Organisational strategy to improve Antimicrobial Stewardship within CVS

RCVS Knowledge Quality Improvement (QI) to Lead Organisational Change Award Champion 2025

Clinical Improvement Team, CVS Group

Introduction

The CVS Clinical Improvement Team led wide-scale change in sustaining a successful antimicrobial stewardship programme, developing the Clinical Governance Framework outlining the behaviours needed to create a culture where clinical improvement can flourish.

Guided by the framework, they brought together individuals from all areas of the organisation to discuss potential improvements. Engaging their teams to help shape the work created a greater sense of ownership of the project by all involved. Together, they implemented systems to facilitate good antimicrobial stewardship, including the development of a digital dashboard for prescribing data, ensuring the availability of appropriate clinical resources, holding team meetings for clinical and strategic discussions, and effectively communicating their purpose and progress.

In 2024, there were approximately 35,000 fewer highest priority critically important antibiotic (HPCIA) prescriptions compared to the benchmark. This was achieved by creating a culture where Quality Improvement can flourish, sharing data and ideas, and engaging practice teams to help shape the work.

1. Choose a topic relevant to your practice

The topic should be amenable to measurement, commonly encountered and with room for improvement.

a. What topic was chosen?

The introduction of an organisational strategy to improve antimicrobial stewardship (AMS), with a focus on highest priority critically important antibiotics (HPCIAs).

b. Why was this topic chosen?

Antimicrobial resistance (AMR) is a global threat to humanity[1]. One method to combat AMR is through the responsible use of antibiotics, which is what practice teams can influence and is important to them.

2. Selection of criteria

Criteria should be easily understood and measured.

a. What criteria was used?

The focus of this project is on HPCIA prescriptions as these are most important in human healthcare and provides a good starting place when introducing QI rather than trying to focus on too much.

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.

a. What target was set?

At the start of the project, no targets were set, as this could inadvertently negatively affect prescribing behaviours. Clinicians were asked to self-reflect on their prescribing to determine appropriacy and if improvements could be made, keeping in mind that prescribing rates will never reach zero as some prescribing is needed and warranted. Responsible use is the aim.

The data collected in the six months before the first audit round acts as the benchmark to assess prescribing rate improvement over time.

b. What evidence was used to define the target?

No targets were set, but practices are benchmarked via averaged CVS prescribing data which is adjusted monthly to reflect current prescribing behaviours. The intention is these acts as a peer-to-peer benchmark.

4. Collect data

Identify who needs to collect what data, in what form and how.

a. When was the data collected?

The ongoing project consisted of several data collection points and interventions, the first between January 2021 – July 2021.

b. What data was collected?

The data collected included the number of HPCIA prescriptions reflected as a percentage of total consultations. This allows some context as to how busy a practice is, with an assumption made that a busier practice may produce more prescriptions.

c. How was the data collected?

The data is collected centrally and distributed via a digital dashboard, which all companion animal practices can access. The dashboard is updated monthly and provides historical data over time so teams can track their progress.

d. Results:

See the results section of the re-audit phase to see the full results.

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.

c. Was the target met, if not, why not?

Targets were not set, but the benchmark provided by calculating the median percentage of prescribing from six months prior to the start of the project, demonstrates clear progress in reducing HPCIA prescriptions.

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.

a. What changes were introduced?

After the first round of data collection, we introduced various interventions in July 2021:

- The first intervention was implementing the digital dashboard so practices could access their prescribing data and determine if improvements could be made in terms of prescribing appropriateness.
- A clinical audit toolkit was created for practices to undertake their own clinical audits.

- Regional Clinical Leads, who are senior vets, also supported improvements in practice, which included holding team meetings for clinical discussions.

This sparked a multitude of improvement projects within CVS practices, encompassing both non-HPCIA and HPCIA prescriptions, led by local teams and guided by their local needs. There were examples of practices focusing on reducing the use of cefovecin in cat bite abscesses and metronidazole in acute diarrhoea cases.

This work was also supported by BSAVA Protect ME prescribing guidance and posters, which were distributed and available to all practices.

b. What was the overall action plan?

The approach is aimed at empowering practice teams with the data and knowledge they need to make changes that are appropriate to their setting, as they know the work best. We actively seek feedback from our colleagues who are on the frontline to have a meaningful effect on what we do. Such listening is vitally important for QI, and this input continues to inform our project interventions on an ongoing basis.

We aim to understand views on current approaches and what is working well. Equally we want to find out what problems our clinical teams are facing – to be able to tackle these head on. We respond and support in accordance with the identified need. Long term, we believe this approach will make it easier for our colleagues to prescribe responsibly.

c. When was a re-audit planned?

This is an ongoing audit. Data is regularly assessed and reflected on to determine what factors are influencing prescribing behaviours and how appropriate prescribing and good infection control measures can be supported.

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 them 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.

a. When did the re-audit take place?

The ongoing project consisted of several data collection points and interventions between January 2021 – December 2024.

b. What data was collected for the re-audit?

The data collected included the number of HPCIA prescriptions reflected as a percentage of total consultations, in the same method as previous audit phases.

c. How was the data collected?

The data is collected centrally and distributed via a digital dashboard, which all companion animal practices can access. The dashboard is updated monthly and provides historical data over time so teams can track their progress.

d. Results:

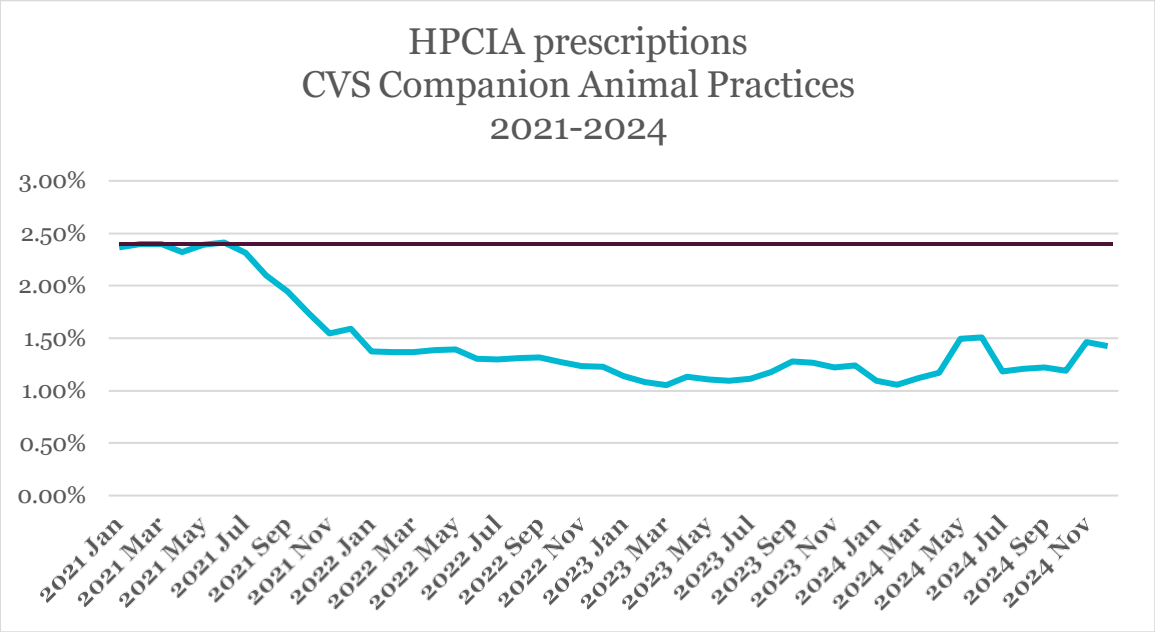


Figure 1: Number of HPCIA prescriptions as a percentage of total consults in CVS Companion Animal practices, 2021 – 2024. The top flat line represents the median percentage of the 6 months before the project began, which serves as a benchmark.

e. Was the target met, if not, why not?

Targets were not set, but the data collected demonstrates clear progress in reducing HPCIA prescriptions in comparison to the benchmark.

f. Were any further changes implemented?

November 2023: CVS introduced the first Clinical Governance Framework which defines the behaviours and culture required for continuous improvement to flourish.

This framework acts to galvanise the organisation in shared values and provides an approach to all clinical improvement.

After evaluation of the prescribing data, we needed to know where the AMS project should go next, so we asked our front-line colleagues.

Putting the CVS Clinical Governance Framework into action, an AMS Strategy Day was held, with the clinical improvement team and 30 people representing all roles in practice. Three AMS priorities were identified.

- Collating and generating the evidence to support responsible antibiotic prescribing and infection control processes.
- Cultivating a culture, where tidiness, cleanliness and hygiene is an important part of everyone's role in infection control to reduce the risk of hospital acquired infections
- Supporting client education and communication of AMS processes or practice policies

August 2024: Members of the Clinical Improvement Team attended multiple regional meetings across the organisation to talk with practice leaders about our AMS priorities and identify local projects that aligned with both our priorities and local needs, as different teams will be in different places on their AMS journey. Projects will be carried out over the coming year. Some projects include:

- Improving the use of in-house cytology to direct appropriate prescribing
- Not keeping HPCIAs in stock or labelling the bottles to ease their identification
- Improving practice infection control measures
- Reviewing practice prescribing guidelines
- Improving hand hygiene
- Improving client education on AMS topics

During these regional, strategic, and practice meetings, we use the 'problem-solving wheel' (see appendix 2), which is a tool to help everyone get familiar and more comfortable with the QI process. The 'wheel' is now being embedded into the culture of how we solve problems or capitalise on opportunities within CVS and helps to instil the behaviours needed for clinical improvement to thrive.

8. Review and reflect

Share your findings and compare your data with other relevant results. This can help to improve compliance.

a. At what stages were the team involved?

Practice teams are involved at all stages. The approach to change is to empower teams with the data, knowledge, and resources they need to enact change locally, which is appropriate to their context. The central CVS support teams are there to provide guidance and resource as needed.

We also rely on practice teams to assist in developing our ongoing AMS strategy to respond to emerging needs. The Clinical Improvement Team works to support and engage teams with the overall strategy. This approach has led to a feeling of heightened ownership and accountability by practice teams.

b. How were the team involved? How was support given?

Practice teams will review their prescribing data routinely and have regular team meetings for improvement and clinical discussion. The regional clinical leads may also assist in meetings. The Clinical Improvement Team engages practice leaders, regional clinical leads, and regional directors at regional meetings to help identify local projects, that align with our three CVS AMS priorities, to keep our focus on current issues and to get feedback on how things are going.

We have held a Strategy Day where people from different companion animal practices across the organisation, and who represented all roles from practice, attended to assist in developing our AMS strategy for the coming year(s).

Prior to the companion animal AMS Strategy Day, we received over 300 responses to a survey of practice teams to help identify what is currently working well (so we keep it) and what challenges they face (that we need to work on). These responses informed our Strategy Day and aided in the development of our current three priorities.

Senior and Executive leaders are involved from a key stakeholder point of view to provide support, communication routes, and help to remove organisational barriers.

c. What barriers did the project face, and how were they overcome?

Organisational barriers, such as IT disruption, resulted in the digital dashboard being unavailable for several months, which appeared to affect progress. Once IT service was back to normal, the dashboard was recreated with the new system in place.

Also, the digital dashboard is currently only available to practice leaders, of which many have expressed a desire to make prescribing data more widely available to their team. This is a barrier we are working on to resolve.

There are also shortcomings in the data, it doesn't tell us about caseload or appropriacy of use. We ask clinicians to determine whether antibiotic use is appropriate and if improvements can be made. However, to be able to demonstrate appropriacy, we are working toward the ability to match a diagnostic test or other justification to a prescription.

d. What consideration has been given for Human Factors?

The clinical audit toolkit contains a Contributory Factors Checklist (see appendix 1), which aids as a discussion tool to help the team discover the human factors that influence prescribing within their local practice.

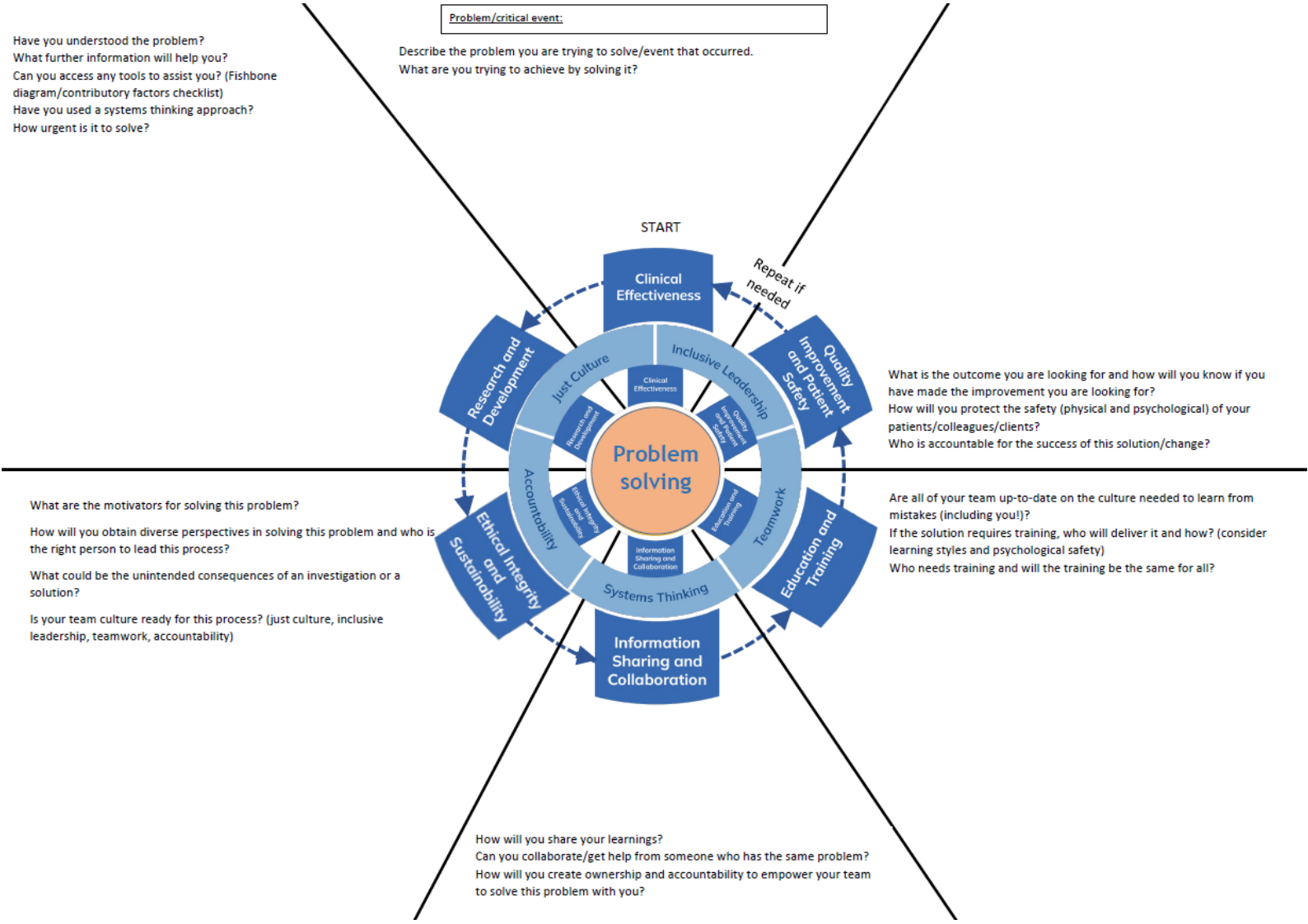
Once these factors have been identified; the team can work to improve them. When teams use the checklist alongside reviewing their prescribing data it becomes a powerful tool for change, as it enables them to apply their experience of how work is done (work as done) in their practice, as opposed to someone else telling them what to do (work as imagined) who doesn't have that same experience.[2]

Appendix 1

Contributory factors checklist Start with these questions to help the team discover the human factors that affect clinical decision-making when prescribing HPCIAs. Once challenges are identified, the team can put systems in place to help make improvements. You may find there are more areas to explore, this is a starting point to stimulate discussion.
What is the team's view on responsible use of antibiotics?
Does the team feel they can ask each other for help with cases?
Any patient factors that may contribute to prescribing?
Any owner factors that may contribute to prescribing?
Any workload, workflow or staffing issues that may prevent workup?
Are the correct drugs, equipment, supplies and reference material available and working properly?
Are there any characteristics about the drugs, equipment, disposables and reference material that are unhelpful?
Are there any improvements to be made with infection control? (e.g. general, infectious disease, surgical prep)
Are there any opportunities to enhance skill or knowledge?
Do local policies, guidelines, protocols, or checklists help or hinder?
Are clinical notes sufficient to follow cases and treatment plans?
Other:
Actions to be taken to address issues identified above:
Date for follow-up:

Appendix 1: CVS Contributory Factors Checklist for teams to use to help identify the (human) factors that influence prescribing behaviours. Once identified, these factors can be improved. Adapted from the London Protocol, Systems Analysis of Critical Incidents.

Appendix 2



Appendix 2: The CVS Problem Solving Wheel

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.

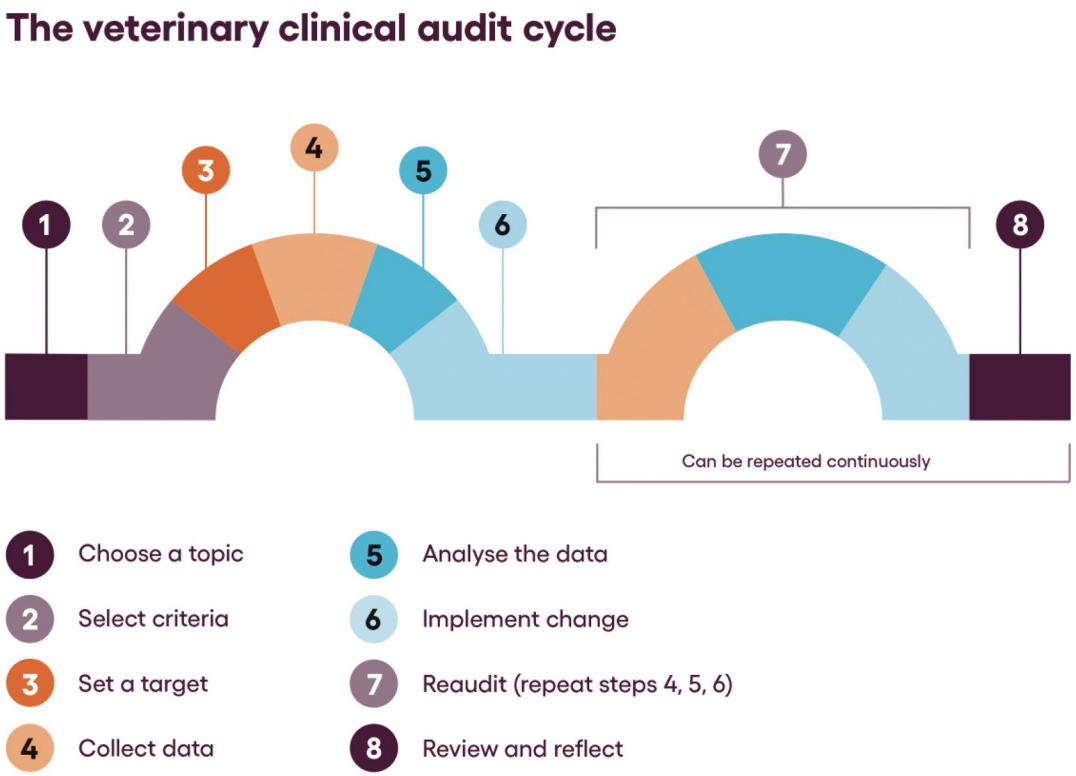


Figure 1: The Veterinary Clinical Audit Cycle by RCVS Knowledge. Available from www.rcvsknowledge.org. Developed by the Royal College of General Practitioners www.rcgp.org.uk/qi-ready

References

1. *Antimicrobial resistance* (2023) [World Health Organization] [online]. Available at: https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance [Accessed 29 July 2025]

2. Singleton, D.A. et al. (2021) A randomised controlled trial to reduce highest priority critically important antimicrobial prescription in companion animals. *Nature Communications,* 12, no. 1593. https://doi.org/10.1038/s41467-021-21864-3

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