

Use of AI, other software...examples

Leo Loth

Training Workshop on Emergency Management and Disaster Response

How to Conduct Simulation Exercise (Sim-Ex)

10 -12 December 2025, Manila, Philippines



Veterinary incursion response relies on:

- **risk assessment models,**
- **standardized operational manuals (like AUSVETPLAN),**
- **diagnostic equipment,**
- **communication systems, and physical control measures.**

These tools help veterinary services prevent, detect, and control outbreaks of exotic or emergency animal diseases (EADs)



Planning and Preparedness Tools

Before an incursion occurs, several tools are used for planning and preparedness: ⓘ

- **Risk Assessment (RA) Tools:** Computer-based models like the Rapid Risk Assessment Tool (RRAT), MINTRISK, and COMPARE help prioritize diseases and identify high-risk introduction pathways (e.g., legal/illegal trade, wild animal movements). These tools provide risk managers with evidence-based data for informed decision-making.
- **Contingency Plans and Manuals:** Comprehensive national plans, such as the [Australian Veterinary Plan \(AUSVETPLAN\)](#), provide agreed-upon national policies and detailed standard operating procedures (SOPs) for various disease scenarios.
- **Virtual Training Platforms:** Online learning centers, such as those provided by the FAO, offer cost-effective ways to train large numbers of professionals simultaneously on disease basics, biosecurity measures, and specific response tasks.
- **Global Data Sharing Systems:** International platforms like the World Animal Health Information System (WAHIS) and the Global Early Warning and Response System for major animal diseases (GLEWS+) facilitate the sharing of data on disease occurrences and global trade, which is crucial for early detection and risk assessment. ⓘ



Response and Field Operation Tools

Once an incursion is suspected or confirmed, the following tools are deployed:

- **Communication Systems:** A key tool is a central point of contact, such as a national "Disease Watch Hotline," to ensure rapid reporting of suspected cases to relevant authorities.
- **Field Investigation Manuals and Checklists:** Veterinarians on the ground use field manuals that offer step-by-step guidance, checklists, and forms for outbreak investigation, sample collection, and disease control measures.
- **Diagnostic Tools:** This includes both basic field tools (e.g., thermometers, sample collection kits) and advanced laboratory equipment for confirming the disease agent rapidly.



- **Physical Control Measures:**
 - **Biosecurity Equipment:** Personal protective equipment (PPE), disinfectants, and cleaning materials are essential for preventing the spread of the disease from an infected site.
 - **Quarantine and Movement Controls:** The power to implement legal controls, such as national livestock standstills and establishment of quarantine zones, is a critical regulatory tool.
 - **Depopulation and Carcass Disposal:** Tools and guidelines for the humane killing of infected animals for disease control purposes and safe disposal of carcasses are necessary to contain an outbreak.
 - **Vaccination Strategies:** Depending on the disease, vaccination programs might be used, requiring specialized vaccination guns, cold chain storage equipment, and post-vaccination monitoring tools. @

IT and software

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National & International Animal Disease Surveillance Systems — Strengthening Rapid Detection and Response

Effective control of animal disease outbreaks depends on specialized national and international surveillance systems for rapid response, tracing, and cross-border coordination.

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Specialized Surveillance Systems for Faster Outbreak Control

Detect, map, and prioritize animal disease responses with integrated tech and coordinated teams

Core functions of surveillance systems

Detect, track, and report animal disease outbreaks using integrated data, GIS, and network analysis.

Decision support and resource allocation

Tools aid authorities in risk assessment, prioritizing responses and allocating resources effectively.

Operational challenges

Timely data submission, interoperability across systems, and maintaining data accuracy remain key hurdles.

Collaboration for effectiveness

Success depends on seamless coordination between national agencies, international organizations, and field operatives.



EpiTrace: SNA-Powered Animal Movement Tracing (Italy)

Rapidly identify infection sources and assess secondary outbreak risk using national databases



Integrated national data

Web app linked to Italian animal databases for complete movement records.



Retrospective & prospective tracing

Trace past infections and predict potential secondary outbreaks from trade patterns.



Social Network Analysis (SNA)

Models relationships between holdings and movements to reveal transmission pathways.



Actionable interventions

Enables targeted responses to minimize outbreak spread and economic loss.



SIMAN — Italy's National Outbreak Notification System

Centralized platform for outbreak reporting, follow-up data
and automated international reports



- 1 Official national platform for outbreak notification**
Collects follow-up data and supplies timely, structured information to national authorities.



- 2 Automated international reporting**
Generates mandatory reports for EU ADNS and WOAHA WAHIS to streamline compliance.



- 3 Compliance with international standards**
Supports reporting obligations under international animal health standards.



WAHIS — Global Reference for Official Animal Health

WOAH's system for collecting, sharing and rapidly alerting
on major animal disease events

WAHIS is the World Organisation for Animal Health's global reference system for official animal health information

Collects and disseminates data from **member countries**

Provides an **e-alert mechanism** for rapid notification of major disease events worldwide

Supports **global transparency** and coordinated responses to transboundary animal diseases

Crucial for **trade** safeguards and **public health** protection





ADIS — EU Animal Disease Reporting Platform

Harmonized reporting aligned with WOAH WAHIS to strengthen regional surveillance



ADIS: European Union platform for animal disease reporting



Compatible with **WOAH WAHIS** to enable seamless data exchange



Ensures **consistent, efficient reporting** across EU member states



Strengthens regional **surveillance** and disease management

1

Developed by Food and Agriculture Organization (FAO) for field disease reporting

2

Enables real-time animal disease data submission from remote locations

3

Designed for low-connectivity environments common in developing countries

4

Supports early warning systems, expanding surveillance coverage and speeding response

5

Used by frontline responders and veterinarians to accelerate disease control

EMA-i: Mobile Field Reporting for Animal Health

FAO app enabling real-time disease reports from frontline responders in low-connectivity areas



TRACES: EU Trade Control & Expert System

Real-time monitoring of cross-border movements to protect animal and public health

Developed by the European Union to monitor cross-border movements of animals and animal products

Border control functions enforce compliance with health regulations at entry points

Tracks trade activities to help control disease spread linked to international commerce

Prevents introduction of infectious agents into **disease-free zones**



Integration & Coordination of Animal Surveillance Systems

Linking national, regional, and global systems to improve detection and reporting

National Systems (e.g., SIMAN, ADIS)

Collects field data, initiates notifications, enforces local response.

1

Regional Platforms (e.g., TRACES)

Aggregates cross-border trade and movement data for regional oversight.

2

Technical Challenges

Address compatibility, standardization, and latency to improve accuracy.

6

Global Systems (e.g., WAHIS)

Consolidates international reports to enable global monitoring and alerts.

3

Coordination & Governance

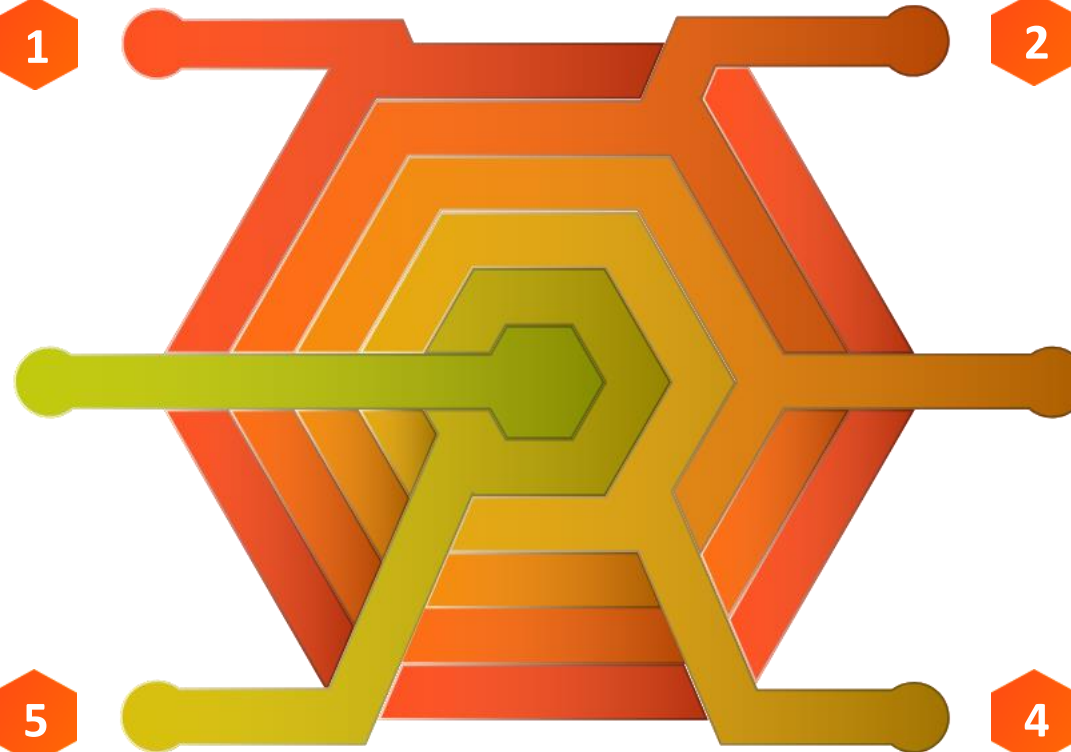
Agreements, protocols, and defined roles to ensure timely information flow.

5

Data Interoperability

Standard formats, APIs, and vocabularies to enable seamless exchange.

4





Strengthening Surveillance for Global Disease Control

Early detection, rapid response, and resilient systems to protect animal and public health and trade



Core roles of surveillance

Early detection, rapid response, and containment to protect animal health, public health, and international trade.



Technology advances

Mobile data collection and network analysis improving speed and accuracy of outbreak detection.



Ongoing challenges

Harmonizing international standards, addressing data privacy concerns, and expanding capacity in resource-limited settings.



Strategic priority

Sustained investment in surveillance is essential for global biosecurity and effective disease risk management.



Thank you

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