

Continued reporting of Unusual Central Nervous System cases

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If you have any follow up questions or comments, please don't hesitate to contact Carles Vilalta, Juan Sanhueza or Emily Geary at cvilalta@umn.edu, jsanhuez@umn.edu, or shmp@umn.edu.

Key points

- An apparent increase in the number of cases associate with atypical neurological signs have been observed over the last two years
- Since then, the Veterinary Diagnostic Laboratories (VDLs) have identified a set of criteria required to meet the CNS case definition.
- MSHMP will continue reporting CNS cases diagnosed at the KSU, ISU, SDSU, and UMN VDLs

Last September after suspecting an increase in unusual central nervous system (CNS) cases over the past two years, the Swine Health Information Center (SHIC) began working with experts at the Veterinary Diagnostic Labs of Iowa State University, South Dakota State University and the University of Minnesota, later joined by Kansas State University, to develop a case definition and report cases.

The initiative documented cases throughout the central and eastern US with one case in Canada. Findings were reported in the March 17, 2017 edition of the Bob Morrison's Swine Health Monitoring Project (MSHMP) report. SHIC has requested that the MSHMP group continue monitoring CNS cases in conjunction with the four VDL's.

The emerging concerns regarding CNS cases was based on increasing mortality and unthriftiness associated with atypical CNS signs commonly characterized by tremors, muscle weakness and ataxia. The cases being monitored are caused by porcine teschovirus (PTV), Porcine enteroviruses (PEV), porcine sapelovirus (PSV), and atypical porcine pestivirus (APPV).

The variation among the clinical history, disease presentation, and pathological changes associated with these cases brings significant subjectivity and difficulties for establishing clear criteria for case definition. Confirming a positive PTV, PEV, or PSV case includes three components, namely, identifying the clinical signs, a positive PCR test for one or more of the viruses, and histological results consistent with viral encephalitis from spinal cord or brain tissue. APPV cases show clinical signs and positive PCR, but usually do not display histological signs.

Cases that have met two out of three of the criteria have previously been reported positive in SHIC findings. After reviewing the original dataset it was decided to report cases as positive if they meet all three components (clinical signs, positive PCR, and histological evidence from spinal or brain tissue). APPV cases must show clinical signs and a positive PCR. This will increase standardization of cases, provide a conservative sense of the prevalence of the diseases, and avoid false alarms. We will continue to gather submissions, geographical information, and data allowing us to determine patterns in increased reporting of cases and disease occurrence. Reporting will occur every month and the cases will be tracked in the MSHMP weekly report. Our goals are to monitor the diseases and analyze the data in order to provide information and value to practitioners, diagnosticians, and the industry at large.

The MSHMP, the VDLs and SHIC encourage practitioners to watch for CNS cases and to submit samples for testing to the laboratories for diagnosis.

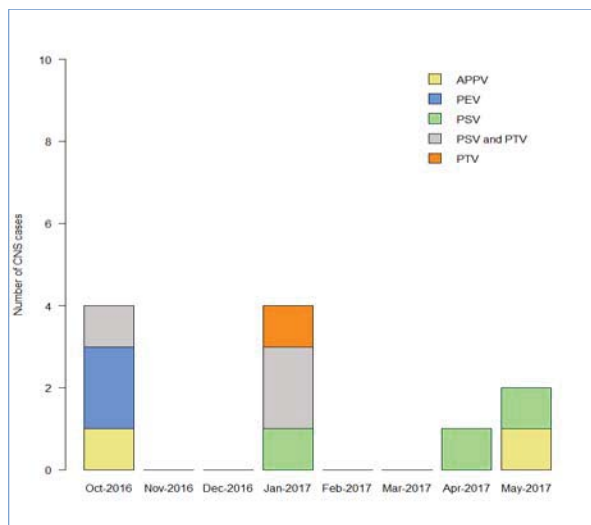


Figure 1: Positive cases meeting conservative case definition

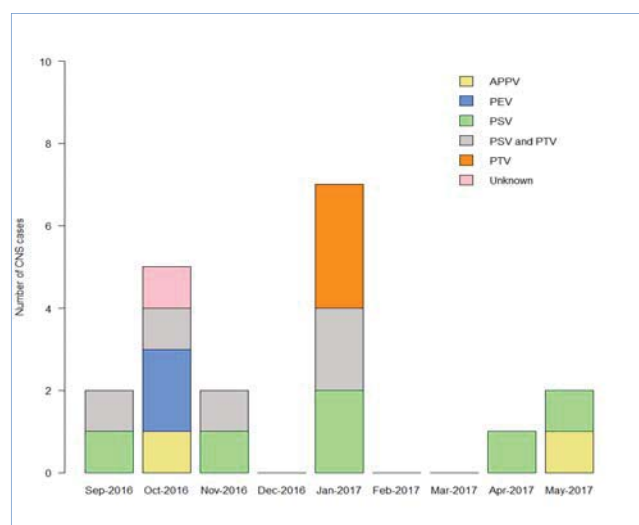


Figure 2: All cases reported including cases displaying 2 of 3 criteria

Additional CNS resources

Original report on SHIC CNS findings https://www.vetmed.umn.edu/sites/vetmed.umn.edu/files/shmp_2016117.38_unusual_central_nervous_system_cases-science_page.pdf
 SHIC support for diagnostic fees <http://www.swinehealth.org/shic-support-for-diagnostic-fees/>
 Original Guidelines and information on CNS <http://www.swinehealth.org/cnscases/>