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ORIGINAL RESEARCH

Factors influencing Scottish dairy farmers' antibiotic use

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Abstract

Background: Good stewardship of antibiotics can reduce the development and impact of antimicrobial resistance (AMR); therefore, understanding farmers' antibiotic use is of interest to stakeholders. To date, few qualitative studies have looked at farmers' antibiotic use on dairy farms in the UK.

Methods: Semi-structured interviews were used to explore 15 Scottish dairy farmers' antibiotic use behaviours and the factors influencing their antibiotic use on farms.

Results: Using an inductive process, the results from the interviews were analysed, and four key themes were extracted: use of antibiotics, awareness of AMR, determinants of antibiotic use and future aspirations.

Limitations: Some of the farmers interviewed were wary about discussing their antibiotic use, which could mean that some contentious issues were not discussed. The farmers also all belonged to a single milk-buying group, which may limit the generalisability of the findings.

Conclusions: The quantities of antibiotics used were felt to be driven by the disease prevalence on farms, cows being indoors more, increasing herd sizes resulting in increased stocking densities, retention of poorer cows and substandard housing. Farmer knowledge of antibiotics varied, and not all farmers interviewed were aware of AMR. The farm veterinarian, the press and peers were found to be the main sources of antibiotic information.

KEYWORDS
antimicrobials, behaviour, dairy cattle, general management, resistance

INTRODUCTION

Globally, there are calls for changes to be made to antibiotic use on farms to reduce the impacts of antimicrobial resistance (AMR) on both livestock and the human population.[1–4] Overuse and misuse of antibiotics are the main anthropogenic contributors to the development and spread of AMR. Although AMR cannot be prevented, its development and spread can be reduced through good stewardship of medicines.[5,6] To address this, the UK governments published a one-health fully integrated 5-year strategy and action plan in 2013 and worked with partners including the World Health Organization, the World Organisation for Animal Health and the Food and Agriculture Organization to secure commitments to a global action plan in 2014.[7] Since then, veterinarians and farmers have undertaken a voluntary programme of reduction that has resulted in halving antibiotic use in food-producing animals and reducing the use of the highest priority critically important antibiotics by nearly 80% since 2014.[8] During this time, further research has looked at the spread of resistance from livestock to humans, and a recent review has concluded that the contribution of farm animals to the spread of AMR to humans may not be as high as initial estimates, although this continues to be debated, as there are many unknowns and contradictory results.[9]

There is a wide-ranging body of work investigating veterinary surgeons' prescribing behaviours, as in the UK, all antibiotics need to be supplied by a veterinary surgeon. However, it can be argued that as antibiotics are often chosen and then administered by the farmer (including all relevant farm staff) in the UK[10] and that farmers are the purchasers of the antibiotics,[11] 'ultimately it is the farmer who is responsible for ensuring that animal medicines are used in a safe, responsible and effective way on farm'.[12] Taking this view, a greater understanding of farmer behaviour is needed to understand the drivers of antibiotic use

on farms[13] and to inform the development of targeted interventions to support the goal of improved antibiotic stewardship.

Understanding farmer decision making and behaviours has a long multidisciplinary history, as many of the decisions that farmers make, including those relating to antibiotic use, are of interest to the government and the public.[14] Previous work has shown that many factors are likely to influence farmers' antibiotic use, including the cost of treatment,[15] the types of buildings on the farm[15,16] and whether reactive or proactive health policies are in place.[17] The information source most frequently used by farmers has been found to be the farm veterinarian.[13,18,19] While a vast array of factors have been identified as influencing antibiotic use by farmers, these do not all relate to dairy farmers in the UK. Although it could be expected that there will be similarities between farmers of different species of animals and across different countries, the use of antibiotics on farms does not happen in isolation; therefore, the wider context and environments in which these decisions are made need to be considered when trying to understand farmers' behaviours.[20–22]

In dairy farming, for example, there are some external factors that are industry specific, including the importance of the milk buyer, their terms and conditions and the food safety legislative environment in which these businesses operate.[23] In the UK, milk is routinely tested for antibiotic residues, and where failures occur, the farmer with the positive result will incur the costs associated with the lost milk, equating to approximately £15,000 per tanker.[24,25] Thus, unlike other farm types, there is and has been for many years an increased motivation to record antibiotic use. It should be noted that it is a legal requirement within the UK to record medicine use in all food-producing animals; however, compliance rates vary. Jones et al.[26] found that 97% of dairy farmers surveyed agreed 'it is important to keep [medicine] treatment records' and that farmers were concerned about antibiotic residues in milk. In addition, some milk buyers have stipulated that farmers supplying them are required to undertake training on antibiotic use to prevent antibiotic residue failures, for example, undertaking 'MilkSure' training.[27]

To date, there have been limited qualitative studies on farmers' antibiotic use and factors influencing their behaviours[13,28] and, to the authors' knowledge, this was the first study to interview UK dairy farmers about their antibiotic use decisions. The use of qualitative methodologies offers opportunities to gain a deeper understanding of why farmers are behaving in a certain way, which takes into account their environment.[29] Such techniques facilitate a dialogue that allows additional questions to be asked that can provide a deeper understanding of the topics being explored. Additionally, new ideas and angles can be introduced and discussed in the interview process, giving interviewees a degree of 'ownership' and allowing the interviewees' perspectives to be considered.[30] To this end, using qualitative methods can offer a contextual approach that is hard to achieve through quantitative methods.

MATERIALS AND METHODS

Semi-structured interview approach

In this study, interviews[29] were used to explore dairy farmers' antibiotic use and the factors that influence their behaviours. These semi-structured interviews were informal in style, and followed the approach given in Mason,[29] where qualitative interviews are described as 'conversations with purpose'. This methodology was used to ensure that participants felt at ease and able to explain themselves fully, as some were hesitant to talk about their antibiotic use. While an interview script was produced (see Appendix S1), interviews were conducted with a fluid and flexible structure, allowing the interviewer and interviewee to discuss unexpected themes. The interviewer took cues from the interviewee to explore certain topics in greater detail. This meant that while all of the interviews examined the key questions to ensure a broadly consistent approach, a 'one-size-fits-all approach' was not applied to the more specific detail of interview discussions.

The interviewer, Lorna Pate, prepared for interviews by consulting two veterinary surgeons to check that the questions in the interview script were appropriate. Following this, the interview script was submitted, along with a copy of the participant information sheet and consent form, to the Royal (Dick) School of Veterinary Studies (RDSVS) and Easter Bush Campus Human (research) Ethical Review Committee (HERC), where the study was fully approved (RDSVS HERC_58_16).

It was also planned that medicine records would be obtained from the farmers interviewed; however, due to the majority farmers being unwilling to provide this information, this did not happen.

Recruitment

Participants were recruited through two veterinary practices, where dairy farmers were made aware of the project and interested farmers were asked to get in touch with the interviewer. In total, 15 farmers were interviewed in the spring of 2018. These farmers were from Dumfriesshire and Ayrshire in Scotland, UK (the main dairy-producing counties). All participants sold their milk to one milk buyer.

Data collection and analysis

Interviews were conducted in person at the interviewee's farm ($n = 7$) or on the telephone ($n = 8$), and all interviews started with informed consent being given verbally. Interview times ranged from 17 to 40 minutes, with face-to-face interviews generally taking longer.

Recruitment of farmers continued until saturation of discussion themes was reached.[31]

Data were collected by audio recording and notes taken by the interviewer during the interview. These recordings were reviewed, and the key information was input into Microsoft Excel.[32] These data were then manually coded to look for themes and patterns in the data using thematic analysis coding. This was an inductive process, in which the themes were not predetermined before the data was analysed. Throughout the coding process, the codes were reduced and refined, resulting in four themes.[33]

RESULTS

Interviewee characteristics

All interviewees had sole or joint responsibility, with other farm staff and family members, to administer antibiotics on the farm. The age of interviewees ranged from 19 to 67, with the majority of the 15 farmers being over 40 years old. All primary interviewees were male; however, at two farms, a female family member sat in the interview. The numbers of cows being milked on the farm ranged from 90 to 420 (median = 210), with the farmers in Dumfriesshire having larger herds than those in Ayrshire (median 268 cows in Dumfriesshire and 144 cows in Ayrshire). One farmer operated a robotic dairy system, and the rest milked their cows through a conventional milking parlour. Cow breeds on the farms were typical to the area: a mixture of Holstein, Friesian and Ayrshire breeds.

Theme 1: Using antibiotics

This theme has been divided into the following three subsections: the main uses of antibiotics, knowledge of antibiotics and comparison to peers.

The main uses of antibiotics

The main use of antibiotics was for udder health issues: treating and preventing mastitis, including drying off (dry cow therapy) (n = 15). Other uses of antibiotics that were given by interviewees included retained fetal membranes (n = 10), foot problems in cows (n = 9) and pneumonia in calves (n = 4).

Knowledge of antibiotics

To gauge farmers' knowledge of antibiotics, they were asked 'How would you describe your knowledge of antibiotics?' Farmers gave a range of responses, with the majority replying with statements such as 'slightly below average' and 'pretty good'. Two farmers asked why they were required to have any detailed knowledge of antibiotics, as they could 'find out from vet'.

Interviewees often answered questions that were specifically about antibiotic use with a response that included information about other veterinary products, including anthelmintics, flukicides and foot-bathing products that did not contain antibiotics. During these conversations, it was not always possible to differentiate whether farmers were elaborating on their veterinary medicine use or did not see the distinction that antibiotics are a specific type of veterinary medicine. Two specific examples are given below:

Example 1:

Interviewer—'What are the main uses of antibiotics on your farm?'

Interviewee—'Mastitis, pneumonia in calves and fluke and worms'.

Example 2:

When the farmer was asked if they had seen drug resistance on their farm, they responded 'we tested for antibiotic resistance a while ago'. The interviewer followed this up and asked additional questions and it transpired that testing was for anthelmintic resistance.

Comparison to peers

This sub-theme emerged from questions that asked participants to 'describe veterinary medicine use on your farm.' Farmers found these questions challenging to answer, and 10 out of 15 farmers compared their knowledge to their peers, with responses commonly used including: 'medium, not as high as others' and 'low compared to others'.

Theme 2: Awareness of AMR

One farmer stated that they were not aware of antibiotic resistance or AMR, one failed to answer the question and the rest said they were all aware of AMR. Six farmers were keen to talk about their experiences with what they believed to be antibiotic resistance. A further two farmers detailed their neighbour's experiences with antibiotic resistance. The farmers that had first-hand experiences of antibiotic resistance talked very freely about what happened or the reasons why they thought they had seen antibiotic resistance on their farms; extracts are shared below.

A farmer that had experienced antibiotic resistance in the last 2 years said: they had a 'massive outbreak that could not be brought under control … it was exceptionally costly and … emotionally distressing'.

'Yes, I think so, problems with treating foot problems (dermatitis) all year round now'.

'Cows used to respond better (quicker to treatment)—are the drugs as strong as they used to be?'

Theme 3: Determinants of antibiotic use (quantity and antibiotic selection)

When discussing the determinants of antibiotic use, farmers were split on how they answered, with some choosing to talk about animal disease and how more disease on-farm resulted in higher quantities of antibiotics being needed. The other farmers spoke about who influences their antibiotic use, including the types of antibiotics they choose to use. This resulted in theme three containing four sub-groups: animal disease, influencers, antibiotic attributes and past experience.

Animal disease (including constraints to reductions)

Antibiotic use was felt to be determined by the 'disease burden' on-farm: 'The need for them (antibiotics)', 'If there is a disease outbreak [we] use more antibiotics' referring to antibiotics being used therapeutically. Others reported having disease in the herd such as 'having bovine viral diarrhoea (BVD) makes people use more as cows more likely to get sick'.

'Keeping all heifers to expand herd means we are not selecting the best like in the past' inferred that the heifers that are now being kept on-farm may be more susceptible to disease and therefore may require more antibiotic treatment. Some also mentioned that increased numbers of cows were often kept in buildings that were designed for fewer cows: 'More cows means more disease problems'.

'[cows] being inside more means more antibiotics are needed for feet and other things'.

'Poor housing … poor ventilation'.

Ways that disease could be reduced included investment in the farm buildings, improved housing, improved cubicle design and installing vented curtains. Some farmers felt that improvements to the farm buildings could significantly reduce the quantities of antibiotics used; however, they were not able to invest at the current time due to lack of capital, for example, 'A new shed would reduce quantities of antibiotics I use; however, this is not possible at the moment'.

Influencers

The three main sources of information were the veterinarian, peers and the farming press. The most common answer given was their veterinarian, and farmers felt that their veterinarian was most influential to their decisions surrounding antibiotic use. Specific comments made in this theme included the following:

'The vet chooses the antibiotics that we use, we have a good relationship with the vet'.

'Always interested in what my neighbours are doing/have done'.

'I find out about new antibiotics in the farming press'.

Attributes of the antibiotic

The cost, withdrawal time and availability of the antibiotic were the three attributes of the antibiotic that emerged in the interviews as having an influence on what antibiotic was used.

'the cost … there are price differences between the same antibiotics'

'milk withdrawal time is important'

One farmer discussed at length their inability to 'get hold of … [their preferred brand of dry cow therapy, due to a supply problem] tubes so had to use other [brand]'.

Experience

Farmers said they would continue using an antibiotic if it remained effective. 'Past experience' was used to 'choose' the antibiotic, and it appeared that something would need to change before they considered a different one, for example, the antibiotics of choice not being available or considered to be no longer effective.

'What has worked in the past, if it's still working keep with it'.

'Change, if it's not any good (doesn't work)'.

'Whether I can get it (the specific brand of dry cow therapy)'.

Theme 4: Looking to the future

Some farmers discussed changes that could impact their antibiotic use in the future. The impact of increased cow numbers was discussed by farmers who were currently increasing or planning to make this change. Not all were planning to invest or alter cattle housing in the near future to accommodate the extra cows. The farmers who had increased their herd sizes reported an increase in disease prevalence on farms; some said it was the result of increased numbers in the same shed space and one suggested that they were 'keeping cows they wouldn't have kept in the past'.

There was a desire for most farmers who were not doing selective dry cow therapy to consider this approach. Selective dry cow therapy is where cows at drying off are appraised using predetermined criteria to decide whether they get an antibiotic dry cow therapy or not, which is the opposite of a blanket treatment where all cows would be treated with an antibiotic. One farmer had a bad experience in the past but was hoping to start it again.

'Had shot (at selective dry cow therapy), forced into it by [name redacted]. Going to look at trying this again'.

'Started selective dry cow therapy … and … using herdwatch [livestock management app] to keep records'.

Increased use of vaccinations was seen as a way by some to reduce antibiotic use in the future, but the cost was seen as a barrier. Improved vaccines

and diagnostic tests that could be 'done on-farm and be quick' were things that farmers hoped for soon. Also looking to improve cows' immune systems through 'improving the cow's diet' or '… the use of immunotherapy (treatments) like in America … some farmers are trialling it…it costs £30 per cow' were given as ways to reduce animal disease and therefore reduce antibiotic use on-farm.

DISCUSSION

The aim of this study was to identify and further understand factors that influence dairy farmers' antibiotic use. This qualitative approach has not been previously used to explore Scottish dairy farmers' antibiotic use on farms. This study has raised some important themes and factors that have not been reported in this context before. These include that interviewees perceived drug use to be driven by disease prevalence on farms, which was felt to be caused by cows being housed more, the drive to increase herd sizes resulting in increased stocking densities, retention of substandard cows and sub-optimum housing conditions.

Using antibiotics

The main uses for antibiotics on farms were udder health, foot problems and calf pneumonia, in keeping with those found in other studies.[19] The results from this study and anecdotal evidence suggest that the term 'antibiotics' is generally being used by farmers to describe veterinary medicines. The converse has also been found where farmers were not aware that some veterinary products, including footbath products, contained antibiotics.[19] Other studies have also questioned farmers' knowledge of antibiotics, such as that by Jones et al.,[26] which used farmers' awareness of the Responsible Use of Medicines in Agriculture Alliance (RUMA)[12] guidelines to gauge their understanding. It is very difficult to determine farmers' knowledge of antibiotics without 'testing' them, and it is difficult to say how much knowledge farmers require given that the prescription of antibiotics lies with their veterinary surgeon (and so they are used under veterinary guidance). Some farmers in this study questioned how much knowledge they should have of antibiotics as they used their veterinarian to gain this knowledge. Again, this reliance on veterinary knowledge has been found in other studies; however, the cost of the veterinarian's time was also found to be a barrier to accessing this knowledge.[13]

Antibiotic use on farms was not quantified using medicine records. It was initially envisaged that medicine records would be seen by the interviewer; however, none of the farmers interviewed was willing to share this information. Instead, a subjective self-assessment approach was used where farmers were asked 'how would you describe veterinary medicine use on your farm?' In answering this question, most farmers compared the quantities that they perceived they used to that of their peers. Throughout the interviews, farmers repeatedly compared themselves to their peers. Farmers are known to have strong peer networks, and it has been found that peer-to-peer knowledge exchange is important within the agricultural community.[14,34] All farmers interviewed had previously had their antibiotic use benchmarked against their peers by their milk buyer, so this might account for the responses given, or it could be a way to quickly move on from being drawn to give a more detailed answer or 'othering' where respondents attempt to remove or distance themselves from others, in this case farmers that use high levels of antibiotics.[35] Benchmarking is an approach commonly used in the UK in retailer-aligned contracts in informal settings such as discussion groups and farmer field schools to discuss and reduce antibiotic use.

Awareness of AMR

Awareness of AMR in the UK farming community is known to not be universal,[13,19,26] and this was also found in this study, where one farmer said that they did not know about AMR. Overall, awareness of AMR was high in the sample, and the interviewed farmers were very happy to recall stories of drug resistance. This confirmed that some farmers were talking about drug resistance and sharing their experiences with their peers. It should be highlighted that farmers may not always be able to differentiate AMR from drug resistance or failures more generally. One farmer confused anthelmintic resistance with antibiotic resistance when specifically asked about antibiotic resistance, but this only came to light as the interviewer asked additional questions, and therefore it is unlikely that this result would have emerged from a questionnaire-type approach or if the interview had been conducted by an interviewer without additional knowledge of the subject area.

Determinants of antibiotic use

The use of antibiotics was found to depend on four high-level factors: disease incidence on-farm, sources of information, past experience and the antibiotic attributes. The quantities of antibiotics used on farms were attributed to the levels of disease on farms, inferring that antibiotics were used for treating animals when they were sick. A large proportion of farmers were found to be using antibiotic dry cow treatment on all cows at drying off, rather than selective dry cow therapy, which reflects the previous findings of Biggs.[36]

Factors that were mentioned that could contribute to increased disease incidence included underlying diseases such as BVD, vaccination policies, culling policies, stocking densities and quality of buildings. Eradicating immunosuppressing diseases has been well publicised to farmers as a way to reduce the quantities of antibiotics used on farms,[37,38] and currently, in Scotland, there is a compulsory national programme

to eradicate BVD.[39] Vaccines were seen to be one of the main ways to reduce antibiotic use; however, these were felt to be expensive by some. It has been reported that when there have been increases in the number of vaccines used on dairy farms, reductions in antibiotics were also seen, although vaccine use reduces when milk prices do.[40]

Increases in stock numbers were commonly discussed as contributing to disproportional increases in antibiotic use; these increases in herd size were attributed to the economics of dairy farming.[41] First, interviewees had relaxed their culling policies to retain more cows and increase their herd sizes, and second, sheds were becoming more crowded and less fit for purpose, which resulted in increased stocking densities. In relation to this, building quality and suitability were discussed at length by many farmers, who said they did not have the capital to invest in new buildings or improve their current housing. This constraint was discussed more by the Ayrshire farmers interviewed; however, the sample size is not sufficient to uncover why these differences were found. It could be a result of the interviewer visiting the Ayrshire farms or a result of differences between the farmers, including business structures and attitudes to investment. External influences such as planning permission and governmental regulations may also contribute towards investment decisions; however, these were not highlighted in the responses. Farmers' lack of ability to invest in new buildings has also been raised previously by pig farmers and veterinarians[15] as one of the biggest constraints to reducing antibiotic use.

Three sources of antibiotic information were named by interviewees—their veterinarian, peers and the farming press. The importance of the veterinarian as an influencer of antibiotic decisions on farms is in keeping with other studies where they have repeatedly been found as a key influencer in antibiotic decisions on farms.[26,42] Some farmers interviewed were very reliant on their veterinarians for information, as previously discussed in this paper. Despite the relatively small number of farmers and limited geographical location, this study highlights the reliance farmers place on veterinary surgeons as a source of information and guidance on the use of antibiotics. Peers were also found to be important influencers of farmer behaviour in this study.[14,34] These findings have implications for the dissemination of best practice and the design of targeted interventions to improve antibiotic stewardship.

While farmers did not mention their milk buying company as an influencer, some did fear restrictions being placed on them by their milk buyer; thus, this could be considered an influencing factor. Some milk buyers have restricted the use of some antibiotics,[10] and retailers are seen as influencers of farmer behaviour.[43] The economic pressures on dairy farms are likely to account for preferences for cheaper antibiotics and those with lesser withdrawal times, resulting in more milk being saleable. Thus, this further highlights the economic environment in which dairy farms operate. Farmers were unlikely to change the antibiotic they used; if it worked, they were likely to continue using it. Past experience and the experiences of peers are known to be key influences on farmers' decisions about animal health.[34] These external factors should be taken into consideration when looking at ways to improve antibiotic stewardship.

The future

In the future, farmers reported that quick and convenient testing (cow-side or pen-side testing) and new vaccines would help them reduce their antibiotic use. While farmers were not specifically asked about how fast the test should be, two farmers described their ideal test to be 'like the California mastitis test', which produces results within seconds, is simple to use and does not require the culturing of bacteria. Although success has been seen in small trials of 'on-farm' tests such as MastTest, where farmers are required to culture bacteria to determine whether it is Gram-negative or Gram-positive, this approach has many attributes that could mean that it is not commonly adopted. These include the fact that current tests take 12–14 hours to produce a result, and the test requires the user to have the ability and safety protocols in place to culture bacteria that could be zoonotic.[44] Improving the immune response of cows through immunotherapy treatments[45] and improved diets was another approach that farmers in this study wanted to try, based on evidence they had heard about in other countries, including America. The advantages of collecting data on dairy farms and using this to make evidence-based decisions about disease control have been widely discussed.[46–48] However, translating data collected into useful information still remains a challenge on farms.[46] Farm management programmes designed specifically for farmers such as 'herdwatch' were found to be overcoming this for some of the farmers interviewed.

Limitations

Building trust with farmers will be key to gaining a better understanding of their antibiotic use at the farm level. The topic of antibiotic use and AMR is still a sensitive topic for some farmers, and many were not willing to share their medicine records. Only two farmers had their medicine records available at the in-person interview. Most farmers did not want to share their medicine records, as they feared repercussions, mainly from their milk buyer, including restrictions being placed on the types and quantities of antibiotics that they could use, being 'forced into using selective dry cow therapy' and financial penalties for exceeding medicine use targets. It was, however, promising to learn that farmers were sharing their stories and experiences with their peers, as some animal health problems are not discussed in the agricultural community. Future studies will need to take these sensitivities into account to ensure that an accurate understanding of farmers' antibiotic behaviours

is achieved and that farmers are not simply giving the answers that they think the interviewer wants to hear (i.e., social desirability bias).[49] This highlights the role of interviewers in qualitative work and the impact that their judgement and experience can have on the information that is collected, particularly in semi-structured or unstructured interviews. It is unknown whether there were differences in the data collected from participants because some interviews were held in person and some on the telephone. This methodology was chosen to allow a rich conversation to occur with the aim of discussing new themes and ideas; however, there are some limitations of this approach, as discussed in Bryman[50] and Robson and McCartan.[51] One of the main considerations in qualitative research is sampling. The samples chosen for this work were all from one milk-buying group, which, as seen earlier in the discussion, may result in some topics being overexposed or not being applicable to this group and therefore not covered.

CONCLUSIONS

In conclusion, a variety of factors were found to influence the antibiotic use decisions of the farmers interviewed. The quantities of antibiotics used on farms were felt to be driven by the disease prevalence, which was linked to cows being housed more, increased herd sizes, higher stocking densities and retention of poorer cows along with substandard housing. Improving poor housing was one of the main ways farmers felt reductions in antibiotics could be achieved; however, economically and logistically, this was not possible for many. Farmer knowledge of antibiotics varied, awareness of AMR was found not to be universal and farmers were found to be reliant on their veterinarians for information on antibiotic use. These findings have implications for how information and advice on how antibiotic stewardship should be disseminated.

AUTHOR CONTRIBUTIONS

Alastair I. Macrae, Catherine E. Milne and David J. Roberts helped with the design of the work and to write the manuscript. Rob McMorran provided help to analyse the data and helped to write the manuscript. Lorna A. Pate collected, analysed and led the writing of the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

ETHICS STATEMENT

The interview script was submitted along with a copy of the participant information sheet and consent form to the Royal (Dick) School of Veterinary Studies (RDSVS) and Easter Bush Campus Human (research) Ethical Review Committee (HERC), where the study was fully approved (RDSVS HERC_58_16).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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