



A Nuffield Farming Scholarships Trust

Report

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**Ensuring the veterinary
profession meets the needs of
livestock agriculture
now and in the future**

John Remnant

September 2020

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Nuffield (UK) Farming Scholarships Trust Report



Date of report: September 2020

*"Leading positive change in agriculture.
Inspiring passion and potential in people."*

Title	Ensuring the veterinary profession meets the needs of livestock agriculture now and in the future
Scholar	John Remnant
Sponsor	The Trehane Trust
Objectives of Study Tour	<ul style="list-style-type: none">• Identify and evaluate strategies used to improve the recruitment and retention of farm animal vets• Identify and evaluate strategies used to equip the next generation of farm animal vets with the skills and confidence they will need• Describe the future role of the farm vet and how this will help livestock agriculture
Countries Visited	Australia, Canada, The Netherlands, New Zealand, USA
Messages	<ul style="list-style-type: none">• Recruitment and retention of rural and farm animal vets is a global concern, better data is needed to understand the detail fully• Showcasing diverse role models and illustrating how farm vets contribute to human health, animal welfare, the environment and rural communities will attract more interest amongst applicants and veterinary students• Ways of working incorporating more flexible and part time working, different fee structures, collaborating with technicians and other farm advisors and using technology will help retain more vets in the farm sector, as well as providing improved services to farms• Embracing and leading changes to more "herd health" and technology driven veterinary care for farms is essential for the future of the profession, post graduate education is a key way to achieve this

EXECUTIVE SUMMARY

Farming and the veterinary profession are changing. There are reports of a recruitment and retention crisis for farm animal vets. This is a worldwide concern with no easy solutions. Efforts targeted at the key stages of the pipeline can help. These stages are 1. outreach from and admissions to veterinary schools; 2. training and inspiring veterinary students at veterinary school; 3. recruiting and retaining vets into jobs in farm animal practice; and 4. ensuring farmers receive the services they need from sustainable veterinary businesses.

Across all these stages more data are needed to quantify the problems and identify which changes and interventions can improve the situation. This will also allow clearer definitions of the problems. For example, is it rural mixed practices or farm animal practices (or both) that experience these challenges?

Promoting the achievements and goals of farm vets and demonstrating how these align with societal values such as improving animal welfare, and reducing environmental impact to prospective veterinary students, veterinary students and wider society will improve retention and recruitment and benefit farms.

The veterinary profession, and agriculture, must work to be more inclusive. Many people are put off a farm veterinary career because they think that they must be from a farming background. Discrimination and harassment working on farms also puts many veterinary students and qualified vets off the farm sector. The veterinary profession and farmers stand to benefit from better diversity if this is improved.

Many farm animal veterinary practices struggle to accommodate part time and flexible working. This results in alternative veterinary jobs being more appealing. Part time work can and should be accommodated more widely in farm animal veterinary practice. Similar challenges occur as a result of the need to provide out-of-hours cover. There is a mismatch between the cost to vets of providing these services, the value placed on them by farms and the revenue they generate for the veterinary practice. This mismatch limits alternative models or better compensation for this work.

Widening the veterinary practice team to include other professionals can strengthen the offering to clients as well as offset challenges with recruiting and retaining vets. This wider team should include greater use of technicians to help with practical tasks on farms.

It has long been said that farm animal vets will be doing more consultancy style preventive work: this is happening already. This change must be embraced. Herd health services should add value to farms. Common charging structures limit uptake of these services by framing veterinary input as a cost rather than emphasising the value. Structured postgraduate training can help develop both herd health and business skills and improve retention in practice or in the broader industry.

Technology will facilitate, as well as necessitate, many of these changes. Technological solutions can make access to veterinary services easier, but new technologies replacing manual veterinary tasks also pose a risk to the sustainability of practices. Training vets to work with these technologies is essential.

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DISCLAIMER

The opinions expressed in this report are my own and not necessarily those of the Nuffield Farming Scholarships Trust, or of my sponsor, or of any other sponsoring body.

Please note that the content of this report is up to date and believed to be correct as at the date shown on the front cover

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1. Personal introduction

I am a specialist cattle veterinary surgeon and Clinical Associate Professor at the University of Nottingham School of Veterinary Medicine and Science. I qualified as a vet from Bristol University in 2008. I hold a diploma from the European College of Bovine Health Management and a PhD in dairy herd reproduction as well as becoming a Senior Fellow of the Higher Education Academy. I am on the board of the British Cattle Veterinary Association, where I currently lead the education group.



Figure 1. The author at work

I grew up in rural Cornwall but am not from a farming background. I wanted to become a vet from an early age envisaging working in mixed practice, treating a wide variety of animals both pets and farmed animals. This aspiration continued throughout my time at vet school. I took a job at the practice where I had done most of my work experience in my hometown of Liskeard in South East Cornwall. I had a great time in this job, working with some brilliant farmers, vets and practice staff. After a couple of years, whilst still enjoying doing a mixture of all species, I was becoming increasingly keen to focus on farm animal work. I moved back to Bristol Vet School, working as a vet in their farm animal practice. It was in this job that I first started to be involved in teaching, hosting the final year veterinary students in the practice as part of their practical rotations. I moved to a postgraduate training position at the University of Nottingham, which combined clinical work, research, teaching and enabled me to complete some further qualifications. After completing this “residency” programme, I stayed at Nottingham taking up a position as a Clinical Assistant Professor in 2014. I was promoted to Clinical Associate Professor in 2020.

I spend most of my time teaching, both at the vet school and on farm visits alongside clinical work. My clinical interests are in dairy herd health, with publications on dairy cow lameness, reproduction and antibiotic use. I still spend time in practice, but increasingly am involved in developing our curriculum. I am passionate about ensuring our students are well prepared for the next step in their careers and that the veterinary profession is well placed to serve the needs of modern agriculture. It is this passion that inspired my interest in my study topic.



2. Background to my study tour

The regulatory body for vets in the UK is the Royal College of Veterinary Surgeons (RCVS). In March 2017, there were 23,220 vets registered as “UK-practicing” (that is they are working, using their veterinary surgeon status, in the UK) (the most recent published data, RCVS, 2017). At the same time there were 5,209 students attending one of the UK’s seven RCVS-accredited veterinary schools (at the time of writing there are eight veterinary schools in the UK). In 2016, 929 students obtained a veterinary degree in the UK with 910 registering with the RCVS. In the 2016/17 cycle there were a further 1,153 registrations, 976 from the EU/EEA and Switzerland and 161 from outside Europe. In 2017, 962 members were removed from the register. In sum, the number of registered vets in the UK is increasing year on year: this seems set to continue providing there are no changes to mutual recognition of qualifications or migration following the end of the Brexit transition period at the end of 2020.

Despite the increasing number of vets, farm animal practices report challenges with recruitment and retention of vets. In a survey carried out by the British Cattle Veterinary Association in 2018, 81% of cattle vet respondents reported that their practice considered there was an issue with recruitment and 49% with retention. Despite this frequent discussion of a “recruitment crisis” in the farm animal sector, there is limited data to confirm the extent of this. Workforce data collected by the Institute for Employment Studies on behalf of the RCVS (Robinson *et al*, 2019) showed that only 3.2% of vets responding identified farm or production animal practice as their main area of work with a further 11.7% in mixed practice (compared to 3.7% and 15.8% in 2014). Most vets work in small animal practice (52.6%), although there are other types of work likely to be at least partially in the agricultural sector e.g. 1.7% work for the Animal and Plant Health Agency (APHA) and 1.5% in meat hygiene/official controls.

Alongside these challenges to farm vet recruitment, both the veterinary profession and the agricultural industry in which vets work are changing. These are not new challenges, a government commissioned review in 2008 (Lowe, 2009) made numerous recommendations on how the veterinary profession could better serve the production animal sector. Technology and other innovations are transforming livestock production: producers require an ever-changing range of services from their vet (Woodward *et al*, 2019). There is a move away from traditional “fire-brigade” emergency work to more consultancy services (Huxley, 2016). However, vets are still obligated to provide emergency cover for animals under their care and whilst people talk about increasing consultancy type work, there will always be a need for these more traditional services.

The goal of this study was to investigate approaches used elsewhere in the world to ensure that there are enough vets entering the livestock sector and that they are equipped with the skills required by the industry.



3. My study tour

I planned my study tour to focus on areas with similar regulatory frameworks and agricultural sectors to the UK. At each overseas location I tried to spend time in vet schools speaking to students and staff about their thoughts on these issues. Vet schools also provided useful links to local practitioners and farmers to allow me to spend some time in more commercial settings. Overseas destinations are listed in Figure 2. In addition to the overseas visits, I have met with representatives of the RCVS, British Veterinary Association, British Veterinary Ethnicity and Diversity Society, British Cattle Veterinary Association and DEFRA, as well as discussing my topic with friends, colleagues and acquaintances in agriculture and the veterinary profession. A full list of contacts and meetings in the UK and overseas is provided in the acknowledgements.

Figure 2. Overseas destinations as part of the study tour

<i>Date</i>	<i>Destination</i>	<i>Reasons for visit</i>
July 2019 (1 week)	Utrecht, The Netherlands	This visit was based at Utrecht Veterinary School, the only vet school in The Netherlands. The school allows a large degree of “tracking” compared to UK schools where students can focus on their area of interest.
September 2019 (3 days)	’s-Hertogenbosch, The Netherlands	The European Bovine Congress was held in Den Bosch in September, the theme was “Your Veterinary Toolbox 2025”
September 2019 (1 week)	Ontario, Canada	This visit was based at Ontario Veterinary College (OVC) in Guelph. OVC has one of the largest dairy research groups in the world.
September 2019 (1 week)	Minnesota, USA	This visit was based at the University of Minnesota in Minneapolis. The vet school here work in partnership with a large local dairy farm as well as offering a summer school to prepare graduates to work in dairy practice.
October 2019 (1 week)	Alberta, Canada	This visit was based at the University of Calgary, with a veterinary school set up to train vets for rural Alberta. Being in Alberta also allowed me to spend time exploring veterinary work in the beef feedlot sector.
January 2020 (2 weeks)	New Zealand	Massey University has New Zealand’s only vet school. I also visited several of New Zealand’s larger practices, including a farmer owned “vet club”. New Zealand’s Ministry for Primary Industries also has a system to incentivise careers in rural practice.
February 2020 (1 week)	Queensland, Australia	The “VetEd Down Under” veterinary education conference was held at the Gatton Campus of The University of Queensland. I



was able to host a workshop discussing my project with farm veterinary teaching staff from all over Australia.

February 2020 (4 days)	New South Wales, Australia	Charles Sturt University's vet school is based at their Wagga Wagga campus and was established to train vets for rural Australia.
February 2020 (4 days)	Melbourne, Australia	Melbourne University run a postgraduate training programme for aspiring dairy vets. I was also able to meet with representatives of Dairy Australia.



4. Joining the profession

It became apparent early on during the study tour that the challenges of recruitment and retention of vets working in the farm sector and of the changing nature of both the profession and the agricultural industry in relation to its veterinary needs in the UK are common throughout the countries visited. There is a lack of data on approaches that work best. The following is a summary of ideas and approaches shared in discussions and meetings. These will be described in sections in a chronological structure from approaches before vet school to actions to take after graduation. Following these sections, the discussion will identify common themes running throughout these stages.

4.1 Before Vet School: Outreach and Admissions

Getting the “right” people into vet school is often brought up as a potential solution to various challenges in the profession, including the shortage of farm animal vets. Whilst the two are interlinked, approaches to change the people coming to vet school broadly fall in to two categories- those that favour influencing who applies to vet school and those that favour influencing who is offered a place.

4.1.1 Outreach

Outreach is the term used in higher education to describe activities undertaken to encourage people to apply to university, often in the context of encouraging and assisting people from backgrounds that are typically less likely to attend university. These activities are undertaken directly by veterinary schools and by the profession more broadly. As described previously, most vets are small animal vets. On most visits students and vet school staff felt that small animal work was the most common intended destination for veterinary students and applicants. Various outreach activities were described that could encourage more people with an interest or potential interest in agriculture to consider a career in veterinary medicine.

Media portrayal: It was felt that much of the media portrayal of vets focussed on small animal practice or an old-fashioned view of farm animal practice. Potential applicants who might prefer a career in farm animal veterinary practice may be put off. The RCVS are already taking steps to showcase veterinary careers at events such as *Countryfile Live* and agricultural shows. An approach that can be implemented on a smaller scale was described by a vet in Ontario, Canada:-

Like many veterinary practices, Tavistock Veterinarians are asked to give talks at the local school. One vet, despite being a dairy vet, when asked to give the talk initially planned to take cuddly toys and pictures of lambs and calves. But before the visit she decided to also take her laptop and some sample farm data to show the children some of the more modern and technology focused aspects of a production animal vet's job. She found different activities seemed to attract different groups of children. It gave them a chance to realise that there are aspects to the veterinary profession other than treating sick pet animals and may have inspired a child interested in computers or farming to consider a career that they might have thought wouldn't interest them.

Widening participation: In addition to showcasing the broad role of the farm animal vet, outreach also has an important role to play in enabling children and young people to learn about and feel able to apply to vet school. The veterinary profession and veterinary student population are not representative of the general population and lack diversity on many fronts, including gender,



ethnicity and socio-economic background. It is no surprise that a lack of diversity in terms of people joining the profession results in a lack of diversity in career choices and interests. Discussions with the British Veterinary Ethnicity and Diversity Society, veterinary students across the world and talks at the VetEd Down Under conference on widening participation all highlighted some very real barriers to entering the profession to many under-represented groups. There is no point encouraging school children that being a vet (and a farm vet in particular) would be a great job for them if they don't feel able to apply. Measures that could help would be ensuring there are visible role models in the farm veterinary sector reflecting the diversity of potential applicants.

Limited opportunities for experience: Another barrier is the limited opportunity for urban and lower income school children to gain experience on farms. Without some exposure to and understanding of agriculture, even if it is of interest, children are unlikely to have the confidence to pursue a career in this area. This can be improved by farm animal vets working with these communities (where the local vet practice is likely to be small animal): for example, a farm animal vet I spoke to is also a trustee at a city farm. By engaging with, and supporting, city farms and similar initiatives that enable more school children (so potential farm vets) to experience agriculture and see that there is more to a vet's role than they might have realised, the potential pool of applicants would expand.

Anti-livestock values: Breaking down barriers to entry for the wider population will help, but there is a separate challenge in addressing some of the anti-livestock farming attitudes in younger people. In one meeting a veterinary student explained that they didn't tell their friends from their home city that they were interested in a career in farm animal practice because many disagreed with farming. This disconnect between farming and food production is a challenge across agriculture. The veterinary sector has some unique advantages in being able to showcase the vet's role as an advocate for animal welfare. For people that care about the animals kept for food production, rather than avoiding the sector entirely, working as a livestock vet is an opportunity to support farmers in maintaining high animal welfare and environmental standards. The student in this case felt that being a livestock vet was completely consistent with protecting the environment, improving animal welfare and feeding a growing population, but they also felt that this wasn't understood by many young people that value these things. Outreach activities are a great opportunity to highlight how veterinary careers align with these values and can make a positive impact.

4.1.2 Admissions

While changing outreach approaches can attract more applicants, the admissions policies of each veterinary school can have a much more direct impact on who does and doesn't get in. Admissions processes vary by vet school in the UK but are generally based on a combination of academic performance, practical experience and performance in interviews and assessments. It is common to hear informally in the UK that "the problem" is that entry requirements are too focussed on academic performance rather than common sense or practical ability. At farming conferences and events, it is sometimes suggested that the solution to a lack of farm vets is positive selection of those from a farming background.

On the study tour I found different approaches were used across the schools with some consistent themes and some novel approaches. There was almost universal dismissal of positive selection of applicants from a farming background. There was a feeling (although no data) that this was not predictive of people choosing to work in farm animal veterinary practice. At almost every vet school



visited, there were examples of successful farm vets not from a farming background and examples of farmers' children that had gone on to be successful in other sectors of the profession. It was generally considered hard to predict where people would work on graduation (and even harder to predict if they would stay). In the UK and many other countries most vet students go to vet school directly from school at age 18-19. Over the five or six years of their veterinary training, which often takes place in a new part of the country, it is not surprising that people change their aspirations and outlook. Even in Canada and the USA, where vet students must do a degree before their (four year) veterinary degree, predicting likely career at admission was challenging. One interviewee even suggested that for some people in agriculture, vet school could be a way to “escape” their rural lifestyle.

The academic standards required to gain a place at vet school were frequently raised. All vet schools visited still maintain a minimum academic standard to gain a place: this was felt necessary to ensure applicants would be able to meet the academic standard required to pass the course. The extent to which other factors were considered by schools alongside academic performance. Massey University in New Zealand had recently moved away from a system where academic performance was almost the sole basis for admissions decisions to also taking in to account non-academic factors. The thinking was this might result in more “rounded” graduates, but the decision was not motivated by or expected to lead to more vets working in the farm sector. Some interviewees even suggested that this process tended to select more extrovert personalities which may not be suited to a job where a lot of time is spent alone in a vehicle travelling to visits.

One interesting example encountered was the veterinary course at Charles Sturt University (CSU). The vet school was established with the specific mission to recruit and train vets to work in rural and regional Australia. It is important to note that rural practice is not exclusively farm animal practice. CSU's approach taken by CSU appears to have been successful so far with many graduates remaining in rural areas after graduation (Hyams *et al*, 2017). Its admission process looks for evidence of a motivation to work in rural Australia as well as the challenges associated with this. For example an applicant from a city that had managed to arrange several trips to farms and demonstrated a good understanding of the challenges of rural practice might score more highly than someone who grew up on a farm but hadn't used their situation to visit a wider range of farms.

Outreach and Admissions summary

- **Outreach activities should showcase a range of veterinary careers including modern versions of farm animal practice and the contribution this sector makes to society;**
- **Barriers to veterinary and agricultural careers need to be reduced for many groups, including people from urban areas;**
- **Admissions processes at vet school may be able to select for potential farm vets if required, this should be based on motivation and interest**



4.2 During Vet School: Training and Inspiring

There are many good reasons to inspire school children that a career as a farm vet might be for them and to remove barriers to applying to vet school. But these alone are unlikely to have a large impact on the number of vets pursuing a career in farm animal practice. Throughout the visits students and staff felt that it was common for veterinary students to regularly change their mind as they consider different or new career options. Vet school itself is the time to equip future vets with the skills and confidence to pursue a career in farm practice and to inspire them that this is a great career.

4.2.1 Training

Training and education at vet school serves two purposes: to equip vets both with the skills and knowledge they need to work in modern agriculture and with the practical competences and confidence to be able to work in the sector. Whilst these two purposes may sound similar, it became clear on the study tour that they can sometimes compete.

From talking to students, practicing vets, and farmers, it emerged that equipping students with the necessary skills tends to focus on competency in routine practical skills. Students worry about their employability if they cannot confidently diagnose pregnancy in a cow or dehorn a calf. In almost every meeting in every country on the study tour, the word *credibility* was brought up in this context. Newly qualified vets need to be competent at these routine procedures to have any credibility. The competing view is that these routine procedures are increasingly not carried out by vets themselves: there was a feeling, particularly talking to vets in academia, that training in population and preventive work was the future. On research and commercial farms visited, particularly in The Netherlands and Canada, there was extensive use of technology, such as sensors, to monitor health and detect disease and discussions were about how essential it was that vet students were taught to understand how to work with and assist farmers using these technologies.

When pushed on these competing approaches, advocates of both sides of the debate tend to agree that both are necessary. Veterinary students need to be equipped with the skills to do the job and tasks that exist now, but also need an awareness of how their sector will develop over time. One observation by several interviewees was that there are limited opportunities for structured training after graduation, and that if these were developed there would be less pressure to cover everything in the degree programme. The University of Minnesota run a summer school to address this point: further training in more advanced herd level veterinary work is provided over a summer course for either final year or recently qualified vets.

4.2.1.1 Tracking (a narrower course)

One of the reasons teaching both these aspects of farm animal veterinary practice can be challenging is the sheer volume of material to be covered in veterinary degree. For every new approach or discovery there is something to add to the curriculum, but very rarely is there something that becomes redundant. One controversial solution to this is increased “tracking”, where students follow a programme of teaching based around their intended career choice.

Currently in the UK, all veterinary students must graduate with what has become known as “omni-potential”, that is the potential to work with any animal species. There is no limited licence to practice: graduates are either a vet or not – there is no farm animal only vet or small animal only vet. This is the



same in all countries visited. As a result, whilst a minor degree of tracking is permissible in the UK, most veterinary schools retain a broad curriculum. At the time of writing the RCVS have announced a wide-ranging review of this topic.

Extreme tracking within the veterinary degree is controversial at all veterinary schools, with very opposing views even within departments. An extensive discussion on the pros and cons of tracking is beyond the scope of this report, however it is important to consider the role tracking may play in training the next generation of farm vets. Supporters of tracking believe that it would allow extensive training at a much higher level of both practical skills and population health skills because these could replace the “other” species teaching. This would allow the limited resources to be invested in those students with a preference for working in farm animal jobs. Opponents of tracking point out that extreme tracking may reduce the number of farm veterinary graduates. They suggest it is likely to be a less popular choice than a small animal track as students base their choices on their own experience and the largest jobs market and veterinary schools are then left with less opportunity to inspire people to consider a farm career.

Example of tracking: Of all the veterinary schools visited, Utrecht has the most extreme version of tracking with a three-year common bachelor's degree followed by a three-year master's programme in the chosen area (which includes first aid of all species). Data were not available on the career outcomes of students embarking on the different tracks, but the senior staff were very clear that the goal of tracking was to address the challenge of curriculum overload rather than influence the jobs market or address any perceived shortfall in either competence or number of students. Historically, Utrecht veterinary school did reserve places specifically for people entering the course committed to the farm track, however this has now been stopped. A new initiative to enable direct entry to the master's level farm veterinary track for agriculture students is under development but currently not approved by regulators.

It seems that we do not know the impact that tracking could have on the choices of students and career outcomes. Both students and staff at Utrecht had stories about former students ending up in a completely different area of practice than their chosen track. Structured training and education after graduation may be a better way of allowing people to focus on one area in the current regulatory environment. Even if it becomes permitted, more data is needed before tracking can be considered a “solution” for the farm veterinary sector.

4.2.1.2 Clinical skills and experience

Many of the veterinary skills considered essential for credibility are less commonly carried out by vets than they used to be. This, coupled with a growing number of students, can make it harder to find opportunities for students to gain the experience to feel confident. At every vet school visited, simulators were available for students to develop their basic practical skills and there was a lot of time dedicated to providing training on these skills to students (Figure 3 on next page).



Figure 3. Pictured are simulators from a selection of the vet schools visited *author's own*

With routine practical procedures increasingly being carried out by farm staff, one solution to providing students with practical experience, whilst gaining experience of modern farming systems, is for commercial farms and veterinary schools to work together. Minnesota Veterinary School work with a local 10,000 cow dairy herd to give students hands-on experience. This not only provides veterinary students with practical experience, but the relationship also ensures the vet school staff and students are in touch with the requirements of a modern farm. At Calgary vet school, one of the farm teaching staff arranged a trip to large dairy herds in the USA to gain pregnancy diagnosis practice.

A connection with real farms was considered important for students gaining confidence. Teaching about the day-to-day workings of a modern farm was often considered one of the aspects that was



difficult to fit in to a full curriculum but was essential for veterinary graduates to be confident delivering services on farms. Placements on farms are an integral part of developing this understanding both for UK vet students and those at the schools visited. At Ontario Veterinary College early placements are carefully managed so that farmers with the time and interest in teaching are allocated less experienced but keen students so that they gain this experience quickly.

4.2.2 Inspiring

As well as equipping students with the required skills and confidence to work in farm animal practice, it is also important that they are inspired to consider this career option.

When talking to farm track students at Utrecht veterinary school, many of them chose the farm track based on the breadth of opportunities it prepared them for. Showcasing broader opportunities such as work in government agencies, public health, policy and charities, reduced students desire to keep small animal practice as a backup option. Further, these broader options also emphasise the contribution to society that farm vets make. These align well with many veterinary students' values, but sometimes seem to be lost in the focus on routine skills. Some farm focused veterinary students encountered on the study tour, described a perception amongst their peers that farm work is not compatible with good animal welfare and that it was not as technical as other disciplines.

It is important that these perceptions are not promoted on placements. Students and vet school staff throughout the study tour described incidents where poor practice was encountered either on farms or with vets. It is essential that early experiences are positive, particularly for students where these early experiences at vet school might be their first experiences of agriculture. These anecdotes don't just span animal husbandry and veterinary practice but personal issues as well. At conferences and at vet schools wherever visited, there were numerous stories of students encountering sexism, racism, homophobia and other forms of harassment. There was also a common perception that if you weren't already in to farming you wouldn't be welcome. This put off a lot of potential vets that might have entered the sector. Solutions to this are similar to the previous outreach section, for example championing appropriate role models and facilitating access to good quality experience.

Training and Inspiring summary

- **There is a challenging balance between teaching routine practical skills for credibility and preparing students for more advanced work in the future;**
- **Tracking (a narrower course) itself is not a guaranteed solution, more structured postgraduate development may be a better option;**
- **Good quality, supportive and inclusive experience on farms can only help**



4.3 After Vet School: Recruitment and Retention

Encouraging and inspiring more people before and during vet school to consider a career in farm animal practice may help with the recruitment of farm vets into practices. Retention in practice and the profession as a whole is also recognised as an issue. There are some strategies specific to farm veterinary practice that can be adopted.

4.3.1 Recruitment

Everywhere, both students and recently qualified vets in farm animal practices listed “support” and “mentoring” as the key aspects of a practice that they were most concerned about when looking for a position, particularly as farm veterinary work usually involves being away from the practice premises, working alone. Having the support of senior vets, both as back-up on independent visits and in terms of continued development, was a clear priority. Senior vets and owners of the practices fully recognised this concern. A key theme that emerged was the difference between saying support would be offered and delivering this support with vet students wanting employers to have, and clearly communicate, a plan for exactly what this “support” looked like.

Practices identified for good practice in recruitment highlighted that almost all their new graduate employees had spent time in the practice as students. This was the best way of communicating the support that was on offer as students saw for themselves how the practice looked after staff. This also meant these employers felt that recruitment was less of an issue: their challenge was deciding who to recruit. It is hard to articulate the culture in these practices, but when visiting and interacting with the team there is a sense that this is a positive workplace where everyone gets on. It was this supportive atmosphere that made students want to work there. Many specific positive management practices were also highlighted by employees and employers, they included:

- An initial period shadowing experienced vets
- A designated back up vet for out of hours work
- A plan for development with regular reviews and appraisals
- A reasonable amount of annual leave and time off through the week

These recruiting and management practices are not new and already take place widely. The key to success is making clear and specific what is on offer and ensuring it is seen to be happening by visiting students. Links with veterinary schools and active engagement with students can help with the communication and demonstration of these values.

Competitive salaries and terms and conditions were mentioned by many students and recent graduates as important considerations in joining a practice, but generally given less importance than support and practice culture. In New Zealand, funding has been used to try and increase the number of graduates working in rural practice. The Ministry of Primary Industries (MPI) runs the Voluntary Bonding Scheme for Veterinarians, a government bursary to new veterinary graduates taking jobs in approved rural practices set up to address staff shortages in rural practices, which should in turn improve biosecurity, animal welfare and food safety. The scheme provides a direct payment to the recently qualified vet provided they stay in the practice for at least three years, with payments being continued for up to five years. A recent review of the scheme (MacIntyre, 2019) stated that data to quantify the success and cost effectiveness of the scheme was lacking, but that it appeared to have



had some success in improving retention of vets in these practices rather than increasing the interest in these jobs in the first place.

4.3.2 Retention

No detailed data were found to determine whether recruitment or retention (or both) of vets in farm animal practice most affects vet availability in the UK or from the countries visited. Increased recruitment and better retention would help the sustainability of rural and farm animal practices and it appears many of the strategies to improve retention could improve recruitment, with the sector being more appealing to work in.

Supportive working environment: Talking to employers and employees in practices across visits, the importance of support and a positive working environment was echoed in discussions with students and recent graduates. Employers shared ideas for developing this, ranging from funding for staff leisure activities and practice social events to adequate time off and flexibility. Part of this support was aimed at encouraging people to settle in rural communities. Work in the UK has shown that being from a rural background seemed to be associated with better retention in farm practice (Adam *et al*, 2015). Many recently qualified vets will have moved to a new area and might not be from communities as rural as those that they go to work in. Suggestions to help this ranged from things as simple as offering to let a new vet leave early to go to hockey training in Canada, to sponsoring the local rugby team in New Zealand, with the new vets training alongside the farmers they work with and the practice team attending matches together to cheer on their staff.

Accommodating family life: Childcare and accommodating family life more broadly were often seen as a challenge for retention. Many practices lost staff after a few years when they were starting a family. New Zealand's MPI Voluntary Bonding Scheme for Veterinarians, which only applies to people staying in full time work, identifies this as the most common driver for people leaving the scheme before the five-year period is over (MacIntyre, 2019). One large practice in New Zealand was planning to open its own creche to help with this. In rural Australia, local businesses working together to support local services, particularly childcare, was highlighted as an opportunity to make staying in a rural location more achievable. The practices visited where part time and flexible working was facilitated felt that this made a massive difference to their ability to retain staff. Many farm animal practices in the UK still feel unable to accommodate flexible or part time working.

Out of hours work: Out of hours work was often raised as a challenge in retaining staff. Talking to farmers everywhere, the provision of out of hours emergency cover is seen as essential and many vets agree. However, working nights and weekends in addition to the normal working week is often seen as one of the hardest parts of working in farm practice. This was often discussed as "part of the job", but the work by Adam (2015, 2018) highlights that other employment options, "the alternatives", are also a factor in job retention. Due to the increase in the number of dedicated out-of-hours only providers, it is now common for small animal vets to do no out-of-hours work (Figure 4). Farm practice is in competition with this, and other "alternatives" which may provide flexible, part time and no out-of-hours working. Farm practice has much to offer: many vets pointed out the better "in-hours" working hours and lifestyle benefits of having more autonomy over their working day. These can be further enhanced with measures such as giving time off after out-of-hours work and by farm practices showcasing these benefits.



Figure 4. An out-of-hours small animal clinic in New Zealand, one of many “alternatives” to being a farm vet
author's own

Career development and progression: Career development and progression were also seen as essential for retention. In terms of recruitment, development focused more on support and mentoring in the early stages of a vet’s career. When discussing retention, professional development tended to focus more on progression and being able to pursue areas of interest. In the Netherlands, one vet described their interest in policy development and how the practice allowed them to be away responding to government and professional consultations. In New Zealand, several larger practices described their research departments as an important aspect to their business but with a particular benefit for retention because vets could explore areas of interest and find a broader range of work activities within the business. Professional development can also be facilitated by funding and allowing time for postgraduate training and development. These additional activities allow vets to work on areas that are important to them as well as wider agriculture and society. A formal



postgraduate training programme offered by Melbourne vet school helped with retention in a broader sense: many of the participants no longer work in practice but have stayed within the agricultural sector (e.g. Dairy Australia) when they otherwise might have left to pursue something else entirely.

Recruitment and Retention summary

- **Structured, well defined support for new graduates in a positive and friendly workplace is essential for recruitment;**
- **Pro-active engagement with veterinary schools and students can enable practices to showcase good practice and attract interest in jobs;**
- **Enabling part time working and opportunities for career development can improve retention**



5. Working with farmers: Services and Business models

Ensuring a consistent supply of interested, skilled vets into the farm sector and retaining them is important in meeting the needs of agriculture in the future. These vets should also offer services that modern farmers need from sustainable veterinary businesses. Further, new ways of working might also mitigate a lower number of vets in the sector.

5.1 Services

5.1.1 Variations in services used

As agriculture changes, the services which livestock farmers require from vets change as well. While there is trend for farms increasing in size, there remains a wide spectrum of livestock enterprises in the UK: from high producing dairy farms to extensive beef and sheep farms. Even within a sector the size of units, the intensity of production and business structure will vary. The veterinary services used by individual farms varied massively within countries and systems. In the Netherlands, on a day visiting several dairy farms there was a farmer who only used their vet for disbudding calves and others that worked closely with their vet across a whole range of activities from nutrition to the examination of all sick animals. Whilst some variation between farms is likely, a lot of this difference seemed to be down to the veterinary practice the farmer used, the services they offered and how well they were marketed. This pattern was repeated in Canada: within the East of Olds Dairy Discussion Group, there was huge variation in what people used their vet for, where services were not offered or carried out by a farm's own vet, or other providers were used.

5.1.2 Advisory services

Farmers that received advisory services from their vet clearly valued it, as witnessed by a presentation by Arian Kamp, a dairy farmer at the European Bovine Congress (Figure 5).



Figure 5. Arian Kamp describing the role of their vet at the European Bovine Congress *author's own*



Similarly, in Ontario an award-winning farm, Loewith & Sons, described the importance of reviewing production and performance data with their vet and how this had been a key part of their success. They were so keen on this approach, they invited the author to look around the farm during the visit, on the condition that at least three things that could be improved were shared at the end (Figure 6) Throughout all the countries visited, one of the key tasks of vets in cattle practice was the routine reproductive examination visit (

Figure 7). These regular visits to farms were credited by many of the vets for being the basis of their relationship with their dairy clients. Despite consultancy and preventive medicine becoming more important to both veterinary businesses and their offering to farms, most vets felt that routine fertility work was the way to facilitate herd health work. This regular contact was key to establishing the detailed understanding of the farm and the building of strong relationships with farmers that are needed to offer high quality advisory services.

The two sides of farm veterinary work (Figures 6 below and 7 next page)



Figure 6. The author reviewing production data in Ontario *author's own*



Figure 7. The author helping with routine technical tasks - pregnancy diagnosis- in New South Wales
author's own

5.1.3 'Critical friend'

The service role as a “critical-friend” to farms is common for modern farm vets where advice to farmers on important issues was often provided, for example, on the use of antibiotics in animals or on industry wide welfare concerns such as the fate of dairy bull calves in New Zealand. Outside of traditional farm practice, farm vets often had roles in consultancy with retailers, producer groups or government. These roles were an important opportunity for vets to act as advocates for animal welfare and safe food production. The relative independence of vets from producers and the high levels of public trust in the veterinary profession benefits the sector by providing credibility and reassurance. On a related note, allowing practicing vets to diversify their work in other areas may



benefit farmers too. Large practices in New Zealand and Canada saw their research arms as being an important part of their offering to their farmer clients, both at an industry and individual producer level. The research carried out by these large veterinary practices was directly relevant to key questions from their clients and the findings were shared immediately with producers.

5.2 Business Models

Traditionally, veterinary services are delivered from a local veterinary practice and charged for on a pay-as-you-go basis. With the trend to fewer, larger farms and the replacement of many traditional veterinary tasks with either technology or trained farm staff, in some remote areas there can be a challenge to sustaining a veterinary business. The lower the income is to a practice, the fewer vets can be employed to cover the rota, resulting in a knock-on challenge of trying to recruit new vets. This was an issue in remote parts of Canada and Australia where there may not be the density of animals or volume of work to make a veterinary business financially viable. Although the UK doesn't have the same scale of "remoteness" as Canada and Australia, similar challenges are seen in places like the Highlands and Islands of Scotland. The most challenging aspect is the provision of out-of-hours emergency cover which raises questions around who is responsible for ensuring veterinary cover available in these areas. One option to try to address provision of veterinary cover would be farmer-owned-and-run veterinary businesses. "Farm Vet Clubs" in New Zealand were originally established by cooperatives of farmers trying to work together to recruit vets. A similar model is seen in large farms in the USA where the farm may employ a vet, or team of vets to provide veterinary cover. Both these models shift the responsibility and cost of providing veterinary cover to the farms but would also allow for the call out cost to be subsidised. A further development in large farms in the USA is that while emergency cover was often provided by the farm's own vets, consultancy and advisory work was carried out by external vets.

The shift in veterinary work towards more "herd health" and consultancy work is not new. This trend has been discussed at veterinary conferences and in reports for decades. Despite this, almost all the practices visited agreed that knowing how to incorporate this into a business model is challenging. As a vet and dairy data expert at Utrecht University said, many vets make a living from the 5% of cows that get sick, rather than the 95% that they prevent getting sick. There is no clear solution to this. Many of the practices visited thought that the use of contract systems with a fixed monthly fee based on production or number of animals would help. This model benefits both the farm and veterinary business in terms of reducing risk and allowing better cash flow. It also means both businesses benefit when things are going well rather than the situation where (in purely monetary terms) the farm's worst day is the vet's best day. Despite the appeal of these systems, the detail of what is included and what it should cost can prove challenging to agree, requiring a bespoke arrangement for each client-vet relationship.

Remoteness is less of a barrier for this consultancy style of work. There are some veterinary businesses that provide these services without traditional emergency work. They use technology and local technicians to enable remote working: this model may provide some solutions to the challenges in traditional practice. One example of this type of veterinary business is Feedlot Health Services (FHS) in Okotoks, Alberta:-



FHS have clients across Canada, the USA and Mexico as well as in Kazakhstan. FHS employ over 35 vets and consultants, many living remotely from both the headquarters in Alberta and from their clients. All clients joining the practice are given bespoke computer software that connects to recording systems and sensors on the farm. The software backs these data up daily to servers at the practice, allowing the farm's vets and advisors to monitor performance daily. Veterinary records, prescriptions, diagnoses and advice are sent back to the on-farm computer system. Post-mortem data is collected by local technicians or trained farm staff following standard operating procedures and uploading photos allowing the vets to make a diagnosis remotely. These remote services are complemented by telephone discussions and regular face-to-face meetings between the vets and farmers, with these taking place when it is convenient to both parties.

Another feature of FHS, also seen in large farm animal practices in New Zealand, was the use of technicians to carry out many procedures traditionally done by the vet, or farm staff themselves were trained by the vets to carry out the procedures. There was also a lot of cooperation between veterinary and non-veterinary advisors within the businesses. This was better for farmers, as the right expertise was provided by the right people, as well as being good for the veterinary business by being able to offer a wider range of services.

Services and Business Models summary

- **Vets will continue to become more reliant on income from consultancy services;**
- **Technology may overcome some challenges of serving remote clients, but maintaining emergency cover may require careful planning by farmers;**
- **The use of technicians and allied professionals within a veterinary (or animal health) business helps add value to clients**



6. Discussion

6.1 Definitions and data

Throughout the study tour people asked, “is there actually a shortage of farm vets?”. It seems that in the UK and in the countries visited no one is quite sure. Some practices have difficulty recruiting farm vets, some mixed practices have changed to do small animal work only, but there is no data to support an absolute shortage or problem in supply. Apart from very specific challenges in areas like the Highlands and Islands of Scotland, there are also few reports of farms unable to access veterinary services. The lack of data itself does not mean there is not a problem and, in related aspects of the profession, such as in meat hygiene work, there are clear threats to recruitment and continued provision of veterinary services. There are also broader issues in terms of capacity of the profession to help respond to exotic disease outbreaks, such as the Foot and Mouth disease outbreak in 2001. **Careful recording of both supply and demand for veterinary services in agriculture is therefore needed to quantify the challenges faced as well as measure the success of any strategies.** If government intervention, either in the form of a subsidy or in changes to immigration or education policy, is required, clear evidence will be needed to justify them.

Definitions are also important to pinpoint the problem. Overseas, it appeared that the greater staffing problems were in the rural practices, undertaking farm and small animal work, rather than in farm animal practices and similarly in the UK it is the mixed practices where vet numbers are thought to be declining but the statistics available are unclear on the actual positions of mixed v. farm animal practices. Whilst the findings in this report could relate to both rural mixed and purely farm animal practices, knowing where to target any interventions is essential.

6.2 The veterinary profession and providing services for the livestock industry

The study tour and report cover a wide range of topics. Throughout the study tour and even coming to the end of the report writing, the author considered focussing on any one of the four key areas described (outreach and admissions, training and inspiring, recruitment and retention and then services and business models) as there is so much detail to be explored on each. However, it became apparent during the study tour that, whilst the areas are often considered in isolation, there are consistent themes that recur at each stage, as summarised in Figure 8 on the next page. These recurrent themes, beginning with Values, will be discussed in turn.

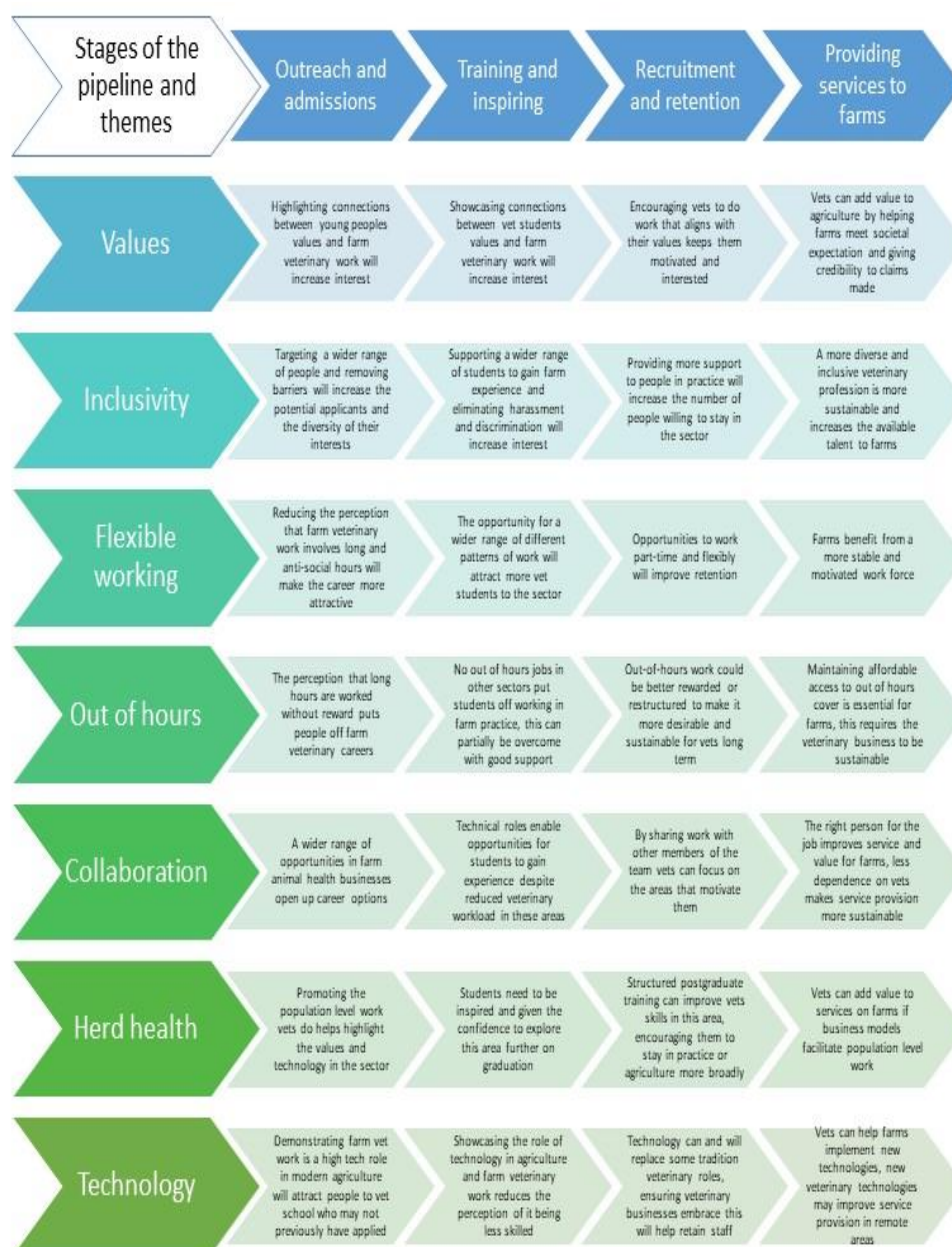


Figure 8. Summary of how the themes and stages identified interact

author's own

6.2.1 Values

The personal values of people entering the profession came up in conversation throughout the tour, particularly when talking to veterinary students. The veterinary profession could do more to showcase the profession's contribution to animal health, welfare and food standards, within and outside the profession. Explaining the impact that farm animal vets can have on animal welfare and on the environmental footprint of livestock production would demonstrate to young people trying to decide on their careers that a veterinary role can align with their principles on these issues. Promoting these ideas may also highlight the professional satisfaction that can come from working in agriculture, overcoming the perception that farm animal veterinary work is less technical or valuable than other sectors. Practices supporting their veterinary staff to become involved in these issues could keep them



interested and motivated, whether conducting consultancy with clients or being involved in research or policy development. All these approaches also benefit agriculture, not only by improving the interest and supply of farm animal vets, but by providing a veterinary profession that can help farmers meet public expectations and promote the good work agriculture does in these areas.

6.2.2 Inclusivity

At every step of applying and getting into vet school, training at vet school, and working in farm animal practice it was clear that some people were put off. There are multiple barriers for many people ranging from a lack of exposure and work experience opportunities, to a lack of role models, or discrimination (overt and covert), which can range from a perception that you must be from a farming background to work in the industry, difficulty in gaining enough experience to build confidence, or when gaining experience on farms or in veterinary practice being subjected to sexist, racist, xenophobic or homophobic abuse. The veterinary profession and farming community must work together to reduce and eliminate discrimination and harassment. Not only do these barriers reduce the number of people who consider working in the industry, they also limit the benefit to the veterinary profession and farming community of engaging with a wider range of people. With consumers largely based in cities and potential markets for UK produce all over the world, the veterinary profession is well placed to help reassure consumers that their expectations are being met and to support farmers in meeting them. There are many large, societal challenges to overcome in this area, but there are specific steps that veterinary schools, employers and farmers can take to help. Acknowledging the existence of discrimination and supporting students and employees who experience it, as well as educating the profession and farmers on the issues and how to address them, will demonstrate that the profession takes this seriously and that everyone is welcome.

Another aspect of unconscious exclusion is that it is common (and perhaps understandable) that practices and farms are keen to take the most experienced students for work experience but this limits the opportunity to inspire people and communicate the good work vets do. Even if veterinary students decide to pursue a career in small animal practice, their good experiences on farms and with farm animal vets will be shared with clients and future generations of veterinary students.

6.2.3 Flexible working practices

Lack of opportunities for part-time work came up as putting vet students off a career in farm animal practice as well as being a reason for poor retention. Lifestyle expectations are changing for modern graduates and the lifestyle offered by alternative veterinary career options already accommodate these needs. Farm animal practices must adapt to accommodate flexible and part-time working but, while challenging to accommodate, recruitment and retention may remain an issue until practices change. These challenges were highlighted particularly (although not exclusively) by female vets, who were keen to stay in farm practice but were worried that they would have no option but to move to a small animal role if they started a family. The vets and employers where more part-time and flexible working was accommodated spoke of how valuable flexibility was to the business and farms, retaining good staff and offering consistency for long standing clients. Some businesses also highlighted that, if you do accommodate employee requirements for family life, they are likely to remain in the area and with the business for a long time. Practices accommodated these needs in different ways: some offered a reduction in hours; others changed the balance of work with more mentoring and routine work for those that were part-time.



6.2.4 Out of hours working

Alongside part-time and flexible working is the challenge of providing out-of-hours cover. Practices varied in how people working part-time contributed to the rota. In some instances, this was pro rata, in others part-time staff still did a full share of the rota and occasionally vets doing no out-of-hours work were accommodated. What was striking was how consistently out-of-hours was noted by vets and vet students as one of the hardest parts of the job. It is also one of the most highly valued services offered by farm vets, with some farmers using almost no other services but still requesting emergency cover. Even though providing this service is incredibly costly to vets and incredibly valued by farmers, it remains one of the smallest revenue streams in most practices. The provision of emergency cover is also most challenging in remote areas. There is no easy solution to this. The provision of emergency cover is integral to the identity and expectations of a farm animal vet and a necessary contribution to farming communities and the welfare of farmed animals. However, it remains a significant challenge to recruitment and retention. The low revenue generated by out-of-hours work limits the financial compensation and time-off-in-lieu that vets are offered for this work. Increasing the cost of emergency visits feels unacceptable. Many vets suggest “being on call” is the hard bit, rather than the calls themselves.

The author feels that the most sustainable and transparent model is to charge a retainer for emergency cover. This could be linked to spending on other services, reducing the cost for farmers supporting the veterinary business in other ways. This approach acknowledges the cost of providing this service without disincentivising calls in an emergency and making what is usually already a stressful event worse by producing a large bill. The income generated by such a system may also enable smaller practices to maintain a local presence in more remote areas.

6.2.5 Collaboration

One way to address the challenge of a shortage of veterinarians would be to share the tasks out to a wider range of veterinary staff. Currently use of “para-professionals” in farm animal veterinary practice is generally a lot lower than the use of veterinary nurses in small animal practice but some farm practices make use of a wider team, with tasks like dehorning and vaccination carried out by non-veterinary members of the practice and involving other professionals in animal health businesses, such as hoof-trimmers or nutritionists. This benefits the practice and farmers, allowing farmers to cost-effectively outsource procedures they might have done themselves. At the same time, para-professionals working directly with veterinary practices can increase available data and ensure good communication, for example, a foot trimmer working for the practice can share the records directly with the farm’s vet, or a technician vaccinating cattle can update practice records to show which animals have been vaccinated. There is more scope to increase the role of para-professionals in farm animal practices, and potentially this could even include traditionally core veterinary procedures such as pregnancy diagnosis of cattle or even “paramedic” type services in remote areas with a shortage of vets.

But there are challenges to this approach, particularly that much of the income a vet generates for the business is from routine technical procedures and with increased use of para-professionals, veterinary businesses may need to maximise the number of vets in the business to have the maximum number of vets staffing the out-of-hours rota. On the other hand, using more para-professionals has wider benefits. It increases veterinary/animal health career options for people interested in working in this area who are more interested in practical skills than the high academic performance needed to go to



veterinary school. The technician roles would provide valuable practical training opportunities for aspiring vets to gain hands-on experience. The reduction in routine technical work for vets may also improve retention and interest in farm animal veterinary careers among vet students by allowing them to focus more on the work that aligns with their interests and values.

6.2.6 Herd health

Most vets recognise that there is increasing demand for and need to offer “herd health” preventive medicine services but many say that it is still difficult to make it work in practice. Routine technical procedures are often seen as essential for building relationships with clients and allowing discussion on these broader topics. Business models, with hourly rates for time on-farm, may restrict the opportunity for longer more involved discussions. To charge realistically for these services, vets must add value to farms and be able to communicate this value. There are challenges but delivery of these services will provide many benefits. For the vets, if an increased proportion of a vet’s time is spent on preventive, pre-booked work then this facilitates part time working because the workload can be planned and managed in advance. Such work aligns well with the values that attract people to the veterinary profession and helps counteract the perception of some students that farm work is less valuable. And, done well, this type of veterinary work also benefits the livestock sector more broadly by preventing problems, reducing costs and increasing production sustainably.

Adding value to farms with this type of work and being able to communicate that value requires vets to have the relevant skills. Without radical change from regulators and veterinary schools there will always be limited space in the veterinary curriculum and a resulting tension between teaching practical skills and herd health skills. There must be enough herd health teaching to inspire students and give them the confidence to undertake this type of work after graduation. Structured postgraduate training seems a more sustainable way of delivering this and would provide the structure and progression that aids with retention.

6.2.7 Technology

This should be an attraction for recruits to the vet world. As in many sectors, developments in technology are enabling and forcing change in both farming and the veterinary profession. Farming is a high-tech industry and vets should be involved in the use of technology on livestock farms, whether it is helping interpret health information from animal-based sensors or advising on the value and impact of farm investments in technology related to animal health and welfare. Teaching veterinary students about the role of sensors, big-data and other technologies in livestock is considered an essential part of the curriculum. Beyond teaching students these skills, showcasing the role of technology in farm animal veterinary work to both veterinary students and people considering a veterinary career would help dispel the myth that farm work is less technical and rewarding. This may also attract people to veterinary degrees with a wider range of career interests, appealing to those interested in technology, maths and data, as well as those interested in working with pet animals.

The use of technology can also alleviate, and contribute to meeting, some of the challenges in the sector. For example, the use of telemedicine and on farm technologies may overcome problems involved in delivering veterinary services to remote areas, or increase the benefits of automation such as using in-line sensors available in milking parlours to monitor for likely pregnancy in dairy cows. As these and other technologies become more widely available, the balance of work a vet carries out will change whether business models adapt or not. It would be better to embrace this change now to help



ensure developments are directed towards areas that will benefit farmers and their animals the most as well as ensuring a sustainable veterinary service to farms.

Discussion Summary

- **Data needs to be captured to accurately define the recruitment and retention challenges and the supply and demand for veterinary services and the most effective ways to address them;**
- **There are recurrent themes that arose throughout the study tour and apply at each of the stages described earlier in the report – admissions, recruitment and retention of farm vets at the same time as improving services to farmers – which interact and can influence each of the stages;**
- **These recurrent themes are the values that the farm animal veterinary profession promotes, improving inclusivity, allowing more flexible working and reconsidering out-of-hours delivery, improving collaboration and broadening the practice team, increasing herd health services and embracing new technology**



7. Conclusions

- Concern about recruitment and retention of vets in farm and rural veterinary practice is a global phenomenon, however there is limited data on exactly where the problems are and how they can be improved.
- The public perception of a veterinary career limits interest predominantly to those interested in small animal veterinary work. There are significant barriers to some demographic groups in pursuing a veterinary career, particularly in farm animal practice.
- Working practices and conditions in farm animal veterinary practice are not perceived as being favourable compared to alternative veterinary careers, particularly around flexible, part-time and out-of-hours working.
- Increased preventive work is the future of farm animal veterinary practice. Embracing and enabling this change will improve recruitment of vets, retention of vets and the service farmers receive.
- Advances in technology will enable, and in some cases force, changes to the way farm vets work: the profession must embrace and drive these changes.

8. Recommendations

1. Better data must be collected that identifies if and where there is a shortage of farm animal or rural vets.
2. Vet schools' and the veterinary profession's outreach activities must showcase a range of veterinary careers and role models.
3. Farm animal veterinary businesses must find ways to accommodate flexible and part time working, reconsidering the model for providing out of hours needs to be part of this.
4. Strong partnerships between farming organisations, veterinary practices and veterinary schools, particularly in terms of teaching must be increased.
5. Provision of structured postgraduate training in a range of modern farm animal veterinary work will improve retention and ensure vets are able to meet the needs of modern farmers.



9. After my study tour

Undertaking the study tour and writing this report feels like the start of a project rather than the end. I expected to encounter clear solutions with data to support them on the study tour. Instead I encountered shared challenges and frustrations, but also shared passions and ideas. I am keen to continue exploring this area and working with contacts in the UK and overseas. There are so many unanswered questions and so many ideas that I could not fit in to the report.

In my own work, findings and ideas from my study tour are already informing my teaching and our curriculum development. I look forward to sharing these ideas with colleagues at other vet schools as well. I am also planning to work on developing an evidence base for many of the ideas or anecdotes shared with me in meetings and on visits.



Acknowledgements and thanks

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My partner, Katie, has been incredibly patient with me planning my study tour, and being away for a long period of time, including me being in Australia when she sat (and passed) some important professional exams back here in Europe. Katie has also been a great source of ideas and support as I have discussed my project. Thank you.

Last, but by no means least, the project itself would have come to nothing if it wasn't for all the people in the UK and overseas who were willing to give up their time to share their ideas with me and to answer my questions. I am grateful to everyone who has taken the time to meet with me in person, or to speak on the phone. I would like to say thank you all those people who have so willingly invited me into their homes, businesses and workplaces. The ideas and arguments presented in this report are a distillation of all these conversations. I have made a list of all those who I had a formal meeting with as an appendix. Thank you all.

John Remnant



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Appendix 1: Meetings and people

I would like to acknowledge the contribution of all the people I have met with and discussed this project with. There have been countless helpful, informal discussions both within the UK and on my study tour. Whilst these are not all recorded, I would like to thank anyone and everyone that has taken the time to discuss these ideas with me. Following is a list of all my recorded meetings and contacts. Thank you all.

<i>Name</i>	<i>Organisation</i>	<i>Location</i>
Gordon Atkins	University of Calgary	Alberta, Canada
Herman Barkema	University of Calgary	Alberta, Canada
Betty Jo Bradley	By phone, Livestock Veterinary Services	Alberta, Canada
Calvin Booker	Feedlot Health Services	Alberta, Canada
Cody Creelman	Mosaic Veterinary Partners	Alberta, Canada
Sylvia Checkley	University of Calgary	Alberta, Canada
Anabelle Denson	University of Calgary	Alberta, Canada
Alessa Kuczewski	University of Calgary	Alberta, Canada
Frank van der Meer	University of Calgary	Alberta, Canada
Denis Nagel	Solvat	Alberta, Canada
Karin Orsel*	University of Calgary	Alberta, Canada
Karin's grad student discussion group	University of Calgary	Alberta, Canada
Bruce Stover	University of Calgary	Alberta, Canada
Miranda Verhoef and the whole discussion group	East of Olds Dairy Discussion Group	Alberta, Canada
Adam Little	By phone from UK	Canada
Jim Bennett, the team in the practice and clients	Northern Valley Vets	Minnesota, USA
Gerard Cramer*	University of Minnesota	Minnesota, USA
Students and staff at the Dairy Education Centre	University of Minnesota	Minnesota, USA



Sandra Godden	University of Minnesota	Minnesota, USA
Tim Goldsmith	University of Minnesota	Minnesota, USA
Erin Royster	University of Minnesota	Minnesota, USA
Perle Zhitniskiy	University of Minnesota	Minnesota, USA
People that attended my seminar	University of Minnesota	Minnesota, USA
Vicky Brooks	Charles Sturt University	New South Wales, Australia
Allan Gunn	Charles Sturt University	New South Wales, Australia
Seumas McKillop, the team and clients	Holbrook Vets	New South Wales, Australia
Chris Petzel	Charles Sturt University	New South Wales, Australia
Emma Scholz*	Charles Sturt University	New South Wales, Australia
Murray Scholz NSch	Scholz Farming Company	New South Wales, Australia
Rob Woodgate*	Charles Sturt University	New South Wales, Australia
Farm rotation students	Charles Sturt University	New South Wales, Australia
People that attended my seminar	Charles Sturt University	New South Wales, Australia
Mark Bryan	VetSouth, VetNZ	New Zealand
Andrew Bates	VetLife	New Zealand
Abi Chase	Boehringer Ingelheim Animal Health	New Zealand
Tennielle Ellingham, Liana and the team at the practice	Anexa FVC	New Zealand
Megan Gordon	Massey University	New Zealand
Stuart Gordon*	Massey University	New Zealand



Jon Huxley*	Massey University	New Zealand
Ben Hancock NSch	Beef and Lamb New Zealand	New Zealand
Eloise Jillings	Massey University	New Zealand
Natalie King	Massey University	New Zealand
Richard Laven	Massey University	New Zealand
Kevin Lawrence	Massey University	New Zealand
Meredith Love, the team in the practice and the students	Massey University	New Zealand
Kristina Mueller	Massey University	New Zealand
Janet van Polanen	Ministry for Primary Industries	New Zealand
Anne Ridler	Massey University	New Zealand
Jenny Weston	Massey University	New Zealand
Farm rotation students	Massey University	New Zealand
People that attended my seminar	Massey University	New Zealand
Rita Couto Serrenho	Ontario Veterinary College	Ontario, Canada
Todd Duffield	Ontario Veterinary College	Ontario, Canada
Jessica Gordon	Ontario Veterinary College	Ontario, Canada
David Kelton	Ontario Veterinary College	Ontario, Canada
Stephen LeBlanc*	Ontario Veterinary College	Ontario, Canada
Kerry Lissemore	Ontario Veterinary College	Ontario, Canada
Terri O'Sullivan	Ontario Veterinary College	Ontario, Canada
Dave Renaud*	Ontario Veterinary College	Ontario, Canada
Wayne Shewfelt and the Tavistock Vets team and clients	Tavistock Veterinarians	Ontario, Canada
Charlotte Winder	Ontario Veterinary College	Ontario, Canada
The herd health elective students at OVC	Ontario Veterinary College	Ontario, Canada



The organising committee at VetEd Down Under	VetEd Down Under, University of Queensland	Queensland, Australia
The participants of my workshop at VetEd Down Under	VetEd Down Under, University of Queensland	Queensland, Australia
Hilde Aardema	Utrecht Vet School	The Netherlands
Geart Benedictus*	Royal GD	The Netherlands
Speakers and delegates	European Bovine Congress	The Netherlands
Staff at the Dairy Campus	Dairy Campus, Friesland	The Netherlands
Farm track students	Utrecht Vet School	The Netherlands
Miel Hostens	Utrecht Vet School	The Netherlands
Ruurd Jorritsma	Utrecht Vet School	The Netherlands
Pieter Kirkels (and clients)	Universitaire Landbouwhuisdieren Praktijk (ULP)	The Netherlands
Betsie Krattley-Roodenburg	Universitaire Landbouwhuisdieren Praktijk (ULP)	The Netherlands
Wim Kramer*	Utrecht Vet School	The Netherlands
Arjan Stokman	Stokman Koudum	The Netherlands
Peter Vos	Utrecht Vet School	The Netherlands
Arne Vanhoudt	Utrecht Vet School	The Netherlands
L and J van der Zijl	Haskerweide, Dairy Farm	The Netherlands
People that attended my seminar	Utrecht Vet School	The Netherlands
Kate Adam	Scottish Rural University and College	UK
Board members	British Cattle Veterinary Association	UK
Niall Connell	Royal College of Veterinary Surgeons	UK
CHAWG members and attendees	Cattle Health and Welfare Group (CHAWG)	UK
Simon Doherty	British Veterinary Association	UK
Daniella Dos Santos	British Veterinary Association	UK



Susan Dawson	Royal College of Veterinary Surgeons	UK
Linda Prescott-Clements	Royal College of Veterinary Surgeons	UK
Navaratnam Partheeban	British Veterinary Ethnicity and Diversity Society	UK
Veterinary Capacity and Capability Group	Department for Environment Food and Rural Affairs	UK
XL Vets Farm Group	XL Vets Farm conference	UK
Sarah Bolton NSch	Dairy Australia	Victoria, Australia
Peter Mansell	University of Melbourne	Victoria, Australia
Michael Pyman*	Dairy Australia/University of Melbourne	Victoria, Australia
Zoe Vogels	The Vet Group (by phone)	Victoria, Australia

I'd like to particularly thank the people marked * who helped me to plan and coordinate my visits

John Remnant



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