“Primum non nocere: an impossible task in medicine?”

The Hippocratic principle of "primum non nocere" or "first, do no harm" is a central principle in medicine that emphasises the significance of avoiding harm to patients. Although this principle has been followed for centuries, some have questioned if it is an impossible task in modern medicine. This essay will explore the concept of "primum non nocere" in the context of patient safety with a particular interest in anaesthetics, discussing the challenges of achieving it and the measures that can be taken to promote patient safety(1).

One of the major challenges of achieving "primum non nocere" in medicine is the complexity of modern healthcare. Healthcare delivery is a multifaceted process that involves multiple stakeholders, including patients, healthcare providers and healthcare systems. As a result, errors can occur at any point in the process, resulting in harm to patients. A study published in the Journal of Patient Safety estimated that between 210,000 and 400,000 patients die each year in the United States due to preventable medical errors, making it the third leading cause of death in the country (2,3).

To address this issue, healthcare providers and healthcare systems must prioritise patient safety and take measures to minimise harm. One approach is to integrate evidence-based practices that have been shown to improve patient safety. For example, the use of electronic health records, computerised physician order entry, and barcode medication administration systems can reduce the risk of medication errors and adverse drug events (4). Similarly, the use of checklists and standardised protocols can improve communication and teamwork among healthcare providers and reduce the risk of errors.

In the field of anaesthesia, the principle of "primum non nocere" is particularly relevant, as anaesthesia administration carries serious risks. Anaesthetists must balance the risks of respiratory depression, cardiovascular instability, and other complications with the benefits of providing pain relief and allowing surgical procedures to be performed. To reduce harm, anaesthetists use a variety of techniques, including careful selection and administration of medications, monitoring of vital signs, and prompt response to changes in the patient's condition (5).

Anaesthesia providers also use standardised protocols and checklists to promote patient safety. For example, the World Health Organization developed a Surgical Safety Checklist that includes specific items related to anaesthesia administration, such as verifying the patient's identity and ensuring that the correct medication and dose are administered(6). A study published in the New England Journal of Medicine in 2009 found that the use of this checklist was associated with a significant reduction in mortality rates and complications during

surgery. The study included eight hospitals in eight cities around the world and involved over 7,000 patients undergoing non-cardiac surgery. The checklist was associated with a 36% reduction in the rate of death and a 47% reduction in the rate of complications (7). These findings highlight the importance of using standardised protocols and checklists to promote patient safety in healthcare.

Despite precautions such as double checking medications with a second provider, labelling medications with the patient's details, monitoring of vital signs and implementation of checklists, errors can still occur in anaesthesia administration. In a study published in the journal of Anesthesia and Analgesia in 2015, medication errors were found to occur in approximately 1 in 133 anaesthetics administered. While most of these errors did not result in patient harm, a small percentage did result in patient harm or death - 8.9% of errors resulted in harm, and 0.4% resulted in death (8). However, it is important to note that many of these errors were preventable and were caused by failures in communication or protocol adherence.

Communication is another critical factor in promoting patient safety in anaesthesia. Anesthesiologists must communicate effectively with patients, other healthcare providers, and their team members to ensure that everyone is in agreement regarding the patient's care plan. Anaesthetists must also communicate any potential risks or complications to the patient before administering anaesthesia. A study investigating the nature and causes of communication errors in anaesthesia analysed 1,004 reported adverse events from the US anaesthesia incident reporting system. They found that communication errors were the most common cause of adverse events, accounting for 23.5% of incidents (9). The majority of communication errors occurred during handoffs and transitions of care between anaesthesia providers. These errors included incomplete or incorrect information transfer, misinterpretation of information, and lack of communication altogether.

In order to better communicate and increase patient safety, a number of measures could be implemented. The standardised communication protocols such as the aforementioned WHOs Surgical Safety Checklist can reduce the risk of errors. Team briefings could be conducted prior to starting a procedure to ensure everyone on the team is on the same page regarding the procedure and any potential concerns. Read-backs, where after receiving an order or instruction, repeating it back to the person who gave it, can confirm understanding and accuracy (10). Improving a standardised handoff process that includes a comprehensive review of the patient's status, care plan and any pending issues or concerns can help identify and address potential problems before they become serious issues (11). By implementing these strategies, healthcare providers can promote better communication and increase patient safety in the field of anaesthetics.

Although some have questioned "primum non nocere" thinking it is an impossible task in modern medicine, I believe that although medicine can never be entirely risk-free, healthcare providers must take every possible measure to minimise harm and ensure the best possible outcomes for their patients. Through the use of standardised protocols, checklists, the development of a culture of safety, the use of evidence-based practices and cultivating an environment of open communication, I am confident healthcare providers can follow the principle of “primum non nocere” to create a culture of safety and ensure the best possible outcomes for their patients.

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