The Global Early Warning System for transboundary animal diseases including major zoonosis (GLEWS)

and Level of achievement – Sept 08

What is GLEWS?

- The Global Early Warning and Response System for Transboundary Animal Diseases and Major Zoonoses is a joint FAO, OIE and WHO initiative which combines the strengths of the three organizations to achieve common objectives.
An early warning system that formally brings together human and veterinary public health systems:
- to share zoonotic disease outbreak information
- to share epidemiological and risk analysis
- to deliver early warning messages to the international community on areas at risk of TAD.

GLEWS was initiated in 2002
Agreement signed in 2006
Sources of Information

- Global Information and Early Warning System on Food and Agriculture (GIEWS-FAO)
- Famine Early Warning System Network (FEWS-FAO)
- The Global Public Health Intelligence Network (GPHIN) – Health Canada
- The Programme for Monitoring of Emerging Diseases (Promed)
- Field FAO officers and Country Partners (projects)
Zoonotic Diseases

- Anthrax
- Bovine Spongiform Encephalopathy
- Brucellosis (B. melitensis)
- Crimean Congo Hemorrhagic Fever
- Ebola Virus
- Food borne diseases
- Highly Pathogenic Avian Influenza*
- Japanese Encephalitis
- Marburg Hemorrhagic Fever
- New World Screwworm
- Nipah Virus
- Old World Screwworm
- Q Fever
- Rabies
- Rift Valley Fever* (RVF)
- Tularemia
- Venezuelan Equine Encephalomyelitis
- West Nile Virus

Non Zoonotic Diseases

- African Swine Fever
- Classical Swine Fever
- Contagious Bovine Pleuropneumonia
- Foot-and-Mouth Disease*
- Peste des Petits Ruminants
- Rinderpest
- Sheep Pox*/Goat Pox
- African Horsesickness
OIE Early Warning System

Type of data and flow

Regional

Regional Offices

Regional Representations

Regional Offices

National

WHO Country Offices

OIE Delegates, CVDs

FAO Country-Off and field operations

National Authorities
Type of data and flow

Types of alert data
- Rumor
- Suspected
- Confirmed

What triggers GLEWS?

- Is the public health impact of the event serious?
  - High morbidity and/or high mortality in humans and/or animals.
  - Emerging disease with significant mortality and/or morbidity or zoonotic potential.

- Is the event unusual or unexpected?
  - First occurrence or reoccurrence of a disease/strain.
  - Unusual event for the area or season.
  - Event associated with an unknown agent.

- Is there significant risk of international spread?
  - Potential for transboundary spread.

- Is there significant risk of international travel or trade restrictions?
**Current progress: Disease tracking**

- **Statistics (sept 2007 - August 08):**
  - 336 communications shared among GLEWS partners (monthly mean 34),
  - 82% related to HPAI (9% RVF)

- **Dissemination**
  - [www.glews.net](http://www.glews.net)
    - first version (internal) online June 2008
    - consolidated when the platform will be running

- **GLEWS SOP under development**
  - **confidentiality** provisions (list of diffusions, information sharing from HQ to regional and country offices)
  - HPAI, RVF as priority diseases and increase sharing of other GLEWS diseases
  - Define GLEWS performance indicators
  - Dissemination
**Current progress: GLEWS Platform**

- "Development of GLEWS electronic platform is the priority"
  - Finalization of technical specification document and implementation by June 2008 - First prototype December 2008

- Restricted Access (only GLEWS members)
- Event Tracking System included (Action Request until the end of the event)
- Event management: Search, Query, Filter and Basic Descriptive Analysis.
- Performance and Metrics Module
- Dashboard, User Personalisation

---

**Current progress: Response**

- Operational outbreak response is responsibility of ARO and CMC-AH

- GLEWS Task: Risk mitigation guideline preparation:
  - Identification of gaps and existing standards
  - Prioritize urgent needs
  - Additional resources needed
Daily Update for CMC meetings

- permanent request for information
- Common outputs: Website, warning messages
- At this stage, no common publications...
  - Example in FAO (labeled “Glews team in FAO”)

Example in FAO (labeled “Glews team in FAO”)

- 3t/week HPAI Update meetings
- monthly Update AIDENews

outputs of GLEWS

- Disease alert and early warning messages
  - factual alert messages
outputs of GLEWS

- Disease alert and early warning messages
- Number of OIE Alerts and notification

Number of published Alerts

Year

Number of Reports

Published Immediate notifications and follow-up reports

Year
Disease alert and early warning messages

Results of Disease Tracking and Verification Activities in OIE

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of enquiries</th>
<th>Replies</th>
<th>No reply</th>
<th>Official notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>32</td>
<td>18</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>2003</td>
<td>29</td>
<td>24</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>2004</td>
<td>85</td>
<td>67</td>
<td>18</td>
<td>39</td>
</tr>
<tr>
<td>2005</td>
<td>97</td>
<td>74</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>2006</td>
<td>113</td>
<td>80</td>
<td>33</td>
<td>66</td>
</tr>
<tr>
<td>2007</td>
<td>140</td>
<td>103</td>
<td>37</td>
<td>71</td>
</tr>
</tbody>
</table>

Sensitive material is posted on IHR secure website available to IHR National Focal points when issue is sensitive and not public.

Also on INFOSAN Emergency secure website available to only members of INFOSAN Emergency.
Holistic Approaches to Pathogen and Disease Understanding

- Farming and Marketing systems
- Animal populations and movements
- Land use
- Socio economic factors
- Institutional context and policies
- Climate
- Natural and man-made disasters

Disease alert and early warning messages

- digested analysis/disease intelligence
- forecasting messages (collaborating centers network)
- Example EMPRES Watch in FAO (labeled “GLEWS team in FAO”)
  Analysis-modeling-forecasting

outputs of GLEWS
The Global Early Warning System for transboundary animal diseases including major zoonosis (GLEWS)

THANK YOU FOR YOUR ATTENTION
FMD “Hotspots”

Probability of Outbreaks based on Logistic Regression Model for 2003/4 AI Epidemic
Figure 12. Commercial movements of live animals in West Africa; workshop report, TCP/RAF/2916
Poultry Commercial Movement

Source: GIRA, 2004
Value Chain Mapping of Kampong Chickens and Ducks

- Hatchery
- Farm (Budidaya)
- Sapronak (Satuan Produksi Ternak) / Livestock Production Unit

Cut Chicken / Duck
- Collector from Outside Jakarta Province
- Collector in Jakarta Province

Eggs
- Collector from Outside Jakarta Province
- Collector in Jakarta Province

Traditional Market
- TPA (Tempat Pemotongan Ayam) / Chicken Slaughter Place/Point
- TPI (Tempat Pemotongan Itik) / Duck Slaughter Place/Point

Household
- Food Stall
- Chicken Peddler
- Restaurant
- Supermarket
- Bakery

Kiosk
- Jamu / Traditional Herb Seller
- Martabak / Omelet Seller

Salty Eggs Producers

Kampong chicken
- Chicken’s eggs
- Duck’s eggs
- Duck meat
**GLEWS@fao.org**
- forward local information on possible TAD events (... even newspaper clippings).
- Information is extracted and verification carried out through other channels. The originator of the information is protected.

**EMPRES-Shipping-Service@fao.org**
- submission of samples for confirmation or agent characterisation to OIE or FAO reference laboratories.