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Cattle veterinarians' awareness and understanding of biosecurity

K. Pritchard, W. Wapenaar, M. L. Brennan

PREVENTIVE biosecurity measures, such as isolation of purchased animals, are well documented in the literature (Duncan 1990, Maunsell and Donovan 2008, Noremark and others 2009) and biosecurity has been highlighted as a key intervention for many of the important diseases affecting cattle in the UK (Scott 2013). There is evidence that not many practices are being undertaken by producers and various explanations have been suggested (Nerlich and Wright 2006, Brennan and Christley 2012, Brennan and Christley 2013). In comparison, there is limited literature on cattle veterinarians' knowledge and opinions about biosecurity. There has been debate in previous studies as to whether biosecurity advice is being given by veterinarians and whether they feel qualified, or sure about what to advise (Gunn and others 2008, Jansen and Lam 2012). Therefore, the aim of this study was to determine the understanding and awareness of current on-farm biosecurity practices among cattle veterinarians in the UK.

The target population was cattle veterinarians in the UK, with the sampling frame being cattle veterinarians who attended the British Cattle Veterinary Association (BCVA) congress in 2010. Eligible participants had to be undertaking cattle clinical work. A paper-based questionnaire was constructed (available on request), covering topics such as definitions of biosecurity, the perceived usefulness of practices, where veterinarians learnt about and sourced biosecurity information, and the specific biosecurity protocols veterinarians carried out on farms. The questionnaire underwent a pretest and pilot phase to minimise question ambiguity. Personal information, such as name or address, was not collected to ensure anonymity. A digital camera prize draw and chocolate bars were offered as an incentive (email details for the draw were removed from the questionnaires prior to analysis being undertaken). Ethical approval was received from the School of Veterinary Medicine and Science Ethics Committee at The University of Nottingham. Data were manipulated and analysed using Microsoft Excel (Microsoft Office Excel 2007) and Minitab V. 15 (Minitab Inc, State College, Pennsylvania, USA), with one in five questionnaires reviewed for

error detection. To analyse the open-ended questions relating to opinions, thematic analysis was used (Braun and Clarke 2006).

A total of 65 questionnaires were completed, three of which were excluded because only the demographic questions were completed. Some questions were left unanswered (the number of respondents per question is outlined where appropriate) and for some questions participants could select multiple answers. Just under three-quarters of the respondents (43/60; 72 per cent) were male and the majority of respondents were above 40 years of age (n=34/60; 57 per cent). Forty per cent of respondents (n=24/60) had undertaken further study since graduating from their veterinary degree. Year of veterinary degree graduation varied greatly, with most graduating between 1981 and 1990 (n=19/60; 32 per cent).

All respondents (n=62) reported that they understood what the term biosecurity meant, with 57 respondents (92 per cent) defining biosecurity in terms of prevention or control of disease. Only 26 per cent (n=16) mentioned prevention of disease from **entering** a farm, with no reference to preventing disease **leaving** a farm. Almost all respondents stated that they would personally undertake biosecurity protocols when visiting farms (n=57/62; 92 per cent), with all nominating that they cleaned and disinfected protective clothing and footwear. The majority (n=57/62; 92 per cent) answered that they advised cattle producers about on-farm biosecurity. Participants most frequently advised farmers on quarantine and isolation of animals coming onto the farm (n=32/57; 56 per cent; Fig. 1). Forty-three per cent of respondents (n=26/60) stated that they set aside specific time to discuss biosecurity plans with cattle producers. Of the five respondents who stated they did not give advice, reasons were that clients had not asked and that they assumed protocols were being carried out.

The majority of respondents indicated that biosecurity protocols were useful when carried out correctly on cattle farms (n=58/61; 95 per cent). Approximately 52 per cent of participants (n=32/62) stated that a lack of knowledge and understanding was the reason farmers did not undertake many biosecurity protocols (Fig. 2). Producers' not having enough time (40 per cent; n=25/62) and not undertaking practices being a habit (24 per cent; n=15/62) was also a frequent comment.

Cattle veterinarians appeared to have a good understanding of what the term biosecurity meant, although most did not mention the risks of transmission of disease out of farms versus entering farms. Depending on whether the definitions given by respondents were truly representative of cattle veterinarians' beliefs about biosecurity, this finding could have implications for the advice given to farmers and any subsequent preventive activities undertaken.

Most cattle veterinarians stated that they undertook biosecurity protocols on farms, advised clients on biosecurity and thought biosecurity protocols were useful, which is supported by other UK studies (Anderson 2010). A concurrent study focusing on veterinary students suggested that only half of the students when 'seeing practice' observed cattle veterinarians advising producers on biosecurity (Pritchard 2010). Previous research has identified potential misconceptions by veterinarians about what topics they are discussing with farmers (Hall and Wapenaar 2012), and whether advice is required on specific areas if not requested (Lam and others 2011, Sayers and others 2014). Further research is required to determine if miscommunication is responsible for the lack of implementation of biosecurity measures.

It has been suggested that the timing and method of communication could be important (Hall and Wapenaar 2012); many respondents in the current study stated they did not set aside specific time to discuss biosecurity plans with producers.

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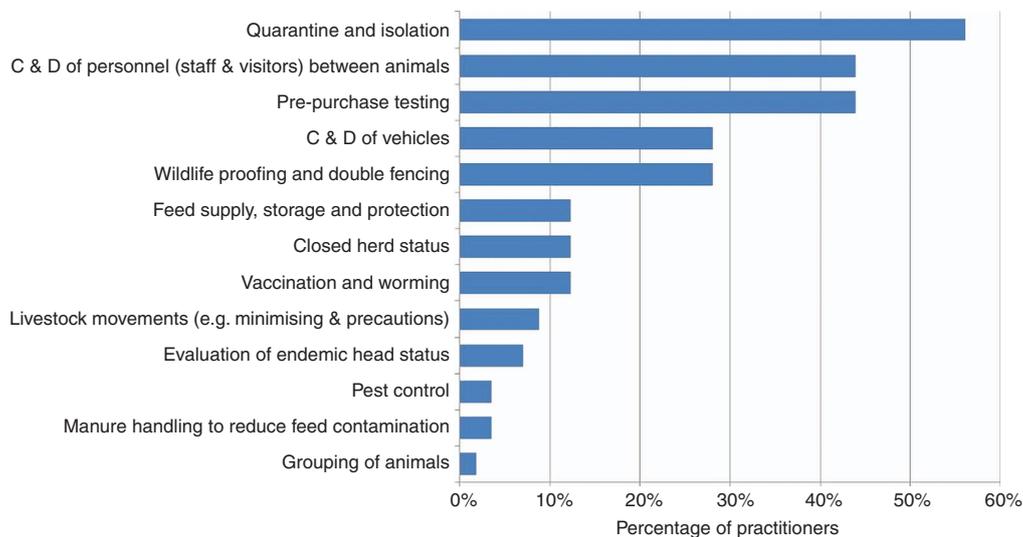


FIG 1: On-farm biosecurity measures that cattle veterinarians advise cattle producers on (n=57). Categories of practices represent grouping of responses from open questions. 'C & D' relates to cleaning and disinfection

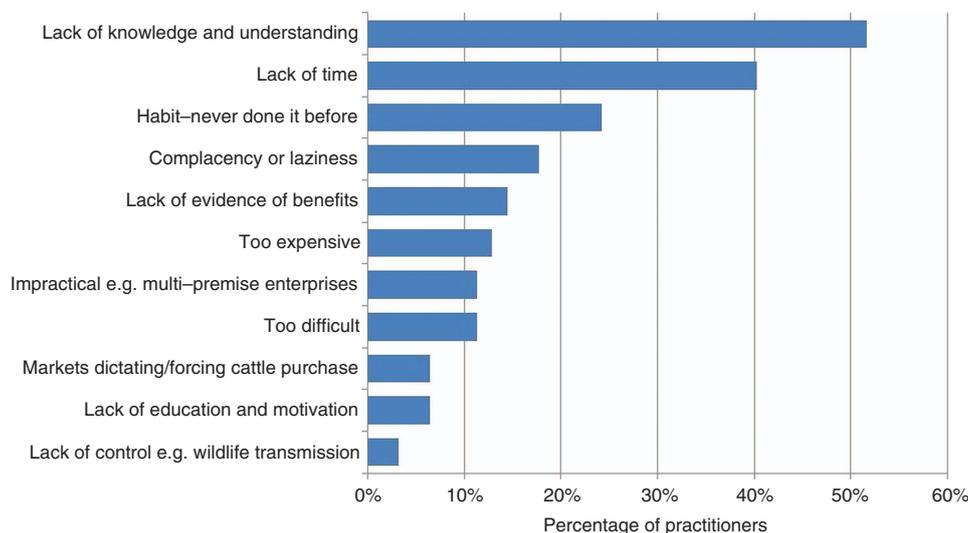


FIG 2: Cattle veterinarians' opinions on why cattle producers do not undertake many on-farm biosecurity protocols (n=62). Categories of reasons represent grouping of responses from open questions

A recent initiative found the more veterinarians were perceived to spend time discussing biosecurity, the more likely implementation was to occur (Enticott and others 2012). Producers appear willing to discuss topics such as biosecurity with their veterinarian, which identifies that greater attention may need to be paid to these discussions (Heffernan and others 2008, McLaughlin 2011, Derks and others 2013). Further work is required to investigate how much discussion occurs on biosecurity during all types of farm visits, not just those focused around general herd health.

Study limitations include representativeness of respondents to cattle veterinarians in the UK, and elsewhere. When compared with the RCVS 2010 survey of all types of practising veterinarians (RCVS 2010), respondents here were more likely to be male and longer qualified. If opinions from a larger number of veterinarians were sought, the results may appear differently. Additionally, the effect of reporting bias (i.e. veterinarians reporting on their activities, which could differ from what activities are actually carried out) is unknown. Considering the lack of published information relating to the opinions of cattle veterinarians on biosecurity, this study provides baseline information

for further work investigating how veterinarians can assist to improve the uptake of biosecurity practices on cattle farms.

Knowledge and awareness do not appear to be a limitation for cattle veterinarians offering advice to farmers on biosecurity in the UK. However, time specifically set aside to advise farmers on biosecurity appears limited. Further work investigating barriers and promoters to these types of discussions would be valuable to further optimise disease prevention on farms.

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