

Tracking and Improving Patient Safety During Anesthesia

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Anesthesiologists track and correct problems during each anesthetic and this is a major part of the practice of anesthesiology. Adding up all of the problems that occur in each anesthetic and making sense of all of this information is essential to making improvements in the quality and safety of all anesthetics.

Over the past several decades, the improvements in care provided by anesthesiologists have resulted in an extraordinary decrease in complications and death associated with anesthesia. This has occurred due to improvements in the techniques and drugs available and to a careful ongoing evaluation and correction of problems associated with anesthetics. The American Society of Anesthesiologists (ASA) and the Anesthesia Patient Safety Foundation (APSF) have been leaders in promoting and improving safe practices and better methods of monitoring patient well being.

One way that safety has been improved by these organizations is by establishing consistent high standards of practice, and guidelines to practice that are based on the best science available. Other improvements have resulted from the analysis of reports of problems and “near misses” from operating rooms around the country. This type of central reporting is important in providing an early warning of problems that might occur too infrequently for individual organizations to detect them. Such evaluations lead to changes in practice as do the development of better ways to measure how well patients are doing during operations. For example, 20 years ago anesthesiologists began to use devices that continuously measure of oxygen levels in the blood. As a result, dangerous decreases in oxygen level are detected rapidly and can be corrected quickly. This has greatly reduced the occurrence of brain damage due to lack of oxygen.

Evaluation of each anesthetic given helps to discover problems. When the results are compared between individuals and institutions, important, but infrequent problems

are recognized. Actions taken to reduce them improves safety. Much of the theory of how to measure and improve safety and quality comes from a variety of sources. These include industry, agriculture, and statistics. They are also very dependent on the work of W. Edwards Deming, the individual most responsible for the development of the concept of continuous quality improvement. The ways hospitals and individual Departments of Anesthesiology measure quality and outcome come mostly from methods promoted by the ASA, and Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Many governmental regulations are also intended to improve safety. When organizations pool their data, they are more likely to recognize previously unknown threats. When this happens, they are better able to work together to plan ways to improve safety. Some issues that limit effective pooling of data include concerns for privacy, liability, and the need for agreement on how to best collect and analyze the information efficiently.

Regardless of the healthcare organization, some methods of evaluating and correcting problems have become common. Every time a patient is anesthetized, problems associated with the anesthetic are recorded, usually on a quality report form. The kinds of problems that are reported include: difficulty managing ventilation, blood pressure problems, equipment malfunctions, and other unexpected difficulties or inefficiencies. The number of possible problems tracked on quality report forms varies from a dozen or so to several dozen. The data on these forms are usually transferred to a computer database. From this database, one can analyze the problems, the types of patient having them, the locations in which they occurred, the types of operations during which they occurred, the physicians and nurses involved and the way in which each of these relates to one another. By analyzing trends and the causes of the problems, solutions are developed to reduce their occurrence. The solutions may involve purchasing new or better equipment, changing medical practices, or improving the training of members of the operating room team.

Anesthesiologists have been leaders in the field of safety and quality improvement. Research done by anesthesiologists in improving outcome has become a model for patient safety.