



Syndromic Surveillance by PVS – feasibility trial

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Background



AHDB-Pork funded project:

The development of an effective methodology for monitoring health and welfare status in the pig industry and to establish the current baseline health and welfare status of pigs in England

Initial PVS on-line survey



Twenty pig practitioners/pig practices/pig company vets gave their opinions on use of pig practitioner data for pig disease surveillance

- ~ 90% - PVS data valuable in providing baseline syndromic/disease data and early warning disease data
- Clinical/syndromic data was preferred to disease/diagnosis data
 - Confidentiality;
 - Standardisation;
 - Lack of (veterinary) time;
 - Uneven coverage of units.

Main constraints identified:

The trial

Aim



Evaluate the feasibility (including practicality) of data gathering and submission by PVS, which could be of use as an integral component of an animal health and welfare monitoring and syndromic surveillance programme.

The trial ...



- Standardised recording forms:
 - Unit baseline data - customised Excel database
 - Disease incident reports – on-line web server
- May to July 2013
- PVS were paid to participate
- Started with a standardisation day
- Eight PVS recorded data over a 6-week period
- Attending PVS and pig units each had unique identifiers

Data collected



Unit baseline data



- Purpose of unit
- Size – nominal pig numbers
- Management – basics (e.g. source of growing pigs)
- Accommodation
- Vaccinations
- Questions separated for breeding and growing herd
- PHIP health status
- Unit identification was kept confidential (only county was provided)

Pig disease incident reports



A disease incident report should be generated if there is a change in clinical signs and/or mortality beyond the background for the pig unit which is remarkable to the attending pig veterinary surgeon. The report may be of a disease incident which has been ongoing for some time before they are first discussed with attending vet at, for example, a quarterly visit. The report should include both suspected upsurges/recrudescences of clinical signs/diseases known to be an issue for the farm and possible new disease incidents – the determining factor for a report being generated is that the veterinary surgeon considers the clinical signs/disease to be above the 'norm' for the pig unit, this would suggest an intervention was likely to be considered. If in doubt, veterinarians should report disease incidents.

Pig disease incident reports



- Date and type of vet contact
- Affected pigs – age(s) and stage(s) of production
- Clinical signs – duration, predominant signs
- Morbidity and mortality
- Recrudescence/new disease/not known
- Predominant clinical syndrome
- Provisional diagnosis if made

Pig disease incident reports – follow up



- Does disease incident remain of concern?
 - No – resolved
 - No – not resolved but reduced incidence/interventions made and no longer of concern
 - Yes – ongoing and of concern
 - Not known
- Has a diagnosis been made – provisional or confirmed
- Confirmed diagnosis - what and how made
- Other comments



Results

Results



- 110 unit baseline data
 - from 81 routine visits plus 29 from units with disease

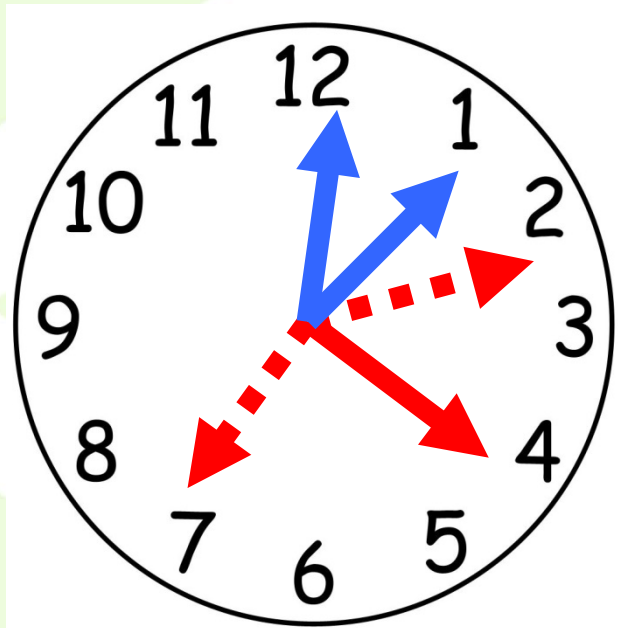
Contact type		%
68	Post-mortem examinations performed	
	No	77.9
	Yes	22.1
Yo	Veterinary Visit - Other	7.4

- Mostly indoor units, and continuous
- Majority tested or supposed negative for PRRSv

Time taken for reports – from post-trial survey

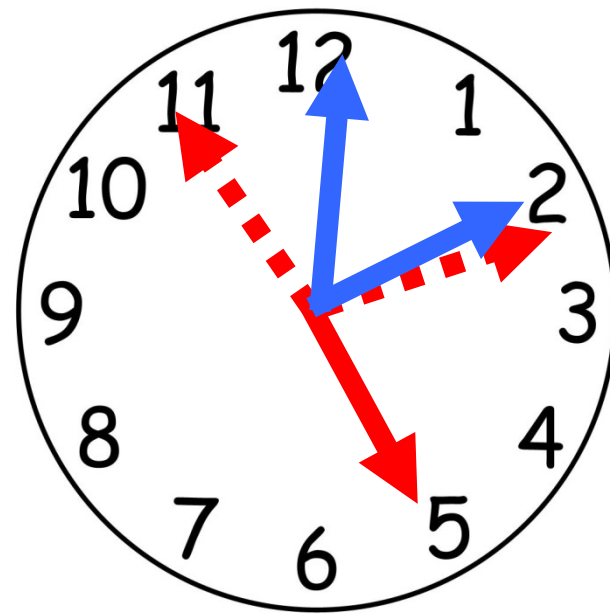


Unit baseline



Average 22 minutes

Disease incident



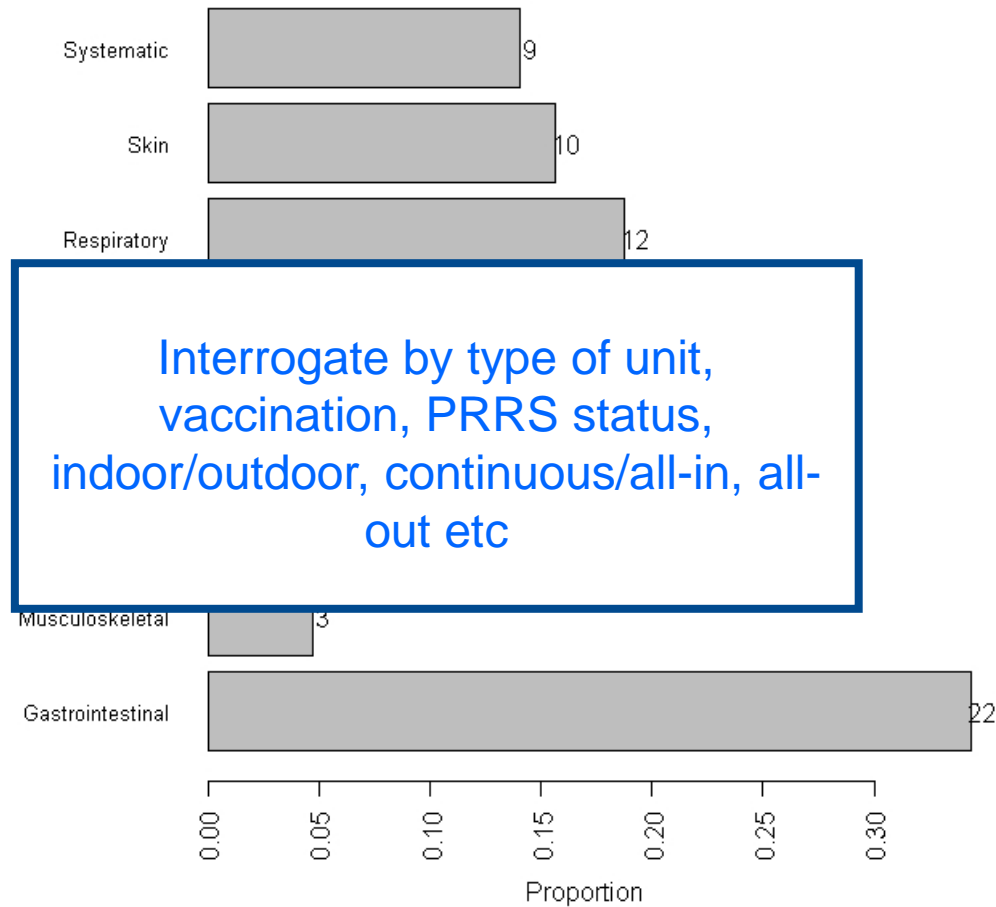
Average 27 minutes

Type of reports considered

Disease incidents reported



Disease syndromes - Growing Pigs

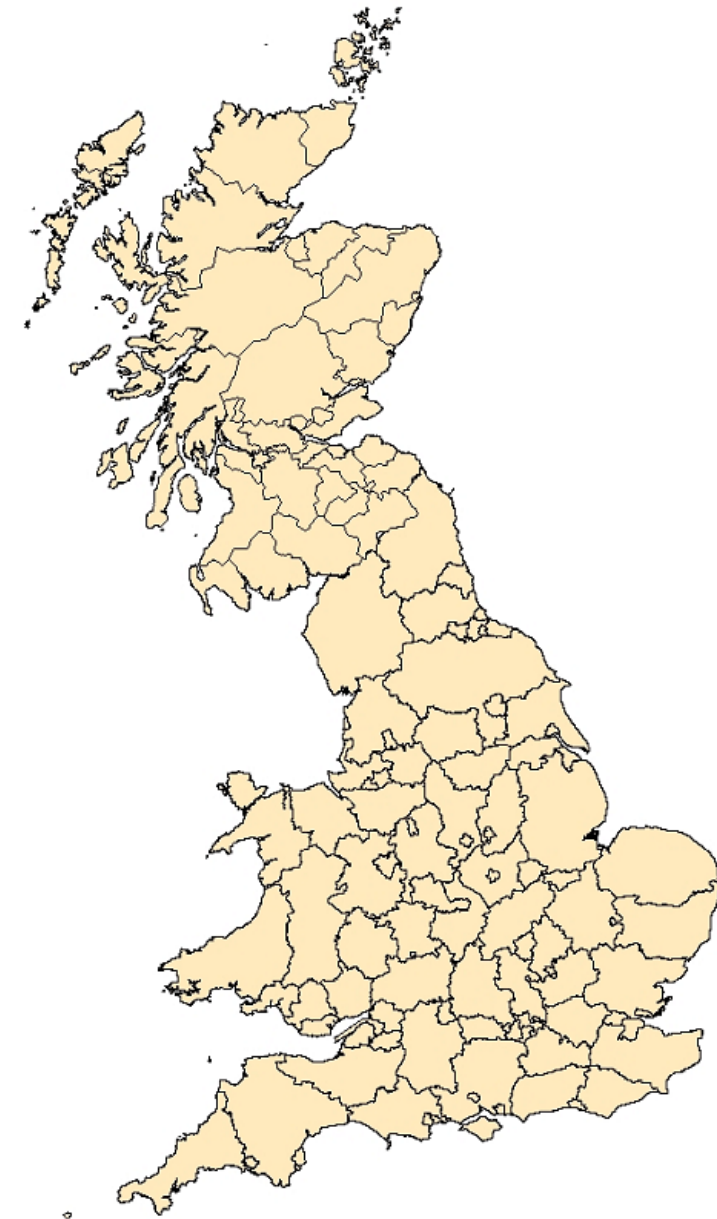


Surveillance report outputs

County level maps

Top “layer” demonstrates geographical coverage (sensitivity)
– fairly static

Separate “layer” for units with <100 pigs

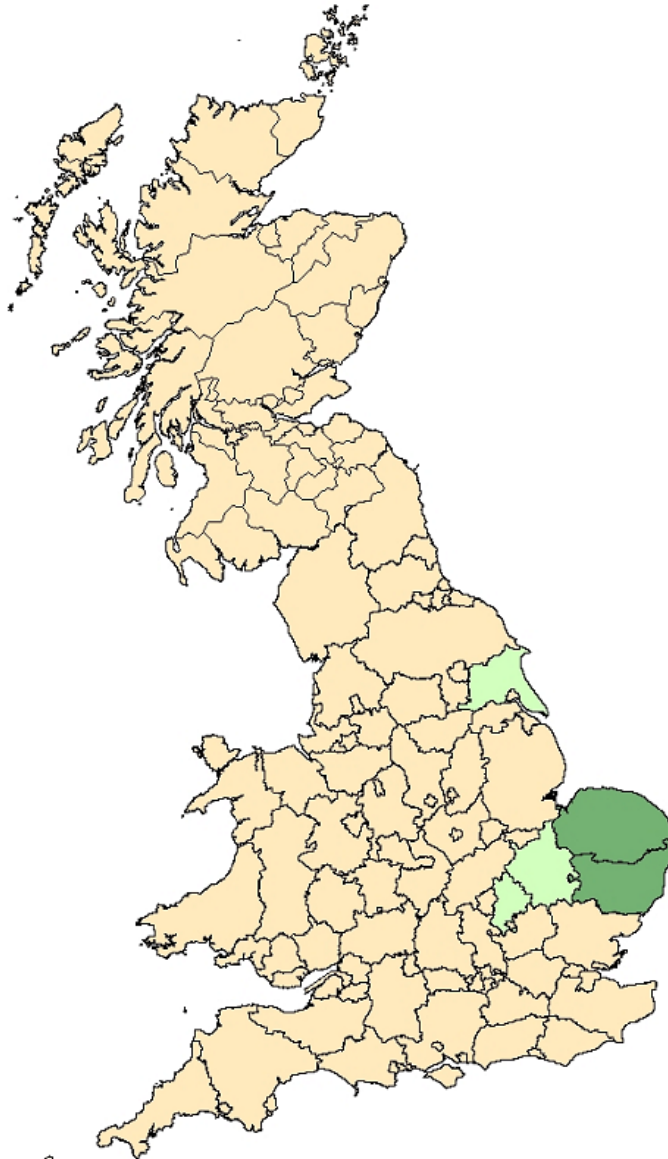


Units with at least 100 pigs

Surveillance report outputs

Each syndrome
has a “layer”

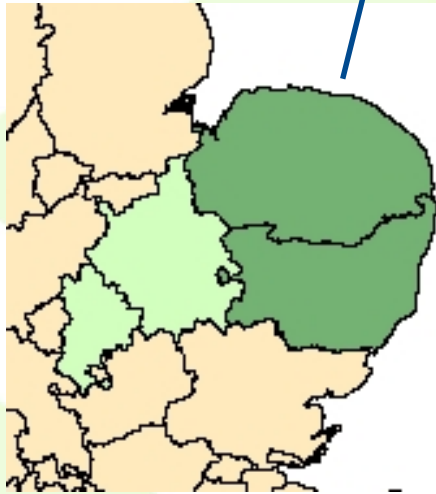
Dynamic



Example - Respiratory syndrome

Ages affected: neonatal x 10, weaners x 1

Types of unit: 5 weaner-producer, 3 breeder-finisher



**Example
Respiratory syndrome**

Surveillance report outputs

Drill down for more
detail on affected
units

Dynamic

Surveillance report outputs - options



At regular intervals – monthly, quarterly, annual
a set of bespoke reports

Real-time as data added e.g. at any one time to show
number of disease incidents for each syndrome causing
concern by county

Limitations

From PVS post-trial survey ...



- Confidentiality

- Unique veterinary identifiers good and need linking with defined list of unit identifiers
- Different vets need to be able to report data for same pig units

- Engagement

- Make data reporting more time efficient (mobile app/on-line/drop-down responses/prepopulated)
- Link data reporting to an output for PVS to access
- Link to APHA disease surveillance recording



From PVS post-trial survey ...



- Standardisation
 - More guidance on disease incidents to report
 - Follow-up questions need further development
- Real-time reporting
 - Dynamic nature of disease within a unit not captured

For a system like this to be successful



IT investment to develop a system fit for purpose.
Recording in and reporting out would be essential.

If this was achieved:
the system would be very useful or quite useful for
pig disease surveillance

Acknowledgements



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Any questions?

