Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Canadian Food Inspection Agency




Our vision:
To excel as a science-based regulator, trusted and respected by Canadians and the international community.

Our mission:
Dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada's people, environment and economy.

PED: THE COLLABORATIVE RESPONSE

NFAHW FORUM 2014

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CHIEF VETERINARY OFICER, CANADA

Canada

PED: Global spread

- Not a new disease - first recognized in England in 1971
- After this, documented in many European and Asian countries
- Since 2010, variant strains emerged in China
- Recently PED was notified to OIE as an emerging disease by:
  - United States
  - Canada
  - Mexico
  - Dominican Republic
  - Colombia
  - Japan (re-emergence after a gap of 7 years)
  - Taiwan
- Recent report in literature from Germany
- U.S. strains – Chinese origin
- Route of introduction into U.S. not identified yet.


ORIGINALIEN

Porcine epidemic diarrhoea (PED) – Neuausbrüche in deutschen Mastschweinebeständen

CFIA Key considerations before the entry of PEDV into Canada

- While making decisions regarding the level and extent of CFIA's engagement in the PED situation, the following were the key considerations:
  - Not zoonotic
  - Not a food safety concern
  - Not an OIE-listed disease
  - Not a federally reportable disease in Canada
- The decision was taken that CFIA is best positioned as a collaborative facilitator and this decision was communicated to stakeholders.

PED: Canada's experience

- Collaborative efforts were/are key to management
- Early identification and engagement of the appropriate parties recognising that everyone had a role to play
  - Industry/Industry Associations
  - Private Veterinarians/Veterinary Associations
  - Provincial/Territorial governments
  - Federal governments

Preparedness

- Canadian preparedness began immediately in May 2013 after PED was identified in the U.S.
  - **Engagement/awareness activities**
    - NFAHWC Leadership -Emerging issues team got the meaningful national calls on PED started. Then taken over by the office of CVO, Canada.
    - Federal/Provincial/Territorial (FPT) stakeholders continued to engage through regular teleconference calls
    - Regular contact with the U.S. counterparts both at the federal and industry level.
    - All stakeholders increased public awareness about the disease and promoted biosecurity protocols through regular public notifications, town halls, tabletop exercise etc.
    - CSHIN surveillance reports
  - **Import policy and Border controls**
    - CFIA ensured existing import policy mitigate risk of introduction.
    - CFIA worked with Canadian Border Services Agency (CBSA) to increase border controls for returning trucks.

Preparedness

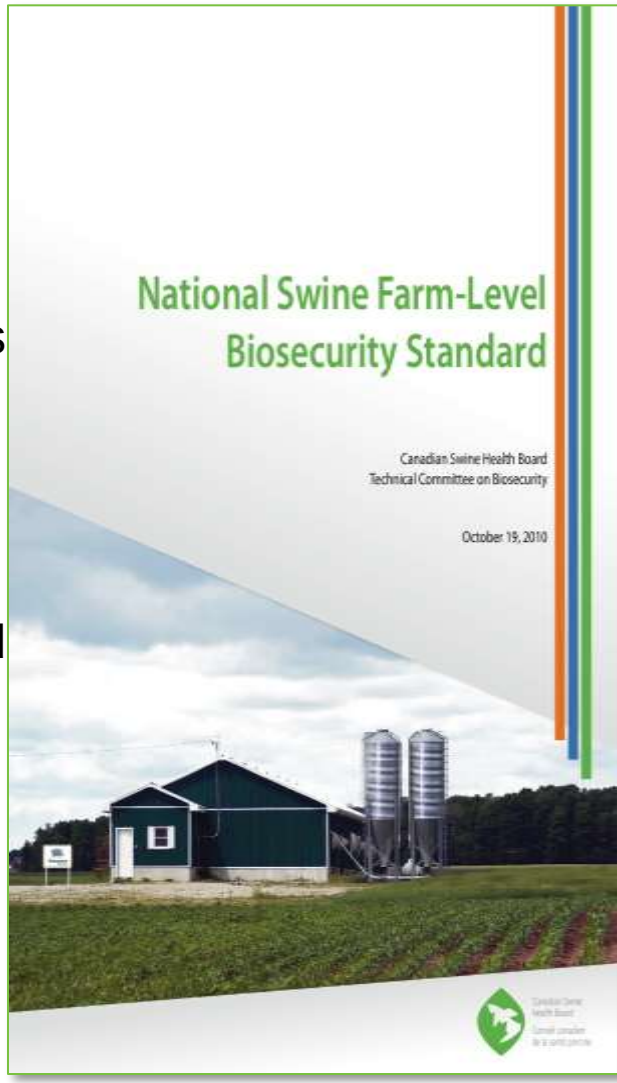
- **Diagnostics**
  - Diagnostic testing capability and capacity built in collaboration with the CFIA National Centre for Foreign Animal Disease and Canadian Animal Health Surveillance Network laboratories. AHL, Guelph played an important part in developing PCR test and transferring it to other network labs.
- **Hazard Characterization**
  - CFIA completed Hazard Characterisation for transmission pathways, exposure routes, risk factors of concern. The document was shared with provinces and industry.
- **Response plans**
  - Both industry and provinces worked very hard in getting their response plans ready

Preparedness-Role of CSHB

Biosecurity and Communication

- Early on it was recognized how important biosecurity was to prevention, management and control.
- The Canadian Swine Health Board (CSHB) was instrumental in preparedness.
- Even prior to PED they had worked with producers to produce this national swine farm-level biosecurity standard which served as a reference document. Canada already had a good foundation when PED arrived.

- Very early on CSHB were involved with producer education on recognition of PED, preparation and publication of C & D documents, advice for cold weather cleaning, and other similar activities.



Entry of PED in Canada

- First suspected case reported in Ontario on Jan. 22, 2014. Confirmed by the CFIA on Jan. 24, 2014.
- Sequencing of the virus from clinical cases indicated the PEDV strain was similar to strains identified from initial outbreaks in U.S.
- CFIA notified OIE on Feb. 5, 2014 by letter, and later through the World Animal Health Information System (WAHIS)

After the entry of PEDv in Canada

- Unprecedented, prompt co-operation, tireless efforts to contain and manage the virus.
- Disease was made reportable or notifiable in some provinces.
- Response has been led by provinces and industry with support from the entire service sector- private veterinarians, trucking, feed, deadstock removals, processors/slaughter houses, producers themselves-**Everyone did what they were supposed to do.**
- Herd veterinarians lead the on farm aspect of the response and work with producers on – controlled exposure approaches, biosecurity strategies, marketing of pigs, collection of epidemiology information, euthanasia and disposal strategies.
- Environmental sampling/surveillance continues in affected and non affected provinces as a part of provincial and industry led response plan.
- Industry received funding to support disease surveillance and biosecurity improvements
- Comprehensive resources are available on industry and provincial government websites.

Role of CSHIN : Surveillance and communication

- CSHIN in reporting daily on the situation, was absolutely critical to the PED response.
- Without regular CSHIN reports, Canada would not have the national summaries, graphing, etc. that proved so useful for national and international reporting, right from the surveillance reports corroborating PED freedom before mid-January to the daily updates, tracking of cases, etc. once we had the PED outbreak.
- None of us would have the information we did on a national scale had CSHIN not been in place.

Helping Producers Manage Disease

Surveillance for diseases in the Canadian swine herd is a priority for the Canadian Swine Health Board. This project is an opportunity to set up a world class system in Canada. It will benefit pig and pork sales internationally.

All swine veterinarians are encouraged to participate to help deal with the latest swine health issues that could occur on your farm.

Canadian Swine Health Intelligence Network (CSHIN)

CSHIN will have two parts

1. The Swine Veterinary Network

- Swine veterinarians and specialists will hold web-based meetings every quarter to review and identify new health problems.
- Every participating veterinarian will fill in a form describing problems they have recently encountered.
- Meetings will be in three regions in Canada followed by a Canadian web meeting a short time later.
- Reports from these meetings will be sent to all swine veterinarians keeping everyone informed about changes to swine health and ways of managing it.
- The network will also be a way to quickly communicate whenever something unusual is observed by a veterinarian or laboratory.

2. Practice Based Data Network

- When veterinarians fill in their medical records they also fill in a short form describing the health problems seen during a farm visit.
- farm data and reports from their clients.
- Reports may be shared with other veterinarians and for the benefit of the industry as a whole – but only for large regions so individual farms can't be identified, and always with the direct permission of your veterinarian.

The Canadian Swine Health Board is building a network to help veterinarians deal with diseases on swine farms.

How It Works

- Data about swine diseases across Canada is collected daily and analyzed.
- More information is added by veterinarians and swine experts from across the country.
- New information about diseases and how to control them is produced.
- This information is sent to veterinarians across the country.
- Your veterinarian uses the information to help you deal with disease on your farm!

This Network Will:

1. Help to protect your herd from diseases.
2. Help your veterinarian solve disease problems on your farm.
3. Help Canada's swine and pork industries to maintain current markets and access new markets.

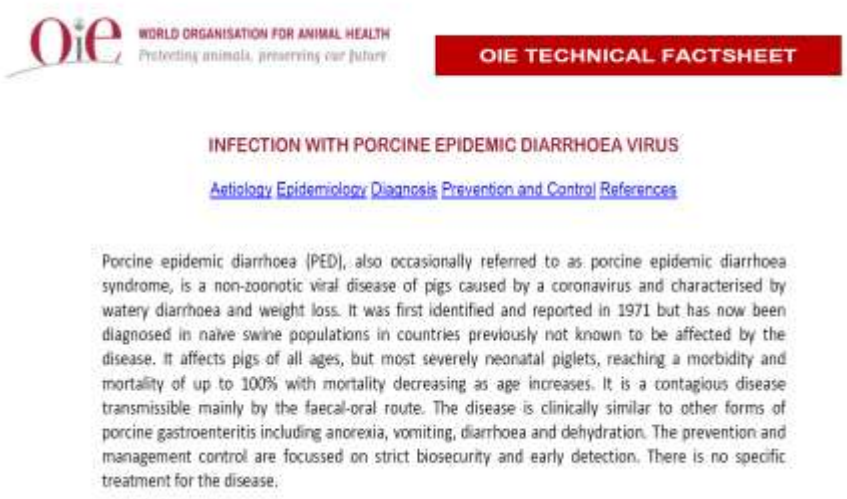
There will be no additional cost to you or your veterinarian. Please discuss this valuable new network with your veterinarian.

Role of CFIA

- CFIA provided technical, diagnostic and scientific support.
- Access to PED vaccine for emergency use under veterinary supervision.
- Continued engagement of stakeholders through the CVO office.
- Continue to recommend vigilance and strict biosecurity protocols along with all other stakeholders.
- Continue to work with CBSA and provinces on border vigilance and promoting the importance of effective cleaning & disinfection of trucks.
- Informed the OIE by letter, in Feb. 2014, of the entry of PEDV into Canada
- Continue to update trade partners regularly and respond to questions in order to minimise trade impacts

Knowledge transfer

- OIE *ad hoc* group on PED produced technical fact sheet and recommended not to add PED to OIE List Diseases
- Shared our collaborative story at the Swine Enteric Coronavirus international meeting in Chicago, USA
- 26th Conference of OIE Regional Commission for Europe in Berne, Switzerland – PED Technical report, presentation and recommendations
- Scientific paper on epidemiological investigation of feed- submitted for publication


WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

OIE TECHNICAL FACTSHEET

INFECTION WITH PORCINE EPIDEMIC DIARRHOEA VIRUS

Aetiology Epidemiology Diagnosis Prevention and Control References

Porcine epidemic diarrhoea (PED), also occasionally referred to as porcine epidemic diarrhoea syndrome, is a non-zoonotic viral disease of pigs caused by a coronavirus and characterised by watery diarrhoea and weight loss. It was first identified and reported in 1971 but has now been diagnosed in naive swine populations in countries previously not known to be affected by the disease. It affects pigs of all ages, but most severely neonatal piglets, reaching a morbidity and mortality of up to 100% with mortality decreasing as age increases. It is a contagious disease transmissible mainly by the faecal-oral route. The disease is clinically similar to other forms of porcine gastroenteritis including anorexia, vomiting, diarrhoea and dehydration. The prevention and management control are focussed on strict biosecurity and early detection. There is no specific treatment for the disease.

PED: Feed Investigation

- This investigation is another example of great collaboration
- Epidemiological findings of the first cluster of cases identified feed as a possible source**-OMAF and veterinarians in private practice**
- Testing by **Ontario laboratory** on Feb. 9, 2014 revealed that a particular lot of US-origin spray-dried porcine blood plasma used in feed pellets contained PEDV genetic material.
- As a precautionary measure, the **feed distributor** issued a voluntary recall on Feb. 9, 2014 for all pelleted swine nursery feed products containing porcine plasma-the feed distributor should be commended for this.

PED-Feed Issue

- Bioassay tests and feed epidemiology assessment conducted in Feb. 2014.
  - Piglets fed contaminated lots of spray-dried porcine plasma shed a high level of PEDV for ≥9 days
  - Piglets fed PEDV positive feed did not shed significant amounts of PEDV
- Effectiveness of the voluntary withdrawal by the feed manufacturer was confirmed.
- The CFIA's National Emergency Operations Centre was activated at the end of Feb. 2014 in response to the PED issues related to feed.
- Feed and feed ingredients related to PED cases were traced and tested by CFIA.
- CFIA worked closely with U.S. officials on U.S. tracing and testing activities.
- The weight of the epidemiological evidence supports that the source for most of the early cases in Ontario and for the single case in PEI in Jan. 2014, was pelleted swine feed containing a specific lot of spray-dried porcine plasma imported from the U.S.
- It remains unclear what role PEDV-contaminated feed play in the broader epidemiology of PED in Canada.

Knowledge transfer

Transboundary and Emerging Diseases

Transboundary and Emerging Diseases

RAPID COMMUNICATION

Investigation into the Role of Potentially Contaminated Feed as a Source of the First-Detected Outbreaks of Porcine Epidemic Diarrhea in Canada

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Keywords:
porcine epidemic diarrhea; spray-dried porcine plasma; transmission

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Summary

In January 2014, approximately 9 months following the initial detection of porcine epidemic diarrhea (PED) in the USA, the first case of PED was confirmed in a swine herd in south-western Ontario. A follow-up epidemiological investigation carried out on the initial and 10 subsequent Ontario PED cases pointed to feed as a common risk factor. As a result, several lots of feed and spray-dried porcine plasma (SDPP) used as a feed supplement were tested for the presence of PEDV genome by real-time RT-PCR assay. Several of these

PED Forum

CFIA, through the Office of the CVO, Canada facilitated a PED forum

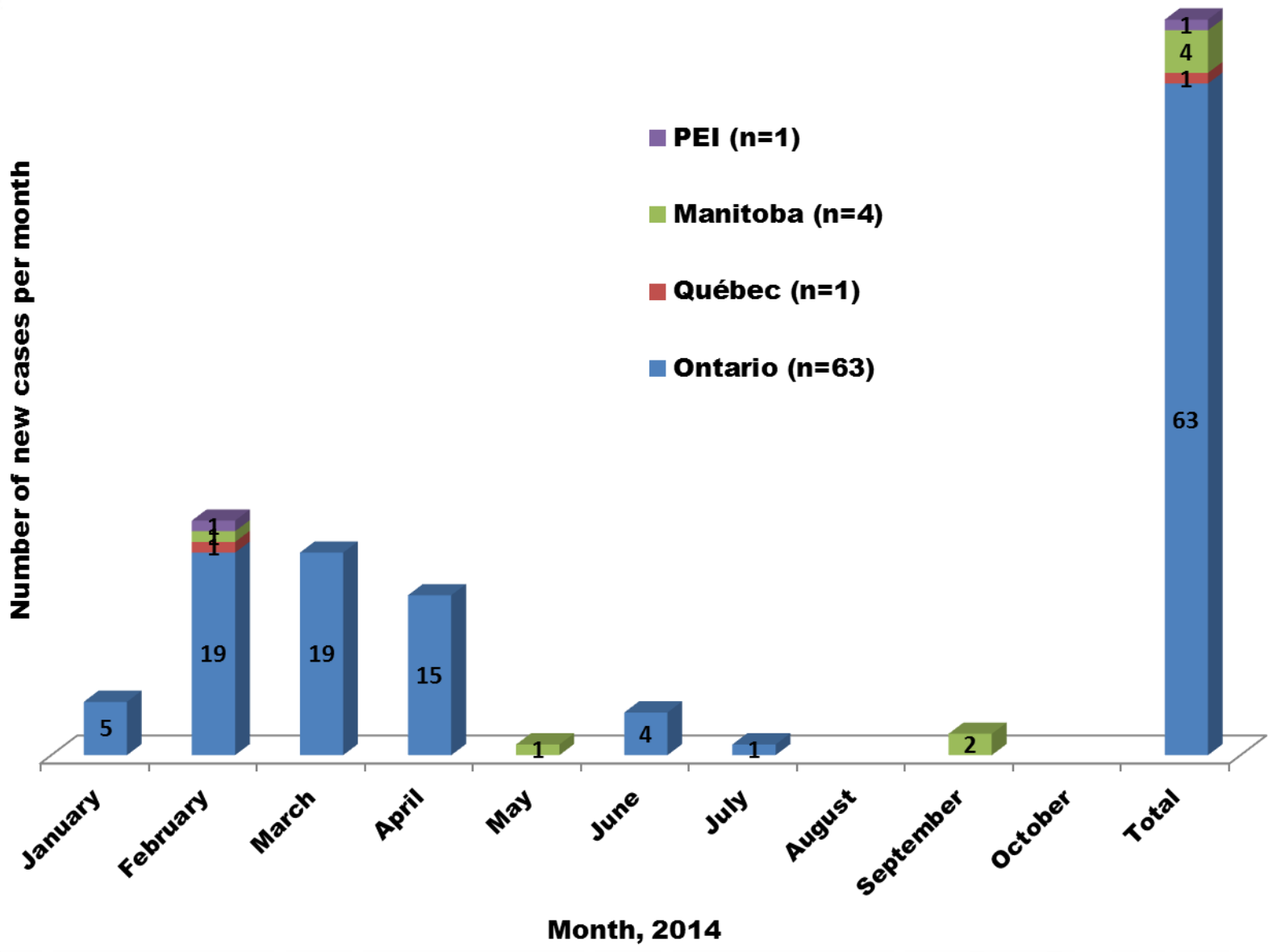
- Further engagement with stakeholders
- Open dialogue on Canadian and U.S. experience and future directions
- To bring overall leadership in addressing PED issues

- Action plan produced with timelines.

Current situation

- Canada has identified PED in four (4) provinces, with a total of sixty-nine (69) cases reported as of October,2014:
  - Sixty-three (63) confirmed cases in Ontario
  - One (1) confirmed case in Prince Edward Island (PEI)
  - One (1) confirmed case in Quebec (asymptomatic)
  - Four(4) confirmed cases in Manitoba
- Number of new cases reported per month has drastically diminished.
- May – 1 case (in Manitoba only)
- Early June – 4 cases (in Ontario only)
- Late July – 1 case (in Ontario only)
- **August – No case**
- September-2 cases(in Manitoba only)
- **October-No case**
- Surveillance continues by the provinces and industry.

PED Management-A success story



PED Elimination-success story continues

- **Industry has the tools and the motivation to control and eliminate**

- Ontario- successful PED eliminations at 21 affected farms as of late September,2014. Led by industry-OSHAB/OPIC ARC&E Program. Financially supported by Ontario pork.
- Quebec - The only farm with the disease in Quebec is now negative. New pigs were introduced into the finisher site in June and remain negative.
- Manitoba - First positive farm implemented an eradication strategy. First attempt unsuccessful. Results pending for second attempt.
- Manitoba - Second farm will start their eradication strategy this month.
- PEI: The affected herd is clinically normal. Virus elimination from the premises not yet confirmed.

Ongoing Activities

- Continuing strict biosecurity measures on farm, cleaning and disinfection of trucks, and enhanced controls at the border.
- Continue to sequence and characterize virus strains from positive farms.
- Further research studies to better understand the virus: funding with partners (Genome Alberta, Genome Ontario, Ontario Ministry of Agriculture, Food and Rural Affairs).
- Updating OIE quarterly through WAHIS.
- Market access activities-updating and on going negotiations
- At the request of some countries, and based on the health status of that country, Canada has modified sanitary export health certificates for live swine, requiring additional risk mitigating measures for PEDV. Modifications such as these have permitted Canada to continue to export pigs free from this disease .

Going forward

- Engagement with and regular updates to/from provincial and industry stakeholders to continue.
- Facilitate discussion around the collaborative approach required for emerging disease threats in future.
- Working on a decision analysis tool.
- Monitor research. Further research studies needed to better understand the virus.
- Border controls- cleaning and disinfection issues.
- Challenges with off-farm biosecurity, particularly in high traffic areas like assembly yards.


Canada