The Protect Me poster project and reducing our cefovecin use by Quarry Veterinary Group, VetPartners

RCVS Knowledge Antimicrobial Stewardship Award Highly Commended 2024

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Introduction

Quarry Veterinary Group is a first-opinion small animal practice. We have a total of 7 vets, with a broad range of experience, from those with many years since graduating to those graduating more recently. We have a mix of full and part-time vets, provide our own out-of-hours care, and are part of the VetPartners Group. We have certificate holders in small animal medicine and dentistry, as well as veterinary nurse certificate holders in both emergency and critical care, and feline nursing, and an animal behaviour technician (soon to be a clinical animal behaviourist).

We are a relatively small team with a wide range of skill sets between us, so we try to play to our strengths. However, because of this diversity within the team, we recognised that some of our antimicrobial use was quite varied.

I wanted to create a culture where we could talk openly about our prescribing decisions and the reasoning behind them without feeling we would be opening ourselves up to criticism.

Aims of the clinical audit

We aimed to improve our overall rational use of antibiotics and create more of a consensus about how and when antibiotics were being prescribed. A secondary aim was to reduce our use of highest-priority critically important antibiotics (HP-CIAs), particularly cefovecin as this was being used much more frequently than fluoroquinolones within the practice.

To do this we planned to go through the sections of the BSAVA Protect Me poster[1], this would give some structure to generate discussion and aim to get a consensus on what antibiotics we wanted to use, and when to use them. This would allow the identification of any barriers to changing our approach and enable the presentation of any relevant evidence behind the recommendations.

This was quite a broad aim, and I underestimated the scale of the task, so we split this into smaller sections and so far, we have looked at the ear and skin sections. The process has enabled discussion about antimicrobial use in our everyday conversations, and this in itself has been valuable.

I utilised some of the resources from RCVS Knowledge during this process in a range of different areas including clinical audit and creating guidelines, and the VetTeamAMR resources[2]. I found the communication and behaviour section, and the section on diagnostics particularly helpful.

I thought about how I could change my own prescribing habits and identified knowledge and confidence as being the biggest factors. I find it much easier to follow a recommendation or protocol if I understand the reasoning and evidence that has led to it. Using the RESET model in the communication section of the VetTeamAMR resources[2], I identified I am an 'info-seeker'. It was helpful for me to think about what motivates change, and to understand we don't all think in the same way. This had an impact on how I communicated with the team through this process.

Actions

In order to encourage change across the team I first needed to find out what we were currently doing and the rationale behind those decisions.

We utilised the internal messaging system on the practice management software and sent around a message that included small sections of the current Protect Me poster recommendations and asked for everyone's thoughts and feedback. I tried to include some questions to help encourage reflection on our current practice.

The responses were collated, and I then addressed any concerns and questions, presenting evidence and reasoning behind some of the recommendations to the rest of the team. Where possible I used examples given to me by vets within the practice alongside using external resources. We also tried to identify any barriers to change. Once we had some consensus, I sent a summary round and updated our preferences on the poster displayed in the dispensing area of the practice.

Using the RCVS Knowledge audit template as guidance I retrospectively collected data on some areas that had arisen in the discussions. These areas included the use of third-generation cephalosporins, skin and ear cytology, and topical antiseptics rather than topical antibiotics for skin disease.

Confidence in skin cytology was identified as a barrier to change so we arranged CPD on both this and the use of topical antiseptics. The CPD was well attended by vets, nurses and members of the reception team. This led to the creation of new skin cytology guidance that was displayed and available for reference near the microscope. Some of the vets also attended further CPD on cefovecin use, organised by VetPartners.

As a team, we discussed the use of cefovecin in skin disease, wounds and abscesses and the importance of reserving its use as an HP-CIA, but ultimately prescribing decisions were left up to the vets seeing the cases.

Further prospective data was collected in a re-audit to complete the audit cycle and assess the effectiveness of the team discussions and interventions.

Results

The discussion period for skin disease was between November 2022 and March 2023, with cefovecin use discussed between January and March 2023. As shown in the graphs below cefovecin use has significantly decreased over the past 12 months.

In December 2023 only 2 patients received cefovecin, an 84% decrease compared with the data from December 2022, and an 89% reduction compared with December 2021.

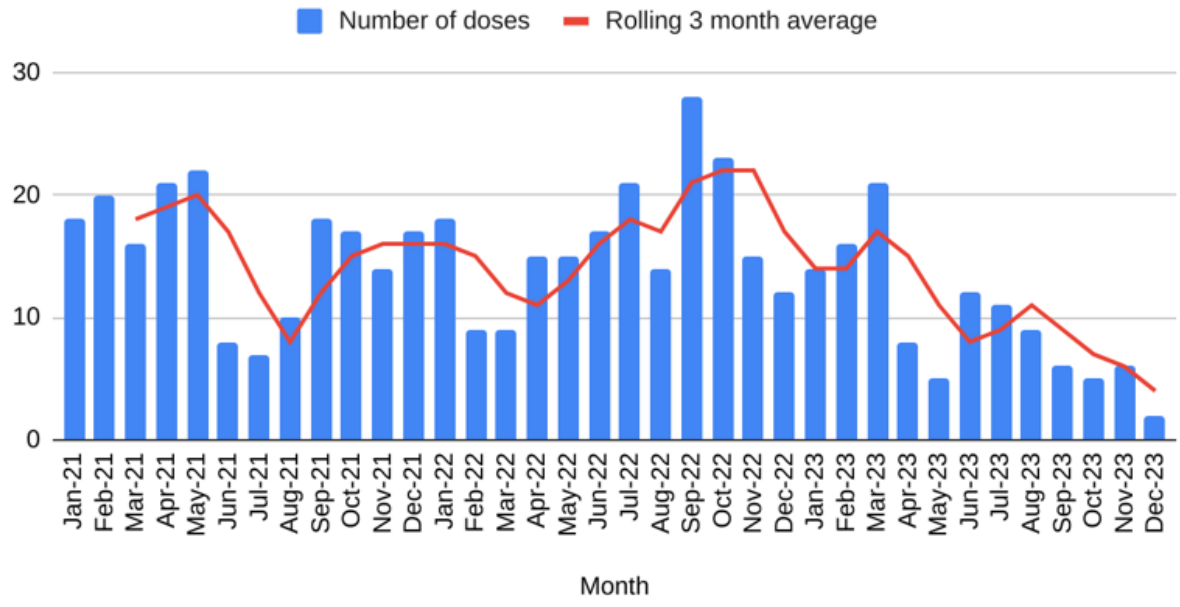

Figure 1: Number of cefovecin doses per month, with a rolling average 2021 – 2023

This correlates with a reduction in the prescribing data, and a reduction in use has been seen across all the vets within the practice. All vets now have a similar prescribing rate, rather than the discrepancy we had previously.

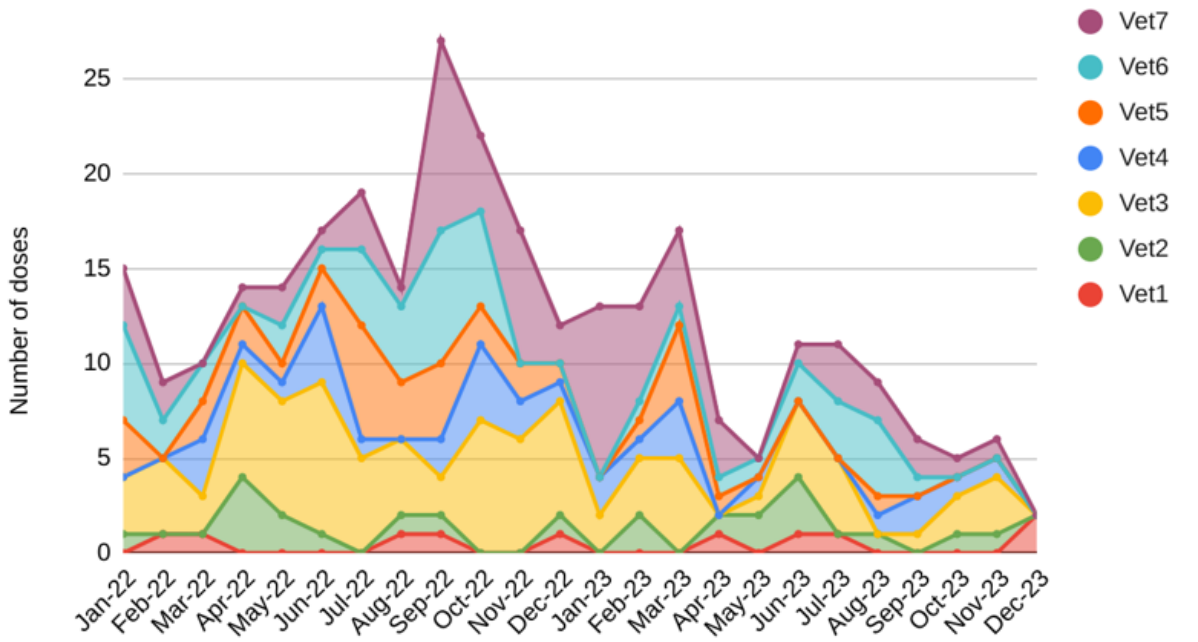

Figure 2: Cefovecin use per vet 2022 - 2023

We have seen improvements in other areas too. We did seven times as many microscopy samples in November 2023 compared with 2022. Our use of topical antibiotics for skin disease has reduced by 75%, and we are now using more topical antiseptics instead.

Ongoing Results

Since winning the RCVS Knowledge Highly Commended Award, we have continued to audit our cefovecin and total systemic antibiotic use.

We have seen a sustained reduction in our cefovecin prescribing, achieving a further 43% reduction in the total milligram (mg) of cefovecin dispensed in the first six months of 2024 compared to the previous six months at the end of 2023. This has meant we have achieved a fantastic overall 77% reduction in cefovecin use since 2022.

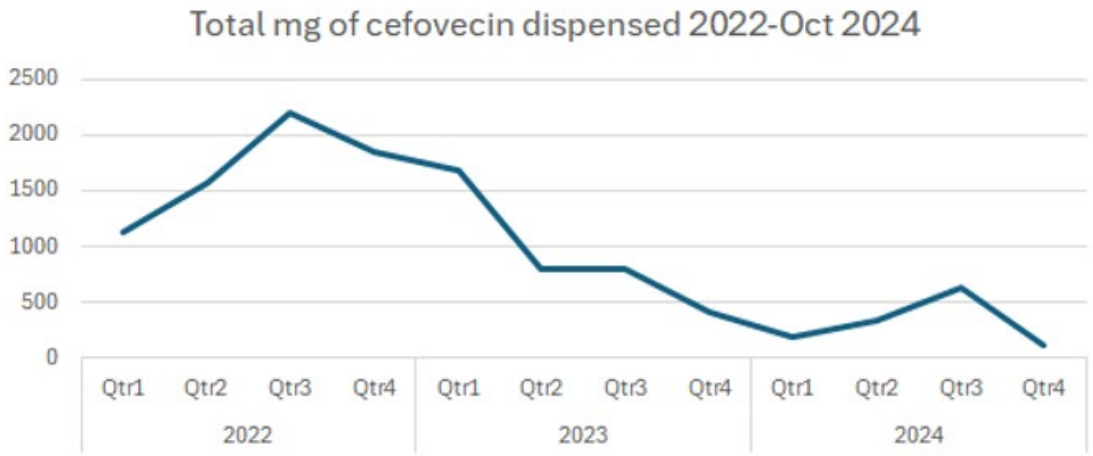

Figure 3: Continued reduction in the total mg of cefovecin dispensed over time.

We have also seen a reduction in our overall systemic antibiotic use, with a 19% reduction in the total systemic antibiotics prescribed in the first 6 months of 2024 compared with the same period in 2022 (from 1.49kg to 1.2kg). Our prescribing patterns have also changed with increased prescribing of European Medicines Agency (EMA) Category D (prudence) antibiotics from 18% of our total prescribing in 2022 to 28% in 2024.

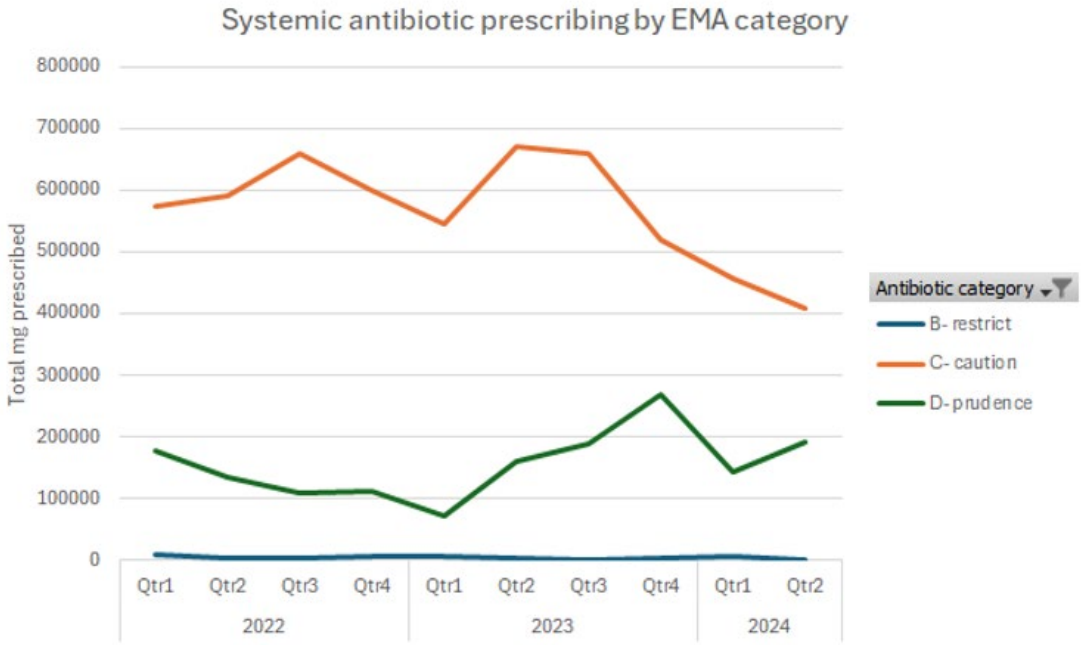

Figure 4: Systemic antibiotic prescribing by EMA Category over time.

Impact of intervention

The main barrier to achieving the original aim was that I chose a broad approach to try and instigate change, intending to improve our overall antimicrobial stewardship. We aimed to go through the whole Protect Me poster and underestimated how big this was as a task, particularly to do it in the way that we chose. Despite this, the change in our cefovecin prescribing has been very significant, and I was not expecting to see such a substantial reduction in our use. On reflection, I think the biggest factor in instigating this change was to generate discussion about antimicrobial stewardship and creating a learning culture. This is why I feel the whole team deserves recognition.

It was important to make sure everyone in the team was involved, and to enable this we used the internal messaging system. It can be difficult to gauge how much information to send around to achieve a balance between keeping everyone engaged without creating too much pressure with constant messages. There was often a delay in responding to these messages due to time pressures, but despite this engagement was good and all the vets took time to give feedback and be involved in the discussions. Using the messaging system also allowed time for reflection on current practices, collating everyone's feedback and finding evidence to present and useful articles to share.

Having a range of experience and interests within the team is beneficial, and the discussions allowed us to learn from each other. Some individual vets already had low rates of prescribing cefovecin, and it was useful for them to be able to share their experience of this.

Another barrier was that at times it felt like there was some resistance to change. I tried to overcome this by thinking about what motivates our decision-making and change itself. The RCVS Knowledge antimicrobial resistance (AMR) resources on communication and behaviour change helped do this. I tried to present the evidence behind the recommendations and include things I had learned along the way. I recognised my antibiotic use could also improve. I wanted to create a learning culture where my colleagues felt they could speak freely and offer their honest opinions, so I felt sharing my feelings was a good way to initiate this. Involving everyone in the team discussions leads to more of a long-term impact and change in mindset.

I have learnt a lot about clinical audit, and Quality Improvement (QI) through this process. It certainly was not the perfect clinical audit or QI initiative; it was complicated and there were a lot of factors at play. I utilised some of the clinical audit resources when it came to collecting and looking at the data, and in hindsight, it would have been helpful to use these resources earlier in the process.

However, it has been hugely encouraging to see the changes the whole team has made in all areas, particularly so with cefovecin. The impact just talking about antimicrobial stewardship has had is so much greater than we anticipated, and I feel very proud of the improvements the whole team have achieved.

The changes we have made and seen since starting this project have been marked and sustained. Our discussions about the use of antibiotics have continued through 2024, both in departmental meetings and in everyday case discussions. It has had a much wider impact than just on the areas of the poster we have worked through. There is much more of a driver across the team to use antibiotics rationally, and even in areas that have not been audited yet, the changes are noticeable.

We still haven't made our way through the whole of the new version of the BSAVA Protect Me poster. This is going to be an ongoing process, but despite this, we have continued to see reductions in our antibiotic prescribing and improvements in our stewardship. I think what I have come to realise is that antibiotic stewardship is about continuous learning and reflection about what we do and how we prescribe. The recommendations are likely to continue to change and it can be challenging to keep up with. What our project has shown is just how valuable discussing antibiotic stewardship and the recommendations within a practice setting can be, and that this can lead to significant changes in antibiotic use.

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Summary

Clinical audit is a process for monitoring standards of clinical care to see if it is being carried out in the best way possible, known as best practice.

A clinical audit can be described as a systematic cycle. It involves measuring care against specific criteria, taking action to improve it, if necessary, and monitoring the process to sustain improvement. As the process continues, an even higher level of quality is achieved.

What the clinical audit process is used for

A clinical audit is a measurement process, a starting point for implementing change. It is not a one-off task, but one that is repeated regularly to ensure ongoing engagement and a high standard of care.

It is used:

- ⇒ To check that clinical care meets defined quality standards.
- ⇒ To monitor the changes made to ensure that they are bringing about improvements and to address any shortfalls.

A clinical audit ensures concordance with specific clinical standards and best practices, driving improvements in clinical care. It is the core activity in the implementation of quality improvement.

A clinical audit may be needed because other processes point to areas of concern that require more detailed investigation.

A clinical audit facilitates a detailed collection of data for a robust and repeatable recollection of data at a later stage. This is indicated on the diagram wherein in the 2nd process we can see steps 4, 5 and 6 repeated. The next page will take you through the steps the practice took to put this into practice.

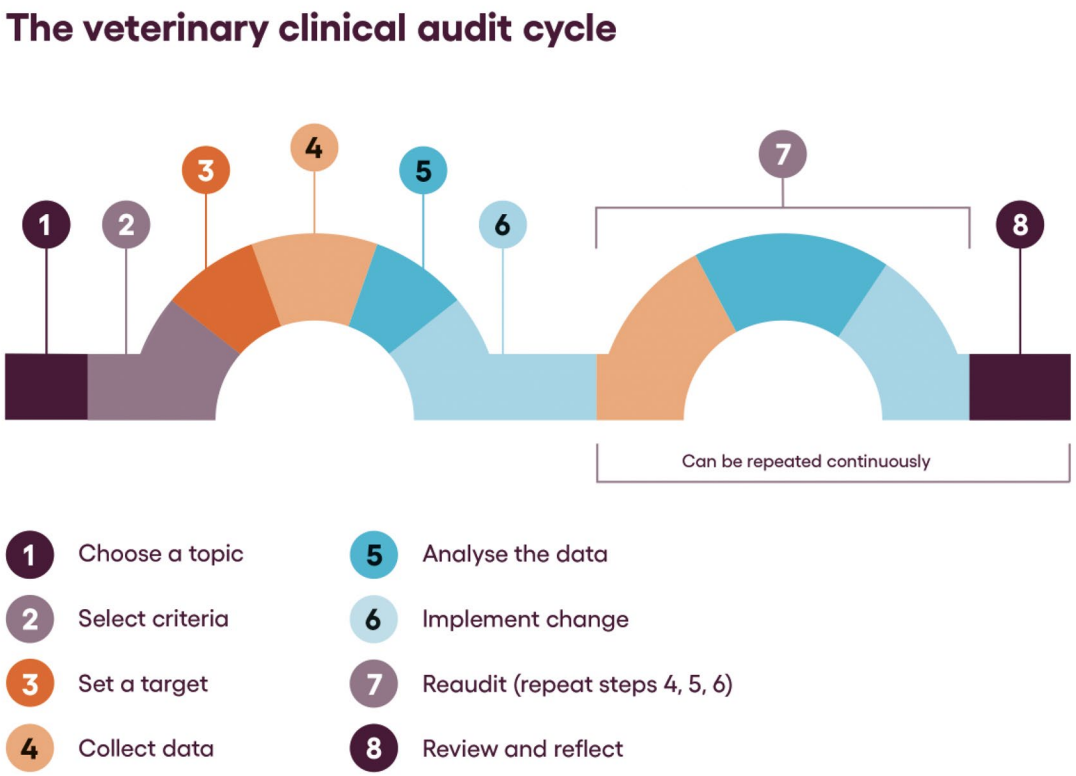

Figure 5: The Veterinary Clinical Audit Cycle by RCVS Knowledge. Available from www.rcvsknowledge.org. Developed by the Royal College of General Practitioners www.rcgp.org.uk/qi-ready

1. Choose a topic relevant to your practice

   The topic should be amenable to measurement, commonly encountered and with room for improvement. The team decided to measure their use of highest-priority critically important antibiotics (HP-CIAs), particularly cefovecin, and the utilisation of ear and skin cytology and topical antiseptics.

2. Selection of criteria

   Criteria should be easily understood and measured. All animals presenting with ear and skin complaints and wounds were included in the audit. Veterinary surgeon prescribing data were also included to establish the trend of cefovecin use.

3. Set a target

   Targets should be set using available evidence and agreeing best practices. The first audit will often be an information-gathering exercise, however, targets should be discussed and set. Internal messaging software was used to establish a

consensus on antibiotic use and identify areas where improvements could be made. A target was set to reduce the use of third-generation cephalosporins, increase the utilisation of skin and ear cytology, and increase the use of appropriate topical antiseptics for skin disease.

4. Collect data

Identify who needs to collect what data, in what form and how. The author invited team reflection and feedback on the current rate of third-generation cephalosporins use to establish the baseline. This feedback was collated along with retrospective prescribing data to identify where improvements could be made.

5. Analyse

Was the standard met? Compare the data with the agreed target and/or benchmarked data if it is available. Note any reasons why targets were not met. These may be varying reasons and can take the discussion from the entire team to identify. The initial data collection identified a wide range of prescribing rates amongst the veterinary team. Confidence in performing ear and skin cytology and the appropriate use of topical antiseptics in skin disease were identified as a barrier to change.

6. Implement change

What change or intervention will assist in the target being met? Develop an action plan: what has to be done, how and when? Set a time to re-audit. CPD on performing skin cytology and the use of topical antiseptics was provided, and new guidance documents were displayed in practice.

7. Re-audit

Repeat steps 4 and 5 to see if changes in step 6 made a difference. If no beneficial change has been observed then implement a new change and repeat the cycle. This cycle can be repeated continuously if needed. Even if the target is not met, the result can be compared with the previous results to see if there is an improvement. Prospective data collection during the re-audit phase showed a significant reduction in prescribing data across the whole veterinary surgeon team. The use of cefovecin in December 2023 reduced by 84% compared to December 2022, and 89% compared to December 2021. The rate of microscopy examination in ear and skin conditions increased sevenfold, with the use of topical antibiotics reduced by 75%. A further re-audit in the first six months of 2024 showed a sustained change in prescribing habits, with a further 43% reduction in cefovecin use and an increase in Category D (prudence) antibiotic use.

8. Review and reflect

Share your findings and compare your data with other relevant results. This can help to improve compliance. The team regularly provided results and feedback to the rest of the clinical team via internal communication channels and team discussions. All vets engaged with the process and continue to review sections of the BSAVA Protect Me poster to examine the rational use of antimicrobials, making notable improvements in other areas not covered by this audit. The team have established a strong learning culture supported by the wider VetPartners Group and antimicrobial stewardship is now at the forefront of team discussions.

References

1. BSAVA (2022) Protect Me. [Online] Available from: https://www.bsava.com/resources/veterinary-resources/protect-me/
2. Companion Animal and Equine Learning Platform [RCVS Knowledge] [Online]. Available from: https://learn.rcvsknowledge.org/course/index.php?categoryid=35