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Swine Enteric Coronavirus Disease (SECD) Situation Report

February 13, 2015

Analysis of data received as of February 7, 2015

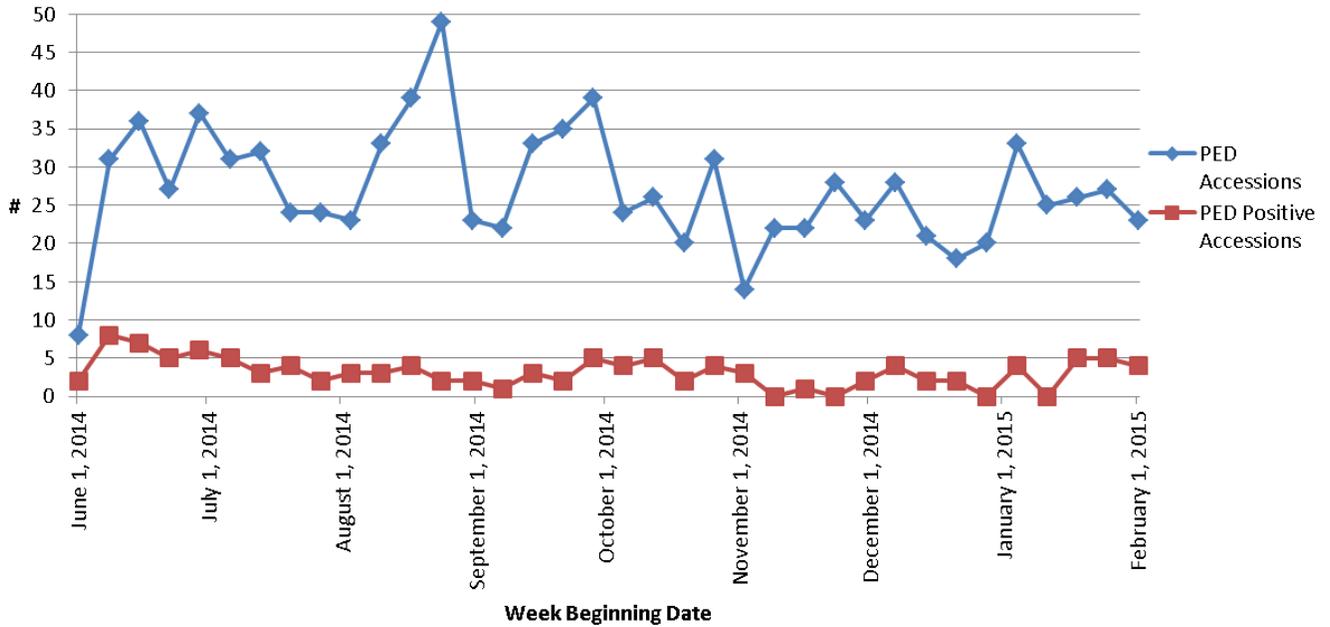
This report provides an update of Indiana activities under the USDA Federal Order, *Reporting, Herd Monitoring, and Management of Novel Swine Enteric Coronavirus Diseases*, effective June 5, 2014. The Indiana State Board of Animal Health (BOAH) will issue this report on a biweekly basis to summarize 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 99% 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

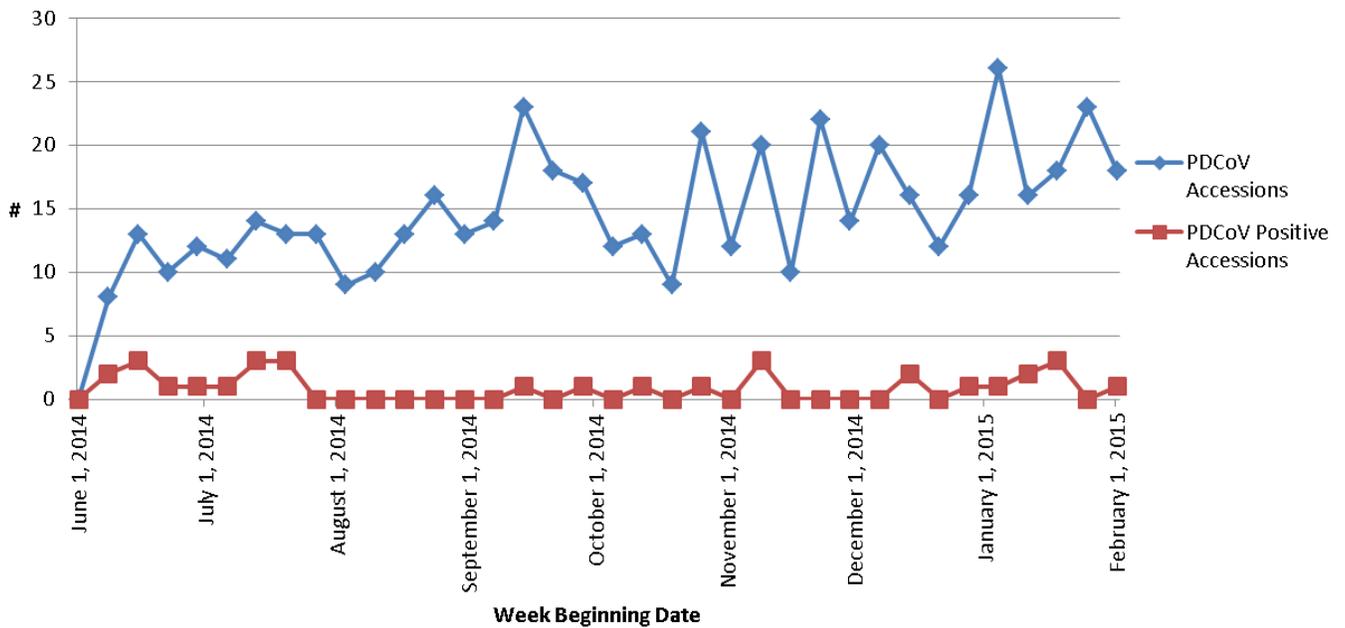
Summary Data – June 5, 2014 through February 7, 2015

Since June 5, 2014, the number of PED accessions ranged from 8 to 49 and averaged 27 accessions per week; PED positive accessions have ranged from 0 to 8 and averaged 3 positives per week. During this same time period, the number of PDCoV accessions ranged from 0 to 26 and averaged 14 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.

PED Accessions by Week

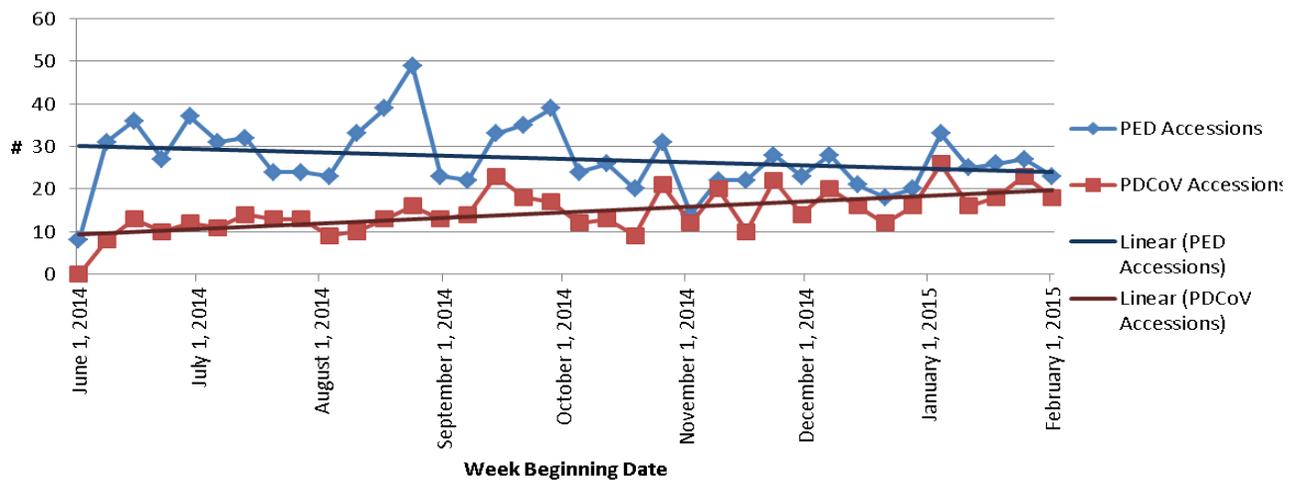


PDCoV Accessions by Week

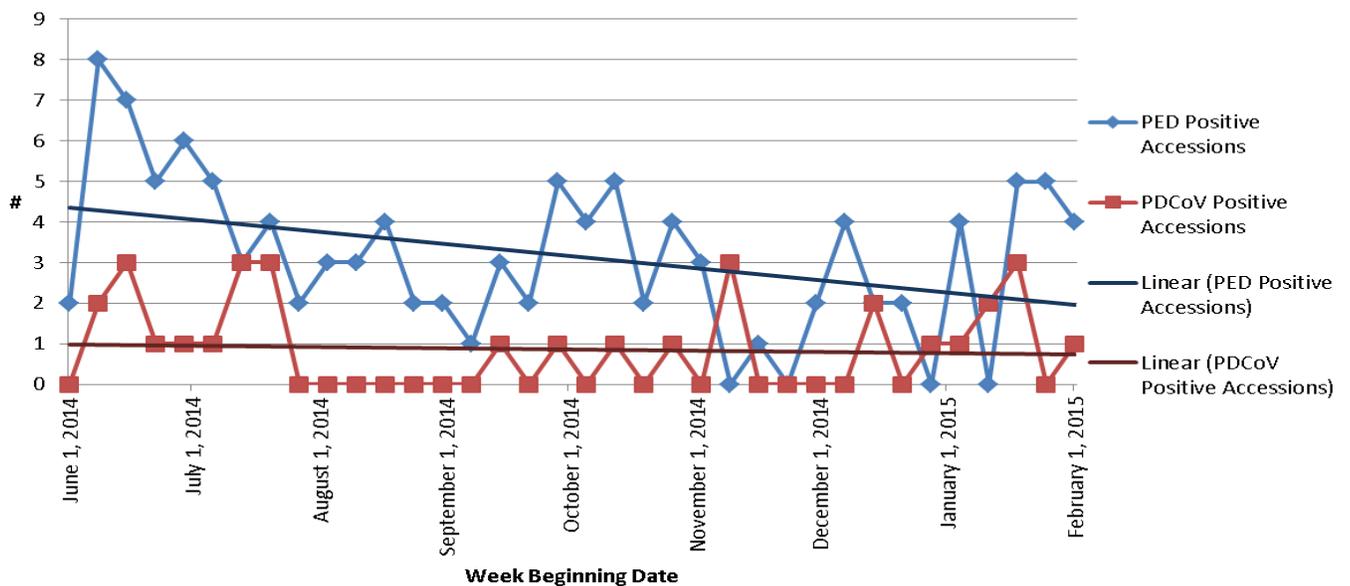


Although the number of accessions submitted for SECD testing has fluctuated from week to week since the beginning of the federal order, we have seen an overall downward trend in the number of PED accessions submitted each week, but an overall upward trend in the number of PDCoV accessions submitted each week. The upward trend in PDCoV submissions may be due to the fact that many labs have bundled testing for PED, PDCoV, and TGE. The number of positive accessions each week has trended downward for PED, but remained relatively stable for PDCoV. The following two graphs use linear trend lines to present these facts. 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

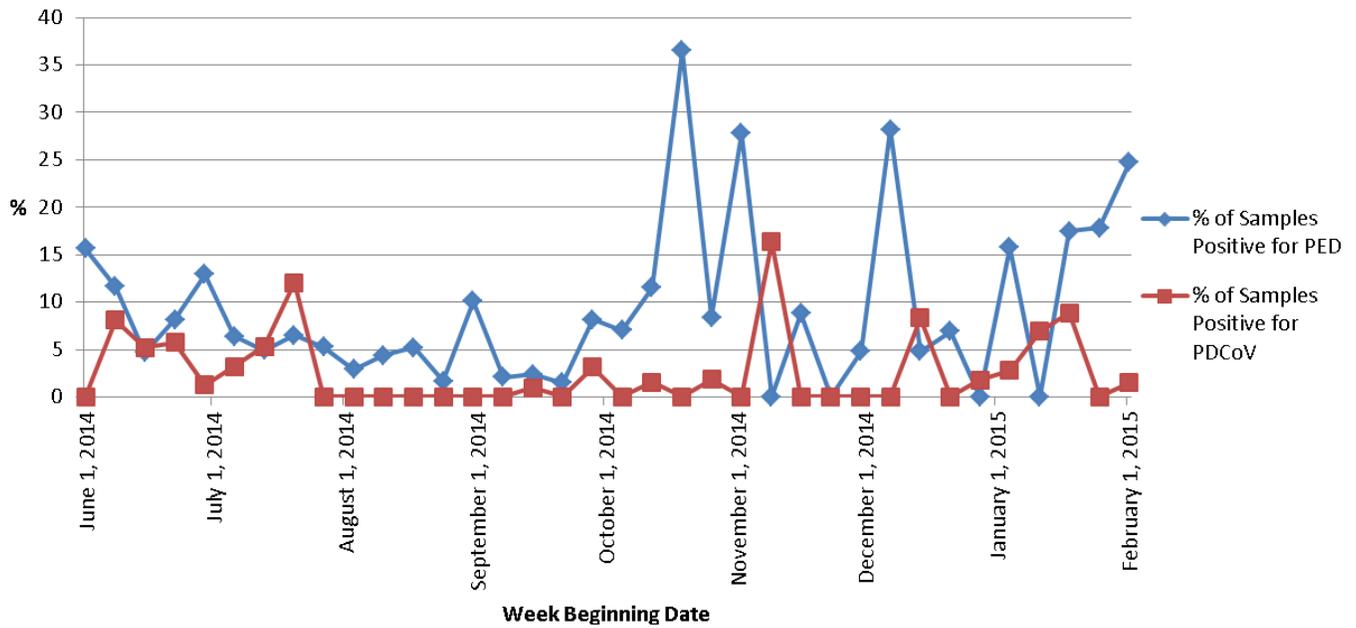


Trend in Positive Accessions by Week



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.

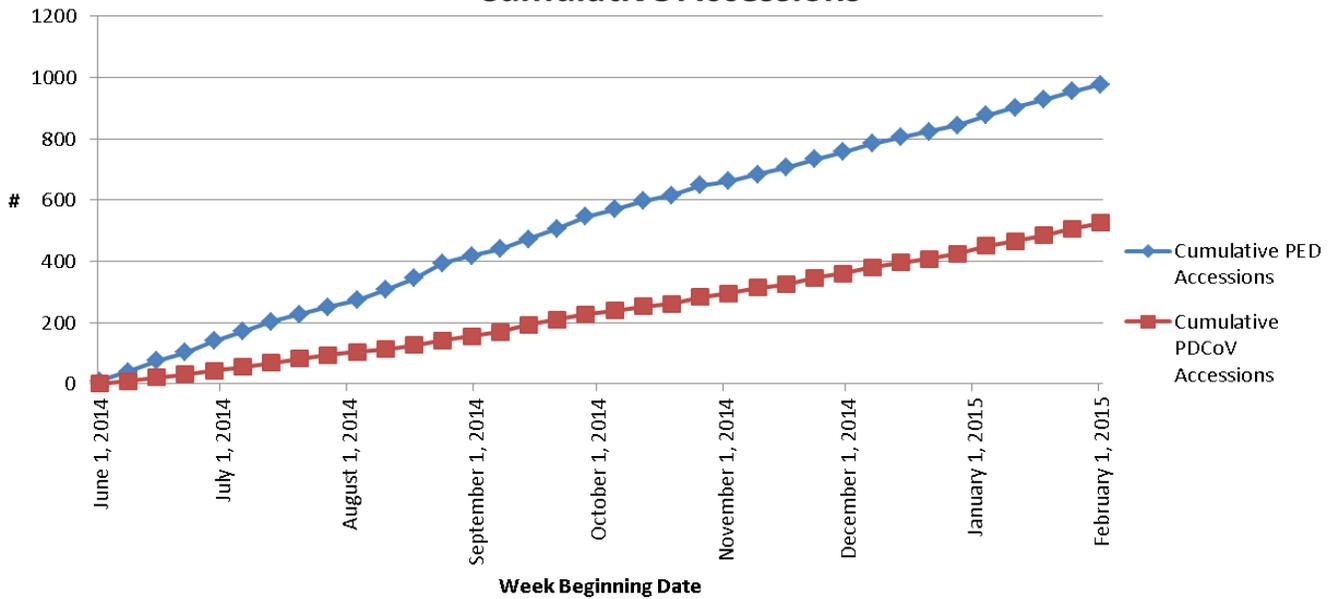
Percent of All Samples Testing Positive



Cumulative Testing Data – June 5, 2014 through February 7, 2015

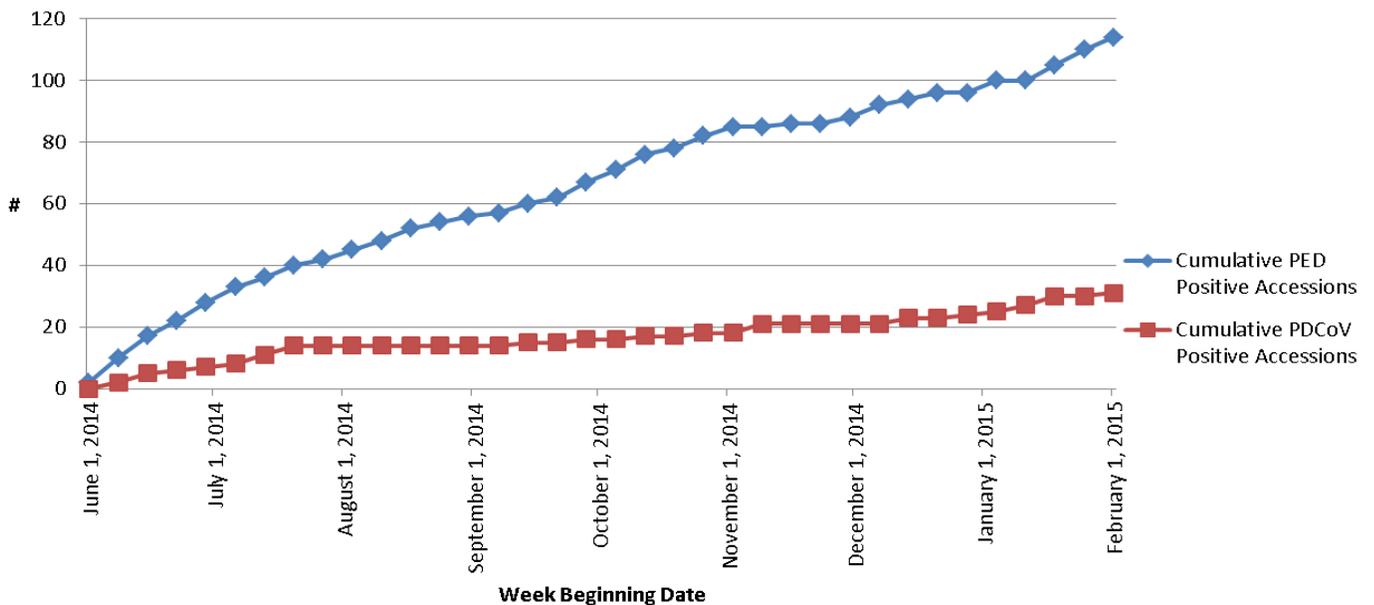
	PED	PDCoV	<i>Change from last Report— PED</i>	<i>Change from last Report—PDCoV</i>
Total Number of Accessions	977	525	52	43
Number of Positive Accessions	114	31	9	1
Number of Negative Accessions	863	494	43	42
Total Number of Samples Tested	4216	2074	200	155

Cumulative Accessions



Of all PED accessions, 11% have contained at least one sample that tested positive. This is true for only 6% 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 17 out of 36 weeks (47%). This is true for only 4 out of 36 weeks (11%) for the cumulative number of PED positive accessions. Initially, the cumulative number of PED positive accessions was increasing more steadily and more quickly than the cumulative number of PDCoV positive accessions, however all four weeks with zero PED positive accessions have occurred within the last three months.

Cumulative Positive Accessions



Cumulative Geographic Distribution Data – June 5, 2014 through February 7, 2015

SECD testing has been distributed throughout the state, with results reported for 61 of 92 counties (66%). 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. 32% of the premises and 60% of the counties that have submitted accessions for testing have had at least one positive result.

	Number Tested	Number with Positive Results
Premises	228	74
PED Only	85	55
PDCoV Only	4	8
PED+PDCoV	139	11
Counties	61	37
PED Only	9	23
PDCoV Only	0	6
PED+PDCoV	52	8

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 02/07/15

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



- Indiana Counties - PED Pos Tests thru 02.07.15
- Indiana Counties - PED Neg Tests Only thru 02.07.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 02/07/15

County PED status
Based on most recent test for any farm



- Indiana Counties - Last Test PED Pos thru 2.07.15
- Indiana Counties - Last Tests PED Neg thru 1.24.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 02/07/15

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 2.07.15
- Indiana Counties - Neg Tests Only PDCoV thru 2.07.15
- Indiana Counties - No known testing

Indiana SECD Testing - USAHERDS Data
06/05/14 through 02/07/15

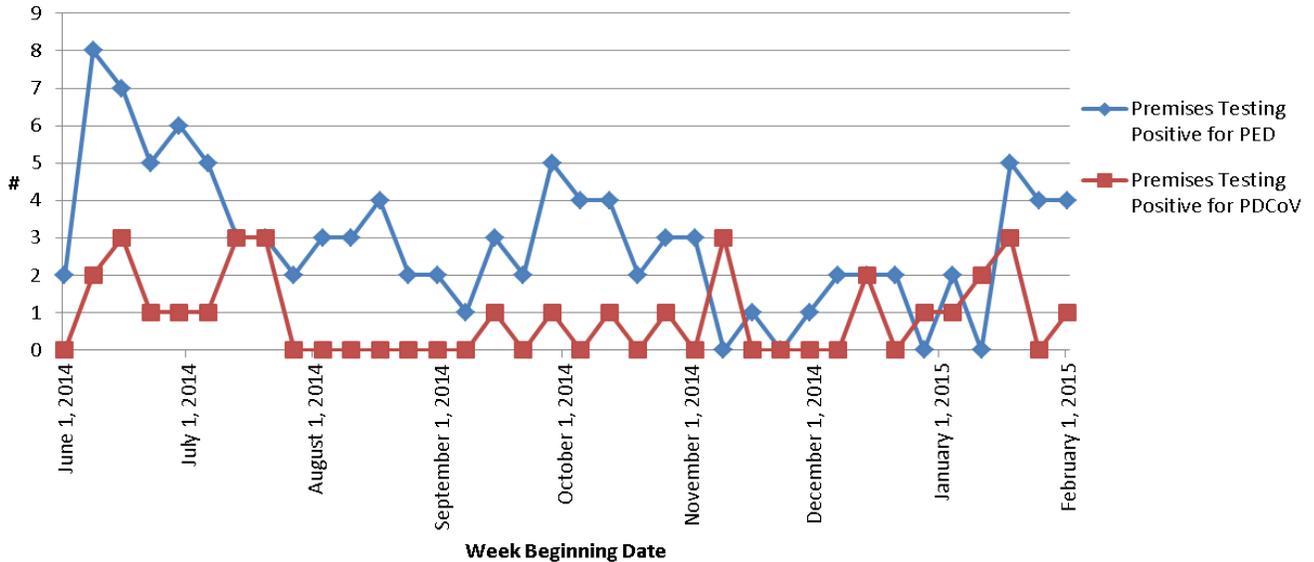
County PDCoV status
Based on most recent test for any farm



- Indiana Counties - Pos Tests PDCoV - Last test 2.7.15
- Indiana Counties - Neg Tests Only PDCoV - Last test 2.07.15
- Indiana Counties - No known testing

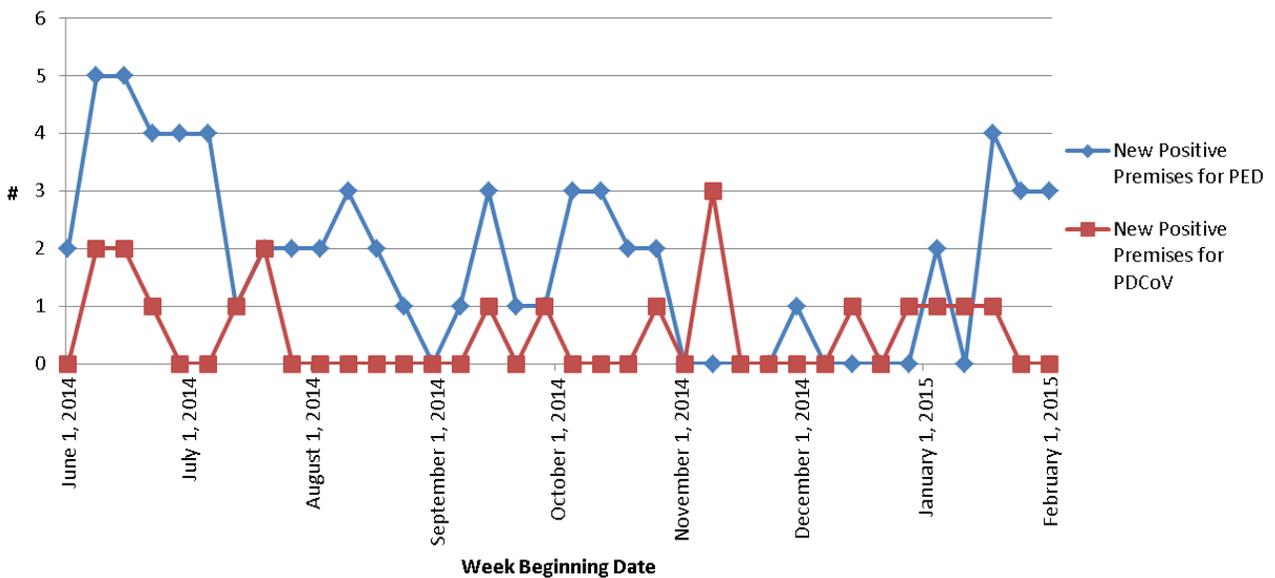
In addition to the overall number of premises testing positive and the number of premises positive based on the results of their last test, it is also informative to consider the distribution of premises testing positive by week. The first graph below depicts all premises testing positive each week. 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 02/07/15**

**Six new PED Pos Farms
One newly Positive County - Kosciusko**



-  Indiana Counties - New PED Pos Farms since prior report
-  Indiana Counties - PED Pos Tests thru 02.07.15
-  Indiana Counties - No known testing

**Indiana SECD Testing - USAHERDS Data
06/05/14 through 02/07/15**

**One new PDCoV Pos Premises
One New Positive County - Kosciusko**



-  Indiana Counties - New PDCoV Pos Farms since prior report
-  Indiana Counties - Pos Tests PDCoV thru 2.07.15
-  Indiana Counties

SECD Data Available from USDA

The USDA releases a weekly summary report of SECD testing occurring within the United States. The reports covering the most recent two weeks of data were included with the distribution of this report from the Indiana State Board of Animal Health. You may also 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.

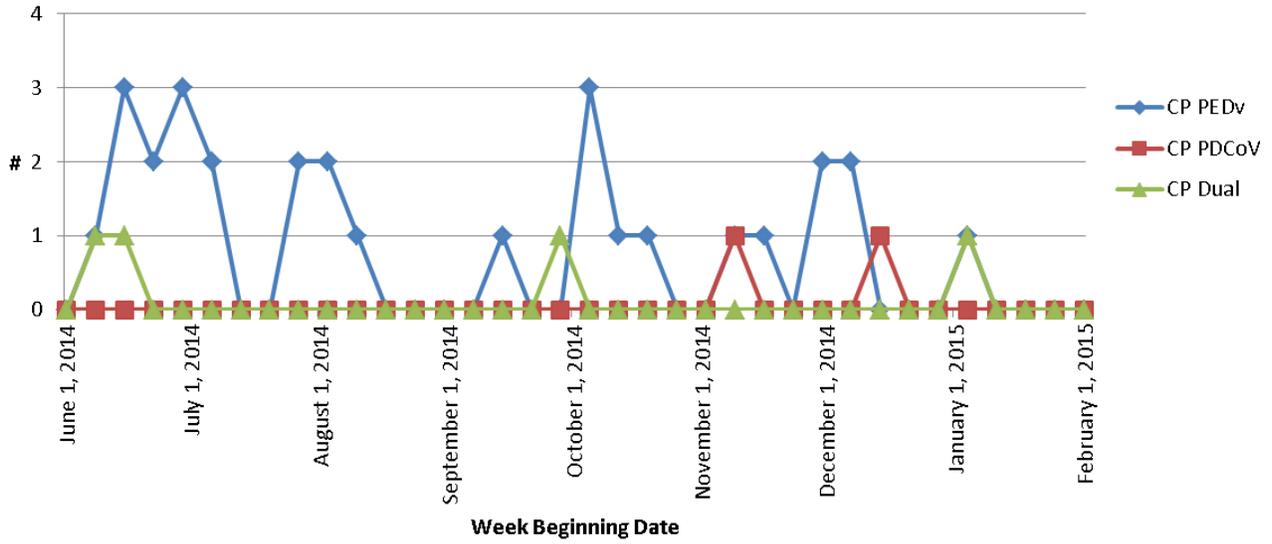
	PED	PDCoV	PED + PDCoV
Number of Confirmed* Positive Premises	27	2	4
Number of Presumptive** Positive Premises	18	1	3

**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 two graphs below provide a snapshot of premises classifications by week. In these graphs, a premises may be counted in more than one week if it was initially positive for only PED 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

