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## INDIANA STATE BOARD OF ANIMAL HEALTH

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### Swine Enteric Coronavirus Disease (SECD) Situation Report

**January 16, 2015**

*Analysis of data received as of January 10, 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.

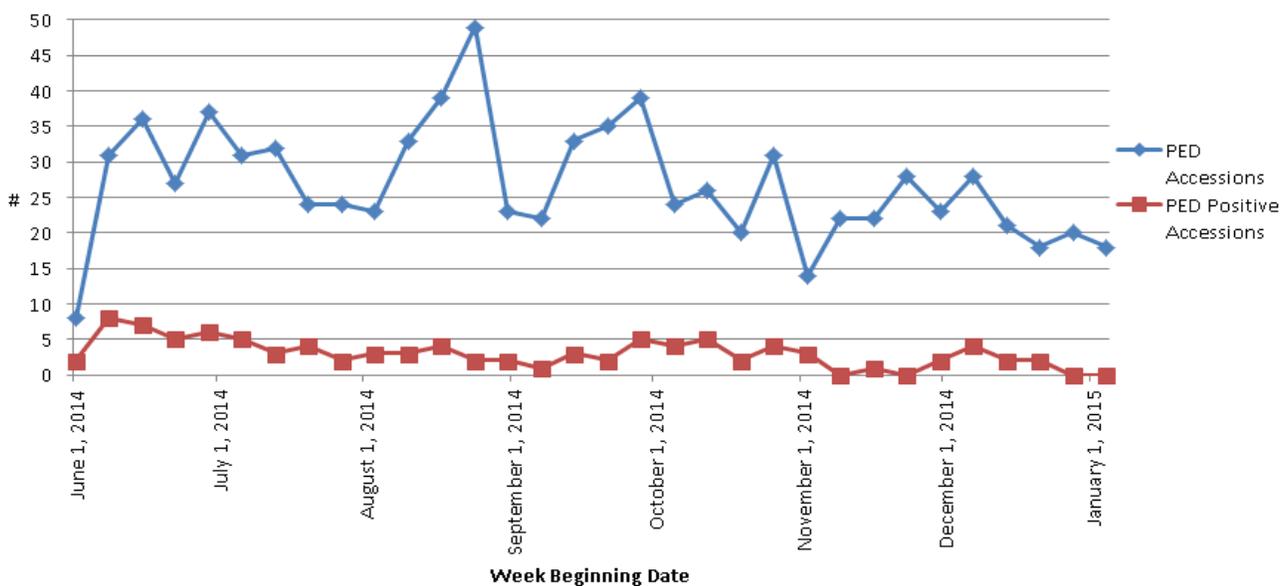
*This report is made possible because of Indiana's premises identification program and use of those numbers on disease reports to BOAH.*

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

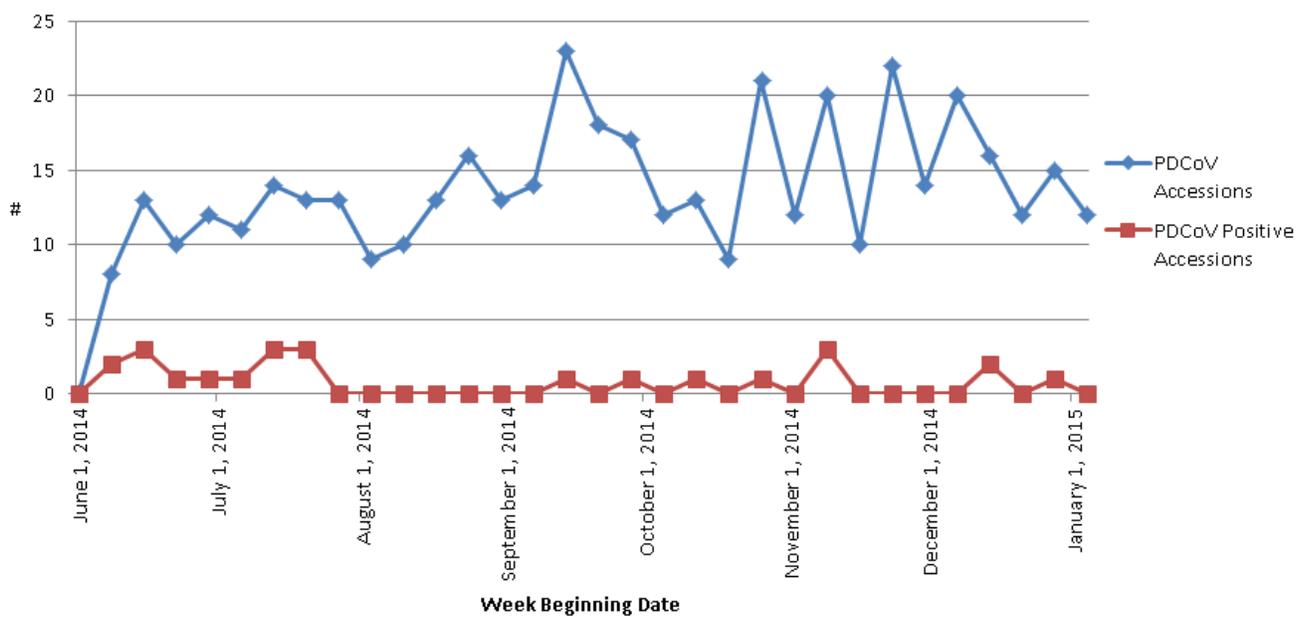
#### **Summary Data – June 5, 2014 through January 10, 2015**

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 23 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 in which at least one sample tested positive, and these may occur on a premises that previously tested positive.

### PED Accessions by Week

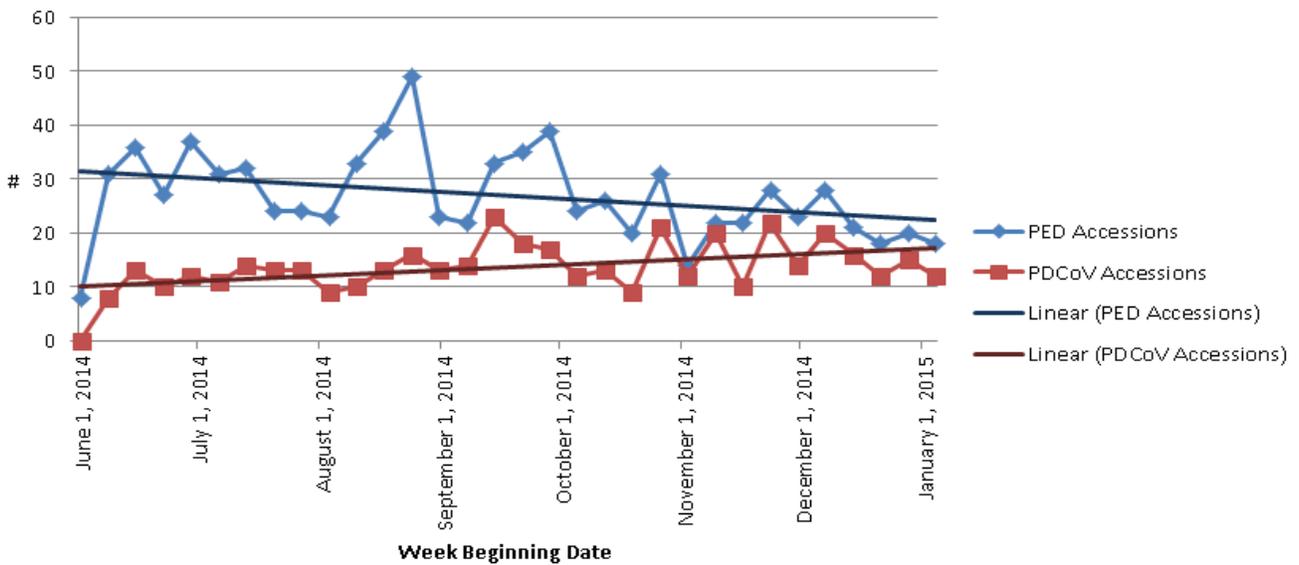


### PDCoV Accessions by Week

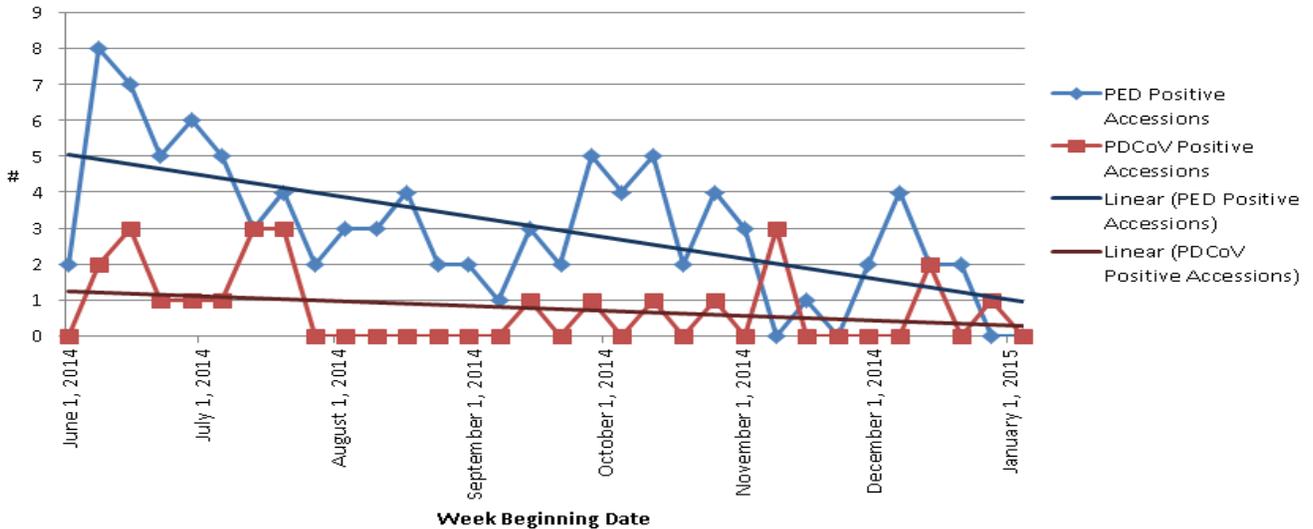


Although the number of accessions submitted for SECD testing has fluctuated from week to week since the beginning of the federal order, we have seen an overall downward trend in the number of PED accessions submitted each week, but an overall upward trend in the number of PDCoV accessions submitted weekly. Overall, the number of positive accessions each week has trended downward for both PED and PDCoV. These facts are demonstrated using linear trend lines in the following two graphs. A trend line provides a way to visualize the long-term trend in data and determine whether a particular data set have increased or decreased over a period of time. 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

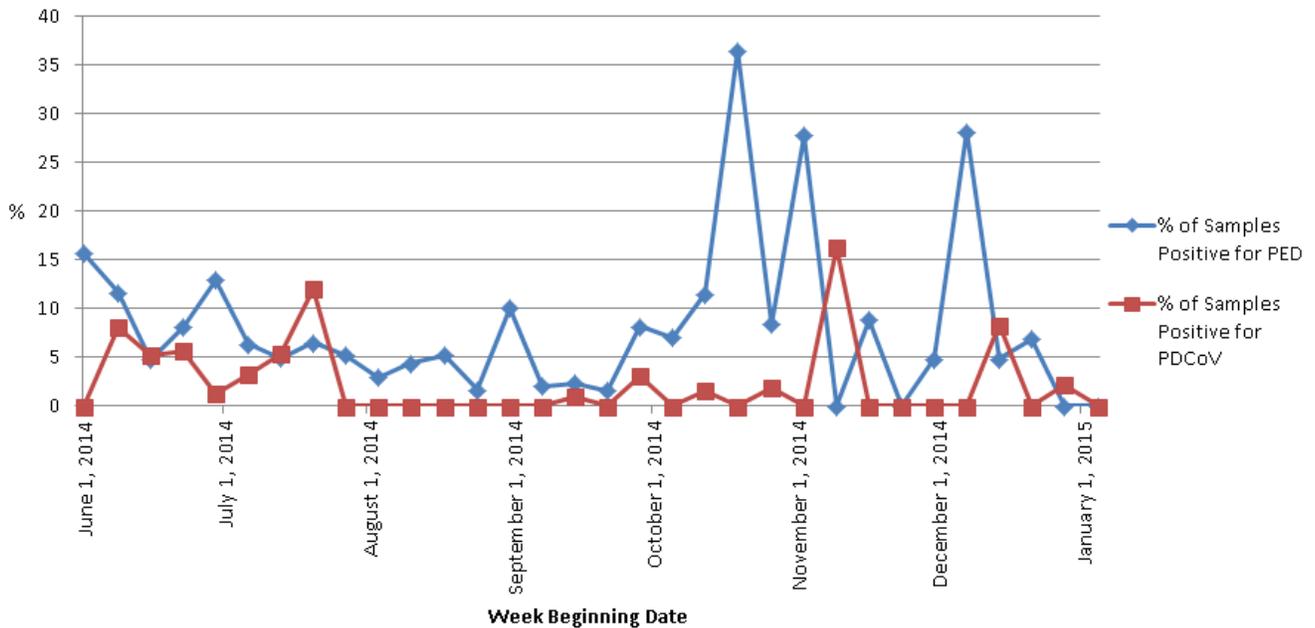


### Trend in Positive Accessions by Week



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 positives, 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.

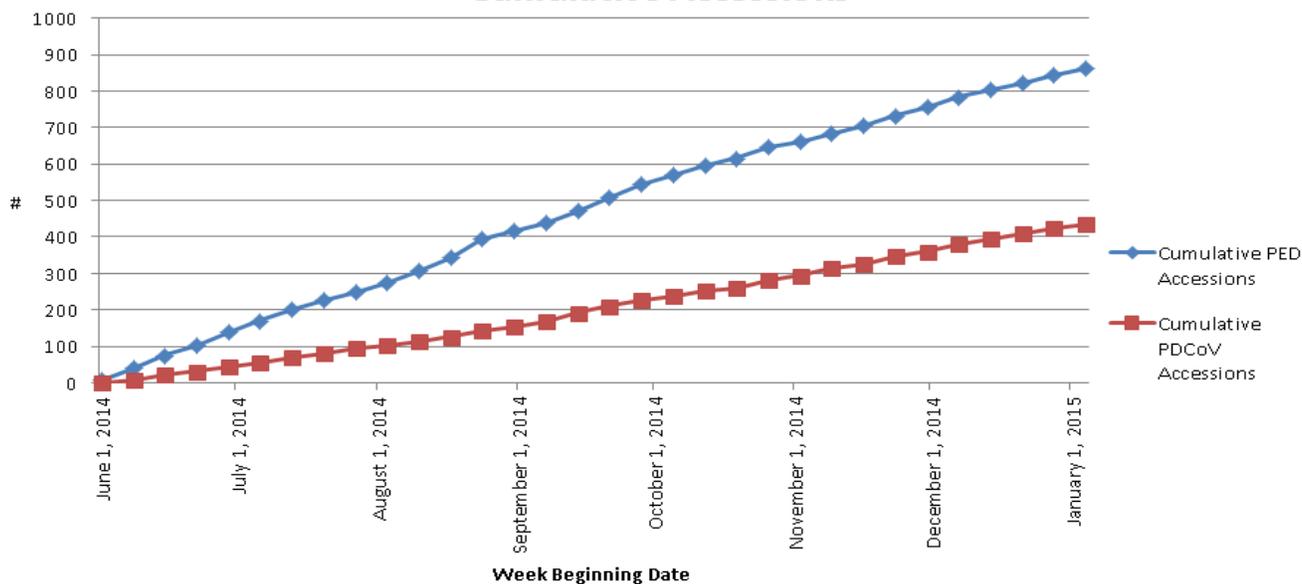
### Percent of All Samples Testing Positive



### Cumulative Testing Data – June 5, 2014 through January 10, 2015

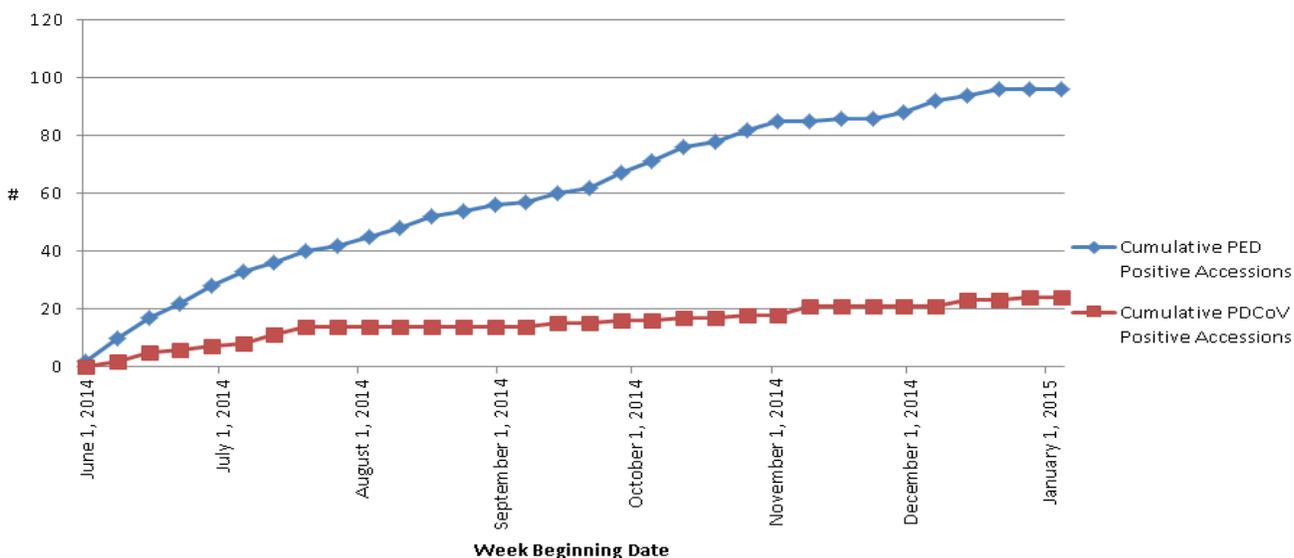
	<b>PED</b>	<b>PDCoV</b>	<b><i>Change from last Report— PED</i></b>	<b><i>Change from last Report—PDCoV</i></b>
Total Number of Accessions	861	435	88	62
Number of Positive Accessions	96	24	8	3
Number of Negative Accessions	765	411	49	59
Total Number of Samples Tested	3828	1762	477	176

### Cumulative Accessions



Of all PED accessions, 11% have contained at least one sample that tested positive. This is true for fewer than 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 32 weeks (53%). This is true for only 4 out of 32 weeks (13%) 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 4 weeks with zero PED-positive accessions have occurred within the last 2 months.

### Cumulative Positive Accessions



**Cumulative Geographic Distribution Data – June 5, 2014 through January 10, 2015**

SECD testing has been distributed throughout the state, with results reported for 58 of 92 counties (63%). 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. At least one positive result has been identified in 31% of the premises and 59% of the counties that have submitted accessions for testing.

	<b>Number Tested</b>	<b>Number with Positive Results</b>
<b>Premises</b>	199	62
PED Only	81	46
PDCoV Only	3	7
PED+PDCoV	115	9
<b>Counties</b>	58	34
PED Only	10	22
PDCoV Only	0	6
PED+PDCoV	48	6

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 result.

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.

When the two maps are compared for each virus, a difference of four counties for PED and six counties for PDCoV is revealed. The fact that more premises have tested positive for PED than PDCoV is likely one of the reasons that fewer counties have “gone negative” for PED, based solely on the results of their last test.



# Indiana SECD Testing - USAHERDS Data 06/05/14 through 01/10/15

*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 1.10.15
- Indiana Counties - Neg Tests Only PDCoV thru 1.10.15
- Indiana Counties - No known testing

# Indiana SECD Testing – USAHERDS Data 06/05/14 through 01/10/15

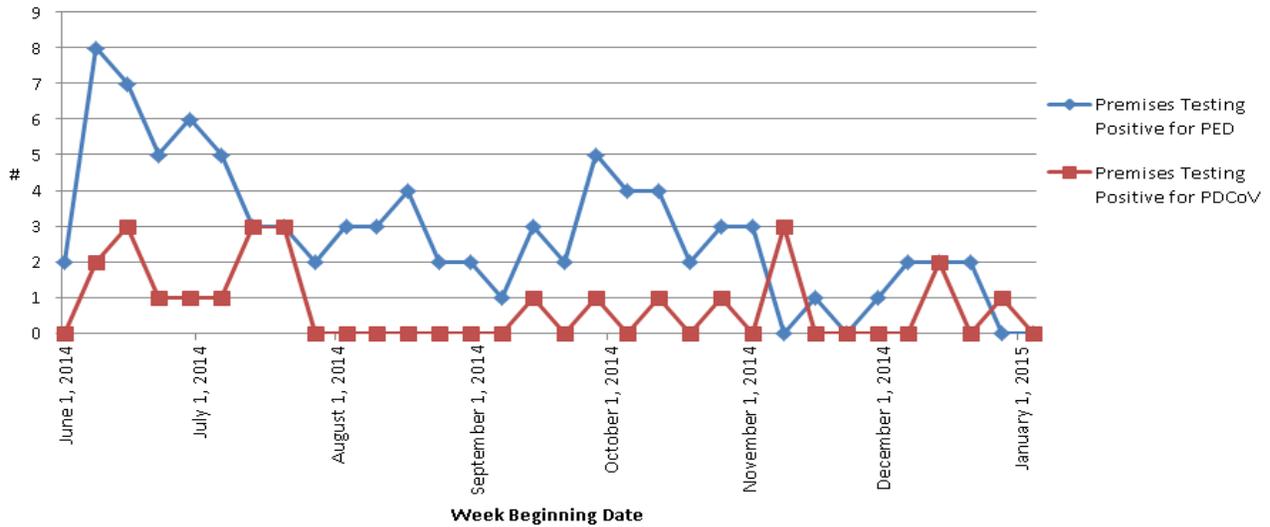
*County PDCoV status*  
**Based on most recent test for any farm**



- Indiana Counties - Pos Tests PDCoV - Last Test for each Farm
- Indiana Counties - Neg Tests PDCoV - Last Test for each Farm
- Indiana Counties - No known testing

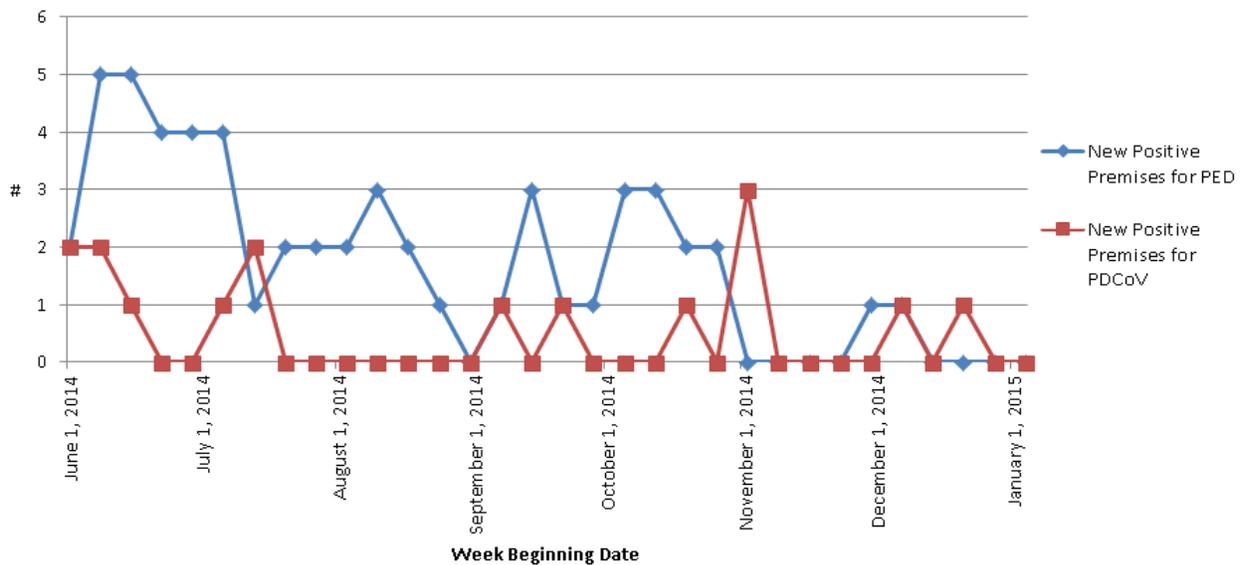
In addition to the overall number of positives tests and their latest results, consideration of the distribution of test-positive premises by week is informative. The first graph below depicts all premises testing positive each week. In this graph, a premises is counted as positive once per week for 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, the site 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 an extremely similar pattern.

**Newly Positive Premises by Week**



## 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 2 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 2 weeks to complete.

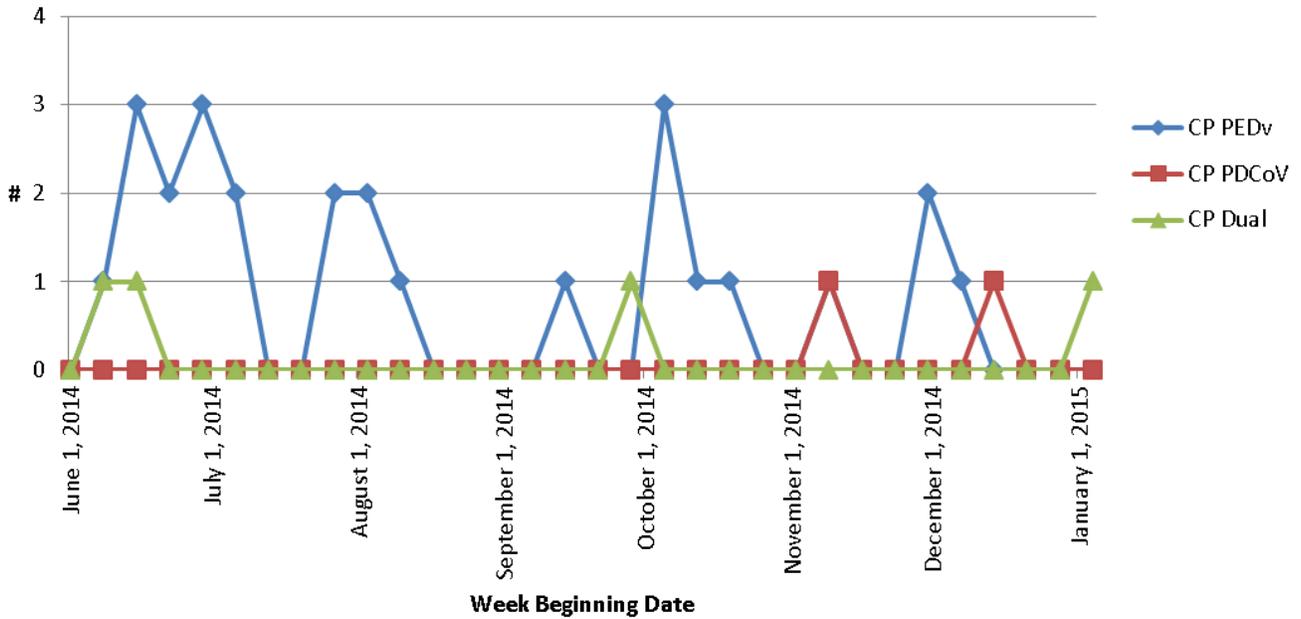
	<b>PED</b>	<b>PDCoV</b>	<b>PED + PDCoV</b>
Number of Confirmed* Positive Premises	21	2	3
Number of Presumptive** Positive Premises	18	1	3

*\*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

