

# Companion animal worming – maximising owner compliance

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## ABSTRACT

Anthelmintics are a diverse class of chemotherapeutic agents that remain extremely important in the management of helminth (worm) infections. However, their utility can be compromised by the problem of non-compliance. In general, compliance is low and fewer proportions of owners comply with the deworming protocols recommended by their vets.

The magnitude of the problem of non-compliance to medications, and its serious consequences, is so alarming more health benefits would arise to improving compliance to existing anthelmintic drugs than developing new products. Through enhanced compliance, owners and veterinary professionals can improve the management of worm infections by informing better decisions, improving treatment outcomes, aiding in the early identification of failing compounds and delaying the emergence of drug resistance.

In this article, the author discusses the relevance and importance of adherence to deworming, identifies barriers and factors affecting compliance and describes strategies to promote compliance.

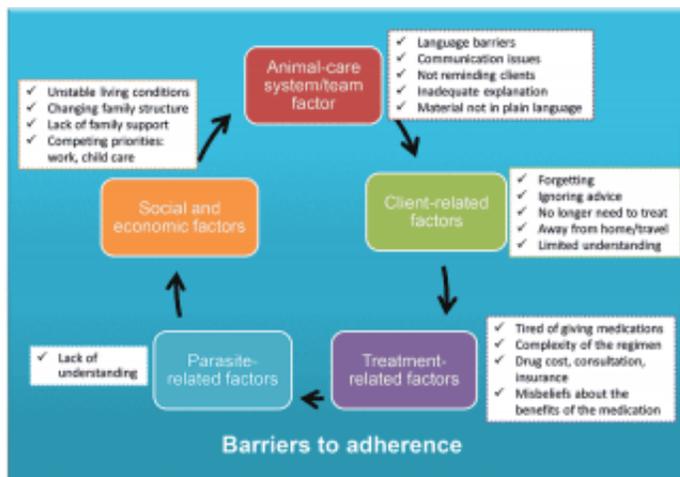
**The introduction of modern anthelmintics has enabled effective control of companion animal worm infections; however, achieving good owner compliance remains a persistent challenge for veterinary professionals and anthelmintic-producing companies.**

Non-compliance occurs when a mismatch exists between what is prescribed in terms of medication and what owners actually do. Most non-compliant owners do not comply with the manufacturer's recommendations and prescribed treatment protocols (Matos et al, 2015).

Many owners do not realise the risks and consequences of ignoring or interrupting treatment, and

most are not aware of other options that could make administering medications more convenient for them and pleasant for their pets. Owner compliance is a complex issue with considerable societal, economic and animal health impacts.

Poor owner compliance may be attributed to the difficulty in convincing owners of the need for preventive medications when parasites are perceived to be less prevalent in a pet's environment.



**Figure 1.** Common causes that can potentially influence pet owner compliance.

Obviously, veterinary professionals need to be more proactive in communicating the risks of parasitism and the benefits of preventive medications to pet owners. Some vets, however, do not adequately discuss parasite control with clients because of a lack of knowledge on the subject, inadequate time during appointments in a busy clinical practice and an increasing reliance on broad-spectrum, antiparasitic drugs as an alternative to appropriate client education (Harvey et al, 1991; Zajac et al, 2000; Stull et al, 2007).

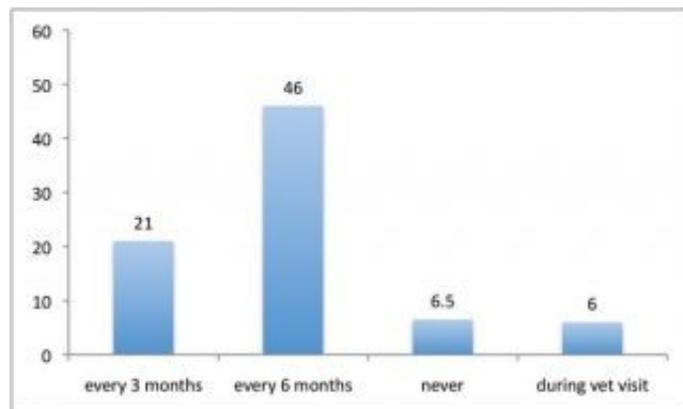
Fortunately, many of the leading causes of non-compliance (**Figure 1**) are behaviour-related and preventable. This article explores the factors influencing owner compliance and discusses how various compliance-enhancing approaches can be used to enable their implementation in clinical settings.

## Cat owner survey

Poor compliance to treatment is a well-recognised problem (Barter et al, 1996; Adams et al, 2005; Gates and Nolan, 2010).

The term “compliance” is also recognised in the scientific research arena. For example, “one dog was withdrawn from the long-term study after diagnosis with tapeworm and the owner’s non-compliance to protocol by feeding dog treats” (Forster et al, 2016). The challenge is compliance is

often a hidden problem; undisclosed by clients and unrecognised by vets.



**Figure 2.** Based on a deworming survey of 1,000 cat owners by Bayer (2014), this graph shows the percentage of how many are aware of the importance of adhering to routine deworming by revealing how often they carry it out.

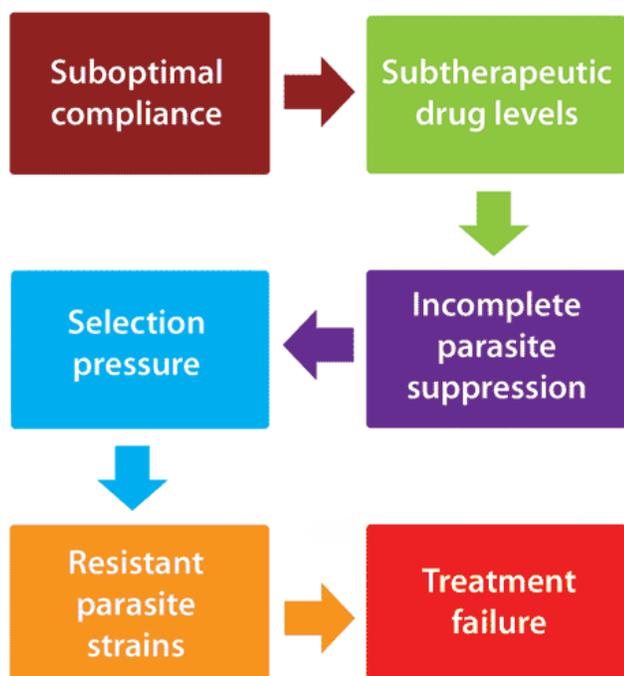
No specific estimates exist on the size of the problem. However, a study of 1,000 cat owners commissioned by Bayer (2014) revealed some interesting findings regarding confusion over when owners need to dose (**Figure 2**), the benefits of deworming, the lack of awareness about the risks of infection and the link between having a busy modern life and low owner compliance when it comes to deworming cats.

Despite the confusion, around 35 per cent of owners mentioned they wanted as much knowledge as possible about their pets and their vet to involve them in health care decisions. About 20 per cent reported they found information about the health of their cat interesting. Concerns exist regarding the 54 per cent of cat owners who used the internet for advice because this could be the reason for some misconceptions.

These findings indicate by educating owners about the basics of worms and deworming, and by recommending effective deworming solutions, vets can considerably improve compliance.

## Owner compliance

The consequences of non-compliance can be serious. In terms of clinical outcomes, non-compliance can lead to lower quality of life, mortality, more visits to the vet and increased treatment costs, which may compromise vet-client relationships. Also, there are public health implications in cases of zoonotic parasite infections.



**Figure 3.** An illustration of how suboptimal drug compliance contributes to the development of drug resistance. The process begins when doses are missed and drug levels become subtherapeutic. This leads to incomplete parasite suppression and generation of resistant parasites by selection of mutant strains. Not only will the treated animal be at risk of failing its current regimen, but it will also be at risk of a developing resistance that may reduce the effectiveness of future treatment and the antiparasitic drug might stop working.

Owner lack of compliance is not limited to medications, but it can also take other forms, including the failure to keep appointments, follow recommended lifestyle changes and follow other aspects of treatment or recommended preventive health practices. Hence, the actual implications of non-compliance go far beyond the cost of medication. For example, suboptimal parasite management can contribute to the risk of drug resistance (**Figure 3**).

On the other hand, enhancing pet owner adherence to parasite treatment can bring many benefits. The majority of vets believe compliance could have a positive impact on their practice. If a client experiences a problem due to non-compliance, he or she will normally hold the practice responsible. Some unhappy owners can share their negative experience with others and this can affect the reputation of the practice, with potential financial implications.

Owner compliance can also be of huge benefit via cost-savings and improved treatment outcomes. Clients should know the cost of treatment can be considerably high if the preventive measures have not been followed. It is often less expensive to prevent a condition than treat it.

## **Solutions**

Some compliance-enhancing approaches can be adopted by animal health care providers to better manage worm infections. It is hoped these approaches would reduce the time and cost involved with implementing pet owner compliance strategies in clinical settings.

### **Client education**

Pet owners who clearly understand the purpose of treatment are more likely to adhere to the instructions than those who do not. Fortunately, the veterinary profession has recognised the importance of good communication skills, which have become now part of the requirements of educational programmes for vet surgeons and nurses (RCVS, 2014).

Communication with owners involves face-to-face communication, sending mail/emails, SMS reminders or involving other members of the family or friends, when appropriate.

Veterinary professionals should ensure owners understand the risks associated with the lack of adoption of the treatment instructions and the potential serious impact on pets' health, and recognise the positive effects of the recommended treatment to their pets and family members.

Provide pet owners with detailed instructions on how to administer medications, including timing, food restrictions, drug interactions and instructions on how to identify and handle adverse drug effects. Keep it simple and easy for owners to remember to use the medicine by limiting instructions to about three or four main points. Also, it is important for veterinarians to use simple, everyday language, especially when giving instructions.

Focus on educating clients on what is best for their pets, adapt your consultation style to each client's needs, establish the best way to communicate with each client and consider using communication aids, communicate relevant knowledge, ask open-ended questions to facilitate information sharing, encourage clients to ask questions and restate the instructions given to ensure understanding.

Finally, show concern and respect, practise active listening and be non-judgemental.

### **Off-the-shelf solutions**

Understanding owner perception, concerns and social context is important – because they are different. Hence, do not assume one treatment protocol will meet each client's needs.

It is important to know if there is a relationship between pet owners' compliance and gender, educational experience, economic status, employment status, marital status, and ethnic or cultural background. Effects of these can be mitigated by tailoring the instructions to an owner's level of

understanding and individual circumstances.

It is important to address the ability of individual clients to administer the treatment as instructed. Compliance improves when the prescribed medicine is a pill that can be taken once a day or spot-on that can be applied without any effort from the owner or stress to the animal. In this regard, using a longer-acting drug, if possible, or a pill with more than one drug, can be advantageous.

Also, clients should have the opportunity to discuss their queries and concerns so the veterinary professional can tailor interventions to suit the needs and expectations of each client. This is even more important for owners with low literacy skills, visual impairment or hearing difficulty, or elderly clients with deficits in memory and physical dexterity who might struggle to remember the prescribed programme of medications.

## **Pet owner-centred approach to cases**

Create partnerships with pet owners and increase their involvement in the development of parasite management plans. Clearly explain to them the risk of parasites and the pros and potential cons of the available products.

Owners who understand the reasons why their pets should receive a particular treatment and the benefits of using a recommended product are more likely to be compliant. Talk and listen to the client, rather than making assumptions about his or her preferences. Before prescribing, offer clients clear, relevant information on worms and possible deworming options.

Discuss information, rather than just presenting it. Check if clients have any information/questions they wish to discuss when drugs are dispensed. Offer individualised and easy to understand information, free from jargon. Clarify any misconception associated with the prescribed drugs or the duration and frequency of treatment.

Even though proper administration of dewormers is a critical component of parasite management, and although pet owners shown how to administer drugs are generally more likely to be compliant, not all practices show owners how to administer medication.

The majority of owners like to receive information in writing, so they can refer back to it. This highlights the importance of clients' education, which can be done during the consultation or in discussion with the trained nurse. Make sure relevant literature is available in the waiting room and ensure your practice website has plenty of specific, up-to-date information available.

## **Evidence-based service**

There is rising demand among veterinary professionals and pharmaceutical companies for the adoption of a more evidence-based approach for worm control.

Empowering staff to deliver better services can be achieved via a number of approaches. For example, identification of the roles and responsibilities of the practice team to deliver improved patient-centred health care, ensuring robust processes are in place for communication among practice staff involved in the animal's care, and encouraging the team to take an active role in adopting a consistent message throughout the practice that compliance is crucial to health and the development of positive owner-vet relationships.

It is important to educate all staff in the practice so each member of the team has a full understanding of what medicine is available and how it should be used.

Technology-enabled monitoring of treated animals can also be considered. For example, a wearable smart collar was found to be an important tool in remote monitoring of the activity level of dogs undergoing heartworm treatment, where strict rest is vital to the recovery of animals and to reduce the fatal complications. A cloud-based analytical engine can be used to evaluate, in real time, the vital signs and behaviour of animals and communicate to owners via a mobile or web-based application, accessible to them and their vets.

Furthermore, because the distributor sales reps are more likely to have access to the latest research findings and understand specific indications and differences between the products they sell, they can help practice staff provide the right product to pet owners.

## **Know what makes it difficult for clients to administer medications**

If a vet is unable to detect non-compliance, it is impossible for him or her to correct the problem. Therefore, it is imperative to assess owner compliance reliably.

Regular assessment of client compliance by itself can increase compliance because it allows veterinary professionals to identify and predict those who will adhere to the prescribed treatment protocol. Also, assessing compliance can identify the difficulties encountered by owners during a treatment's application.

You can improve your understanding of client compliance by asking owners in a non-judgemental, supportive attitude about what they know, believe and understand about the medicines and the need for a particular treatment, and whether they have any general or specific concerns.

In general, owners can be accurate in reporting whether they are adhering to the prescribed treatment regimen if they are asked simple and direct questions. For example, "do you ever forget to give the animal the medications?", "when you feel your pet becomes better, do you stop giving it medications?" or "when you feel clinical signs of your pet became worse, do you stop giving it medicine?". Avoid using "yes" or "no" questions.

Consider using records to identify clients who need support and reminders, and electronic

monitoring devices, return medication counts and client self-reports to estimate the likely adherence to prescribed parasite management regimens.

## Conclusion

Serious consequences can result from lack of compliance to a prescribed treatment. Indeed, good adherence to antiparasitic treatment is required to achieve satisfactory parasite suppression and improve treatment outcomes and to avoid the emergence of drug resistance.

Everyone in the profession acknowledges owner compliance is challenging, but can be improved and an integrated strategy is the way forward because no single approach can improve compliance. Hence, there is a need for the implementation of rigorous and sustainable compliance-enhancing approaches that address this important topic.

Some of the suggested approaches are maintaining clear and effective communication between animal health care providers and pet owners, nurturance of trusting relationship between veterinary professionals and their clients, and realistic assessment of owners' knowledge and understanding of the prescribed treatment.

## References

- Adams VJ, Campbell JR, Waldner CL, Dowling PM and Shmon CL (2005). Evaluation of client compliance with short-term administration of antimicrobials to dogs, *Journal of the American Veterinary Medical Association* **226**(4): 567–574.
- Barter LS, Watson AD and Maddison JE (1996). Owner compliance with short term antimicrobial medication in dogs, *Australian Veterinary Journal* **74**(4): 277–280.
- Bayer (2014). Survey of 1,000 UK cat owners, OnePoll.
- Forster GM, Nealon NJ, Hill D, Jensen TD, Stone TL, Bauer JE and Ryan EP (2016). Navy and black bean-based dog foods are digestible during weight loss in overweight and obese adult companion dogs, *Journal of Applied Animal Nutrition* **4**: 1-11.
- Gates MC and Nolan TJ (2010). Factors influencing heartworm, flea, and tick preventative use in patients presenting to a veterinary teaching hospital, *Preventive Veterinary Medicine* **93**(2-3): 193.
- Harvey JB, Roberts JM and Schantz PM (1991). Survey of veterinarians' recommendations for treatment and control of intestinal parasites in dogs: public health implications, *Journal of the American Veterinary Medical Association* **199**(6): 702-707.
- Matos M, Alho AM, Owen SP, Nunes T and Madeira de Carvalho L (2015) Parasite control practices and public perception of parasitic diseases: a survey of dog and cat owners, *Preventive Veterinary Medicine* **122**(1-2): 174-180.
- RCVS (2014). RCVS day one skills for veterinary nurses, small animal, [www.rcvs.org.uk/document-library/rcvs-day-one-skills-for-veterinary-nurses](http://www.rcvs.org.uk/document-library/rcvs-day-one-skills-for-veterinary-nurses) (accessed 1 June 2016).

- Stull JW, Carr AP, Chomel BB, Berghaus RD and Hird DW (2007). Small animal deworming protocols, client education, and veterinarian perception of zoonotic parasites in western Canada, *Canadian Veterinary Journal* **48**(3): 269-276.
- Zajac AM, Sangster NC and Geary TG (2000). Why veterinarians should care more about parasitology, *Parasitology Today* **16**(12): 504-506.