Can correctly estimating surgical time improve patient surgical lists for the surgeon, the team and the patient.

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Introduction

A quality improvement audit was designed to help assess surgery length in the referral department to streamline the running and scheduling of procedures. It had been found that the surgeon was overbooked or running late for evening consultations and the practice needed to assess why this was.
The impact of incorrectly estimating surgical time is reported in human medical literature with a negative impact on the hospital, staff and patients. Overbooking can add pressure and stress to the surgeon and their team, as well as impact patient safety.

Based on human studies, it was hypothesised that the veterinary surgeon would correctly estimate the time for 30% of surgical cases.

Method

Using 50 randomly selected referral cases, the predicted and actual surgical time was audited.
Data was collected from the anaesthetic sheet on the Smartflow (Idexx UK) system, and the actual surgical time had been recorded by the anaesthetic nurse.
The predicted time given by the surgeon was taken from the pre-operative checklist found on Smartflow.
The results from the first audit were made available to the surgeon. A second audit of a further 50 cases was performed seven months later using the same method.
Cases were a range of species, age, procedure and nursing team combination.

"The cumulative consequences of any kind of inefficiency in operating room management lead to a significant loss of revenue for the hospital, staff dissatisfaction, and patient care disruption." (1)

Fatigue and increased workload can increase the risk of medication errors in human nurses (2)

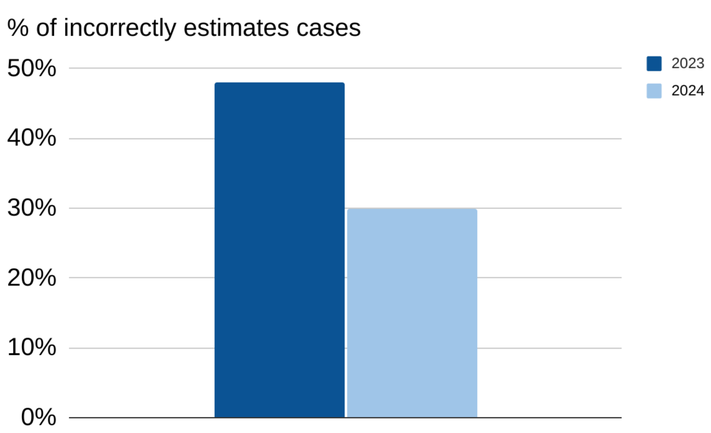
When under stress memory suffers, stress also causes irritability and nervousness which could result in mistakes (3).

We are more prone to short-term memory loss when fatigued or distracted.(4)

Ryan et al, 2022 found that 25% of human surgical cases were correctly estimated (5)

Laskin et al, 2013 found that human surgeons correctly estimated surgical times 26% of the time (6)

Frapwell et al (2022) completed a study looking into the veterinary surgeon's ability to estimate length, they found a mean error of 33.3% (7)



Results

The audit results from 2023 found that the surgeon correctly estimated 52% of cases, the average predicted time was underestimated by 29 minutes.

The second audit found that the surgeon correctly estimated 70% of cases, the average predicted time was underestimated by 19 minutes.

Conclusion

This audit and study disproved the hypothesis, this surgeon was able to predict surgical time more accurately than human studies had shown. There was also an improvement on the ability to correctly estimate surgical time, estimated times in the second audit were more accurate. During a discussion, the surgeon explained there was now a better awareness of the duration of the surgeries and now they had taken into consideration time required for any complications or unexpected events during surgery.
The results of the audit were able to be used in the procedule bookings, which allowed better planning of the day and encouraged the vet to leave emergency surgery spaces in the diary and allow one day a month with no procedures to allow time for admin, paperwork and full stock checks.

Improvements and further studies
To audit the whole anaesthetic time and not just surgical, allowing the assessment of the operating day and where any hold ups may be or training is required.
When selecting cases, choose an even number of species, age, procedure type and a range of nursing team combinations to see whether these have an effect on overall time.
Using anonymous questionnaire methods, levels of stress could be recorded and measured against the days caseload to help assess staff wellness.

This data can be carried forward within the veterinary industry to help better understand the need for correct planning and communication, create a better understanding of the effects of delayed starts or inefficiencies, and how these can affect the team and the patients.

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