

Guidelines Case example: Creating practice guidelines on the use of suture material in feline spays

Section A: Case example on the seven steps on creating practice guidelines.

This walkthrough expands on the seven steps to creating a guideline. It is intended for people who are looking to create guidelines within practice.

1. Decide what the guideline will address

Identify the topic and scope of the practice guideline and the specific question(s) to be addressed. The scope of the guideline must be clearly stated together with the context and objectives.

A clinical audit cycle showed that there had been a recent increase in post-operative complications in feline neutering. This guideline has been produced to reduce the incidence of complications, and unify the suture methods used within the team.

2. Allocate team members to research and review the evidence

Decide who will be involved in research and allocate roles, while considering the team members that will use the guideline. It is important to involve as many members of the team as possible in the production of the guidelines. Roles would include author(s), person carrying out the literature search, and evidence review. Evidence for these areas can be gathered by carrying out a literature search and obtaining relevant opinions where appropriate. If evidence from veterinary research is lacking, it may be helpful to also search medical literature. RCVS Knowledge has a range of [resources](#) that can assist you in finding evidence. If you need assistance in performing a literature search, or are short of time, you can complete a [literature search request form](#) and submit it to the RCVS Knowledge Library team. For further information, you can contact the library team at library@rcvsknowledge.org.

The Senior Veterinary Surgeon was tasked with investigating the findings of the clinical audit. A meeting was set between the clinical team. During this meeting the surgery was discussed in great detail, to see if there were any points of difference that may account for the increased complication rate. It was noted that complication rates were increased when one type of suture material was used, and when midline technique was used. The team discussed whether this choice of suture material was appropriate for intra-dermal sutures. It was decided that by researching and developing a practice guideline on which suture materials should be used for cat spays, the practice could aim to improve the level of care given. A literature search was performed to investigate surgical outcomes of techniques for feline suture. Ideally, information was recently published (i.e. from 2000 onward) so it is relatively current. To find the appropriate literature, the team performed a literature search in CAB Abstracts, with the assistance of the RCVS Knowledge Library and information services. The search strategy can be found under Annex A of this guideline. The Critical Appraisal tools that have been developed by The Joanna Briggs Institute were used when considering each research paper. These, as well as other tools to assist in appraisal, were found through the RCVS Knowledge EBVM Toolkits. The Senior Veterinary Surgeon, Associated Veterinary Surgeon and Registered Veterinary Nurse will perform the evidence review.

3. Hold a meeting to review and discuss the evidence

The team then reviews and assesses the evidence based on agreed criteria. It can help to separate any discussed actions into 'clinical examination', 'diagnostic tests', 'treatment' and 'follow-up care' in preparation for Stage 4. It is important to involve a range of members of the veterinary team to discuss how the evidence can be applied in your particular practice setting. You can use the RCVS Knowledge Guidelines Template to help you provide structure to your meeting.

The literature review team considered the evidence, whilst considering the aims of the activity:

- Determine which suture material was considered the most appropriate for each stage of the surgical procedure including ligatures, muscle layer, and intradermal sutures.
- Whilst primarily considering which suture material should be used based on successful procedure outcomes, cost should also be taken into account. Preference will be given to sutures available on a reel as they allow custom lengths to be cut and as such are more cost effective. The practice team discussed whether it should be a protocol or a guideline. They referred to the consensus statements by RCVS Knowledge, which states: Guidelines are systematically developed, evidence-based statements that can help practitioners and clients make decisions about the most appropriate care for patients in specific clinical circumstances. Protocols are formal sets of instructions for situations where there is a known outcome. There should be no deviation from a protocol. As, in very particular circumstances there might be reason to not use these specific suture materials e.g. in pregnant animals, cats with a friable uterus, or in large cats. It was decided it should be a guideline, however if an alternative is used, this must be recorded in patients clinical notes.

4. Once the team has come to an agreement, create a guideline draft

The recommendations should be specific and unambiguous, consider potential barriers, and suggest some supportive tools for implementation. Using the RCVS Knowledge document, *Guidelines Template*, write a draft of the guideline. The team should agree on the draft.

5. Provide the draft to the relevant team members for review

The guideline draft should be provided to all team members identified in the scope of the guideline. Team members should be encouraged to ask questions and provide feedback on what should be included in the guidelines.

The draft was circulated to team members by email to be discussed at a team meeting. One member of the team requested training to be included for any recommended techniques.

6. Once everyone has reviewed the guideline, release the final version

Once the team have considered the feedback and suggestions, the guideline can be finalised. We recommend using the same format across all guidelines for ease of accessing the information.

The draft was circulated and edits suggested by email.

7. Set a date for implementation and a date for review

The team should set a reasonable date on which they will begin implementing the guideline in practice. The implementation date should allow all members of the team to understand the guideline. Typically, this would be put in the footer of the document so that it can be easily assessed. After implementation, it may be worth raising the topic of guidelines at a practice meeting to ask the team if they are finding the guideline useful. You may choose to measure the impact of guideline introduction through clinical audit. If the guideline is completely new, it may be worth scheduling a review within six months of its release. After this, the review date for the guideline can be every year or every two years, depending on clinical relevance.

Implementation date: 1st August 2018

Process Audit: 1st February 2019

Guideline review date and outcome audit: 1st August 2019.

The team stated that data on neutering complication rates should continue to be collected and monitored to see if the changes they had made were an improvement. As the procedure is a common one for this busy practice, the team decided that it would be reasonable to perform a process audit in 6 months' time. Once it was established that the changes the team made were an improvement, review's to check compliance with the guideline, and to check the most up-to-date available evidence against those used to establish the guideline, could be undertaken annually.

A table was created to outline the review schedule:

Review/ audit type	Time after introduction	Thereafter
Process audit	6 months	Random intervals
Outcome audit	12 months (data collection begins after 6 months)	Annually
Guideline review	12 months (or following the process audit as necessary)	Annually

Further reading:

See RCVS Knowledge EBVM Toolkit: <https://knowledge.rcvs.org.uk/evidence-based-veterinary-medicine/ebvm-toolkit/>

We have also created a visual aid for the process of creating a walkthrough that you may find useful <https://knowledge.rcvs.org.uk/quality-improvement/tools-and-resources/>.

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Section B: Development of feline spay guidelines: suture material.

What is this guideline about?

Practice guideline for the recommended suture materials used for routine cat spays

Who is the guideline relevant to?

Whole team Vets Nurses Reception Support staff

Allocated team member to research and review the evidence:

Head Veterinary Surgeon, Registered Veterinary Nurse and Associated Veterinary Surgeon

Areas of focus and recommendations

Based on the research that was done it is recognised that there are multiple opinions on which suture material is best suited for different surgical sites. This suture guideline has been created to unify the practice approach. The practice guideline for the suture material to use for cat spays is as follows:

1. Where possible a flank approach should be used. The preferred suture material is 3 metric (3.0) Monocryl® with one packet to be used per procedure.
2. The ovaries and uterus should be ligated using Monocryl®.
3. The muscles should be closed in two layers. The innermost layer (consisting of 2 muscle planes) being a simple interrupted suture technique using Monocryl®. This will reduce the likelihood of hernia formation.
4. The second muscle layer can be simple continuous.
5. Where possible intradermal sutures should be placed using Monocryl® and an Aberdeen knot used to tie off the sutures which should then be buried.
6. If a midline approach is performed then the linea alba should be closed with 2 metric (3.0) PDS® from a reel. The skin should be closed with intradermal Monocryl® sutures.

PDS (polydioxanone) - retains 80% of its strength at 2 weeks, 44% at 8 weeks, and is completely absorbed within 6–7 months. The blue dye disappears from the suture before the suture completely dissolves, so several months later the PDS found within tissues will appear clear.

Monocryl (poliglecaprone 25) - retains 60% at 1 week and 40% at 2 weeks and 30% at 4 weeks; absorption is complete at 3–4 months.

Vicryl (polyglactin 910) - retains 75% of its strength at 2 weeks, 25% at 4 weeks, and complete absorption around 2.5 months. It was opinion of the panel that this material had too much drag and better options were available for cat spays. It was not to be used.

Follow-up care

Animal owners should be instructed to bring the animal back to the practice if they appear unwell.

References

- ⇒ Marturello, Danielle M. et al (2014) Knot security and tensile strength of suture materials. *Veterinary Surgery* 43(1) pp 73
- ⇒ Roush, James K (2003) Biomaterials and surgical implants. In: Slatter, Douglas (ed) *Textbook of Small Animal Surgery* 3rd ed. 2003 Philadelphia: Saunders pp 141-148
- ⇒ Schmiedt, Chad W (2012) Suture materials, tissue staplers, ligation devices and closure methods. In: Tobias, Karen M and Johnston, Spencer A (eds) *Veterinary Surgery Small Animal* Philadelphia: Saunders pp 187-200
- ⇒ Galindo-Zamora, V. (2016) Flank approach to spay. 41st World Small Animal Veterinary Association Congress. Cartagena, Colombia, 27-30 September 2016. 66-68.
- ⇒ Roberts, M. et al. Effect of age and surgical approach on perioperative wound complication following ovariohysterectomy in shelter-housed cats in Australia. *Journal of Feline Medicine and Surgery Open Reports*. 2015. 1(2):2055116915613358.
- ⇒ Sontas, B. et al. Methods of oestrus prevention in dogs and cats: a survey of Turkish veterinairians' practices and beliefs. *Archivos de Medicina Veterinaria*; 2012. 44(2): 155-166.
- ⇒ Lee, H. et al. Treatment of lymphatic gastritis with cyclosporine in a cat. *Journal of Veterinary Clinics*. 2014. 31(2): 108-111.

Review

Review Active date: 01/08/2018

Process audit date: 01/02/2019

Guideline review date: 01/08/2019

Document control: Up to date versions of the guideline will be kept in the suture kit, and will be clipped to patient notes of relevant patients. Once a new version is released, it is the responsibility of the Practice Manager to ensure the paper copies are replaced.

Notes

Training for in flank technique will be sought for those team members who are unexperienced in this.

Annex A

The following literature searches were performed:

Database: CAB Abstracts <2000 to 2018 Week 29>

Search Strategy:

1 (cat or cats or feline or felines or queen or queens or felis or felidae).mp. or exp cats/ or exp Felis/ or exp Felidae/
2 (spey or speyed or speying or spay or spayed or spaying or neuter or neutered or neutering or ovariectomy or ovariohysterectomy or hysterectomy or sterilised or sterilized or sterilisation or sterilization or de-sex or de-sexed or desexing or desex or desexed or desexing or gonadectomy).mp. or exp ovariectomy/ or exp gonadectomy/ or exp sterilization/ or exp hysterectomy/
3 (midline or flank or linea alba or laparotomy or coeliotomy or celiotomy or lateral approach).mp. or exp laparotomy/
4 1 and 2 and 3 (167)
5 limit 4 to yr="2008 -Current"

Database: CAB Abstracts <2000 to 2018 Week 29>

Search Strategy:

1 cat or cats or feline or felines or queen or queens or felis or felidae or exp cats/ or exp Felis/ or exp Felidae/
2 spey or speyed or speying or spay or spayed or spaying or neuter or neutered or neutering or ovariectomy or ovariohysterectomy or hysterectomy or sterilised or sterilized or sterilisation or sterilization or de-sex or de-sexed or desexing or desex or desexed or desexing or gonadectomy or exp ovariectomy/ or exp gonadectomy/ or exp sterilization/ or exp hysterectomy/
3 monocryl or poliglecaprone or PDS or polydioxanone or polyglactine or polyglactin or vicryl
4 1 and 2 and 3

Database: CAB Abstracts <2000 to 2018 Week 29>

Search Strategy:

1 cat or cats or feline or felines or queen or queens or felis or felidae).mp. or exp cats/ or exp Felis/ or exp Felidae/
2 spey or speyed or speying or spay or spayed or spaying or neuter or neutered or neutering or ovariectomy or ovariohysterectomy or hysterectomy or sterilised or sterilized or sterilisation or sterilization or de-sex or de-sexed or desexing or desex or desexed or desexing or gonadectomy or exp ovariectomy/ or exp gonadectomy/ or exp sterilization/ or exp hysterectomy/
3 monocryl or poliglecaprone or PDS or polydioxanone or polyglactine or polyglactin or vicryl or suture*
4 1 and 2 and 3
5 limit 4 to yr="2008 -Current"



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