~~DRAFT~~ FINAL ABSTRACT

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TITLE:

~~UK SURVEILLANCE: DETECTION AND ALERT~~ OF ~~ABNORMAL TRENDS USING RADAR~~

UK SURVEILLANCE: SCANNING SURVEILLANCE REPORTS – UNDERSTANDING THE MESSAGE

THEME: 8. EMERGING ISSUES

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The UK Veterinary Surveillance Strategy, launched in 2003, seeks to increase the likelihood of early detection of new diseases by maintaining scanning surveillance of animal populations in which the occurrence of a new disease could have the greatest impact. This is achieved in part through the monitoring and reporting of diagnoses made in veterinary diagnostic laboratories. This approach targets clinically affected animals for which the veterinarian has sought laboratory aid to diagnosis, and biases the chances of detection towards those syndromes which the veterinarian cannot diagnose through clinical signs and history alone. This bias is useful, as such animals are arguably more likely to have a new disease, but can only form part of such surveillance as it excludes all others.

To understand the value and limitations of such surveillance, a project has been established to design a standard approach to reporting laboratory diagnostic data, which includes an indication of the denominator and potential confounding factors. The approach will consider the use of a standard 'quality statement' to accompany each report, such as has been designed for the quantitative reports generated from our information management system 'RADAR'. This could describe the likely population coverage, likely omissions, quality standards in participating laboratories, etc., and help to define additional surveillance needs.

This paper presents the quality guidelines and statement template produced, and discusses the issues surrounding their use, including the practicality of applying them to reports from other sources.

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~~THEME: 5. EVALUATION OF ANIMAL DISEASE~~

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Abstract:

One of the main functions of the Rapid Analysis and Detection of Animal-related Risks (RADAR) system is to assist in detecting new or emerging diseases earlier that would otherwise be the case. This is achieved by the timely provision of data and the conduct of relevant analyses. Because of the number of reports that will be produced using RADAR, an automated method of detection of unexpected results is required. Unexpected results may fall outside a set threshold required for notification or intervention. However, more commonly trends need to be analysed against previously reported estimates. Indeed, identifying clusters in time is one of the first requirements for the investigation of a disease process. RADAR is able to present data in time-series, spatially and temporal-spatially, and therefore, different analyses are required to detect unexpected results in each of these formats.

The Scan Statistic Test (SST) identifies abnormal numbers of cases within a specified time period, but assumes a relatively constant background population. Thus, the SST may be appropriate for some analyses conducted using RADAR (e.g. number of new incidents of salmonella in a herd) but may not be as appropriate when used for others (e.g. salmonella incidents in calves under 3 weeks of age) where the population fluctuates according to calving times. A generalised SST can be used to accommodate changes in the size of population at risk.

This paper discusses the development and use of temporal detection and alerting systems for use in RADAR.

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