



# Community for Emerging and Zoonotic Diseases

*Identifying emerging risks through collective intelligence*

Dr. Andrea Osborn  
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<https://www.cezd.ca/>

# Objectives

- To provide early warning notifications of emerging and zoonotic disease threats through integration of multidisciplinary member perspectives and automated information mining.
- To facilitate further analysis and reporting as needed for relevant signals.
- Ultimately, to enable Canada to better anticipate, mitigate, and manage pending disease threats on its society, economy, environment, and animal resources.

# Background

- CEZD Evolution:
  - Project Phase 2013 - 2016
  - Implementation Phase 2016 - 2018
  - Sustainability Phase 2018 to present
- Project Phase Funding:
  - Canadian Safety and Security Program of the Defense Research and Development Canada (DRDC) Centre for Security Science
- Ongoing Funding
  - Canadian Food Inspection Agency funds core team
  - Public Health Agency Canada funds technology platform
  - Partners provide their time and expertise



Canadian Safety  
and Security Program



Canada 



# Technology

- **Knowledge Integration using Web Based Intelligence (KIWI)**  
Technology on the Canadian Network for Public Health Intelligence (CNPHI)
  - Provided by the Public Health Agency of Canada
- KIWI's algorithms decrease the information burden
- Links computer intelligence to human analysis with timely reporting of results

# Intelligence Process

## Filtration

CEZD use KIWI's algorithm to perform automated environmental scanning and filtration of emerging and zoonotic disease signals

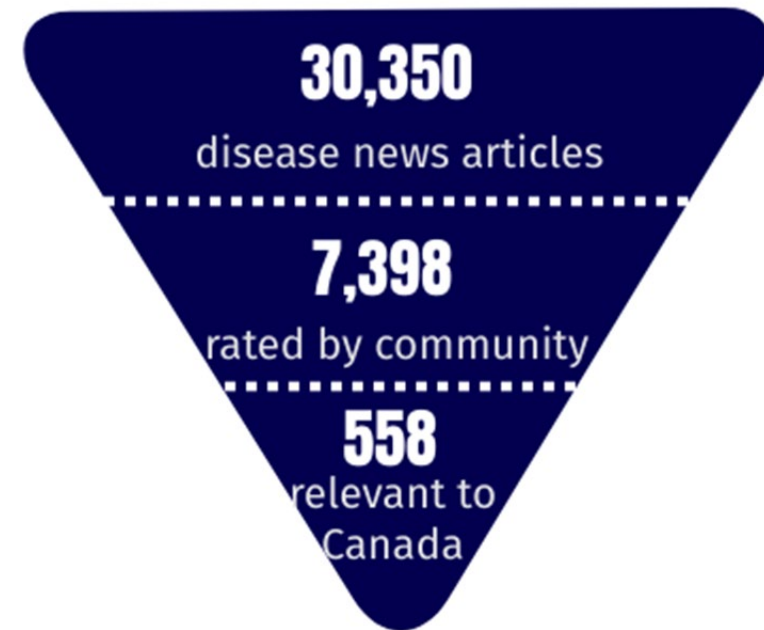
## Integration

Community member perspectives are integrated via signal ratings within KIWI in order to determine signal relevance to Canada

## Identification

Signals identified as relevant, based on rating threshold, are included in weekly intelligence reports, with some undergoing further assessment.

## Event Filtering Process



# Environmental Scanning

## 21 sources being searched automatically

- MediSys
- Outbreak News Today
- ProMED
- The Poultry Site
- Avian Flu Diary
- Contagion Live
- ECDC
- Empress-i
- Eurek Alert
- Farmscape
- Global Meat News
- Healthy Wildlife Blog
- Poultry Med
- Swine Health Information Centre
- Science Daily
- The Western Producer
- The Horse Site
- Worms & Germs Blog
- Eurosurveillance
- The Cattle Site
- GPHIN\*

## Additional manually searched

- Ontario Farmer
- Feed Stuffs
- The Pig Site
- US Animal Health Association
- OIE WAHIS
- FIESCA
- OAHN
- Google
- FluTrackers
- GPHIN daily reports

# Community

- Partners include provincial, federal and municipal governments, industry, and academia in areas of public, animal and environmental health
- As of May 2021, there are 383 Individuals Engaged, including:
  - 172 actively engaged on the platform (CNPHI)
  - 211 passive receivers of intelligence reports



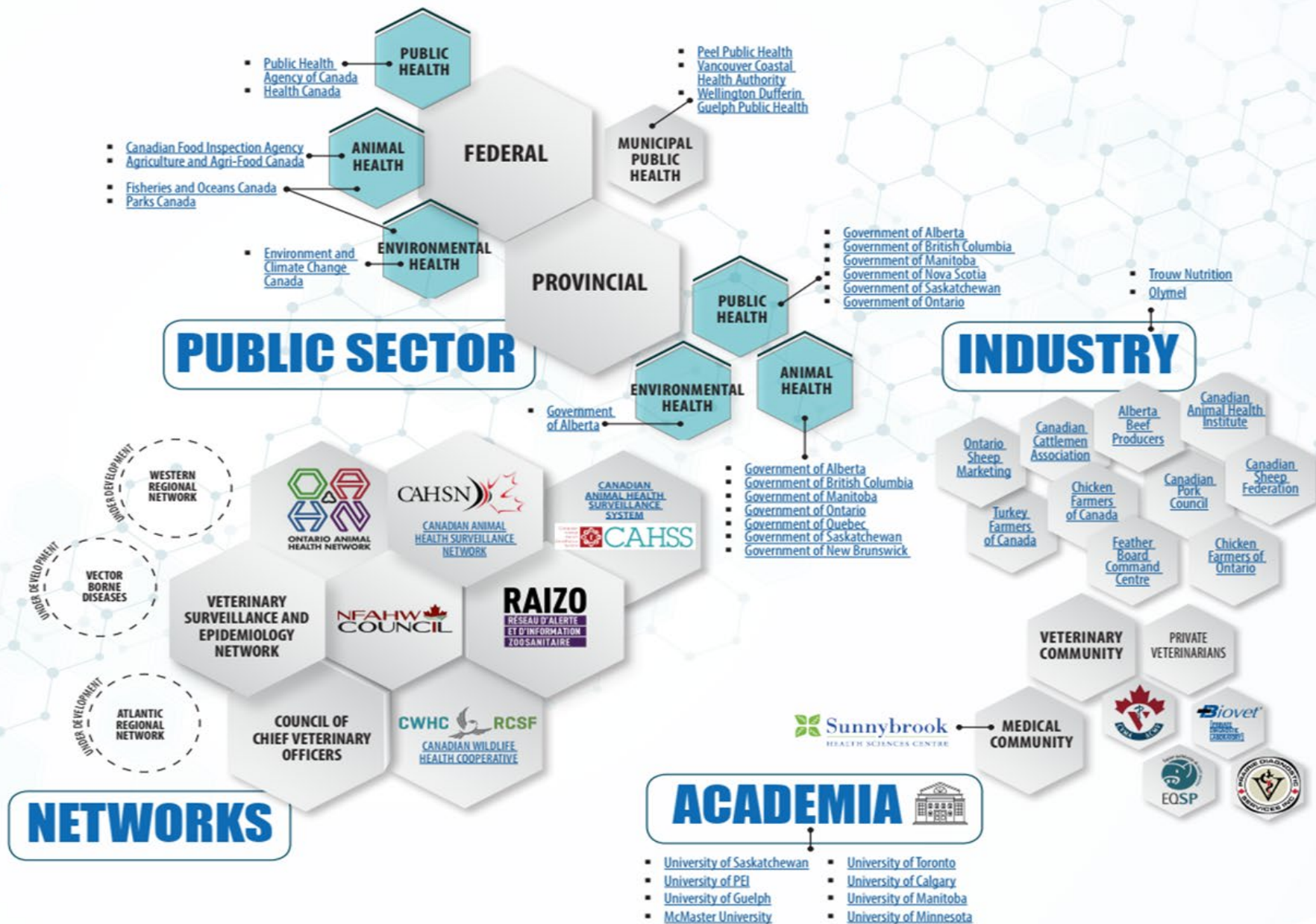


## OUR MISSION

*multidisciplinary perspectives to generate anticipatory intelligence to provide early warning for emerging and zoonotic diseases.*

The *Community for Emerging and Zoonotic Diseases (CEZD)* is a virtual network that integrates today's automated information-mining tools with a human-based multidisciplinary analytical capability. The automated technology collects and filters disease signals and the expertise from within the community analyzes, and disseminates intelligence information, related to zoonotic and emerging infectious diseases from both open and traditional information sources.

This virtual multidisciplinary network includes members from Provincial, Federal and Municipal governments, Industry, Academia in areas of public, animal and environmental health. CEZD was developed to support Canada's animal early warning, preparedness and response capabilities needs regarding emerging and zoonotic diseases. Through the gathering of information, analysis and the generation and distribution of timely intelligence reports, Canada is now better able to anticipate, manage, and mitigate pending disease threats on its society, economy, environment, and animal resources.





# Weekly Intelligence Reports

- 52 produced/year
- Sections:
  - Relevant Events
  - New Events
  - Continuous Events
  - Scientific Findings
- Other Intelligence products:
  - Ping rating and commentary
  - Interdisciplinary discussion/Scoping meeting
  - Risk profile
  - Risk assessment



# Conclusions

- There are a vast number of signals related to emerging and zoonotic diseases around the world on an ongoing basis
- The strength of CEZD lies in the integration of multidisciplinary member perspectives and automated information mining
- The filtering and analysis process must occur in stages and have the flexibility to provide the appropriate analysis for each situation



**Thank You  
Comments or Questions**

