A Content and Thematic Analysis of Closed Claims Resulting in Death

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INTRODUCTION

Mortality attributable to anesthesia has declined significantly over time. The reasons include the introduction of respiratory monitoring, use of evidence based practice guidelines, and advances in teamwork and education. Although anesthetic mortality has improved, studies evaluating the contribution of anesthesia to peri-operative mortality are needed to enable improvements in quality and safety.

Qualitative research methodology can be an effective approach to providing clarity and an understanding of anesthesia adverse events. Using content and thematic analysis, closed claims where the outcome was death were reviewed.

PURPOSE

The purpose of this study was to identify themes that would provide unique insights into the events leading up to death with a focus on the role anesthesia may or may not have had in the outcome.

MATERIALS & METHODS

Content and thematic analysis, a qualitative framework approach, was employed to analyze closed malpractice claims. Through this method, patterns, features, and themes specific to the sample were identified facilitating interpretation and understanding of the dataset.

In 2015, the insurer, CNA, made available to the AANA Foundation Closed Claim Research Team 245 closed claim files. Applying a qualitative thematic framework approach, data from each file were extracted and entered onto a previously validated closed claim instrument. The instrument has four distinct sections including the reviewer's narrative, reviewer's assessment, listing of accusations, and a description of key lessons learned. From the narrative, code words capturing the phenomena of interest were generated. Through analytical reflection of the data set, themes were identified. Prior to data entry, all research claim reviewers participated in a protocol session and interrater reliability was established.

RESULTS

Of the 245 files reviewed, an adverse event leading to death occurred in 87 of the claims. All claims were analyzed adhering to the described method. Four major themes emerged from the thematic analysis: (1) patient factors, (2) anesthesia provider factors, (3) environmental factors, and (4) team/group factors. In addition, 16 subthemes were identified. Excerpts demonstrating evidence of the major themes were drawn from the claims.

Major Themes and Related Subthemes

Themes	Definition	Subthemes
Patient Factors	What is innate to the patient and what the patient has control over	• Pre-existing conditions • Lack of disclosure • Self-medication
Anesthesia Provider Factors	CRNA	• Knowledge deficit • Inappropriate response • Communication failure • Failing/inability to obtain information regarding patient
Environmental Factors	Circumstances, objects or conditions by which one is surrounded	• Setting • Adequate resources • Equipment
Team/Group Factors	Individuals interacting to provide patient care	• Situational awareness • Communication failure • Shared liability • Transfer of care • Normalization of deviance • Knowledge/skills/qualifications of team members

Events Leading to Death

Event	Frequency	Percent
Respiratory Event		
Airway Loss	23	26.5
Aspiration	7	8
Cardiac Event		
Cardiac Arrest	15	17.2
Bradycardia	8	9.2
Myocardial Infarction	3	3.4
Drug Related		
Narcotics Only	6	6.9
Other	4	4.6
Hemorrhage	9	10.4
Other	12	13.8
Total	**87**	**100**

DISCUSSSION

The closed claim review revealed examples of patient factors potentially contributing to death including the presence of comorbidities and behaviors such as unwillingness to disclose information or noncompliance with medications and therapeutic regimens. Both individual anesthesia providers and healthcare teams experienced communication failures. Environmental factors included patient suitability or fit for the surgical environment and lack of appropriate resources and personnel. The closed claim review also revealed multiple instances of individuals but more often, teams deviating from known standards of care. The reviewers identified this drift from accepted standards as normalization of deviance which represents a break in safety culture. There are key lessons to be learned from the review of closed claims. The following table presents the lessons learned and recommendations for improving patient safety.

Lessons Learned and Recommendations to Improve Patient Safety

Lesson I: Effective Communication is Vital to Patient Safety:

Employ "SBAR"[20]- provides a common and predictable structure to the communication:
- "SBAR" stands for: (i) *situation* - what is going on with the patient?; (ii) *background* - what is the clinical background, or context?; (iii) *assessment* - what do I think the problem is?; and (iv) *recommendation* - what would I do to correct?

Use appropriate assertion:
- State the problem politely and persistently until you get an answer
- Don't "hint and hope"
- Focus on the problem and avoid the issue of who's "right "and who's "wrong"

Adopt critical language:
- Derived from the CUS program at United Airlines. It stands for "I'm *concerned*, I'm *uncomfortable*, this is *unsafe*, or I'm *scared*"
- Adopt within the culture as meaning: "we have a serious problem, stop and listen to me".

Improve situational awareness:
- Refers to the care team maintaining the "big picture" and thinking ahead to plan and discuss contingencies.
- Should include ongoing dialogue, which keeps members of the team up to date with what is happening and how they will respond if the situation changes.

Participate in debriefing:
- Spend a couple of minutes after a procedure, or at the end of a day, to assess what the team did well, what were the challenges, and what they will do differently the next time.

Lesson II: Not All Patients are Suitable for Surgery in Remote or Office Based Locations:

Adhere to the AANA Standards for Office Based Anesthesia Practice which establishes a common base for the delivery of quality patient care in these environments.[21]
- Consider the condition of the patient and the planned surgery in determining if there are appropriate resources to manage various levels of anesthesia.
- Develop policies that address patient selection criteria, monitoring equipment, availability of adequate numbers of well-trained support personnel and the ability to treat foreseeable complications.

Lesson III: Difficult Airways Can Be Encountered At Any Point in the Perioperative Period
- Patients with obstructive sleep apnea (OSA) are at increased risk for perioperative complications including post discharge death.
- Assess early for causes of hypoxia when bradycardia develops.
- Continuously monitor ventilation and oxygenation, and be vigilant in recognizing imminent respiratory adverse events during all anesthetics.
- Use of end-tidal capnography to monitor ventilation is particularly important, as oxygen saturation is slow to decrease in the presence of supplemental oxygen.
- Adhere to the ASA Difficult Airway Algorithm[22]

CONCLUSION

In summary, the AANA Foundation Closed Claim Research Team identified 87 deaths resulting in closed malpractice claims during a 10-year period. Major events leading to death were categorized as respiratory, cardiac and drug related. The major themes identified as contributing to events leading to death include patient, provider, environmental and team/group factors. The data derived from analysis of these claims exposed important and previously unappreciated aspects of adverse outcomes in cases involving CRNAs.

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