

TITLE

SWINE DISEASE REPORTING SYSTEM – AN ONLINE DASHBOARD TO COMMUNICATE AGGREGATED DIAGNOSTIC LABORATORY RESULTS FROM US SWINE

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Background and objectives

Historically, data from veterinary diagnostic laboratories (VDLs) regarding pathogen detection frequency and diseases are intermittently provided to the public through publications or proceedings. In the USA, there is no single data source to access aggregated diagnostic test results from VDLs. The purpose of this project was to develop a user-friendly informatics tool to summarize and report routine pathogen detection from samples submitted to participating VDLs over time.

Material & methods

Information from submission forms, tests performed, and test results from swine cases submitted to four VDLs (Iowa State University, University of Minnesota, South Dakota State University, and Kansas State University) were retrieved and aggregated using PROC DATA and PROC SQL scripts on SAS 9.4. Data were standardized and reported by age category, specimen, season, year, and state. Data included test PCR-based results for Porcine Reproductive and Respiratory Syndrome Virus (PRRSV), Porcine Epidemic Diarrhea Virus (PEDV), Porcine Deltacoronavirus (PDCoV), Transmissible Gastroenteritis Virus (TGEV), and Mycoplasma hyopneumoniae (MHP). The aggregated, and anonymized dataset was uploaded to Microsoft Power BI for dynamic charts/visualization.

Results

Altogether, results from the past 5 years were reported. There was a seasonal trend on the detection of the PRRSV, PEDV, PDCoV, and TGEV with a higher percentage of positive cases during winter or spring months, and MHP during fall. The frequency of detection of TGEV has decreased precipitously and has virtually a disappearance of TGEV since the emergence of PEDV and PDCoV.

Discussion & Conclusion

This informatics tool is known as the Swine Disease Reporting System, available at www.powerbi.com, username sdrs@iastate.edu, password Bacon 100. Monthly reports are distributed by email. SDRS is a user-friendly tool that provides interactive information regarding swine pathogen detection aggregated from 4 VDLs, with the ability to be updated on a near real-time basis and allowing rapid visualization, thus keeping the swine industry informed regarding pathogen detection.