

Checklist case example: Peripheral intravenous catheter checklist

Section A: The six stages of developing a checklist

Checklists are developed to assist teams in their day-to-day work. They are a list of verifications or actions which need to be completed before, during or after a procedure or task.

1. Highlight an area of practice that requires improvement

You may find through significant event audit (SEA), or clinical audit, that specific areas of your practice would benefit from the introduction of a checklist.

Anecdotal reports within practice had identified that there were an increasing number of patient's developing peripheral intravenous catheter complications.

2. Hold a meeting to involve and engage the team

It's important to engage all members of the team who will use the checklist once it has been introduced into practice. A team meeting can be effective in establishing ownership of the process, and ultimately the checklist. Ask a team member volunteer as the Checklist Champion.

A catheter care checklist template had been identified by a veterinary surgeon during CPD. This list was distributed to the veterinary team to gather feedback and ideas.

3. Create and circulate the checklist

Following the meeting the checklist should be written up and circulated amongst the team.

It was decided that the catheter care checklist that had been found would initially be used. The list would then be evaluated for its suitability at a later date.

4. Introduction of the checklist and the Checklist Champion

In the initial meeting, once the checklist has been introduced, the Checklist Champion will ensure that all members of the team are using the checklist, providing training where required and ensuring the checklist is used consistently in all relevant procedures. Any questions that arise will be directed to the Checklist Champion, who will be open to giving and receiving feedback.

Since the veterinary team was so large, and had many different departments several checklist champions were allocated to ensure there was support throughout the differing shifts.

5. Discuss the checklist

Shortly after checklist implementation, discuss the checklist in a team meeting to see how the team are finding it. Was it awkward? Was it too long? Finesse the checklist to make it more convenient and usable. You may need to repeat this occasionally to ensure the team are happy; if the checklist doesn't help assist daily practice, no one will use it!

Once it had been used by a variety of staff members, the suitability of the list was discussed. It was identified that several staff members were not completing it as they found it unclear and difficult to apply to the situation. Feedback allowed a new checklist to be designed and trialled.

6. Audit the checklist

Conducting an audit on the use of the checklist is beneficial to the implementation of the checklist. It helps to ascertain that the checklist is being used by all members of the team. If changes are made, it is important to conduct a re-audit, to ensure the required changes have led to improvements.

An audit is completed every quarter, not only to ascertain whether the checklist is still in use and suitable, but to monitor the catheter care protocol and to see if any patterns and trends occur which lead to complications. The overall aim of the checklist is to standardise the catheter care, and reduce the complications that arise.

Checklist case example: Peripheral Intravenous catheter checklist

Section B: Developing a peripheral intravenous catheter checklist in practice



Checklist topic

Peripheral Intravenous Catheter Placement and Care

Checklist development meeting

Nicola Beaney MRCVS BVSc PG Cert Small Animal discovered a catheter care checklist while undertaking CPD. Ongoing issues about IV complications had been raised in both vet and nurse meetings so the list was introduced to all staff members. The following aims of the checklist were decided on:

- ⇒ Overall improvement in the complication rates currently being encountered (extravasation, phlebitis, limb swelling, pyrexia and pain at site of the insertion).
- ⇒ Identifying possible causes for the above and the impact of any variables on the incidence of these as well as individual risk factors.
- ⇒ Identify differences observed between species.
- ⇒ Improve the recording of issues.

Due to the size of the practice, and its different departments (first opinion, referral, and out of hours) the senior members of the team were all made checklist champions.

Who will be the Checklist Champion? All senior nurses

Create and circulate the checklist

The catheter care checklist was printed and distributed during department meetings for feedback and ideas on its use.

Deadline for feedback submission: 08/01/2018

Introduce the checklist and the champion

It was decided that the catheter care checklist found by Nicola would initially be used. Feedback could be reported to any senior nurse at any time. The checklist was to be discussed at the next vet and nurse meeting.

Date of implementation: 18/01/2018

Date for discussion: 19/02/2018

Discuss the checklist

The checklist took a number of months to implement. Although it had been discussed in a meeting, communication had not extended to those absent from the meeting, and there was also poor staff compliance. This was due to team members being under the impression that the checklist was optional and although the checklist should be completed by the member of the team that inserts the catheter the subsequent requirement to record the daily findings is the responsibility of the primary care nurse. As this involved an additional sheet for completion this was very quickly forgotten because of the increased workload in an already pressured environment.

On discussion, feedback from the team identified that the checklist was ambiguous in places, so was difficult to apply and use. This led to an adaptation of the initial checklist and we also identified a main checklist champion for overall support of the list, Hannah Young RVN.

Date of review: 19/03/2018

Date for audit: 16/04/2018

Audit the checklist

The first audit was completed over the first four months and reported that 30 patients; 17 dogs and 13 cats, had IV complications.

Reported complications were:

- ⇒ Swollen paws
- ⇒ Erythema
- ⇒ Swelling proximal to the IV
- ⇒ Pyrexia
- ⇒ Painful limb where the IV was placed
- ⇒ Discharge in the t-connector or IV hub.

Swollen paws (without any other complications) accounted for 17% of dogs and 76% of cats. We assumed that the cause for a swollen paw without any other recorded complication was due to incorrect taping of the IV or incorrect bandaging.

A further 35% of dogs recorded with swollen paws had concurrent swelling distally to the IV site or erythema. These cases were found to be swollen due to subcutaneous fluids or phlebitis.

The 7 cases with evidence of phlebitis were reviewed for risk factors to include;

- ⇒ Neutropenia
- ⇒ Fluids containing glucose
- ⇒ Prolonged hospitalisation
- ⇒ Prolonged use of the IV

Out of these 7 cases, 5 patients had prolonged hospital stays and 2 patients had a prolonged use of the IV (both cats).

From these results, the following changes were implemented into practice.

- ⇒ A silk like surgical tape was to be used when placing cat IV's instead. This is due to cats representing a higher number (76%) of identified limb swelling. The current tape used can constrict on the patient, so we found a tape that was less likely to tighten.
- ⇒ Orthopaedic padding and a knitted conforming bandage to be used to bandage in cat IV catheters. This was a change from using orthopaedic padding and a cohesive bandage. The cohesive bandage is known to constrict, and although it is a good bandage material, this increased the chance of inappropriate bandaging causing limb swelling.
- ⇒ The catheter care checklist was changed so that the type of t-connector was recorded. This was to identify if the closed system t-connectors helped in reducing phlebitis.
 - ⇒ The catheter placement and care protocol was updated to include these changes, and they were discussed in the vet and nurse meetings. Strict adherence to the protocol was emphasised.

Date of re-audit (if applicable): 16/07/2018

Date for review (when applicable): 20/07/2018

Re-audit the checklist

The results of the second audit reported that 42 patients; 17 dogs and 25 cats had IV complications.

Reported complications were:

- ⇒ Swollen Paws
- ⇒ Swelling proximal to the IV
- ⇒ Pyrexia
- ⇒ Painful limb where the IV was placed
- ⇒ Discharge in the t-connector or hub.

Swollen paws (without any other complications) accounted for 10% of dogs and 40% of cats. We assumed that the cause for this, in the absence of other complications, was due to the taping and bandaging technique. This is a reduction from the previous audit.

The 3 patients with evidence of phlebitis were reviewed for the aforementioned risk factors. 2 of the patients had prolonged hospital stays. 2 of the patients were referral patients, and had the IV placed at a different practice, therefore control over the placement technique or materials was not possible. Closed system t-connectors were used in 2 of the patients, suggesting no positive benefit. Although at this time the volume of cases is too small to make an accurate comparison.

There was a reduced overall incidence of phlebitis in this quarter.

The number of cases where extravasation of fluid caused swelling accounted for 32% of cat cases and 76% of dog cases. Due to initial difficulties regarding tape and bandage failure the change in protocol had not been adhered to as it was proving ineffective so data regarding improvement in this area cannot be easily extrapolated. There were 4 recorded cases in cats where the IV catheter fell out shortly after placing. This has been included as a complication due to the discomfort for the patient at having to have another one replaced, this had not been recorded previously. Although the percentage of cats with a swollen foot without other complication has improved significantly the overall number of cases recorded has increased and the percentage of cats with 'blown' IV's has increased. This may suggest that the change in tape is more likely to lead to subcutaneous fluid administration and ineffective securing of the IV.

The number of recorded cases overall has improved but subjectively it was likely that there are still a number unrecorded, this needs to be continually addressed and the importance of the checklist reiterated to all staff.

Review the checklist

Attempts to change the tape used for cat IV's have proved unsuccessful leading the catheter's to be inadequately secured causing increased risk of extravasation of fluids. Further staff training on the application of tapes and dressings will be given. General consensus is that there has been an overall improvement in IV complication rate. We will await the results of the next audit.

Since introducing the checklist we have found overall improvements in the complication rates we encountered, including extravasation, phlebitis, limb swelling, pyrexia and pain at the site of insertion.

As a team we found that an objective standardised exercise meant that all patients received the same level of care. It encourages clinical members to think about what they are doing rather than just tick boxes. After a positive and consistent approach we have found that investment in this as a useful tool has been greatly improved. Completing the audits and the checklists has led to an environment where we have better clinical outcomes, we use clinical governance to inform changes and improve patient welfare and creates an environment where we strive for excellence and constantly push forward to evolve our practice and consistently foster the attitude 'Could this be done better and how?'

Date of re-audit (if applicable): 29/10/2018

Checklist case example: Peripheral intravenous catheter checklist

Section C: Example of Peripheral intravenous catheter care checklist

The following documents were created by Newnham Court Veterinary Hospital for the monitoring of intravenous catheter placements and care during the patients hospitalisation. Attached you will find:

1. NCVH Peripheral Venous Catheter Care - Daily Checklist



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