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Anaesthesia Error in United States: Reasons for Mismanagement

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Anaesthesia Error in United States: Reasons for Mismanagement

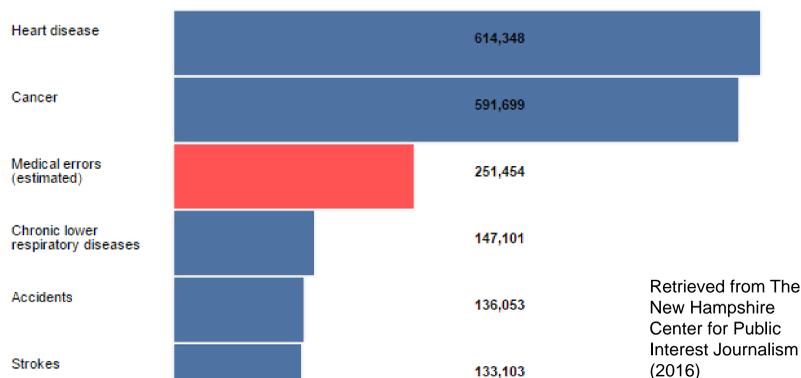
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Abstract

Medical error is an all too common occurrence in the United States. Specifically, medical error and mismanagement of anesthesia can have lifelong and potentially fatal consequences for patients. Furthermore, medication mistakes cost nearly \$21 billion annually in the United States, and 100% of surveyed anesthesiologists above the age of 70 reported that one of their mistakes resulted in a medical malpractice lawsuit (NEHI, 2011; Peckham, 2016). A literature review was conducted to investigate the scope and significance of anesthesia error in the United States, reasons for errors and mismanagement of anesthesia, and current policies in place to protect patients from anesthesia error. We found that patients characterized by obesity, diabetes and asthma were most vulnerable to anesthesia error. Furthermore, errors in judgement and failure to check and monitor equipment both were major reasons for anesthesia error. Recommendations for further preventing these type of errors were provided.

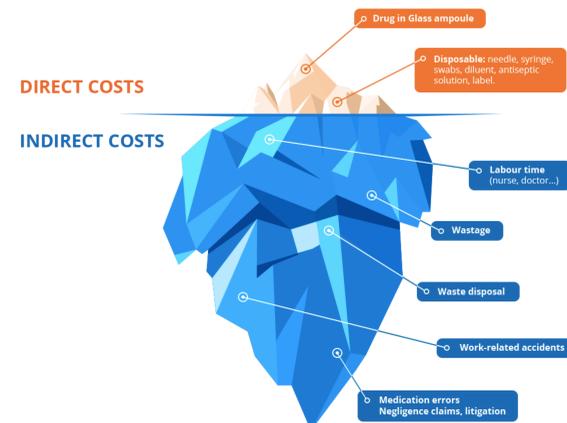
Background & Significance

- Nearly 21 million North American patients receive anesthesia each year, which puts them at risk for complications that arise from anesthesia mismanagement.
- Annually, there are 20,000-40,000 cases of wakefulness under anesthesia, 70% of which lead to PTSD
- Anesthesia alone is responsible for death in 1 of every 200,000 patients that receive it.
- Financial costs of medication errors are estimated at \$21 billion annually.
- By the age of 70, nearly all anesthesiologists will have faced a medical malpractice lawsuit.



Methods

- The following are the phrases searched to identify articles: "intraoperative awareness," "wakefulness during surgery," "anesthesia mismanagement," "obesity and anesthesia", "costs of medication mistakes," "policies," and "anesthesia medical error."
- Sources were found using key phrase searches in several online databases. Articles were included based on their overall relevance to the discussed topic, as well as their legitimacy in the academic community



[Medication Error Costs]. (2017). Retrieved from <http://www.aguettantpfs.com/clinical-cost-reduction/>

Findings

FACTORS LEADING TO ERROR

- Obesity, Diabetes, Asthma and Pediatric complications are the leading challenges for anesthesia resulting in medical error.
- There are no studies or evidence-based guidelines for the maximum doses for obese patients
- interruption of the Diabetic patient's food intake can also intensify their symptoms but, due to the sedation, can go undetected and missed during the surgery
- Patients with asthma are ultimately at an increased risk for a life-threatening bronchospasm occurring during surgery
- Equipment problems leading to errors include inability to ventilate, failure to deliver adequate oxygen, and/or misleading information from monitors
- Dosage is based on weight, age, gender, physical and mental conditions of that patient

STUDIES

- Investigated the rate of anesthetic related problems between 2002 and 2004 at Birmingham Children's Hospital
- Of the 28,023 procedures performed, 668 incidents occurred. After assessing each incident, it was determined 284 incidents originated from human error.
- An error of judgement accounted for 122 of these cases (43%).
 - Inadequate depth of anesthesia
 - Inadvisable anesthetic technique
 - Anesthetizing child with URTI
 - Trachea extubated at wrong time
- The failure to check or monitor equipment during surgery accounted for 50 of these cases (17.6%).
- Another study conducted by the Japanese Society of Anesthesiologists (JSA) recorded 233 incidents of medication errors at their institution over 8 years. Of the 233 incidents, 25% were made by overdosing (Yamamoto et al., 2008).

Current Measures

- Bispectral Index (BIS) indicators are sometimes used to detect the degree of consciousness in patients undergoing surgery
- Provider education can be enhanced to reduce errors. This includes information about drug administration, ways to reduce noise, and standardizing ways to perform tasks
- The Ohio Hospital Association introduced the following model: check equipment, discuss risk factors with the patient, understand prescription side effects, and talking with the patient if an intraoperative episode occurs

Discussion & Recommendations

- We know that anesthesia mistakes are a common occurrence in the United States and can cause harm
- Implementation of procedures, such as a checklist, for the anesthesiologist to follow would help reduce opportunities for errors
- Support groups and discussion panels would allow physicians to learn from mistakes
- Better monitoring for at risk patients while under sedation
- Initiating a checks and balance system between Physician and Pharmacist communication
- Electronic record dosage calculation confirmation for pediatric patients to prevent overdose

Conclusion

The healthcare system has in fact become a double-edged sword in too many cases. The incredible advancements that we have gained in medicine and medical care, such as sedatives and their purpose for painless surgeries, are still accompanied by many medical errors that interrupt and put those advancements at a standstill for periods of time. It is crucial that we devote time, research and policies towards ensuring the decrease of preventable medical errors in the mismanagement of anesthesia during surgery.

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