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Swine Enteric Coronavirus Disease (SECD) Situation Report

May 8, 2015

Analysis of data received as of May 2, 2015

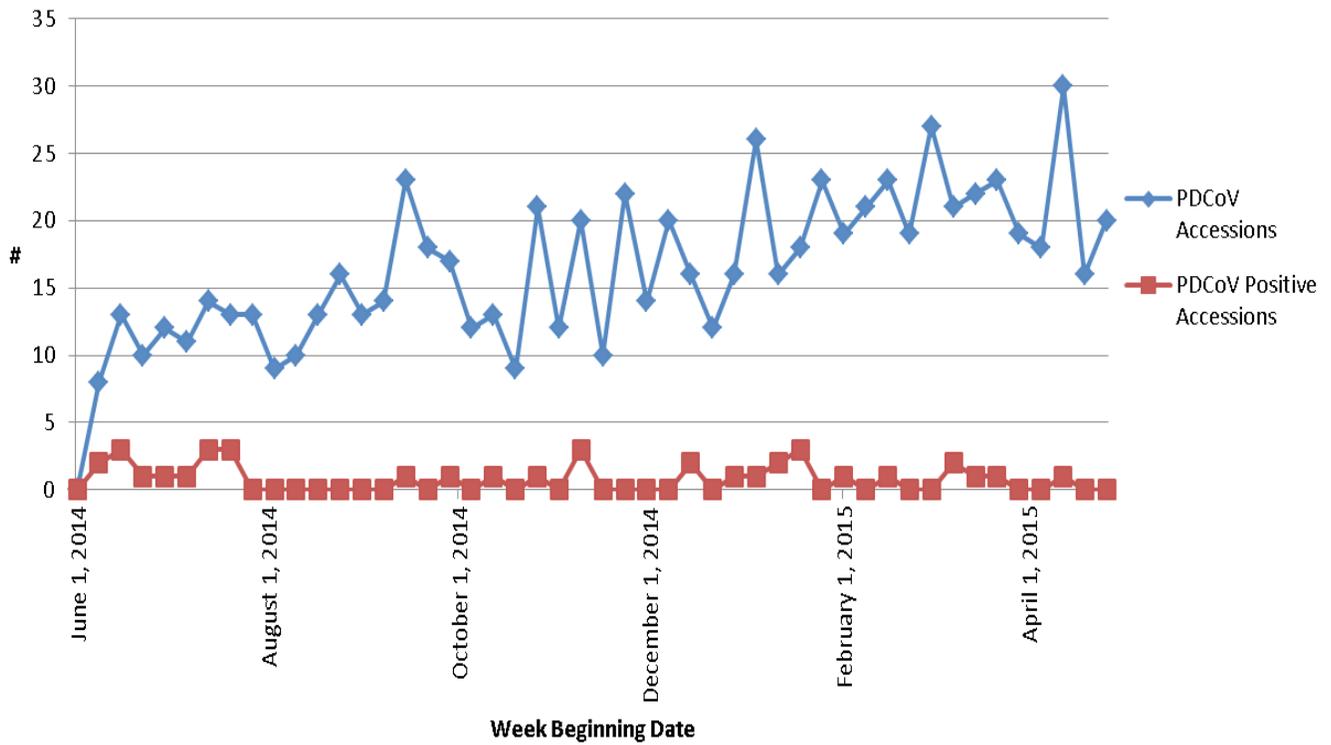
This report provides an update of Indiana activities under the USDA Federal Order, Reporting, Herd Monitoring, and Management of Novel Swine Enteric Coronavirus Diseases, effective June 5, 2014. The Indiana State Board of Animal Health (BOAH) will issue this report on a monthly basis to summarize data on all porcine epidemic diarrhea virus (PEDv) and porcine delta coronavirus (PDCoV) testing conducted at the Purdue University Animal Disease Diagnostic Laboratory, the Iowa State University Veterinary Diagnostic Laboratory, and the University of Minnesota Veterinary Diagnostic Laboratory. These laboratories conduct an estimated 98% of all SECD testing for Indiana premises and send these results directly to BOAH. Some additional information on testing performed at other laboratories is obtained using the USDA SECD database. Any information derived from other sources is clearly identified and explained.

General information about the SECD monitoring and control program in Indiana is provided on the BOAH website at: www.in.gov/boah/2680.htm

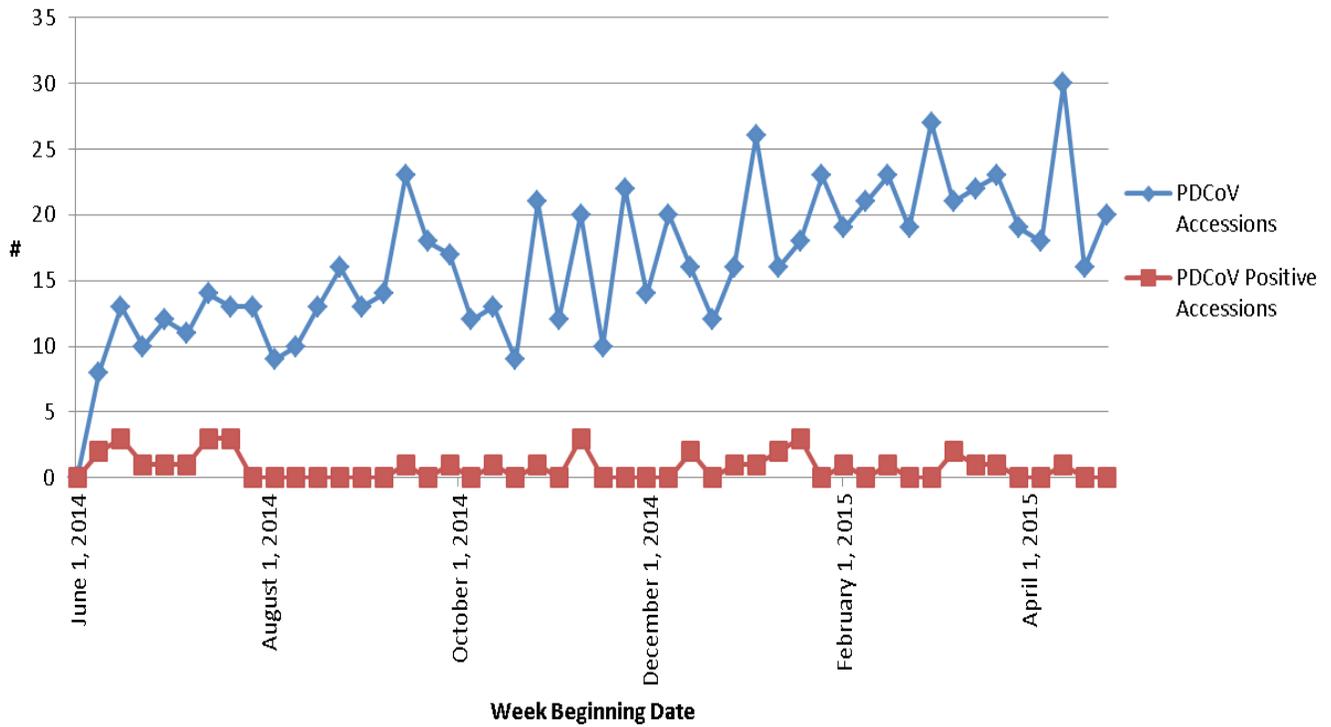
Summary Data – June 5, 2014 through May 2, 2015

Since June 5, 2014, the number of PED accessions ranged from 8 to 49 and averaged 28 accessions per week; PED positive accessions have ranged from 0 to 11 and averaged almost 4 positives per week. During this same time period, the number of PDCoV accessions ranged from 0 to 30 and averaged 16 accessions per week; PDCoV positive accessions have ranged from 0 to 3 and averaged less than one positive per week. Each accession represents a test or set of tests performed on specimens from an individual premises. A positive accession is defined as an accession where at least one sample tested positive, and these may occur on a premises that previously tested positive.

PDCoV Accessions by Week

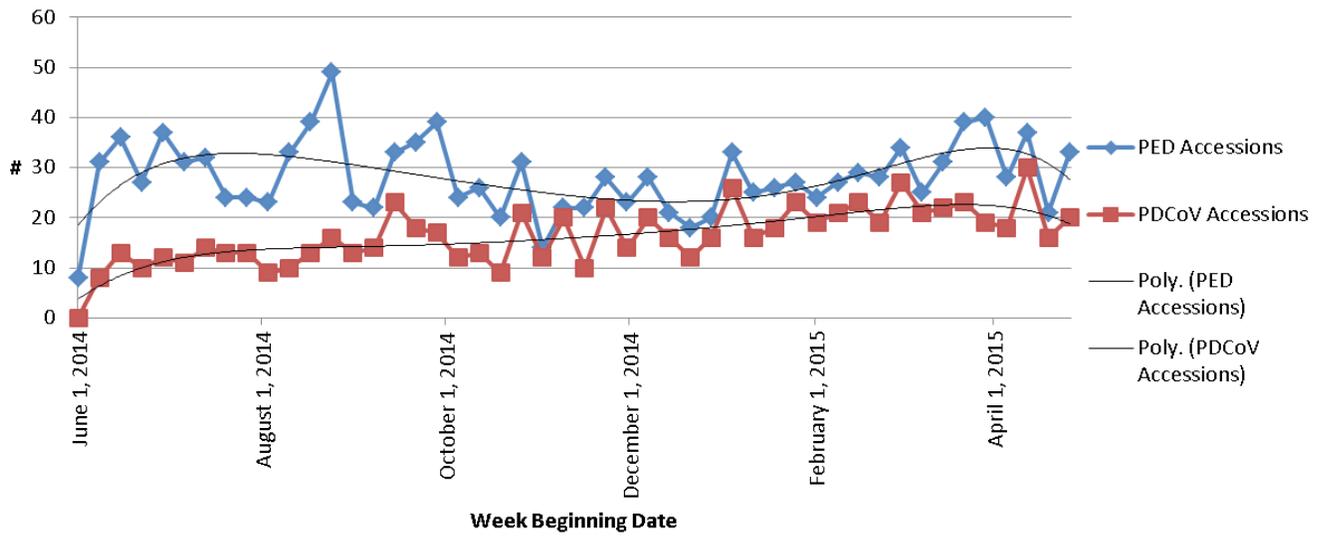


PDCoV Accessions by Week

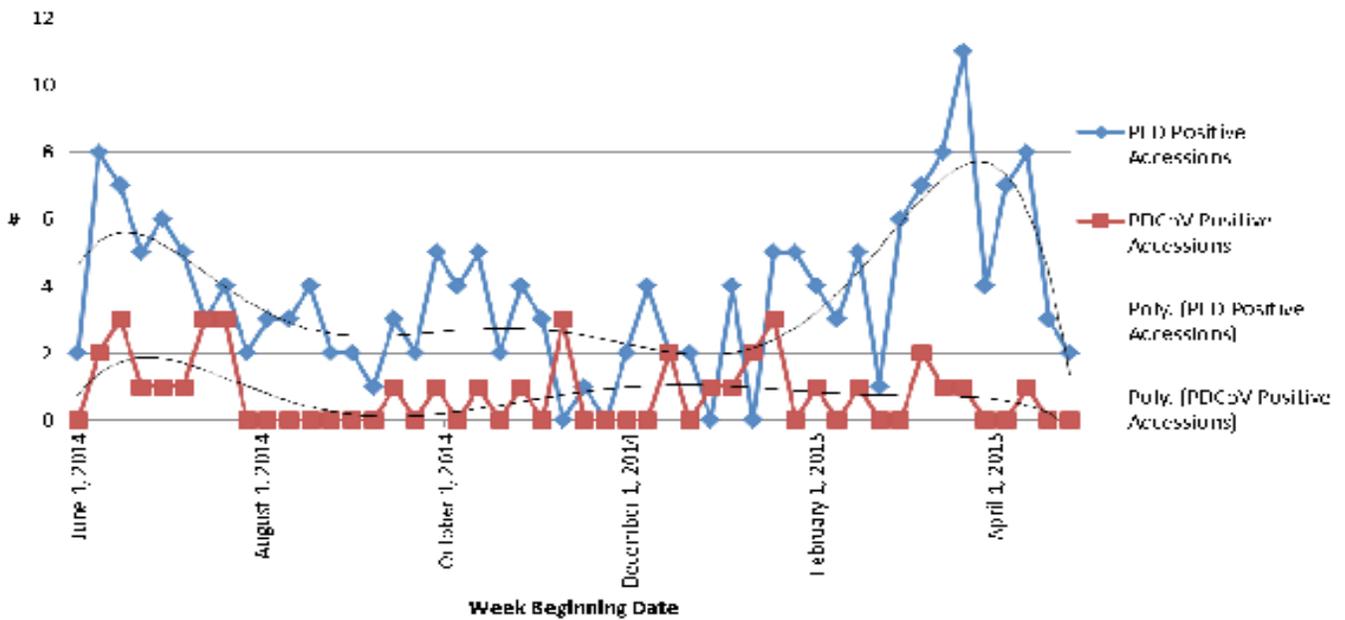


Although the number of accessions submitted for SECD testing has fluctuated from week to week since the beginning of the federal order, we have seen a decline in PED accessions at the end of 2015 that has returned these last couple months. PDCoV accessions have been on a gradual rise. The upward trend in PDCoV submissions may be due to the fact that many labs have bundled testing for PED, PDCoV, and TGE. Due to the number of positive PED accessions over past weeks, the trend lines show a new peak in positive PED accessions for March 2015 that appears to have dropped off in April 2015. The positive PDCoV accessions have remained fairly consistent since the original reports in June 2014. However, the trend lines shown here are included for demonstration purposes only and may not indicate a statistically significant change in the data over time.

Trend in Number of Accessions Submitted by Week

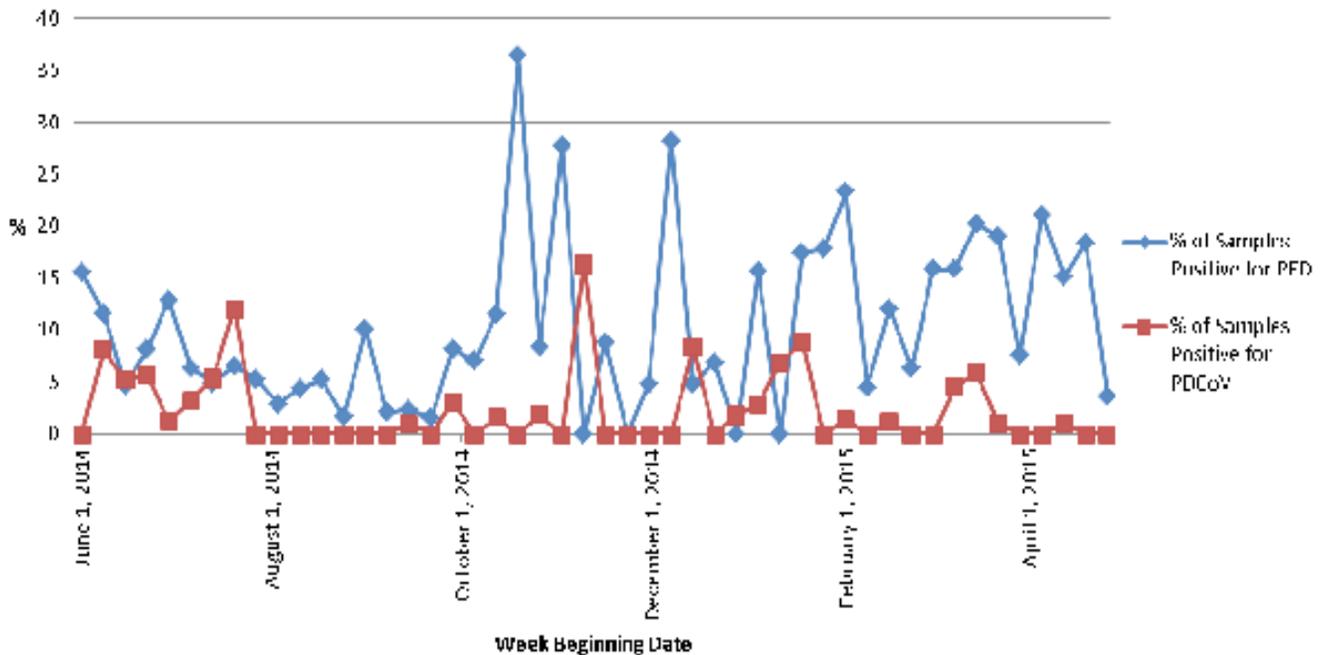


Trend in Positive Accessions by Week



In an effort to offer a slightly different perspective on the data, the following graph shows the percent of all samples tested each week that were positive. In contrast to the preceding graphs that focused on the total number of accessions and positive accessions, the graph below is heavily influenced by high-volume submitters and submissions containing a large number of positive samples. However, over time this graph may better demonstrate seasonal trends in disease and the long term effect of herd clean-up efforts.

Percent of All Samples Testing Positive

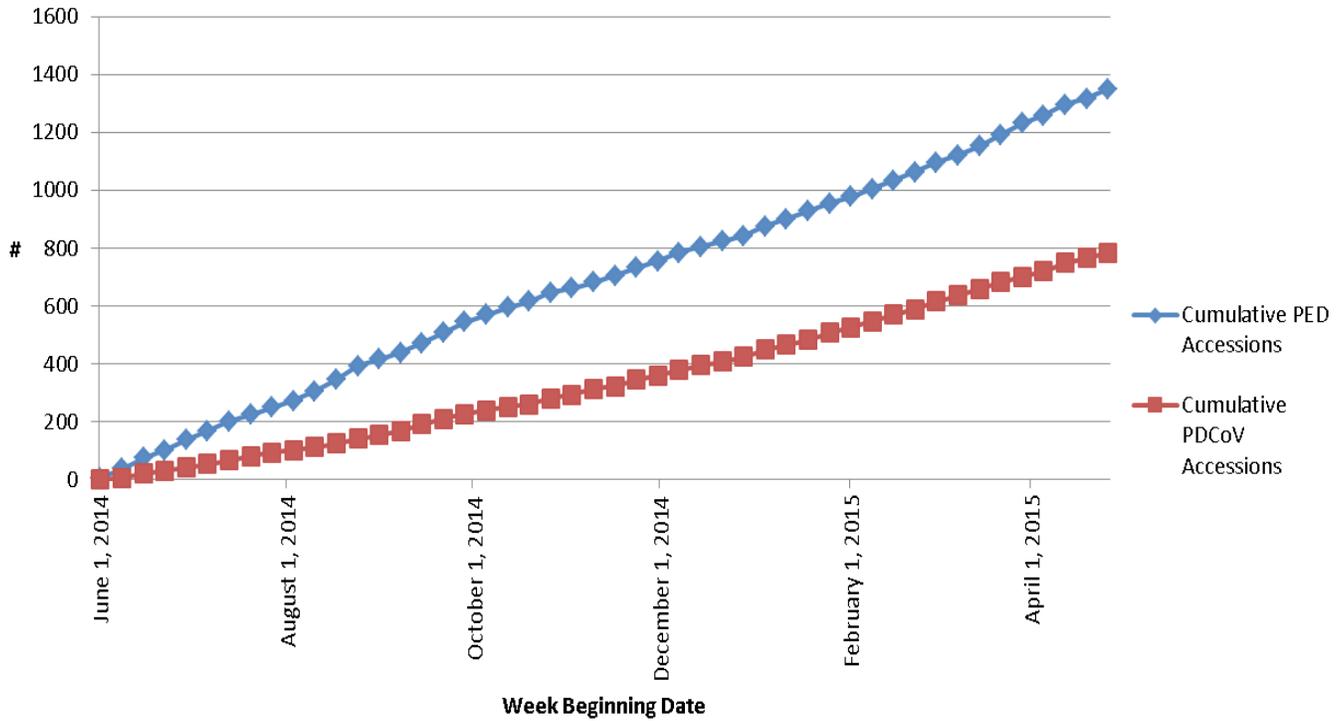


Cumulative Testing Data – June 5, 2014 through May 2, 2015

	PED	PDCoV	Change from last Report— PED	Change from last Report—PDCoV
Total Number of Accessions	1350	785	136	92
Number of Positive Accessions	179	37	23	1
Number of Negative Accessions	1171	748	113	91
Total Number of Samples Tested	5737	3181	630	455

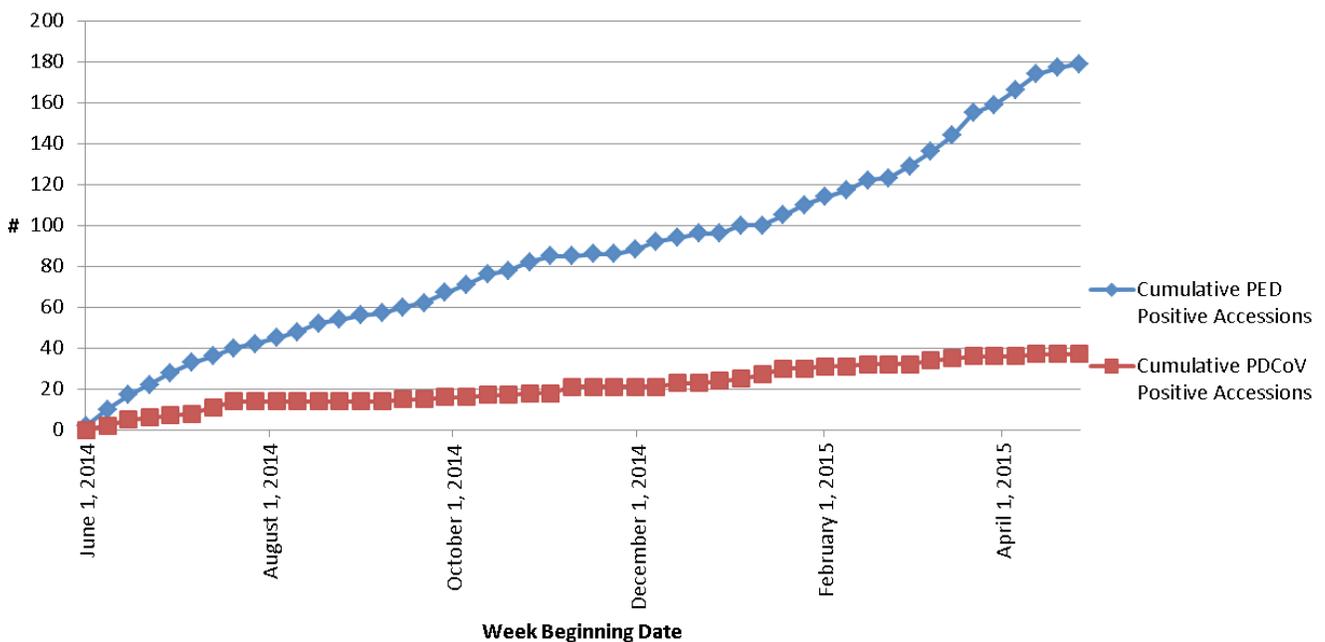
*This is the first report to contain four weeks of new data rather than two as before. Numbers in the “change” columns will be about twice the amount of what they have been in past reports.

Cumulative Accessions



Of all PED accessions, 13.25% have contained at least one sample that tested positive. This is true for only 4.7% of all PDCoV accessions. These percentages have remained relatively constant since the first Indiana SECD Report was completed in early October, 2014. The cumulative number of accessions submitted for SECD testing has increased steadily for both PED and PDCoV. In contrast, the cumulative number of PDCoV positive accessions has remained the same as the prior week for 24 out of 48 weeks (50%). This is true for only 4 out of 48 weeks (8.3%) for the cumulative number of PED positive accessions.

Cumulative Positive Accessions



Cumulative Geographic Distribution Data – June 5, 2014 through May 2, 2015

SECD testing has been distributed throughout the state, with results reported for 66 of 92 counties (72%). This mirrors the geographic distribution of commercial swine operations in Indiana. While the majority of premises and counties have tested for both PED and PDCoV, the majority of positive test results for both premises and counties have been for PED only. 34% of the premises and 68% of the counties that have submitted accessions for testing have had at least one positive result.

	Number Tested	Number with Positive Results
Premises	294	100
PED Only	84	78
PDCoV Only	4	8
PED+PDCoV	206	14
Counties	66	45
PED Only	4	29
PDCoV Only	0	4
PED+PDCoV	62	12

The maps on the left side of the following pages depict the overall results for all premises in the county that have conducted testing for PED or PDCoV, respectively, since June 5, 2014. If any premises in the county ever tested positive within that timeframe, the county is red, regardless of how long ago the test was completed or how many negative tests have occurred since the last positive test.

The maps on the right side of the following pages depict only the results of the last test conducted for all premises in the county for PED or PDCoV, respectively. If the last test for any premises in the county was positive the entire county is red, regardless of how long ago the test was completed.

Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15

PED Testing



- Indiana Counties - PED Pos Tests thru 05.02.15
- Indiana Counties - PED Neg Tests Only thru 05.02.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15

*County PED status
Based on most recent test for any farm*



- Indiana Counties - Last Tests PED Pos thru 5.02.15
- Indiana Counties - Last Tests PED Neg thru 5.02.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15

County PDCoV status
POS - any POS tests since 06/05/14
NEG - only NEG tests since 06/05/14



- Indiana Counties - Pos Tests PDCoV thru 5.02.15
- Indiana Counties - Neg Tests Only PDCoV thru 5.02.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15

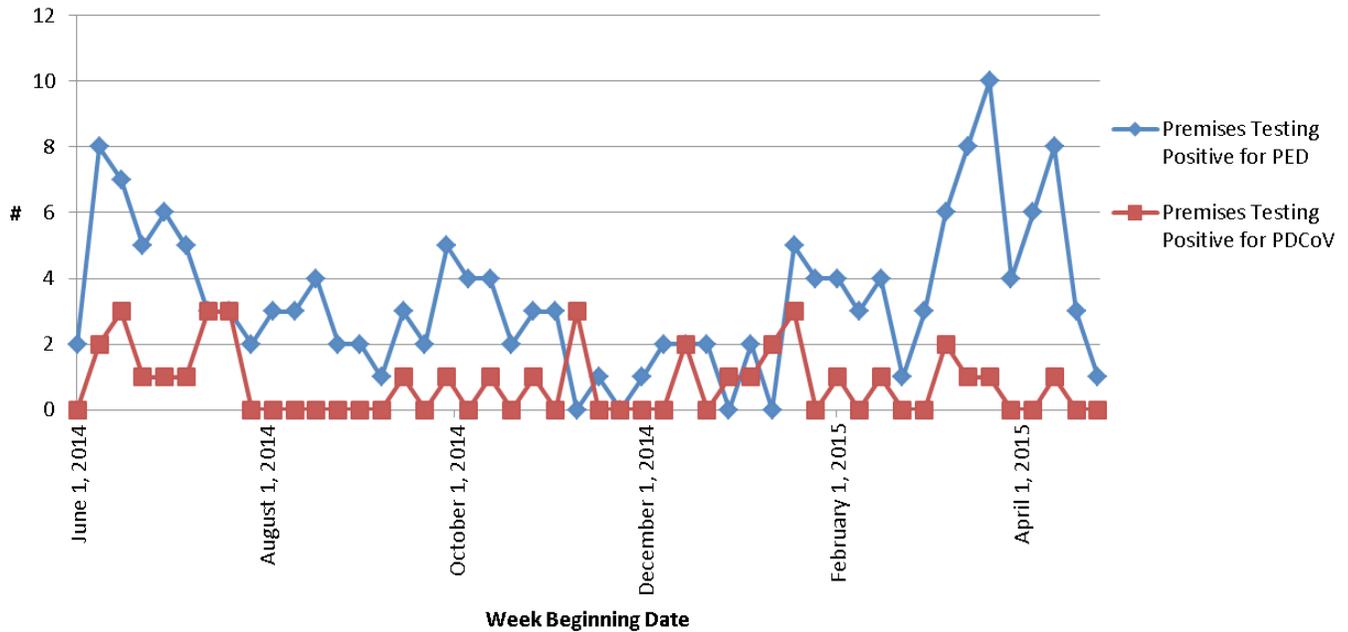
County PDCoV status
Based on most recent test for any farm



- Indiana Counties - Pos Tests PDCoV - Last test 5.02.15
- Indiana Counties - Neg Tests PDCoV - Last test 5.02.15
- Indiana Counties - No known testing

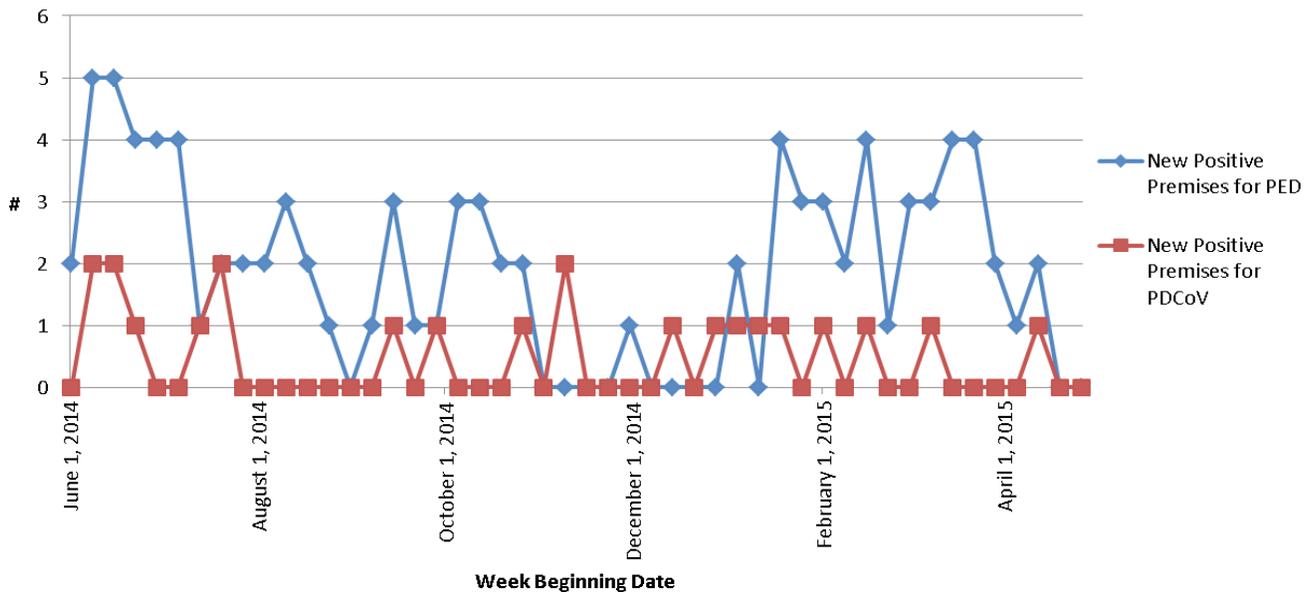
In addition to the overall number of premises testing positive and the number of premises positive based on the results of their last test, it is also informative to consider the distribution of premises testing positive by week. The first graph below depicts all premises testing positive each week. In this graph, a premises is counted as positive once per week for every week that it has a positive test result.

Premises Testing Positive by Week



The second graph depicts only premises that have had their first positive test result in a given week. Once a premises is counted as positive, it is not counted again in any subsequent week. Although the two graphs are not identical, and despite the differing criteria for inclusion of a given premises, the two graphs follow a similar pattern of peaks and dips.

Newly Positive Premises by Week



Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15
PED Testing

Four new PED Pos Farms since 4.04.15 Report
Two new Positive Counties - Johnson & Tippecanoe



-  Indiana Counties - PED Pos Farms since last report
-  Indiana Counties - PED Pos Tests thru 05.02.15
-  Indiana Counties

Indiana SECD Testing - USAHERDS Data
06/05/14 through 05/02/15
PDCoV Testing

One New PDCoV Farm - One New County - Perry



-  Indiana Counties - New PDCoV Pos Farms since prior report
-  Indiana Counties - Pos Tests PDCoV thru 4.04.15
-  Indiana Counties

SECD Data Available from USDA

The USDA releases a weekly summary report of SECD testing occurring within the United States. You may access the reports via the USDA APHIS website. At this website, a link to the “Weekly Situation Report” and “Situation Report Archive” may be found midway down the page, under the “SECD Reports” header.

A brief summary of the most recent Indiana data from USDA is included below; however, these numbers will likely differ from the numbers presented above. It is important to note that the USDA data does not include any environmental samples not directly associated with a farm site and live pigs (e.g., feed or swabs of livestock trailers, feed mills, markets, etc). In addition, the numbers reported here reflect only those accessions that have gone through the full USDA verification process, which typically takes about two weeks to complete.

	PED	PDCoV	PED + PDCoV
Number of Confirmed* Positive Premises	48	4	4
Number of Presumptive** Positive Premises	22	2	3

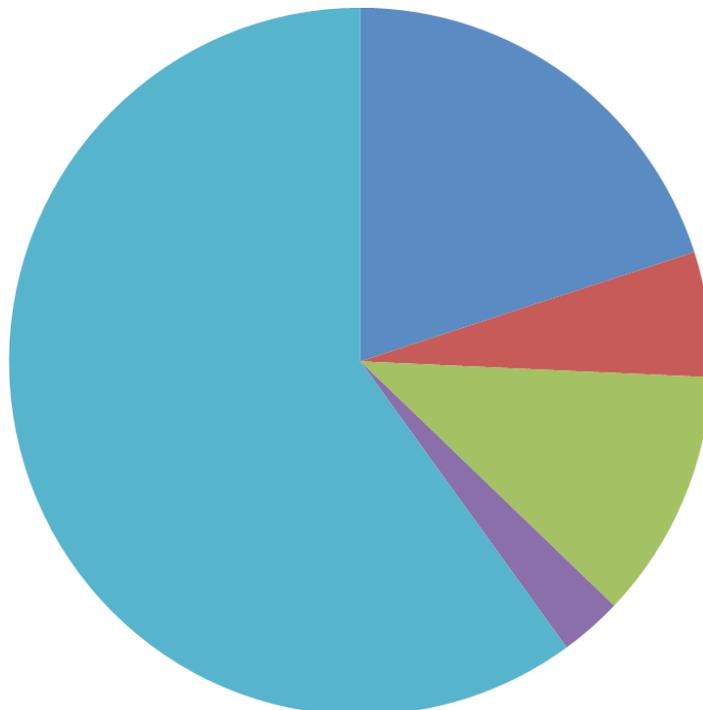
*Confirmed positive cases must have exhibited clinical signs and had a positive test

**Presumptive positive cases have a positive test, but the animals did not exhibit clinical signs

The table above provides a current count of Indiana’s premises classifications, as determined by the USDA criteria. The following pie chart represents newly positive premises since January 1, 2015 that have been through the USDA verification process and have been classified by production type by the herd veterinarian. As you can see from the pie chart, the largest representation comes from the Wean to Finish category.

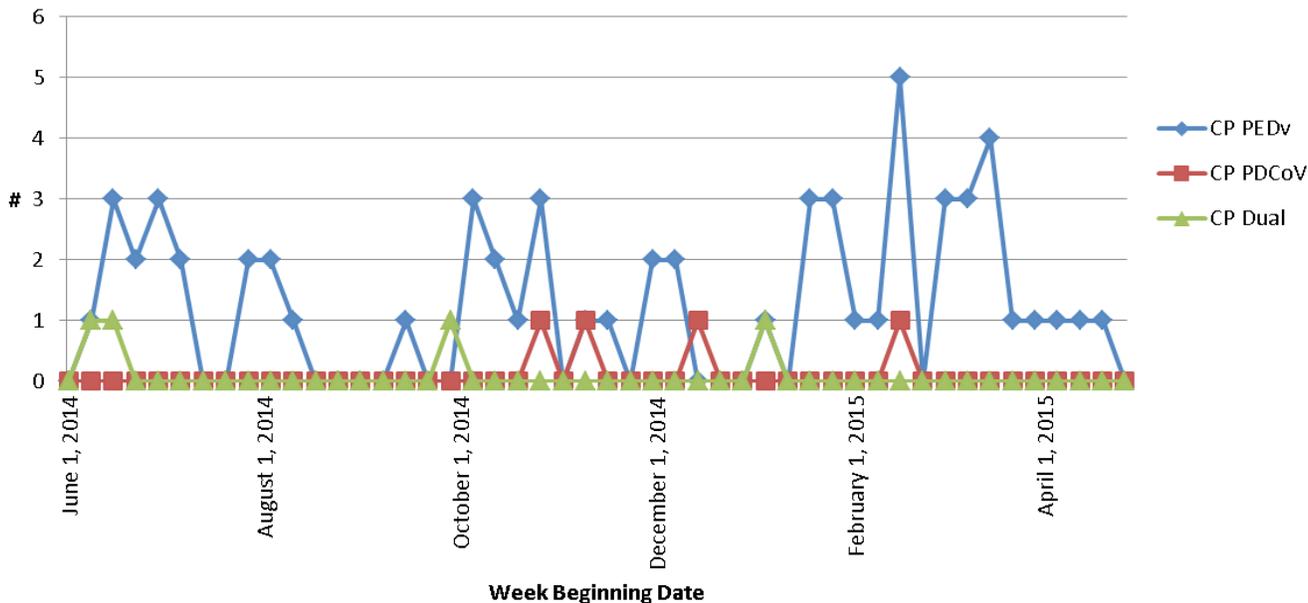
Category of Verified Newly Positive Premises Since Jan. 1, 2015

■ Sow/Breeding ■ Nursery ■ Finisher ■ Farrow to Finish ■ Wean to Finish



The two line graphs below provide a snapshot of premises classifications by week. In these graphs, a premise may be counted in more than one week if it was initially positive for only PEDv or PDCoV and subsequently found to be positive for both diseases, or if it was upgraded from an initial presumptive positive to a confirmed positive at a later date.

New Confirmed Positive Premises by Week



New Presumptive Positive Premises by Week

