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Review of Emergency Care, after hours

Insights from a systems thinking approach:

An explanation of the causal diagram developed during the review

June 2024

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Executive summary

This document is a summary companion to support and help explain the causal diagram developed during the review of emergency care, after hours. It is in large part based on the final report produced by Deliberate, which will be issued following this presentation of the causal diagram at the NZVA * NZVNA Conference in Otautahi | Christchurch in June 2024.

Given the complex nature of the issues being experienced with emergency care, after hours, as system thinking approach was used to investigate them.

Four areas to get into balance

This found that four areas were loosely indicative of a healthy state of emergency care, after hours. These were:

- Confidence and proficiency in both the technical *and* non technical skills required to deliver emergency care, after hours shifts;
- Willingness to do emergency care, after hours shifts;
- Ensuring that the frequency of shifts is appropriate (for different vets and clinics circumstances); and
- Financial viability of emergency care, after hours.

Six themes were identified in the profession and drawn in a causal diagram. These are listed below. It is within these themes that interventions can be taken to influence the four areas listed above:

Vet confidence, proficiency & willingness to do emergency care shifts

Vet confidence, proficiency, and willingness to do emergency care shifts are all linked and involve not just technical clinical skills, but also the expertise to deal with clients and manage the non-technical aspects of emergency care, after hours.

Willingness to do shifts also influences the number of vets available on each roster and the resulting roster frequency.

Client circumstances and expectations

There are a range of circumstantial pressures on clients that vets cannot change, such as the number of animals they have; the value they see in their animals; and the extent they believe animals need high levels of care. Vets can, however, adjust the way they provide services to shift client experiences and expectations.

Tensions often arise when there is a difference between what clients expect and what individual vets consider is appropriate for emergency care, after hours. This can increase pressure on vets and affect their wellbeing.

Discussions about pet insurance fit under this theme. As well as providing security to clients that their vet bills will be covered, it ensures that vets are properly remunerated for the work they do.

Financial considerations

There are a range of external pressures on clients' ability and willingness to pay for emergency care, after hours - not all of which vets can influence. There are also many factors, which vets can influence, that determine whether vet fees are fully charged or discounted. Both sets of influences are linked to the financial viability of emergency care and clinics in general. They are also important when practices are considering partnering to provide emergency care, after hours.

Medical knowledge and training

Clients and many vets expect that sophisticated medical care and technology will be available, even after hours. There is also a current expectation that people will see a vet rather than another member of the veterinary team, even outside normal business hours.

The role that Massey University plays in veterinarian training and graduate preparedness is also critical under this theme and is an important area of influence. However, there are significant delays before new Massey graduates can complete their studies and have an impact in the industry.

Vet professional development in practices

Professional development through on-the-job training and mentoring has a strong impact on the confidence and proficiency of vets. This relates to both the technical and non-technical skills required to deliver high quality veterinary services.

Time delays mean that recent changes to training and mentoring will take time to flow through to results.

Vet stimulation in work, wellbeing and job satisfaction

Influences on vet stimulation in work, wellbeing and job satisfaction include remuneration; anxiety relating to emergency services delivery; the level of challenge received from work; health and safety concerns; and general life pressures. Non-technical skills, such as dealing with people and money, also play a role and flow through to all parts of the emergency care system.

Concerns about liability are also linked to the likelihood a vet will accept non-emergency cases.

Insights and tensions

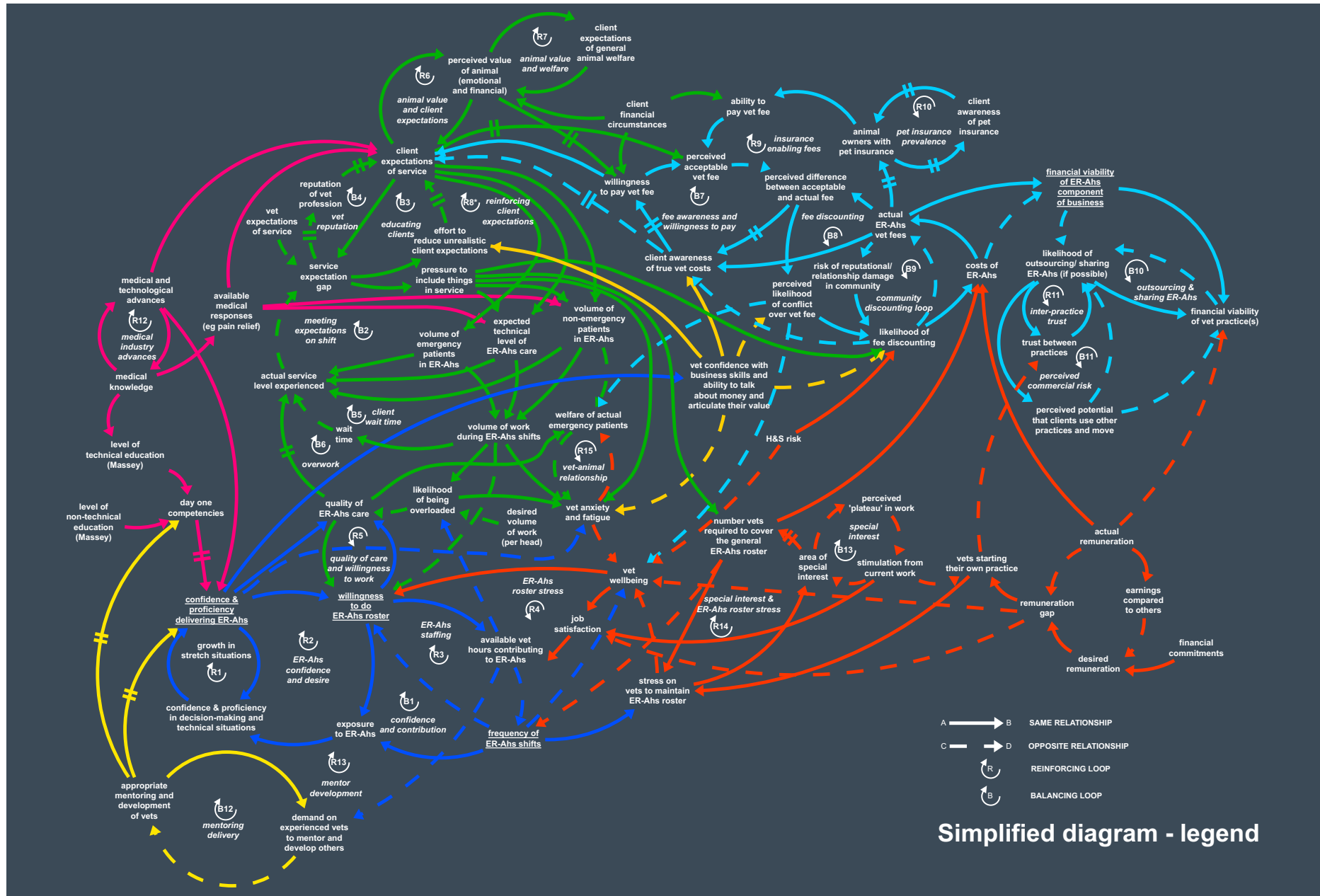
Within these six themes, a range of insights and tensions were observed. These are places where action could be focused. Action will require support, direction or even leadership from more than the Vet Council. A summary of these insights and tensions are:

- Doing emergency care, after hours builds confidence and competence.
- Confidence & proficiency, willingness, wellbeing all move together. Frequency of shifts moves opposite them.
- Dealing with clients and money is a critical, sometimes unnurtured skill.
- Meeting unrealistic client expectations can further reinforce them. This overworks and fatigues vets, reducing wellbeing.
- Due to liability concerns, vets accept non-emergency patients, increasing the potential of overwork.
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- Due to liability concerns, vets accept non-emergency patients, increasing the potential of overwork.
- Mentoring is important. Especially for non-technical skills.
- Vets often require non-technical skills (e.g. dealing with people or money) that are not developed in vet training or mentoring.
- Mentors take time to grow and improving mentoring will take time. Mentor numbers are constrained in the interim.
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- Vets often require non-technical skills (e.g. dealing with people or money) that are not developed in vet training or mentoring.
- Mentors take time to grow and improving mentoring will take time. Mentor numbers are constrained in the interim.

It is hoped that these insights and the causal diagram explained in this support document, can be used as a tool to support better understanding of the issues within the profession. Further, it can aid vets, practices, or even potentially groups of practices or a region to support decision-making on what action to undertake and where.

An image of the causal diagram is provided overleaf.



1. Introduction

In late 2023 Deliberate was approached by the Veterinary Council of New Zealand (VCNZ) to support them in an investigation. This was in relation to issues relating to the provision of veterinary emergency care after hours (ER-Ahs). Emergency care provision is a requirement of the Council for all veterinarians in clinical practice. Yet many practices are experiencing challenges in its delivery. These challenges have been ongoing for many years but have more recently been accentuated by a veterinarian shortage across the country.

As a result, Deliberate was commissioned to run a series of workshops that took a systems thinking view on the issues relating to ER-Ahs. This was to help VCNZ better understand the issues and challenges and help inform any potential action plan to deal with these that may be developed in conjunction with the wider industry.

This report summarises this process and its findings.

2. What is systems thinking?

The world that we live in is a highly interconnected place of causality and effect. The work of policy development often seeks to respond to undesirable behaviour or patterns being experienced in our natural environment and therefore seeks to influence these causes, to alter or improve the desired behaviour.

'Systems Thinking' is a name often applied to a range of approaches to thinking about issues holistically. One of these approaches is academic discipline of 'System Dynamics'. System Dynamics originated from the Sloan School of Management at the Massachusetts Institute of Technology, Cambridge, Massachusetts in the late 1960's.

Systems thinking, as articulated by the discipline of System Dynamics, is a conceptual framework and set of tools that have been developed to help make these patterns of interconnectedness clearer (Senge, 2006). They help us understand the structure of a set of various interacting factors that create a behaviour that we are trying to understand. Once these interconnections are

articulated, we can better understand which parts of a system are having the most influence on the behaviour, allowing us to identify areas of leverage in order to influence this.

Where the term systems thinking has been here, it refers to the qualitative concepts articulated by the discipline of System Dynamics (Sterman, 2000). The main qualitative tool that this discipline uses to understanding systems is called a causal loop diagram (CLD) or a causal diagram. Throughout this report the term 'causal diagram' has been used.

3. The fundamentals of causal diagrams – articulating system structure

At the core of a causal diagram is the desire to visually articulate the relationships between variables that best explain the behaviour of the system that you are trying to understand. This visual articulation of relationship is known as 'system structure'.

This section outlines important fundamental elements of system structure. These are:

- feedback loops;
- how feedback loops are correctly annotated; and
- the use of the 'goal/gap' structure (as this can explain how different loops dominant in a system at different times).

It is recommended that the reader familiarises themselves with these concepts, as an understanding of them is required to read the causal diagrams in this report and gain insight from them.

3.1. Feedback loops – the basic building blocks of a causal diagram

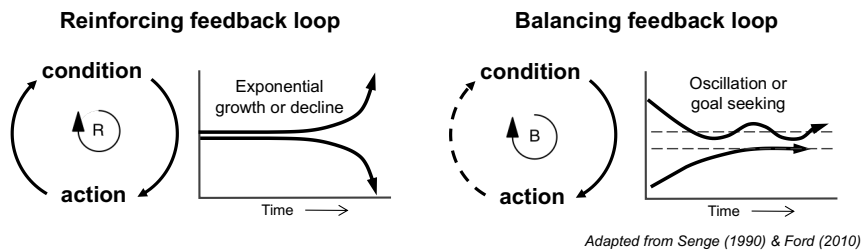
Systems thinking is especially interested in systems where loops of causality are identified – these are called feedback loops. There are two types of feedback loops, reinforcing and balancing (Senge, 1990).

In a reinforcing feedback loop, the direction of influence provided by one factor to another will transfer around the loop and influence back on the originating factor in the same direction. This has the effect of reinforcing the direction of the original influence, and any change will build on itself and amplify. Another way of saying this is that influence will spiral, either upwards or downwards. Reinforcing loops are what drive growth or decline within a system.

In a balancing feedback loop, the direction of influence provided by one factor to another will transfer around the loop through that one factor (or series of factors) and influence back on the originating factor in the opposite direction. This has the effect of balancing out the direction of the original influence. Balancing loops are what create control, restraint or resistance within a system.

The two types of feedback loop are described in Figure 1.

Figure 1. The two types of feedback loops



Feedback loops can be made up of more than two variables and can be mapped together to form a causal diagram). How these interact provide insight into how a wider system operates.

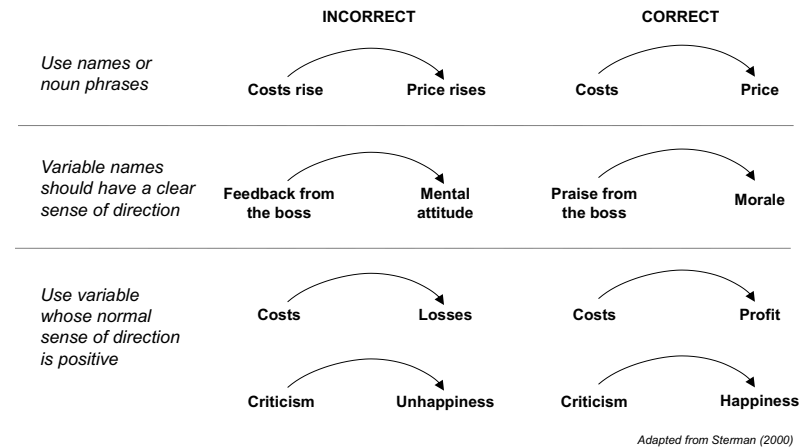
When feedback loops are described in this report, they describe the feedback loop operating by itself only. In other words, this describes their dynamics – *all other things being equal*.

3.2. Labelling variables

An important concept within causal diagrams is the concept of accumulation (or decumulation) –where do things build-up (or decrease) in your system? The simple analogy of a bathtub is often used to describe this (for more on this see section 4.5).

In causal diagrams, this concept of accumulation is captured by describing variables in such a way that their name implies that they can increase or decrease. This means that they should be described as nouns; have a clear sense of direction; and have a normal sense of direction that is positive. Examples to demonstrate this are shown in Figure 2.

Figure 2. Labelling variables



3.3. Annotating loops

Variables within causal diagrams are connected (and made into feedback loops) by arrows, which indicate that one factor has a causal relationship with the next. These arrows are annotated with either an 's' or an 'o' which stands for 'same' or

'opposite'. These terms correspond to the direction of change that any change in the first variable will have on the second variable.

For example, if a directional change in one variable leads to a directional change in the next variable in the same direction, it is a same relationship. Likewise, if the second variable changes in the opposite direction, it is an opposite relationship. See Figure 3 for a visual description.

If there is a notable delay in this influence presenting in the second variable, when compared to the other influences described in the causal diagram, this is annotated as a double line crossing the arrow. An example of this is shown in Figure 4.

3.4. Goals and gaps – driving individual loop dominance.

Realising that multiple loops are operating within a system is the first useful insight of systems thinking. A further useful insight is understanding that not all loops operate at the same strength all of the time. Different loops can dominate the dynamics of a system at different times. For example, a system might be dominated by a period of growth (a reinforcing loop), but when some kind of physical limit is approached (e.g. the available space in a pond for algae to grow) a balancing loop will start to dominate, therefore slowing the rate of growth.

One useful mechanism for gaining insight into the strength of a balancing loop is the 'goal/gap' structure. This is a structure that combines both a desired level of something (a 'goal'), with an actual level of something. This difference between these variables is the 'gap' between the desired and actual levels.

The higher the desired level and the lower the actual level, the greater the 'gap' or difference and the stronger the operation of the loops that this gap influences. The lower the desired level and the higher the actual level, the lower the 'gap' or difference, and therefore the weaker the operation of the loops that this gap influences.

The 'goal/gap' mechanism can be seen within the causal diagram in this report. A conceptual example is shown in Figure 5 which shows the act of filling a glass of water.

Initially, while the gap/difference between the desired and actual water level is high, the tap will be opened more and the strength of the water flow is higher.

As the desired level of water is approached the gap/difference reduces, so the tap is closed further, weakening the flow of water (you don't want the water to overflow the glass), until it is fully closed when the water level reaches the desired amount (Senge, 1990).

Figure 3. How arrows are labelled in causal diagrams

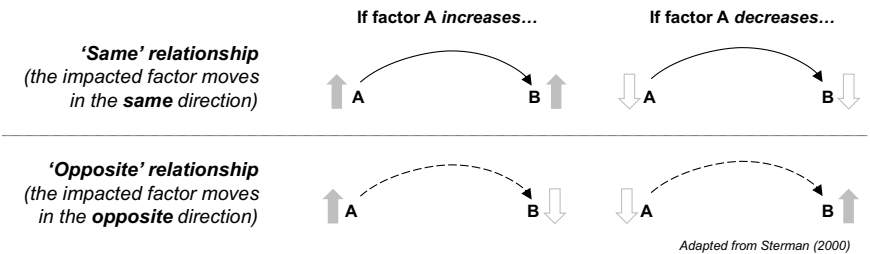


Figure 4. How delays are annotated on arrows

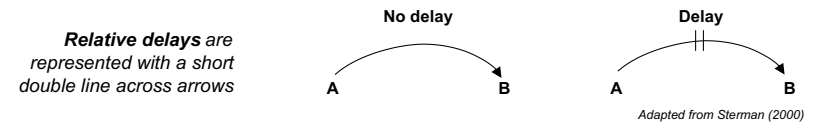
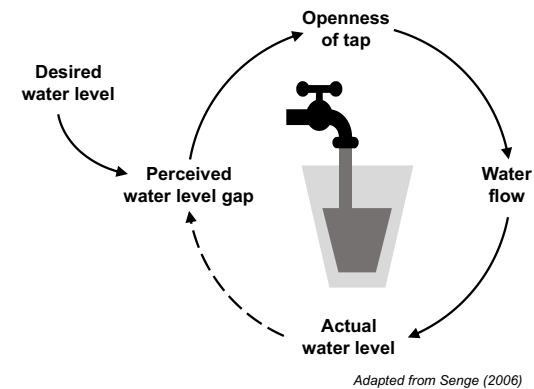


Figure 5. Example of a 'goal/gap' structure in a causal diagram – pouring a glass of water



4. The methodology used

The insights in this report were developed from a series of workshop run with a cross section of veterinarians from different practice profiles, species interests, and geographies around New Zealand. A systems thinking approach was used (see previous sections) and in particular, a participatory model building approach based on the work of Vennix (1996) and Hovmand et al. (2013).

The participatory approach meant that workshop participants took a lead role in determining what the frustrations and issues with ER-Ahs were, what the factors that were contributing to them were, and how those factors influenced each other. These deliberations resulted in the causal diagram that is described in this report.

The process was as follows:

1. A selection of veterinarians that might contribute to this process was identified by Seton Butler at VCNZ. Much effort went into this list to ensure that they represented a variety of: geographies (e.g. north/south island, urban/rural); practice types (e.g. large/small, private/club); species interest (e.g. dairy, companion animal, equine); and veterinarian profile (e.g. the NZVA and recent graduates were included).
2. A series of three workshops were run in Wellington over a period of a couple of months. In these workshops the challenges were discussed and the causal diagram was developed or reviewed. Most of the causal diagram was developed by Deliberate in between workshops.
3. In between the workshop a series of online discussions were held with all workshop participants, grouped by their perspectives (e.g. equine, or club, etc). In these meetings additional participants were invited along by the workshop participants, to widen the group of people that were inputting to and testing the causal diagram being developed.

It is important to note that two version of the causal diagram were developed in the course of this work. The detailed version was the primary diagram that was created during the workshops. While this is the main repository of the detail that was discussed, it was acknowledged that this was possibly too complex a

diagram to be used by people who were not involved. Therefore, a more simplified version of the diagram was developed by Deliberate. This synthesised the main insights and feedback loops and is the causal diagram described in the main body of this report.

The original detailed version is described in Figure 34

As noted above, the participants were vets. So these diagrams are from a vet's perspective.

Figure 6. Participants were identified from around the country



Figure 7. Diagram of the process followed



5. Dynamics captured in the causal diagram

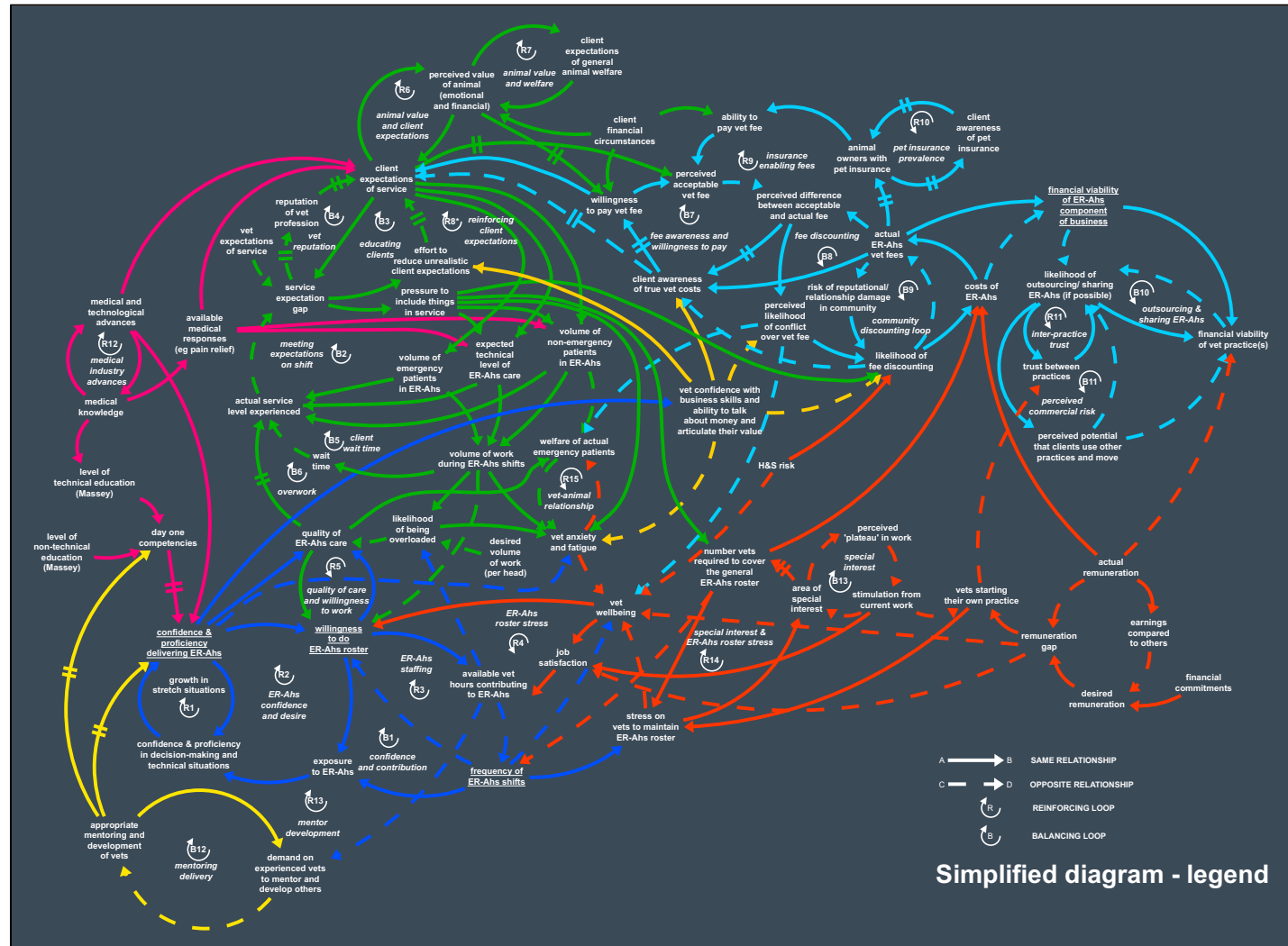
As noted in the previous section, two versions of the same diagram were created in this course of this work. The detailed version is described in the separate full report.

This section describes the simplified version of the causal diagram by providing an overview of it and describing the six main areas of the diagram.

5.1. Overview of the diagram

The simplified version of the causal diagram is shown in Figure 8. A larger version of this is provided in **Error! Reference source not found.**

Figure 8. Simplified causal diagram



5.1.1. Conceptual indicators of relative health of ER-Ahs delivery

During the workshops, discussions with participants between workshops, and the development of the causal diagram during and after the workshops, four main factors were identified as being good relative indicators¹ of a healthy state of emergency care delivery. These are showed as bolded and underlines factors. They are listed and described in Table 1.

5.1.2. Summary of areas of the diagram

The tensions and insights discussed in the workshops and captured by the diagram, which has six themes in it, to help make it more accessible. These themes are not perfect and are not intended to reduce the complexity of the issues highlighted. They are intended to make them more accessible. Note that many areas still interact with others, so interventions in one area will likely have flow on impacts in other areas. Or they may be impacted by other areas.

These themes are:

1. Vet confidence, proficiency & willingness to do emergency care shifts
2. Client circumstances and expectations
3. Financial considerations
4. Medical knowledge and training
5. Vet professional development in practices
6. Vet stimulation in work, wellbeing and job satisfaction

They are described in detail in Table 2 and shown as shaded areas in Figure 9.

The remainder of this section will explain the factors and influences within each of these themes of the diagram.

¹ While these factors are considered good relative indicators, it is not suggested that they would all be easily measured and are not suggested as any kind of performance metric. Rather, they are considered indicators of the attitude and culture associated with delivering ER-Ahs.

Table 1. Relative indicators of healthy emergency care delivery

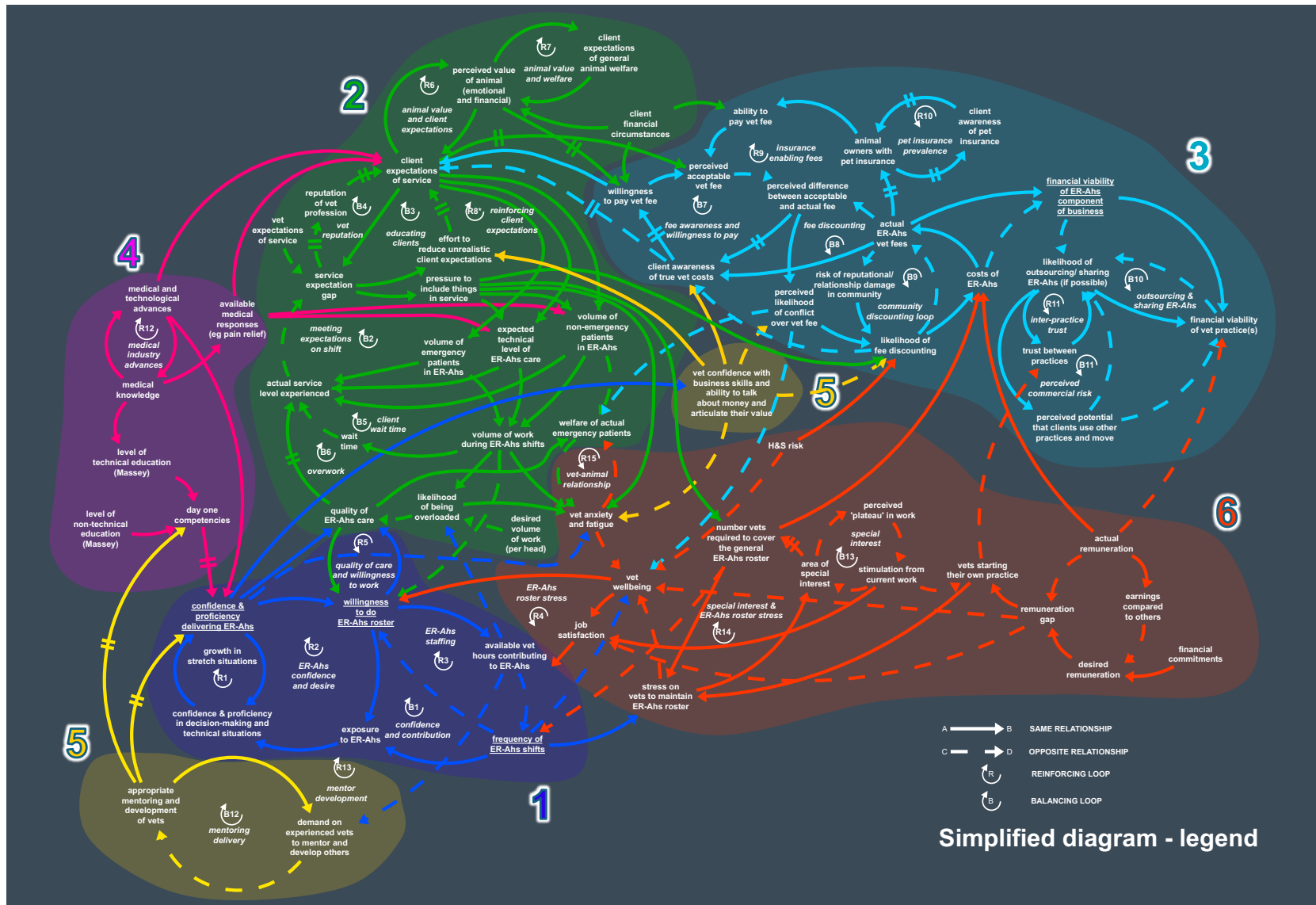
Relative indicator of healthy emergency care delivery:	Description:
Confidence and proficiency delivering ER-Ahs:	Vets feel that they are confident and proficient enough to deliver ER-Ahs shifts. While this is part technical (vets are assumed to have an active annual practicing certificate), it is also non-technical. It was regularly raised during discussions that many vets feel they have low confidence or proficiency in the important <i>non-technical</i> skills required to deliver ER-Ahs. These include things like soft/power skills to be able to deal with clients, and the ability to discuss money and payment difficulties.
Willingness to do ER-Ahs roster:	Vets are willing to contribute to the ER-Ahs roster and this does not make them unduly uncomfortable or nervous – outside of the obvious discomfort of it being shift work.
Frequency of ER-Ahs shifts:	The frequency of ER-Ahs shifts for people in practice is maintained at an appropriate level. This does not determine what an appropriate frequency of shifts is for any vet or practice. But it does recognise that there are many practices where the frequency may be too high, which is both a contributing factor to the issue of delivering ER-Ahs, as well as a result of the issues contributing to it.
Financial viability of ER-Ahs component of business:	The above three factors all relate to the personal experience of vets doing ER-Ahs shifts. This factor relates to the financial viability of the ER-Ahs component of the business. This was regularly noted as an issue as – whether it is being tracked or not – there was widespread recognition that many businesses do not break even on ER-Ahs. The ER-Ahs component of the business does not need to be a separate entity or may not even be measured separately in any detail. It is a conceptual framing to highlight that the ER-Ahs service costs to deliver and the business needs to recoup fees for that. ²

² This does not mean that participants were saying that it had to make a profit. There was discussion of businesses that make the commercial decision to run ER-Ahs at a loss as a way of gaining exposure to new clients. This is discussed in the details version of the diagram, see **Error! Reference source not found.**

Table 2. Themes within the causal diagram

Theme in diagram (colour = shading)	Description of theme area
1 Vet confidence, proficiency & willingness to do emergency care shifts	<p>Vet confidence, proficiency, and willingness to do emergency care shifts are all linked and involve not just technical clinical skills, but also the expertise to deal with clients and manage the non-technical aspects of emergency care, after hours.</p> <p>Willingness to do shifts also influences the number of vets available on each roster and the resulting roster frequency.</p>
2 Client circumstances and expectations	<p>There are a range of circumstantial pressures on clients that vets cannot change, such as the number of animals they have; the value they see in their animals; and the extent they believe animals need high levels of care. Vets can, however, adjust the way they provide services to shift client experiences and expectations.</p> <p>Tensions often arise when there is a difference between what clients expect and what individual vets consider is appropriate for emergency care, after hours. This can increase pressure on vets and affect their wellbeing.</p> <p>Discussions about pet insurance fit under this theme. As well as providing security to clients that their vet bills will be covered, it ensures that vets are properly remunerated for the work they do.</p>
3 Financial considerations	<p>There are a range of external pressures on clients' ability and willingness to pay for emergency care, after hours - not all of which vets can influence. There are also many factors, which vets can influence, that determine whether vet fees are fully charged or discounted. Both sets of influences are linked to the financial viability of emergency care and clinics in general. They are also important when practices are considering partnering to provide emergency care, after hours.</p>
4 Medical knowledge and training	<p>Clients and many vets expect that sophisticated medical care and technology will be available, even after hours. There is also a current expectation that people will see a vet rather than another member of the veterinary team, even outside normal business hours.</p> <p>The role that Massey University plays in veterinarian training and graduate preparedness is also critical under this theme and is an important area of influence. However, there are significant delays before new Massey graduates can complete their studies and have an impact in the industry.</p>
5 Vet professional development in practices	<p>Professional development through on-the-job training and mentoring has a strong impact on the confidence and proficiency of vets. This relates to both the technical and non-technical skills required to deliver high quality veterinary services.</p> <p>Time delays mean that recent changes to training and mentoring will take time to flow through to results.</p>
6 Vet stimulation in work, wellbeing and job satisfaction	<p>Influences on vet stimulation in work, wellbeing and job satisfaction include remuneration; anxiety relating to emergency services delivery; the level of challenge received from work; health and safety concerns; and general life pressures. Non-technical skills, such as dealing with people and money, also play a role and flow through to all parts of the emergency care system.</p> <p>Concerns about liability are also linked to the likelihood a vet will accept non-emergency cases.</p>

Figure 9. Simplified causal diagram – themes are shaded



5.2. Vet confidence, proficiency & willingness to do emergency care shifts

This section describes three of the four relative indicators of healthy emergency care service: vets' confidence and proficiency delivering ER-Ahs; their willingness to do ER-Ahs shifts; and the frequency of those shifts.

5.2.1. Vet confidence, proficiency and willingness

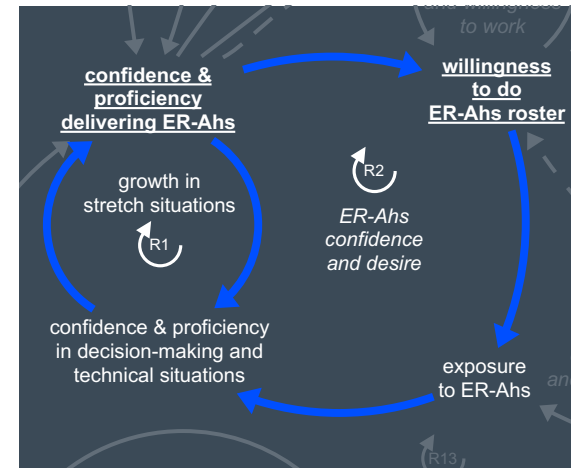
Vet's 'confidence & proficiency delivering ER-Ahs' describes not just vets' confidence and proficiency in the *technical* skills required to deliver emergency care, but also the *non-technical* skills. Workshop participants talked about the need for confidence in decision-making skills and a level of soft (or power) skills. For example, decision-making skills included things like handling situations outside of the relative stability of the daytime practice (and availability of other staff to ask questions). This is represented by the factor 'confidence & proficiency in decision-making and technical situations'. Another example is soft/power skills, which include the ability to deal with all sorts of clients by oneself, or without the support of other staff like during the day (Figure 10).

It was noted that doing ER-Ahs shifts both required and built these skills. Therefore 'confidence & proficiency delivering ER-Ahs' has been linked in a reinforcing loop (*growth in stretch situations* R1) with 'confidence & proficiency in decision-making and technical situations'. This reinforcing loop will spiral – if vets are doing ER-Ahs they are both building and using these skills, both of which spiral off each other. If on the other hand they are not doing ER-Ahs, this limits their ability to build the skills, which further erodes their confidence.

To build these skills they must first be exposed to ER-Ahs. This is represented by the factor 'exposure to ER-Ahs. This is in turn dependent on vets willingness to contribute to the ER-Ahs roster, which is shown as the factor 'willingness to do ER-Ahs'.

³ There was discussion about how to represent the number of vets available to contribute to the roster. It is not the number of vets per se, and many vets may not be full time and therefore may only be smaller contributors to the roster, the

Figure 10. Vet confidence, proficiency and willingness



The more willing vets are to be on the roster, then the greater their 'exposure to ER-Ahs' which further builds their confidence and proficiency. Yet their willingness is itself partly dependent on their 'confidence & proficiency delivering ER-Ahs'. This forms another spiralling loop called *ER-Ahs confidence and desire* (R2)

5.2.2. Willingness, frequency of shifts and vet wellbeing

Vets 'willingness to do ER-Ahs roster' interacts with the 'frequency of ER-Ahs shifts' in another spiralling loop called *ER-Ahs staffing* (R3). Here, more willingness increases the 'available vet hours contributing to ER-Ahs'³, which reduces (opposite relationship) the average 'frequency of ER-Ahs shifts' that vet would need to do. The lower the frequency of shifts required of vets in a practice, the greater (opposite relationship) the likely willingness of vets in the practice to contribute to the roster (Figure 11).

At the same time, the 'frequency of ER-Ahs shifts' has an opposite relationship with 'vet wellbeing'. In other words, the higher the frequency of shifts, the lower the vet wellbeing because they got overloaded. The lower their wellbeing, the lower their willingness to contribute. This completes another reinforcing loop called *ER-Ahs roster stress* (R4)

term 'available vet hours contributing to ER-Ahs' was agreed. This represents the number of vets hours that can be contributed to the roster, and is a function of the number of vets and their relative FTE contribution to the business.

5.3. Client circumstances and expectations

Client expectations were a common area of discussion during the workshops. There are also many factors influencing these and client expectations are involved in many overlapping feedback loops. These are described in this sub-section.

5.3.1. General client circumstances and their perception of animals needs

General client circumstances are those circumstances which vets have no (or very little) control over. These can be summarised as their personal financial circumstances and their general expectations of animal's needs (Figure 14).

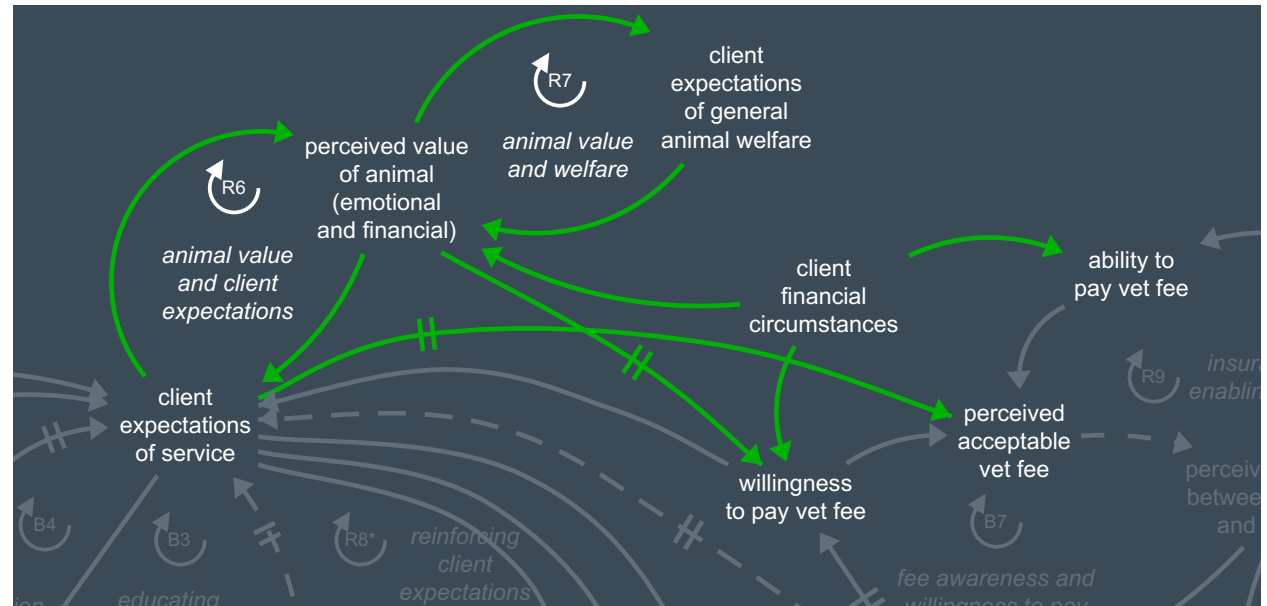
The important factor here is that represented as 'perceived value of animal (emotional and financial)'. This describes an increasing value that has been placed on animals and pets in recent decades. In effect this reflects changes in the average animal-human bond for most pet owners, but also for many farmers. For example, over recent decades the position of pets as 'members of the family' has increased, perhaps because the average family size has reduced, and the number of families that do not have children increasing. This was perceived to increase the likelihood that pets were more valued as family members. This factor has an important reinforcing relationship with 'client expectations of service' from the vet (*animal value and client expectations* (R6)).

There has also been an increasing appreciation that animals have rights to a good life themselves, both in the pet world and the animal production world. This is

represented by the factor 'client expectations of general animal welfare', and this has been trending up in recent decades. In other words, there is a greater appreciation that animals are entitled to a good quality of life for themselves. While this applies to pets, it is also an example of changing attitudes across international markets for New Zealand's primary products. This also forms a reinforcing loop with the 'perceived value of animal (emotional and financial)', called *animal value and welfare* (R7).

'Client financial circumstances' also influence the perceived value of animals. People were perceived to have more disposable income than in decades past and were choosing to spend more of that on their pets.

Figure 14. General client circumstances and their perception of animals needs



5.3.2. Volume of work on shifts – meeting and reinforcing client expectations

The loops described in this sub-section are a very important part of the diagram. They describe the relationship between ‘client expectations of service’, the volume of patients presenting to ER-Ahs and the volume of work done on ER-Ahs to meet client’s expectations. Importantly, several loops operating here conflict or compete (Figure 15).

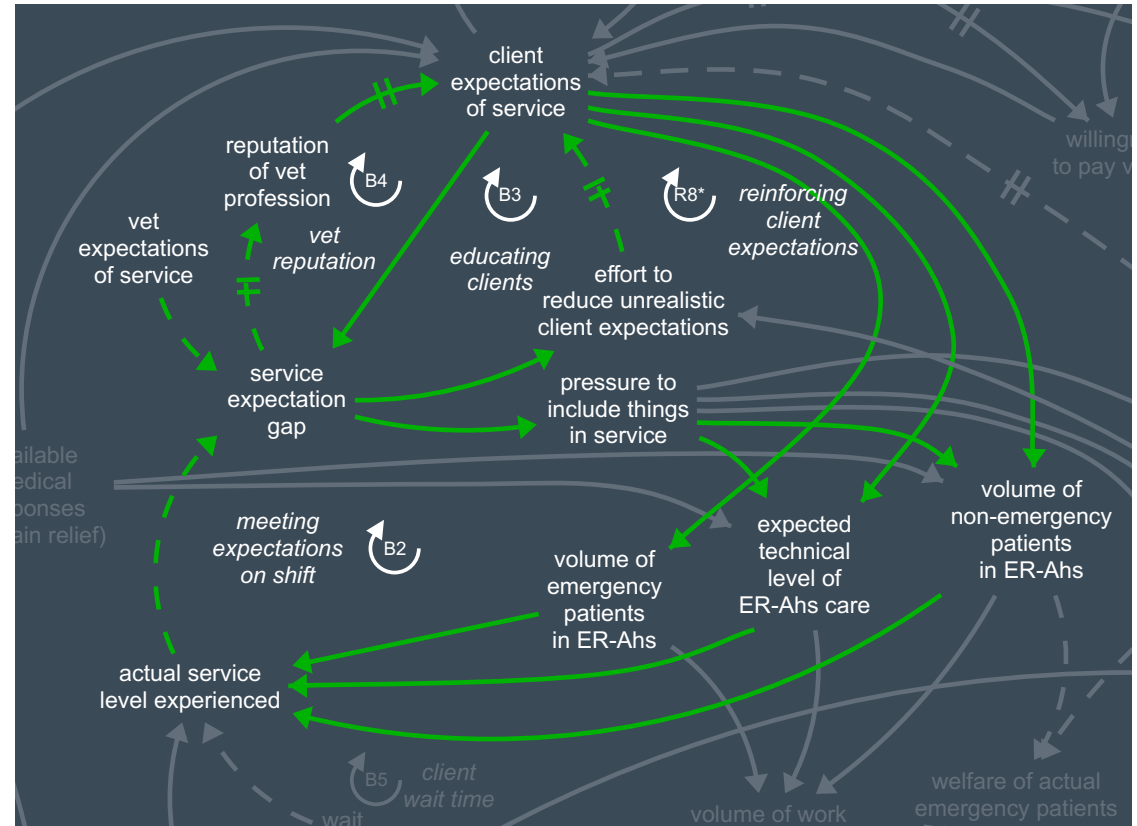
Firstly, consider the reinforcing loop *reinforcing client expectations* (R8*)⁴. As ‘client expectations of service’ rise, these have a same relationship with the volume of emergency and non-emergency patients presenting, and the level of technical care expected. These are represented as the factors ‘volume of emergency patients in ER-Ahs’, ‘volume of non-emergency patients in ER-Ahs’, and the ‘expected technical level of ER-Ahs care’ and R8* is effectively the same loop via these three different pathways. In other words, the greater the client expectations, the greater number of cases and level of service expected and delivered on ER-Ahs shifts.

The differentiation of non-emergency patients from emergency patients is an important one. One of the recurring comments from workshop participants was that clients often expect the same level of service from ER-Ahs as they do from the day practice and it was discussed that this was not its intent. This will be expanded on later.

The greater the levels of this work (actual emergency patients, non-emergency patients, and the level of technical care each receive) delivered in ER-Ahs, the greater the ‘actual service level experienced’. The ‘client expectations of service’ and the ‘actual service level experienced’ form a goal/gap relationship (see section 3.4). The greater the actual service delivered, the lower the gap

between that and the client expectations (in other words – it meets client expectations!). If this gap is low (i.e. expectations are met) then the reputation of the vet profession is increased (an opposite relationship) and this further reinforces or raises client expectations. In short – continually delivering on client expectations in part encourages them to rise. This is a loop that has probably been operating in the vet profession for many decades⁵.

Figure 15. Meeting and reinforcing client expectations



⁴ The asterisk beside this loop label indicates that it is a label for multiple loops on a similar pathway. As described above.

⁵ It is noted that this is not unusual and is a feedback loop experienced in most professions or industries.

A strong theme in the workshop discussion was that client expectations for ER-Ahs care were often higher than what vets would consider necessary for emergency care. That is, it was not seen as the same as the service delivered during the daytime clinic, and was instead provided as an emergency provision – to get people through to when the day clinic would be open. This tension between client expectations and vets' expectations of service is shown as another goal/gap relationship (see section 3.4) where the generalisation is that client expectations are assumed to be higher than vet expectations of what is acceptable to get a patient through to daytime clinic hours. Therefore, 'vet expectations of service' has an opposite relationship with the 'service expectation gap', while 'client expectations' has a same relationship. In other words, the greater client expectations of service, the greater the gap between their expectations and vets' expectations of what is acceptable for emergency care.

This difference in expectations (gap) influences two types of activity. It can increase 'pressure to include things in service' or increase 'effort to reduce unrealistic client expectations'. In other words, vets can seek to meet client expectations or adjust them to be more realistic. It is noted that 'unrealistic expectations' is used here to describe client expectations that are not aligned with what vets deem appropriate for emergency after hours care. It was noted in the workshop discussions that the veterinary industry is a service industry and therefore will always involve an element of meeting client expectations. However, there was general agreement that the level of service that should be expected by clients in an emergency after hours situation is not the same as what they should expect in daytime clinic hours.

Vets efforts to meet expectations is represented by the *meeting expectations on shift* loop (B2). This is driven the 'service expectation gap' which puts pressure on vets to include more things in the ER-Ahs service (the factor 'pressure to include things in service'). This is predominantly through the addition of services that would normally be

done during daytime clinic hours – i.e. accepting an increased 'volume of non-emergency patients in ER-Ahs' or undertaking more tests and procedures that would normally wait until daytime (therefore increasing the 'expected technical level of ER-Ahs care'). An increase in either or both increases the 'actual service level experienced', decreases the 'service expectation gap', and thus eases the 'pressure to include things in service', bring actual service more in line with expectations. This loop operates in the immediacy of an ER-Ahs shift.

This loop describes important dynamics that seem to have been operating in the vet profession for years. It is likely that this loop has dominated the industry for some time and ironically it only achieves increased client expectations in the longer term (due to the its link with *reinforcing client expectations* (R8*)), which means that there remains a gap between vet and client expectations for ER-Ahs.

This is not the only loop operating here though. It is important to note the balancing loop *educating clients* (B3). This is primarily driven by the difference between 'vet expectations of service' and 'client expectations of service' and describes the dynamic of vets attempting to reduce unrealistic client expectations. Here a gap between client and vet expectations can lead to 'effort to reduce unrealistic client expectations' (same relationship), which in turn can lead to a reduction in 'client expectations' (opposite relationship), thus bringing both client and vet expectations closer together. It is noted that this may be a more difficult pathway, as vets need confidence to push back on unrealistic client expectations (more on this later), but it is an important balancing loop. One that anecdotal comments in the workshops would suggest may not have been operating very strongly in the profession to date. Although there were examples provided from practices that this loop is operating well in some individual clinics.

The final loop to describe in this area is the *vet reputation* loop (B4). This describes the dynamic that the reputation of the vet industry (at a practice level or at a profession level) is linked to meeting the expectations of clients. This will balance over time – if expectations are met they will continue to be increased over time until there is a sustained difference between what is actually experienced and what is expected. This will reduce the reputation of the vet(s) and eventually reduce expectations of clients – but through loss of faith in delivery. This loop highlights the importance of seeking to actively reduce the gap between 'client expectations', and 'vet expectations' and the 'actual service level experienced' – either through increased delivery or reducing clients' unrealistic expectations. Or both.

Another important factor to note here is the 'welfare of actual emergency patients'. Any increase in non-emergency patients can reduce (opposite relationship) the 'welfare of actual emergency patients', due to the added stress on the vets' time. Similarly, if the 'quality of ER-Ahs care' is reduced through overwork, this can also reduce the 'welfare of actual emergency patients' as vets will be pressured on shifts and won't be able to provide the same level of care to actual emergency patients.

5.3.3. Unintended impacts of meeting expectations –client wait time and vet overwork

In addition to the important dynamics described in the last section, this section describes two important unintended impacts of meeting clients' expectations – client wait time and vet overwork (Figure 16).

Assuming the reinforcing loop *reinforcing client expectations* (R8*) is operating, this increases the 'volume of work during ER-Ahs shift' over time. Any increase in the volume of work done on shifts has two unintended consequences. Firstly, client 'wait time' will increase and vets 'likelihood of being overworked' will increase, reducing the 'quality of ER-Ahs care' provided on shift.

Ironically, both reduce the 'actual service level experienced' and form balancing loops with the 'reputation of the vet profession' and 'client expectations'. These are represented as *client wait time* loop (B5)) and *overwork* loop (B6).

The overwork loop is also influenced by the factor 'desired volume of work (per head)'. The higher this, the lower the 'likelihood of being overloaded'. This factor has been included to represent that there is no single appropriate amount of work for a vet on a shift. This will always be situation dependent.

Figure 16. Unintended impacts of meeting expectations –client wait time and vet overwork



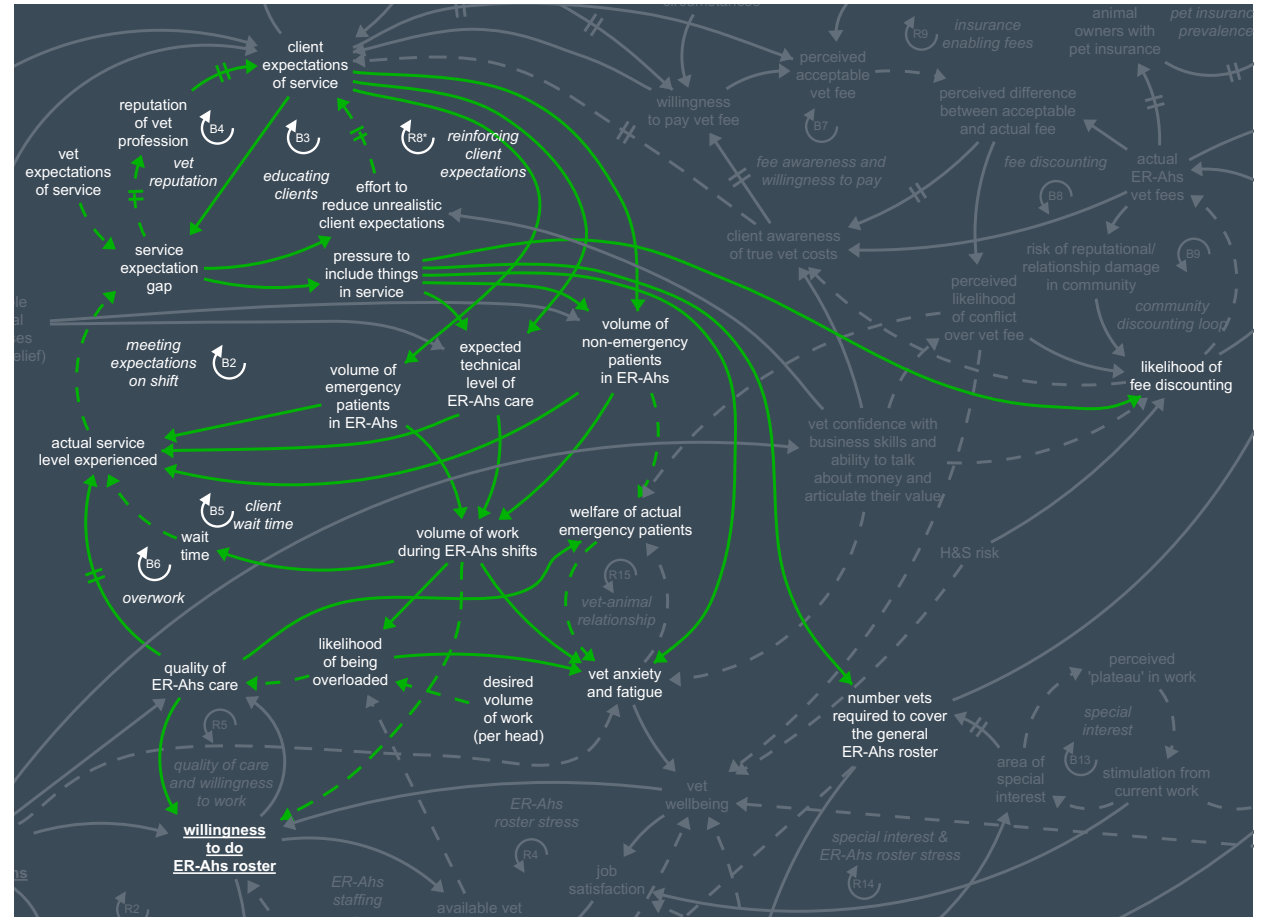
5.3.4. How client circumstances and expectations influence other areas

In addition to the influences the factors described above have on each other, they also influence other parts of the diagram. These are described below and may be read in conjunction with the other relevant related sections of this report:

- ‘Client expectations of service’ has a same influence on the ‘perceived acceptable vet fee’.
- ‘Client financial circumstances’ has a same influence on both a client’s willingness and ability to pay vet fees.
- The ‘perceived value of animal (emotional and financial)’ can have a same influence on a clients’ willingness to pay. Importantly, it does not alter their *ability* to pay. This tension is explored more in section 5.4.1.
- The ‘quality of ER-Ahs care’ has a same relationship with ‘willingness to do ER-Ahs roster’. If the quality is reduced (e.g. through overwork) this can reduce the willingness to do ER-Ahs.
- The greater the ‘pressure to include things in service’ the greater the ‘number of vets required to cover general ER-Ahs roster’; and the greater the ‘likelihood of fee discounting’ (both same relationships).
- The ‘pressure to include things in service’, ‘volume of work during ER-Ahs shifts’, ‘likelihood of being overloaded’ and the

‘welfare of actual emergency patients’ all influence ‘vet anxiety and fatigue’.

Figure 17. How client circumstances and expectations influence other areas



5.4. Financial considerations

There are a range of influences on clients' ability to pay and their willingness to pay, not all of which vets can influence. There are also a range of influences on the likelihood that vet fees are not fully charged, or are discounted, which vets are able to influence. Both sets of influences are linked to the financial viability of emergency care and clinics in general, which in turn impact on the likelihood of businesses sharing emergency and afterhours services.

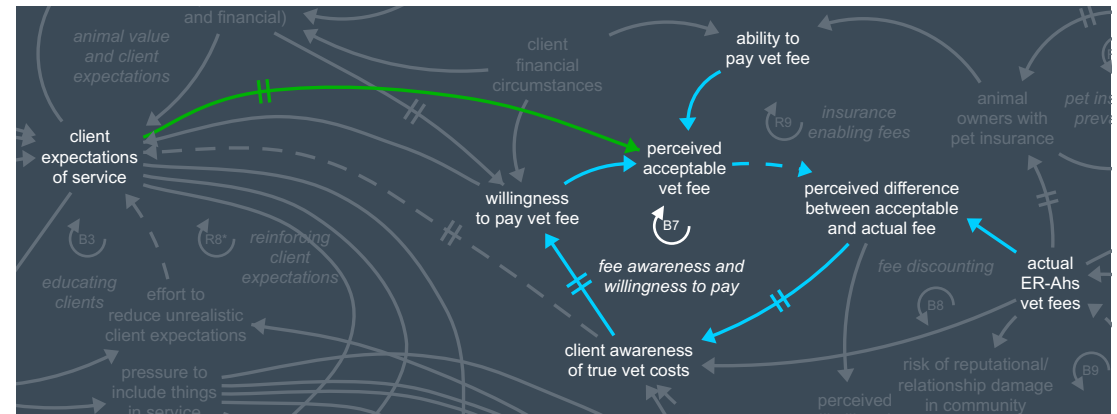
5.4.1. Acceptable fees and clients' willingness and ability to pay

The fee that a client finds acceptable is shown as 'perceived acceptable vet fee'. This is influenced by a combination of 'client expectations of service', their 'willingness to pay vet fee' and their 'ability to pay vet fee' (all same relationships) (Figure 18).

The 'perceived acceptable vet fee' forms a goal/gap (or difference) with the 'actual ER-Ahs vet fees'. The greater the 'actual ER-Ahs vet fees', the *greater* the 'perceived difference between acceptable and actual fee' (same relationship). The greater the 'perceived available vet fee', the *lower* the perceived difference (opposite relationship).

This difference (or gap) has a delayed influence on 'client awareness of true vet costs'. In other words – the more aligned someone's idea of an acceptable fee is with the actual fee, the more likely they are to be aware of the true costs of veterinary service. In turn, this has a delayed influence on a clients' 'willingness to pay vet fee'. This forms the balancing loop *fee awareness and willingness to pay* (B7) which describes the dynamics that the greater awareness that clients have of true vet costs, the more willing they will be to pay the actual vet fee required.

Figure 18. Acceptable fees and clients' willingness and ability to pay



5.4.2. Perceived conflict over fees and fee discounting

The greater the 'costs of ER-Ahs', the greater the fees required to cover it ('actual ER-Ahs vet fees').

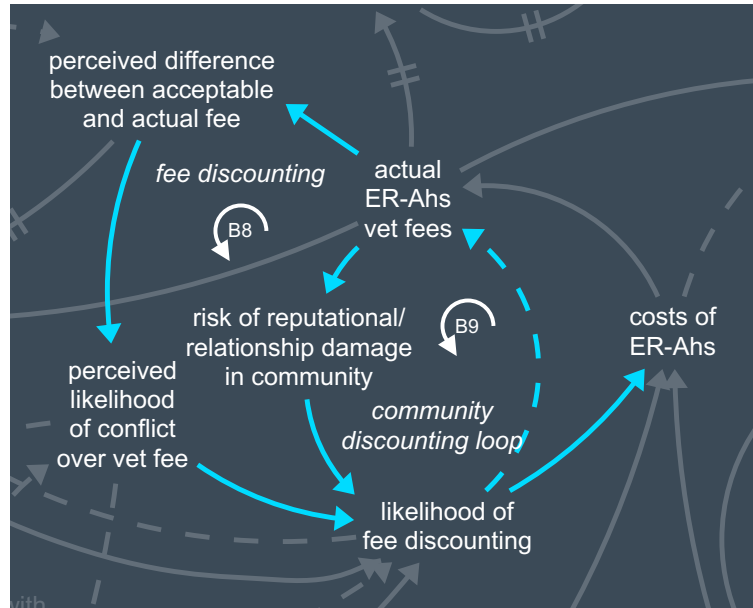
That said, when there is a reasonable sized 'perceived difference between acceptable and actual fee' (the difference between the actual fee and the perceived acceptable fee), this can increase the likelihood of fee discounting. A difference (or gap) can increase the 'perceived likelihood of conflict over vet fee' (same relationship) which can increase the 'likelihood of fee discounting' (same relationship), which can reduce the 'actual ER-Ahs vet fees' (opposite relationship). This reduces the perceived difference (gap) – in other words, discounting the fees (*discounting fees* loop (B8)) is a way of bringing the actual fees into line with the perceived acceptable fees. There was consensus in the workshops that this was a loop that was regularly operating in the vet industry (Figure 19, next page).

Ironically, discounting only increases the 'costs of ER-Ahs', putting further upwards pressure on the 'actual ER-Ahs vet fees' that need to be charged.

Another loop that discounts fees is the *community discounting loop* (B9). This loop describes the dynamics of vets that are based in more smaller locations and are very much a part of the community. For example, it can be difficult for vets to charge full price for their services

because they may have children going to school with their clients' children, or play sport with clients, etc.

Figure 19. Perceived conflict over fees and fee discounting



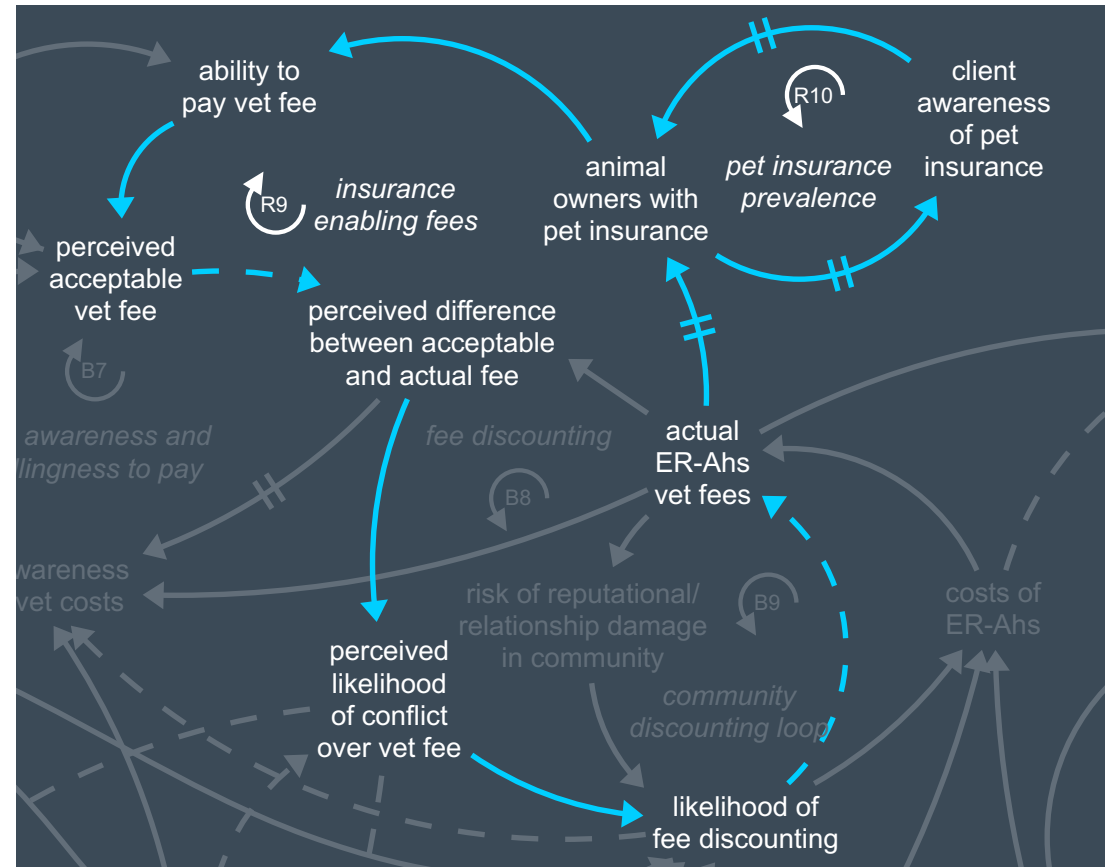
This is represented by the factor 'risk or reputational/relationship damage in community' and the higher the fees, the higher this risk, therefore the higher the 'likelihood of fee discounting' (all same relationships), which then reduces the actual fees (opposite relationship).

5.4.3. The influence of pet insurance

It was noted by workshop participants that pet insurance is playing an increasing role in the financial considerations of pet owners. It was noted that as actual fees have increased, then over time so has the number of 'animal owners with pet insurance' (same relationship). This does increase a clients' 'ability to pay vet fee'

which increases the 'perceived acceptable vet fee', reduces the perceived difference, perceived likelihood of conflict, and discounting, enabling greater 'actual ER-Ahs vet fees' to be charged in the longer term. See reinforcing loop R9 – *insurance enabling fees* (Figure 20).

Figure 20. The influence of pet insurance



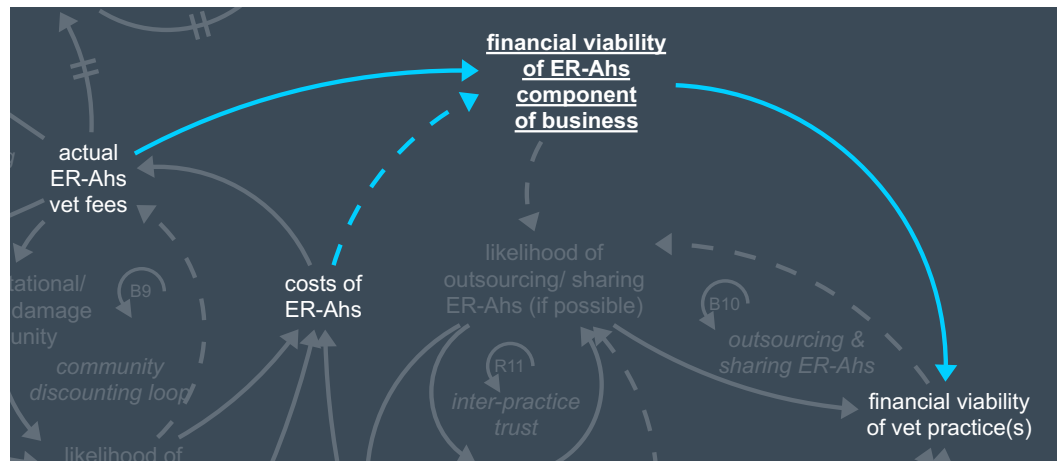
At the same time, more pet owners with insurance will have a word-of-mouth effect meaning more people become aware of pet insurance, which over time will increase its prevalence. This is shown by the reinforcing loop R10 – *pet insurance prevalence*.

5.4.4. The financial viability of the ER-Ahs

The financial viability of the ER-Ahs component of the business has already been highlighted as an important indicator of relative healthy ER-Ahs delivery (see section 5.1.1). This is represented in the simplest way possible in this diagram – the ‘financial viability of ER-Ahs component of business’ is a function of the ‘costs of ER-Ahs’ (opposite relationship – the greater the costs the lower the financial viability), and the ‘actual ER-Ahs vet fees’ (same relationship – the greater the fees the greater the financial viability) (Figure 21).

This has a similar flow on effect to the financial viability of the overall practice. The greater the ‘financial viability of ER-Ahs component of business’, the greater the ‘financial viability of vet practice(s)’ (a same relationship).

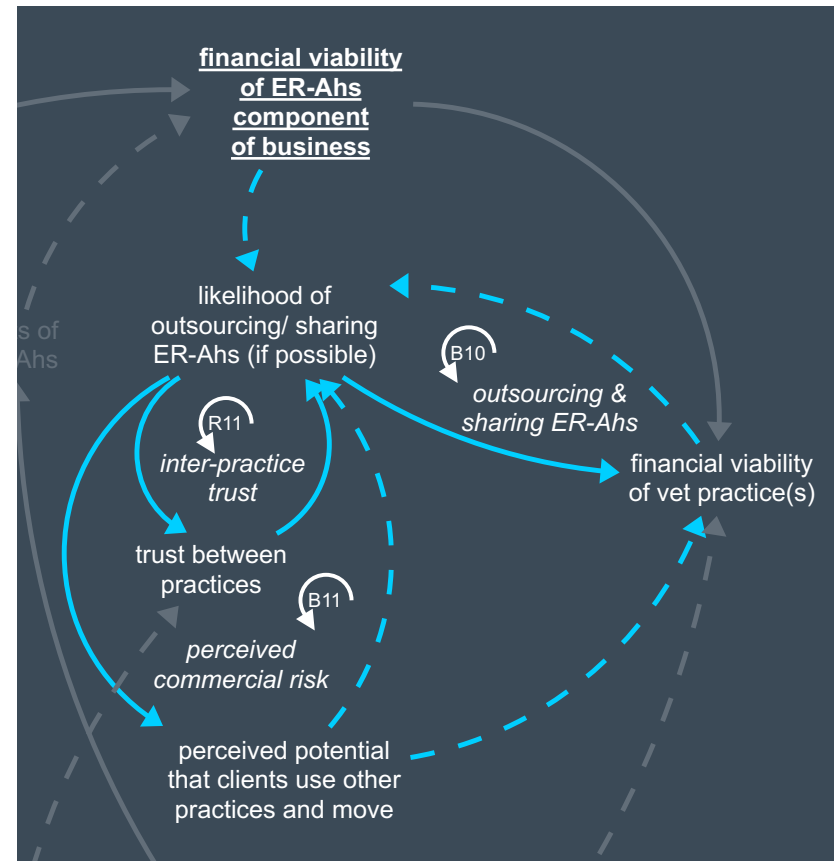
Figure 21. The financial viability of the ER-Ahs



5.4.5. Inter-practice trust and the (potential) sharing of ER-Ahs

The financial viability of the ER-Ahs component of the business (and the practice in general) is an important influence on the ‘likelihood of outsourcing/ sharing ER-Ahs (is possible)’. The lower the financial viability, the greater the likelihood of outsourcing/sharing (opposite relationship) (Figure 22).

Figure 22. Inter-practice trust and the (potential) sharing of ER-Ahs



It is noted that the outsourcing factor has the caveat ‘(if possible)’ in it. This is to indicate that not all practices may be able to share or outsource their ER-Ahs. Primarily because of geographic location – practices that are situated remotely have fewer (or no) other practices with which they can realistically share their ER-Ahs work. It is therefore recognised that these loops become more relevant the greater the number of practices are in proximity of each other.

Sharing or outsourcing ER-Ahs operates in a balancing loop with the financial viability of vet practices (*outsourcing & sharing ER-Ahs* (B10)). The lower the financial viability of the practice, the greater the likelihood of sharing/outsourcing (opposite relationship). Similarly, the greater the likelihood of sharing/outsourcing, the greater the 'financial viability of the vet practice(s)' (same relationship).

In addition, sharing/outsourcing ER-Ahs both enables, and is dependent on, the level of 'trust between practices'. This factor represents the level of trust that exists between practices and would be required to share/outsourc ER-Ahs. This forms a reinforcing loop (*inter-practice trust* (R11)) which can either spiral up if trust and relationships between practices are healthy, or spiral down, if trust and relationships between practices are not healthy. Trust between practices is likely to be heavily influenced by historical dynamics within regions and between practices/individuals.

Even if there is strong trust between practices, there may still be some commercial risk. These dynamics are represented by the *perceived commercial risk* loop (B11). This is a balancing loop where an increase in the sharing/outsourcing of ER-Ahs will increase the 'perceived potential that clients use other practices and move' (same relationship). Yet this perceived risk also *reduces* the 'likelihood of outsourcing/ sharing ER-Ahs' (opposite relationship).

At the same time, if clients do use other vets and then move practice, this can reduce the financial viability of a vet practice.

It is noted that there are many factors influencing whether ER-Ahs is outsourced or shared, and provide

insight into the many elements of trust and relationships that need to be in place for this to be achieved successfully.

5.4.6. How financial considerations influence other areas

In addition to the influences the factors described above have on each other, they also influence other parts of the diagram. These are described below (Figure 23) and may be read in conjunction with the other relevant related sections of this report:

- The 'perceived likelihood of conflict of vet fee' has an opposite relationship with both the 'welfare of actual emergency patients' and 'vet wellbeing'. The greater the perceived conflict, the lower those two factors.

Figure 23. How financial considerations influence other areas



5.5. Medical knowledge and training

The impact of advances in medical knowledge is important and fairly constant (it is always rising). The role that the Massey School of Veterinary Science (Massey) plays in veterinarian training and graduate preparedness is also critical and is an important area of influence, yet there are significant delays before cohorts flowing through Massey have an impact in the industry.

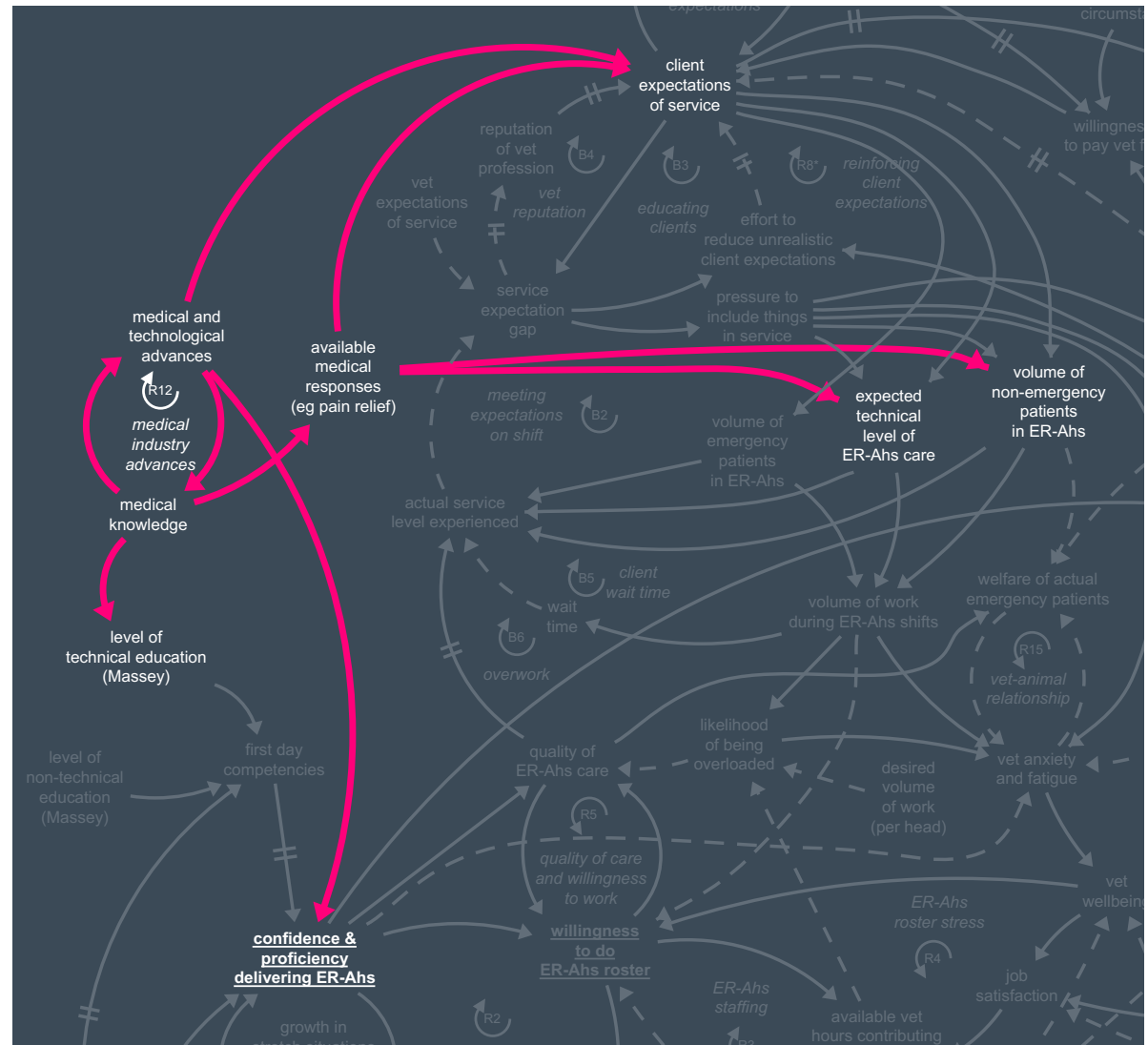
5.5.1. Medical knowledge and advances

'Medical knowledge' and 'medical and technological advances' are represented in a reinforcing loop called *medical industry advances* (R12). This represents the dynamic of these two things reinforcing each other over time.

'Medical knowledge' has a same relationship with 'available medical responses (e.g. pain relief)', which itself has a same relationship with 'client expectations', the 'expected technical level of ER-Ahs care' and the 'volume of non-emergency patients in ER-Ahs'. These represent the dynamics that workshop participants described, where the availability of a medicine (like pain relief) leads to a greater expectation that this would be available or prescribed, whether this was in response to an actual emergency or not.

'Medical and technological advances' also increase client expectations for a similar reason. These also increase vets 'confidence & proficiency delivering ER-Ahs'.

Figure 24. Medical knowledge and advances



5.5.2. Massey School of Veterinary Science

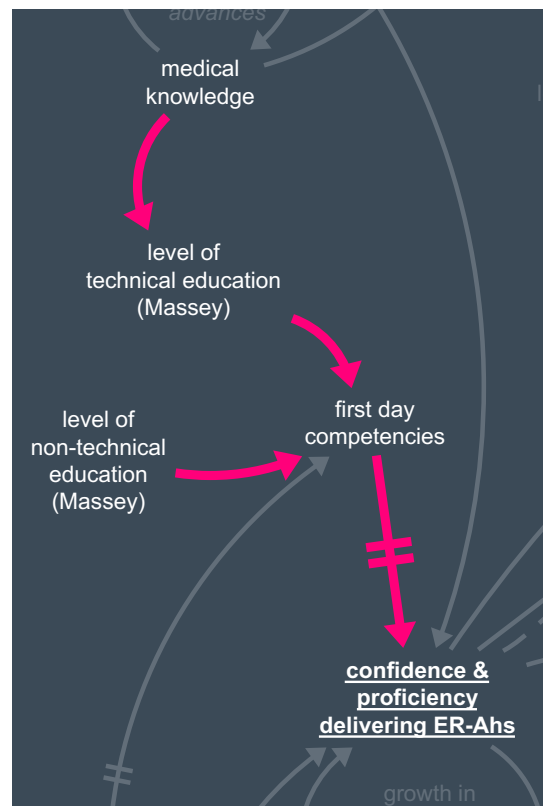
The Massey School of Veterinary Science (Massey) is the only veterinary school in New Zealand, so obviously plays an important role in training vets. The type of education that Massey provides is divided into two types – technical and non-technical (Figure 25).

The 'level of technical education (Massey)' describes the *medical* education that students receive. This covers things like science knowledge, clinical and surgery skills required to be a vet.

The 'level of non-technical education (Massey)' describes the *non-medical* education that students receive. This covers things like business and interpersonal skills, and an understanding of legal and legislative issues.

Both technical and non-technical skills contribute to 'day one competencies' of vets. That is, the skills and competencies they go into the vet profession with. This has a delayed influence on vets 'confidence & proficiency delivering ER-Ahs'. It is delayed because Massey has a minimum 5-year lead time to produce graduate vets.

Figure 25. Massey School of Veterinary Science



5.6. Veterinarian professional development in practices

Once vets have graduated, professional development within practices through on the job training and mentoring has an important continued influence on their confidence and proficiency. This naturally relates to technical skills but perhaps more importantly, the non-technical skills required to deliver good veterinary services. While there are likely to be variances in the technical skills of all vets, this diagram assumes that all vets are technically competent and hold an annual practising certificate. The focus on mentoring explained here has a focus on the mentoring and development of relevant non-technical skills – for example business practices, soft/power skills for dealing with people, and dealing with perceived conflict.

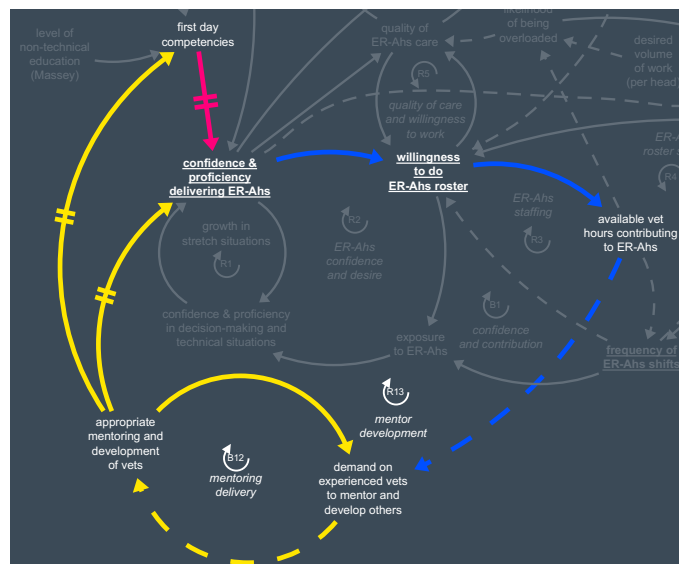
5.6.1. Mentoring and development

In-practice mentoring is an important way that vets continue to develop skills throughout their career. While there is a strong focus on mentoring recent graduates, mentoring may continue to apply to vets throughout their career (Figure 26, next page).

The act of mentoring and the ongoing development of vets through support and training is represented by the factor 'appropriate mentoring and development of vets'. The word 'appropriate' is used as there will be many different needs of many different vets, in the different practice situations that exist across the country. Mentoring and development, over time (delay) will have a same influence on the 'day one competencies' of graduate vets and vets 'confidence & proficiency delivering ER-Ahs'. These two pathways recognise that mentoring can happen when a trainee vet is on placement ('day one competencies') and in an ongoing way when they are working in a practice ('confidence & proficiency delivering ER-Ahs').

Ensuring the 'appropriate mentoring and development of vets' places a 'demand on experienced vets to mentor and develop others' (same relationship).

Figure 26. Mentoring and development



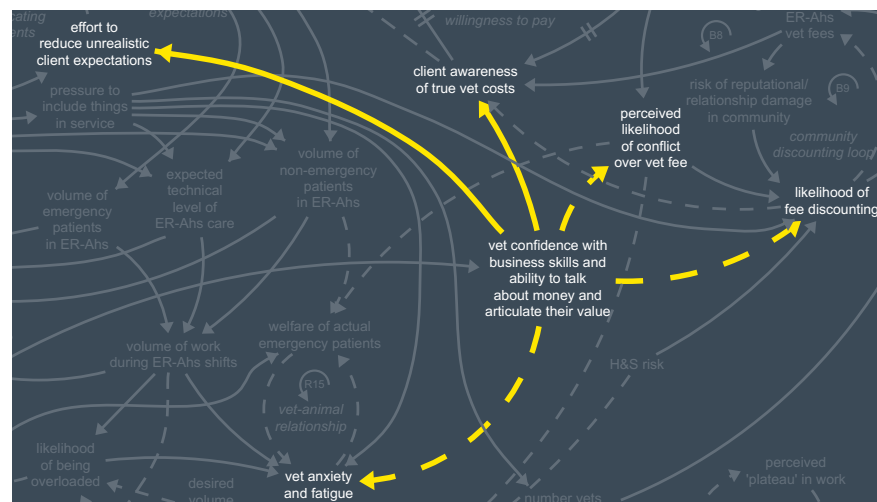
If there is strain on the ER-Ahs roster and the ‘available vet hours contributing to ER-Ahs’ are low, this can also increase the ‘demand on experienced vets to mentor and develop others’. The flow on impact of this demand on vets to mentor is that this has an opposite influence on mentoring, creating a balancing loop called *mentoring delivery* (B12). In other words, the ability of a practice to mentor and develop people is constrained by the availability of experienced staff in its practice.

Over time, the act of mentoring can develop more vets, build confidence and proficiency, increasing vets’ willingness and the number of vets doing ER-Ahs, which will decrease the demand (on average) on experienced vets, which further enables more mentoring. This is captured as reinforcing loop *mentor development* (R13), but it is noted that this loop will take some time to operate (many years).

5.6.2. Vet confidence with the necessary business skills

The other major component of professional development was noted as being the confidence that vets have with the necessary business skills to operate as a vet (Figure 27). This recognises that being a vet requires many more skills than just the technical medical skills. This includes a range of skills such as: being proficient in the processes of the business/practice; having good people skills (often called soft or power skills) to be able to deal with clients in difficult situations; the ability to articulate the value that they are adding with any necessary procedures and their associated costs; as well as confidence and skills dealing with financial issues from a business point of view – that is, being fully aware of the costs incurred by the business and the need to recover them in fees. These skills have been represented in the diagram with the comprehensive factor: ‘vet confidence with business skills an ability to talk about money and articulate their value’.

Figure 27. Vet confidence with the necessary business skills



This factor influences several other factors. It has a same relationship with both ‘client awareness of true vet costs’ and ‘effort to reduce unrealistic client expectations’ – the higher this factor the *higher* these other factors. While it has an opposite relationship with ‘vet anxiety and fatigue’, the ‘perceived likelihood of conflict over vet fee’, and ‘likelihood of fee discounting’ – the higher this factor the *lower* these other factors. These connections highlight the impact that such soft/power skills have on multiple parts of the business, client expectations, and vet wellbeing.

This could range from seeking to build more experience with a certain species of animal to with certain discipline (e.g. surgery or dentistry)⁶. As vets focus more on an 'area of special interest', they increase their intellectual stimulation and reduce their 'perceived 'plateau' in work' (an opposite relationship). This creates a balancing loop between plateauing, stimulation and special interest, which is called the *special interest* loop (B13).

These factors have several important flow-on impacts. Firstly, the lower a vets' 'stimulation from current work', the higher (opposite relationship) the likelihood of 'vets starting their own practice', in order to achieve the intellectual stimulation they desire. This can also be influenced by the opportunities (or lack of them) provided within a practice, which can also lead to a sense of feeling a 'plateau'. If vets start their own practice they are leaving their existing practice, so this has a further flow-on same relationship with 'stress on vets to maintain ER-Ahs roster'.

Secondly, over time (delay) an increase in the number of vets that have an 'area of special interest' can also lead to a narrowing of the current experience of vets across the board in a practice. This means that there is a need to increase the 'number of vets required to cover general ER-Ahs roster' to help accommodate these more focused skill sets (same relationship). This adds further 'stress on vets to maintain the ER-Ahs roster' (same relationship) which, ironically, can also be a motivator (same relationship) for vets to pursue an 'area of special interest' to avoid the stress of a general roster. This describes the reinforcing loop *special interest and ER-Ahs roster stress* (R14).

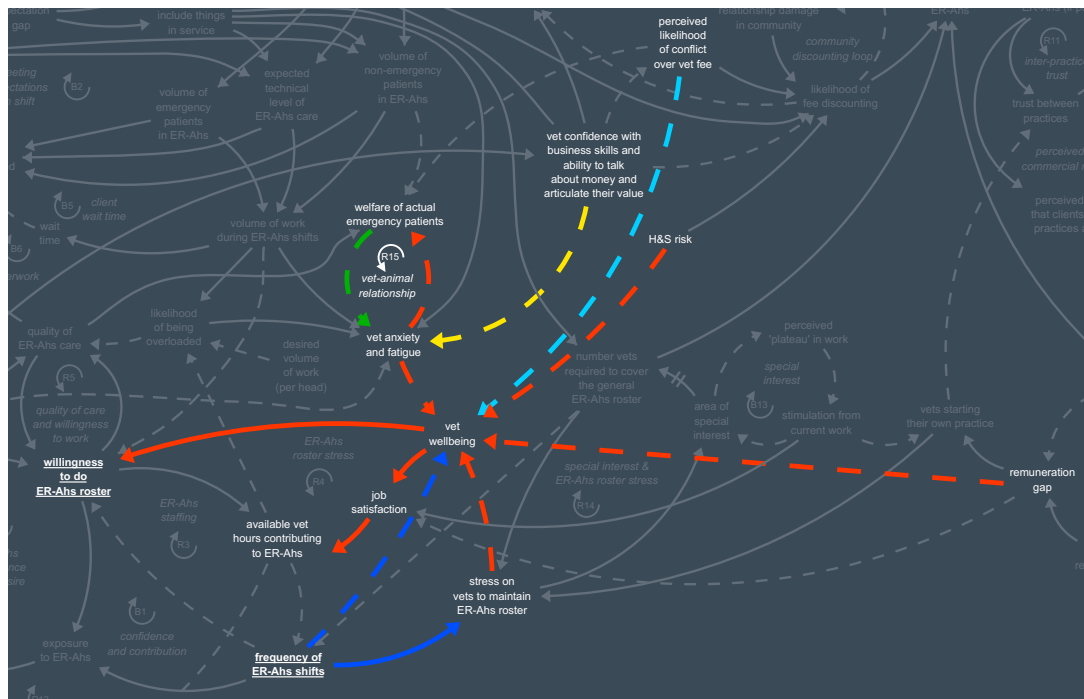
Also, the lower a vets 'stimulation from current work', the lower their 'job satisfaction' (same relationship).

⁶ It is important to note that this does NOT represent certified specialisation, which is achieved through further accredited study. This is not represented specifically in the diagram.

5.7.2. The many influences on vet wellbeing

The ‘vet wellbeing’ factor captures the many elements that make up vet wellbeing. This includes the physical, intellectual and emotional wellbeing of vets. Consequently, there are many influences on this factor (Figure 29).

Figure 29. The many influences on vet wellbeing



Primarily, vet wellbeing has been represented in the diagram as having a same influence on both ‘willingness to do ER-Ahs roster’ and ‘job satisfaction’ (which then has a same influence on the ‘available vet hours contributing to ER-Ahs’). It is therefore an important factor in relation to the delivery of ER-Ahs being in a healthy state. The influences on it are described below.

Firstly, ‘vet wellbeing’ is influenced by the ER-Ahs roster itself. If the ‘frequency of ER-Ahs shifts’ is high this decreases ‘vet wellbeing’ (an opposite relationship). A high frequency also

increases the level of ‘stress on vets to maintain ER-Ahs roster’ – that is, the individual stress on vets involved with a high frequency ER-Ahs roster to maintain that roster – which then has an opposite relationship with ‘vet wellbeing’, decreasing it.

Secondly, ‘vet anxiety and fatigue’ has an opposite relationship with ‘vet wellbeing’ – if it decreases then ‘vet wellbeing’ increases. ‘Vet anxiety and fatigue’ is a comprehensive factor that captures mental and physical fatigue of vets and the anxiety that they experience. It is important to note that while there are many influences on this (including vet confidence, overwork and pressure to meet client expectations), it is also linked in a reinforcing loop with the ‘welfare of actual emergency patients’ (called the *vet-animal relationship* loop (R15)). This captures the dynamic that many noted where vets are usually very focused on the welfare of the actual patients in their care, which has a direct impact on their anxiety.

Thirdly, ‘vet wellbeing’ is also influenced by the ‘perceived likelihood of conflict over vet fee’ and health and safety risk (‘H&S risk’). While none of the relationships described in this diagram are weighted, it is noted that the perceived conflict and the need to deal with clients about money matter, was noted as a significant stress on many vets. Many workshop participants and interviewees noted that vets tended to get into the veterinary profession to focus on animal care, and the prominent need for financial and people skills were not inherent in some vets, or developed during training. This also influences the ‘H&S risk’, as some participants noted that perceived conflict over fees could also be a form of H&S risk. ‘H&S risk’ also includes other dynamics such as the late-night nature of visiting clients in ER-Ahs and often needing to do this alone.

Finally, remuneration was also noted as an influence on ‘vet wellbeing’. If pay was lower than desired (i.e. the ‘remuneration gap’ was high – see next section), this reduced ‘vet wellbeing’.

5.7.3. Remuneration

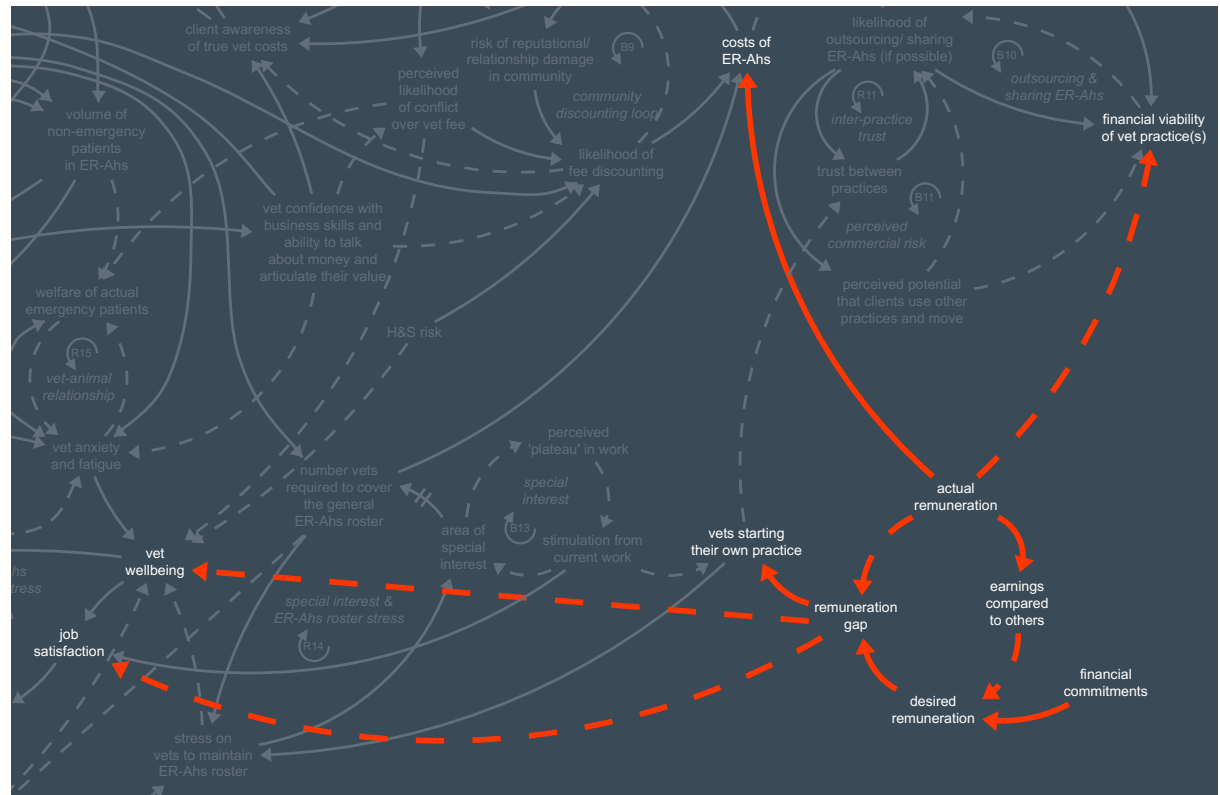
This section describes some of the dynamics relating to vet remuneration. This is often an obvious and emotive element in the complex set of factors relating to the delivery of ER-Ahs service. It is hoped that this diagram helps put this factor in the context of the many other factors that also contribute to the healthy delivery of ER-Ahs (Figure 30).

Remuneration is represented in the diagram as another example of a goal/gap relationship (see section 3.4). Here, there is the 'desired remuneration' and the 'actual remuneration' of a vet. Or of vets on average, as this could be used as an individual lens or a collective, industry lens on remuneration. These two factors both influence the 'remuneration gap'. If there is a large difference between desired and actual remuneration, then the gap is large; If actual is in line with desired remuneration, then this gap is small (or non-existent). The size of this gap indicates the amount of influence this then has on other areas.

There are several areas that this 'remuneration gap' influences. The likelihood of 'vets starting their own practice' (a same relationship – the larger the 'remuneration gap; the more likely vets are to start their own practice'); 'vet wellbeing' (an opposite relationship – the larger the 'remuneration gap', the lower wellbeing); and 'job satisfaction' (an opposite relationship – the larger the 'remuneration gap' the lower vets 'job satisfaction').

The level of 'actual remuneration' also has some flow-on influences. If it increases it also increases the 'costs of ER-Ahs' (same relationship) and it also reduces the 'financial viability of vet practice(s)' (opposite relationship).

Figure 30. Remuneration



Further, if remuneration increases, it increases the vets 'earnings compared to others' (both within the industry as well as comparable professions). This has an opposite influence on the 'desired remuneration' – that is, the more you are paid comparative to others, reduces some of the drivers for further desired remuneration. However, the final factor 'financial commitments' captures other financial influences (outside of how a vet salary compares to others) that would influence a vets desired remuneration.

6. Summary of insights or tensions identified

The dynamics identified during this project have been discussed in the previous sections. This section provides a summary of the key insights and tensions identified in the industry by this work. This section does not seek to ‘answer’ or ‘solve’ any of these tensions. Rather, it provides an aligned overview of them, to inform a wider conversation within the vet profession of what to do about them.

The tensions and issues are often long running and/or have been operating for many years. Therefore, some will likely take many years to influence, while some may be able to be influenced in the short term. This is the nature of complex systems. It is important that this is appreciated by the wider industry and any actions identified seek to deal with deeper-seated challenges. Otherwise, there may be a bias towards action that may seem easy to do in the short term, but may have sub-optimal impact in the long-term.

This section is structured in tabular form (see Table 3). This is so that any **insights or tensions** are aligned with **potential action** and **important things to be aware of** (e.g. other areas that may influence or be influenced by this tension). Colour-coded columns indicate which part of the diagram these comments relate to. See Figure 32 for an example.

This table may form the core of a wider action plan developed within the vet profession. Columns could be added to highlight any resources already be available; and what actions are to be taken and by whom. For a conceptual example see Figure 33

Figure 32. Example of table format used in this section

Key insights or tensions:	Diagram area(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram area(s)
Key insight or tension described here.	1	Example action to consider here.	<ul style="list-style-type: none"> Things to also be aware of list here. For example, areas that may influence this, or influence from this. 	1
				2

This column indicates the area of the diagram that this ‘*insight or tension*’ relates to

This column indicates the area of the diagram that the ‘*important things to be aware of*’ relate to.

Figure 33. Example of table format that could be used in wider industry action plan

Key insights or tensions:	Diagram area(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram area(s)	Existing resources that may support	Developing future actions (and owner)
Key insight or tension described here.	1	Example action to consider here.	<ul style="list-style-type: none"> Things to also be aware of list here. For example, areas that may influence this, or influence from this. 	1	• XXXXX	• XXXXX
				2		

These columns could be added to form the core of an industry-wide action plan. Outlining what resources may already exist, and future actions (and owners)

Table 3. Summary of key insights or tensions identified

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
Expectations of animal welfare and the perceived value of animals (primarily in an emotional sense - the human-animal bond), are linked. These have been reinforcing each other over time.	2	Unlikely to be able to influence	<ul style="list-style-type: none"> Increased value of animal increases client expectations of service and what is included. Increased value of animal may eventually lead to a greater willingness to pay for vet fees, but this takes time and may be a weak influence (i.e. is not guaranteed). There is an increasing pressure to include more in vet ER-Ahs service. This increases the volume of work for vets per shift which flows on to increased vet anxiety, reducing wellbeing and job satisfaction. 	2
				3
				6
Trends of declining family sizes and increasing disposable income (for some) increase pet numbers and expectations of ER-Ahs service.	2	Unable to influence	<ul style="list-style-type: none"> Continued growth in pet numbers and client expectations will continue to increase the actual number of emergency patients presenting in ER-Ahs. It will also continue to increase the presentation of non-emergency patients in ER-Ahs and higher technical expectations of clients during visits. The Increased perceived value of animals may eventually lead to a greater willingness to pay for vet fees, but this takes time and may be a weak influence (i.e. is not guaranteed). 	2
				3
Medical and technical advances continue to improve the level of service possible for ER-Ahs. However: <ul style="list-style-type: none"> There is a tension between what level of service some vets believe is medically adequate for ER-Ahs patients, and what a client expects. There are differing expectations amongst vets 	4	Encourage greater discussion and awareness amongst vets relating to differing interpretations of 'adequate ER-Ahs care'. Encourage vets to provide 'adequate	<ul style="list-style-type: none"> Likely tension within vet community relating to what 'adequate' ER-Ahs service is. Clients' awareness of improved medical advances can lead to an increased level of expectations – e.g. pain relief is more available so it should be sought. This can lead to increased presentations of non-emergency patients and an increased level of the technical service expected. Both of which increase the volume of work on ER-Ahs shifts. Only focusing on adjusting vets' views on what 'adequate' care is, without seeking to influence client expectations, will likely: <ul style="list-style-type: none"> Retain a gap between these expectations potentially causing damage to the reputation of the vet industry in the medium-term. Do nothing to adjust the potential mis-match between client expectations and vet realities of costs and paying full fees. 	4
	2			2

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
as to what level of technical care is adequate for ER-Ahs.	3	ER-Ahs care', not necessarily 'gold-plated'.		3
Efforts to meet client ER-Ahs technical expectations reinforce potentially unrealistically high client expectations of service, while increasing the likelihood of overwork for vets on ER-Ahs shifts, increasing fatigue and reducing wellbeing.	2	Continue to try to meet high clients expectations.	<ul style="list-style-type: none"> • If actual service meets client expectations, this will likely further reinforce higher client expectations, further reinforcing the workload on ER-Ahs shifts. • Likely continued overloading of vets on ER-Ahs shifts, decreasing vet wellbeing and reducing the number of willing ER-Ahs workers. • Likely impact on wait time for clients, ironically reducing their actual service level experience. • Likely long-term damage to vet industry reputation through not meeting expectations. 	2 6
	2	Try to reduce unrealistically high client expectations to an appropriate level.	<ul style="list-style-type: none"> • This will take time. In the meantime there would likely be tension between lowering client expectations to a realistic or appropriate level, and the gap between client expectations of service and vet expectations of adequate service. Therefore, some impact on the reputation of the vet industry in the medium term should be anticipated and mitigated. • Reducing unrealistic client expectations is likely to be an important impact on the volume of work on ER-Ahs shifts. In particular: <ul style="list-style-type: none"> ○ Reducing non-emergency patients and potentially high levels of technical work. ○ The benefits for actual emergency patients if non-emergency patients reduce. ○ The impact on vet anxiety and wellbeing if workload and pressure reduces. ○ Improved quality of care for patients that do present, with positive flow on impacts for the reputation of the vet profession. ○ There may be a reduction in non-emergency patients which would reduce the potential fees charged. • The ability to achieve this is influenced by the vets to confidence in dealing with the non-medical side of vet practice. Being confident dealing with clients, talking about money and setting expectations. 	2 3 6 5

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
Vet decision-making abilities in ER-Ahs shifts are grown and developed during ER-Ahs shifts. This builds confidence and competence in delivering ER-Ahs work. This reinforces on itself, so can grow if practised or decline if not practised.	1	Mandate, encourage, incentivise or adapt ER-Ahs shifts.	<ul style="list-style-type: none"> • These loops have likely been reinforcing on themselves in an undesirable direction for some time: vets don't get exposure so don't build confidence, so are unwilling to do ER-Ahs, which reduces exposure. • Low confidence delivering ER-Ahs is an importance influence on vet anxiety and, in turn, wellbeing and job satisfaction. • The role of appropriate mentoring and development of vets during ER-Ahs, not just exposure to ER-Ahs, is important to help this loop reinforce in a good way. • Given the constraints on experienced vets and their role in mentoring, reversing this spiralling loop is likely to take some time, requiring action to support experienced vets too. • If vets are more clearly rewarded (financially or otherwise) for ER-Ahs shifts, their wellbeing and job satisfaction will improve, increasing their likelihood of doing ER-Ahs shifts. However this will take time to flow through all factors and should be recognised as only a partial influence on vet wellbeing and job satisfaction. • Vet anxiety relating to service delivery is an important influence on vet wellbeing and willingness to do ER-Ahs shifts. In particular, these are enabled by the soft/power skills required to deal with perceived potential client conflicts over vet fees, and 'adequate' level of service. • The availability of more experienced vets to mentor less experienced vets is important in building vet confidence in the longer term. (See comments on mentoring below) • Confidence and willingness to do ER-Ahs shifts is an important influence attitudinal on the resulting quality of ER-Ahs care. This is in conjunction with the actual volume of work on shifts. • Vets have a level of anxiety relating to service delivery that comes from other parts of the job/practice. These other influences can reduce wellbeing and willingness to do ER-Ahs shifts. • Both formal training at Massey and informal training on placement in practices, play an important role in setting expectations around ER-Ahs shifts in vets work. 	1
Confidence & competence delivering ER-Ahs and willingness to do ER-Ahs are strongly linked, reinforcing on each other. They reinforce each other, so increase together or decline together.	2			2
Confidence & competence delivering ER-Ahs, willingness to do ER-Ahs, the frequency of ER-Ahs shifts and vet wellbeing are strongly linked. All reinforce on each other, so they spiral up together or spiral down together.	2			6
				5
		4		
Vet concerns about liability are linked to the likelihood that they will accept	6	Improve understanding of	<ul style="list-style-type: none"> • Vets' understanding of, and experience with, regulatory requirements are linked to perceptions about liability: <ul style="list-style-type: none"> ○ Is an improved awareness of regulatory requirements required? What role might 	6

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
non-emergency patients in ER-Ahs, which impacts the volume of work realised on ER-Ahs shifts.		liability and increase comfort with perceived implications of liability. Improving understanding of what constitutes an emergency and/or an 'appropriate' level of ER-Ahs service.	<ul style="list-style-type: none"> ○ VCNZ and Massey play in this? <ul style="list-style-type: none"> ○ There may be an unnecessary level of concern relating to the VCNZ complaints process. Is this increasing anxiety amongst less experienced vets? Might professional development help this process improve? E.g. an improved understanding of what an 'adequate' level of ER-Ahs service might be, across different circumstances? ● The perception (by vets) that all modern science should be used to provide an 'adequate' level of ER-Ahs is linked to vets' concern about liability. Can greater awareness about reducing the former help reduce the latter? ● Vet concerns about liability is an important influence on vet wellbeing, which has important flow on impacts to willingness to do ER-Ahs shifts. ● Reducing vet concerns about liability can reduce the amount of non-emergency patients seen in ER-Ahs, which can help reduce the volume of work on ER-Ahs shifts, and the potential for vet overwork. 	2
				1
				5
				4
The role of non-technical (soft/power) skills in veterinary practice is often under-estimated. These play a very important role in dealing with clients and the financial aspects of the veterinary business.	5	Seek to support, nurture and further develop non-technical soft/power skills in the vet skill set.	<ul style="list-style-type: none"> ● Developing non-technical soft/power skills will take time and may need to be considered more in selection criteria. It is noted that recent changes at Massey in relation to this have not yet flowed through to the workforce. ● Soft/power skills link with day one competencies; support confidence and proficiency in delivering ER-Ahs; dealing with perceived conflict over fees (see specific point relating to this below); vets' ability to mentor others; and vet anxiety relating to service delivery. 	1
				2
				3
				4
				5
				6
Mentoring of less experienced vets (and vet students on placement) plays an important role in the development of appropriate skills for practice -	5	Improve mentoring	<ul style="list-style-type: none"> ● Mentoring ability is constrained by availability of experienced vets on the ER-Ahs roster. ● There are significant delays for mentoring to have an effect. ● Improving mentoring will likely increase stress on the ER-Ahs roster in the medium term. ● Successful mentoring with vet students can influence the competencies of graduates from Massey - although these delays are likely to be significant. (i.e. take years to flow through) 	5
				1

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
especially non-technical (power/soft) skills.			<ul style="list-style-type: none"> Might mentoring skills need to be recognised in remuneration too? As this helps with vet satisfaction and willingness to do ER-Ahs shifts. 	6
The awareness and prevalence of pet insurance reinforce each other. While prevalence of pet insurance reduces likelihood of fee discounting and increases actual vet fees.	3	Encourage pet healthcare planning	<ul style="list-style-type: none"> Health care planning (e.g. pet insurance or payment plans) can increase a clients' ability to pay, but not necessarily their willingness. Willingness is influenced by their personal circumstances, the value they place on the animal, and their expectations of service. Higher actual vet fees have a delayed impact on the prevalence of pet insurance and potentially payment plans. However, this prevalence in turn increases the ability of clients' to pay, thus reinforcing and sustaining the higher actual vet fees. At the same time, sustained high vet fees will, over time, increase the cost of pet health planning (e.g. pet insurance) and reduce its affordability, which will impact its prevalence. Therefore, the level of actual fees that pet insurance can enable, and the prevalence of pet insurance, will likely come into some kind of balance in the longer-term. Improved pet healthcare planning may help reduce (but not eliminate) conflict over fees which has a flow on impact to vet wellbeing and eventually willingness to be part of the ER-Ahs roster. In-house payment plans can be a constraint on clients using other ER-Ahs services. Therefore this can be a constraint on the likelihood that ER-Ahs services might be shared across practices. 	3
The perceived difference between the clients' perceived acceptable vet fee and the actual fee, is a very important tension. Influencing multiple other areas. The impact of this non-technical element of vet practice was continually highlighted by vets.	5	<p>Increase client's awareness of true vet costs.</p> <p>Support vets to build non-technical skills that build confidence dealing with the financial aspects of the business.</p>	<ul style="list-style-type: none"> The perceived difference between an acceptable fee and the actual fee impacts the perceived likelihood of conflict over the vet fee. The vets' perceived likelihood of conflict over the vet fee is influenced by their own perception of what a client is willing to pay. This may often only be assumed and may never actually be verbalised. This perceived conflict is an important influence on vet anxiety and their perception of the welfare of actual emergency patients. The perceived conflict over fees underpins the likelihood of discounting the fee. This action further reinforces a low client awareness of true fees, thus sustaining a situation with higher perceived likelihood of conflict over fees, and sustained vet anxiety. This area is strongly influenced by the quality of non-technical skills of vets, and the level and quality of in-practice mentoring that is provided to both lesser and experienced vets. A low level of awareness of true vet costs even among vets, maintains a high likelihood of fee discounting, further reinforcing a lower level of client awareness of true vet costs and 	3

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
			<ul style="list-style-type: none"> a sustained perceived likelihood of conflict over vet fees. Sustained fee discounting maintains sustained pressure on the financial viability of the ER-Ahs components of practices. 	2
Inter-practice trust and commercial risk are key factors influencing the likelihood that practices share ER-Ahs services.	5	<p>Explore sharing of ER-Ahs services. (not always possible in remote areas)</p> <p>Build pathways to improving trust between practices.</p>	<ul style="list-style-type: none"> Outsourcing or sharing of ER-Ahs will not be possible for all practices. It is unlikely to be possible in more remote parts of the country due to the geographically spread nature of rural vet practices. The outsourcing or sharing of ER-Ahs is dependent on BOTH a high level of trust between practices and a low level of commercial risk. Inter-practice trust and the likelihood of outsourcing reinforce each other - good trust increases likelihood of sharing, which increases trust. And vice versa. Building trust between practices takes a significant amount of time and is heavily influenced by previous inter-practice relationships. Trust between practices is influenced by the quality of relationships between practices and whether some practices run ER-Ahs at a loss as a business strategy (e.g. as a loss leader). Even in situations where there is a high level of trust between practices, there can be a commercial risk to sharing ER-Ahs services. This is likely to be a higher risk where the clients are of a higher commercial value. In house payment plans can constrain the ability to share ER-Ahs service, as they will be held with one practice but ER-Ahs may be delivered by another. 	5 6
Remuneration	6	Consider autonomy and flexibility around how vets are rewarded. e.g. in money or in time off?	<ul style="list-style-type: none"> There is a wide variety of ways that remuneration is described and packaged across the industry. Some inconsistencies are historic due to vets moving off the ER-Ahs roster but not having their remuneration adjusted. A continued remuneration gap (difference between desired and actual) may encourage some vets to start their own practice, which can have impact the trust between practices, which is important for sharing/outsourcing afterhours. Remuneration is an influence on job satisfaction and which flows on to the desire of vets to remain in clinical practice, and thus their availability for the ER-Ahs roster. 	6

Key insights or tensions:	Diagram theme(s)	Potential action	Important things to be aware of: (e.g. Influencing (upstream) or flow on (downstream) factors)	Diagram theme(s)
		Consider making how remuneration is made up more transparent so there is a greater understanding of the remuneration associated with ER-Ahs shifts.		1
Vets plateauing in their work and areas of special interests.	6	Consider autonomy and flexibility around how vets are allowed to operate so they are stimulated by their current work. Sometimes plateauing is about the vet practice not changing, not just the vet.	<ul style="list-style-type: none"> • The likelihood of vets experiencing a plateau in their stimulation from their work seems to be a common phenomenon. Developing an area of special interest (e.g. types of cases that present) is often described as a way of gaining more stimulation and progressing ones career. • While seen as a pathway for people to get more intellectual stimulation from work, ironically this can narrow vets' breadth or currency of experience. This is likely to be more of an issue in mixed practices where vets may focus on one particular species. • Counter-intuitively, this trend can increase the need for multiple vets on the ER-Ahs roster due to the narrower breadth/currency of experience. This increases the stress on a wider range of vets (to cover all the skills required) to cover the roster. This increases the costs of ER-Ahs, and impacts vet wellbeing and job satisfaction. • Greater focus in a special interest and therefore a narrower breadth/currency of experience can also increase the perceived likelihood of a client complaining to Vet Council (if a vet is exposed to something outside their area of knowledge). • Perceived plateauing in work can also be a motivator for vets to start their own practice. This is also a pathway that can impact the relationship and trust between practices, which can impact the conditions needed to share/outsource ER-Ahs. • Autonomy and flexibility are important elements that contribute to stimulation and satisfaction. 	6
				3
				1

7. How to use the insights from this report

The *process* of developing a causal diagram has many benefits including intangible benefits like building shared appreciation of issues and articulating how causal factors are understood to operate. At a minimum, the shared understanding around the issues relating to ER-Ahs that was built up by those involved in the workshop and interviews should not be forgotten or underestimated.

The resulting *causal diagram* is the tangible output. And this is an articulation of the inter-related causes and influences involved in the issues relating to ER-Ahs, as understood by the group. This, too, is only part of the output.

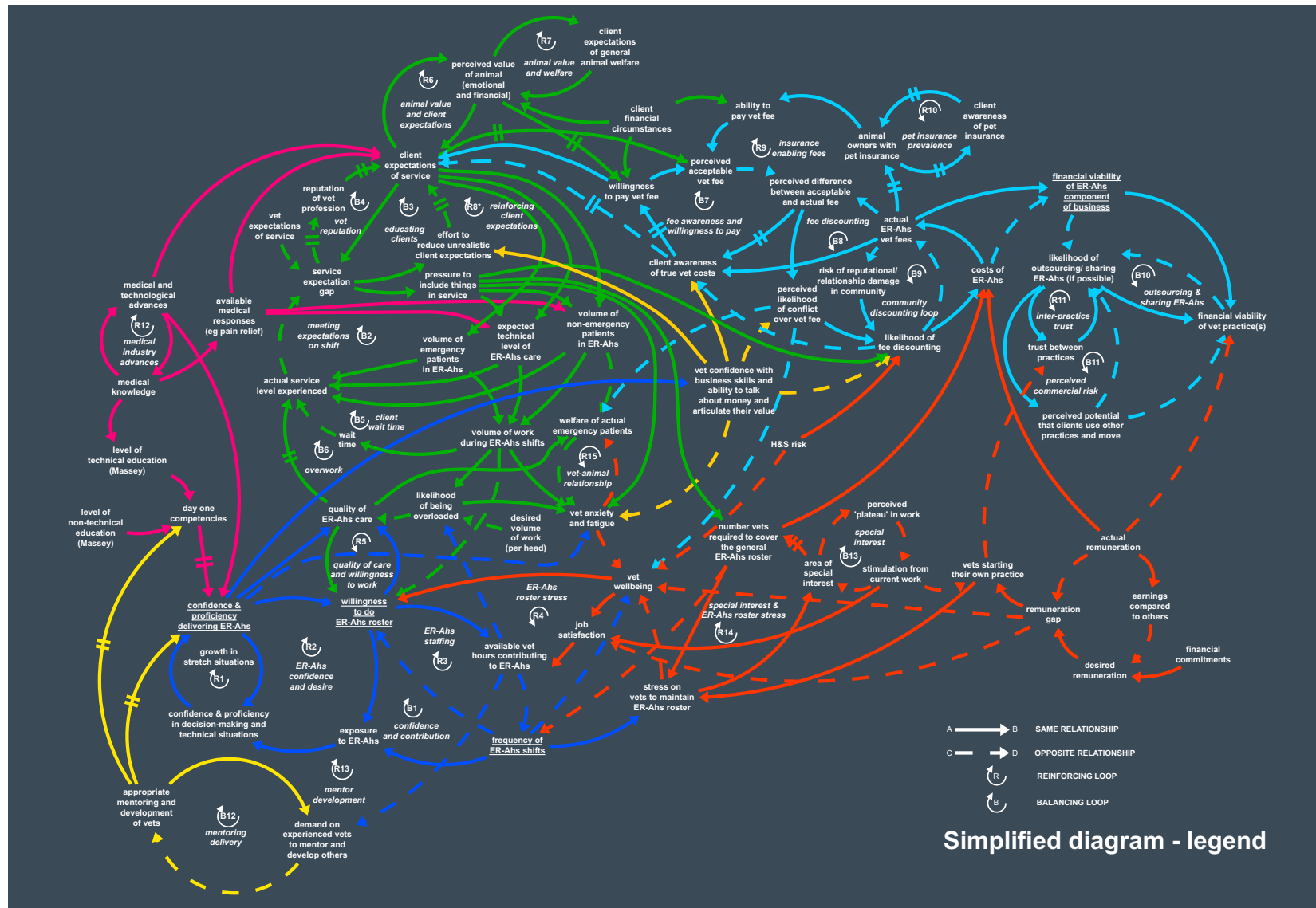
Additional insights can be achieved when the diagram is used as a basis to explore the potential impacts on key area(s) of interest, over time, in response to potential or proposed changes. Remember, a causal diagram is an attempt to articulate the structure of influences resulting in some kind of *trend or behaviour over time*. Using it to link back to anticipated changes over time is an important reason for developing a causal diagram. So using it for this purpose is an important application.

Qualitative insights about the structure and likely behaviour (dynamics) of the system can be achieved in a variety of ways. The feedback loop approach recognises that nothing is static and that things are constantly changing – moving into, or out of, balance (i.e. changing over time). Using the diagram to support discussion around the feedback loops associated with ER-Ahs can explain how the behaviour of variables of interest may change over time. Or in other words, what the future may look like in response to changes.

How is this done? There are different ways of gaining insight from a causal diagram.

1. At a minimum, a causal diagram highlights the interconnected nature of the factors relating to ER-Ahs. This alone can help identify areas that are related to the issue that need to be considered in any action.
2. It highlights where influence on the issue is internal (endogenous, via circular causality and feedback loops) versus external (exogenous) influences. This highlights factors that are having an influence on the issues from *within* the system. This can help reframe participants' perceptions of how much influence is from 'external' sources and how much is from 'within'.
3. Potential futures and changes in the system can be explored. The causal diagram can be used as a tool to guide discussion relating to the anticipated dynamic behaviour of some elements in the diagram. This can be discussed and explored as a practice, or as a region, or as a sector. This is the primary way that this diagram is expected to be of use for the vet profession. It is anticipated to act as a guide to help: identify where action(s) may be taken; and explore what impact that/those action(s) may have on the variables within the diagram over time.
4. If any further research or mathematical modelling was proposed by the industry in relation to this issue, it is also anticipated that this diagram may help inform the scope of that work. Given the comprehension of this diagram.

Figure 34. Full sized version of the simplified diagram



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