

## Clinical Audit Case Example: Post-operative hypothermia audit by Samantha Thompson

### Section A: The eight stages of a clinical audit

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 on-going engagement and a high-standard of care.

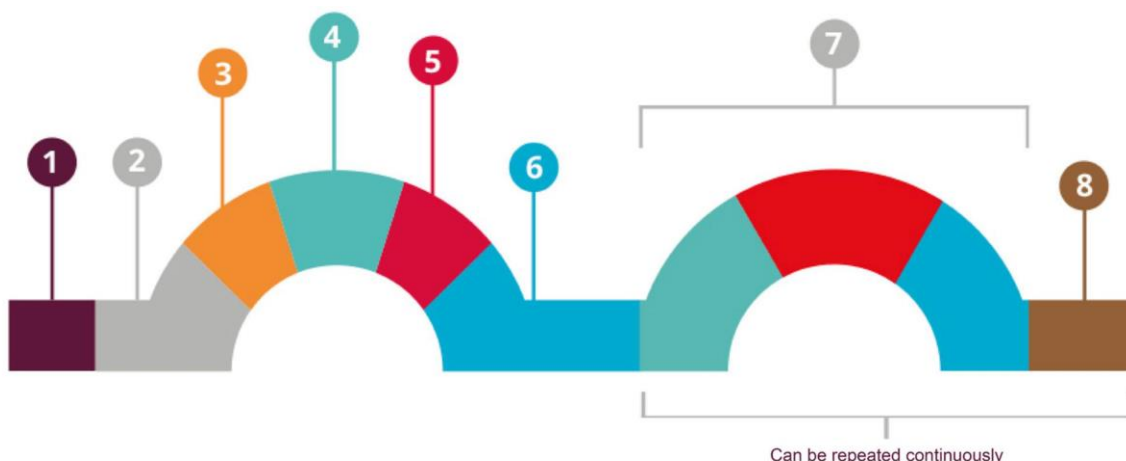
It is used:

- ⇒ 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.



### **1. Choose a topic relevant to your practice**

**The topic should be amenable to measurement, commonly encountered and with room for improvement.** In this case, the practice team had noticed that some of the patient's post-operative temperatures were suboptimal. An initial audit was carried out to find the average post-operative temperature.

### **2. Selection of criteria**

**Criteria should be easily understood and measured.** Post-operative temperatures were to be taken on every patient that was recovering from a procedure.

### **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.** We performed the audit to obtain information on the current standard (benchmark) of the practice. Once we had the results, our aim was to have most patients within the mild category, as this is considered to be of least concern. Mild would mean the patients had a temperature of 36.5 or above. We also wanted address areas that had unexpected moderate or severe hypothermia, for example, MRI.

### **4. Collect data**

**Identify who needs to collect what data, in what form and how.** Post-op temperatures were recorded on a spreadsheet alongside the patient's species and the procedure that had occurred.

### **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 results showed several patients were below the target, with some falling into the 'severe' category.

### **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.** Further training and talking to the team occurred to encourage warming under and post-anaesthesia. New warming equipment was ordered.

### **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.** The audit was repeated approximately two months later, and it was found that the average post-operative temperature had increased.

### **8. Review and reflect**

**Share your findings and compare your data with other relevant results. This can help to improve compliance.** The findings are reported to the team regularly, and further audits will be completed on differing procedures to find at-risk areas.

## Clinical Audit Case Example: Hypothermia audit by Samantha Thompson

### Section B: Clinical audit in practice, using hypothermia as an example

<b>Name of initiative:</b>	Post-operative temperature audit
<b>Initiative start date:</b>	August 2019
<b>Submitted by:</b>	Samantha Thompson RVN Grad Dip VN Cert VN ECC DET Clinical Services Manager

### Introduction

North Downs Specialist referrals is a large multidiscipline hospital in Surrey consisting of a recovery ward, day ward, feline ward, isolation unit and main wards. Average inpatient numbers are anywhere from 25-40 patient per night. As well as four theatres, we also offer CT, MRI and other diagnostics.

### Aims

The recovery ward was introduced in January after it was noted that there was often a high number of patients returning from procedures at any one time. Having these patients in a quiet and warm environment where they could be observed was crucial. Once there was consistent team members in the recovery ward it was noticed that some of the patient's post-operative temperatures were suboptimal and at times worrying low.

There were some concerns that some steps put in place to warm patients were being missed, so we conducted an initial baseline audit of post-operative temperatures. Following a discussion with the team, and several additional measures put in place, a second audit was carried out.

### Actions

The recovery ward nurses completed the baseline audit over one week. The post-operative temperatures were logged alongside the procedure and the species of the patient on a spreadsheet.

All the data was analysed and the average temperature was calculated. This was found to be very low, at 36.2°C, which falls into the moderate category according to the BSAVA guidelines. However, several cases fell into the severe category, less than 34°C, which can have serious consequences, including electrolyte imbalances.

A recent CPD attended by the team gave several suggestions for improving temperatures. These included bubble wrap jackets, socks on patients, blankets and warming after pre-med administration, and minimising preparation time for surgical patients. The team also discussed articles on the subject. Several suggestions were made and implemented, some of which could not be implemented before the second audit as we were waiting for equipment, such as hot air warming devices for Endoscopy and mattresses for MRI.

As per the quality improvement cycle, a second audit was carried out, in a similar manner as the first, which found that there was improvement in the average temperature.

## Results

In the baseline audit, the average post-anaesthesia temperature was suboptimal at 36.2°C, falling into the moderate category according to the BSAVA.

We found the results to be concerning and, following team discussion, changes were made. As a practice, we managed to improve our post-operative temperatures significantly following the implementation of these changes.

The second audit was conducted over a much wider sample pool, as we experienced a busier week so our patient numbers were higher, which should be considered when interpreting the results. The average temperature was 37°C, which was a significant improvement that could likely impact patient wellbeing.

While the average temperature was found to be low in the baseline audit, the most concerning factor was when we looked at the individual temperatures, as it seemed that we missed opportunities to warm, for example, an MRI patient with a temperature of 35.2°C.

When converting the gathered information into percentages in the baseline audit, 60% of temperatures were found to be 36.5°C or below. During the second audit, this had dropped to 55%, which is an improvement. However, we are still striving to improve, and we will conduct our third audit once the final resources arrive. This will be capped at monitoring 54 patient temperatures, to enable us to draw comparisons to the second audit.

## Impact of intervention

This audit and subsequent steps have had a significant impact on patient care. Over a relatively short space of time, we managed to increase our average post-op temperature to 37°C, although there is still room for improvement when we explored the data in more depth.

Hypothermia occurring post-operatively has been linked to delayed wound healing, prolonged hospital stays and delayed recovery. With the increase in post-operative temperatures, we would hope this would positively influence these areas. Further data collection would be required to truly assess the impact on the length of stay and previously mentioned factors.

A deeper look into the data did highlight that there were still significant areas for improvement, with some temperatures still being of concern. Given the nature of the practice, we may never be able to eradicate this as, for example, in small patients with a high ASA Score undergoing invasive procedures, large areas of hair needs to be clipped and many of our patients have low body condition scores. However, we have taken further steps and striven for improvement, and we will continue to re-audit and evaluate.

Feedback from the team has demonstrated a positive shift in thought process and culture. We are taking the steps to improve patient care, which, in turn, has a positive effect on the team. They can see that the changes they have made have impacted the patients, which improves compliance and motivates the team members to take the additional required steps.

The audit was able to influence budget allocation and the results have enabled us to identify areas for improvement. One example is that many patients were returning from endoscopies hypothermic and, as a result of the audit, we introduced an area for patient warming.

Based on a discussion from a prior M&M, we realised that using a 'Hot Dog' as a warming method wasn't always appropriate due to the manufacturer's guidelines. Based on this discussion, and the audit results, the 'Hot Dog' has been moved to theatre prep where it can be used in line with the recommended guidelines, and a hot air warming device has been ordered for Endoscopy. It was also noted that a table was often being used without a rubber mat, and so we have ordered a bespoke mattress. If we find this to be beneficial, we will look to implement these in theatre prep too.

Finally, we noticed that patients were losing a large amount of heat in areas such as X-Ray, where it can be difficult to warm and cover the patients. Subsequently, a mattress for the X-ray table has been purchased. We have planned a third audit to take place to assess the impact these measures have had, although sadly time constrictions have limited this. It would be of interest to further assess areas of heat loss, which could be done by auditing the temperature both prior to and post X-rays. There is certainly scope for many further audits and ways to improve.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/). Feel free to adapt and share this document with acknowledgment to RCVS Knowledge and the case study author, Samantha Thompson. This information is provided for use for educational purposes. We do not warrant that information we provide will meet animal health or medical requirements.

Interested in submitting your own case example? Email us at [ebvm@rcvsknowledge.org](mailto:ebvm@rcvsknowledge.org).