

Electronic Global Emerging Disease Surveillance

Presented by: Kamina K. Johnson

United States Department of Agriculture

Veterinary Services

Objectives

1. Timely recognition of emerging diseases
2. Creation of a body of knowledge relative to global disease emergence, movement and changes in risk
3. Identification, assessment and forecasting of important trends affecting, or with the potential to affect, animal disease emergence, animal health or animal related industries

Population and Information Collection

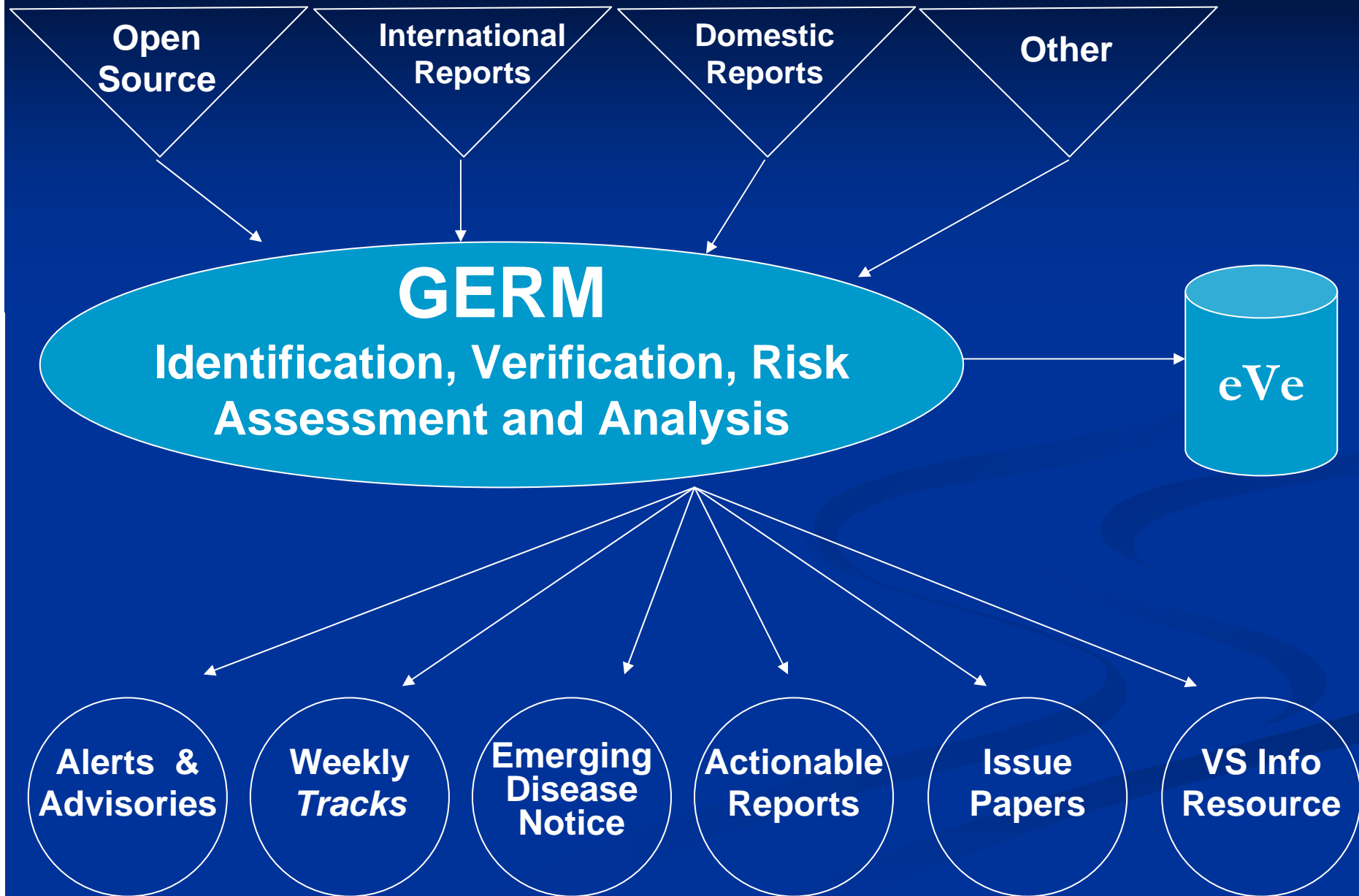
- Population = events that post a risk to US livestock and markets
- International
 - Reports of animal die-offs or disease outbreaks
 - Social, technological, environmental, economic, and political situations or news
- Domestic
 - FSIS Slaughter data (pilot project)
 - Laboratory data (future project)

Methods for analyzing data

Global Event reporting Model (GERM)

- **Priority 1 [Alert]** *High Increased-Risk Events*
 - Events of risk to the U.S
 - Action: Immediate notification of decision makers
- **Priority 2 [Advisory]** *Medium Increased-Risk Events*
 - Events of possible risk to the U.S.
 - Action: Immediate notification of decision makers
- **Priority 3 [Tracking]** *Low Increased-Risk Events*
 - Events that are low, but possible risk to the U.S.
 - Events that need further clarification
 - Issues, trends, technologies that could affect U.S. agriculture
 - Action: Weekly reporting to Veterinary Services and other partners

Disease Surveillance Process



CEI Alert: United Kingdom, Infectious Salmon Anemia

Country: Scotland

Location: Shetland

Sources: AnimalNet, ProMED, University of Maine Cooperative Extension, World Trade Atlas

Date: January 6, 2009

Event Summary

Infectious salmon anemia (ISA) has been confirmed at a fish farm and is suspected at two other farms in the Burra area of Shetland archipelago, 200 km northeast of the Scottish coast. The government has established control and surveillance zones and movement restrictions, and has begun an epidemiological investigation. A similar outbreak of ISA a decade ago cost Scotland millions of pounds and the loss of 200 jobs. Scotland is the world's third largest producer of Atlantic salmon, with annual global sales of approximately £300 million (~\$450 million US).

CEI Assessment

ISA was first identified in the mid-1980s, and has been reported in farmed Atlantic salmon in Norway, Canada, the United Kingdom, Denmark, Chile, and the United States (Maine). Subclinical infections have also been detected in wild fish species in other locations. ISA virus can be transmitted by direct contact between fish, as well as indirectly through tissues and fluids, contaminated equipment, sea lice, and by people who have handled infected fish.

According to the World Trade Atlas, in 2008 (through October) the United States imported 7,645 metric tons of fresh salmon, 1,783 metric tons of fish fillets, and 568 metric tons of frozen fish from the United Kingdom (data from Scotland not reported separately). Such imports could represent a disease risk to the U.S. aquaculture industry, although the level of risk is unknown. The United States is free of ISA, having last reported it to the OIE in 2003.



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CEI Animal Health Tracks

January 11–17, 2007



Alerts Issued this Week

- Priority 2 - Iran; suspected outbreak of highly pathogenic avian influenza (HPAI) in poultry and wild birds

Priority 1 Updates

- None

Priority 2 Updates

- **Highly Pathogenic Avian Influenza H5N1 in Iran Confirmed:**
Iranian officials have confirmed highly pathogenic H5N1 in backyard chickens in a village in the province of Mazandaran in northern Iran near the Caspian Sea. The flock was depopulated and additional control measures include zoning, movement controls, and surveillance. This is Iran's first report of HPAI H5N1 in poultry. Iran's only previous report of HPAI H5N1 was in wild swans in February 2006. (Source: OIE)

Selected Events Being Monitored

- **India:** Indian officials have reported to the OIE outbreaks of HPAI H5N1 among backyard poultry on small farms in several villages in the state of West Bengal. The last outbreak of HPAI in India occurred in July 2007 in the state of Manipur. Both West Bengal and Manipur share borders with Bangladesh, which has had ongoing outbreaks of HPAI H5N1.
- **Mexico:** Undiagnosed die-off of 70 caged rabbits on a farm in Xicotepec Rio Blanco, Veracruz-Llave.
- **Russia:** Multiple reports indicate pig die-offs in Irkutskaya Oblast; multiple causes have been suggested.
- **Syria:** Goats and sheep dying and goats aborting in the province of Hims. Suspected cause reported as cold weather and fodder shortage.
- **West Bank:** Sheep and goats dying from persistent diarrhea, unspecified infection, and cold weather. Local officials concerned that entire local livestock population is threatened.
- **Venezuela:** Undiagnosed FMD-like illness affects 2,500 cattle (beef, dairy) and pigs on at least 10 premises in Alberto Adriani, Merida. Local ranchers call the disease "Chinela", suspect a possible mutation in the FMD virus, and want the current vaccine evaluated.

Priority 1: Major outbreak of an FAD or a new, unknown, or unconfirmed livestock or zoonotic disease in the U.S. or U.S. trading partner.

Priority 2: Occurrence of a highly significant or novel disease in a non-U.S. trading partner. Non-FAD or undiagnosed livestock mortality cluster of concern in the U.S. or major U.S. trading partner. Unusual epidemiological characteristics of known pathogen.

Monitored Events: Disease which does not meet the criteria for a higher priority but is of interest for monitoring purposes.

The CEI Animal Health Tracks is a compilation of open-source information regarding significant emerging animal health issues and foreign animal disease events of interest to U.S. animal agriculture which are being monitored by the Center for Emerging Issues (CEI).

For further information e-mail cei/aphis/usda@aphis.usda.gov.

Summary

Advantages

- Events easy to identify because of model
- Process of how to handle information
- Database to track and share events

Disadvantages

- Time intensive
- Little automation
- Difficult to fuse text with structured data
- Limited visualization of big picture