

Cat Bite Abscess Clinical Audit by White Lodge Veterinary Surgery

RCVS Knowledge Antimicrobial Stewardship Award Champion 2023

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Introduction

White Lodge Veterinary Surgery is a first-opinion veterinary practice within the CVS Group Ltd Exmouth Hub and has a strong Quality Improvement (QI) ethos.

We formed a new practice leadership team in December 2021 and placed an emphasis on QI activities. This involved forming a QI committee including both clinical and non-clinical team members to help drive clinical excellence. In January 2022, with support from our Hub Clinical Lead (HCL), we started to promote antimicrobial stewardship (AMS) initiatives, identified as an area of focus from our recent QI clinical audits. This commenced with an initiative to review practice use of antibiotics with the aim of eliminating inappropriate or unnecessary antibiotic use.

With the use of antibiotics being one of the main drivers of AMR, it is essential that the veterinary community adopt a One Health approach as a part of a multi-disciplinary effort to provide solutions to threats to human and animal health¹.

Our vision at White Lodge Veterinary Surgery is to be part of the solution to AMR.

Aims of the clinical audit

Following external CPD on antimicrobial stewardship (AMS) in veterinary practice attended by our QI Lead, a practice clinical team meeting was organised by the Head Vet to discuss the BSAVA PROTECT ME 'Antibacterial use in our Practice' poster² and general antibiotic use in practice.

The meeting and the practice AMS initiative prompted discussions about the use of antibiotics in the treatment of cat bite abscesses (CBA) and we identified this as worthy of further investigation. We felt this was particularly important as cefovecin, a 3rd generation cephalosporin and critically important antimicrobial (CIA) (as defined by the World Health

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Organisation (WHO)³ and European Medicines Agency) is often used in the treatment of CBAs.

Our aim was to change the prescribing culture across the practice for CBAs, adopting a 'case-by-case' approach, giving confidence to our veterinary peers to use up-to-date clinical guidelines and only use antibiotics where absolutely necessary.

We hope the results of our audit will help encourage other practices to audit their results and look at their guidelines.

Actions

Advice was sought from a dermatology specialist, the CVS Director of Quality Improvement, a Statistician and Epidemiologist, and Hub Clinical Leads, as well as researching clinical guidelines to help inform the inclusion criteria and audit structure.

Following the literature search, we found limited research on the treatment of CBAs without the use of antimicrobials. Although the BSAVA "PROTECT ME" poster² commonly appears in veterinary dispensaries, stating that antibiotics are not needed unless pyrexia and/or cellulitis is present, there appears to be a tendency to prescribe due to lack of confidence in treatment without antibiotics and possibly client pressure or expectation.

The prospective CBA audit, developed and championed by the Head Vet and QI Chairperson with the support of the Practice Director, was discussed by the QI committee (clinical and non-clinical teams) and at clinical team meetings. It was important the audit was developed with the involvement of all teams to agree on the plan and encourage participation with clear inclusion parameters. The whole team approach and peer support ethos were vital in ensuring that vets felt confident in their new approach to the treatment of CBAs.

- The BSAVA "PROTECT ME" guidelines were used to help form audit inclusion criteria. The audit inclusion parameters were designed to protect patients by case selection to ensure patient safety, as only fit and healthy cats were included:
 - Cats who presented with a discrete CBA, non-febrile (temperature below 39.4°C), with no evidence of cellulitis were to be included. These were treated with non-steroidal anti-inflammatories (NSAIDs), lancing, and flushing of abscesses.
 - Unwell, pyrexia cats who did not meet the inclusion criteria were treated on a case-by-case basis, prescribed antibiotics, and not included in the audit.

- Informed consent was obtained with advice given to return to see a vet before the scheduled follow-up appointment if necessary. Free rechecks were offered to promote close monitoring and safeguard patient welfare.
- An antibiotic awareness leaflet (“PROTECT ME”/ BSAVA “No antibiotic prescription required”) was also given to the client with a full explanation of the clinical reasoning behind not prescribing antibiotics (Annex 1).
- Owners were advised to use salt water or 2-4% chlorhexidine to bathe the affected area at home once daily.
- Cats in the audit were advised to re-present 5 -7 days after treatment for a free nurse re-examination. Failure to attend the re-examination triggered a follow-up nurse phone consultation. Cases lost to follow-up were considered to have been resolved.
- A consultation template was created for the vet at the initial presentation and another for the nurses at the post-treatment check. This was to standardise the information gathered.
- Posters were placed in each clinical room of the practice to remind vets about the audit and to initiate a discussion with the client about the proposed treatment plan (Annex 2) and the purpose of the audit as part of the process of receiving informed consent.

The initial audit ran from 1st May 2022 until 31st December 2022. The Exmouth Hub has elected to continue adding cases to the audit, with a view to publishing the outcome to share it within CVS and the wider veterinary community, repeating the audit in January 2023.

Results

The measure of successful treatment was whether, on re-examination, the CBA site appeared free from infection and wound healing was evident. If the wound had not started to heal or if there was infection or pyrexia then the treatment was deemed to have failed and further treatment provided.

- Of the 22 cats included in the initial audit, 19 (86%) did not need antibiotics to successfully treat the abscess (Table 1).

Number in audit	Practice	Age of animal	Abscess Open or closed	Treatment successful	Reason for treatment was judged

					success or not
1	White Lodge	9	Closed	Yes	Never Returned
2	White Lodge	7	Open	Yes	Follow-up phone call
3	White Lodge	17	Closed	Yes	Never Returned
4	Raddenstiles	9	Open	Yes	Never Returned
5	Raddenstiles	3	Open	No	Consult
6	Raddenstiles	10	Open	Yes	Consult
7	Raddenstiles	2	Open	Yes	Never Returned
8	White Lodge	7	Open	No	Consult
9	White Lodge	4	Open	Yes	Consult
10	White Lodge	12	Open	Yes	Consult
11	White Lodge	8	Open	Yes	Follow-up phone call
12	Raddenstiles	7	Open	No	Consult
13	Raddenstiles	11	Open	Yes	Consult
14	Raddenstiles	10	Open	Yes	Never Returned
15	Raddenstiles	2	Open	Yes	Consult
16	Raddenstiles	2	Closed	Yes	Never Returned
17	White Lodge	2	Closed	Yes	Never Returned
18	White Lodge	6	Open	Yes	Never Returned
19	Raddenstiles	10	Open	Yes	Never Returned
20	White Lodge	2	Open	Yes	Consult
21	White Lodge	8	Open	Yes	Consult
22	White Lodge	8	Open	Yes	Never Returned

Table 1: Results of the initial audit May 2022 – December 2022.

As part of this audit, the number of times injectable cefovecin was used was also measured and compared to the previous period. Data analysis from the practice management system (PMS) showed a 32.6% reduction in the number of times cefovecin was dispensed in the 8-

month period after the audit started compared to the previous 8-month period, with a 29.7% reduction in the volume (ml) dispensed (Table 2).

White Lodge	September 2021 to April 2022	May 2022 to December 2022	Percentage reduction
Number of times injectable cefovecin was dispensed	43	29	32.6%
Total volume of Cefovecin dispensed (mls)	17.96	12.62	29.7%

Table 2: Comparing cefovecin usage between 8 months prior to the audit start date and 8 months after the audit start date.

Analysing the data further showed that in the first four months of the audit, cefovecin was dispensed 21 times. However, in the second four months, after the interim results were shared with the team, cefovecin was dispensed 8 times (Table 3). This represents a 61.9% reduction in the number of times cefovecin was dispensed in the second half of the audit compared with the first half and a 56.3% reduction in volume dispensed during the same time period.

White Lodge	May 2022 to August 2022	Sept 2022 to December 2022	Percentage reduction
Number of times injectable cefovecin was dispensed	21	8	61.9%
Total volume of Cefovecin dispensed (mls)	8.78	3.84	56.3%

Table 3: Comparing cefovecin usage in the first four months of the audit period and the second four months of the audit period.

The audit outcome was shared with a group of CVS practices in an ‘Advanced Veterinary Practitioner (AVP) Networking’ meeting and as a result, an additional practice chose to join the audit in January 2023.

The full re-audit results can be found in Annex 3.

Success stories and interim results of the audit were fed back informally every 1-2 months and more formally in August 2022 via email or clinical meetings to show progression and keep the audit current and relevant. Clinical note ‘short cuts’ and templates supported the vets to take part in the audit without extending consultation times or creating extra work.

Initially, vets felt apprehensive and anxious, however through peer support and sharing of results the audit became a success. There was a significant increase in the number of cases included in the audit after sharing interim results with the clinical team.

Impact of intervention

The impact of this QI audit has been far reaching, including a number of positive impacts on the veterinary team. The audit has proved to be an excellent team building exercise, involving improved peer support, improved communication, and encouragement of clinical discussions.

The feeling of camaraderie and the increase in confidence of the team members has been tangible. The whole practice team has been very proud to be involved in the project and with such significant changes in practice ownership and leadership, it has played a part in bringing the team together.

The vast reduction in the use of injectable cefovecin is a significant step towards achieving our vision of contributing to the One Health approach and shows the importance of sharing results and audit outcomes during the audit cycle where possible.

This audit has increased veterinary surgeon confidence in not using antibiotics for CBAs across the Exmouth Hub and has changed practice culture towards the prescribing of antibiotics when treating a CBA on a case-by-case basis depending on clinical signs (particularly the presence or absence of pyrexia and cellulitis).

Discussing the audit with clients has promoted responsible use of antibiotics and improved client understanding. This has had a positive impact on the vet-client relationship and trust in the practice. Vets report that *“sharing results with clients has made clients more accepting of treatment without antibiotics”* and *“[they] feel under less pressure from clients to prescribe antibiotics”*.

It should be noted that many clients have articulated their approval of our vision to contribute towards the reduction of AMR and have generally been very willing to be part of the audit and pleased when minimal intervention has been required, without the cost associated with giving antibiotics. Clients often struggle to administer antibiotics to cats so using them responsibly and only when necessary improves the client experience. Clients became less anxious and more comfortable with not being prescribed antibiotics when interim results were shared with them. Although not part of the audit, clients whose cats were treated with antibiotics, understood why they were being prescribed and that it was critical to complete the course.

The audit has promoted relationships between the two Exmouth Hub practices (historically rival practices) and opened up clinical conversations and the sharing of knowledge, protocols, and procedures to help drive clinical excellence in both practices.

Communication between vets within the White Lodge practice team has also improved. Clinical discussions now more regularly take place between all vets, which include the use of antibiotics, culture and sensitivity testing, and in-house cytology. CPD has been organised for the nursing team to include in-house cytology training, with a particular focus on ear and wound cytology to help inform further diagnostics and treatment choice. Further audits have been organised with different members of the team becoming more involved than before, creating a culture of teamwork and improved collaboration.

Continued on next page.

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.

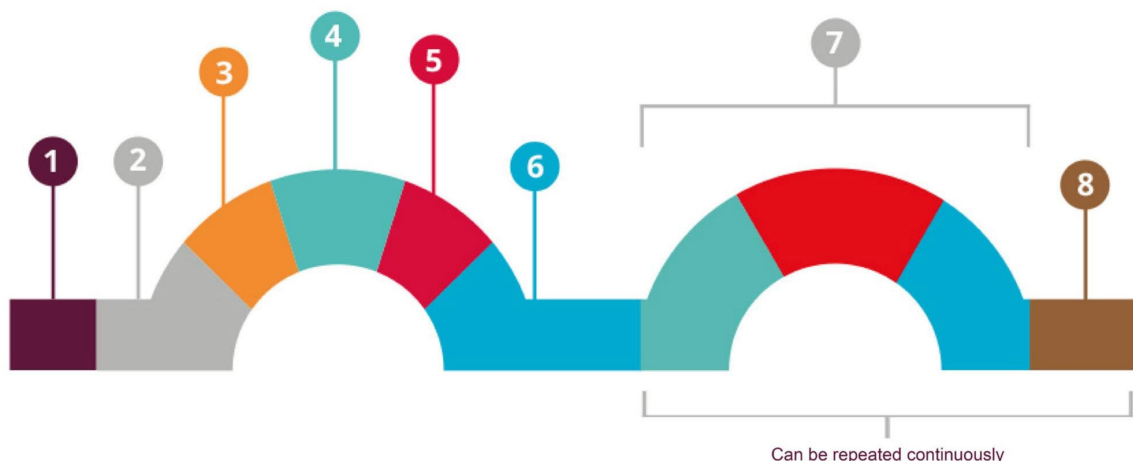


Figure 1: The Veterinary Clinical Audit Cycle by RCVS Knowledge. Available from www.rcvsknowledge.org. Developed by the Royal College of General Practitioners www.rcgp.org.uk/qi-ready

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.

1. Choose a topic relevant to your practice

The topic should be amenable to measurement, commonly encountered and with room for improvement. The successful resolution of cat bite abscesses without the use of antibiotics. The reduction in the amount of cefovecin dispensed during the audit period.

2. Selection of criteria

Criteria should be easily understood and measured. Only fit and healthy cats, presenting with discrete CBA, with no evidence of pyrexia or cellulitis were to be included.

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. There was no pre-audit data available before the introduction of the guideline. The target was for all cats included in the audit to have a successful resolution of the abscess without the use of antibiotics.

4. Collect data

Identify who needs to collect what data, in what form, and how. Data was collected by both veterinary surgeons and registered veterinary nurses. A consultation template was created for the vet at the initial presentation and another for the nurses at the post-treatment check to standardise the information gathered.

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. Of the 22 cats included in the initial audit, 19 (86%) did not need antibiotics to

successfully treat the abscess. A 32.6% reduction in antibiotic prescribing events was achieved in the 8-month audit period when compared to the previous 8-month period.

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. New practice guidelines were created, including owner education materials.

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. Data was collected from one further practice over a second 8-month period and of the 52 cats included in the re-audit, 86.6% were successfully treated without antibiotics.

8. Review and reflect

Share your findings and compare your data with other relevant results. This can help to improve compliance. After sharing the results with the clinical team, a significant increase in the number of cases included in the audit was observed. Further practices have joined the audit and findings, updates, and learnings from educational materials are regularly given to the team.

References

1. WHO (2023) *One Health*. [Online] Available at: https://www.who.int/health-topics/one-health#tab=tab_1
2. BSAVA (2022) *Protect Me*. [Online] Available at: <https://www.bsava.com/resources/veterinary-resources/protect-me/>
3. WHO (2023a) *Antimicrobial resistance*. [Online] Available at: <https://www.who.int/health-topics/antimicrobial-resistance>



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Interested in submitting your own case example? Email us at ebvm@rcvsknowledge.org.

Annex 1: BSAVA No antibiotic prescription required.

No antibiotic prescription required

Veterinary practice name and address

Pet's name:

Owner:

Date:

Veterinary surgeon

Signature

Based on a thorough examination and the history you provided, an antibiotic is **not** needed for your pet today.

Current findings:

<input type="checkbox"/> Diarrhoea lasts 5–7 days on average	<input type="checkbox"/> Vomiting
<input type="checkbox"/> Cough lasts 7–10 days on average	<input type="checkbox"/> Nasal discharge ± sneezing
<input type="checkbox"/> Cystitis (cats only) signs last 3–5 days on average	<input type="checkbox"/> Other:

These conditions are not commonly caused by bacteria so antibiotics will not help. Those that can be caused by bacteria, e.g. diarrhoea, most often get better on their own.

What should you do:

Feed a bland diet
Example diet:

Ensure regular fluid intake by wetting the food and offering multiple water sources

Avoid contact with other animals (your pet may have a viral infection)




Restrict exercise (your pet needs rest)

Other

What to do if things get worse:

If your pet is not better in days' time, if new symptoms are observed or if you have further concerns, please call or visit the practice.

Antibiotics can cause harmful side effects to your pet. Taking unnecessary antibiotics can also promote resistant bacteria that are a threat to animal and human health.

Other than adding the practice details, the prescription pad may not be altered in any way or used for any other purpose without prior written permission of the copyright holder, and may not be sold. ©BSAVA/SAMSoc 2018

Annex 2: Reminder poster displayed around the practice.



Annex 3: Re-audit results January 2023 – August 2023

Number in audit	Practice	Age of animal (years rounded up)	Abscess Open or closed	Treatment successful	Reason for treatment was judged success or not
1	White Lodge	9	Closed	Yes	Never Returned
2	White Lodge	7	Open	Yes	Follow up phone call
3	White Lodge	17	Closed	Yes	Never Returned
4	Raddenstiles	9	Open	Yes	Never Returned
5	Raddenstiles	3	Open	No	Consult
6	Raddenstiles	10	Open	Yes	Consult
7	Raddenstiles	2	Open	Yes	Never Returned
8	White Lodge	7	Open	No	Consult
9	White Lodge	4	Open	Yes	Consult
10	White Lodge	12	Open	Yes	Consult
11	White Lodge	8	Open	Yes	Follow up phone call
12	Raddenstiles	7	Open	No	Consult
13	Raddenstiles	11	Open	Yes	Consult
14	Raddenstiles	10	Open	Yes	Never Returned
15	Raddenstiles	2	Open	Yes	Consult
16	Raddenstiles	2	Closed	Yes	Never Returned
17	White Lodge	2	Closed	Yes	Never Returned
18	White Lodge	6	Open	Yes	Never Returned

19	Raddenstiles	10	Open	Yes	Never Returned
20	White Lodge	2	Open	Yes	Consult
21	White Lodge	8	Open	Yes	Consult
22	White Lodge	8	Open	Yes	Never Returned
23	White Lodge	8	Open	Yes	Consult
24	White Lodge	8	Open	Yes	Never returned, second time in audit
25	Raddenstiles	1	Open	No	NB only reseen after 3 days
26	White Lodge	11	Open	Yes	Phone call
27	White Lodge	13	Open	Yes	Never returned
28	White Lodge	15	Open	Yes	Phone call
29	White Lodge	3	Open	No	Consult
30	Raddenstiles	2	Open	Yes	Never returned
31	Raddenstiles	8	Closed	Yes	Consult
32	Raddenstiles	10	Closed	Yes	Never returned
33	Raddenstiles	6	Closed	Yes	Consult
34	Larwood and Kennedy	9	Closed	No	Ongoing as of 22 days
35	Larwood and Kennedy	10	Closed	No	On going day 35
36	Larwood and Kennedy	12	Open	Yes	Never returned
37	Larwood and Kennedy	12	Open	Yes	Signed off day 17
38	Larwood and Kennedy	12	Closed	Yes	Consult
39	Larwood and Kennedy	14	Open	Yes	Consult

40	Larwood and Kennedy	1	Open	Yes	Consult
41	Larwood and Kennedy	5	Closed	Yes	Consult
42	Larwood and Kennedy	9	Open	Yes	Consult
43	Larwood and Kennedy	6	Open	Yes	Consult
44	Larwood and Kennedy	5	Closed	Yes	Consult
45	White Lodge	6	Closed	Yes	Consult
46	White Lodge	1	Open	Yes	Never Returned
47	White Lodge	3	Open	Yes	Never Returned
48	White Lodge	2	Open	Yes	Never Returned
49	Raddenstiles	13	Closed	Yes	Never Returned
50	Raddenstiles	16	Open	Yes	Consult
51	Raddenstiles	12	Open	Yes	Consult
52	Raddenstiles	3	Open	Yes	Phone call