Clinical Audit Case Example: Post-operative Outcomes

Name of the initiative: Post-operative Outcomes

Initiative start date: 1st July 2021

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Introduction

Beech House Veterinary Centre is a first-opinion small animal practice based in Southampton. We have a team of 6 vets, 4 RVNs, 3 SVNs, 1 ACA, and a reception team of 5. I joined Beech House at the beginning of June 2021 with a passion for Quality Improvement and patient safety. The stress of the COVID-19 pandemic and the associated staffing issues had caused teams to work quite separately, making effective teamwork difficult.

When I arrived at the practice, I tried to spend time with each team member to get to know them in a personal way and understand their roles and responsibilities. By doing this, we were able to identify areas of improvement on a personal level.

I made it a priority for all the team members to sit down together to discuss any issues and how we could address them. These were scheduled monthly, and I also introduced a comments and suggestions box into the staff room, where everyone could post both positive and negative things anonymously. I wanted to foster a culture of psychological safety, where everyone felt comfortable raising issues and no blame was apportioned.

Aims of the clinical audit

Once I had settled into the practice I began to look more closely at the clinical aspects of our practice. During my nurse consults, I found a proportion of dogs were coming back after routine neutering with vomiting and/or diarrhoea. On discussion, the rest of the team had also identified this. I was unable to perform any peri-operative audits at this stage as we weren't recording enough data from admission through to discharge and on to the post-op checks.

I raised this during a team meeting, and we identified that our anaesthetic sheets were very basic meaning that minimal peri-operative data was being recorded. We looked at changing our sheets and decided to start with the Association of Anaesthesiologists (AVA)[1] anaesthetic charts. We also ensured that the IVC Post-Operative Assessment (POA) charts were displayed, so they were easily accessible during post-operative checks. We set aside time each week to log all the data for every routine neutering procedure and collect enough data for initial benchmarking.

The initial peri-operative audit showed that our post-op complication rates were much higher than the national averages (based on the RCVS Knowledge, National Audit for Small Animal Neutering[2]). The majority of the post-op issues for that month were due to gastrointestinal problems; either vomiting, diarrhoea, or both. I also identified that we had an issue with peri-operative hypothermia

and that the animals were losing the most heat in the period after the pre-operative temperature, pulse and respiration (TPR) observations were performed and before they are taken into the prep room (i.e., when in the kennels).

Other issues identified were: TPRs not being performed before surgery, lack of blood pressure monitoring during anaesthesia, no monitoring of patient's TPRs in recovery.
I decided to focus on post-operative complications as this could be addressed quickly, and I hoped that the results of our efforts would prove that it is worth spending time on Quality Improvement – by keeping this first step simple I hoped that the team would be engaged to keep addressing other areas of our work.

Actions

When designing interventions, we researched many relevant peer-reviewed clinical studies and presented a concise version at practice meetings to discuss what changes were needed.

We updated our protocols.

- We ensured all team members gave consistent advice on starving patients before surgery – from midnight rather than from 9 pm.
- We considered the types of foods that are common allergens and stopped giving this to dogs in recovery, instead providing a commercial gastrointestinal diet. For dogs with a sensitive stomach, we encouraged owners to bring in their normal food.
- We encouraged the use of the new multiparameter machine for all procedures, especially for blood pressure (BP) monitoring and a new protocol was introduced to state that non-steroidal anti-inflammatory drugs (NSAIDs) should only be given when the patients' blood pressure had returned to normal. This was to reduce the risk of vomiting or diarrhoea occurring due to the administration of NSAIDs alongside low gastrointestinal perfusion caused by low blood pressure.

Results

The changes we made have led to improved patient safety and welfare, have helped us provide a better service to our clients, and have helped us create a much more positive workplace culture.

The data has shown that our post-operative complications have reduced.

- Our overall post-op complication rate dropped from 28% in June, to 24% in July-August and then to 9.68% by the end of September.
- In June, we had an issue with 16% of patients having post-op GI problems. After changing our protocols, this dropped to 8% in July and August, 0% in September, and 4% in October.

At the end of October, I noticed a spike in the post-op complication rates of our dog castrates. A high percentage of the dogs were coming back with a significant amount of scrotal swelling. We identified that the patients with scrotal swelling were those that did not have laser therapy post-operatively. We have now introduced laser therapy into our dog castrate protocol, and we are monitoring this through further audit.

Other improvements we have seen are:

- Peri-operative hypothermia (body temp of less than 37°C) has been addressed and the incidence has dropped from 34% in July/August to 27.6% in September and 20.6% in October.
- Prior to July, no TPRs were taken prior to surgery. In July/August, with the introduction of the new anaesthetic sheet, this led to 76% of patients having TPRs recorded, 71% in September and 77% in October.
- Pain scoring has been a protocol that has had poor compliance so far. In June-August, no patients were pain scored after routine surgeries. This has increased slightly to 23.1% in October. This is the focus for our next efforts, and I have already held a training session with the team members responsible for post-op care and introduced a new protocol. We will assess the success of this at the end of month audit.

Impact of the initiative

Personally, I learned so much from this process. When I started my role, I was so enthusiastic to bring about change quickly but I was mindful to try not to do too much at once. I learned it was essential to engage the whole team in identifying the changes needed and implementing them, to make a lasting difference. A happy and engaged team provides better patient and client care. It's been fantastic to see everyone get involved, adopt the changes, and feed into the process to continuously improve. Without everyone's combined efforts, we would not have achieved the results we have seen.

I ensure I have a few protected hours set aside each week to collect data for auditing. The results of the audits are communicated to the team at our monthly practice meetings, and we decide collectively how we can improve. I then type up the minutes of the meetings, including the action points, and email every team member a copy. I try to support other team members with action points they have been given, such as helping a vet create a new anaesthetic protocol for rabbits and guinea pigs. The results of the audits and changes implemented are routinely reviewed and evaluated. If the changes aren't working, we try something else. If the changes work well, they then become protocols or guidelines.

Other QI initiatives the team are involved in are:

- Increasing **blood pressure monitoring** during anaesthesia- BP and multiparameter training given to all veterinary nurses. BP audits carried out monthly.
- Improving the **peri-operative analgesia**- improved our use of methadone and buprenorphine by providing analgesia CPD for the vets with an anaesthesia specialist.
  Analgesia audited monthly.
- Introduced **anaesthesia patient safety checklists**. Compliance audited monthly.
- Introduced **IVC Informed Consent forms**. Given to all clients at the animal's pre-op check and returned signed. Audited monthly.
- New **post-op care checklist** created for all kennels. Ensures everyone is aware if the patient still has an IV in, has been fed, taken outside etc. The aim is to improve post-op patient care and team communication.
- I have also been **training our student veterinary nurses** in how to collect data and perform clinical audits. I believe it is important for them to be trained in a practice where QI is the normal.

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.

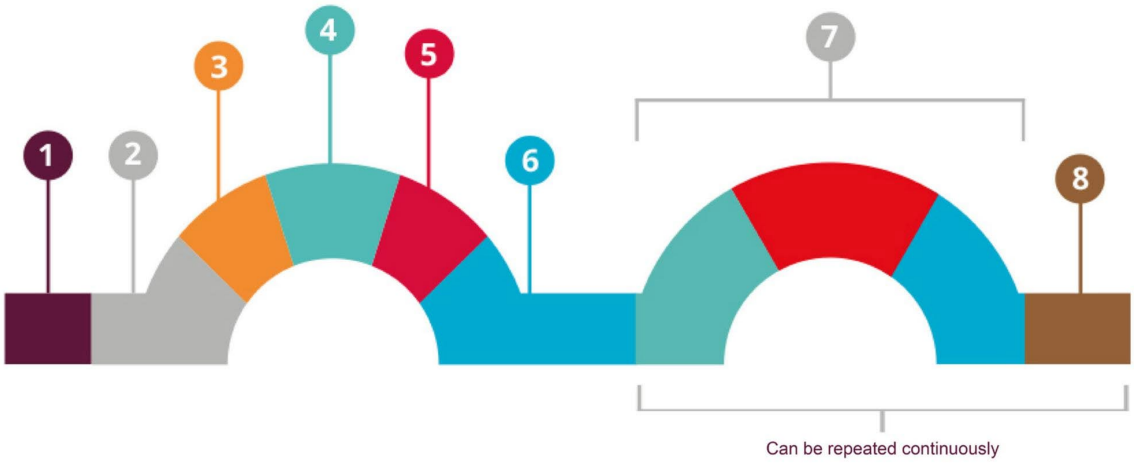

Figure 1: The Veterinary Clinical Audit Cycle by RCVS Knowledge. Available from www.rcvsknowledge.org. Developed by the Royal College of General Practitioners www.rcgp.org.uk/qi-ready

1. Choose a topic relevant to your practice

The topic should be amenable to measurement, commonly encountered and with room for improvement. Following team discussions, the incidence of post-operative complications was identified as an area needing improvement.

2. Selection of criteria

Criteria should be easily understood and measured. For this audit, all patients undergoing routine, elective surgery were chosen.

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. The team aimed to reduce complication rates to be in line with the national benchmark as reported on VetAudit.

4. Collect data

Identify who needs to collect what data, in what form and how. Data was collected from completed anaesthetic monitoring forms and the practice management system (PMS).

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 audit showed an overall post-operative complication rate of 28% in June 2021.

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. The team discussed a number of changes that led to the creation of protocols and guidelines and an overall change in the workplace culture with the whole team working towards the same goals.

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. Repeat audits have been performed, which showed a reduction to 24% in July/August, and a further reduction to 9.68% by September 2021.

8. Review and reflect

Share your findings and compare your data with other relevant results. This can help to improve compliance. Findings and updates are regularly given to the team at monthly team meetings.

[1] *AVA anaesthetic chart* [Association of Anaesthetists] [online]. Available from: https://ava.eu.com

[2] *VetAudit* [RCVS Knowledge] [online]. Available from: https://vetaudit.rcvsk.org