ANAESTHESIA AND PATIENT SAFETY

Essay

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AAGBI	Association of Anesthetists of Great Britain and Ireland
ABG	arterial blood gas
ACC/AHA	The American Heart Association/ American College of Cardiology
ACLS	advanced cardiac life support
ACRM	Anesthesia crisis resource management
AlkP	Alkaline phosphatase
APSF	The Anesthesia Patient Safety Foundation
ASA	The American Society of Anesthesiologists
ASA PS ...	The American Society of Anesthesiologists Physical score
AST	Aspartate trans-aminase
B-HCG	Beta Human chorionic Gonadotrophines
BMI	Body mass index
BUN	Blood Urea Nitrogen
CAD	Coronary artery disease
CBC	Complete blood count
CHF	Congestive Heart Failure
CPR	cardiopulmonary resuscitation
Creat	Creatinine

CXR ..... Chest x ray

ECG ..... Electro cardio gram

ESU ..... electrosurgical unit

FEV1 ..... forced expiratory volume in 1 second

HBV ..... Hepatitis B virus

HCV ..... Hepatitis C virus

HgbA1c ... glycosylated hemoglobin

HTN ..... Hypertension

ICU ..... Intensive care unit

IOM ..... Institute of Medicine

IPPV ..... Intermittent positive pressure ventilation

JCAHO ... The Joint Commission on Accreditation of Healthcare Organizations

kPa ..... Kilo pascal

LVEF ..... left ventricular ejection fraction

MAC ..... monitored anesthesia care

Mets ..... Metabolic equivalent

MI ..... Myocardial Infarction

NYHA ..... New York Heart Association's

OR ..... operating room

PACU ..... The post anesthesia care unit

PFTs ..... pulmonary function tests

plt ..... platelets

PT ..... Prothrombin time

PTT ..... Partial thromboplastin time

SBAR ..... Situation, the Background, Assessment, and Recommendations

SSD ..... sterile supplies department

STEEEP . safe, timely, effective, efficient, equitable, and patient-centered

TB ..... Tuberculosis

Introduction

Patient safety and quality improvement are important for all care providers, especially providers of anesthesia **(Bierstein, 2007)**.

Knowledge of the processes and outcomes that are being highlighted nationally and identification of new areas for improvement are critical to our role as perioperative caregivers **(Pronovost et al., 2006)**

We must determine how to integrate the quality improvement and data acquisition into our workflow to be successful because feedback is imperative to success **(Sexton et al., 2006)**

Anesthesiology has long been acknowledged as a leader in patient safety and the continued national highlight on improvement in patient safety and quality offers leadership opportunities for the perioperative caregivers **(Makary et al., 2006)**

Definition of Safety and Quality of Safety

Patient safety and quality is firmly based on the concept that the patient is the center of care. The person or team performing the procedure has requirements that must be accommodated in the anesthetic plan. However, the patient's concerns, fears, values, and expectations also must be addressed. Emphasizing that patient perception must be considered in the design of a safe, high-quality anesthetic experience **(Cooper, 2008).**

The patient's most fundamental needs are for high quality and complete safety. Meeting these expectations demands knowledge, skills, and continuous vigilance. Equally important is a system that ensures safe practitioners; provides the appropriate drugs, technologies, policies, and procedures to foster safe practice; monitors performance of the entire process (including both outcomes and patient satisfaction); identifies safety and quality problems; and implements corrections. All of these demand a culture of safety and quality at all levels of the system, a culture that supports these needs not just in word, but also in deeds and actions **(Longnecker et al., 2008).**

History of Patient Safety in Anesthesia

The roots of safety run deep in anesthesiology. Dating to the first survey of anesthetic deaths, there has been a regular and continuous self-examination within the anesthesia profession to understand the causes of harm and how to prevent them. In the modern era of healthcare, anesthesia was the specialty that coined the term "patient safety," which is now in the lexicon of healthcare and broadly applied to all medical disciplines **(Vandam, 1997).**

The history of safety in anesthesiology may have begun with the first description of an anesthetic death that of Hannah Greener, who died during administration of chloroform for amputation of her large toe in 1848 **(Baker, 2005).**

The concept of "**patient safety**" arose in the early 1980s, in response to several factors. The first study of the contribution of human error in anesthesia was reported in 1978, and was followed by later studies of a larger cohort and specific issues of how errors occur and strategies for their prevention **(Cooper et al., 2008).**

The American Society of Anesthesiologists (ASA), under its then president, Ellison C. Pierce, Jr., MD, created a committee on Patient Safety and Risk Management, which likely was the first use of the term "patient safety" **(Pierce, 1996).**

The Anesthesia Patient Safety Foundation (APSF) was formed in 1985. Its newsletter, research program, and other activities represented the first organized efforts in healthcare to address patient safety as a single topic. The ASA later sponsored studies of closed malpractice claims, which led to numerous reports about causes of the most severe adverse events and their trends **(Cheney, 1999).**

Many efforts contributed to what appears to be a substantial reduction in catastrophic adverse anesthesia outcomes among relatively healthy patients **(Gaba, 2000).**

Among these were improvements in educational programs, safer drugs and equipment, more intense patient monitoring (especially oxygen analyzers, pulse oximetry, and capnography), and new technologies for managing difficult airways (a specific contributor to numerous severe adverse outcomes). Standards and guidelines for anesthesia care also played a role in reducing adverse events **(Cooper et al., 2008).**

DEFINING SAFETY AND QUALITY

The key terms commonly used to discuss quality and patient safety are as follows:

- ***Patient safety:*** Is the avoidance, prevention, and amelioration of adverse outcomes or injuries stemming from the processes of healthcare. These events include "errors," "deviations," and "accidents." Safety emerges from the

interactions among the components of the system; it does not reside in a single person, device, or department. Improving safety depends on learning how safety emerges from the interactions of the components through analysis of "near misses" and adverse outcomes or injuries. Patient safety is a subset of healthcare quality **(Cooper et al, 2008).**

- ***Quality of care:*** Is the extent to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge **(Lohr -KNE, 1990).**

- ***Patient-centered care:*** Encompasses the qualities of compassion, empathy, open and complete communication, and responsiveness to the needs and preferences of each patient **(Cooper et al., 2008).**

- ***Quality assurance:*** Is the formal and systematic monitoring and reviewing of medical care delivery and outcome; designing activities to improve healthcare and to overcome identified deficiencies in providers, facilities, or support systems; and the carrying out of follow up steps or procedures to ensure that actions have been effective and no new problems have been introduced **(Baker et al., 2005).**

- ***Adverse event:*** Is an injury that was caused by medical management that results in measurable disability.

- ***Accident:*** Is an unplanned, unexpected, and undesired event, usually with an adverse consequence.

- ***Error:*** Occurs when a planned sequence of mental or physical activities fails to achieve its intended outcome and these failures cannot be attributed to the intervention of some chance agency

- ***Risk management:*** Is the clinical and administrative activities undertaken to identify, evaluate, and reduce the risk of injury to patients, staff, and visitors, and to identify, evaluate, and reduce the risk of loss to the organization itself **(Cooper et al., 2008).**

Quality and safety goals must be met before, during, and after application of the anesthetic, including the various transport processes. Within this framework, constraints are introduced by the needs of all parties in the care process, including the expectations of other clinicians (e.g., surgeon or other operator, medical consultants), facilities (e.g., hospital or ambulatory care site), and the patient (or family or guardian, for example). Sometimes these are competing expectations, requiring thoughtful tradeoffs based on essential priorities. When balancing these tradeoffs, involvement of the patient is a key to positive patient satisfaction with the overall process **(Longnecker et al., 2008).**

The concepts of quality and safety are a continuum. There is no uniform agreement on their differences in the larger