A foundational tenant of medicine, “primum non nocere” bestows the principle of non-maleficence upon its adherents. To reduce harm to patients, medical professionals must evaluate the necessity and impact of every action to minimize all unnecessary risks to their patients. A proposed intervention must respect patient wishes, adhere to best practices, and act proportionally to the pathology. Modern medicine employs an ever-increasing array of individualized care options and is growing exceedingly complex. With this complexity, a degree of intrinsic harm will continue to trouble practice, despite the best effort of physicians. Still, all healthcare professionals have an ethical and moral duty to minimize avoidable harm by updating practice guidelines, learning from past errors, and continuing to identify and address systemic causes of error to improve patient outcomes.

It is a rare, noteworthy news incident when a malicious actor performs in medicine. Instead, a preponderance of harm comes from medical error. In a seminal report published in 1999, the US Institute of Medicine defines an error as the “failure of a planned action to be completed as intended or use of a wrong plan to achieve an aim.”[1] These errors come in various forms, including misdiagnoses, medication errors and adverse drug events (ADEs), or surgical errors. International data has indicated that medical errors and unsafe care causing harm to patients impose a high burden through several metrics like morbidity, mortality, and economic measures.[2] While a less robust evaluation has occurred in Ireland, The Irish National Adverse Events Study found in 2015 an incidence of 10.3 events per 100 admissions, 71% of which were avoidable.[3] Adverse drug events, one of the most common types of medical error, profoundly impact affected patients. Globally, healthcare expenses due to medication error account for 1% of the total expenditure, which does not account for lost productivity or other trickle-down effects of these errors. [2]

Although studies report a variety of incidences of medication errors in anesthetic practice, recent international studies suggest as many as one erroneous event in every twenty medications administered perioperatively.[4] Perioperative medicine is especially error-prone since anesthesiologists prescribe, dispense, and administer drugs rather than a separate professional performing each step.[5] The nature of the operating theater leads to a complex and distracting environment, further complicating the administration of these drugs. Additionally, the injectable drugs anesthesiologists routinely utilize have increased rates of harm from errors.[5] Errors in anesthetic practice can have profound effects, have limited reversal options, and destabilize a situation precipitously. Like other errors, contributing factors include communication breakdowns, inadequate training, and systemic defects. These elements contribute to error-prone practice and unnecessary, avoidable harm imparted to patients.

All actors within healthcare, from its providers and their patients to the systemic administration, have the ability and responsibility to take action to reduce harm. Healthcare providers should follow organizational best practices and provide feedback to improve safety. Open reporting of near-miss events or errors may provide data to guide development of quality improvement measures. By remaining current with developing literature and organizational best practices, physicians further promote harm reduction for their patients. Healthcare providers also have a duty to promote a cooperative collaborative working environment between their colleagues and other allied healthcare professionals. Poor interprofessional communication and suboptimal teamwork is a leading contributor to medical error and patient harm. In ensuring openness, approachability, and mutual respect, all involved in a patient’s care can feel open to bringing up any issues regarding patient safety.

This culture of openness transcends the individual provider and requires healthcare administration action, as latent errors at a systemic level are an outsized contributor to patient harm. Global initiatives like the World Health Organization's Medicine Without Harm, and related Global Patient Safety Action Plan have outlined clear tenable goals to reduce unnecessary patient harm.[2] Like previous campaigns implementing surgical timeouts and other process improvements, this plan outlines distinct actionable steps at the national, regional, or local institution level for harm reduction and improving a patient's healthcare experience.

As the primary utilizers of healthcare, patients also should take an active role in their journey to reduce harm. Collaborating with their provider to express goals and limitations to care, exploration of this dialogue can promote more active participation. Open communication can be challenging due to frequently encountered barriers like hearing difficulty or comprehension challenges but proves essential to receiving care that does not cause harm. In palliative or critical care environments where non-maleficence and beneficence may be at odds, this communication is paramount to ensure provider and patient share common goals and expectations for their care. A shared understanding and alliance helps reduce the harm of a patient receiving undesired care and enduring invasive or dramatic interventions to reach an unwanted outcome.

While total elimination of harm remains a Sisyphean challenge, several implemented strategies reduce avoidable errors, suggesting further expansion will ensure the safest care possible. Identification of actionable steps with implementation at an administrative level ensures all departments are operating under best practices similarly. Due to the myriad training backgrounds, professional experiences, and individual preferences, anesthesiologists often have their own stylistic approach to providing perioperative care and anesthetic plan. A checklist and protocol-driven evidence-based approach will provide better adaptability and interinstitutional similarity, resulting in more reproducible harm-free patient care. Methods to reduce drug errors in anesthesiology include improving labeling and packaging of sound-alike look-alike drugs (SALADs), reducing the number of syringes drawn, and having distinct storage of high-risk drugs.[5] These evidence-based methods can limit latent errors and drive quality improvement but rely on a culture of patient safety and harm reduction. Support of staff reporting errors or near-miss events without concern of retribution prioritizes harm reduction overall and identifies contributing issues. In return, healthcare providers should speak up when encountering errors - even if no perceived deleterious outcome occurs. Only through this bipartisan relationship can future practice improve, and we reach a future free from avoidable harm.

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