



BMH Med. J. 2018;5(1):24-26 **Brief Review**

Safety in Anaesthesia

MC Rajesh

Baby Memorial Hospital, Kozhikode, Kerala, India. PIN: 673004

Address for Correspondence: Dr. MC Rajesh MD, MBA, Senior Consultant Anaesthesiologist, Baby Memorial Hospital, Kozhikode, Kerala, India. PIN: 673004. E- mail: rithraj2@yahoo.co.in

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“Safety is not an intellectual exercise to keep us in work. It is a matter of life and death. It is the sum of our contributions to safety management that determines whether the people we work with live or die”- Sir Brian Appleton.

Anaesthesiologists are proud of their reputation for safety!

From the first reported anaesthesia mishap onwards (Hannah Greener about 170 years ago) anaesthesiologists were always concerned about the safety of their patients. Anaesthesia - related mortality is always an important public health concern and the fact is that it's preventable most of the time. Over the years, things have evolved drastically in favour of patient's safety, thanks to the untiring work of anaesthesiology fraternity. Awareness by the lay public and medical administrators also played a major role.

Now, it may be surprising know the fact that it is the only specialty in health care to have attained the six sigma defect rate!! [1] (A six sigma process incidentally is defined as one in which 99.99966% of the end product are statistically free of defect). There are innumerable studies from the 19th century onwards which clearly showed a reduction in anaesthesia related mortality. In fact, from 1980 onwards, there is a drastic reduction (10 fold decrease) in anaesthesia related mortality [2]. Statistics even show a steep reduction in morbidity associated with anaesthesia over the years [1]. Based on the results of peri-operative mortality, the specialty has been hailed as the model of improvements and patient safety in medical science [1].

So how did the speciality attain this invincible level? Safety is the result of different components of the anaesthesia system, i.e., professionals, equipments and facilities. Compromising any of the above components can pose the risk of perioperative mishaps! There have been tireless efforts by the past anaesthesia fraternity to improve the facilities (getting proper monitors and other equipments like anaesthesia machine with inbuilt safety features). The essence of all monitors is to detect impairment in tissue oxygenation! Academic refresher courses and workshops will help the professionals to update their current understanding of the subject and sharpen their skills. There are encouraging feedbacks regarding simulation based workshops in terms of communication and decision making skills. Increasing the knowledge base will help in decision making and avoid errors in judgment!

Present day anaesthesia practice involves lot of checklists and protocols. These were evolved over a

time looking into and analyzing the reported errors and adopting what is best for the evidence based medicine. There are international standards for conducting the safe practice of Anaesthesia, which was adopted by the World Federation of Society of Anaesthesiologists on 13th June 1992 [3]. This was later on subjected to further revisions periodically. But the most important component is the presence of a qualified anaesthesia provider! So the major credit for making anaesthesia safe should go undoubtedly to anaesthesiologist itself. Only a trained professional can interpret and correct early warning signs from the monitor!

The evolution process towards safety has similarity with that of aviation industry [4]. It is true that safety precautions are adapted after analyzing the so-called mistakes or deficiencies in the system. Human errors in the system are always identifiable, predictable, repetitive and so preventable! So how do we know something went wrong unless the person involved in the error reports the same in the medical forum? Anaesthesiologists are the first among medical professionals to evolve such system called incident reporting. Reported incidents may be anonymous and if known also must be handled in a non-punitive manner. Errors are later on subjected to technical dissection and analysis to find out corrective steps. This will definitely lead to an enhanced learning, correction and prevent it from recurring.

The pioneering work in this regard was done by Cooper [4] in 1978. What he did was interviewing staff and residents in anaesthesia to analyze (root cause analysis) preventable incidents [5]. In addition to initiating the corrective strategies, due credit must also be given to Cooper for recognizing near misses (more common than adverse events) and pointing out the limitations of retrospective data. There were subsequent studies on critical incidents from Cooper and colleagues with the objective of learning from mistakes rather than allocating blame [6]! Years later Runciman developed Australian Incident Monitoring Study [4] (Incident reporting). So all these laid the foundation for the anonymous reporting of critical incidents and definitely improved the safety standards in anaesthesia. It has to be put on records that the anaesthesiologists efforts in this direction started even before the WHO Safe Surgery Saves Lives Project [7]!

In continuation of the objective to achieve higher safety standards, World Federation of Societies of Anaesthesiologists (WFSA) launched a campaign called SAFE-T (Safe Anaesthesia for Everyone Today). The main aim of the SAFE-T is to create awareness and improve knowledge about the importance of safe Anaesthesia and safe surgery. Improving safety levels invariably uplift the quality of care to a more efficient and effective standard. Quality of care complements the practice of evidence based medicine [8]. The best technique for patient safety and quality of care is simply reducing the gap between known best practices and the actual delivery of care. A good safety track record and better quality of care invariably translate to less number of medico-legal litigation. As professionals, we are so obsessed with correcting correctable causes for error during our practice. If you scan through any recent journals, there will be articles relating this topic. One interesting article is recent guidelines for safe medication practice in European Journal of Anaesthesiology [9]. A positive impact of reduced mortality is that insurance premiums for anaesthetists have remained stable or even decreased in European and North American countries [10]. Even with best medical practice, sometimes unreliable delivery can happen (adverse events) [11]. But that is part and parcel of the game!

The funny part of Anaesthesiologists' compulsion to avoid mistakes and strive for perfection is that most of us suffer from a bit of obsessive compulsive element!

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