Risk Management (2)
A country perspective and case study - HPAI Indonesia

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HPAI Indonesia – key time lines

Jun 2003: Reports of chicken die-offs in Central Java
Jul 2003: Commercial sector experiencing outbreaks; rumours H5N1
Oct 2003: University study concludes HPAI
Nov-Dec 2003: ND assumed causing mortality, other agent contributes

Jan 2004: Consumer scares, 50% drop of chicken sales
Feb 2004: Reports to OIE H5N1 in 51 regencies in 10 provinces
Jul 2004: 7.4 M of poultry losses, THL and VN bans chicken imports
Nov 2004: WHO warns from human pandemic

Jul 2005: 1st Human fatal case
Nov 2005: Virus spread to 22 of 33 Provinces

Jan 2006: NSWP issued
Mar 2006: KOMNAS and CMU established
Dec 2006: Further spread in poultry overall 58 human case fatalities

2008: ALL major production systems (sector 1-4) and most of the provinces are affected
Poultry Movements

Virus affecting both humans and local poultry may not be locally produced, but instead introduced from outside sources all over Java

Source: DGLS, 2010
Risk management – considerations

• Traditionally, mainly top-down and authoritarian approach not appropriately recognizing local stakeholder interests and knowledge VS. Participatory, based on common purpose, shared solutions, supported by local knowledge

• Zero-Risk as Risk Management Approach excessively stringent measures may increase risk of illegal trade need to recognize that there is no zero risk
Risk management – HPAI key responses Indonesia

1. Culling & compensation (C&C)

2004
• After massive outbreaks reports in commercial farms zero-risk as risk management approach with attempted mass C&C
• Seen as the international standard & recommended from OIE
• Pandemic scenario – WHO

Unwanted outcome
• Compensation didn’t work out effectively or not at all

2008/2009
• Changed to voluntary culling negotiate with farmers by PDS/PDR teams
  Pro: Community involvement due to PDSR
  Cons: No guarantee that a positive flock will be culled
        Immediate sales of suspected flocks - risky behaviour due to still lack of compensation
Risk management – HPAI key responses Indonesia

2. Vaccination

2005 - 2007
• Several attempts to introduce mass vaccination
• Decision made based on discussion within GoI including also international expertise (FAO). Based on knowledge of time.

2007
• Adapted to targeted vaccination of high risk populations

Challenges:
• Vaccines to be used, feasibility
• Post vaccine surveillance, challenge trials (?)
• Targeted population (?)
Risk management – HPAI key responses Indonesia

3. Surveillance – Participatory Disease Surveillance & Response

2003-5
• Surveillance capacity limited on district level and related to large animals
• Idea based on discussions within GoI and with FAO in late 2005

2006
• PDS/PDR team established

2007
Change from PDS/PDR to PDSR
• Based on an external revision and for cost saving
• To guarantee a better follow up of cases using same teams

2011 –
• Further integration of PDSR in Pukeswan or DINAS
DFID-Funded Collaborative HPAI Research Project
Selected case studies

National partners: DGLS, IPB, UGM
International partners: ILRI, IFPRI, RVC
Time: 2007-2010

Objectives:
1. Provide scientific basis for improving HPAI control strategies
   – More cost-effective, feasible
2. Inject insights into policy processes
   – National, regional and global
3. Build capacity for evidence-based formulation of pro-poor disease control policy
Case studies: added value of Eco health Model of Hygienic Small Scale Poultry Slaughter House

**Socio-economic perspective**
- Livelihood analysis
- CBA

**Political perspectives**
- Law and regulation
- HPAI Background paper

**Vet epidemiology:**
- Qualitative RA
- Quantitative RA

**Synthesis**
targeting
HPAI Pro Poor Risk Reduction Strategies

**Value chain perspective:**
- Value chain analysis
- Mitigation compliance

**Institutional analysis**
Authorities involved in HPAI

**- Household survey**

Various partners from government, universities (vets, socio-econ), private sector work collaborative but not transdisciplinary
Qualitative Risk Assessment of HPAI H5N1 Transmission between Small-Scale Commercial Broiler Chicken Farms in Bogor, Indonesia

Syafriison Idris, Maria Fatima Palupi, Elly Sudiana, Fred Unger

Background

• Better understanding of the routes of virus introduction into farms and transmission of virus infection between sectors 3 is needed

• RA to support prioritization for control.

Risk questions

• Risk of HPAI H5N1 virus transmission between small-scale broiler farm

Source of information

• Literature, FGD, IDI and Expert opinion
Pathways associated with highest risks of transmission:

**Movement of visitors** between small-scale broiler farms: bird collectors & animal health workers

**Sharing of equipment** between farms and along the market chain
A Quantitative Risk Assessment for the onward transmission of Highly Pathogenic Avian Influenza (HPAI) H5N1 from infected small-scale broiler farms in Bogor, Indonesia

Will de Glanville, Syafrison Idris, Solenne Costard, Fred Unger, and Dirk Pfeiffer

Follow up of qualitative RA

1. To describe and quantify the risk of transmission of HPAI H5N1 between:
   a) Small-scale broiler (SSB) farms;
   b) SSB farms and backyard poultry flocks
2. Identification of risk mitigation strategies
General Approach

Infected small-scale broiler farm

Mixing in the marketing chain

Environmental contamination (faeces/respiratory secretions/carcasses)

Air borne/insects
Water
Equipment

Animals
People

Free-ranging backyard chickens

Susceptible SSB/backyard flock
Key results and recommendations for risk management from qualitative and quantitative RA

Risk associated with collectors
- Simple farm gate bio-security (culture of cleanliness, training)
- Mandatory delay between visits (enforceable?)
- Early detection (penalties/incentives?)

Overall

Risk associated with handling
- Simple sanitation (e.g. Hand washing)
- Mandatory delay between visits

Risk associated with contaminated water
- No carcass disposal in rivers (behaviour, awareness?)
- Water treatment (behaviour, practice)
Alignment of poultry sector actors with HPAI control in Bogor, Indonesia
Iwan Willyanto, B. Bett, F. Unger, T. Randolph

Aligned with carried out qualitative and quantitative risk assessment.

Objectives: To assess the level of compliance of the various poultry value chain actors with HPAI control measures

Methodology: Likert scale (practice, incentives and capacity)

Mitigation measures which likely enjoy better or lower compliance:
- Improving bio-security expected to enjoy the most compliance across the actors in sectors 3 and 4
- Compliance towards BY vaccination seemed to be low
- Culling and compensation appears to be the most difficult to achieve sufficient compliance
Culling?

Source: ILRI/FUnger
BY vaccination (?)
Challenges from a risk manager perspective
– the case of HPAI control in Indonesia

Knowledge & Science:
• Decisions often not based on scientific evidence e.g. mass culling & vacc.
• Scope of initial outbreaks far larger than expected
• Recognition of HPAI approx 8 months after introduction
• Limited understanding of environmental drivers (e.g. duck vs. paddies)

Policy and policy environment:
• Top down decision meets a decentralized system

Resources and capacity:
• Resource allocation
• Epidemiological capacity
Challenges from a risk manager perspective

Society:
- The prominent BY, small-scale production and traditional live bird marketing practices are deeply rooted in the culture and are crucial to people’s livelihoods.
- Several demand shocks due to HPAI in early years
- After years of endemic HPAI decreasing awareness of society including key actors such as producers, traders but also PDSR

Institutional issues:
- Allocation of funds from central to local government challenging
- Enforcement of existing regulations often difficult
Considerations from an EH perspective - related to HPAI

Transdisciplinary
• Attempt to work collaboratively due to newly established institutions e.g. KOMNAS but not transdisciplinary

Knowledge to action:
• Initial response driven by OIE recommendation & external experts
• Decisions not always sufficiently evidence based

Participation:
• Limited participation of various actors:
  • Communities and private sector in early response
  • Control focused primary on producer but not other upstream actors e.g. no compensation planned for other actors

Sustainability:
• Dependency on external funds (e.g. PDSR)
Alternative, more integrated approaches for HPAI Risk management

“Western” Standard disease response failed:

- Assume a well functioning AH/PH system, rapid response capacity
- May fail in the face of bureaucratic, institutional weakness, decentralized system with local market imperfections

Zero risk management inappropriate

- Diseases can be controlled without reducing transmission risk to ZERO
- More important cost effective and feasible targeted control measures
- In short term impossible to eradicate, more feasible to reduce rate of transmission

Modified after Pfeiffer, 2013
Alternative, more integrated approaches for HPAI Risk management* (cont.)

Risk management for HPAI
• Not aligned with other poultry diseases even they may matter more
• Attempting to increase bio-security for millions of BY poultry ineffective

Establishment of disease free zones or compartments
• Demonstrated to work for Thailand

Multilateral coordination
• Within country
• All levels (Government - grass root)
• Between countries

Modified after Pfeiffer, 2013
Risk management HPAI VS. country priorities

**Tsunami:** Dec 2006, 200,000 human fatalities

**Earthquakes:**
  - Yogyakarte: 2006, 7000 human fatalities
  - Padang: 2009, 135,000 human fatalities

**Air crashes:** Medan and Yogyakarta (2006 and 2007)

**Floods:** Jakarta 2013

**Rabies:** Bali 2008 – 2010, 168 human fatalities

**DHF:** 69,000 cases in 2004
Risk management – HPAI has priority?

Source: Jakarta post
References

CD risk assessment: DF, DHF and DSS in Indonesia, February 2005


Syafirison Idris, Maria Fatima Palupi, Elly Sudiana, Fred Unger (2010): Qualitative Risk Assessment of HPAI H5N1 Transmission between Small-Scale Commercial Broiler Chicken Farms in Bogor, Indonesia