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ADVANCES IN THE MANAGEMENT OF SUBARACHNOID HAEMORRHAGE

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Background: Aneurysmal subarachnoid haemorrhage (aSAH) is a medical emergency with significant risk of mortality and long-term neurological impairment. Over the past few years, advances in diagnostic imaging, neuromonitoring, and targeted therapies have shifted aSAH management toward an individualised, physiology-guided approach. Anaesthetists and intensivists are central to this process, contributing to early resuscitation, intraoperative neuroprotection, and postoperative intensive care.

Objectives: To summarise recent advances in the multidisciplinary management of aSAH, with a focus on anaesthetic implications, evolving practices in cerebral perfusion management, prevention of delayed cerebral ischaemia (DCI), and the integration of neuromonitoring.

Methods: A narrative review was conducted using peer-reviewed literature published recently, including landmark papers, clinical trials, guideline updates, and observational studies. Key topics included aneurysm securing, DCI prevention strategies, haemodynamic management, and neuromonitoring modalities.

Results: The updated 2023 AHA/ASA guidelines reaffirm early aneurysm securing (within 24–48 hours) as best practice. Modern intraoperative techniques and endovascular approaches continue to improve.[1] Nimodipine remains the only pharmacological agent with strong evidence for DCI prevention,[1] while newer agents like cilostazol and magnesium show mixed results.[2,3] Individualised blood pressure targets, often guided by autoregulation indices (e.g. PRx), are gaining traction in neurocritical care.[4,5] Multimodal neuromonitoring—including TCD, $PbtO_2$, and NIRS—offers real-time guidance but lacks high-level outcome evidence for widespread adoption.[5,6]

Conclusion: Recent advances in aSAH management emphasise early intervention, individualised cerebral perfusion strategies, and targeted DCI prevention. Anaesthetists play a vital role in delivering neuroprotective care throughout the perioperative and critical care journey. Future research should focus on validating neuromonitoring-guided therapy and precision-based treatment protocols.

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PUSHING BOUNDARIES: PERIOPERATIVE NEUROMONITORING IN TRAUMATIC BRAIN INJURY

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Background: Traumatic brain injury (TBI) is a major global health burden and a leading cause of death and disability, particularly in younger populations. Secondary brain injury, occurring in the hours and days following the primary insult, is a key determinant of outcome and may be exacerbated during the perioperative period by hypotension, hypoxia, hypoglycaemia or impaired cerebral autoregulation. Conventional monitoring (e.g. arterial pressure, end-tidal CO_2) may not adequately capture evolving cerebral pathophysiology. Emerging neuromonitoring technologies offer anaesthetists tools to detect and potentially mitigate secondary injury in real time.

Objectives: To explore the role of perioperative neuromonitoring in TBI management, evaluate current evidence for available modalities, and discuss future directions for integration into anaesthetic and critical care practice.

Methods: This review is based on recent clinical guidelines, observational studies, and randomised trials. It focuses on multimodal monitoring strategies including intracranial pressure (ICP) monitoring, brain tissue oxygenation ($PbtO_2$), cerebral autoregulation assessment (e.g. pressure reactivity index [PRx], optimal cerebral perfusion pressure [CPPoppt]), transcranial doppler (TCD), near-infrared spectroscopy (NIRS), and processed electroencephalography (EEG).

Results: Guided management using ICP and $PbtO_2$ has been associated with reduced mortality and improved physiological endpoints in severe TBI.[1,2] While intraoperative neuromonitoring is less well-studied, TCD and NIRS have shown promise in detecting cerebral hypoperfusion and impaired autoregulation during surgery.[3,4] However, high-quality outcome data from randomised trials remain limited.

Conclusion: Perioperative neuromonitoring in TBI patients has the potential to guide anaesthetic management and prevent secondary brain injury. Although widespread implementation is limited by technical, financial, and training barriers, anaesthetists are well-positioned to lead this paradigm shift. Further research is needed to validate neuromonitoring-guided algorithms and define their impact on long-term neurological outcomes.

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HOW I DO IT: ANAESTHESIA FOR MAJOR HPB SURGERY

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Emphasis will be placed on assessment and functional preservation of residual liver volume; prevention and management of postoperative liver dysfunction; predictors of blood loss and options for its limitation; the novel concept of hypovolaemic phlebotomy as a patient blood management technique to assist CVP control and minimise bleeding; the extra-hepatic pathophysiology of the cirrhotic and some aspects of ERAS for major HPB surgery.

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HOW I DO IT: ANAESTHESIA FOR MAJOR CENTRAL NERVOUS SYSTEM TUMOUR RESECTION

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Central nervous system tumours present a significant clinical burden in sub-Saharan Africa, with prevalence rates as high as 5 900 per 100 000 population. Gliomas and meningiomas are among the most common, and anaesthetic management is influenced by tumour histology, WHO classification (2021), and anatomical location. A comprehensive preoperative assessment includes documentation of pre-existing neurological deficits, screening for endocrine or electrolyte disturbances such as SIADH and cerebral salt wasting syndrome, and a thorough review of neuroimaging to identify mass effect, midline shift, hydrocephalus, or brainstem compression.

Various patient positions—such as supine, lateral, semi-lateral, park-bench, prone, or sitting—may be required to optimise surgical access. Each position necessitates careful consideration of its systemic physiological effects and the associated risk of complications, particularly venous air embolism.

Invasive arterial blood pressure monitoring should be employed, and preparation must be made for potential intra-operative blood loss. Intracranial pressure (ICP), as described by the Monro-Kellie doctrine, reflects the balance between brain tissue, blood, and cerebrospinal fluid volumes. Mass lesions may disrupt this balance, necessitating strategies to preserve cerebral perfusion pressure (CPP) and minimise secondary brain injury.

Key anaesthetic goals include maintaining CPP, reducing ICP, preserving cerebral autoregulation and blood flow, and optimising brain relaxation to facilitate surgical access. Anaesthetic agent selection should aim to reduce cerebral metabolic rate ($CMRO_2$) and support neuroprotection. Total intravenous anaesthesia (TIVA) with agents like propofol and remifentanil is preferred when intraoperative neurophysiological monitoring is used. Awake craniotomy may be indicated for tumours near the eloquent cortex. Stable haemodynamic control is essential throughout, with necessary provisions made to manage blood pressure fluctuations that may affect CPP.

Postoperative care in a high-dependency or intensive care setting allows for close neurological observation and early detection of endocrine, electrolyte, or cardiorespiratory complications.

RADICAL SELF-CARE: RESISTING THE GRIND AND BUILDING A CULTURE OF COLLECTIVE CARE

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In health care, the language of wellness has become increasingly common—resilience workshops, mindfulness apps and "self-care" initiatives abound. Yet, these interventions often place responsibility on individuals to manage burnout within systems that remain unchanged.

Speaking from lived experience within hospital settings and ongoing work with multidisciplinary staff, this session explores how radical self-care begins with dismantling the grind culture that rewards overwork and burnout. The presentation highlights a shift in values that legitimises humanity. Rather than formal research, this presentation is a praxis-based reflection: an invitation to rethink care not as something healthcare workers dispense to others, but as something we must build among ourselves. This is a call to resist the grind, disrupt performative wellness and reimagine what it means to work well together.

PAEDIATRIC PATIENT BLOOD MANAGEMENT

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Background: Paediatric Patient Blood Management (PBM) is an evidence-based bundle- of-care approach designed to optimise the care of children who may require blood transfusion. It aims to reduce unnecessary transfusions, minimise transfusion-related complications, and improve clinical outcomes by focusing on the patient's individual needs and physiological tolerance. The implementation of PBM remains a challenge, mostly in paediatric patients due to the lack of standardised guidelines for blood transfusion.

Objectives: Delineate the principles, challenges, and leadership imperatives for implementation of PBM in paediatric critical care units and in hospitals in general.

Methods: A review of current practices and recommendations was undertaken. The focus was to review the core pillars of PBM: (1) optimisation of red cell mass, (2) minimisation of blood loss, and (3) enhancement of anaemia tolerance. The role of clinical leadership in implementing the changes at institutional level, policy development, education, and quality improvement was another area of interest.

Results: Few factors contribute to effective PBM in children: (1) early detection and treatment of anaemia, (2) the use of blood conservative strategies, and (3) individualised blood transfusion thresholds. Leadership that will motivate for the formation of multidisciplinary transfusion committees, staff training, monitoring and evaluation systems to ensure adherence and best practices. Challenges include variability in practice, limited paediatric data, and resource constraints, especially in Low Resource Settings (LRS).

Conclusion: Implanting PBM in paediatrics is both a clinical necessity and a leadership responsibility. There is a need for further research in this domain.

ANAESTHETIC NEUROTOXICITY AND THE VULNERABLE BRAIN

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This talk aims to provide a balanced and evidence-based perspective on the concept of anaesthetic neurotoxicity, with a primary focus on paediatric patients, whose developing brains may be particularly susceptible to adverse effects. While the majority of concern has historically centred around infants and young children, I will also address emerging data on adult and elderly populations.

The talk will cover a review of the basic neurobiological mechanisms implicated in anaesthetic-induced neurotoxicity.

The trials that have shaped current clinical understanding will be reviewed.

Ultimately, the talk will seek to contextualise the current evidence in a pragmatic way for the practising anaesthetist.

MANAGING THE MONITORS: pEEG IN PRACTICE

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This talk will serve as a practical introduction to the use of perioperative processed electroencephalographic (pEEG) monitoring, with a focus on clinical application rather than

technical detail. While I will briefly describe the monitor itself, the primary emphasis will be on how to interpret and integrate pEEG data meaningfully into anaesthetic management.

pEEG has become increasingly popular as a tool for titrating anaesthesia, and reducing burst suppression during anaesthesia. However, the current trend towards "going as low as possible" often reflects a superficial understanding of the technology. This approach risks misinterpretation and inappropriate anaesthetic depth. Used correctly, pEEG offers a nuanced window into cerebral physiology but it requires context-specific interpretation.

This presentation will highlight the importance of integrating pEEG findings with patient-specific factors (such as age and comorbidities), the type of surgery, and the pharmacodynamic profiles of different anaesthetic agents. I will emphasise that pEEG should guide but never replace clinical judgement.

Particular attention will be given to total intravenous anaesthesia (TIVA), including the rationale for combining propofol with remifentanil or neuromuscular blockade to ensure appropriate EEG signatures and avoid misleading readings. Real-world clinical examples will be used to illustrate best practices, pitfalls, and strategies to avoid common errors.

The overarching aim of the talk is to foster interest in pEEG use, while underscoring the need for safe, informed, and patient-centred application. pEEG is a powerful tool—but only in the hands of a clinician who understands both its capabilities and its limitations.

RESILIENCE AND MENTAL WELLNESS AS ANAESTHETIC NURSE

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As an anaesthetic nurse with years of experience, I've learned that emotional strength and resilience are just as crucial as medical skills in high-pressure situations. I recall a particularly challenging experience when I lost a patient on the theatre table. It was devastating, and the emotional weight lingered, making it hard to shake off feelings of failure and grief. That experience broke me mentally, but it also taught me the importance of resilience and mental wellness.

Around the same time, I was involved in a dramatic case where we had to resuscitate a spinal surgery patient who coded on the table. We managed to stabilise the patient, but the procedure had to be aborted. It was an intense experience that tested my skills and emotional resilience. These experiences, though difficult, shaped me into a more compassionate and effective nurse.

I've developed coping strategies to deal with stress and emotional demands, recognising signs of burnout and seeking support from colleagues, mentors, and mental health professionals. Prioritising mental wellness, practising self-care, and seeking help when needed have become essential to my well-being and ability to provide quality care. Through self-reflection and growth, I've become better equipped to handle the demands of my job and deliver the best possible care for my patients.

My experiences have taught me that resilience and mental wellness are crucial for anaesthetic nurses. By acknowledging vulnerabilities and taking proactive steps to manage mental health, I've become a more confident and effective nurse. I'm committed to ongoing growth and self-care, ensuring I provide compassionate and quality care to my patients. Despite the challenges, I remain dedicated to my work, and these experiences have only strengthened my resolve to make a difference in the lives of those I care for.

PHYSIOLOGY OF ANAESTHESIA AND ASSOCIATED RISKS

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Introduction: This narrative explores the physiological effects of anaesthesia and related perioperative risks. Its aim is to offer a thorough overview of how anaesthesia affects various organ systems and to emphasise the significance of risk stratification and careful monitoring in maintaining patient safety.

Methods: This narrative review aimed at anaesthesia nurse education is based on a selection of current literature, clinical guidelines, and expert commentary. It synthesises findings from peer-reviewed sources, including textbooks, clinical practice guidelines, and academic lectures, to describe the physiological mechanisms and complications associated with anaesthesia.

Results: Anaesthesia induces a controlled, reversible coma-like state by altering brain oscillations and suppressing neuronal communication. It affects multiple organ systems:

- **Cardiovascular:** Anaesthesia agents influence cardiac output, heart rate, and blood pressure, with risks of myocardial infarction and arrhythmias, especially in patients with pre-existing conditions.
- **Respiratory:** Anaesthesia impairs airway reflexes, reduces respiratory drive, and decreases lung volumes, increasing the risk of hypoxia and postoperative pulmonary complications.
- **Neurological:** Most agents reduce cerebral metabolic rate and intracranial pressure, though some increase cerebral blood flow and lower seizure thresholds.
- **Thermoregulatory:** Anaesthesia induces hypothermia and may trigger malignant hyperthermia in genetically predisposed individuals.

- **Postoperative:** Common complications include pain, nausea, hypoventilation, cardiovascular instability, and cognitive dysfunction. Poor pain control can lead to adverse effects on the respiratory, cardiovascular, gastrointestinal, and psychological systems.

Conclusion: Anaesthesia is a complex physiological intervention that requires skilled management to mitigate risks. Anaesthetists play a crucial role in patient safety through preoperative assessment, intraoperative vigilance, and postoperative care. Understanding the systemic effects of anaesthesia is vital for improving outcomes and minimising complications.

DRUG ERRORS AND SAFETY

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Perioperative anaesthetic management involves the preparation and administration of drugs with a high potential for avoidable, iatrogenic harm. Our working environment is complex, distracting and often stressful. Drug safety requires the administration of the correct medication to the correct patient, at the correct time, in the correct dose, by the correct route, with accurate documentation.

In a 2006 survey of South African anaesthetists, 94% reported that they had made at least one error, while 22.6% reported at least four errors. A more recent survey from University of Stellenbosch also showed that 92.5% of participants have made a drug error and 89.2% a near-miss. Incorrect route of administration, potentially resulting in serious harm, accounted for 8.2% of drug errors.

There is often an over reliance on vigilance, mental focus and situational awareness in order to reduce the occurrence of drug errors. Human factors are a major source of drug errors and adverse drug reactions and human errors are an unavoidable outcome of poor human reliability.

Organisations, together with anaesthetists and nursing staff should ensure that systems are in place and that steps are taken to minimise drug errors and potential harm. This includes processes to allow timely access to drugs for emergency treatment and clinical efficiency, whilst also restricting access to mitigate drug errors and abuse. Reporting of drug errors should be encouraged so that we can learn from these mistakes and improve our preventative systems. Adequate and regular training on drug error prevention must be prioritised. Lastly, anaesthetists and all nursing staff involved should embrace the principles of a drug safety culture.

FLUIDS IN DKA

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Introduction: Diabetic ketoacidosis (DKA) is an acute complication of diabetes mellitus. Crystalloid fluids are the mainstay in management, in correcting hypovolaemia, electrolyte abnormalities, improving both ketone clearance and insulin responsiveness. Isotonic saline remains the fluid of choice. However, saline causes hyperchloremic metabolic acidosis, associated with renal impairment and has been found to delay DKA resolution when compared to balanced crystalloids.

Methods: Literature on fluid management in DKA was searched in PubMed and google scholar.

Results: A subgroup analysis of two cluster randomised trials (SMART and SALT – ED), randomised 172 adult patients to receiving isotonic saline or balanced crystalloids and found a shorter time to resolution with balanced crystalloid (median time to resolution: 13.0 hours; IQR: 9.5–18.8 hours) vs. saline (median: 16.9 hours; IQR: 11.9–34.5 hours) (adjusted hazard ratio [aHR] = 1.68; 95% CI, 1.18–2.38; $P = .004$). There are other researchers that have not found this difference. The typical fluid deficit is 100 m/kg, requiring about 500 ml to 1 000 ml/hour for the first four hours and this must be limited to fluid boluses of 250 ml in renal impairment and heart failure. Sodium bicarbonate use remains controversial, and it is not recommended for routine use unless pH < 7.1. Blood glucose levels < 14 mmol/l require infusion of 5–10% dextrose at 125 ml/hr.

Conclusion: The type of crystalloid solution required in the initial management of DKA remains isotonic saline, however, this has been challenged lately by studies showing faster resolution of DKA with balance crystalloid. There is still research ongoing on this subject; it remains to be seen if subsequent guidelines will change their recommendations regarding the type of crystalloid solution that clinicians should use in the initial management of DKA.

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COACHING IN THE MEDICAL SPACE

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The International Coaching Federation defines coaching as "partnering with clients in a thought-provoking and creative process that inspires them to maximise their personal and professional potential". The coaching conversation provides a structured, confidential, non-judgmental space in which the coach helps their client uncover the expert within, helping them conquer limiting beliefs, navigate challenges, and fulfil objectives. With an eye on the future, coaching fosters a sense of hope and empowerment, improved self-worth and greater self-awareness, self-management, resourcefulness, and resilience. Unlike in the corporate world, coaching in the medical world is an underutilised tool, but one that has been shown to help medical professionals achieve greater workplace engagement, professional fulfilment, and enhance their overall sense of wellbeing.

In this talk, learn what coaching entails and how being coached has helped colleagues in medicine overcome burnout and live with purpose, joy and fulfilment, personally and professionally.

PATIENT BLOOD MANAGEMENT (PBM) – FROM CONCEPT TO WORLDWIDE BLOOD HEALTH PARADIGM

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Approximately three billion people worldwide suffer from iron deficiency and anaemia, with another 600 million affected by acute or chronic blood loss and bleeding disorders. These conditions significantly contribute to morbidity, mortality, and healthcare resource use, while also impairing cognitive development, quality of life, and productivity. For decades, the scale and severity of this global health challenge have been largely overlooked, partly due to the traditional view of blood as an easily replaceable resource supplied by voluntary donors. However, growing evidence highlights the importance of managing a patient's own blood through aetiology-specific treatment of anaemia, blood loss, and coagulopathy. Such targeted, bundled interventions have been shown to improve patient outcomes, lower healthcare costs, and minimise the need for transfusions.[1] This new paradigm is described as Patient Blood Management (PBM), an evidence-based, comprehensive model of care that focuses on optimising a patient's own blood. The ultimate goal of PBM is to achieve blood health, the optimal function of individual blood components and their interactions with other organs and physiological systems.[2] Recognising its importance, the World Health Organization (WHO) has urged member states to rapidly implement PBM as a standard of care. To support this, the WHO has published the *Guidance on Implementing Patient Blood Management to Improve Global Blood Health Status*, providing a strategic framework to help Ministries and Health Departments integrate PBM into healthcare systems in collaboration with local health organisations and hospitals.[3]

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PERSONALISED ANAESTHESIA: TAILORING TECHNIQUES FOR INDIVIDUAL PATIENT NEEDS

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Precision medicine refers to an approach where interventions are directed towards a patient's unique genetics, clinical history and physiology. Personalised anaesthesia is a subset of this paradigm shift from standardised protocols towards tailored techniques. The goal of this is to enhance patient safety and satisfaction, and increase efficacy. It also provides benefits to the healthcare system at large by enhancing recovery after surgery, leading to a safer, more efficient and cost-effective service. Personalised anaesthesia can be implemented at all stages of the perioperative journey. Pharmacogenomic profiles and biomarkers can be targeted, with the help of artificial intelligence (AI) models to assimilate the complex data. Drug selection and dosing can be optimised. Other AI advances that contribute to a tailored approach include improved radiological image analysis; for example, ultrasound-guided interventions and regional anaesthesia techniques can be optimised. Monitoring systems, specifically advances in EEG analysis for depth of anaesthesia

monitoring, can ensure adequate dosing and predict the awake vs. anaesthetised state in individual patients. An interesting area of current research is the development of nociceptive monitors. Integration of AI models with the electronic health record can allow vast amounts of complex data to be analysed to allow for accurate risk prediction. These support tools allow clinicians to combine their expertise with accurate information regarding specific risks. With evidence-based guidance throughout the decision-making process, communication with patients is improved and personal preferences can be respected. Individual characteristics and comorbidities as well as patient preferences should all be taken into account when formulating an anaesthetic plan. Personalised anaesthesia is an emerging and exciting field in anaesthetic practice, however there are significant barriers to widespread application of these methods. Challenges include the need for robust data systems, interdisciplinary collaboration, and clinician training. Despite these difficulties, anaesthesia practice is already changing rapidly in keeping with the times, and clinicians are adapting to the new era of individualised care.

TIPS AND TRICKS OF THE TRADE: CRITICAL CARE TRANSPORTATION

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Critical care transportation (CCT) involves the transfer of critically ill or injured patients between (international) medical facilities, between locations within the same hospital or from the scene of an emergency or battlefield to a hospital equipped to provide advanced care. The transport can be done with ground ambulance, helicopter or fixed wing air ambulance plane. This process presents unique challenges that require a specialised set of skills, clinical judgement, and logistical planning to ensure patient safety and continuity of care. In my presentation I will share essential tips and tricks for healthcare professionals involved in CCT, that can be used during high-risk transfers.

Effective preparation is the cornerstone of successful CCT. A comprehensive pre-transport assessment and risk stratification, including a detailed review of the patient's condition, equipment requirements, medication needs, and anticipated risks and complications, is vital. Ensuring that all monitoring and life-support equipment is functioning properly and secured is critical, as is verifying oxygen supply and battery life for transport ventilators and monitors. Communication plays a pivotal role; establishing clear lines between referring, receiving, and transport teams helps coordinate care and mitigate risk.

Clinical tips include pre-emptive management of unstable conditions, such as securing advanced airways and initiating fluid and vasopressor therapy before departure when necessary. Sedation and analgesia protocols should be tailored to maintain haemodynamic stability and patient comfort. In dynamic transport environments—such as helicopters or ambulances—vigilant monitoring and adaptability are essential due to limited access to the patient and environmental constraints. Ambient pressure differences at high altitude play an important role.

Safety considerations must not be overlooked. Crew members should use standardised checklists to minimise errors and adhere to infection control measures during transport. Finally, documentation during transport must be concise yet thorough, capturing all interventions and observations for handover to the receiving team.

In conclusion, critical care transportation demands a high level of preparedness, team training, communication, and clinical acumen. Employing practical strategies and anticipating challenges can significantly improve patient outcomes and safety during transport, making these tips and tricks indispensable for all critical care transport professionals.

PATIENT EDUCATION IN ANAESTHESIA: REDUCING ANXIETY AND BUILDING TRUST

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Preoperative anxiety is a widespread concern, often fuelled by patient uncertainty regarding anaesthesia and the role of anaesthesiologists. This paper explores the significance of anaesthesia-related education as a strategic intervention for reducing anxiety, building trust, and improving overall patient outcomes. It further discusses the optimal timing, content, and modalities for patient education, and emphasises the importance of personalised, culturally sensitive communication in diverse healthcare settings.

Patient education in anaesthesia is a critical intervention that helps mitigate anxiety and fosters trust between patients and healthcare providers. Preoperative anxiety is common and often stems from fear of the unknown, perceived loss of control, and concerns about anaesthetic-related risks. Providing patients with comprehensive and accurate information about anaesthetic procedures, potential side effects, and perioperative management enables them to feel informed and mentally prepared, thereby enhancing their sense of control.

A key strategy for alleviating preoperative anxiety involves thorough consultation with anaesthesiologists prior to surgery. Importantly, the timing of these consultations is crucial to their efficacy, with the optimal window identified as approximately two weeks before the procedure. Additionally, the content and method of information delivery play a vital role. However, staff shortages, time constraints, and limited opportunities for early patient engagement often hinder these efforts. To address these challenges, the integration of modern educational tools—such as written materials, video tutorials, virtual reality simulations,

and digital anaesthesia platforms—can enhance communication and provide personalised education. These interventions have demonstrated measurable reductions in anxiety levels and improvements in physiological outcomes.

Effective communication, tailored to the patient's cognitive level and individual needs, supports shared decision-making and promotes a sense of partnership and trust. Trust cultivated through educational initiatives also improves adherence to pre- and postoperative instructions, lowers the risk of complications, and may shorten hospital stays. In culturally diverse settings, communication strategies that are both culturally sensitive and linguistically appropriate further strengthen the impact of patient education.

In conclusion, patient education in anaesthesia is not merely informational; it is a cornerstone of patient-centred care. By reducing anxiety and establishing trust, it plays a pivotal role in enhancing patient satisfaction, clinical outcomes, and overall healthcare quality. Investment in structured education protocols should be considered an essential component of contemporary anaesthetic practice.

IS REGIONAL ANAESTHESIA REALLY GREEN ANAESTHESIA: A PERSPECTIVE FROM A HIGH-RESOURCE COUNTRY?

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Healthcare contributes to about 4.6% of the global net carbon dioxide emissions, and we need to take action now. It is assumed that regional anaesthesia (RA) is more environmentally sustainable as the scope 1 emission of direct release of potent greenhouse gas (volatile agents) is eliminated or reduced. In fact, previous theoretical calculation has shown a significant savings in carbon emissions when replacing general anaesthetic with spinal anaesthetic. However, it largely depends on the resource utilisation as demonstrated by another observation study comparing the carbon dioxide emissions of a general anaesthetic using low flow sevoflurane, reusable equipment and other sustainable practice, against a spinal anaesthetic with carbon intensive practice. The carbon dioxide emissions were higher in spinal anaesthetic as 10 L/min of oxygen was used to in some sedated patients, and the sterile towels and gowns for each spinal anaesthetic require energy to be processed, although the practice is not necessarily evidence-based. In light of this, a Delphi consensus study was carried out to review the literature for evidence in certain practice parameters in RA. For those practices based on low or no evidence, experts were invited to conduct several rounds of voting to obtain a strong consensus of practice parameters that are environmentally responsible while balancing the patient safety.

There were 36 experts and 65 items reached strong consensus. The highlight of the findings is that sterile gowns are largely unnecessary; pre-made pack can be used but should only contain minimum supplies common to the group, and can be used as the sterile workspace for catheter techniques; sterile probe cover is not required for pre-scan; sedation and oxygen should be goal-directed therapies and should be titrated to individual requirements.

The Delphi consensus study serves as a guide to environmentally responsible resource use in RA practice, especially in high-resource countries.

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IS SPINAL ANAESTHESIA THE BEST FOR MY PATIENT?

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Spinal anaesthesia (SA) is widely used for surgical anaesthesia, however, its suitability depends on various factors and this abstract reviews the evidence.

For some surgeries, data consistently show that SA is more advantageous, providing a reduction in postoperative morbidities and mortality, except for hip fracture surgeries where the patient population is largely frail.

Hip fracture contributes to significant morbidity and mortality in the elderly which places a substantial resource burden on our healthcare system, especially with an expected increase in the aging population. Globally, the incidence of hip fracture in patients over 55 year and older were 681/100 000. In the 2010s, large population-based studies showed a reduction in mortality and morbidities in favour of SA when compared with GA. However, recent randomised controlled studies show no difference in mortality or morbidities such as delirium on patients having SA or GA. However, are we asking the right research question? Patients undergoing hip fracture surgery tend to be frail where the postoperative complications and mortality are multifactorial, and this population tends to be excluded in randomised controlled studies. A recent systematic review showed that a combined orthopaedic and geriatric care, considering multiple aspects in a holistic approach significantly reduces the length of hospital stay, morbidities and mortality.

Studies investigating the difference between GA and SA in resource-limited settings showed a substantial difference, with lower risk of morbidities and mortality in SA, e.g. compared with SA, GA tripled the odds of maternal death, with mortality rates of 6/1 000 for GA. Furthermore, patient's choice should also play an important part in the decision making, provided that they have been informed.

There is no 'one size fits all' approach in clinical decision-making. It is important to review the evidence but also use clinical intuition to determine the best care for that particular patient.

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SAVING OUR SKINS (HOW TO AVOID ETHICAL AND MEDICOLEGAL PROBLEMS)

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Avoiding ethical problems and staying out of the clutches of the lawyers is becoming an increasing concern for the modern healthcare practitioner. Modern, good clinical practice requires an understanding of the ethical issues (particularly consent) involved in medical care and a reasonable working knowledge of the legal processes and the responsibility of the clinician within these.

Today's practitioner must have an understanding of what is meant by "Duty of Care" and the contractual obligations involved, not only in private practice, but also in the public healthcare system. It is for this reason that HPCSA requires five ethical points per annum for CPD accreditation. There is no doubt that the medicolegal risk is increasing, for a number of reasons including depersonalisation of healthcare, better informed public, unrealistic expectations and an increasingly litigious population.

Staying out of ethical issues is not really an option as these will arise both predictably and unexpectedly in a variety of clinical situations and must be dealt with in a properly informed manner, bearing in mind the importance in the South African constitution of patient autonomy.

Demonstrably observing the principles of good clinical practice is the bedrock on which the defensibility of a clinical case is often determined. To this end, it is critical to maintain excellent clinical notes, even if, in emergency situations, these are completed post-hoc and noted as such. Many potentially defensible cases have been lost as a consequence of bad record-keeping.

Importantly, do not adopt "shortcuts" simply because many of your colleagues are doing it. That is not a defence in law should something go wrong.

Should a mishap occur, current advice is to write a detailed narrative as soon as possible in your own words. Consult colleagues and your medical defence adviser. Contrary to previous advice, SPEAK TO YOUR PATIENTS! Remain involved and concerned, seeing the patient regularly.

"UPSIDE DOWN SEDATION" SEDATION FOR PAIN PROCEDURES

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During procedural sedation, airway management is the most important determinant for the successful completion of a procedure.

Although interventional pain procedures are non-invasive, they can be intensely painful, and therefore deep sedation is often the go-to method for management. However, according to the continuum concept of sedation, each deeper level introduces increased safety risks. Of these, maintenance of a natural airway is the most challenging. Deep sedation therefore goes hand in hand with detrimental effects on the natural airway with hypoventilation, airway obstruction and even apnoea in a non-responsive patient.

Furthermore, these procedures are usually performed with the patient in the prone position. This not only complicates airway monitoring, but also increases the risk associated with airway management. In untrained hands this can lead to catastrophic outcomes, since limited airway access may deter timely rescue measures.

In this talk we will look at an alternative to deep sedation in managing these procedures. The aim is to ensure patient safety, comfort and satisfaction, while providing optimal conditions for the successful completion of the procedure.

Ultimately, the most important responsibility of the sedation practitioner is to maintain an unobstructed airway, preserve

respiratory drive, and ensure protective reflexes remain intact—while helping the patient tolerate a painful intervention.

LOW-DOSE NALTREXONE FOR CHRONIC PAIN

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Naltrexone at high dose (50 mg to 100 mg orally per day) is FDA approved for conditions such as alcohol and opioid use disorders and is a competitive antagonist of opioid receptors. It has affinity for μ-receptors with half -life of five hours and its active metabolite 6β-naltrexone has much longer half-life of 15 hours. The Low Dose Naltrexone (LDN) (1–6 mg per day) is used off-label for management of chronic pains conditions. At this low dose, naltrexone exerts analgesic effects by acting on the macrophages such as microglia via antagonism of Toll-like receptor 4 (TLR4). Activated microglia are implicated on the neuroinflammation, nociplastic changes and pain hypersensitivity. During inflammation TLR4 are expressed on the microglia, stimulate the nociceptive systems via cytokines, interleukin 6, tumour necrotic factor alpha and nitric oxide. LDN, therefore antagonises TLR4, offering the therapeutic pathaway to decrease inflammatory cascade and nociceptive system. Through this mechanism LDN is believed to decrease neuroinflammation and all disease associated with it. It is utilised to treat fibromyalgia, migraine complex-regional pain syndrome, arthritis and some cancers. Anaesthetists may see these patients on LDN either in the chronic pain clinic or perioperatively and they present a particular challenge for pain management. This is because there is limited guidance available on the optimal management of patients on LDN particularly during the perioperative period. The major concern for these patients is that severe pain may be difficult to manage especially when opioids are required even after maximising non-opioid analgesia. The current suggestion is that LDN to be withheld for 24 to 72 hours preoperatively and to resume it when patients have stopped using opioid agonists. However, further studies are needed to help the guidance on this growing therapeutic option for chronic pain patients.

OPTIMISING PERIOPERATIVE CARE: NPO AND ERAS GUIDELINES FOR NURSES

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Effective perioperative care is crucial for improving patient outcomes and reducing complications. This presentation discusses the importance of Nil Per Os (NPO) guidelines and Enhanced Recovery After Surgery (ERAS) protocols in nursing practice. NPO guidelines aim to minimise fasting periods and prevent dehydration, while ERAS protocols focus on evidence-based care pathways to enhance recovery and reduce hospital stay. Nurses play a vital role in implementing these guidelines and protocols, ensuring patients receive high-quality, patient-centred care. This presentation provides an overview of NPO and ERAS guidelines, their benefits, and practical strategies for nurses to optimise perioperative care.

WELLNESS AND BURNOUT IN ANAESTHESIA: A GROWING CHALLENGE IN A HIGH-STAKES SPECIALTY

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Burnout is an increasingly recognised occupational hazard in anaesthesia, a high-stress and high-responsibility medical specialty. Characterised by emotional exhaustion, depersonalisation, and a reduced sense of personal accomplishment, burnout affects both the wellbeing of anaesthesiologists and the quality of patient care. The nature of anaesthesia practice—marked by long hours, night shifts, high-acuity cases, and constant vigilance—places practitioners at significant risk.

Recent studies report alarming rates of burnout among anaesthetists globally, with contributing factors including heavy workload, lack of autonomy, moral distress, and inadequate support systems. In South Africa and other resource-constrained settings, the situation is further exacerbated by staff shortages, system inefficiencies, and increased demands during public health crises like COVID-19.

Burnout not only affects mental and physical health, but is also associated with increased medical errors, decreased empathy, early retirement, and even suicidal ideation. Addressing wellness is thus essential not only for the practitioner but for overall healthcare system sustainability. Interventions must be multi-layered, combining individual-level strategies-such as mindfulness, peer support, and self-care-with institutional changes that promote workload balance, professional recognition, and a culture of psychological safety.

This wellness workshop is designed to assist anaesthesiologists in coping with burnout, reconnecting with themselves, and momentarily stepping away from the stressors of clinical practice.

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THE ROLE OF ARTIFICIAL INTELLIGENCE IN MODERN MEDICINE: OPPORTUNITIES FOR AFRICAN AND RURAL HEALTH CARE

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Artificial Intelligence (AI) is becoming an increasingly valuable tool in modern medicine, offering new ways to support clinical decision-making, improve patient safety, and optimise healthcare delivery. While most AI developments have been concentrated in high-resource settings, there is growing interest in how AI can be adapted to address the unique challenges of healthcare systems in Africa, particularly in rural and under-resourced areas.

In these contexts, where specialist expertise, diagnostic equipment, and timely care may be limited, AI has the potential to fill critical gaps. For example, AI-driven diagnostic tools using mobile devices can assist with triage and early identification of complications in remote clinics. Predictive models can support early warning systems in critical care, helping clinicians in district hospitals manage high-risk patients with limited resources. In anaesthesia and perioperative medicine, AI-enhanced monitoring, smart alarms, and automated drug delivery systems could improve safety where staff-to-patient ratios are low.

However, the successful integration of AI in African health care must be guided by local needs. Challenges such as limited digital infrastructure, lack of large-scale health data, language diversity, and clinician training must be addressed. Importantly, AI systems must be designed and validated within African populations to ensure relevance, accuracy, and equity.

This talk will explore current trends in AI and consider how they might be applied in rural African settings. Rather than replacing the clinician, AI should be viewed as a partner in care—supporting decision-making, extending the reach of healthcare workers, and helping to build more resilient systems. With the right investment and collaboration, AI could play a key role in improving healthcare access and outcomes across the continent.

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AN UPDATE ON ANAESTHESIA FOR TRANSSPHENOIDAL PITUITARY SURGERY

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Up to 20% of all brain tumours are pituitary adenomas. Successful perioperative management calls for cooperation between neurosurgeon, endocrinologist, anaesthetist, and neuro-intensivist. Associated endocrine abnormalities of the HPA axis are routine and should be addressed perioperatively.

The transsphenoidal approach presents specific challenges including difficult airway management, exaggerated intubation responses, bleeding and VAE. In addition, difficult intraoperative ergonomics and patient positioning require meticulous planning to facilitate intraoperative access to the patient.

Any anaesthetic plan should comply with general neuroprotective principles and must be easily titratable with a quick offset time to navigate rapid changes in surgical stimulation and ensure a quick emergence to facilitate neurological assessment on awakening.

Techniques such as local anaesthetic application to the nasal mucosa or sphenopalatine/ maxillary nerve blocks have been reported to be effective in blunting exaggerated haemodynamic responses to nasal endoscopy.

Dexmedetomidine infusions have also been shown to limit haemodynamic fluctuations, improving surgical field quality and decreasing analgesia requirements. Large tumours with suprasellar extension occasionally need a transient increase in ICP to facilitate surgical resection. This can be achieved via hypoventilation, a Valsalva manoeuvre or, rarely, lumbar saline injection. Anaesthetic implications of newer surgical techniques such as robotic surgery, and the use of intraoperative MRI should be considered.

Emergence should be rapid and smooth to facilitate neurological assessment. Various techniques such as deep extubation, use of supraglottic airways or lignocaine inflation of the pilot balloon can be considered to prevent straining and coughing on waking.

CSF leaks and DI are well recognised postoperative complications that should be anticipated. As expected, dedicated pituitary neurosurgical teams/centres are associated with improved outcomes.

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REGIONAL ANAESTHESIA IN CRITICAL CARE

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The 2016 PADIS guidelines emphasise multimodal analgesia and a decreased reliance on opioid-based strategies when treating critically ill patients. Neuraxial techniques have significant drawbacks such as altered haemodynamics, coagulopathies, and require advanced skill, limiting their use in the critically ill.

The use of regional field techniques such as PECS 1, PECS 2, Serratus Anterior (SA) and Erector Spinae Plane (ESP) blocks, has increased in recent years, as a result of increased ultrasound availability. PECS 1, PECS 2 and the SA block are all effective, safe, easy to perform and provide an alternative to neuraxial techniques when managing pain arising from the anterior lateral chest wall in a variety of conditions.

ESP blocks have similar advantages. Studies have shown postoperative pain scores comparable to patients treated with thoracic epidural analgesia. Meta-analysis demonstrates a significant reduction in postoperative pain scores. This association is more pronounced in abdominal procedures than thoracic procedures.

Continuous catheter techniques and the addition of drug adjuvants can be employed to prolong the analgesic effect. Strict CLABSI bundles should be employed alongside. Unlike neuraxial techniques, ESP and field blocks can be performed in the presence of abnormal coagulation status. These blocks have been well studied in a variety of postoperative and critical care conditions.

Intravenous lignocaine infusions have also increased in popularity when treating acute surgical pain in the ICU. Consensus guidelines suggest a safe loading dose of 1.5 mg/kg followed by a infusion rate of 1.5 mg/kg/hr for up to a maximum of 24 hrs. Evidence shows however, that the analgesic effect lasts beyond the duration of the infusion.

More studies on regional anaesthesia use in the critical care environment are needed to better elucidate specific patient populations and strategies that result in the best outcomes from using these techniques.

EXPERIENCES OF MODERN-DAY MOTHERHOOD AND WORK: AN INTERPRETATIVE PHENOMENOLOGICAL STUDY OF PROFESSIONAL WORKING MOTHERS' SELF-CARE AND COPING

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Introduction: This study explores the experiences and understandings of self-care and coping in professional working women in South Africa who are first-time mothers. Working mothers find it difficult to balance work and home responsibilities, and often at the expense of self-care.

Method: The sample comprised five mothers of singletons working in business or the corporate sector, who had integrated back into work for at least six months after maternity leave. They began by drawing a picture of how they saw themselves coping with the demands of being a professional working mother. Their portrayal provided a strong introduction to the conversation about their experiences of self-care and coping post-motherhood. Data was collected using semi-structured interviews. The interviews were analysed using interpretative phenomenological analysis.

Results: The participants' descriptions highlighted the challenges of meeting the demands of being a working professional and a first-time mother. The participants' accounts offered deep insights into their experiences of motherhood, self-care and coping. This study suggests that participants found the experience of motherhood a transition that they were not fully prepared for, regarding increased demands and unrealistic expectations. There was a strong sense of pressure on them to live up to the ideals of motherhood. Self-care was challenging, particularly once they had returned to work in relation to time, energy, and support.

Conclusion: Self-care was an enabler to coping and lack of self-care led to poor coping.

"I CAN'T UNDERSTAND A WORD" – LINGUISTIC DIVERSITY IN CLINICAL COMMUNICATION

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Problem: Several barriers to communication exist in the anaesthesiology and critical care environments, including physical impediments to non-verbal communication, noise, language barriers, accent variation, and differing communication styles. Linguistic diversity is the well-described phenomenon of

variation in accents, dialects, and languages, and its impact on effective clinical communication. This phenomenon can impair patient-clinician relationships, clinician-clinician relationships, collaboration, and patient safety. Furthermore, linguistic diversity has been shown to affect perceptions of clinician competence, consultation duration, quality of care, and trust.

Solutions: Some potential solutions that have been considered include accent reduction training, exposure adaptation, consultation training, and the use of communication aids. Accent reduction training entails speech-language pathologist-led training to improve clinicians' awareness of accent characteristics, and modifications to make speech patterns more "acceptable". Exposure adaptation involves exposure to systematic variability, along with listening and imitation exercises. Consultation training entails broader training on critical aspects of the medical consultation, with an element of consultation standardisation. Communication aids make use of printed or electronic content to supplement patients' consultations with "accented practitioners". The efficacy of these potential solutions has not been well established. While some of these strategies have led to perceptions of improved communication, confidence, and performance, they have also been associated with experiences of work disruption, fatigue, anxiety, and marginalisation.

Conclusion: Insufficient evidence exists regarding the extent and severity of the problem, and the validity and efficacy of the many proposed solutions have not been adequately explored. In the context of this lack of definitive evidence, coupled with the potential harms of some of the aforementioned redress strategies, the author suggests that patients and clinicians may benefit from awareness of these barriers in daily practice, and recommends attempts at reducing their impact through cognisance, consideration, and empathy.

TRANSITIONAL CIRCULATION AND ITS PATHOLOGIES

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All of us, as we live and breathe, began our extrauterine lives with one moment: the first breath. The first breath of a newborn sets off a series of physiological and anatomical changes that result in an ability to adapt to extrauterine life. The most dramatic of these changes, arguably, occur in the cardiovascular system.

To understand these changes, we must first understand the intrauterine foetal circulation, and how it enables the foetus to rely solely on the maternal circulation for its nutritional requirements and gas exchange, via the placental interface. Thereafter, the bulk of this presentation will focus on the transitional circulation.

We will examine how the changes in alveolar and arterial partial pressure of oxygen brought about by that first breath, result in a decrease in the pulmonary vascular resistance, and increased pulmonary blood flow. We will also consider the mechanisms by which systemic vascular resistance increases, and how the neonatal left ventricle adapts to the sudden increase in afterload after birth.

These haemodynamic changes ultimately result in the physiological, and later anatomical, closure of several foetal circulatory shunts. The complete transition from intrauterine to extrauterine circulation is crucial for the neonate's continued cardiovascular development.

Things can, however, go wrong. The neonatal period is marked by a tendency to revert back to the foetal circulation, under certain stressors. The anaesthetist caring for the neonate must have a good understanding of these stressors, as several of them are ever present hazards in the perioperative period. Reversion to the foetal circulation can result in significant morbidity, and possibly mortality.

This refresher course will highlight some of the pathologies of transitional circulation relevant to the anaesthetist, such as persistent pulmonary hypertension of the newborn, and patent ductus arteriosus.

CODING – PRECISION IN CODING, EXCELLENCE IN HEALTH CARE

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Anaesthesia billing in South Africa is governed by the SAMA coding structure and is calculated using a unit-based system. Anaesthetists bill independently of surgeons and should determine their own billing rates based on the costs and sustainability of their practice. The core anaesthesia service includes general/regional anaesthesia, sedation, basic airway and IV access, non-invasive monitoring, and intraoperative fluid/blood administration. Additional services—such as nerve blocks, central lines, and fibreoptic bronchoscopy—must be billed separately.

Anaesthesia charges are composed of several components: consultation codes, base units (reflecting the procedure's complexity), time units (0023), modifiers, and extras (such as invasive lines or regional blocks). Consultation codes (0151–0153) are tiered based on time and complexity, while emergency and postoperative consults have separate designations.

Modifiers adjust billing based on patient condition (e.g. ASA status, BMI, age) or procedure complexity (e.g. laparoscopic surgery, prone positioning, emergency service). Each must be clearly documented to ensure compliance and avoid clawbacks. Additional procedures performed intraoperatively (e.g. arterial

line, TEE, nerve blocks) carry standalone unit values and require separate codes.

Monitored anaesthesia care (MAC), sedation, assistant anaesthetists, and general practitioner anaesthesia are billed similarly to general anaesthesia, with adjustments in unit values or applicable modifiers. Chronic pain management services, while often rendered by anaesthetists, are coded separately and are not time-based.

A precise understanding of unit-based billing—combined with accurate documentation and coding—is essential for optimising reimbursement, maintaining legal compliance, and ensuring the financial health of the practice. As funder-specific interpretations evolve, cross-checking codes with scheme-specific rules remains critical.

NAVIGATING MEDICAL INSURANCE FOR ANAESTHESIOLOGISTS IN THE SOUTH AFRICAN CONTEXT

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Whether you're in solo practice, a group, or the public sector, this session offers a practical framework for evaluating your current protection, enhancing medicolegal resilience, and cultivating a practice that's not just clinically safe, but legally defensible.

In a high-risk specialty where outcomes can shift in seconds, anaesthesiologists have an immense clinical responsibility and increasing medico-legal vulnerability. South Africa's complex healthcare landscape—marked by a rising litigation culture, constant regulatory shifts, and economic uncertainty—demands that anaesthetists understand not just the art of anaesthesia, but also the critical systems that protect their practice.

This session also explores and clarifies the roles of the Health Professions Council of South Africa (HPCSA) and the South African Society of Anaesthesiologists (SASA) — in ethics, professional conduct, peer support, public accountability, and where these bodies' responsibilities end. We'll unpack the distinctions between indemnity and malpractice insurance and explore how claims-made versus occurrence-based models impact long-term protection—especially around retirement or practice changes.

Real-world case studies will illustrate common pitfalls, including inadequate documentation, failure to notify insurers, and blurred scopes of practice. We'll move beyond legal jargon to examine the real-world risk profile of anaesthetists—from drug errors and failed airways to postoperative complications. You'll explore how specific behaviours, habits, and system flaws can either protect you or leave you dangerously exposed. Through case-based scenarios and peer discussion, participants will identify risk blind spots in their own practice.

This session empowers clinicians to see insurance not as a grudge expense, but as a strategic investment in career longevity, financial security, and personal peace of mind.

TRAUMATIC BRAIN INJURY – WHAT IS NEW IN BRAIN TRAUMA FOUNDATION GUIDELINES 2016?

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The Brain Trauma Foundation (BTF) has, since its establishment in 1986, envisioned the advancement in evidence-based care in the traumatic brain injury (TBI) sphere through guidelines and research. TBI guidelines were published in 2016, and multiple sub-subject updates have been published as new evidence and practice developments. In this brief review, these new developments are discussed and the future directions are also entertained. The burden of traumatic brain injury in Africa, with the resource constraints are further put forward. Recently, there have been developments in the pre-hospital management of TBI that needs to be highlighted—hypotension, hypoxia and hypocarbia.

BURNOUT AND ANAESTHESIOLOGY

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Burnout is a multidimensional syndrome which occurs due to chronic exposure to occupational stress. This syndrome consists of emotional exhaustion, depersonalisation and a sense of reduced personal accomplishment. It is a prevalent phenomenon, with the theoretical postulate that every individual falls onto a spectrum that ranges from engagement on one extreme to burnout on the other extreme. Local and international data have demonstrated that anaesthesiologists are particularly prone to being affected by burnout due to the determinants and very nature of the practice of anaesthesiology. There are multiple tools to measure burnout with the Maslach Burnout Inventory being the most commonly used and validated system.

Burnout is known to have a negative impact on the individual, their work and personal lives, the patients under their care, collegial relationships and the healthcare system in which they work. Burnout is associated with an increase in medical errors, lapses in clinical judgement, poor patient care and a lack of professionalism among physicians.

The literature demonstrates that there are a multitude of risk factors on an individual, environmental and organisational

level which predispose individuals to burnout. It has also been demonstrated that there are protective factors which allow an individual to counter burnout and move towards the arena of engagement and wellness. There has been much research into how to best mitigate the impact of burnout on medical personnel. Strategies relate to interventions and techniques aimed at countering the risk factors associated with burnout, the practice of resilience and the development of resiliency training programmes. Given that the demands of the healthcare system—which suffers from chronic underfunding and an increasing patient burden—exacerbate many of the risk factors associated with burnout, it remains to be seen whether interventions aimed at moving physicians from burnout towards engagement are successful.

HAND OVER IN RECOVERY

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Communication, Confirmation, Continuity, Safety

Introduction: Definition of PACU/RR, specialised unit closely monitoring patients after anaesthesia for surgical procedures.

Staffing: Highly trained registered nurses who can continue monitoring and are capable of identifying airway, circulatory and post surgical problems.

Identify patient: By name first, then other details like anaesthetist, surgeon, procedure and site/side of operation—sets tone on who to call if there are issues.

Anaesthetic report: Issues, alerts, allergies, comorbidities, complications.

Surgical report: Procedures performed, events, complications, expectations.

Baseline vitals: BP, pulse rate, respiratory rate, oxygen saturation, level of consciousness, comfort.

Devices: Tracheostomy, pacemaker, lines, drains, special precautions (trocar for tracheostomy).

Analgesia regimens: Epidural catheters, plexus catheters, PCA devices.

Post anaesthesia and surgery care plan: Monitoring, patient positioning, do's and don'ts (depending on operation, e.g. not turning spinal patients), blood tests, calf pumps, next drug administration, X-rays or other imaging, etc. Are you happy to take over patient, look after them as they recover safely and then pass them on to the ward?

Conclusion: Clear concise written and verbal communication is essential in ensuring a safe transition from theatre to the PACU.

LIVING THE ULTRA LIFE: LESSONS FROM ENDURANCE SPORT

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Endurance sports such as ultramarathons, Ironman triathlons, long distance cycling and open water swimming push the boundaries of human physical and mental capacity. Athletes who participate in these extreme feats are often celebrated for their physical achievements. But beneath the sweat, strain, and hours of solitude lies a profound philosophy for life filled with a multitude of lessons that extend far beyond the finish line.

The "ultra life" is more than just fitness, it is a lifestyle that cultivates resilience, discipline, purpose, clarity, and transformation. The physiological adaptations to improve cardiovascular efficiency, fat oxidation, mitochondrial density, and neuromuscular coordination that occur when the body is repeatedly subjected to prolonged physical stress mimic life itself: sustainable progress requires embracing discomfort, allowing recovery, and committing to consistency.

This review aims to explore those lessons from endurance sport and their application to everyday living even for non-athletes and everyday people.

The ultra life is not just about distance, it is about how deeply you can engage with discomfort and embrace it as a teacher, how wisely you can manage energy, and how fiercely you can commit to purpose. Endurance sport reminds us that some things—growth, joy, mastery—are earned one step at a time.

MECHANISMS OF ACUTE NOCICEPTIVE PAIN

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Effective pain management begins with a sound understanding of the physiological mechanisms underlying nociceptive pain. This refresher course will provide anaesthesia registrars with a concise yet comprehensive overview of nociceptive pain physiology. It will highlight the essential pathways and modulatory systems involved in nociception and the perception and modulation of pain, with clinical relevance to perioperative and acute care contexts.

The course will begin by clarifying the distinction between nociception—the neural encoding of potentially harmful stimuli—and pain, a complex sensory and emotional experience constructed by the brain. We will examine how contextual factors such as mood, memory, attention, and cultural influences shape

individual pain experiences. Core mechanisms at each level of the nervous system will be explored in detail: from peripheral sensitisation and the activation of Aδ and C fibres at the site of injury, to synaptic modulation in the spinal cord and the phenomenon of central sensitisation—including allodynia and secondary hyperalgesia. The role of the brain in generating and modulating pain will be discussed, with emphasis on top-down control via descending inhibitory and facilitatory pathways.

We will also introduce the influence of synergistic systems—immune, endocrine, and autonomic—on nociceptive processing and the maintenance of sensitisation. Through clinical scenarios and integrative explanations, registrars will be equipped to recognise normal versus maladaptive nociceptive responses, distinguish between nociceptive and nociplastic pain features, and apply this knowledge in clinical decision-making.

DOCTOR MAMA, MAMA DOCTOR

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Navigating the dual roles of *doctor and mother* presents profound challenges and unique growth opportunities. In October 2021, I became a mother to a beautiful daughter, fulfilling a lifelong dream, just a month after stepping into a consultant anaesthetist role. My transition back to work was quickly complicated by my daughter's unexpected seizures, which initiated a harrowing period of uncertainty, hospital admissions, and ultimately, her diagnosis with an extremely rare metabolic disorder, "biotinidase deficiency".

Being a doctor helped in moments of crisis—resuscitation instincts and clinical decision-making kicked in—but knowledge also became a burden, with my mind immediately jumping to worst-case scenarios. While my medical position ensured our concerns were quickly addressed in emergency settings, it could not shield us from the anxiety and vulnerability of parenting a sick child. I struggled to balance professional demands with the overwhelming urge to care for my own child, often feeling torn, emotionally drained, and at times, despairing.

Through this journey, I experienced the unique challenges faced by "doctor-mothers": vulnerability in front of colleagues, the blurred boundaries between work and personal life, and the immense pressure of making medical decisions about one's own child. Support from colleagues, family, and fellow mothers—especially through WhatsApp social groups—was crucial.

This experience has not only amplified my empathy as a clinician, particularly towards mothers and paediatric patients, but has also reinforced the urgent need for support structures for working mothers in medicine. Championing these roles and offering mutual support is essential for the well-being of healthcare professionals and their families.

PAEDIATRIC CARDIAC ANAESTHESIA IN NON-OPERATING ROOM SETTINGS

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Introduction: Paediatric cardiac anaesthesia in non-operating room (OR) settings, such as catheterisation labs and MRI suites, presents unique challenges for children with congenital heart disease (CHD). These include altered physiology, environmental constraints (e.g. remote locations, radiation, magnetic fields, limited access, temperature control, darkness), and procedural demands. This case-based study examines anaesthetic considerations and complications in diagnostic/interventional procedures.

Aims: To analyse anaesthetic strategies for paediatric CHD patients undergoing cardiac MRI and catheterisation outside the OR, focusing on safety, environmental challenges, communication, and personalised plans.

Methods: Retrospective review of two 2024 cases at Red Cross War Memorial Hospital. *Case 1:* A 2-year-5-month-old male (14 kg) with congenitally corrected transposition of the great arteries (ccTGA), Ebstein anomaly, severe tricuspid regurgitation (TR gradient 60 mmHg), pulmonary hypertension, and prior pulmonary artery banding underwent cardiac MRI under general anaesthesia (GA) for double-switch planning, requiring breath-holding. A recent echo showed double discordance and a tight PA band. *Case 2:* A 2-year-6-month-old male (12 kg) with Trisomy 21, tetralogy of Fallot, and RVOT stent stenosis presented with hypercyanotic spells (SpO_2 47%) and underwent emergency catheterisation with stent dilatation under GA via tracheostomy, using ketamine and vasopressors.

Discussion: Advances in care enabled 97% CHD survival rate for CHD patients into adulthood, but perioperative mortality is higher (33% vs. 23% for non-CHD). High-risk groups include single-ventricle, aortic stenosis, and cardiomyopathy patients. General anaesthesia (GA) was essential for breath-holding during MRI; alternatives like the "feed and swaddle technique" are suitable for infants under six months to induce natural sleep, while deep sedation can yield comparable imaging quality to GA. Lesions that increase the Qp: Qs ratio above 1 (left-to-right shunt) can lead to excessive pulmonary blood flow (PBF), potentially flooding the lungs and causing complications like recurrent lower respiratory tract infections, congestive heart failure and coronary ischaemia.

Outcomes: Both cases were successful; *Case 1* informed surgical decisions, while *Case 2* improved SpO_2 from 37% to 96%. POCA registry shows higher arrests in CHD (e.g. single ventricle 19%),

mostly in general ORs 54% vs. 46% occurring in cardiac operating rooms. IMPROVE registry notes complications like arrhythmias (2–3%), arrest (1%), and vascular issues (1–2%).

Conclusion: Non-OR paediatric cardiac anaesthesia demands CHD expertise, pre-procedural planning, and multidisciplinary coordination for safe, effective outcomes.

ACUTE PAIN – PREVENTION OF ACUTE POSTSURGICAL PAIN FROM DEVELOPING INTO POSTSURGICAL PAIN

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Chronic postsurgical pain (CPSP) is a significant clinical challenge, affecting up to 50% of patients after major surgery, with 10–15% developing long-term, disabling pain. Inadequately managed intraoperative and postoperative pain is a primary contributor to CPSP, driven by central and peripheral sensitisation, neuroplasticity, and psychosocial factors such as anxiety, depression, and catastrophising. High-risk procedures—including thoracotomy, amputation, mastectomy, inguinal hernia repair, and Caesarean section—demonstrate elevated CPSP prevalence. From an anaesthesiology perspective, early identification of at-risk individuals and the use of evidence-based, multimodal analgesia are central to CPSP prevention. Opioid-sparing regimens incorporating regional anaesthesia, acetaminophen, NSAIDs, gabapentinoids, lidocaine, and NMDA antagonists such as ketamine have shown efficacy. Of these, regional anaesthesia—particularly when initiated pre-incision and maintained for 48–72 hours postoperatively—offers the strongest procedural evidence for CPSP mitigation. Perioperative intravenous lidocaine infusions provide additional benefit by modulating central sensitisation and reducing opioid exposure. Transitional Pain Services (TPS), often led or supported by anaesthesiologists, represent an emerging model of perioperative care that integrates acute pain management with psychological support and functional rehabilitation. TPS identifies high-risk patients preoperatively and provides longitudinal care, including individualised tapering strategies, behavioural support, and follow-up beyond discharge. Published models have demonstrated reductions in persistent opioid use, improved pain control, and better patient-reported recovery outcomes. While no single modality prevents CPSP entirely, anaesthesiologists are uniquely positioned to lead multidisciplinary strategies focused on risk stratification, patient education, protocolised analgesic pathways, and access to TPS. Expanding such services and embedding structured perioperative pain management within surgical care pathways may significantly reduce the burden of chronic pain and opioid dependency. These efforts can improve long-term surgical outcomes and enhance the quality of recovery across diverse patient population.

PRACTICAL APPLICATION OF PBM IN THE OPERATING THEATRE

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In patients with a Hb above 140 g/l, haemodilution is proven method to decrease the need for RBC transfusions. Replacement today is done with crystalloids in a 1:1 ratio. Once surgery starts, a meticulous surgical technique with exact haemostasis is the most important factor to decrease the need for blood products and for a beneficial patient outcome.

The use of cell salvage is also of outmost relevance. Cell salvage cannot only be used in orthopaedic and cardiac surgery but also in cancer surgery. The processed RBC suspension ideally is irradiated before re-transfusion. Alternatively, the RBC suspension can be re-transfused with or even without a leukocyte depletion filter. Interestingly, a recent meta-analysis shows that cancer recurrence rate is significantly lower in patients treated with cell salvage (with or without leukocyte depletion filter) than those without cell salvage.[1]

Repeated coagulation monitoring with ROTEM/TEG and individualised goal-directed treatment with coagulation factor concentrates according to a coagulation algorithm is a key factor in major surgery to decrease blood product use and optimise patient outcome. The benefit has repeatedly been shown in cardiac surgery and trauma.[2,3] In both domains this approach has decreased transfusion requirement and improved clinical outcomes including an improved survival.

Finally, the use of restrictive transfusion triggers is of paramount significance to decrease blood product use and optimise patient outcomes. For most all patients, a Hb transfusion trigger < 70 g/l is adequate. In cardiac surgery a Hb transfusion trigger < 75 g/l may be used.

The combination of all the above measures makes a tremendous difference for patients.

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GAZETTE 52111 – WHAT DOES IT MEAN FOR PRACTITIONERS AND PATIENTS?

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The Department of Trade, Industry and Competition (DTIC) circulated a public invitation on 14 February 2025, in terms of which it sought public comments on its Draft Regulations on Interim "Block Exemption" for Tariffs Determinations in the Healthcare Sector. This was done through Government Gazette No. 52111.[1] The Gazette or the proposed regulations are purported to create a structured process for determining professional healthcare tariffs, standardised coding, and quality metrics. Stakeholders and interested persons were invited to submit comments in writing on the proposed regulations by 16 May 2025, which SASA did with the help of Werksmans Attorneys.

Statutory body being created that limits HCW input: The block exemption is creating a new statutory body that does not include the input of health care professionals, and the gazette is prohibiting them from participating because they supposedly have a "conflict of interest". This implies that academic departments and public sector doctors will be treated the same way in the future.

Limitation of clinical independence: The gazette specifies the implementation of new treatment protocols, formularies, use of devices and equipment guidelines, and even overhauling complex treatment guidelines. This raises serious ethical and medicolegal issues and the clinical independence of all healthcare workers in the private and the public sector is being threatened.

Targeting of only the healthcare professionals: The gazette quite deliberately only targets professional healthcare workers. It leaves out hospital groups, funders, managed care organisations, big pharma, devices companies, etc. All of these other entities are major cost drivers and the health market enquiry recommendations specifically said that all costs are interlinked and inter-related and that their recommendations should be seen as a package.

Conclusion: SASA submits that the draft regulations lack independence, transparency, and practitioner involvement. They are unlawful, irrational and unfair. SASA supports a model aligned with the HMI's recommendations, ensuring a fair, cost-based, and sustainable tariff-setting process that benefits both patients and healthcare providers. SASA hopes that before the September 2025 national congress that the gazette is withdrawn in its entirety.

Reference

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AWAKE SHOULDER SURGERY

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Awake shoulder surgery is an established, safe, and effective alternative approach to general anaesthesia, especially in the growing population of elderly patients, with multiple comorbidities, who present for shoulder surgery. This approach enables faster recovery, improved pain scores, and higher patient satisfaction in selected patients, while avoiding the risks associated with general anaesthesia, such as postoperative nausea and vomiting, postoperative pulmonary complications, as well as altered cerebral autoregulation and hypotension.

Advancements in nerve localisation through ultrasound guidance have led to the use of low-volume local anaesthetic techniques and alternative approaches, such as the superior trunk block, which has shown promise in preserving diaphragmatic function while maintaining adequate surgical anaesthesia and decreasing the risk of local anaesthetic systemic toxicity.

Multiple obstacles exist, however, and to ensure procedural success, meticulous patient selection, thorough patient education, skilled regional anaesthesia, and continuous intra-operative communication are paramount. Successful awake shoulder surgery offers a valuable alternative and aligns with modern anaesthesia goals of patient-centred care and enhanced recovery.

CRISIS MANAGEMENT IN ANAESTHESIOLOGY

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Crisis resource management (CRM) training equips individuals with the ability to deal with unexpected and high-stakes situations.

Nontechnical skills (NTS) training, which trains individuals to integrate information and recognise arising issues, has been integrated into the practice of Anaesthesiology, in order to decrease adverse events, by complementing technical skills, and contributing to safe and efficient task performance.

The operating room is a dynamic and high-stakes environment where theater medical staff play a crucial role in ensuring patient safety and well-being during surgical procedures. The occurrence of critical anaesthesia events poses significant challenges, requiring the team to have a comprehensive understanding of the factors contributing to these incidents.

"Critical anaesthetic events encompass a spectrum of unexpected occurrences during anaesthesia administration that may result in adverse patient outcomes. These events can include medication errors, equipment malfunctions, airway complications, cardiovascular instability and anaesthetic-related allergic reactions."[1]

Each team has its own needs—the application of the universal principles is therefore unique to each setting and the crisis at hand. Effective communication and teamwork are crucial to minimising errors in the operating room, promoting early identification of potential crises and prompt initiation of appropriate interventions.

CRM Components include communication, leadership, role allocation, situational awareness, dynamic decision making as well as anticipation and planning for crises.

CRM contributes to safe and efficient task performance and fosters an environment where team members feel more comfortable in sharing their concerns and voicing their suggestions.

Teams that apply CRM are more likely to implement appropriate, ethical interventions, timeous decisions and maintain effective teamwork under stressful conditions.

The integration of CRM into curricula of healthcare workers may be useful. Medical teams can also consider incorporating periodic CRM training and drills to increase their team efficiency.

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