Proactive dairy cattle disease control in the UK: veterinary surgeons’ involvement and associated characteristics

H. M. Higgins, J. N. Huxley, W. Wapenaar, M. J. Green

Context
Taking a proactive approach to reduce and control endemic diseases on dairy farms is important to improve animal health and welfare, and for sustainable food production. There are current data relating to the existence and use of written herd health plans by farmers. However, it is not clear how a written plan correlates to ‘proactive veterinary involvement on dairy farms throughout the calendar year’. In this paper, two types of proactive veterinary involvement are identified and defined: ‘Gold Standard Monitoring’ (including ongoing data analysis, risk assessments and laboratory testing) and a lower level of involvement called ‘Regular Control Advice’. For both of these types of veterinary activity, this study aimed to capture veterinary surgeons’ current involvement in the control of three endemic diseases of dairy cattle: mastitis, lameness and Johne’s disease. Characteristics of veterinary surgeons associated with both types of involvement were also investigated.

Main conclusion
This study provides evidence to suggest that there is considerably more scope for proactive and sustained veterinary involvement to control mastitis, lameness and Johne’s disease on dairy farms, particularly at the level of Gold Standard Monitoring. Together, three factors were associated with very different probabilities of veterinary involvement with Gold Standard Monitoring: employment status, possession of a postgraduate cattle qualification and continuing professional development (CPD) related to dairy cattle. Facilitating postgraduate veterinary education may help to increase proactive and sustained veterinary involvement on dairy farms.

Approach
A two-stage cluster design was used to randomly select veterinary surgeons who treated dairy cattle and worked in England. Data were gathered by face-to-face interviews. Characteristics of veterinary surgeons associated with the two types of veterinary involvement were evaluated using two ordered multinomial models, and fitted in a Bayesian statistical framework.

Results
Ninety-four of the 96 selected veterinary surgeons were interviewed. They worked in 20 veterinary practices and, as intended by the sampling strategy, there was a bias towards those who spent the majority of their time working with dairy cows: six participants spent 0 to 24 per cent of their time with dairy cattle, 16 participants 25 to 49 per cent, 27 participants 50 to 75 per cent and 45 participants over 75 per cent.

Currently, 65 of the 94 veterinary surgeons (69 per cent) had no involvement on any farm with “Gold Standard Monitoring” for lameness, 56 (60 per cent) had no involvement with Johne’s disease and 49 (52 per cent) had no involvement with mastitis. For Regular Control Advice, the equivalent figures were: 29 (31 per cent) for lameness, 35 (37 per cent) for Johne’s disease and 19 (20 per cent) for mastitis.

The final multinomial model revealed that three veterinary characteristics combined (employment status, postgraduate cattle qualification and CPD attainment) were associated with greatly different probabilities of veterinary involvement with Gold Standard Monitoring. For example, the model predicted that an assistant without a postgraduate cattle qualification, who had spent no time on CPD in the last year, had an 85 per cent chance of having no involvement with Gold Standard Monitoring for any disease, versus a 5 per cent chance for a CPD ‘enriched’ partner with a postgraduate cattle qualification. CPD and employment status were also (and similarly) associated with markedly different probabilities for delivering Regular Control Advice.

Interpretation
A potential limitation of the study was that it was based on veterinary surgeons self-reporting their involvement, misinterpretation of the definitions, memory recall, or a desire to appear more involved than they actually were, were potential bias. While sample size was relatively small, participants were spread across the breadth of England, reducing bias relating to a specific locality. Also notable is that there may be other types of veterinary characteristics and perceptions not captured here (for example, personality traits) that are important.

Significance of findings
There is evidence to suggest that proactive and ongoing veterinary involvement on dairy farms can be cost-effective, improve animal health and welfare and facilitate sustainable food production. Of course, not every dairy farmer may see the need, or actually have the need, for this type of veterinary input; and some farmers may not be able, or prepared, to pay for it. However, given the current high prevalence of these endemic diseases in the UK national dairy herd, it seems reasonable to suggest that on many dairy farms this type of veterinary involvement is desirable and important. It is expected, therefore, that these findings will be of interest to many stakeholders, including farmers, veterinarians, government, consumers, retailers and welfare scientists.

In order to quantify proactive veterinary input in absolute terms, it would be very useful to have data at farm level. Currently the UK Department for Environment Food and Rural Affairs captures data concerning written farm health plans as part of its annual farm practices survey. In addition, it is suggested that information could be gathered relating to the two types of proactive and sustained veterinary involvement that have been identified and defined in this paper.

These findings bring to the fore the question of veterinary tracking and specialisation at an early career stage; while in many respects desirable, an important question is whether the veterinary profession and farming community can continue to afford omniscient veterinary surgeons at graduation.
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