

EVALÚA TU ANESTESIA PARA MEJORAR TU PRÁCTICA CLÍNICA (Clinical audit - a novel tool for improving clinical practice)

Daniel SJ Pang
Université de Montréal
1500 Avenue des Vétérinaires, Saint-Hyacinthe, Québec, Canada J2S 7C6

A clinical audit is a quality improvement tool used to evaluate and improve care (Langley et al., 2009, Mosedale, 1998, Rose et al., 2016b). Clinical audits are widely used in human medicine, with their use facilitated by the availability of best practice and consensus guidelines. In contrast, the evidence for the use of clinical audit in veterinary medicine is low despite numerous papers discussing their use (Hofmeister et al., 2014, Rose et al., 2016a, Rose et al., 2016b, Viner, 2010). In this session, the core concepts of clinical audit will be introduced, including tips for successful implementation, and examples of failed and successful audits will be presented.

The basic structure of a clinical audit is a 4-step cyclical process (Fig. 1): Plan, Do, Study, Act. 1. The first, Plan, is to identify an area for study. This can be a subject for which a problem is known or suspected, or one for which an accurate picture of current performance is desired. The subject of study can represent an outcome or a process, and there are advantages and disadvantage for each approach. Focusing on an outcome (e.g. reducing post-operative hypothermia) is tempting because it is the key measure of success. However, a focus on outcome may not reflect the processes leading to success/failure in achieving the desired outcome. Therefore, it is often beneficial to focus, or include, tracking of processes (e.g. management of intra-operative body temperature, availability of heating devices). A focus on processes is often more informative as it reveals the source(s) of suboptimal outcomes and identifies specific areas for improvement. 2. Do is for data collection. As with clinical trials or experimental research, data quality is key. Ensuring complete data collection and minimising missing data can be achieved by preparing data collection sheets, ensuring support for the audit by staff members involved in data collection and organising meetings/workshops to explain the goals and benefits of the clinical audit. 3. Study is data analysis. A full clinical audit, in which change is introduced is an observational intervention study. Therefore, analysis is based on a pre-/post-intervention comparison (Rose et al. 2016b). Simple visualisation of the data is often sufficient to identify the current standard of practice. Run charts (Fig. 2) are a useful form of visualisation as they allow temporal patterns to be identified. It is helpful to be able to compare the collected data against a widely accepted standard of practice or consensus guideline; however, few of these exist in veterinary anaesthesia. In the example shown in Fig. 2, the collected data can be directly compared against the historical average (lower horizontal line at approximately 60%) and the new target for improvement (upper horizontal line at approximately 85%). 4. Act is to develop and enact recommendations based on the data collected and analysed. A recommendation may be to continue current practice if no problems are identified (or current targets are being met) or it may be to make a change in practice. If a change (intervention) is introduced, a comparison should be made pre- versus post-intervention (Rose et al. 2016a,b). An important benefit of clinical audit is quantifying the impact of introduced changes. It is tempting, and common practice, to identify a problem and introduce a change without assessing if the change has had a positive result. Furthermore, introducing changes in to a complex system can have unintended consequences, making it useful, if not essential, to track processes and outcomes.

Performing a successful clinical audit depends on careful selection of the subject for study and a supportive environment. The subject for study should be quantifiable, with consideration given to the usefulness of focusing on outcomes versus processes. If the subject for study is an infrequent or rare occurrence, identifying improvement resulting from instituted changes may not be possible without a large sample size and a prolonged period of data collection. Local support for a clinical audit is essential when data collection depends on staff to collect additional information. Formally presenting the subject of the audit and goals can help generate support and further insights regarding the audit subject and design. The goal of a clinical audit can be specific to local conditions, with no expectation of being generalisable to other clinics/ hospitals. For example, Rose et al. (2016a) reported how post-operative hypothermia was particularly prolonged in a referral clinic and it was suspected that

limited access to warming devices was an important contributing factor. Instituting the very simple change in practice of ensuring access to warming devices as well as mandating regular temperature monitoring was successful in improving temperature management.

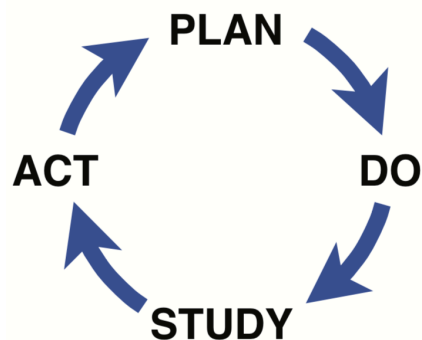


Figure 1: The Plan-Do-Study-Act cycle of a clinical audit. The cycle is continuous, represent the ongoing process of monitoring and improvement.

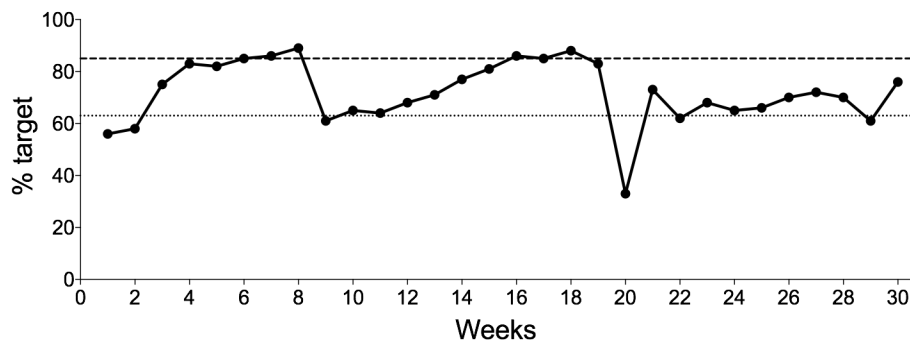


Figure 2: A run chart showing compliance with an outcome of interest over time. The horizontal lines represent the historical standard (lower line) and future target (upper line).

References:

Hofmeister et al. Development, implementation and impact of simple patient safety interventions in a university teaching hospital. *Vet Anaesth Analg* 2014; 41:243-248.

Langley et al. *The improvement guide: a practical approach to enhancing organizational performance*. 2nd ed. Jossey-Bass, San Francisco, CA. 2009

Mosedale. Introducing clinical audit to veterinary practice. *In Practice* 1998; 20:40-42.

Muir and Hubbell *Equine anesthesia: monitoring and emergency therapy*. 1st ed. Mosby, St Louis, MO. 1991

Rose et al. A clinical audit cycle of post-operative hypothermia in dogs. *J Small Anim Pract* 2016a; 57:447-452.

Rose et al. A systematic review of clinical audit in companion animal veterinary medicine. *BMC Vet Res* 2016b; 12:40.

Viner. Clinical effectiveness. What does it mean for practitioners - and cats? *J Feline Med Surg* 2010; 12:561-568.