APPENDIX 7:

ANAESTHESIA-RELATED MORBIDITY, MORTALITY AND NEAR-MISS EVENTS

Perioperative Quality And Safety Monitoring In A Covid-19 Context – A Consultation Document

KEY POINTS

The COVID-19 pandemic has resulted in many changes to usual perioperative processes of care.

These changes highlight the importance of having in place comprehensive, coordinated, efficient systems and processes to monitor and address the safety and quality of perioperative care, including the capacity to identify unintended consequences of changes to care processes.

This document will assist clinicians and health services to develop frameworks to comprehensively monitor and review anaesthesia-related morbidity, mortality and near-miss events.

Its goal is to enable a consistent approach to monitoring perioperative safety and quality across public/private, and rural/regional/metropolitan settings, improving perioperative care for all surgical patients.

There will be a range of challenges and barriers to achieving consistent perioperative safety monitoring in different contexts and locations. We hope this document will encourage discussion about these challenges to explore how a more consistent approach can be effectively achieved.

Clinician-led reporting and review of safety incidents is fundamental to an effective process.

BACKGROUND

Measures of quality in healthcare tend to focus on reliability and efficiency of routine care, and identification of variance from expected (evidence-based) care.1 That is, ensuring we routinely and consistently do things well.

Measures of safety (absence of avoidable harm) in healthcare are more complex.1 A comprehensive understanding of issues affecting patient safety depends on integrating and analysing data from multiple sources, including clinical audits, incident reporting systems and administrative data sets. As each data source has particular strengths, challenges and limitations2, a multi-faceted approach is important.

THE ROLE OF INCIDENT REPORTING

Learning from adverse events and near-miss events is particularly relevant with a new or rapidly changing context, such as that presented by COVID-19. Significant events may be infrequent at individual department or health service level (particularly in small organisations). However, when individual events or issues are aggregated at a state level, emerging risks may become apparent and can be communicated in a timely way to clinicians, other health services and the broader community. These types of issues may not yet be apparent from other data sources.

IMPORTANCE OF NEAR-MISS REPORTING

Near-misses involve events that had potential to cause significant harm but did not result in harm (outcome is the only difference from an adverse event)3. Near-miss reporting is particularly important in anaesthesia, as it offers a unique opportunity to identify and analyse 'recovery strategies' (how an error was recognised before harm occurred)3 in a highly complex environment where human factors engineering design is central to improving safety (for example, reducing the risk of drug administration errors).

APPENDIX 7:

A BASE FRAMEWORK FOR MONITORING AND REVIEWING ANAESTHESIA-RELATED ADVERSE EVENTS AND NEAR-MISSES

Table 1 outlines a base framework for monitoring and reviewing perioperative anaesthesia-related adverse events and near-misses based on existing structures and processes:

Column 2 outlines suggested major categories of events to include in monitoring and review:

- Anaesthesia-related deaths
- Other significant anaesthesia-related events or complications* (examples provided in **Table 2**)
- Near-miss events
- Unplanned escalation of care (including unplanned returns to theatre for anaesthesia- related problems)

Column 2 outlines these events in more detail to assist local department and clinician level reporting and review.

Column 3 highlights the role of hospital level clinical governance processes for different events.

Column 4 summarises some key roles of state-level bodies in understanding perioperative safety and quality issues.

VPCC[4] oversees, reviews and monitors perioperative care in Victoria to improve outcomes for patients before, during and after surgery. It reviews perioperative outcomes (morbidity and mortality) from a quality improvement perspective, collating lessons from individually reported events and administrative datasets that could help improve the system of care. It also provides Victorian anaesthesia-related mortality data for ANZCA's triennial Safety of Anaesthesia reports. VPCC and its subcommittees operate under the Public Health and Wellbeing Act 2008 (Part 4 – Consultative Councils).[5]

The **VASM**[6] is a peer review process that seeks to review all deaths associated with surgical care. It is a collaboration between the Victorian Department of Health, SCV and the RACS. VASM receives notifications of all deaths under the care of a surgeon.

SCV[7] is the state's peak body for leading quality and safety improvement in healthcare. Its core functions include clinical excellence, patient safety, system and safety assurance, and improvement. Part of its patient safety role includes overseeing the Victorian Sentinel Events program[8] which receives and reviews submitted RCA reports.

VAHI[9] monitors, analyses and shares (through regular reports) safety and performance information across Victoria's health system. This includes a quarterly *Inspire* report designed to 'support clinicians to understand the performance of their health service against key measures that impact safety, quality and performance'.

Key performance measures include Hospital Acquired Complications (HACs)[10] which are described in more detail below.

CHALLENGES

While this framework outlines a structure for anaesthesia-related perioperative outcome review, we recognise that many challenges exist in terms of achieving this across the state.

APPENDIX 7:

TABLE 1: A BASE FRAMEWORK FOR MONITORING AND REVIEW OF ANAESTHESIA-RELATED ADVERSE EVENTS AND NEAR-MISSES

EVENT	DEPARTMENTAL/ CLINICIAN LEVEL REVIEW ACTIVITIES	HOSPITAL LEVEL CLINICAL GOVERNANCE ACTIVITIES	STATEWIDE HEALTH SYSTEM LEVEL ACTIVITIES (VPCC/ VASM/SCV/VAHI)
Anaesthesia-related deaths* (Ensure reportable deaths have been referred to the Coroner) Anaesthesia-related deaths referred to and classified by the VPCC[11] contribute to Victorian data for the ANZCA triennial Safety of Anaesthesia report.	Deaths where anaesthesia (local/regional/general) or sedation for a procedure has been thought to contribute to the death* (see **Table 2**). The death may have occurred intra-operatively or in the post-operative period.	Multidisciplinary review of each death, with focused discussion on avoidable deaths and cases where care could be improved. RCAs for sentinel events** that result in death.	VASM peer review of all surgical deaths. VPCC anaesthesia subcommittee review of referred deaths. SCV review of sentinel event RCAs.
Other significant anaesthesia-related events or complications*	Any event related to an anaesthetic procedure that causes a life-threatening incident, temporary or permanent disability, or significant distress* (see **Table 2**).	Case reviews for significant events/issues. Morbidity aggregate reports for common events and Hospital-Acquired Complications.*** RCAs for sentinel events.**	VPCC anaesthesia subcommittee review of referred events. VAHI reporting on HACs. SCV review of sentinel event RCAs.
Near-miss events (Near misses can inform the health system of significant risks and identify important opportunities to improve safety)	Significant near miss events (events with potential to cause significant harm, that did not lead to harm).	Significant near miss events reported and reviewed.	VPCC anaesthesia subcommittee review of referred events.

APPENDIX 7:

EVENT	DEPARTMENTAL/ CLINICIAN LEVEL REVIEW ACTIVITIES	HOSPITAL LEVEL CLINICAL GOVERNANCE ACTIVITIES	STATEWIDE HEALTH SYSTEM LEVEL ACTIVITIES (VPCC/ VASM/SCV/VAHI)
Unplanned escalation of care	Unplanned ICU admission Unplanned HDU/ Coronary Care Unit admission Unplanned transfer to another facility URTT for an anaesthesia-related problem (inclusive of interventional procedures in other locations). (E.g. re-intubation; surgical airway; retained procedural material)	Case reviews for significant issues. URTT for surgical complications and unplanned ICU admissions are aggregated in health service HAC reports. RCAs for sentinel events.**	VPCC anaesthesia subcommittee review of referred events. VAHI reporting on HACs. SCV review of sentinel event RCAs

* Table 2 provides examples of significant anaesthesia-related events/complications, some of which may result in death.

** Table 3 provides the list of sentinel events in Victoria (as at May 2020).

*** Table 4 provides a description of HACs.

APPENDIX 7:

TABLE 2: EXAMPLES OF SIGNIFICANT ANAESTHESIA-RELATED EVENTS/COMPLICATIONS

*EXAMPLES OF SIGNIFICANT ANAESTHESIA-RELATED EVENTS/COMPLICATIONS#
This list is based on the previous VCCAMM reporting list, broader literature review and multidisciplinary VPCC discussion. Some events may also fit the current list of sentinel events in Victoria. #Human factors may play a role in many of these events, so are not mentioned separately
Mortality/morbidity/significant near misses associated with preoperative assessment and/or management issues
Procedural errors/complications
Problems with management of the airway or ventilation
Unexpected cardiac arrest or other circulatory problems in the perioperative period
Crisis management or resuscitation
Monitoring issues (provision/complications)
Drug-related problems (adverse reactions, interactions, preparation and/or administration errors)
Blood product/fluid administration
Anaesthesia/sedation for investigational procedures or resuscitation
Perioperative pain management
Organisational issues
Work environment issues
Equipment-related problems
Anaphylaxis
Awareness during general anaesthesia
Neurological complications (e.g. procedure-related central and peripheral nerve injury, hypoxic brain injury, stroke)
Multifactorial perioperative major complications (perioperative significant organ injury e.g. MI, severe Acute Kidney Injury (AKI) requiring renal replacement therapy, pulmonary embolism)

APPENDIX 7:

TABLE 3: SENTINEL EVENTS LIST IN VICTORIA

SENTINEL EVENTS LIST IN VICTORIA[12] – VERSION 2 (FROM JULY 2019)
1 Surgery or other invasive procedure performed on the wrong site resulting in serious harm or death
2 Surgery or other invasive procedure performed on the wrong patient resulting in serious harm or death
3 Wrong surgical or other invasive procedure performed on a patient resulting in serious harm or death
4 Unintended retention of a foreign object in a patient after surgery or other invasive procedure resulting in serious harm or death
5 Haemolytic blood transfusion reaction resulting from ABO incompatibility resulting in serious harm or death
6 Suspected suicide of a patient in an acute psychiatric unit or acute psychiatric ward
7 Medication error resulting in serious harm or death
8 Use of physical or mechanical restraint resulting in serious harm or death
9 Discharge or release of an infant or child to an unauthorised person
10 Use of an incorrectly positioned oro- or naso-gastric tube resulting in serious harm or death
11 All other adverse patient safety events resulting in serious harm or death

TABLE 4: HOSPITAL ACQUIRED COMPLICATIONS

***HOSPITAL ACQUIRED COMPLICATIONS (HACS)**
More information is available from the ACSQHC HAC website

Hospital-acquired complications (HACs) refer to a nationally agreed list of 16 'high-priority complications' for which 'clinical risk mitigation strategies may reduce (but not necessarily eliminate) the risk of that complication occurring'.[10] HACs are identified from coded admitted patient care data and in Victoria, are reported by VAHI in statewide quarterly Inspire reports.