Avian Influenza:
Indonesian Experience

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Population Map of Bird in Asia

Population Map of Poultry in Indonesia

The Nightmare
Spread of Bird Disease Outbreak in Indonesia (Oct 03)
Distribution of Bird Disease Outbreak in Indonesia (Nov 03 – Feb 04)

- Pontianak Area
- City of Pontianak
- Sampit Area
- Tanah Laut Area

(Laporan Dinas Peternakan)

- NOVEMBER 2003 (1)
- DECEMBER 2003 (1)
- FEBRUARI 2004 (2)
Bird death,
AUG 03 - APR 04
Reported Death

Source: Dinas Peternakan
# Serological Test Results
BPMSOH Gunung Sindur, 31 Januari 2004

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Birds</th>
<th>Place of Origin</th>
<th>Institusi</th>
<th>Antisera H5N1 (log 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Layer</td>
<td>Bogor</td>
<td>Balitvet</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Layer</td>
<td>Blitar</td>
<td>Balitvet</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Layer</td>
<td>Sukoharjo</td>
<td>BPPV R-IV</td>
<td>11</td>
</tr>
<tr>
<td>4.</td>
<td>Buras</td>
<td>Wonosobo</td>
<td>BPPV R-IV</td>
<td>9</td>
</tr>
<tr>
<td>5.</td>
<td>Layer</td>
<td>Tangerang</td>
<td>BPMSOH</td>
<td>8</td>
</tr>
<tr>
<td>6.</td>
<td>Layer</td>
<td>Semarang</td>
<td>BPMSOH</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>Local</td>
<td>Yogyakarta</td>
<td>FKH UGM</td>
<td>6</td>
</tr>
<tr>
<td>8.</td>
<td>Layer</td>
<td>Klaten</td>
<td>FKH UGM</td>
<td>7</td>
</tr>
<tr>
<td>9.</td>
<td>Quail</td>
<td>Klaten</td>
<td>FKH UGM</td>
<td>6</td>
</tr>
</tbody>
</table>
Main Strategy for AI Outbreak

- **VACCINATION**
  - Mass Vaccination to all healthy birds within 6 months, followed by routine vaccination

- **DEPOPULATION**
  - DEPOPULATION of all healthy birds sharing facilities with sick birds
Justification for AI Control Strategy

1. Outbreak has been widely spreading
2. Control of outbreak is anticipated to be difficult due to late initiation
3. Bird farms in Indonesia consist of a large number of small farms (chicken, local chicken, quails, etc.)
9 Control Strategy

1. Improvement of BIOSECURITY
2. Vaccination
3. Depopulation
4. Control of traffic of birds, poultry product, and poultry waste
5. Surveillance and tracing back
6. Restocking
7. Stamping-out
8. Public awareness
9. Monitoring and evaluation
Zoning as a base for AI control

- AFFECTED AREA
- HIGH RISK AREA
- FREE AREA

Map showing regions labeled with dates: NOV.03 and OKT.03.
Depopulation: Constrains

- Very low awareness among farmers and industries, particularly in preventing the selling of sick chicken.
- Depopulation procedure is not simple and must be followed by complete disposal procedure, to prevent the carcasses from becoming the next source of infection.
- Depopulation procedure was not performed in accordance to the *animal welfare* principles.
General Objectives of Outbreak Control

1. Rehabilitation of chicken and egg consumption
2. Rehabilitation of poultry and its related businesses
Objective of AI Control

1. SHORT TERM (6 months, Feb – Jul 2004)
   1) Control the outbreak by suppressing mortality rate down to zero
   2) Control and reduce disease spread to other areas in Indonesia
   3) Protect the disease free areas
   4) Prevent transmission to human by eliminating the source of disease in birds
   5) Poultry recovery

2. LONG TERM (2005 - 2007)
   1) Gradually eradicate the disease
   2) Re-gain the AI-free status
AI related Concerns

- Poultry industries
- Loss of human life
- Food safety issues
- Food security issues
- Survival of small farmers
- Regional and global problems
AI Vaccination

Locally produced

• PUSVETMA: AFLUVET
• PT. VAKSINDO SATWA NUSANTARA: Vaksiflu AI
• PT. MEDION: Medivac AI
8. Public Awareness Campaign

<table>
<thead>
<tr>
<th>BOOKLETS</th>
<th>POSTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIDEO PRESENTATION</td>
<td>RADIO-ADS</td>
</tr>
</tbody>
</table>

This image illustrates various materials and tools used for a public awareness campaign, including booklets, posters, video presentations, radio ads, flyers, and roll-up banners.
Do we have human case?
Respondent Characteristics

**Respondent Criteria**

(N = 1046)

- Contact (+): 829
- Control: 217

**Sex**

(N = 1046)

- Male: 664
- Female: 382

**Age Group**

(N = 1046)

- 0-10: 16
- 11-15: 18
- 16-20: 21
- 21-25: 26
- 26-30: 31
- 31-35: 35
- 35-40: 41
- 41-45: 46
- 46-50: 51
- 51-55: 55
- 56-60: 60
- 61-65: 65
- 66-75: 75
## Main job of Respondent

<table>
<thead>
<tr>
<th>Respondent</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N = 1046)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact (+):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slaughter</td>
<td>6</td>
<td>0.7</td>
</tr>
<tr>
<td>Farm worker</td>
<td>662</td>
<td>79.9</td>
</tr>
<tr>
<td>Product handler</td>
<td>80</td>
<td>9.6</td>
</tr>
<tr>
<td>Slaughter &amp; Worker</td>
<td>77</td>
<td>9.3</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>0.5</td>
</tr>
<tr>
<td>Control (non-contact)</td>
<td>217</td>
<td>20.7</td>
</tr>
</tbody>
</table>

The table above represents the distribution of main jobs of respondents with a total of 1046 respondents. The majority of respondents (79.3%) fall under the 'Contact (+): Farm worker' category, while the 'Control (non-contact)' category constitutes 20.7% of the respondents.
### History of Influenza/URI Related Illness

<table>
<thead>
<tr>
<th>Variabel</th>
<th>History of Illness</th>
<th>Current Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Province</td>
<td>(N = 1046)</td>
<td></td>
</tr>
<tr>
<td>Bali</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Banten</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>DI Yogyakarta</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>West Jawa</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Central Jawa</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>East Jawa</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>South Kalimantan</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>Lampung</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>155</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>
## Results of H5N1 Tests

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>HI Test (Serum)</th>
<th>RT PCR Test (Nasal Swab)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tested</td>
<td>Results</td>
</tr>
<tr>
<td>Bali</td>
<td>130</td>
<td>130 (-)</td>
</tr>
<tr>
<td>Banten</td>
<td>125</td>
<td>125 (-)</td>
</tr>
<tr>
<td>DI Yogyakarta</td>
<td>125</td>
<td>125 (-)</td>
</tr>
<tr>
<td>West Jawa</td>
<td>125</td>
<td>125 (-)</td>
</tr>
<tr>
<td>Central Jawa</td>
<td>125</td>
<td>125 (-)</td>
</tr>
<tr>
<td>East Jawa</td>
<td>128</td>
<td>128 (-)</td>
</tr>
<tr>
<td>South Kalimantan</td>
<td>152</td>
<td>152 (-)</td>
</tr>
<tr>
<td>Lampung</td>
<td>136</td>
<td>136 (-)</td>
</tr>
</tbody>
</table>
How Indonesia anticipates bioterrorism?

- Nat’l Focal Point
- MoFA
- Nat’l Biosecurity Clearing House
- Nat’l Competent Authority

Agency for Biological and Chemical Terrorism Control as the NCC (Nat’l Coordinating Committee)

Ministries of Econ, Industry, & Trade, Agriculture, Defense, FDA, Quarantine, Custom, etc.

Ministries of Justice, Communication & Information, Health, FDA

The President
Conclusions

- 8 Provinces have been affected by AI
- 8,687,406 birds have been reported killed between Aug ’03 and Apr ’04
- None of 829 person with history of contact showed positive result when tested by HI and RT-PCR
- Indonesian Government (MoA and MoH) has taken strategic measures to control the disease
- Indonesia has seriously considered the possibility of the emerging and re-emerging (infectious) diseases as bio-attack.
Thank you!