FAO/OIE/WHO
GLEWS
GLOBAL EARLY WARNING SYSTEM
What is GLEWS?

• The Global Early Warning and Response System for Major Animal Diseases including Zoonoses is a joint FAO, OIE and WHO initiative which combines the strengths of the three organizations to achieve common objectives.

• GLEWS was launched in 2006 and FAO takes the lead to consolidate a team to improve disease tracking of major animal disease events in collaboration with OIE and WHO and to provide digested analysis on disease situation and early warning messages to the international community on areas at risk of TAD.
Which Diseases?

**Non zoonotic**
- African Swine Fever (ASF)
- Classical Swine Fever (CSF)
- Contagious Bovine Pleuropneumonia (CBPP)
- Foot and Mouth Disease (FMD)
- Peste des Petits Ruminants (PPR)
- Rinderpest
- Bluetongue
- etc ...

**Zoonotic diseases**
- Highly Pathogenic Avian Influenza (HPAI)
- Rabies
- Rift Valley Fever (RVF)
- etc...
GLEWS Operational Framework

GLEWS Management Committee

GLEWS Task Force

WG on tracking disease intelligence and early warning

WG on Information System (Development of GLEWS platform)

WG on Response and Socio-Economic analysis

Ad hoc Scientific Advisory Panel
Main activities (1)

Disease tracking component *(automatic email to be developed)*

- Disease tracking will enhance the verification of the three organizations on rumors on animal health events. Standard operating procedures will be implemented for sharing disease information and level of access for different users.

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**Reminder: Russia: Antibodies of H5N1 Registered in Natural Tract of Aksu-Sarykamis of Altayskiy Rayon**

From: Beltran-Alcorde, Daniel (WHO)
To: Ruddick, Andrew (FAO)
Cc: Lehmann, Anne (WHO)
Subject: Reminder: Russia: Antibodies of H5N1 Registered in Natural Tract of Aksu-Sarykamis of Altayskiy Rayon

Dear Andrew Ruddick,

My name is Daniel Beltran-Alcorde, Disease Tracking Officer, working in Emphas, Animal Health Division (AGAH, FAO). I’m currently replacing Sophie von Dobruck following up any suspicions of transboundary animal disease outbreaks. This activity is part of the GLEWS initiative (Global Early Warning System for Major Animal Diseases) which combines the alert and response mechanisms of FAO, OIE and WHO. Being up to date on transboundary animal disease situations in the world is a key activity in order to plan our actions for assisting member countries in combating these diseases.

Therefore, in the future, if you could please inform us of any suspicion/confirmed transboundary animal disease outbreak by emailing GLEWS@fao.org, it would be very much appreciated.

I am contacting you to kindly remind you about the detection of antibodies against H5N1 among wild birds in Altayskiy Rayon mentioned in the news item below. Would you have any further information on it (please kindly copy GLEWS@fao.org in your reply)?

Thanks in advance and best regards,

Daniel Beltran-Alcorde
Disease Tracking Officer
Emphas, Animal Health Division, AGAH, FAO

Russia: Antibodies of H5N1 Registered in Natural Tract of Aksu-Sarykamis of Altayskiy Rayon

9/19/07 AR@WHO [email for more information]. According to a regional source, antibodies of H5N1 were registered in natural tract of Aksu-Sarykamis of Altayskiy Rayon among wild birds. According to officials, there is no need to worry because the antibodies present no danger to healthy birds.

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Information sources

- **Media**
  - Promed (Global electronic reporting system for outbreaks of emerging infectious diseases & toxins)
  - GPHIN (Global Public Health Intelligence Network)
  - AI-Watch

- **FAO**
  - Country report, Project
  - National Government
  - FAO field Officer

- **European commission**

- **OIE**

- **UN agencies**
  - WHO
  - Others
September 2007 - May 2008: 295 communications shared

GLEWS communications by type

- Notification: 62, 21%
- Other: 133, 45%
- Request: 77, 26%
- Surveillance report: 23, 8%

GLEWS communications per disease

- Others: 28, 9%
- AI: 243, 83%
- RVF: 8, 3%
- Unknown: 16, 5%
GLEWS and relevant information

- **Dates**: observation, notification
- **Disease**
- **Species**: Type (Domestic/Wild), species (chicken, ducks...), number,...
- **Virus**: type (H5, H5N1,...)
- **Geographical information**: Region, countries, provinces, village, geographical coordinates...
- **Diagnosis** (laboratory)
- **Epidemiology** (source and diffusion of the outbreak)
- **Control measures**
- **Data entry validation process**
**Event tracking**

- Initial report
- Follow-up on the event.
- Addition or precision of information.
- Record of activities undertaken by GLEWS task force members.
- Request for assistance from other GLEWS task force members.
- Change of the status of the event.
... breaking news! blah Blah ... were collected in 12 villages in the western Usambara

Disease Tracking

Latest disease alerts:
- 12/01/2007: Foot-and-mouth disease (FMD Virus A) - Turkey
- 05/01/2007: Foot-and-mouth disease (FMD Virus O) - Israel
- 04/01/2007: Foot-and-mouth disease (FMD Virus O) - Israel
- 17/01/2007: Foot-and-mouth disease (FMD Virus A) - Jordan
- 17/01/2007: Foot-and-mouth disease (FMD Virus A) - Jordan

Analysis and assessment

WHO, UNICEF urge funding and use of vaccine vial
3 May 2007 -- WHO and UNICEF today jointly urged donors and countries to include vaccine vial monitors (VVMs) among the minimum requirements for vaccine donations and purchases. A VVM is a simple tool used on vaccine vials to clearly indicate if a vaccine is likely to have been damaged by heat.

Emergency Response and Dissemination
Main Activities (2)

Disease Analysis and forecasting component *(Joint Analysis with collaborating centers)*

- Data from the three organizations are shared in real time to improve disease analysis and early warning on GLEWS priority diseases. Collaborating centers and reference centers on epidemiology and veterinary public health carry out specific analysis.
Disease observation/tracking

- draw map

Disease/environment map

- evaluate temp-spatial patterns

Epidemiological hypothesis

- Hypothesis rejected
- Hypothesis NOT rejected

- dispersion / spread models

Statistical validation

NO

Information
Alarm
Risk Maps Drafts

Immediate

Short-Med

Med-long

forecast

Prediction
EWS
Decision tool
**Outputs of GLEWS**

- **Disease alert and early warning messages**
  - These messages will concentrate on predicting animal disease threats, through epidemiological analysis and the integration of additional factors that could have an impact on the occurrence and spread of such diseases (such as economic factors, civil unrest, climatic changes, etc).

- **Development of coordinated responses to animal health emergencies**
  - If in consultation between the three partners there is clear value for onsite assessment of the situation, an urgent joint field mission can be considered engaging the country authorities, in order to obtain a better appreciation of the situation and to offer assistance in the formulation of urgent intervention strategies.
HPAI Outbreaks in domestic poultry and cases in wild birds in Asia, Europe and Africa

- Indonesia
- Europe
- Africa
- Asia

Weekly cases

- Sep.07
- Oct.07
- Nov.07
- Dec.07
- Jan.08
- Feb.08
HPAI outbreaks in domestic poultry and cases in wild birds

- Domestic
- Wild

Sep.07 Oct.07 Nov.07 Dec.07 Jan.08 Feb.08
HPAI outbreaks in domestic poultry and cases in wild birds in Asia, Europe and Africa
HPAI cases in wild birds in Germany, France, Denmark and in the rest of Europe.
HPAI outbreaks: Outbreaks reported in poultry and cases in wild birds

Six Months Period (2 October 2007 - 2 April 2008)

Legend

HPAI Occurrences

- Self Declared Free Country
- H5N1 Domestic
- H5N1 Wild
- H5N1 Domestic
- H5N1 Wild

This map represents occurrences of HPAI observed from 2 Oct 2007 to 2 April 2008. H5 cases are represented on this map only for countries in which H5N1 is known to be endemic and where N-adaptation characterization is not being performed for secondary cases. Countries with HPAI occurrence only in wild birds are not considered as infected according to OIE status. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

NOTE: FAO compiles information from numerous sources (FAO representatives or country missions, FAO reports, OIE, official government sources, EC, Reference laboratories and others) and produces these composite maps in a representative effort to provide full and accurate information. Omissions and errors are regretted, but FAO welcomes messages to that effect with supporting documentation to make the required changes based on FAO validation and verification procedures. Send messages to EMPRES-livestock@fao.org
NOTE: This map represents occurrences of H5 and H5N1 reported from 01 March 2008 to 02 April 2008. H5 cases are represented for countries where N-subtype characterization is not being performed for secondary cases or if laboratory results are still pending. Countries with H5 and H5N1 occurrences only in wild birds are not considered infected according to OIE status. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.
NOTE: This map represents suspicions of disease events and their follow-up status, reported from 01 March 2008 to 02 April 2008. The original data have been collected and aggregated at the most detailed administrative level and for the units available or each country.

1. Introduction

Following the introduction of H5N1 HPAI into Turkey in October 2005, the disease has been reported (as of August 2006) in poultry or wild birds in 26 European countries. From October 2005 onwards, outbreaks of HPAI in domestic poultry have been reported in Albania, Austria, Azerbaijan, Denmark, France, Germany, Hungary, Romania, Russian Federation, Serbia, Turkey and Ukraine, with over 230 recorded outbreaks in Romania alone. With the exception of Albania, all countries also detected HPAI in wild birds. Thirteen countries reported HPAI in wild birds only (Bosnia-Herzegovina, Bulgaria, Croatia, Macedonia or Moldova, although they share borders with known infected countries. In addition, 20 human cases were observed in the European region (WHO classification), with nine deaths. Azerbaijan reported eight human cases in March 2006, of which five were fatal, and Turkey reported another eight human cases in January 2006, of which another five were fatal. Based on the migratory flyways of Anatidae from the West Siberian Lowlands and Scandinavia, the period for migration (which usually precedes the first frost), and the timing and location of HPAI H5N1 outbreaks observed in 2005 in Eastern Europe, it is possible that wild birds played a role in disease introduction and movement during last year’s epidemic. Due to the seasonal occurrence of the disease, and particularly with reports of new outbreaks in the same ecosystems of China and Russia in spring 2006, it is possible that a similar situation could occur in the approaching weeks with the migratory movement of wild birds from their northern breeding grounds.