



## **CEZD Annual Performance Report**

**April 2018 - March 2019**

## Executive Summary

This annual performance report, covers the period from 1 April 2018 – 31 March 2019, and provides statistics on: KIWI signal filtration, information source signal production, signal relevancy, community development, and disease trends. The report is provided to all CEZD members in an effort to promote awareness on system performance, community engagement, notable disease events, and future direction.

The following highlights provide a quick overview of CEZD's growth and development over the last year, as well as any notable events that occurred.

### Highlights:

- As of March 31 2019, the CEZD consists of 295 members (147 CNPHI account members and 148 consumers). An increase of 20% from the previous year.
- CEZD members are located in 9/10 provinces.
- From 1 April 2018 to 31 March 2019, the KIWI technology filtered through 24,085 Individual Information Pieces. CEZD members rated 4,385 Anticipatory Intelligence Signals and produced a total of 439 Early Warning Signals, in 51 weekly intelligence reports.
- An African Swine Fever intelligence report was initiated in the fall of 2018; 20 ASF intelligence reports have been produced.
- The development of the CNPHI on the go application made signal rating more accessible to community members.
- Community Reported Events, Avian Flu Diary, EMPRES-i and ProMed information sources produced the largest amount of relevant signals.
- The majority of Anticipatory Intelligence Signals occurred within the USA, followed by China, Democratic Republic of Congo, Canada, Saudi Arabia, and India.
- Influenza continued to be the most frequently seen health condition, followed very closely by African Swine Fever.
- The most notable signals from 2018-19 include African Swine Fever in China and Belgium, velogenic Newcastle disease in California, Classical Swine Fever in Japan, PED in Alberta, Bovine TB in British Columbia and CWD in Quebec.
- 84% of respondents to the annual survey indicated that CEZD provided them value in their work.
- CEZD's face-to-face partner meeting occurred in Nov 2018 and was attended by 25 delegates in person and 4 via teleconference. A meeting report is available for download on the [CAHSS website](#).
- In the coming fiscal year, CEZD will continue our ongoing activities and work to develop the domestic network in a more integrated manner.

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## Definitions

<b>Anticipatory Intelligence Signal (AIS)</b>	A disease event that originates from the list of Individual Information Pieces and is to be rated by the community.
<b>Automatic AIS</b>	A disease event automatically selected by KIWI's sense making algorithm from the list of Individual Information Pieces.
<b>Manual AIS</b>	A disease event that was not identified automatically by KIWI's sense-making algorithm from the list of Individual Information Pieces but rather by analysts.
<b>CEZD CNPHI-account member</b>	A CEZD member who has signed up for CNPHI and has access to the KIWI technology and CEZD Collaboration Centre.
<b>CEZD consumers</b>	A CEZD member who has not signed up for CNPHI and only receives the CEZD Weekly Intelligence Reports.
<b>Community Reported Event (CRE)</b>	A disease event submitted into the KIWI technology from an outside information source by a member, to be rated by the community.
<b>Early Warning Signal (EWS)</b>	An anticipatory intelligence signal that achieves an average community rating equal to or greater than 2.8.
<b>False-negative</b>	An individual information piece that was not identified as an anticipatory intelligence signal by KIWI's sense making algorithm but is relevant to emerging and zoonotic disease.
<b>False-positive</b>	An anticipatory intelligence signal that achieves an average rating of 1 "not relevant".
<b>Individual Information Piece (IIP)</b>	A disease event that enters the KIWI technology via RSS feeds from a subscribed information source, which has yet to be filtered through the KIWI algorithm.
<b>Information Source</b>	An open website that provides disease event news.
<b>Knowledge Integration using Web-based Intelligence (KIWI) Technology</b>	The Knowledge Integration using Web-based Intelligence technology within CNPHI filters through the vast amount of open disease event information on the web by applying a sense making algorithm. KIWI enables users to monitor global disease events and evaluate their relevance to Canada.
<b>Outreach Engagement Workgroup (OEW)</b>	A working group of CEZD members dedicated to the recruitment of new members and engagement of existing members.
<b>Reporting &amp; Analysis Workgroup (RAW)</b>	A working group of CEZD members dedicated to refining reporting procedures and identifying new opportunities for reporting and analysis.

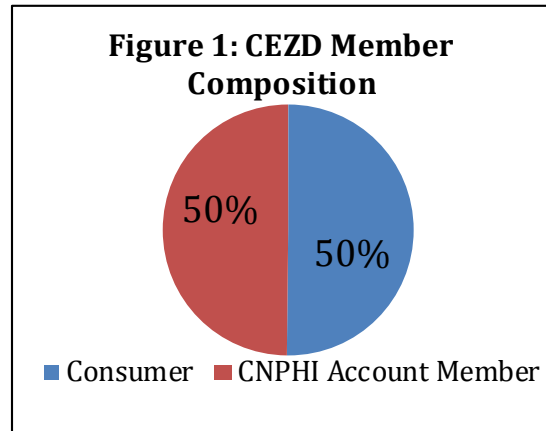
## Introduction

The Community for Emerging and Zoonotic Diseases (CEZD) is a virtual network that integrates automated information-mining tools with professional multidisciplinary perspectives. CEZD's disease intelligence process is designed to provide early identification and warning of threats. Timely and effective intelligence reports are provided back to the communities at risk to help enable them to prevent, avoid or reduce their risk and prepare for an effective response. CEZD utilizes the Public Health Agency of Canada's (PHAC) Canadian Network for Public Health Intelligence (CNPHI) platform for its day-to-day operations. Within CNPHI, the community uses the Knowledge Integration Using Web-based Intelligence (KIWI) technology and the CEZD Collaboration Centre. The KIWI Emerging and Zoonotic program collects and filters disease signals from open information sources. Then the members analyze the information and the core team disseminates the results in the form of Weekly Intelligence Reports.

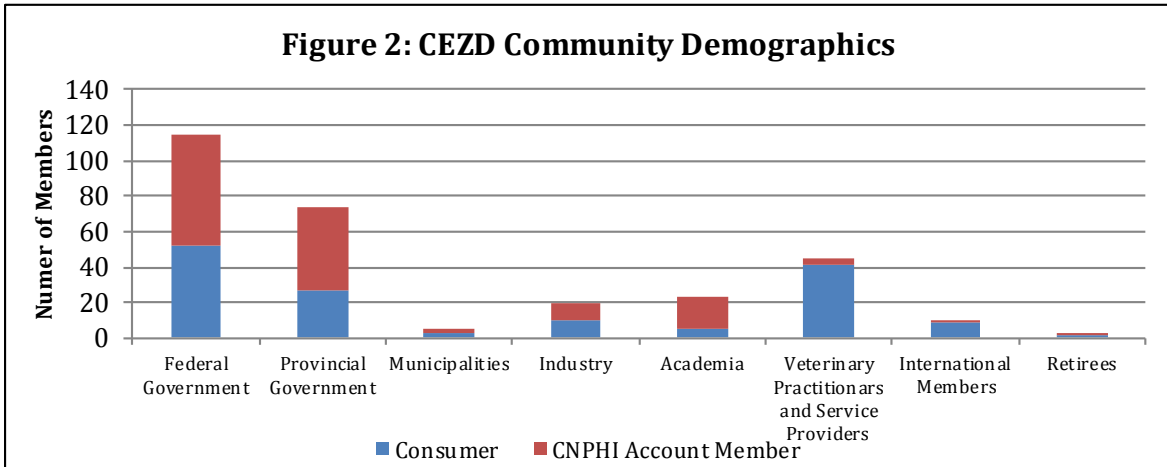
This annual report covers the period from April 1 2018 – March 31 2019, and provides information on current CEZD efforts as well as: demographics, stakeholder engagement efforts, KIWI technology, Anticipatory Intelligence Signal trends, and the CEZD Collaboration Centre. It will conclude with our key priorities and action items going forward.

## CEZD Demographics

As of March 2019, the CEZD consists of 295 members, 4 of which are in the core team. Over the last year, 50 new members have joined the CEZD community, an increase of 20% over last year. **Figure 1: CEZD Member Composition** displays the percentage of members who hold a CNPHI account and those who do not, the latter only receive the intelligence reports and are known as consumers. The community is evenly split between CNPHI account members and consumers.

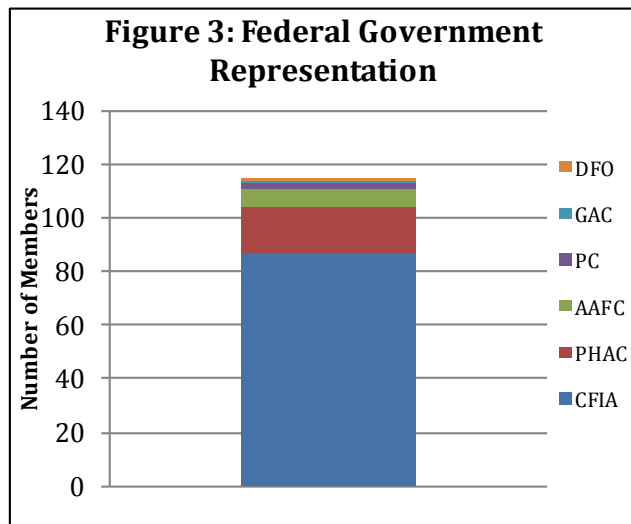


CEZD members belong to a variety of fields, including: federal, provincial, and municipal government, industry, academia, veterinary practice and other service provision. **Figure 2: CEZD Community Demographics** displays the percentage of individuals belonging to each demographic group, along with a new category for retirees. Over the last year, CEZD gained the majority of its new members from the fields of veterinary practice and service provision as well as the federal government.

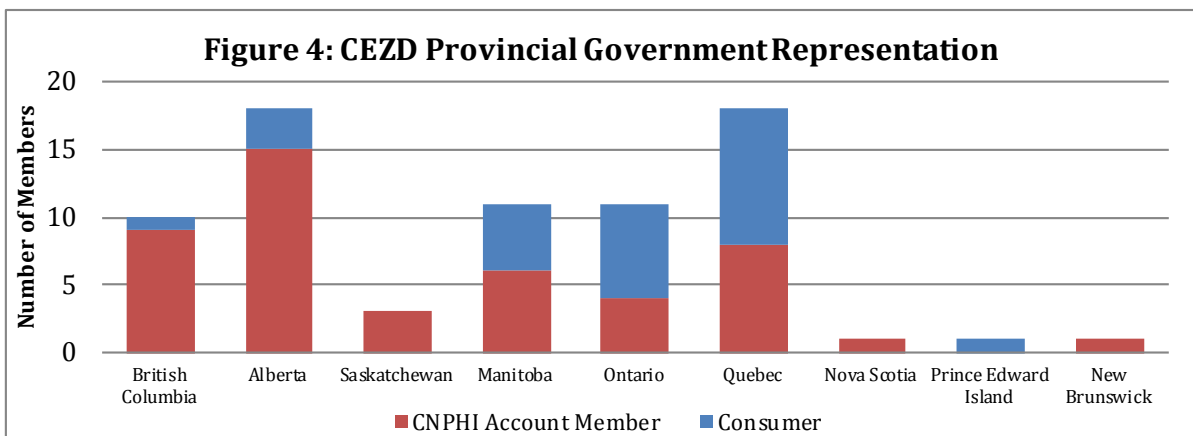


Figures 3 and 4 provide a more detailed depiction of the make-up of the federal and provincial government categories.

**Figure 3: Federal Government Representation** displays the number of members belonging to each of the federal government organizations involved in CEZD. The majority of federal government members are from the CFIA, followed by Public Health Agency of Canada (PHAC) and Agriculture and Agri-Food Canada (AAFC), with one member each from Parks Canada (PC), Global Affairs Canada (GAC), and Fisheries and Oceans Canada (DFO).



**Figure 4: Provincial Government Representation** depicts the number of members from each province but also helps to demonstrate CEZD geographical reach within Canada. CEZD has member representation in 9 out of the 10 provinces and needs to focus on gaining involvement within the 3 territories. With regards to the existing provincial members, Alberta and Quebec have the most membership, followed by Manitoba, Ontario and British Columbia.



## **CEZD Activity Update**

In an effort to engage members within the CEZD, the Core Team has organized and participated in various engagement activities throughout the year, including: pings, community teleconferences, webinars, group notification of items of interest, and introductory demonstration sessions. Participation in CEZD's activities qualifies for continuing education credits for veterinarians and animal health/veterinary technologists.

### **Monthly Community Teleconferences:**

The monthly community teleconferences assist with community management and are used to discuss emerging issues of multidisciplinary concern as they bring together partners across federal and provincial governments, industry, and academia. Nine monthly teleconferences were held throughout the last year.

### **Ping Questions:**

Ping questions are sent to the community approximately weekly to obtain rapid feedback from the community on signals of particular interest. Ping questions remain very successful, with anywhere from 20 to 35 members rating and/or commenting on their relevance. Over the last year, 45 ping questions were sent out to community members. Members have also been encouraged to submit any questions they may have to the community in the form of ping. So far CEZD has had 2 community ping requests, one relating to information sharing and the other regarding the awareness of tick on suids within Canada.

### **Scoping Meetings:**

Scoping meetings have been recently introduced and are held as a result of high ratings on a ping question, or by request from a CEZD member. The meetings bring together a small group of subject matter experts to determine CEZD's next steps in relation to a specific disease event. Meetings were organized this year on two important signals, velogenic Newcastle disease in California and African Swine Fever in China. The results of these scoping meetings were to continue monitoring both outbreaks, and in the case of African Swine Fever, to create an additional intelligence report to document its spread to new areas.

### **Webinars:**

A number of different webinars were also held throughout the year on various topics, including: African Swine Fever (general overview and clinical recognition), Classical Swine Fever Simulation in Ontario, Wildlife Health Information Platform, Climate Change Hazards Information Portal, Asian Longhorn Tick, and a Network Evaluation of OneHealth.

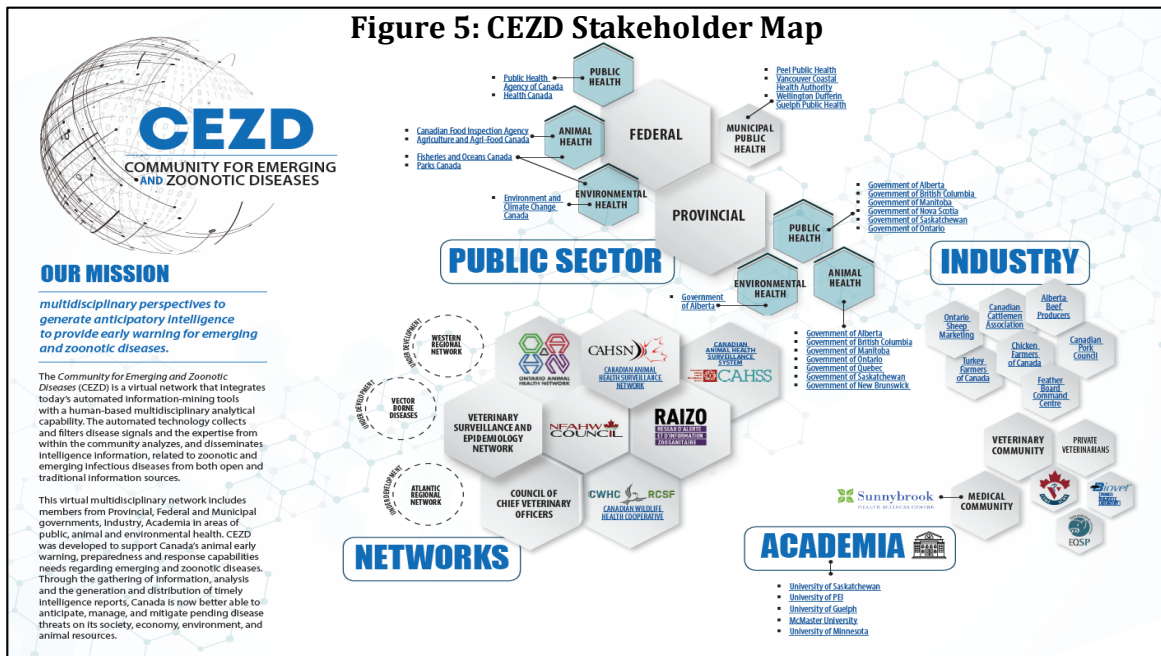
### **Working Groups:**

CEZD's working groups, the Reporting & Analysis Workgroup (RAW) and the Outreach Engagement Workgroup (OEW), continue to function on an as needed basis. Throughout the last year, the RAW assisted with the creation of a CEZD activities and triggers

document which outlines all of CEZD activities, their purpose, triggers, and who should be involved ([see Appendix I](#)).

A new enhanced intelligence report was also piloted, initially with the RAW team then with the broader partners group. This enhanced report was requested by members as it provided more detail and context around disease events than the current version. The CEZD core team is currently working on resolving key issues relating to the implementation of this enhanced report (i.e. summary formatting and production), and hope to begin delivering the new format in the new fiscal year.

A stakeholder map has been created to account for CEZDs development over the past few years. **Figure 5: CEZD Stakeholder Map** displays CEZDs membership categorized into the following groups: public sector, networks, industry, and academia.





### Face to face Meeting:

A face-to-face meeting of the community was held in November 2018. This meeting was focused on advancing intelligence gathering, analysis, reporting and communications. The outcome of the meeting provided direction on the future directions of CEZDs international and domestic intelligence and reporting capabilities as well as sustainability. The meeting was attended by 25 delegates in person and 4 via teleconference. A meeting report with resulting action items was published and is available for download on the [Canadian Animal Health Surveillance System \(CAHSS\) website](#).

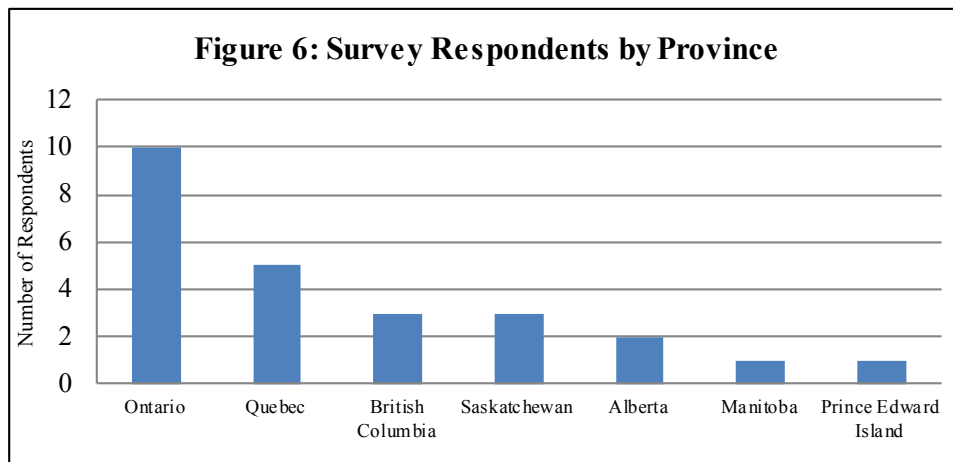
### CNPHI On the Go:

This year the CNPHI also launched its mobile application titled “CNPHI on the go”. CNPHI on the go is a mobile extension of the CNPHI platform and includes the KIWI technology. Through the application, users can easily rate/review/comment on emerging and zoonotic disease events via their mobile phone wherever they go. CNPHI on the go is currently available for download for android phone via Google Play. With the launch of the mobile application we are hoping to engage more members to log in and rate signals, and contribute to the strengthening CEZDs vision to provide more multidisciplinary perspectives.

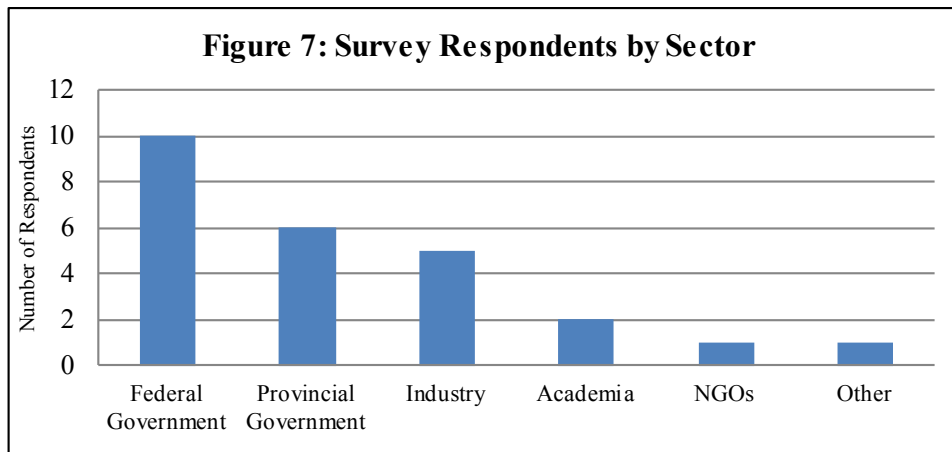
## Annual Member Survey

### Respondent Demographics:

This year’s annual member survey was completed in April 2019. The survey was made available to all 295 members in both English and French and it received a response rate of 8.5% (25 responses: 23 English, 2 French). **Figure 6: Survey Respondents by Province** displays the 7 provinces listed by survey respondents.



Similarly, **Figure 7: Survey Respondents by Sector** displays the 6 sectors as listed by respondents. The respondents matched CEZD’s membership structure fairly well (see Figure 2 above), however certain groups were absent from the survey including: private veterinary practitioners and service providers, international members, and retirees.



Survey respondents belong to a variety of organizations, including:

- Canadian Food Inspection Agency
- University of Guelph
- Public Health Agency of Canada
- Parks Canada
- Saskatchewan Health Authority
- British Columbia Ministry of Agriculture
- Ritchie Smith Feeds
- Quebec Pork Health Team & Quebec Poultry Disease Control Team
- Canadian Wildlife Health Coalition
- Canadian Hatching Egg Producers
- Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec
- Centre D'Expertise En Production Ovine Du Québec.

However, respondents represent an even larger degree of networks (29) as can be seen in [Appendix II: CEZD Survey Respondents Network Connection](#).

**Member Expertise:**

From the survey we identified members with expertise in: diseases of sheep and goat (peste des petites ruminants), manufacturing, wildlife health, epidemiology, poultry and wild bird diseases (avian influenza and Salmonella), risk assessment, zoonotic diseases, swine diseases, veterinary microbiology, vector borne diseases, culicoides (biting midges) and ticks, policy development, food safety, one health, regulatory assessment, and aquatics (import/export).

**CEZD Value:**

When evaluating CEZD's value, 21/25 respondents indicated that CEZD provided them with valuable information relevant to their current position. CEZD's value comes from keeping its members informed of disease outbreaks of interest via the weekly intelligence report and providing regular updates on changing outbreak conditions. Scoping meetings that bring together disease specialists, risk managers, and risk analysts are extremely valuable as they allow for a timely discussion of risks, pathways, gaps, and priorities for further analysis. The information session on ASF and regular report updates were also much appreciated. Other CEZD activities members found valuable included: surveillance

on velogenic Newcastle disease, face-to-face partner meeting in Ottawa, risk profile on SARS-CoV, and the inclusion of vector-borne disease in CEZD's scope.

### Upcoming Disease Threats of Concern to Members:

When asked what the most important upcoming disease threat to Canada was and why, ASF was selected by the majority of respondents. Reasons for this selection included: risk of establishment in feral swine populations, devastating impact to the pork industry, potential of travellers bringing infected goods from affected countries, its spreading at an alarming rate in Europe and Asia exposing gaps in border security, and lack of vaccine. Other disease threats that were mentioned included: vector-borne diseases resulting from climate change, foot and mouth disease due to large animal/animal product imports/exports in North America and around the world, highly pathogenic avian influenza as it continues to spread in many parts of the world, coronavirus, porcine epidemic diarrhea, and drug resistance. The most significant subject that CEZD reported on this year as selected by respondents was: ASF (19), followed by *Echinococcus multilocularis* (2), velogenic Newcastle disease (2), and chronic wasting disease (1).

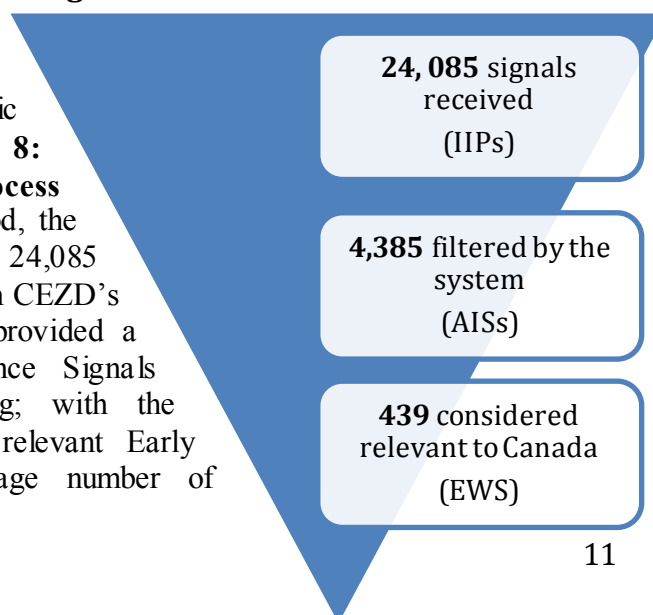
### Awareness of CEZD Activities and Triggers:

Members were asked about their awareness of CEZD's activities and their triggers. Out of 25 respondents, 19 were aware of the activities and their triggers, but only 15 were aware that they could request activities. This highlights an area where more recognition is required in order for CEZD to reach its full potential. Finally, 21 respondents indicated they are willing to share emerging disease events from their sector as part of the CEZD domestic pilot. Those who indicated they would not share information noted that they do not have the authority to do so, it's not their role, or they do not receive such information. Conditions under which members would share information include: confirmation of a disease presence, an uptick in vector borne disease or zoonoses in human population, approval from superiors, confidentiality and privacy for producers, information sharing policies and agreements, accountability, and if the exchange triggers intervention.

## KIWI Technology

From April 2018 to March 2019, a total of 31 different individuals representing 20 different organizations logged in to KIWI and rated signals within the zoonotic and emerging disease program. **Figure 8: KIWI Information Filtration Process** reveals that during the same time period, the KIWI technology filtered through 24,085 Individual Information Pieces (IIPs) from CEZD's 21 automatic information sources. It provided a total of 4,385 Anticipatory Intelligence Signals (AISs) to the community for rating; with the community selecting 439 signals as relevant Early Warning Signals (EWSs). The average number of

**Figure 8: KIWI Information Filtration Process**



individuals rating a signal was 6, but ranged anywhere from 1 to 12. For a detailed monthly breakdown of the signal filtration process please review **Table 1: April 2018 – March 2019 KIWI Signal Filtration.**

<b>Month</b>	<b>Number of AISs</b>	<b>Automatic AISs</b>	<b>Manual AISs</b>	<b>Community Reported Events</b>	<b>Number of EWSs</b>
April 2018	322	208	96	18	6
May 2018	345	231	87	27	13
June 2018	342	231	86	25	9
July 2018	324	216	76	32	5
August 2018	417	286	108	23	28
September 2018	291	165	86	40	30
October 2018	393	226	129	38	56
November 2018	391	225	78	88	70
December 2018	319	187	44	88	57
January 2019	348	187	93	68	43
February 2019	396	235	79	82	58
March 2019	497	350	112	35	64
<b>Total</b>	<b>4385</b>	<b>2747</b>	<b>1074</b>	<b>564</b>	<b>439</b>

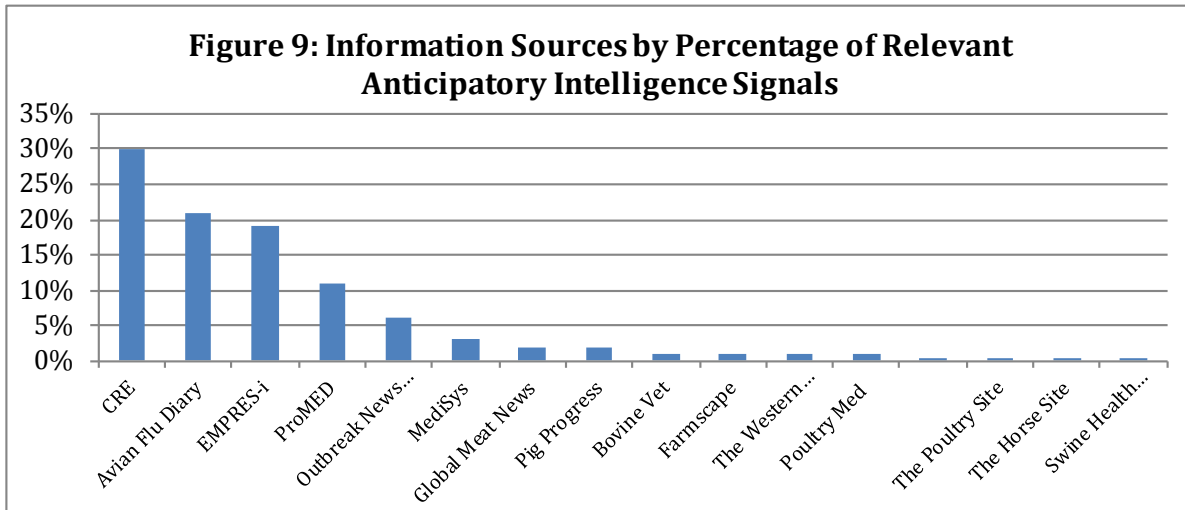
### Information Source Anticipatory Intelligence Signal Production

The CEZD emerging and zoonotic program within the KIWI technology currently subscribes to 21 open disease information sources:

- MediSys
- Outbreak News Today
- ProMED
- The Poultry Site
- Avian Flu Diary
- Contagion Live
- ECDC
- Empress-i
- Eureka 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
- Ontario Animal Health Network
- The Cattle Site

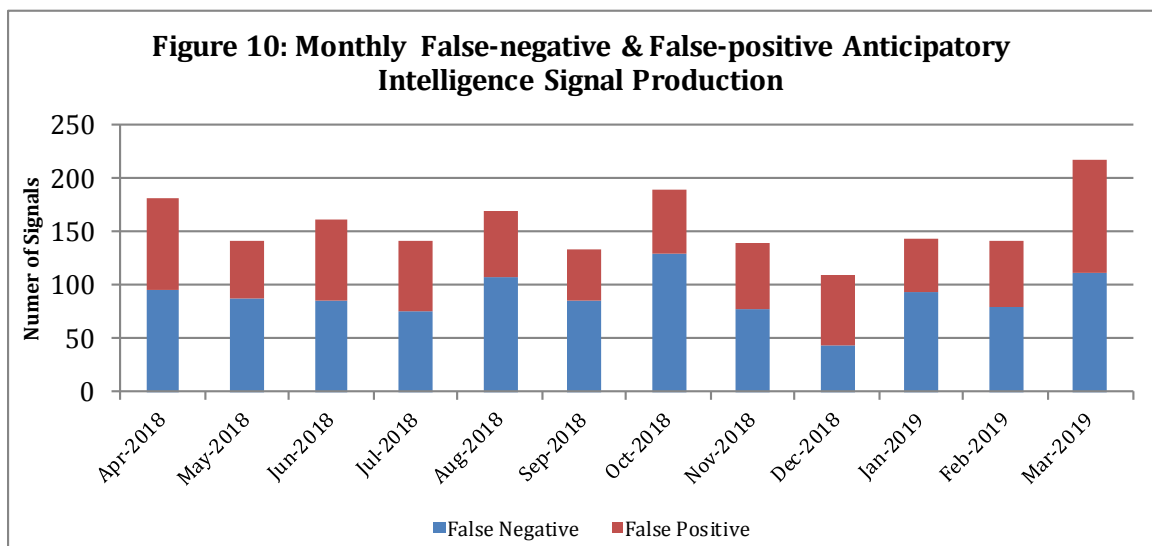
Additionally, the KIWI technology also gathers disease incident information from outside sources in the form of Community Reported Events (CREs). Examples of outside sources include: the United States Animal Health Association, Ontario Farmer, International Biosecurity Intelligence System, and Google News. **Figure 9: Information Sources by Percentage of Relevant Anticipatory Intelligence Signals** displays the percentage of relevant AISs coming from CEZDs information sources. Information sources that did not provide relevant signals, as rated by the community, are not listed in this figure. It is evident that CREs account for the largest amount of relevant signals, followed by Avian Flu Diary, EMPRES-i, ProMED, and Outbreak News Today. However, it must be noted that for a brief time period (Nov 2018- Feb 2019) the ProMED RSS feed was malfunctioning and their signals were input into the system as CREs. Additionally, the sharp increase relevant anticipatory intelligence signals in August 2018 which has

continued into and past March 2019, illustrate the start and expansion of the African Swine Fever (ASF) outbreak in China.



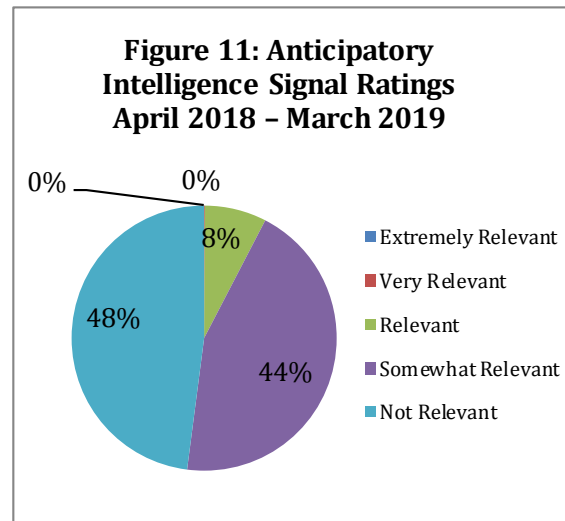
### Anticipatory Intelligence Signal Specificity & Sensitivity

**Figure 10: Monthly False-negative & False-positive Anticipatory Intelligence Signals** displays the percentage of false-negative and -positive signals coming into KIWI each month. False-positives are automatic signals that achieve an average rating of 1 (not relevant), while false-negatives are IIPs that were not identified by the algorithm but by analysts and achieve an average rating greater than 1. From April 2018 to March 2019, 18% of signals coming in for community rating were classified as false-positives, while 24% were false-negatives. When compared to the previous year, a decrease of 11% is observed in the false-positive signals, and an increase of 8% in the false-negatives. The increase in false-negatives relates to the identification and manual signal entering completed by analysts. As noted here, this manual process is essential to the functioning of CEZD, as it helps to produce a comprehensive coverage of disease events.



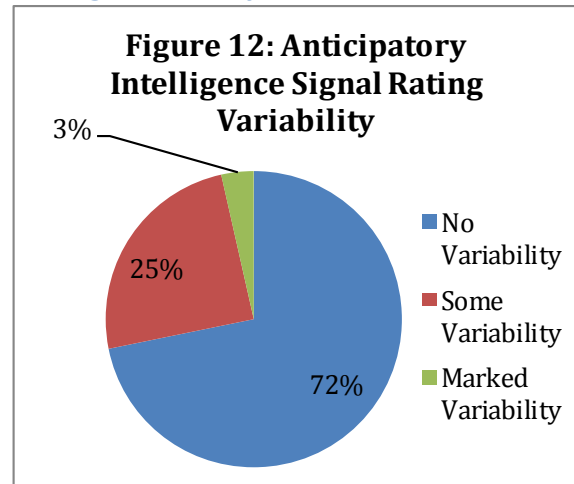
### Anticipatory Intelligence Signal Relevancy

Within KIWI, the CEZD rates AISs on a scale of 1 to 5, 1 being not relevant and 5 being extremely relevant. A relevancy assessment tool is provided to assist with the rating process. **Figure 11: Anticipatory Intelligence Signal Ratings April 2018 – March 2019** outlines the percentage of signals falling into KIWI's relevance categories. This year, we had a few signals achieve very relevant (4) ratings. These signals were related to the ASF outbreak in China. However, to date no signals have been rated as extremely relevant. The majority of signals have an average rating of not relevant or somewhat relevant, with 8% of signals being rated as relevant.



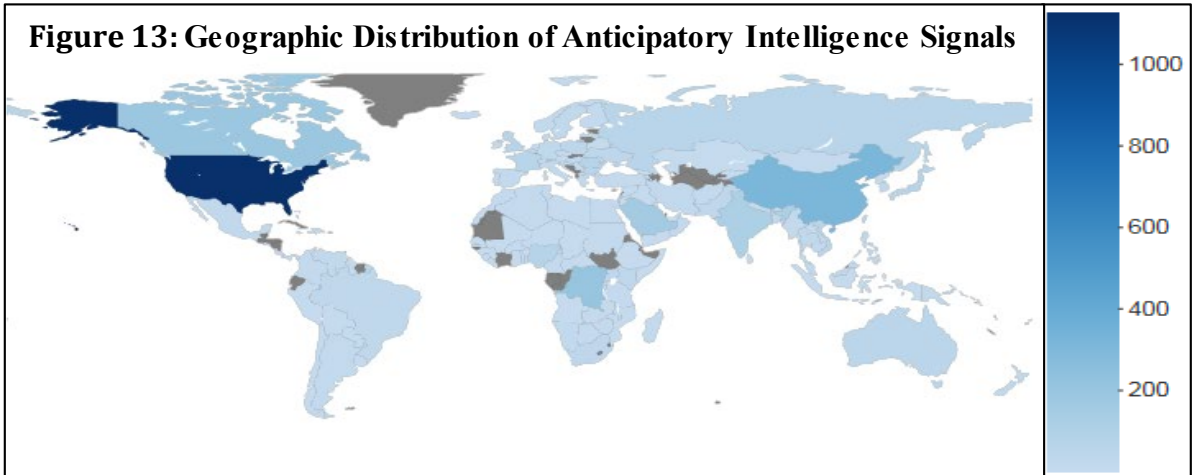
### Anticipatory Intelligence Signal Community Rating Variability

**Figure 12: Anticipatory Intelligence Signal Rating Variability** displays the amount of rating agreement within the community from April 2018 to March 2019. Overall, the CEZD agrees on 72% of signal ratings; 25% of signals display some variability in their rating distributions, while 3% show marked variability in ratings. Compared to last year, these results show an 8% increase in rating variability among the community. However it must be noted that these results are based on differing and sometimes limited amounts of individual ratings per signal and therefore lack power.



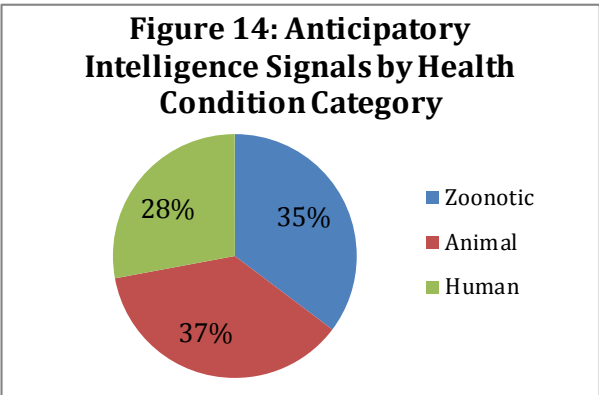
### Geographic Distribution of Anticipatory Intelligence Signals

From April 2018 to March 2019, KIWI has received AISs from 147 different countries. **Figure 13: Geographic Distribution of Anticipatory Intelligence Signals** presents the density of KIWI signals across the world. The highest frequency of signals occurred within the USA (1,129), followed by China (317), Democratic Republic of Congo (212), Canada (189), Saudi Arabia (154), and India (117). Other noteworthy countries with 50+ signals include: Nigeria, Romania, Japan, United Kingdom, France, Russia, Vietnam, and Bulgaria. The high prevalence of USA based signals may be explained our information sources, as the majority of them are based in the USA and therefore relay disease events from their location more frequently.

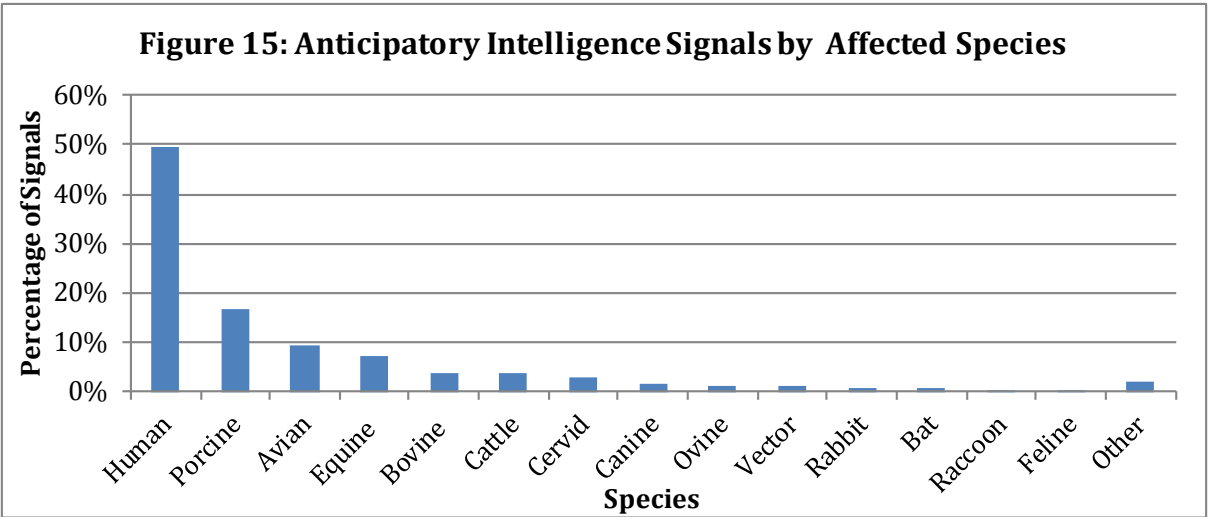


**Categorized Anticipatory Intelligence Signals**

**Figure 14: Anticipatory Intelligence Signals by Health Condition Category** displays the percentage of signals, for the period of April 2018 – March 2019, belonging to the following categories: zoonotic, animal, or human-related. This categorization reveals that the signals within the system are almost equally split between zoonotic (35%), human (28%), and animal (37%) conditions.



A further breakdown by the species affected in each signal reveals that the majority of signal health conditions were affecting humans (49%). Other key affected species include: porcine (17%), avian (9%), equine (7%), and bovine (4%). For more information **Figure 15: Anticipatory Intelligence Signals by Affected Species** displays the percentage of signals affecting each different species over the last year.



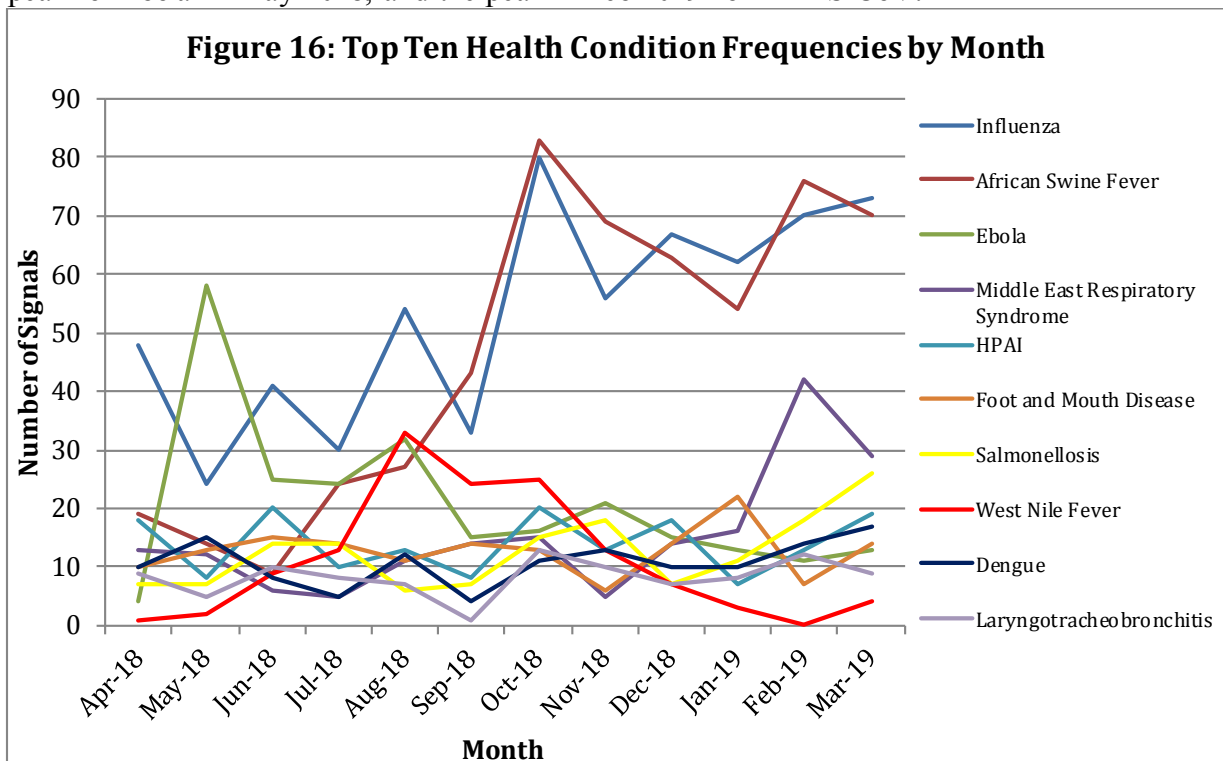
\*Other category includes: goat, fox, rodent, seal, skunk, camel, bear, bee, elephant, primate, lion, hedgehog, hippopotamus, penguin, turtle, dolphin, fish, and worm.

### Anticipatory Intelligence Signal Trends

The top 5 most frequent health conditions from April 2018 – March 2019 were: influenza (including: low pathogenic avian influenza, swine influenza, equine influenza, human influenza...etc.), African Swine Fever (ASF), Ebola, Middle East Respiratory Syndrome (MERS-CoV), and highly pathogenic avian influenza. For more information, **Table 2: KIWI Most Frequent Health Conditions** lists the AIS frequency counts of the top ten most frequent KIWI Health Conditions of the year.

Table 2: KIWI Most Frequent Health Conditions		
Rank	Health Condition	Number of Signals
1	Influenza	638
2	African swine fever	551
3	Ebola	247
4	Middle East respiratory syndrome	182
5	Highly pathogenic avian influenza (HPAI)	167
6	Foot and mouth disease	153
7	Salmonellosis	150
8	West Nile fever	134
9	Dengue	129
10	Laryngotracheobronchitis	99

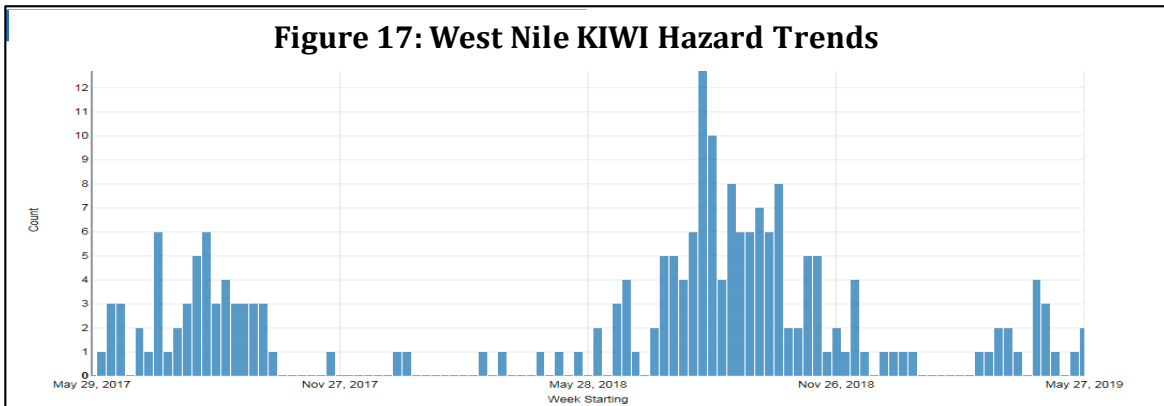
Similarly, **Figure 16: Top Ten Health Condition Frequencies by Month** plots these most frequent health conditions by month to show specific time periods where these conditions occurred. For example, the increase in ASF signals starting in Aug 2018, the peak for Ebola in May 2018, and the peak in Feb 2019 for MERS-CoV.



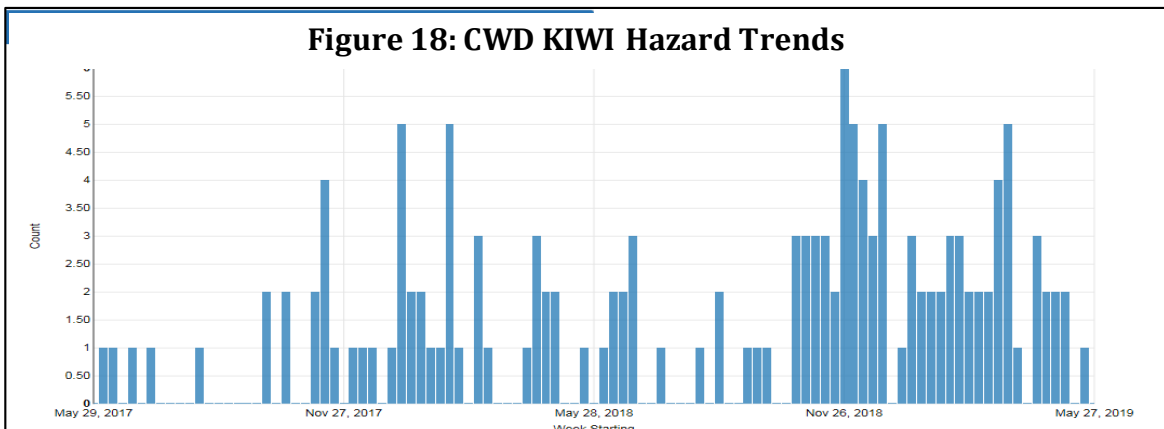


### Disease Frequency Charts

Within KIWI, users can specify a pre-defined time period to review disease trends; however the current maximum range that can be applied is 2 years. These disease trends provide valuable information in the form of disease signal frequency counts over time. While the trends do not represent case counts, one may infer seasonal patterns or an increase in a particular disease based on the frequency counts and constant number of information sources. In **Figure 17: West Nile KIWI Hazard Trends** the weekly frequency counts for West Nile are provided from May 2017 to May 2019. In 2018 the number of West Nile signals far surpassed those from 2017. According to experts, the spread of human diseases caused by mosquitoes and other vectors (i.e. ticks) will continue to rise, being fueled by climate change, global warming and land use patterns.



Similarly, **Figure 18: CWD KIWI Hazard Trends** uses this capability to display chronic wasting disease signals entering the system from May 2017 to May 2019. A total of 145 CWD signals came into the system during this time. The chart displays sporadic signal occurrences up until September 2018, from which the number of signals became much more frequent. This may be due to the CWD cases identified in Quebec in September/October 2018, as well as the expansion of CWD into new areas of Saskatchewan. Continuous reports from the US also contributed to this increase, with the most signals reported from Minnesota and Wisconsin. In Wisconsin, almost twice the number of deer tested positive for CWD in 2018 compared to the previous year. As a result of positive findings CWD management zones were expanded in: Texas, Tennessee, Mississippi, Pennsylvania, and Wyoming.



### Notable Disease Events of the Year

Over the course of the previous year the following events were all rated as highly relevant to the community and many consisted of a large number of reports: African Swine Fever in China and Belgium, Virulent Newcastle Disease in California, Classical Swine Fever in Japan, and Porcine Epidemic Diarrhea in Alberta. **Table 3: Most Notable Events of the Year** lists these events, the time they occurred, the number of signals and the average ratings they received.

<b>Table 3: Most Notable Events of the Year</b>			
<b>Event</b>	<b>Time Period</b>	<b>Number of Signals</b>	<b>Average Rating</b>
African Swine Fever in China	August 2018 – Present Day	179	2.10 - 4.00
Virulent Newcastle Disease in California, USA	May 2018 – Present Day	83	2.30 - 3.20
Classical Swine Fever in Japan	September 2018 – Present Day	41	2.30 - 3.80
African Swine Fever in Belgium	August 2018 – Present Day	35	2.60 - 3.70
Porcine Epidemic Diarrhea in Alberta, Canada	February 2019 – March 2019	16	2.00 - 3.50
Bovine Tuberculosis in British Columbia, Canada	November 2018 – January 2019	5	3.00 - 3.80
Chronic Wasting Disease in Quebec, Canada	September 2018 – October 2018	4	3.00 - 3.40

## CEZD Going Forward

Going forward into the coming year CEZD's focus will be on domestic intelligence, specifically the domestic pilot project explained below. The following items have been identified by the community as key priorities for 2019-20:

### Reporting and Analysis

- During 2018/19 an enhanced weekly intelligence report was piloted. The implementation of a new format, to meet the needs of our increasingly diverse membership, will occur in 2019/20.
- The CEZD activities and triggers processes will continue to be applied and refined. We will evaluate their relevance to domestic intelligence.
- An early warning domestic pilot project will be outlined and initiated, including the creation of simulated domestic disease scenarios.
  - The pilot project will help us to establish domestic intelligence processes/methods for the timely collection and exchange of domestic disease information.
  - Each simulation scenario will allow us to identify and address gaps in domestic early warning.
  - After evaluation of the results of the simulation scenarios, a decision will be made by the community to move on to real domestic signals.

### Engagement

- The community needs to continue to enhance our linkages with existing networks to ensure a "One Health approach". Examples of places where we may be able to enhance connections include: National Farmed Animal Health and Welfare Council's Emerging Issues working group, the CAHSS network groups, as well as existing Public Health networks.
- We need to review if we are leveraging relationships with other networks sufficiently, and will use the results of the domestic pilot project to identify gaps in expertise in our community.
- If funding is available we will hold a CEZD face to face meeting to enable continued community development and connection amongst our members.
- The CEZD communications materials need to be revised and updated to express how CEZD relates to and differs from other networks. A social media strategy needs to be explored.

## Organizational Development and Sustainability

- CEZD's profile needs to be raised across commodity groups and members enabled to carry out CEZD engagement amongst their own groups.
- The partners must engage at higher levels to ensure we have ongoing visibility e.g. Canadian Chief Veterinary Officers, Federal Provincial Territorial Assistant Deputy Ministers.
- The Sustainability Plan must be updated to help guide our future direction.
  - It should consider how CEZD can fit within the Animal Health Canada model.

## APPENDIX I: CEZD Activities and Triggers

Activity	Purpose/Trigger/Who Decides/Who's Involved
Email Notification	<p><b>Purpose:</b> To share information, interesting and relevant findings that do not require feedback</p> <p><b>Trigger:</b> Relevant finding/information found</p> <p><b>Who Decides:</b> Core team &amp; members</p> <p><b>Who's Involved:</b> Sent to CEZD-CNPHI members</p>
Ping	<p><b>Purpose:</b> To gather feedback &amp; comments, open a discussion, and expand the number of ratings for signals in KIWI.</p> <p><b>Trigger:</b> Signals with variable rating distributions, those receiving high ratings in KIWI, unusual or unexpected events, requests sent in by members, urgent matters that we want timely feedback on</p> <p><b>Who Decides:</b> Core team &amp; members</p> <p><b>Who's Involved:</b> CEZD-CNPHI members</p>
Ping Follow -up	<p><b>Purpose:</b> To provide additional information on pings topics</p> <p><b>Trigger:</b> A ping is rated high and more information is available, there are comments requesting more information</p> <p><b>Who Decides:</b> Core team</p> <p><b>Who's Involved:</b> CEZD-CNPHI members</p>
Situation Scoping Meeting	<p><b>Purpose:</b> To gather more information on the situation, decide on CEZD's next steps - what kind of/if further analysis is required</p> <p><b>Trigger:</b> A ping is rated high, more information is required but not readily available, unusual or unexpected event, implications for Canada, high media attention, request from members</p> <p><b>Who Decides:</b> Core team &amp; partners</p> <p><b>Who's Involved:</b> Core team, RAW group, risk managers and experts specific to disease event</p>
The commencement of the following activities is decided upon/triggered by the scoping meeting:	
Risk Profile	<p><b>Purpose:</b> To provide a situation summary on an emerging disease along with: etiology, transmission, species susceptibility, detection and spread, possible pathways of introduction to Canada, and knowledge gaps/primary concerns.</p> <p><b>To Consider:</b> What information is available? Who's responsible?</p>
Hazard Risk Pathway Analysis	<p><b>Purpose:</b> To provide a summary of potential transmission pathways, as well as current risk mitigation and gaps in scientific knowledge for each, in order to identify priorities for further risk analysis.</p> <p><b>To Consider:</b> What information is available? Who's responsible?</p>
Rapid Risk Assessment	<p><b>Purpose:</b> To answer a specific question to support response/preparedness activities.</p> <p><b>To Consider:</b> Timeline? Who's responsible?</p>
Weekly Evolving Situation Report	<p><b>Purpose:</b> To provide ongoing updates on an evolving situation with serious implications for Canada.</p> <p><b>To Consider:</b> For how long to provide the report? Timeframe (weekly, monthly, quarterly...)? Who's responsible?</p>

## APPENDIX II: CEZD Survey Respondents Network Connections

Survey Respondents Network Connections
Acarology
Animal Nutrition Association of Canada
Animal and Plant Health Inspection Service
Antimicrobial Resistance network
American Association of Small Ruminant Practitioners
Canadian Animal Health Coalition
Canadian Animal Health Institute
Canadian Animal Health Laboratorian Network
Canadian Animal Health Surveillance Network
Canadian Animal Health Surveillance System
Canadian Wildlife Health Coalition
Canadian Technical Network of Tuberculosis Laboratories
Centre for Public Health And Zoonoses
Communauté de pratique en épidémiologie de terrain
Enterovirus Surveillance/Acute Flaccid Paralysis/Acute Flaccid Myelitis
Feather Board Command Centre
Lyme Disease Diagnostics Working Group
National Enteric Surveillance Program
National Farmed Animal Health and Welfare Council
Ontario Animal Health Network
Ontario Livestock and Poultry Council
Peste des Petits Ruminants Global Eradication Programme
ProMED mail
Réseau D'alerte et D'information Zoosanitaire
Respiratory Virus Working Group
Sheep Veterinary Society
Small Ruminant Veterinarians of Ontario
Vetovincaprin du MAPAQ,
World Aquatic Veterinary Medical Association