

Porcine Epidemic Diarrhoea – Lessons to Learn For all of us

Courtesy of Derek Armstrong MRCVS





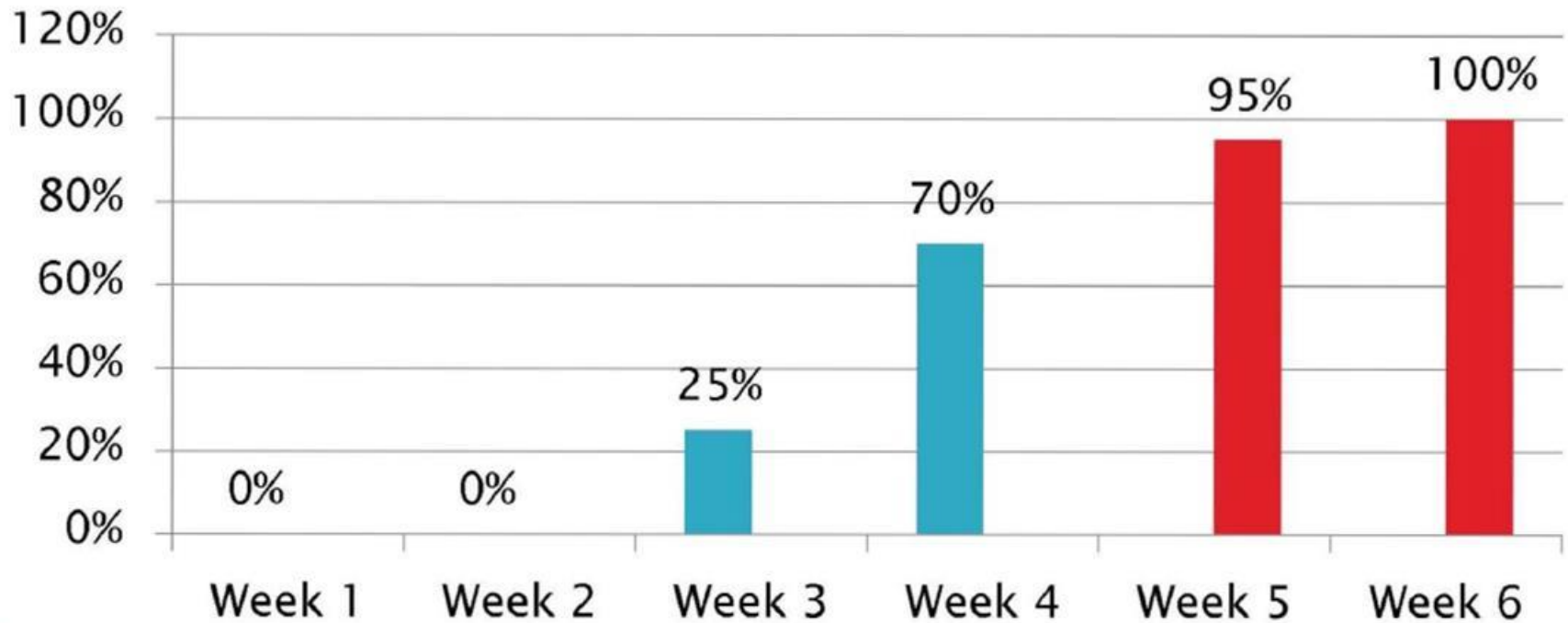
Courtesy of Dr. M



Courtesy of Dr. Matt Ackerman

<http://www.asi.k-state.edu/species/swine/swine-day/Hesse%20and%20Henry%20presentation.pdf>

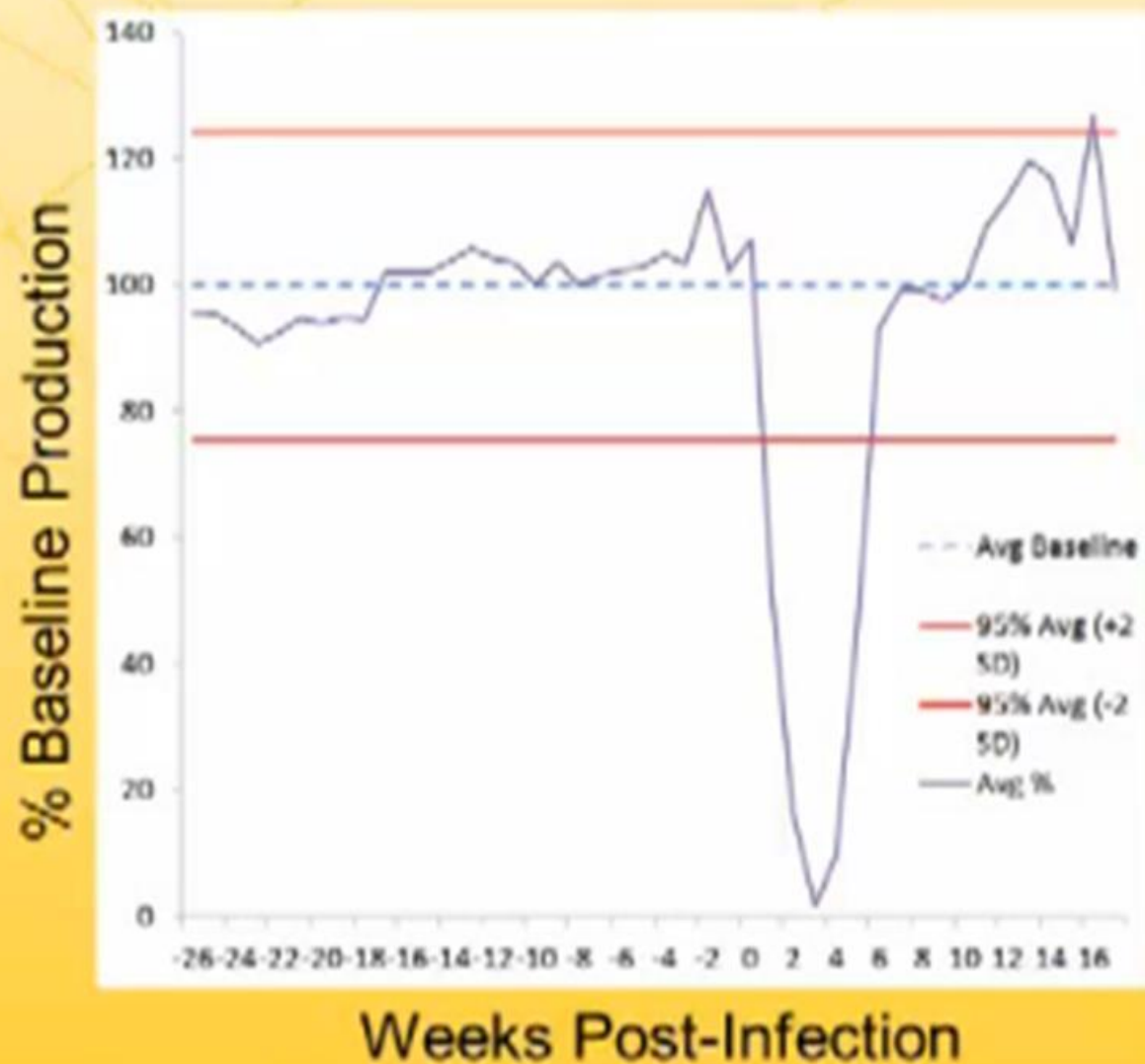
Percent Survivability to Day 7



Dr. Matt Ackerman, Swine Veterinary Services, Greensburg IN

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Production Impact



N = 18 herds

Avg TTBP = 5.9 wks
95% CI = 4.2-7.6

Loss:

1688 pigs/1000 sows
95% CI = 1077-2299

3.9 wks production
95% CI = 2.0-5.8

PED Initial Events

- PEDV was confirmed in the US on May 16th, 2013 by diagnostic tests at the USDA National Veterinary Services Laboratory (NVSL) in Ames, IA
 - Found in multiple farms simultaneously and then additional farms diagnosed positive potentially from lateral spread
- Coordinated effort by all key stakeholders to understand where PEDV was/is occurring and how to best manage it:
 - United States Department of Agriculture (multiple divisions)
 - State Animal Health Organization representatives (SAHO)
 - National Pork Board (NPB)
 - National Pork Producers Council (NPPC)
 - American Association of Swine Veterinarians (AASV)

<http://www.slideshare.net/trufflemedia/dr-lisa-becton-and-dr-tom-burkgren-update-on-porcine-epidemic-diarrhea-virus-pedv-what-is-it-and-how-will-it-affect-me>





...and now affecting 27 different states, along with several other countries (e.g. Canada, Mexico)

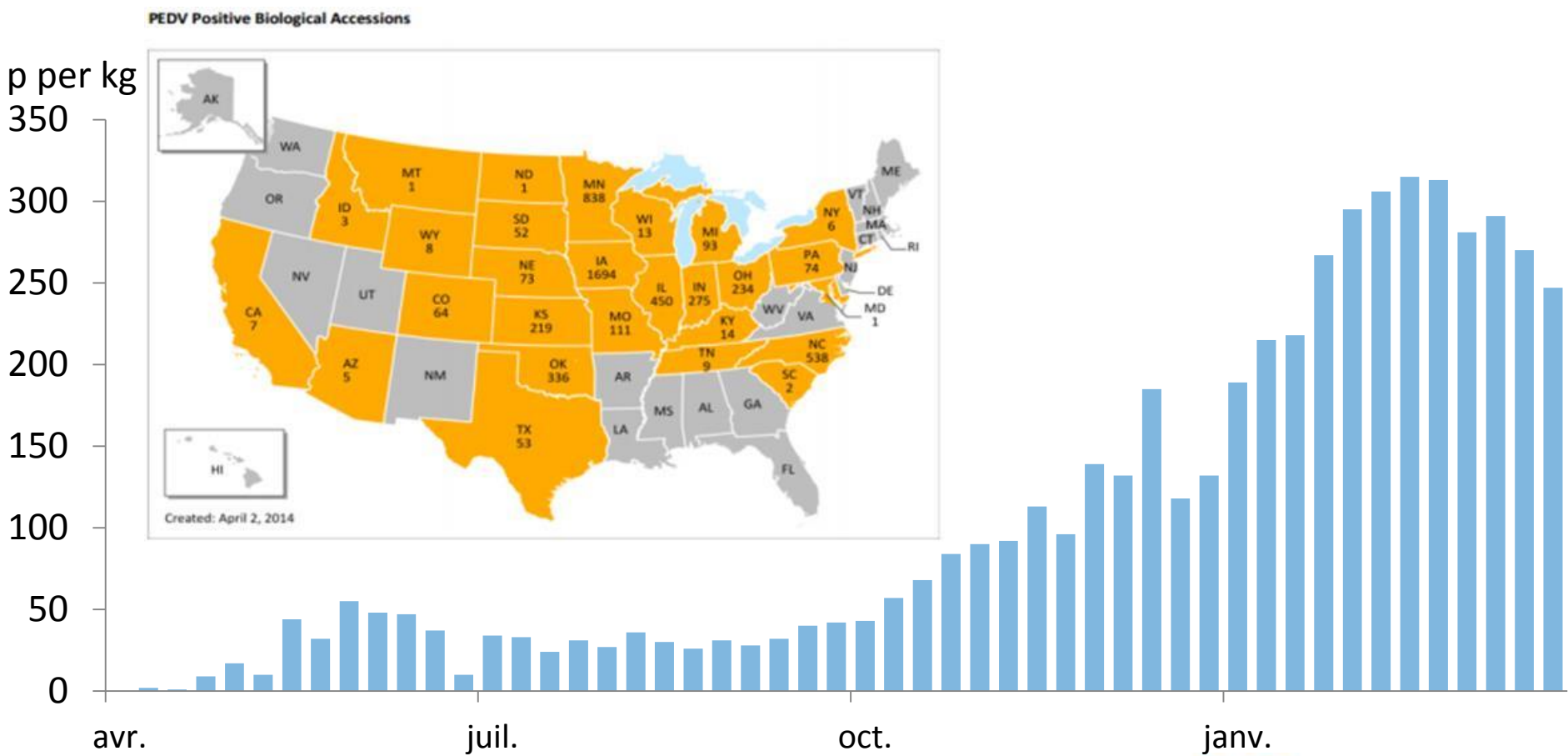


Chart: Number of new cases of Porcine Epidemic Diarrhoea Virus recorded in US each week

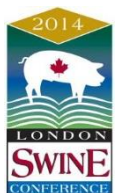
Source: US National Animal Health Laboratory Network





Canada - 2013 Preparedness

- Ontario Swine Health Advisory Board Proposal
- Ontario Pork and OSHAB Committee
- Regular focused conference calls
- University of Guelph developed diagnostic capability
- October, 2013
 - Canadian wash bay and pig transport biosecurity investigation with PED threat
- Information and techniques to the Ontario transport industry that will reduce the risk of infecting Ontario pig farms with PEDv



SOUTH WEST
Ontario Veterinary Services

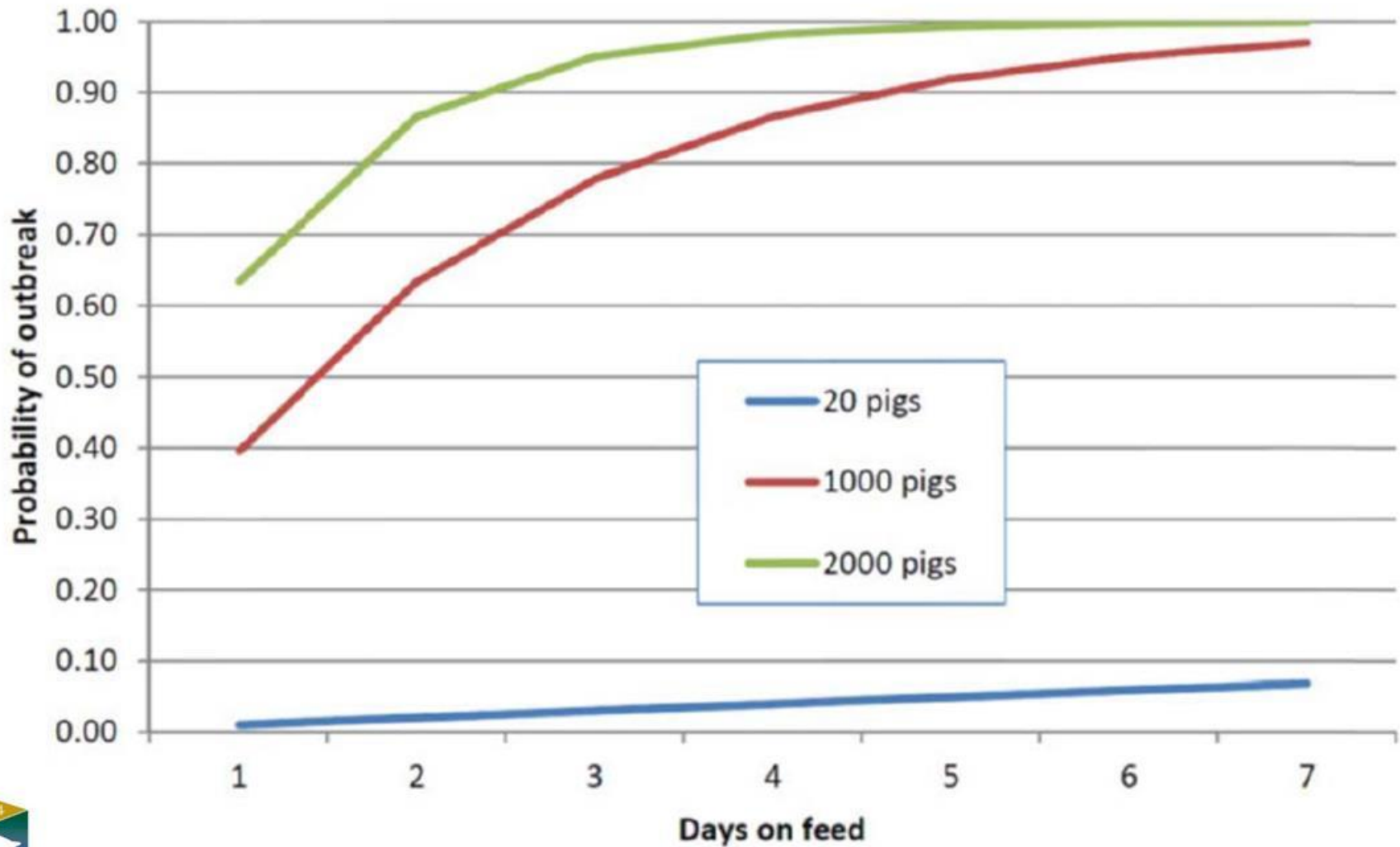


Epidemiology



Prince Edward Island

- 12 pig farms
- 20 sites
- HH multiplier farm
- Great biosecurity
- No connection with ON except same feed



Dr. Peter Davies
University of Minnesota



Deltacoronavirus

- Different virus to PED and TGE
- Reported in 2012 in Hong Kong
- Reported in 2014 in USA
 - Cases are PED and Delta positive but some are Only Delta positive
- Less severe than PED – PWM lower
- Reported in “double” breaks
- Take home message: Treat as if it were PED

Vision

- A vision to stop and eliminate PEDv was discussed at an industry roundtable in Ottawa hosted by CFIA. The industry identified seven areas to focus on:
 - open communications among stakeholders
 - biosecurity both for on farm and off
 - ongoing active surveillance and reporting
 - transports measures, including at the border
 - clarity of the PEDv risks associated with feed
 - research to address PEDv knowledge gaps
 - supporting PEDv containment and elimination
- The provincial PEDv emergency response plans developed are effective and significant steps have been taken to help reduce the risk of the virus being spread in Canada.
- Producers are encouraged to increase their due diligence and use the tools and best information available to prevent the spread of this virus.

Slaughter truck contamination

- Mid-June, EARLY in outbreak, veterinarians swabbed 100 trailers at 7 plants before unloading and after
 - 17% of trailers were PEDv positive on arrival
 - 11% of trailers, arriving negative, positive on departure
- All truck drivers enter the plants!
 - Bills of lading to the scale
 - Off load pigs and pen in holding area
 - Break down load into multiple lots
 - Take pigs to the scale
 - If mortalities, drag dead pig off and out of flow
 - If down, get sled from plant and move pig off of truck
 - Minimum of 5 trips on/off truck and into plant



Preventing introduction of PEDv

- “it’s really about the faeces of the species!”-
- Abattoirs, markets, collection centres
- People and vehicle traffic
- Manure spreading and handling
- **Fallen stock disposal**
- **Disinfectants – what and how**
 - Cleaning – organic matter inactivates
 - Contact time is important, >1 hour
 - Drying improves effectiveness
 - Propylene glycol (NOT antifreeze!) if frozen
 - Whitewash appears effective





The challenge

- An example of viruses in the environment
 - If a 2-3 day old piglet produces 1Billion viruses per 1 ml of faeces
 - 100 mls of faeces will contain 100Billion viruses
 - Assume a biosecurity procedure or processing procedure effectiveness of 99.999%
- 1M viruses remain! Enough to infect 100,000 pigs



Porcine Epidemic Diarrhoea

- Europe needs to keep virulent strains of PED out
- Urgent need to review risk assessments on potential for entry
 - US has had 4 separate new viruses linked to Asia
 - Unless know route of entry EU vulnerable
- Europe needs to step up preparedness
 - Diagnostics; contingency plans for containment;
 - Reportable?
- Learn from US and Asia on effective on-farm controls
 - Controlled exposure of sow herd to provide colostral immunity





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