

South-East Asia Wildlife Health Network Meeting and Special Session at Southeast Asia One Health University  
Network 2022 International Conference



Reporting to the World Animal Health Information system:

*Official data and Epidemic intelligence activity*

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## World Animal Health Information System

OIE-WAHIS (OIE World Animal Health Information System) is a unique comprehensive database through which information on the animal health situation worldwide is reported and disseminated throughout the world. OIE-WAHIS data reflects the information gathered by the Veterinary Services from OIE Members and non-Members Countries and Territories on OIE-listed diseases in domestic animals and wildlife, as well as on emerging diseases and zoonoses.

All this information can be publicly accessed and visualized on this interface. OIE-WAHIS replaces and significantly extends the former web interface named WAHIS providing access to all reported data since 2005. This new public interface includes data extraction tools, interactive mapping tools and dashboards to support data consultation, visualization and extraction of officially validated animal health data.



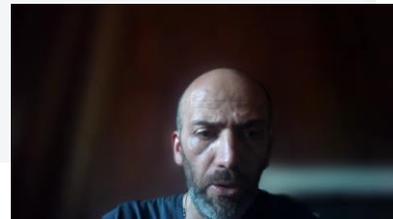
How would you like to consult the information ?



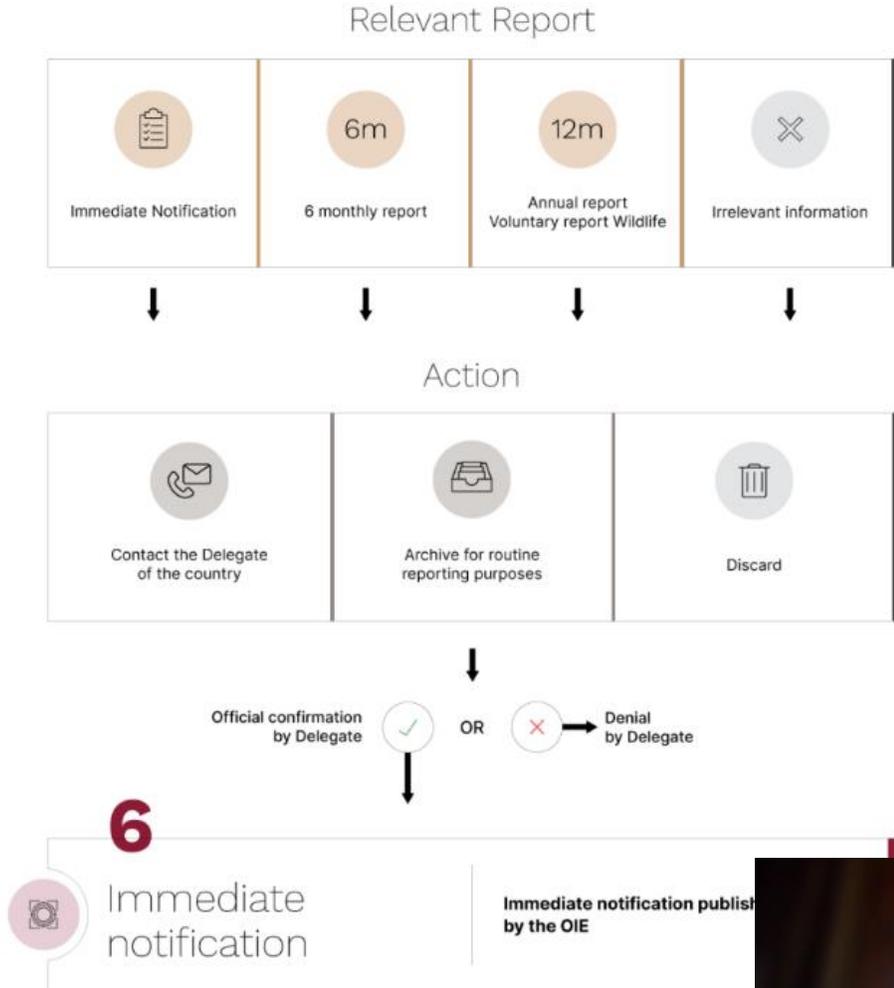
Analytics



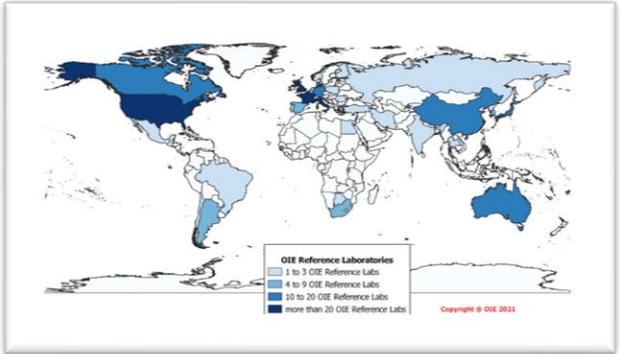
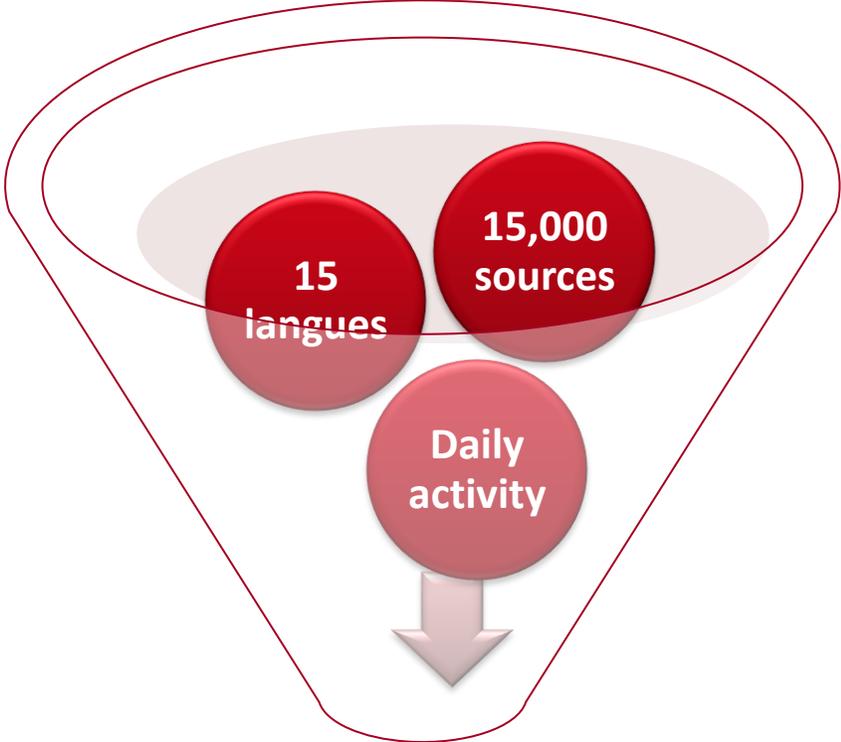
by Report



# Data verification workflow



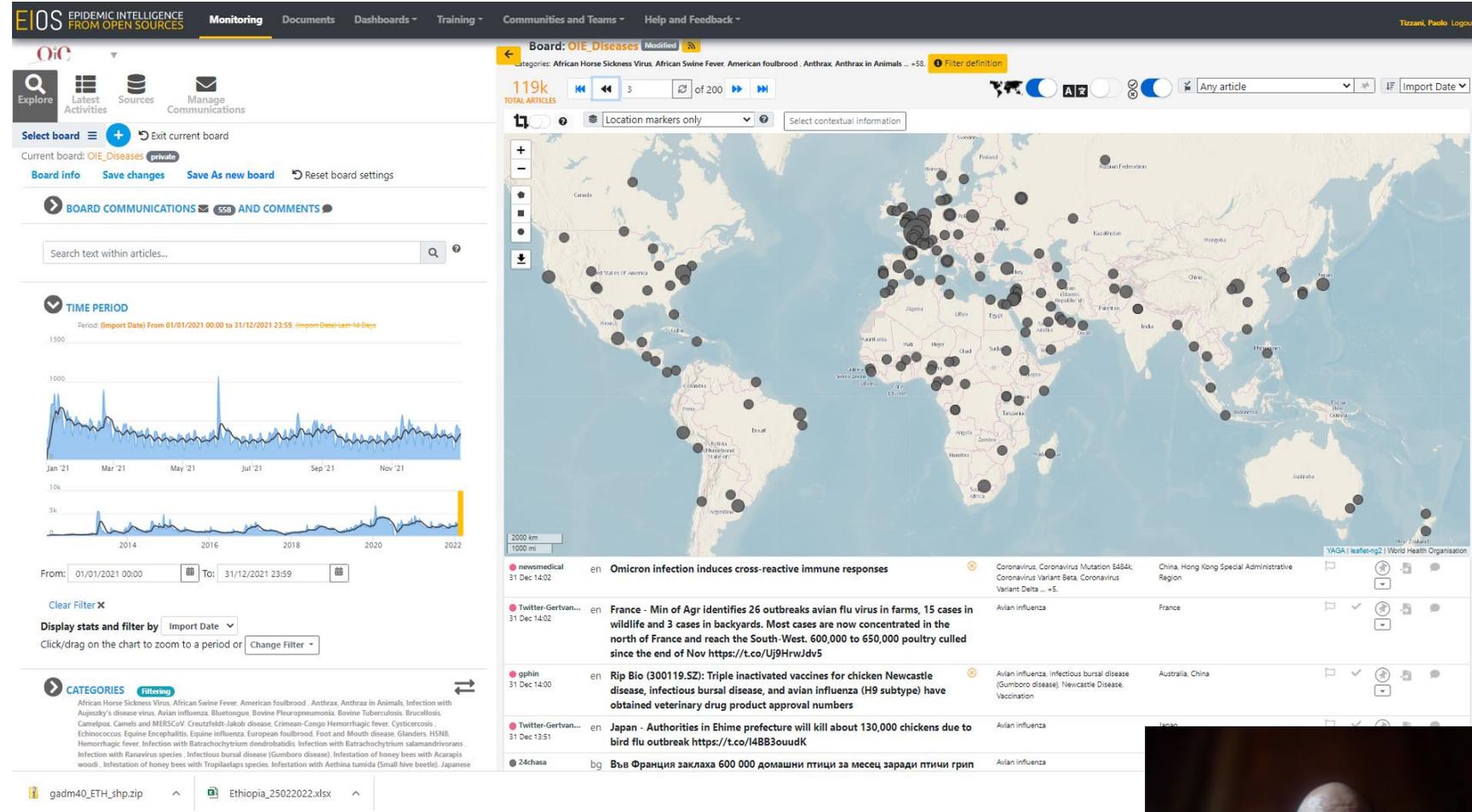
# Epidemic intelligence (EI) activity – source of data



**Reference laboratories (OIE network)**

# Improving the sensitivity of the system and accuracy of the information

- EIOS system for epidemic intelligence
- Daily screening of the web for all OIE-listed diseases (120,000 news screened in 2020)
- Constant communication between OIE and Members
- Around 10% of Immediate notification submitted thanks to active search of rumours



# EIOS system

**OIE**

Explore Latest Activities Sources Manage Communications

Select board **+**

Current board: All Articles

Board info Save As new board

**BOARD COMMUNICATIONS AND COMMENTS**

Search text within articles...

**TIME PERIOD**  
Period: Entire Period

**CATEGORIES** Filtering

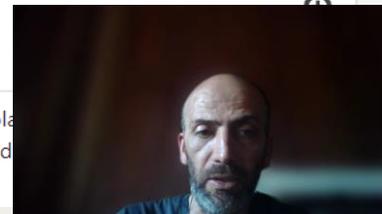
**Board: All Articles**

Categories: All OIE Categories Filter definition

58.9M TOTAL ARTICLES 1 of 200

Any article Import Date

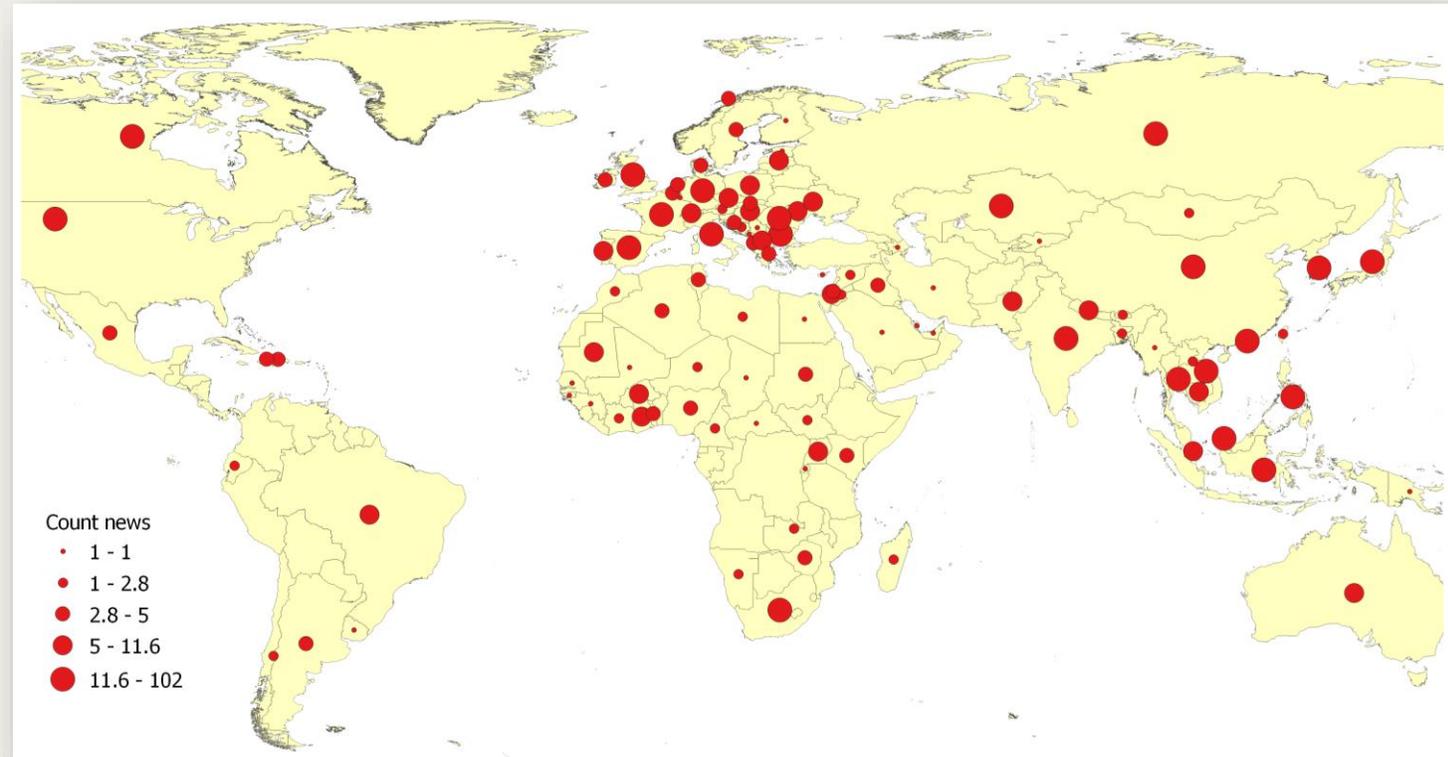
wisal	09:33 UTC	Arabic	سعر نفط عُمان تحت 116 دولارا والأسعار العالمية تهبط بأكثر من دولار ونصف	Coronavirus	China
arthikawaj	09:33 UTC	Hindi	अन्नपूर्ण पदमार्गमा घट्दै पर्यटक	Coronavirus	Nepal
arthikawaj	09:33 UTC	Hindi	गड्डाचौकी भएर आउने विदेशी पर्यटकको संख्या न्यून	Coronavirus	Nepal
bayyraq	09:33 UTC	Arabic	من تعقيم الشمس وحتى تفجير القمر...أغرب الطرق لتخفيف الاحتباس الحراري	Emerging Wildlife Diseases, Floods	Pakistan
polandin	09:33 UTC	English	Putin is ready to starve world to win his war: American historian According to	Refugees and Internally Displaced Persons	Poland



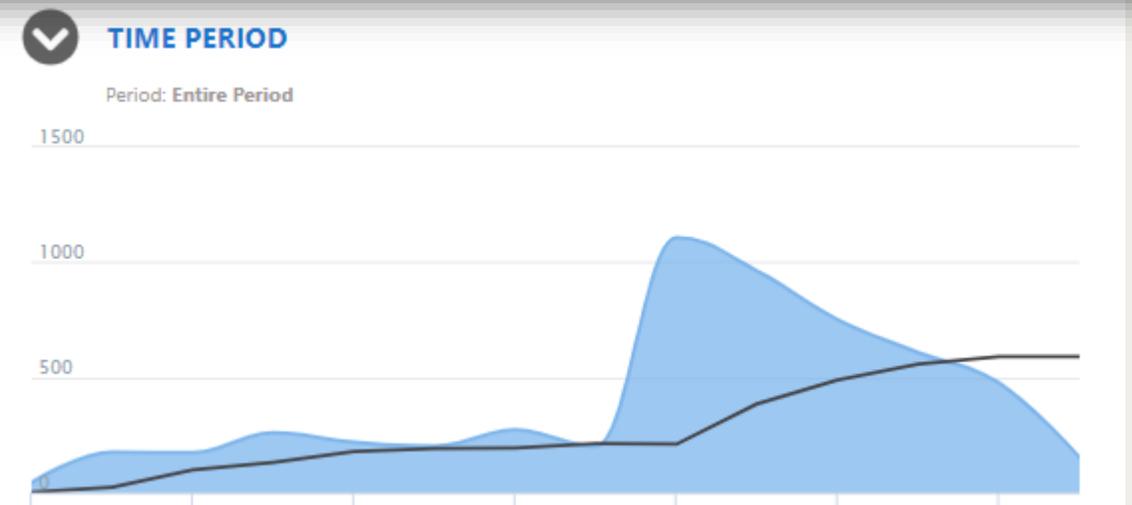
# Algorithms implemented

categories categories

- ▼ All OIE Categories (11 of 395 categories selected)
- ▼ Biological (222k) (10 of 114 categories selected)
  - Babesiosis (49) ✓
  - Baylisascaris (0) ✓
  - Chronic Wasting Disease (12) ✓
  - Emerging Wildlife Diseases (1.1k) ✓**
  - Filovirus (14) ✓
  - Louping ill (0) ✓
  - Rinderpest (6) ✓
  - White-nose syndrome (10) ✓
  - Yersinia Enterocolitica (5) ✓
  - Yersinia Pseudotuberculosis (1) ✓
- ▼ zAll Hazards Threats (optional) (29.5k) (1 of 145 categories selected)
  - Emerging Wildlife Diseases (1.1k) ✓



5.6k  
TOTAL ARTICLES



# Assessing the sensitivity of WAHIS using epidemic intelligence data

Received: 24 July 2021 | Revised: 23 December 2021 | Accepted: 15 January 2022

DOI: 10.1111/zph.12916

ORIGINAL ARTICLE

WILEY

## Sensitivity of an international notification system for wildlife diseases: A case study using the OIE-WAHIS data on tularemia

Angela Fanelli<sup>1</sup> | Lina Awada<sup>2</sup> | Paula Caceres-Soto<sup>2</sup> | François Diaz<sup>3</sup> | Tiggy Grillo<sup>3</sup> | Itlala Gizo<sup>2</sup> | Keith Hamilton<sup>3</sup> | Christine Leon Rolez<sup>2</sup> | Peter Melens<sup>2</sup> | Roberta Morales<sup>2</sup> | Lina Mur<sup>2</sup> | Sophie Muset<sup>3</sup> | Lorenz Nake<sup>4</sup> | Lesa Thompson<sup>5</sup> | Chadia Wannous<sup>6</sup> | Paolo Tizzani<sup>2</sup>

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<sup>5</sup>Regional Representation for Asia and the Pacific, World Organisation for Animal Health (OIE), Tokyo, Japan

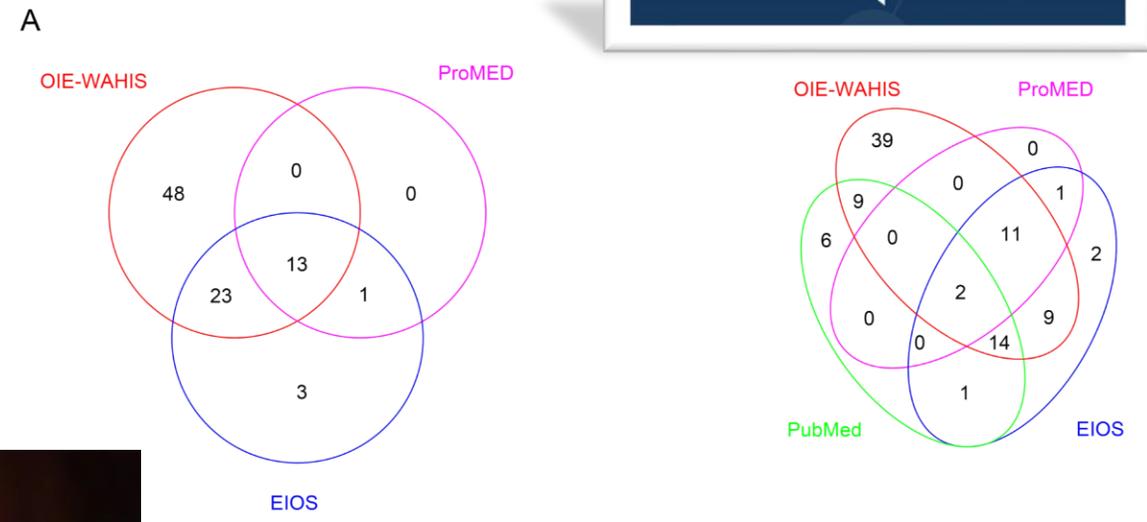
<sup>6</sup>One Health, World Organization for Animal Health (OIE) Regional Office for Africa, Nairobi, Kenya

### Correspondence

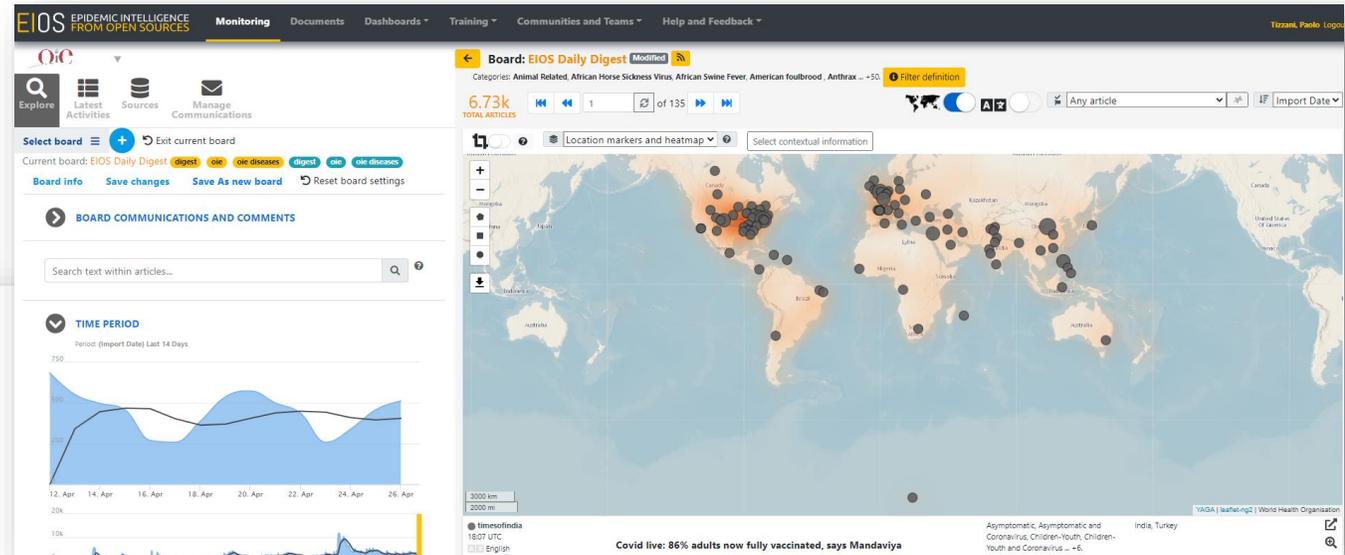
Angela Fanelli, Department of Veterinary Medicine, University of Bari, Valenzano, Bari, Italy.  
Email: angela.fanelli@uniba.it

### Abstract

The World Organization for Animal Health (OIE) has recently developed a Wildlife Health Framework to respond to the need of members to manage the risk from emerging diseases at the animal-human-ecosystem interface. One of its objectives is to improve surveillance systems, early detection and notification of wildlife diseases. Members share information on disease occurrence by reporting through the OIE World Animal Health Information System (OIE-WAHIS—formerly known as ‘WAHIS’). To evaluate the capacity of a surveillance system to detect disease events, it is important to quantify the gap between all known events and those officially notified to the OIE. This study used capture-recapture analysis to estimate the sensitivity of the OIE-WAHIS system for a OIE-listed wildlife disease by comparing information from publicly available sources to identify undetected events. This article presents a case study of the occurrence of tularemia in lagomorphs among selected North American and European countries during the period 2014–2019. First, an analysis using three data sources (OIE-WAHIS, ProMED, WHO-EIOS [Epidemic Intelligence Sources]) was conducted. Subsequent analysis then explored the information from a fourth source (scientific literature collected in PubMed.gov).



# A pioneering approach for diseases risk mapping using data from EIOS: CCHF case study



## Methods in Ecology and Evolution

APPLICATION | Free to Read

### embarcadero: Species distribution modelling with Bayesian additive regression trees in R

Colin J. Carlson

First published: 14 March 2020 | <https://doi.org/10.1111/2041-210X.13389> | Citations: 13

Read the full text >

PDF TOOLS SHARE

#### Abstract

1. *embarcadero* is an R package of convenience tools for species distribution modelling (SDM) with Bayesian additive regression trees (BART), a powerful machine learning approach that has been rarely applied to ecological problems.
2. Like other classification and regression tree methods, BART estimates the probability of a binary outcome based on a set of decision trees. Unlike other methods, BART iteratively generates sets of trees based on a set of priors about tree structure and nodes, and builds a posterior distribution of estimated classification probabilities. So far, BARTs have yet to be applied to SDM.
3. *embarcadero* is a workflow wrapper for BART species distribution models, and

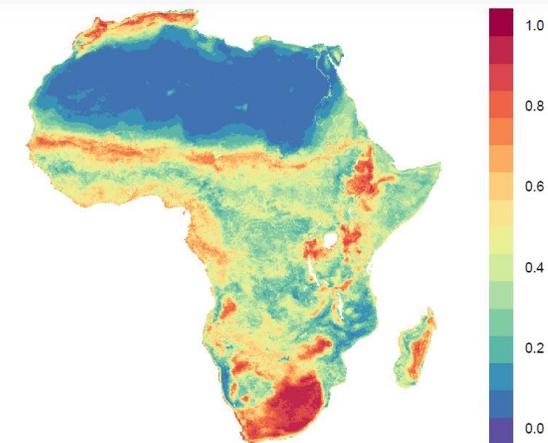
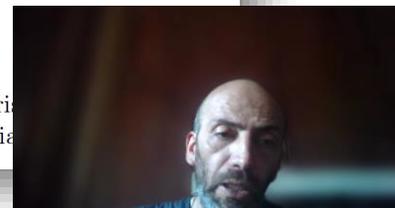


Figure 4: A map of Crimean-Congo haemorrhagic fever transmission risk using ecological niche modelling with BART (see Supplementary Material)



## Opportunities, gaps, and challenges

- **Opportunities:**
  - **Having a centralized and standardized reporting system for diseases in wildlife**
  - **Legal framework and standards on animal diseases**
  - **Improved sensitivity for occurrence of diseases in wildlife**
- **Gaps and challenges:**
  - **sensitivity of the system for some diseases**
  - **some communication gaps among relevant stakeholders / institutions**



# Thank you

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