

## **SWINE HEALTH SYNDROMIC SURVEILLANCE BASED ON CLINICAL SIGNS AND PRESUMPTIVE DIAGNOSIS DATA REPORTED AT FARM LEVEL**

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### **Introduction**

The development of data mining and time series analyses allows extracting information of the health swine population at almost real time from non-specific data. In the North-Eastern Spain, the Grup de Sanejament Porci (GSP) implemented an open web application to collect, transfer and store data of clinical signs and presumptive diagnosis detected in pig farms by veterinary clinicians. This study assessed the potential of this system for animal health syndromic surveillance using retrospective data.

### **Material & Methods**

The population covered comprised data collected in Aragon, Catalonia and Navarra regions between January 2012 and January 2017. The most relevant clinical signs and presumptive diagnoses were analyzed and modeled in order to assess the spatiotemporal baselines. All analyses were conducted using the “base” , “surveillance “ and “sp” packages of the statistical software R.

### **Results**

A total of 8,547 clinical outbreaks were analyzed from 1,337 farms of 33 counties, mostly fattening farms. Respiratory clinical signs were the most reported, followed by digestive and nervous signs. Respiratory outbreaks were associated mainly with porcine respiratory complex diseases such as swine influenza, mycoplasmosis or PRRSV; followed by Pasteurellosis, swine pleuropneumonia and Glasser’s disease. Digestive outbreaks were associated mainly with colibacillosis, clostridiosis and swine dysentery. Nervous and locomotor outbreaks were attributed to *Haemophilus parasuis* and *Streptococcus suis* infection and reproductive outbreaks mainly to PRRSV infection.

## **Discussion & Conclusion**

The application of GSP allowed the monitorization of health problems at population level associated with endemic diseases, studying their spatio-temporal evolution and identifying subpopulations of risk. The information provided by the system demonstrates to be useful to identify the increase of incidence of diverse clinical problems in different subpopulations. A more prolonged implementation of this system in all the population would provide robust swine health information at near real time and contribute to improve the decision-making and health management.