We need to talk about error: the causes and types of mistakes in veterinary practice

C. Oxtoby, E. Ferguson, K. White, L. Mossop

Context
Patient safety research in human medicine suggests mistakes made by doctors and nurses kill more people annually than AIDS or breast cancer and almost one in 10 visits to hospital result in some level of adverse event. Studies investigating the causes of disasters in other safety-critical industries, such as aviation and nuclear power, agree that human factors are major contributors to at least 70 per cent of accidents. From this perspective, individuals are a final fallible link in a chain of events. These workers, no matter how highly trained and motivated, are still fundamentally subject to their cognitive limitations. Other factors within the workplace, often far removed from the person at the point of care, are also considered for the influence they have on people’s behaviour and decision making. Medicine now recognises the importance of this systems perspective approach to error as it has greater potential to identify the true causes of errors and prevent recurrence, rather than simply punishing the clinician at the sharp end. Frameworks of error causes and types have been developed to help professionals analyse the root causes of mistakes and design interventions to reduce their occurrence.

Vets also make mistakes and cause unintentional harm to patients. However, the profession has no compound mortality and morbidity figures, no frameworks of medical error and an immature understanding of human factors and their contribution to the causes of veterinary mistakes. This paper aims to identify the types and causes of error in veterinary practice and provide a framework to aid their analysis and understanding.

Results
The framework of error is shown in Fig 1. Analysis of the insurance claims data indicated that surgery accounted for 41 per cent of the total errors, medical treatment for 30 per cent and anaesthesia for only 2 per cent.

Main conclusion
The causes of error in veterinary practice are similar to those in other safety-critical industries. Cognitive limitations and deficiencies in non-technical skills such as communication and leadership are identified, as well as problems with equipment design and ergonomics. Errors relating to surgery are the most common type of error. This mirrors human medicine where cognitive limitations and deficient communication skills have been identified as the leading causes of mistakes and almost 40 per cent of adverse events are related to surgical operations.

Approach
A qualitative approach using thematic analysis was carried out on 678 records of insurance claims obtained from a professional indemnity insurer and the transcripts of nine focus groups made up of practising vets and nurses. Professionals discussed personal experiences of mistakes using the critical incident technique, a form of root cause analysis. The themes that emerged from both these data sets were merged to form an overall framework of error that was organised into two branches relating to the individual or the system. A quantitative approach was used to order by frequency 2238 types of insurance claims from a five-year period, into categories of error type.

Interpretation
Insurance claims records do not represent a random sample of the population and are reported for the purpose of litigation. The focus group data like any interview data, are subject to social desirability, hindsight and recall biases. However, the findings are reflected in the medical and safety literature, which confers some degree of validity.

Significance of findings
This study presents empirical evidence of the effect that cognitive limitations, poor leadership and deficient communication can have on patient outcomes and quality of care. There is little continuing professional development available targeting the non-technical skill set and interprofessional teamwork and the importance of clinical leadership is under-resourced and researched, especially in comparison to the field of human medicine. The authors hope the error framework may be used to inform the discussion of critical incidents during mortality and morbidity meetings, and to direct practice resources in an effort to prevent mistakes rather than simply reacting to the actions of the clinician after the event. It is hoped that it will stimulate further research and interest in human factors, and their application in the development of patient safety interventions such as surgical and anaesthetic checklists and team training tools.
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