratory, Depopulation of in-contact of 1 Km radius
Humane culling, safe disposal and proper disinfection
Intensive surveillance in 10 km zone
Communication to farmers and consumers about the hazard, behaviour change and hygienic practices including farm biosecurity

Number of culled birds: About 2,50,000
Other Emerging Diseases

**Nipah**:

Emergence-Detected in 2001

Trend- Limited in northern part of Bangladesh

Response- There are 10 active surveillance sites for early warning, case detection and notification (Collaborators: ICDDR,B, CDC/USA)

**Dengue**:

Emergence- Massive outbreak in 2000

Trend- It has now become endemic in some parts of the country. Number of fatalities reduced

Response- Case management was instituted, awareness was raised on vector control
Trends: Emerging Diseases and Pandemic

- Country is at higher risk of emerging diseases
- Emergence of deadly H5N1 virus is a potential threat for igniting pandemics
- Increasing poultry, cattle and small ruminant farming coupled with global warming has significantly increased the vulnerability of human population to emerging zoonotic diseases
- International travel and in-country human mobility has increased dramatically
Coordination and Policy Planning

- National Avian Influenza and Human Pandemic Influenza Preparedness and Response Plans framed and being implemented.
- Operational Manuals of Department of Livestock service approved and operationalised.
- Multi-sectoral coordination from the highest level to field level operationalised involving animal health, human health, wild life, civil administration, law enforcing agencies, local government, and civil society.
Surveillance and Laboratory Capacity

- Regular reporting system established with new epidemiology unit at Department of Livestock Service.
- A national reference laboratory for HPAI with the capacity to identify H5 subtype of Avian influenza employing RT-PCR.
- Manpower trained for carrying laboratory test, disease investigation and surveillance
- IEDCR (MOH) has been identified as National Influenza Center (NIC)
- Real time PCR to identify H5N1 in human recently installed and operationalised at ICDDR,B
- Hospital based influenza surveillance is ongoing
Response and Communication

• Both animal and human health response teams formed and trained on response techniques (culling, disposal and disinfection), case management, personal safety and bio-safety
• Logistics and antiviral procured and stockpiled for responding to outbreaks in animals and possible outbreak in humans.
• Hospital capacity for handling human cases improved and preparation for pandemic is ongoing
• Communications materials developed and distributed for preparedness, protection, reporting, response and compliance
• Compensation package developed and implemented
• Communication to reduce panic and adverse effect on poultry business without compromising public health concern
Lessons learnt

- Predictions of disease introduction by migratory birds did not work as the areas close to migratory birds habitats were not infected.
- Coordination among donors and agencies is critical and need to be strengthened further.
- Bio-security of farms and markets should be given highest priority.
- Quarantine, movement control, monitoring of trades are very important.
- Prudent communications may reduce the risk of market collapse and prevent more cases in both humans and animals.
Issues for further Study and Partnership Development

- Detail Epidemiological study
- Quick confirmation of HPAI
- In-depth analyses of the circulating viruses
- Public private partnership, enhanced international cooperation and experience sharing
Key Constraints and Challenges

- Exact epidemiology of the disease is not clearly understood
- To identify the exact measures to contain further spread of the disease
- Monitoring and surveillance difficult due to outbreak in backyard poultry
- Limited manpower, Lab facilities and Resources
- Lack of understanding of human transmissibility of the virus (H5N1)
Priority area
for
Road Map
Technical Gaps

- Updating plan documents
- Designing surveillance programme
- Number of Field Lab not sufficient
- Upgrading of Field Lab to BSL2
- Upgrading of National Lab to BSL3
- Support for research on development of cheap and easily available quick diagnostic techniques
Priority Area

- Updating policies, plans and SoPs
- Farmers’ awareness building for better biosecurity and personal hygiene through traditional and interpersonal communication
- Strengthen risk based surveillance in backyard farm, commercial farm, wild birds and wet markets
- Strengthening response capacities for outbreak in animals
- Strengthening linkage between veterinary public health and human health
- Strengthen sentinel surveillance for AI in human
- Strengthen diagnostic capacity and safety level of animal health and human health laboratories dealing with AI virus
- Strengthen capacities to handle human AI patients
- Training human and animal health professional and paraprofessionals
- Material development for different phases of pandemics
Way Forward

- Bangladesh is committed to ensure better health for human as well as animals
- Achieved a lot but not complacent
- Desiring to achieve our goals through international collaboration
Thank you