

Clinical Audit Case Example: Optimisation of the use of ear cytology in veterinary primary care

Name of initiative: Optimisation of the use of ear cytology in veterinary primary care
Initiative start date: December 2019
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Introduction

The Hub Clinical Leads (HCLs) are a team of 10 general practitioner vets who work with primary care practices to support clinical development across the Small Animal (SA) division of CVS UK Ltd. Being in a position to examine the clinical activities within an industry-representative number of sites the HCL team identified a variation in the approach to the management of Otitis Externa (OE). A review of diagnostic and treatment modalities for 26269 cases was undertaken, which highlighted the limited use of ear cytology (19.2%; 5044 cases). The low level of cytology use in primary care was suspected to be a major contributory factor to the significant use of HPCIA antibiotics without culture, as indicated by SAVSNET data.

Based on the above audits, ear cytology across the division was considered an area for improvement. It is well understood that the use of cytology in cases of OE is beneficial, facilitating cost-effective identification of primary and secondary causes and aiding the selection of treatment and monitoring response to therapy¹. Increasing the use of ear cytology was therefore expected to improve clinical outcomes for patients through better quality diagnostics, leading to enhanced client engagement and collaboration with the clinician, better and more consistent treatment approaches, and appropriate therapeutic selection. The long-term secondary effects were considered to be overall improved vet-client relations, better quality consultations, and improved job satisfaction for clinical staff.

Aims of the clinical audit

The first part of this project was designed to help understand what the barriers to performing ear cytology within practice were. The barriers were identified as a lack of current knowledge, perception of insufficient time, and inability to access good quality equipment. Equipment audits identified where investment was required. Teaching materials were developed for the team to learn how to perform high-quality ear cytology and maintain equipment, both online and as a hard copy, and a programme of face-to-face tutorials where required.

Actions

An audit across all CVS UK Ltd SA division sites conducted between August – October 2019 demonstrated that ear cytology was undertaken in only 19.2% of cases, meaning that 80.8% of patients with otitis externa (OE) were prescribed antibiotics without cytological support.

Only 11% of all cases were provided with in-house point of care cytology. The remaining 8.2% who were offered ear cytology had this performed externally, and one limitation of this audit is that it is

not known if these results guided treatment. Of the treatment prescribed for all cases, 5% (1322 cases) were fluoroquinolones, and 46% (12264 cases) were polymixin B based. SAVSNET data shows that the most significant use of fluoroquinolones across the SA division is for ear disease. Reducing this usage where unnecessary would represent a significant improvement in quality and responsible prescription of antibiotics.

The HCL Team sought opinions across the Small Animal division in order to understand the perception of barriers to ear cytology so that the intervention could be supported appropriately. This consultation facilitated cause and effect analysis which found the barriers to be:

1. Lack of confidence with use of the microscope, particularly focusing at x100 and identification of pathological events
2. Perceived lack of time
3. Insufficient equipment or poorly working/maintained equipment
4. Accessibility of equipment
5. The perception that cytology doesn't change treatment choice or outcome
6. Not charging for the service provided (confidence vs. unwillingness to discuss cost)

A minimal equipment list for cytology was developed along with an equipment survey of sites to assess what investment was required; if a site did not meet the minimum standards, equipment was supplied.

Areas for support that were identified included the need for education and resources for equipment maintenance and a lack of confidence on how to clean the equipment, which led to poor functionality of equipment, hence further reducing use. It was also essential to provide training for team members who lacked the skill or confidence to easily use the microscope and identify pathological changes.

An online course was developed in collaboration with the learning, education and development team and the lab division, which incorporated clinical training and equipment maintenance through the use of guidelines, imagery resources and video guides. This training was targeted at both veterinary and nursing teams. Depending on the site set-up, ear cytology has the potential to be a nurse-led procedure, and this was a particular focus of the training. The training was made available free of charge via an online Moodle-based platform to which all staff have access.

The project was introduced to teams through local leadership at regional meetings in December 2019. The availability of new equipment, training and support was disseminated. Clinical directors and Practice directors were empowered to lead their teams to increase their use of ear cytology, ensuring their equipment was optimised and available training resources employed. They were asked to consider where they thought the barriers lay within their site.

Results

The audit outcomes are discussed above. This project was designed to be run for over six months until the end of June 2020. The stretch target for the whole SA division was 60%. Steady improvements were seen following the introduction of the program, and in March 2020, 41.4% of cases received cytological investigation when antibiotic containing ear preparations were prescribed. 17 of 18

geographical regions within the SA division achieved over 30% of patients receiving cytology, with the top-performing region reaching 58.5%, up from a starting point of 31.8%. As this data represents approximately 5500 cases seen per month, the national increase in ear cytology equates to an additional 1100 cases receiving cytological investigation in March 2020 versus December 2019, meaning that the goal of 60% was achievable.

	Start (Aug-Oct Av)	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20		RAG Key
N1	18.5%	20.4%	19.8%	21.9%	36.0%	9.1%	17.9%	25.5%	25.6%	25.8%	26.9%	27.1%	>60%	
N2	23.7%	31.6%	34.5%	38.3%	53.6%	13.2%	18.9%	25.2%	27.4%	38.5%	37.5%	40.0%	>30%	
N3	26.0%	17.3%	18.8%	28.1%	33.3%	18.0%	22.0%	26.8%	27.0%	25.5%	30.1%	29.5%	<30%	
N4	19.1%	15.2%	19.0%	20.7%	34.2%	21.9%	22.5%	30.0%	26.1%	33.3%	30.7%	30.4%		
N5	16.9%	12.6%	18.8%	28.2%	39.4%	13.0%	18.0%	25.3%	20.1%	16.9%	20.4%	20.6%		
N6	11.6%	11.2%	15.7%	26.7%	34.5%	3.3%	9.7%	16.9%	13.8%	12.4%	11.6%	21.8%		
N7	13.3%	10.8%	19.8%	26.7%	35.1%	13.4%	20.9%	19.8%	18.5%	16.6%	20.1%	24.7%		
NI1	6.5%	3.6%	14.5%	27.2%	32.1%	14.5%	11.2%	23.7%	30.6%	25.1%	27.6%	28.0%		
S1	20.6%	15.1%	23.2%	24.7%	45.6%	14.9%	27.1%	30.5%	26.3%	25.9%	33.0%	40.1%		
S2	18.8%	14.7%	19.4%	21.6%	35.6%	15.5%	19.1%	26.1%	21.6%	20.1%	19.3%	32.4%		
S3	19.3%	15.4%	14.1%	17.0%	23.2%	2.8%	5.3%	11.1%	14.9%	13.3%	9.2%	9.3%		
S4	17.9%	13.6%	17.8%	21.3%	49.2%	14.9%	22.0%	18.2%	15.6%	13.5%	13.5%	12.5%		
S5	34.9%	31.7%	27.4%	26.6%	41.7%	20.9%	29.5%	41.7%	39.0%	29.4%	34.5%	34.8%		
S6	29.2%	30.6%	43.0%	44.0%	54.1%	19.6%	30.0%	32.7%	36.0%	34.3%	44.2%	40.9%		
S7	28.6%	23.2%	36.3%	34.5%	45.8%	22.3%	26.2%	30.0%	29.9%	29.4%	32.2%	32.50%		
S8	26.0%	27.5%	36.2%	36.4%	56.9%	42.2%	45.0%	48.2%	50.9%	51.9%	51.3%	61.1%		
S9	31.8%	36.0%	44.0%	48.6%	58.5%	18.3%	21.2%	39.8%	41.6%	33.2%	37.3%	38.1%		
S10	15.2%	15.9%	31.2%	33.4%	40.0%	8.4%	17.1%	26.9%	29.3%	22.7%	28.0%	38.5%		
North	16.50%	17.30%	21.20%	27.30%	38.80%	13.10%	18.8%	24.6%	23.6%	25.1%	26.2%	28.2%		
South	22.00%	24.30%	28.30%	31.10%	44.00%	17.70%	24.0%	29.4%	30.3%	27.0%	29.9%	32.1%		
SA incl NI	19.20%	19.80%	25.00%	29.30%	41.40%	15.50%	21.1%	27.1%	27.2%	26.1%	28.1%	30.2%		

Clearly, this year has been a challenge, and the required adaptation to working practices in April and May and the strain on resources and facilities had a very significant influence. From a QI perspective, whilst unprecedented, it was very interesting to witness the impact that the pressure caused by the restrictions placed on veterinary teams and the ability to prescribe remotely had on the way cases were managed during the COVID-19 crisis. Investigation of ear disease reduced significantly, and cytological investigation of OE was 15.5% in April 2020, and although this presented a challenge, this information was sensitively shared with sites. Ways of working were being routinely considered, and a best practice, protect the patient, protect each other approach was taken. Regional discussions were held weekly and included conversations around how to secure an accurate diagnosis whilst reducing contact with the client and a shift in focus towards an early definitive treatment plan wherever appropriate.

The project and audit have continued, although more sensitive, as teams still face challenges in the current climate. Ear cytology has been used as an excellent example of how we can work differently during the pandemic. A focus on accurate diagnosis as early as possible in the patient journey has been key in reducing the need to have contact with patients and, therefore, owners during this time. This “getting it right, first-time” approach covers all aspects of general practice. In October, national performance has returned to 30.2% one geographical region was the first to pass the 60% target.

Impact of Intervention

One of the key outcomes of introducing this QI initiative was the widespread improvement in knowledge and skill of vets and nurses in all stages of their careers. Engaging such a large cohort of clinical team members to review their way of working and consider an alternative approach was a challenge. This process was welcomed by most but more challenging for others who found the external influence difficult to accept. In these situations, it was necessary to spend time with the team to understand why they felt that ear cytology was impractical.

The most common barrier encountered was the accessibility of equipment. The microscope was often well set out in the lab area, however, this was often some distance from the consulting rooms, and again sometimes located away from the staining area. Moving the microscope to the consult room or dispensing area and creating miniature staining areas in consult rooms using cat litter trays and slide boxes which allowed staff to continue conversations with the client whilst also staining slides, was hugely successful.

We have a wide range of teams with a spread of QI activity. A large number of the teams involved in this project are well used to using auditing tools to analyse performance, look for opportunities, make change and then reassess to establish how much progress has been made and whether the original problem has been solved. For some of our teams, however, this is a new or not yet established concept. Part of the project asked the teams (using provided instruction) to audit internally the reasons why ear cases were not receiving cytology as part of their management. The purpose of this was first to allow teams to identify their own barriers to enable them to plan how to overcome them, and secondly to introduce the concept of audit to teams that have previously had little or no experience of QI - seeing the benefit of audit and review process many sites have since applied this to other areas of their practice.

A positive impact has been the improvement in equipping of sites for cytological investigations. Most of the sites with insufficient equipment were small branch sites of larger groups. Providing the facility to perform more investigations at the point of care is an advantage for the pets and clients who sometimes, due to logistics, miss out on such investigations. In addition, there has been feedback of increased satisfaction for the staff who are often frustrated by working in sites with poorer facilities and more difficulty in staffing which in turn leads to reduced continuity of care, and often reduced patient knowledge and client satisfaction.

This project has challenged clinical staff to look at their technical knowledge and skill in order to succeed. In general, more recently qualified vets and nurses had more confidence with the technique due to changes in teaching and more recent exposure. For some of the more experienced team members, nervousness around admitting the need for support presented as a reluctance to take part or see the point of the project. However, once the barriers to learning were broken down, it was found that there was a widespread improvement in knowledge and skill of vets and nurses in all stages of their careers. This in turn has also led to some becoming re-engaged in their self-development and QI within their teams.

This project lent itself well to leadership from veterinary and nursing staff who had recently qualified due to their increased level of input and confidence, and feedback suggested that these groups felt empowered to speak up due to the support of the wider project. In a handful of sites, this unfortunately led to mild conflict between some members within practices, but such issues have now been resolved.

Some sites who became actively engaged with this project developed fully nurse-led services which were well received within these practices. Providing nursing teams with an opportunity to fully lead and direct improvement of this type has provided increased job satisfaction for the individuals involved, leading to a higher likelihood of retaining such staff.

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.

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 practice, 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 where 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 practise.

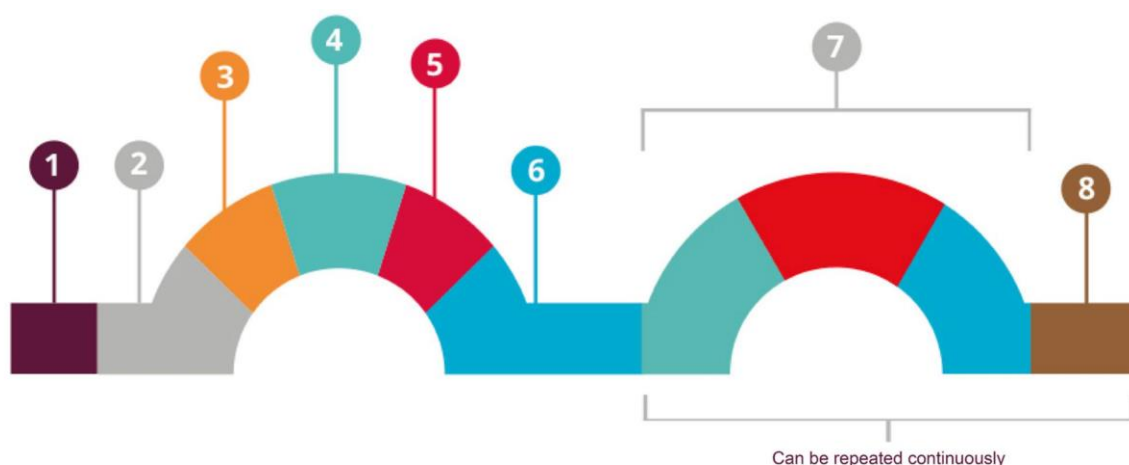


Figure 1: The Veterinary Clinical Audit Cycle by RCVS Knowledge. Available from www.rcvsknowledge.org. Developed by the Royal College of General Practitioners www.rcgp.org.uk/qi-ready

1. Choose a topic relevant to your practice

The topic should be amenable to measurement, commonly encountered and with room for improvement. A review of data highlighted a low-level use of cytology being performed for cases presenting with otitis externa.

2. Selection of criteria

Criteria should be easily understood and measured. For this audit, all patients presenting with otitis externa within the group of practices were chosen.

3. Set a target

Targets should be set using available evidence and agreeing best practice. The first audit will often be an information gathering exercise, however targets should be discussed and set. A goal of 60% was set.

4. Collect data

Identify who needs to collect what data, in what form and how. Data was collected from the PMS retrospectively.

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 discussion from the entire team to identify. The initial audit showed that ear cytology was undertaken in only 19.2% of cases, meaning that 80.8% of patients with otitis externa (OE) were prescribed antibiotics without cytological support

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 lead to the purchase of further equipment, protocols to be developed, and overall, the 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 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. Repeats audits have been performed, which showed a reduction in numbers during the COVID-19 pandemic, however in October national performance returned to 30.2% and one geographical region was the first to pass the 60% target.

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.

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