Parasite control: starting the conversation

Regulation (EU) 2019/6 on veterinary medicinal products came into force on January 28, 2022. Along with changes to antimicrobial usage, a major change is the requirement for a veterinary prescription for antiparasitic products in livestock, with a deferral until June 1, 2022. In this article Alison Burrell, BA, MSc, C.Psychol, Health Psychologist, Animal Health Ireland (AHI), and Dr Natascha Meunier, BVSc, PhD, Dip.ECVPH, Programme Manager, AHI, highlight how the change in regulations can be used as an opportunity for veterinarians to nurture a collaborative relationship with clients and encourage behaviours that delay or minimise antiparasitic resistance for sustainable parasite control over the longer term

Health psychology and understanding human behaviour change from a biopsychosocial perspective is a well-established discipline, with behaviour change theory used to address important human health issues such as increasing physical activity, managing chronic illness and improving disease detection (Michie *et al*, 2011; Michie and Johnston, 2012). However, most interventions addressing behaviours to improve animal health and welfare come in the form of regulatory, top-down public policy changes. Although regulations may be an important catalyst for social change, relying solely on restrictive measures rather than considering the individual, environmental and social factors that enable behavioural change can lead to increased mistrust of authorities, a disconnect from farm best practice and other unintended outcomes, (Escobar and Demeritt, 2017). Veterinarians will need to be prepared to address questions from farmers on why things have changed and why veterinarians now need to be involved in a space that they felt was previously adequately managed by themselves. This is where the utility of a veterinary consult can help bridge the gap between top level policy and the practical on-farm application and reasoning behind the changes. Parasite control needs to be tailored to each specific farm and consists largely in assessing risks and pre-empting development of large parasite burdens that would overwhelm host defences, resulting in sub-clinical and clinical losses. However, the nature of the parasite risk on the farm is complex and constantly changing with a range of interlinking farm management and environmental contributors. For example, pastures that were 'safe' last year, may have high worm burdens this season due to weather conditions favouring larval survival and proliferation after grazing with calves. The vet-client relationship is critical to assessing the risk, understanding what is currently being done and developing management practices tailored to the farm which are practical for that client.

Research points to a shift in the role of the veterinary profession towards preventative medicine: moving from a reactive to proactive model. Indeed, changing how veterinarians interact with their clients is described as the future of the profession, creating a collaborative partnership with clients to highlight the pivotal role veterinarians play in preventative services (Reyher, Barrett and Tisdall, 2017). In a recent qualitative study examining farmers' barriers and facilitators to engaging in selective dry cow therapy, Huey *et al* (2021) found that engaging in a dry cow consult with a trained veterinary practitioner provided herd owners with a fresh perspective on their farm routine, that they gained 'small little tips' when taking a collaborative approach to sharing ideas and that future consults should take a similar preventative approach: "I'd actually think that going forward that farmers should be using their veterinarians a bit more for consultations that way and procedures in place," Irish Dairy Farmer, (Huey *et al*, 2021).

UNDERSTANDING WHAT DRIVES FARMER BEHAVIOUR

To successfully deliver a tailored herd health consult and support meaningful behaviour change at farm level, it is important to understand the complexity of farmer decision-making. Reyher, Barrett & Tisdall (2017) suggest that practitioners often assume that farmers' motivations are mainly financial, but merely discussing economic factors will rarely stimulate meaningful changes to farm routine. Professional identity, pride in farming, personal values, moral

and ethical considerations, veterinary input, regulations, peer support and wider society as well as economics have been identified as contributing to farmers' decision making.
The Health Belief Model, (Rosenstock, 1974), has been used in human health research for decades and is particularly relevant to the area of parasite control and the perceived threat it poses to herd health. The Health Belief Model (Figure 1) presents six determinants in managing health and health behaviours and this has been applied to lameness management in cattle farming (Bard, 2018). It suggests that farmers make a 'mental calculus' of whether the benefits of behavioural changes outweigh the practical and psychological costs. For farmers to engage in parasite prevention practices or change their anthelmintic use to address resistance, they must perceive their herd as vulnerable to the disease or resistance, believe that it would have serious health or social consequences, that the recommended changes would reduce this severity and that the benefits of change would outweigh the cost. They also require a belief in their own capability (or self-efficacy) to carry out the necessary behavioural changes to farm practices. Engagement in these new behaviours would require prompts such as parasite prevention communication resources (cues to action), and other individual modifying factors (such as demographics, knowledge and socioeconomics) can also influence the decision to take action.

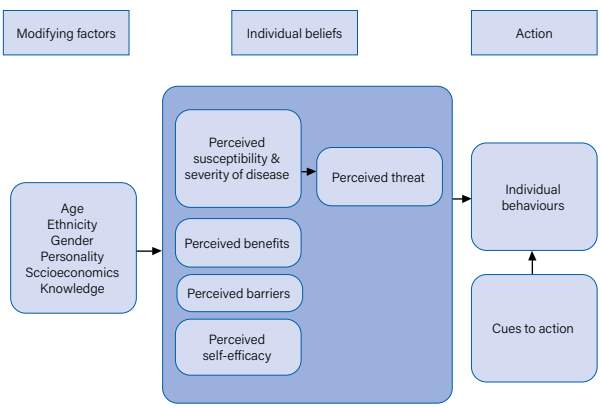

Figure 1. The Health Belief Model (from Bard, 2018).

Understanding both what influences farmer behaviour and how farmers perceive the risk of parasite disease and anthelmintic resistance will help veterinary practitioners to deliver an individualised consult with increased uptake of recommendations. For example, frequent anthelmintic treatment in animals is considered a driver of resistance. However, a farmer may consider calves to be at high risk of developing PGE, treating them frequently throughout their first grazing season to minimise any potential losses and inadvertently applying selection pressure. To this farmer, the perceived risk of severe disease outweighs the potential risk of resistance and the advice to 'use less anthelmintics.' If the farmer is brought to understand the benefits of allowing some immunity to develop and additional tools such as faecal egg counts and average daily gains are introduced to help monitor risk, they may then feel it is safe to reduce the frequency of treatments in that group of animals.

IDENTIFYING BEHAVIOURS TO TARGET DURING A CONSULT

When selecting a target behaviour to change, Michie *et al* (2011) stress the importance of considering the COM-B model: does the client have the psychological and physical capability, the social and physical opportunity and the reflective and automatic motivation to carry out the target behaviour? For example, does the client have the knowledge and physical skills to take effective faecal samples (capability), do they have the labour and facilities on farm to safely weigh animals and dose them accordingly (opportunity) and have they made a measured decision and feel positively towards a newly advised targeted treatment strategy (motivation)?

TOOLS TO USE DURING CONSULTS

Effective communication

There are tools used in human health that can help to create a collaborative consult with clients, acknowledging any ambivalence your client is feeling towards these new changes. This is particularly important considering the 'invisible threat vs. visible thrive' nature of parasitic disease and anthelmintic resistance and farmers' previous autonomy over anthelmintic use. Expressing empathy and acceptance towards your client, avoiding the 'righting reflex' and drawing out their individual motivations are important aspects of effective communication, as outlined in a previous *Veterinary Ireland Journal* article on Motivational Interviewing (Regan and Burrell, 2021).
"The 'righting' reflex in the context of motivation describes the tendency of health professionals to advise patients about the right path for good health. This can often have a paradoxical effect in practice, inadvertently reinforcing the argument to maintain the status quo" (Shaw, 2016).
Research has shown that open questions (questions that cannot be answered with a Yes/No/One word response, using 'How/Why/What') are rarely used in veterinary consults (Ritter *et al*, 2018), but can be incredibly helpful when eliciting information on farm practices and clients' existing knowledge of parasite disease management. It is important to remember that the veterinary practitioner is one of many voices on farm who are a source of advice, support or technical information and that advice may be conflicting. For example, grazing to a low sward height might result in increased parasite larval uptake but optimises grass usage and may be advised by another professional.
As well as using an on-farm consult to highlight changes that need to be made to farm practices, it is important to also highlight what is going well, recognising a client's strengths and acknowledging behaviours that are contributing to parasite disease management. Affirmations can help to reinforce a positive client-practitioner relationship and increase a client's self-efficacy to make any required changes, e.g., "It's good that you're already dosing animals based on the heaviest animal in a group because it ensures all the animals are getting enough wormer".

Recognising internal motivation

Before compiling a herd health plan to manage parasite disease on farm, it is important to establish how the client feels about

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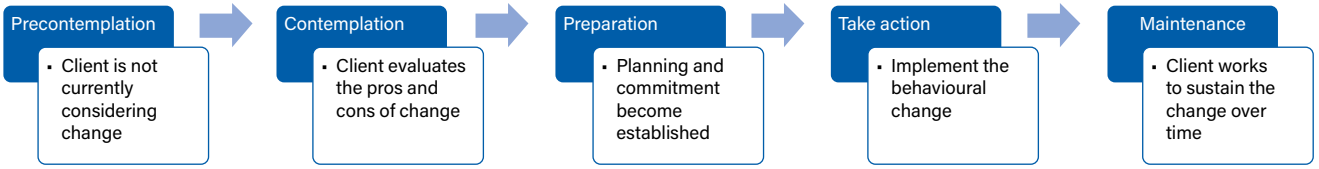

Figure 2. The Transtheoretical Model of Change (Prochaska, DiClemente and Norcross, 1997).

making on farm changes and what stage they are at – from motivation to action. Prochaska, DiClemente and Norcross (1997) highlight the various stages that an individual goes through when deciding to change, which needs to be considered when delivering a herd health consult. There is no benefit to making a detailed herd health plan, if the client is still in a 'Precontemplation' or 'Contemplation' stage of change (Figure 2). In this instance, it may be more beneficial to talk through this ambivalence with them and examine the pros and cons of making a change. For example, advising on doing a pre- and post-drench test for the commonly used products on farm are a small expense (con) that can give you valuable information on how to proceed with a parasite plan (pro).

Overcoming barriers and dealing with uncertainty

The nature of parasite control means dealing with uncertainty, anticipating barriers to completing the herd health management plan and ensuring that intentions are acted upon. There are many factors throughout the year to consider and putting 'if..., then... plans' in place during a consult can support reaching set targets or goals for the year, while anticipating how conditions may change: IF it's a dry summer, THEN we'll take faecal samples and delay treatment in the calves until egg counts increase.

Measuring what you manage

Self-monitoring of a behaviour, receiving feedback on our own behaviours and feedback on others and what they are doing has all been shown to facilitate positive behaviour change. Reyher, Barrett and Tisdall (2017) highlight the importance of recording antimicrobial use to keep track of changes, illustrate improvements, and use as a benchmark to show what is possible and motivate farmers to keep making improvements. Anthelmintics will also benefit from recording, allowing farmers to evaluate how effective treatments have been and for comparison between seasons, allowing for improvements and refinement of the parasite plans.

CONCLUSION

We as veterinarians have the opportunity to highlight our value in animal health management and shift away from a reactive-only role on farm. The behaviour change tools introduced above, while described within the context of parasite control, are relevant for any interactions with clients. Considering the interplay of production, health management, welfare, economics and sustainability, veterinarians are well placed to provide tailored advice that addresses the growing concern of anthelmintic resistance while also meeting the needs of the farmer.

References available on request.

Reader Questions and Answers

A SHEEP FARMER HAS APPROACHED YOU TO DISCUSS PARASITE CONTROL ON-FARM IN ORDER TO GET PRESCRIPTIONS FOR THE ANTHELMINTICS THEY WERE USING LAST YEAR. THEY MENTION USING SOMETHING DIFFERENT AS THEY ARE NOT CONVINCED THAT THE PRODUCTS WORKED VERY WELL FOR THE LAMBS, AS THEY WEREN'T THRIVING AND THEY HAD TO REPEAT THE DOSE MORE THAN ONCE.

1) YOU SUGGEST A DRENCH TEST ON THE FLOCK AND TESTING TO INVESTIGATE OTHER CAUSES. BASED ON THE MODEL OF CHANGE, WHICH OF THE FIVE STAGES IS THIS FARMER LIKELY AT?

- **A.** Precontemplation
- **B.** Contemplation
- **C.** Preparation
- **D.** Take action

2) YOU WANT TO PREPARE THE FARMER FOR RECEIVING THE RESULT OF THE DRENCH TEST. CHOOSE THE LEAST EFFECTIVE IF/THEN PLAN:

- **A.** If the pre-drench FEC is 0, then it is better to delay the treatment for 3-4 weeks and test again.
- **B.** If we do this drench test, then we'll see what the results are and decide what to do
- **C.** If the pre-drench FEC is high and the post-drench FEC is 0, then we can continue using that product
- **D.** If the pre- and post-drench FECs are both high, then we need to look closer at resistance and repeat the test with other wormers

3. WHICH OF THE FOLLOWING QUESTIONS IS LIKELY TO GIVE THE MOST ROUNDED INFORMATION?

- **A.** Did you dose the animals according to the package instructions?
- **B.** Did you weigh the animals before you dosed them?
- **C.** How did you dose the animals, take me through the steps on how you draw up a dose?
- **D.** How much of drug x did you dose with?

4) YOU SUGGEST SWITCHING FROM AN ORAL DOSE TO AN INJECTABLE PRODUCT. WHICH OF THE FOLLOWING RELATES TO THE CLIENT'S OPPORTUNITY (FROM THE COM-B MODEL) TO CARRY OUT THE CHANGE?

- **A.** The farmer has the handling facilities to secure animals while injecting
- **B.** The farmer is confident in giving the injections
- **C.** The farmer thinks that the injectable product will be more effective
- **D.** The farmer is not confident in giving the injections

ANSWERS: 1B; 2B; 3C; 4A.