Update on avian influenza in the EU and worldwide

Working Group of the Advisory Group on the Food Chain
Animal Health and Plant Health, 19 June 2015

Maria Pittman
Unit G2 – Animal Health
Directorate-General for Health and Food Safety
Evolving and complex situation with multiple HPAI subtypes in four continents (Asia, Europe, North America, Africa)

Unprecedented spread of H5 HPAI lineage 2.3.4.4
Recent spread of lineage 2.3.2.1 (H5N1) to Europe (BG, Ro) and West Africa

**North American H5 HPAI** viruses mixed with local strains

**H5N2 now** predominant in poultry and wild birds

Highly infectious but **extended incubation period** most marked in turkeys
Intercontinental spread of HPAI H5N8 viruses
Lee et al. (2015) Journal of Virology
<table>
<thead>
<tr>
<th>Country</th>
<th>Affected region</th>
<th>HPAI subtype</th>
<th>Outbreak Type</th>
<th>Confirmation date</th>
<th>Flock size</th>
<th>Species / Production type</th>
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<tbody>
<tr>
<td>Germany</td>
<td>Mecklenburg-Western Pomerania</td>
<td>H5N8</td>
<td>1</td>
<td>05/11/2014</td>
<td>30939</td>
<td>fattening turkeys indoor</td>
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<td></td>
<td>Mecklenburg-Western Pomerania, island of Ruegen</td>
<td>H5N8</td>
<td>1</td>
<td>21/11/2014</td>
<td>1</td>
<td>common teal live bird</td>
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<td>Lower Saxony, Cloppenburg</td>
<td>H5N8</td>
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<td>16/12/2014</td>
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<td>Lower Saxony, Emsland</td>
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<td>20/12/2014</td>
<td>10102</td>
<td>fattening ducks indoor</td>
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<td>Sachsen-Anhalt, Anhalt-Bitterfeld</td>
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<td>20/12/2014</td>
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<td></td>
<td>Rostock</td>
<td>H5N8</td>
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<td>7/01/2015</td>
<td>496</td>
<td>zoo, white stork dead bird</td>
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<td>Mecklenburg-Western Pomerania, Anklam</td>
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<td>1</td>
<td>20/01/2015</td>
<td>196</td>
<td>backyard</td>
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<td>Mecklenburg-Western Pomerania, Anklam</td>
<td>H5N8</td>
<td>2</td>
<td>26/01/2015</td>
<td>36</td>
<td>backyard</td>
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<td>Netherlands</td>
<td>Utrecht province, Hekendorp</td>
<td>H5N8</td>
<td>1</td>
<td>16/11/2014</td>
<td>150000</td>
<td>laying hens indoor</td>
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<td></td>
<td>Zuid-Holland province, Ter Aar</td>
<td>H5N8</td>
<td>1</td>
<td>21/11/2014</td>
<td>43000</td>
<td>laying hens indoor</td>
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<td>Overijssel province, Kamperveen</td>
<td>H5N8</td>
<td>1</td>
<td>21/11/2014</td>
<td>10000</td>
<td>broiler breeder indoor</td>
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<td></td>
<td>Overijssel province, Kamperveen</td>
<td>H5N8</td>
<td>2</td>
<td>23/11/2014</td>
<td>14600</td>
<td>fattening ducks indoor</td>
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<td></td>
<td>Zuid Holland province, Zoeterwoude</td>
<td>H5N8</td>
<td>1</td>
<td>30/11/2014</td>
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<td>Utrecht province, Kamerik</td>
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<td>1</td>
<td>1/12/2014</td>
<td>2</td>
<td>Eurasian widgeon live bird</td>
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<td>United Kingdom</td>
<td>East Riding of Yorkshire</td>
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<td>16/11/2014</td>
<td>6178</td>
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<td>Italy</td>
<td>Veneto, Rovigo</td>
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<td>15/12/2014</td>
<td>31985</td>
<td>fattening turkeys indoor</td>
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<td>Bulgaria</td>
<td>Burgas Region, Poda protected area</td>
<td>H5N1</td>
<td>1</td>
<td>26/01/2015</td>
<td>1</td>
<td>Dalmatian pelican dead bird</td>
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<td>Burgas Region, Konstantinonvo</td>
<td>H5N1</td>
<td>2</td>
<td>2/02/2015</td>
<td>22</td>
<td>backyard</td>
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<td>Burgas Region, Poda protected area</td>
<td>H5N1</td>
<td>6</td>
<td>6/02/2015</td>
<td>2</td>
<td>dove / gull dead bird</td>
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<td>Hungary</td>
<td>Békés County, Füzesgyarmat</td>
<td>H5N8</td>
<td>1</td>
<td>24/02/2015</td>
<td>21170</td>
<td>fattening ducks indoors</td>
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<td>Sweden</td>
<td>Stockholm, Djurgården island,</td>
<td>H5N8</td>
<td>1</td>
<td>Feb/March</td>
<td>2</td>
<td>mute swan (cygnus olor)</td>
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<tr>
<td>Romania</td>
<td>Tulcea/Constanta county - Danube delta</td>
<td>H5N1</td>
<td>2</td>
<td>26/03/2015</td>
<td>6+/64†/250</td>
<td>Dalmatian pelican dead bird</td>
</tr>
</tbody>
</table>
North American flyways - schematised
## HPAI outbreaks in Canada
### H5N2 & H5N1 (non-Asian)

<table>
<thead>
<tr>
<th>Province</th>
<th>Subtype</th>
<th>No of outbreaks</th>
<th>No of counties</th>
<th>Species/category</th>
<th>Start</th>
<th>Last</th>
<th>Population died/culled</th>
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<tbody>
<tr>
<td>BRITISH COLUMBIA</td>
<td>H5N1</td>
<td>13</td>
<td></td>
<td>11 commercial: Broiler breeder, turkeys, layers, 2 non-commercial</td>
<td>01/12/2014</td>
<td>02/02/2015</td>
<td>245,180</td>
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<tr>
<td></td>
<td>H5N2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>ONTARIO</td>
<td>H5N2</td>
<td>1</td>
<td>Oxford</td>
<td>Turkeys</td>
<td>08/04</td>
<td></td>
<td>44,800</td>
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<tr>
<td></td>
<td>H5N2</td>
<td>1</td>
<td>Oxford</td>
<td>Broiler breeder</td>
<td>18/04</td>
<td></td>
<td>27,000</td>
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<tr>
<td></td>
<td>H5N2</td>
<td>1</td>
<td>Oxford</td>
<td>Turkeys</td>
<td>23/04</td>
<td></td>
<td>7,900</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79,700</td>
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</tbody>
</table>
Canada – regionalisation

**British Columbia:**
13 outbreaks as of first confirmation on 04/01/2014 - lifting of restrictions by **09/06**.

**Ontario:**
3 outbreaks between 08-23/04 all in Oxford county
Regionalisation of two 'avian influenza control zones' 10km radius around outbreak farms
Second control zone covers two last outbreaks
Avian Influenza Control Zone
Oxford County 2015
Update on Avian Influenza Findings
Poultry Findings Confirmed by USDA’s National Veterinary Services Laboratories

- 223 Outbreaks
- 48 Million birds affected:
- 19/12/2014 first detection
- 17/06/2015 last detection
USA - Current situation and regionalisation

- **Extent of epidemic** – 222 outbreaks in **15 States**:  
  - Oregon, Washington, Idaho, California, Kansas, Arkansas,  
    Missouri, Montana, **Minnesota** (turkeys), **Iowa** (laying hens),  
    North and South Dakota, Wisconsin, Indiana, Nebraska

- **Wild bird findings** also in States without poultry outbreaks:  
  - Nevada, New Mexico, Wyoming, Utah, Kentucky

- **Results of epidemiological analysis** for HPAI infected poultry flocks of 15/06/2015 published  
  - single point virus introduction via wild birds  
  - lateral spread between poultry holdings  
  - Biosecurity at farm level?
Regionalisation as voted at the PAFF meeting on 5th June 2015

EU Import Restrictions

- **Entire State**
- **County Level**
- **10 km radius area**
Health and Consumers

HPAI in other third countries
HPAI H5N1 Egypt

Cases in humans recently dramatically increased

Since 12/2014 - end 02/2015:
• 352 poultry outbreaks
• 101 human cases/31 fatalities
• as compared to only 44 poultry outbreaks and no human cases reported during the same period the year before.
H5N1 HPAI in Egypt (cont.)

- Outbreaks in commercial and household poultry all year round

- Humans get occasionally infected when in close contact with sick poultry (>household keeping)

- Preliminary analysis of the genome sequences of circulating H5N1 viruses suggests that they continue evolving
  - less awareness, protection by vaccines?

- No similar surge in cases reported in any other country

- Clusters, but so far no sustained human-human transmission

- http://ecdc.europa.eu
HPAI in other third countries: H5 and H5N1

**Israel:**
01-02/2015: 8 outbreaks and one in early 05 in commercial holdings
no imports as certification suspended
virus related to Egyptian viruses

**Palestinian Auton. Territories:**
01-03/2015: 4 outbreaks in West bank (commercial and backyard) and 2 in Gaza strip (small holders)

**Turkey:**
04-05/2015: 3 outbreaks in the Asiatic part of the country reported via the ADNS system
Last outbreaks in 2008 (7)
Imports of heat treated poultry meat products produced from meat sourced from approved third countries or Member States
Thank you for your attention!!

Vaccination against AI  EU/USA

**EU: Emergency and preventive vaccination**
- Member States’ decision
- Approved plan with surveillance and control of movements
- **very little use of vaccination in poultry and zoo birds**
- Member States do not see the advantages in using emergency vaccination with currently available vaccines
  - onset of immunity too slow, protection not always satisfactory
  - cumbersome, costly application
  - trade implications although internationally recognized measure

**USDA: vaccination never used to control HPAI**
- Stamping-out considered the best tool
- vaccine strain is developed
- USDA/APHIS decision to introduce vaccination in particular in layers and turkeys