March 16th, 2023

Please note the attached report for the WA Anaesthetic Mortality committee:

WA Anaesthetic Mortality Committee membership updates:

The WA AMC consists of the Chair and representatives from the WA ANZCA committee, the University of WA, The WA branch of the ASA, the WA Branch of the AMA, RANZCOG, RACGP, RACS, DOH Director General, Australian Nursing Federation (Midwives) and the Australian Dental Association.

A. WA AMC membership:

a. Members who retired in 2022:
   i. Mr Mark Newman (RACS)
   ii. Dr Kenneth Williams (AMA)
   iii. Dr Liezel Bredenkamp (AMA deputy)
   iv. Dr Tran-Lee Kaing (ADA deputy)

b. New appointments:
   i. Anna Clare (RANZCOG)
   ii. Dr Celine Baber (AMA)
   iii. Dr Maya Calvert (AMA deputy)
   iv. Frank Chang (ADA deputy)
   v. Nomination for Mr Stephen Rodrigues (RACS) – awaiting Ministerial approval

c. Reappointments:
   i. Dieter Gebauer (ADA)

d. Vacancies:
   i. 340BB(3)(k): Professor of Clinical Pharmacology UWA. There is currently no representative for this position as the specific role no longer exists at UWA.
   ii. 340BB3(i): Midwife in clinical practice, position still vacant – despite multiple targeted enquires no one has agreed to take this position at this time

e. The ruling regarding the maximum duration of DOH committee memberships of 10 years requires replacement of current Chair and Deputy Chair positions. Nominations by ANZCA WA Regional Committee have been sent to the DOH and currently awaiting approval by the minister.

f. There is potential for changes to membership with a limited review of the Health Act in 2023. Suggested changes discussed and agreed to at the last WA AMC meeting:
   i. Changes to current position description/ nominating body
      1. Current 340BB (3)(b): One is to be the Professor of Anaesthesia at the University of Western Australia. Change to: "A specialist anaesthetic holding a substantive academic position at one of the Universities in Western Australia with a Medical School, nominated by the Chief Health Officer"

2. Current 340BB(3)(c). "A medical practitioner specialising in anaesthetics, nominating body ANZCA (WA State Branch). Change nominating body to*:* ASA (WA State branch). This would reinstate the previous nominating body.

ii. Discontinuation of the following positions

1. Current 340BB(3)(k) nominating body ***UWA be discontinued.*** The position of Professor of Clinical Pharmacology at the University of Western Australia no longer exists.
2. Current 340BB(3)(i) midwife nominated by the CHO ***be discontinued***. Consistent difficulty in filling this position, relevance of expertise in contributing to discussions and assessments can be met by the member nominated by RANZCOG.

iii. ***Creation of the following positions***:

1. Representation from Intensive Care Medicine, being a be a medical practitioner specialising in Intensive Care Medicine, with nomination from the WA branch of the College of Intensive Care Medicine.
2. Representation from Perioperative Care Medicine, being a medical practitioner specialising in anaesthesia with a special interest in Perioperative Medicine with nomination by the ANZCA (WA State Branch).
3. Representation by an Anaesthetic Assistant, being a currently practicing, senior, anaesthetic assistant, nominated by the CHO. (*Specific wording TBA)*

iv. ***Change to the process for nominating Chair of the WA AMC***

1. Chair to be nominated by the Minister for Health (with Committee recommendation). (*Process for election of Chair position to be clarified by committee).*

Note the nominations for positions must also meet the WA DOH gender balance requirement.

B. Medical Investigators:

a. Dr John Martyr is the Chief Investigator
b. Dr Christine Grobler is the Deputy Investigator.

C. Meetings for the WA AMC

a. The WA AMC last met on the November 4th2022
b. The next WA AMC committee meeting is planned for October 2023

D. Report to ANZCA WA regional committee:

a. The regulations for the ANZCA WA regional committee have changed and they will no longer hold an annual AGM. The annual WA AMC report will be sent to the WA RC who plan to circulate this by email to all WA ANZCA fellows and trainees.

E. ANZCA Mortality Subcommittee

a. The ANZCA triennial report (2018 – 2020) data collection is now underway with the report expected later this year.
b. ANZCA Mortality Subcommittee meetings

- 2022: February 1st, June 28th, October 11th
- 2023: March 14th, July 4th, October 17th.

F. WA AMC collaboration with WAASM

- Process: WAASM notifies the WA AMC of any surgically reportable deaths where the surgeon considers that there was "definitely" an anaesthetic contribution to the death, and any cases were the surgeon indicates that there is a "probable" anaesthetic contribution to the death. Once the relevant anaesthetist involved in the case is identified, if no report has already been submitted, the anaesthetist involved will be asked to submit a report to the AMC which will be assessed in the normal manner or documentation will be sort from the relevant institution. WAASM will be notified that the assessment has been completed with no other details released.
- Sheila Klimczyk, Data manager, Statutory Mortality Committees has agreed to take on tracking and requesting anaesthetic data for patients identified by to the WAASM by WA ASM.
- To date there have been 12 deaths from 2022 reported by WAASM. Two were withdrawn from assessment as not meeting criteria, 6 assessments have been completed, the rest are awaiting information to enable assessment.
- There were 12 cases in 2021 identified by WAASM as having possible or definite anaesthetic contribution to the death. After review by the medical investigator 4 cases were withdrawn as not meeting AMC reporting requirements, investigation was concluded in all the other cases
- Dr Jennifer (Jay) Bruce is the current anaesthetic representative on the WAASM committee.

G. Coroner report access

a. Access to coroners' reports are no longer available to the AMC as part of their assessment process, based on legal advice regarding confidentiality. We are awaiting legislative review to see if access to can given in the future.

H. Electronic reporting system

- The electronic REDCAP system on the WA DOH website is now the primary reporting method for WA anaesthetic mortality.
- Information about anaesthetic mortality reporting in WA and the link to the DOH reporting web page is available on the ANZCA website and the WA ASA website. The ANZCA website has recently been updated, hopefully simplifying access to information on mortality reporting.
- Initial feedback has been generally positive with ~30% of reports still being submitted via email or in hardcopy. Further education for the anaesthetic community via the annual report to the ANZCA WA Regional Committee is planned.

I. Communication with the anaesthetic community

- There is an information page regarding anaesthetic mortality reporting requirements and process for completion of the reports are on both the WA section of ANZCA website and the WA section of the ASA website.
- Feedback was received suggesting that changes are made to the standard feedback letter sent to anaesthetists when no anaesthetic attributable cause has been found, (cases

classified as Category 4-7). It noted that the current letter lacked empathy, acknowledgement of positive aspects of care delivered, or acknowledgement that adverse outcomes are often indistinguishable from the effects of the surgery. There was consideration of the risk of increasing the "second victim" effect. An updated letter addressing these concerns has been completed and will be used in future.

- Dr Terence Bourke previous inaugural committee member passed away thin 2022, at the age of 94. A search was made for documentation of his committee participation and provided as part of the eulogy.

J. Reporting requirements and feedback process

a. Cases are required by law to be reported if death occurs within 48 hours of the ***commencement / induction*** of an anaesthetic ***OR*** if the anaesthetic may have contributed to the death.
b. After completion of the case assessment the reporting anaesthetist will receive a letter summarising the assessment by the investigator or committee
c. If the case doesn't meet the requirements for reporting and assessment the reasons for this will be communicated to the anaesthetist involved.

K. Denominator data

- We have explored methods to get accurate denominator data on the number of anaesthetics given in WA to be able to access the overall mortality rate. Unfortunately, the clinical coding used by the WA clinical coding Authority (WA CCA) links to anaesthetic procedures, of which there may be multiple for one anaesthetic event/operation. In addition, we are unable to match anaesthetic procedures with non-surgical procedures (obstetric, gastroenterological, radiological, cardiology and psychiatric etc.) for which the anaesthetic was administered. Therefore, at this point in time, we have not found a practical way to get an accurate assessment of the number of anaesthetics given in WA.

Reported cases assessed

The data reported was collected from cases reported to the WA AMC and assessed by during 2021 and 2022. Of note the cases from 2021 were not included in previous reports due to either a delay in the report being received, or the timing of the case being reviewed by the investigators and the committee.

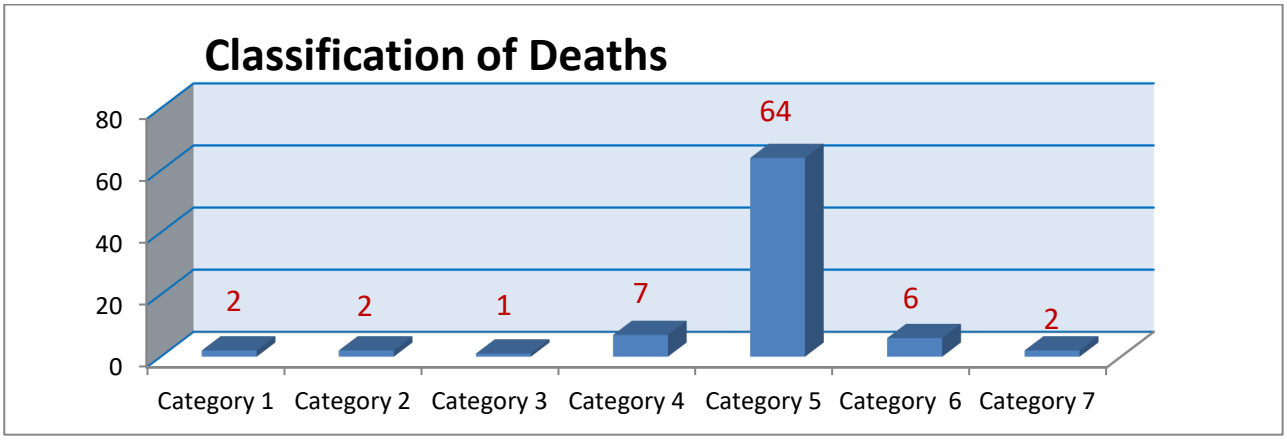
The online REDCAP reporting system commenced in June 2021 cases reported prior to this were mostly received as a hard copy report or occasionally by email, 70% of reports are now completed via the REDCAP system. There are more areas assessed in this report compared with previous years with information available regarding the urgency of operation with the addition of urgent to the previous elective and emergency categories. Increased detail regarding HDU /ICU location of death, location of procedure when not in the operating theatre suit and death within 12 hours as a subset of those within 24 hours of commencement of anaesthetic.

Numbers of cases assessed:

- 84 cases were reviewed by the investigators and the AMC in this period (2021- 2022).
- Of the cases reported and assessed 15 cases were from 2021.
- In addition, there were 4 cases reported which were withdrawn from assessment due to not meeting reporting criteria and are not reported in the data.
- Seven cases from 2022 are still awaiting assessment and are not included in the data.

Classification of cases assessed

- Five of the cases were classified in Categories 1-3 with definite or possible anaesthetic factors contributing to the death. The other 79 were assessed and classified by the AMC investigators in categories 4-6.



Categories 1-3 cover Deaths Attributable to Anaesthesia. There were 5 cases classified as such in this report,

- Category 1 Where it is reasonably certain that death was caused by the anaesthesia or other factors,
- Category 2 Where there is some doubt whether death was entirely attributable to the anaesthesia or other factors under the control of the anaesthetist.
- Category 3 Where death was caused by both surgical and anaesthesia factors.

These cases were further sub classified in relation to factors associated with anaesthesia, the identified factors were:

A (i) Patient Assessment

B (i) Choice or application of anaesthetic technique

B (ii) Airway Maintenance Including Pulmonary Aspiration

C (ii) Drug dosage

G: Were although anaesthesia contributed to the death there were no correctable factors identified

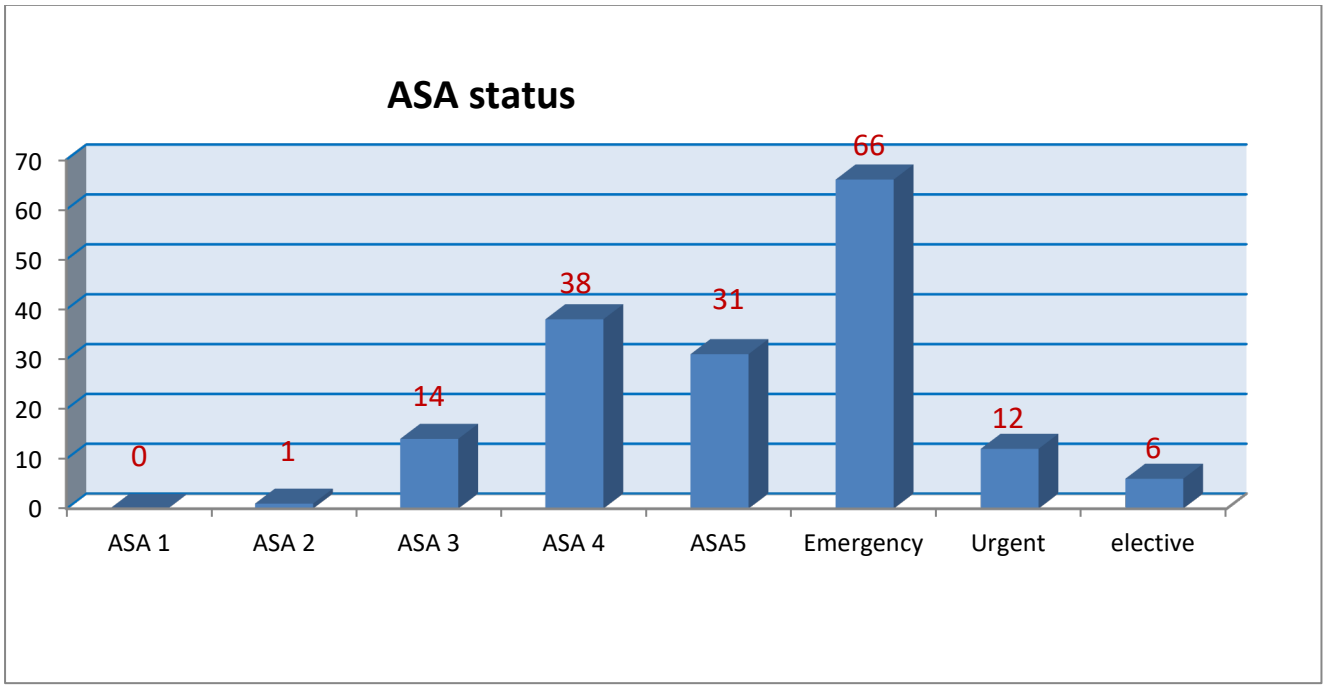
H: Where the medical condition of the patient was a significant factor in the death. Of note all category 1-3 cases were also classified with sub-category H.

Of the cases which were assessed as the anaesthetic did not contribute to the death:

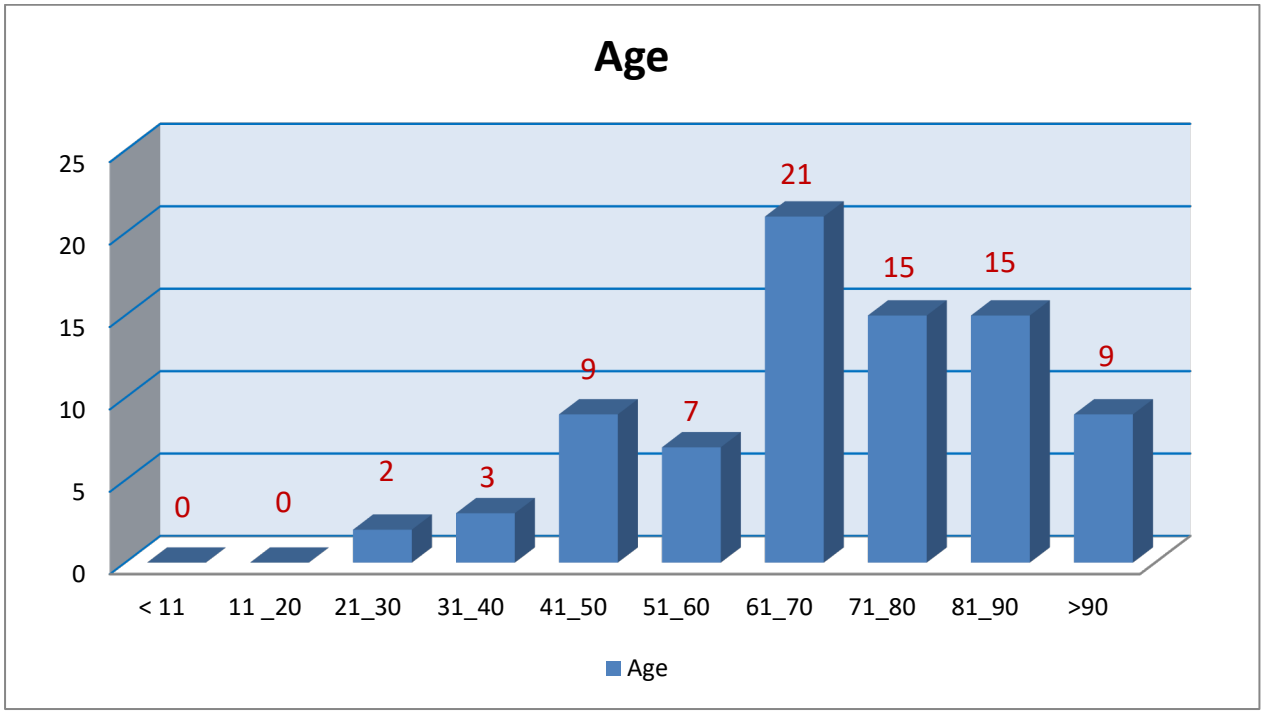
- 7 Cases classified as Category4: (Surgical death, were the anaesthesia was not contributory)
- 64 Cases classified as Category 5: (Inevitable death)
- 6 Cases classified as Category 6: (Incidental death)
- 2 Cases classified as Category 7: (Un-assessable despite good documentation)

This is a similar distribution to previous years

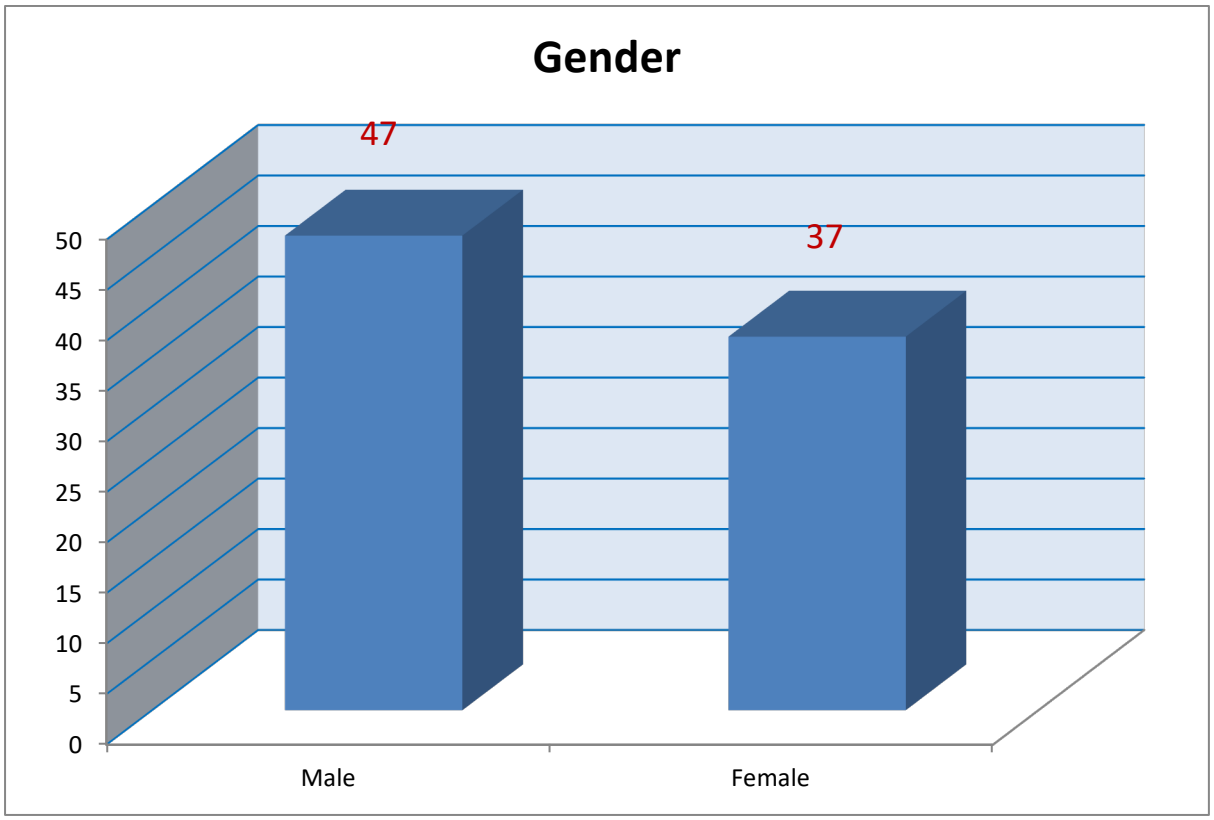
- Please see attached Classification system for details of the categories

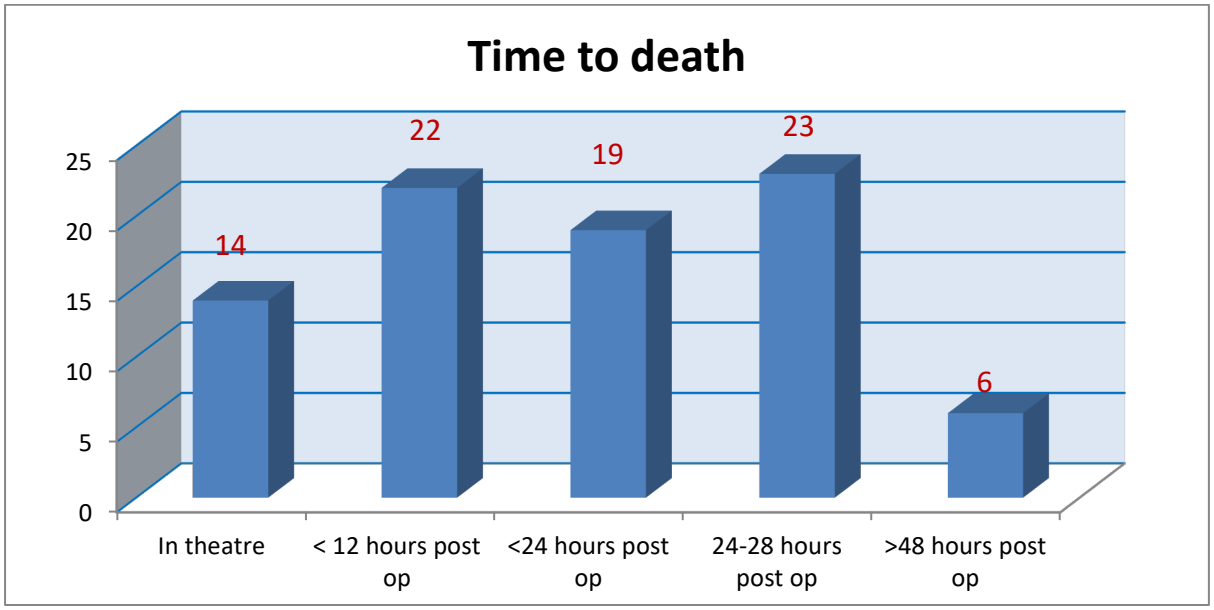


- 99% of the cases were ASA grades 3-5 and 91% were identified as urgent/emergent
- This is similar to the previous report in which 96% of the cases were ASA grades 3-5
- There the same percentage of cases were identified as urgent/emergent compared to 2021.

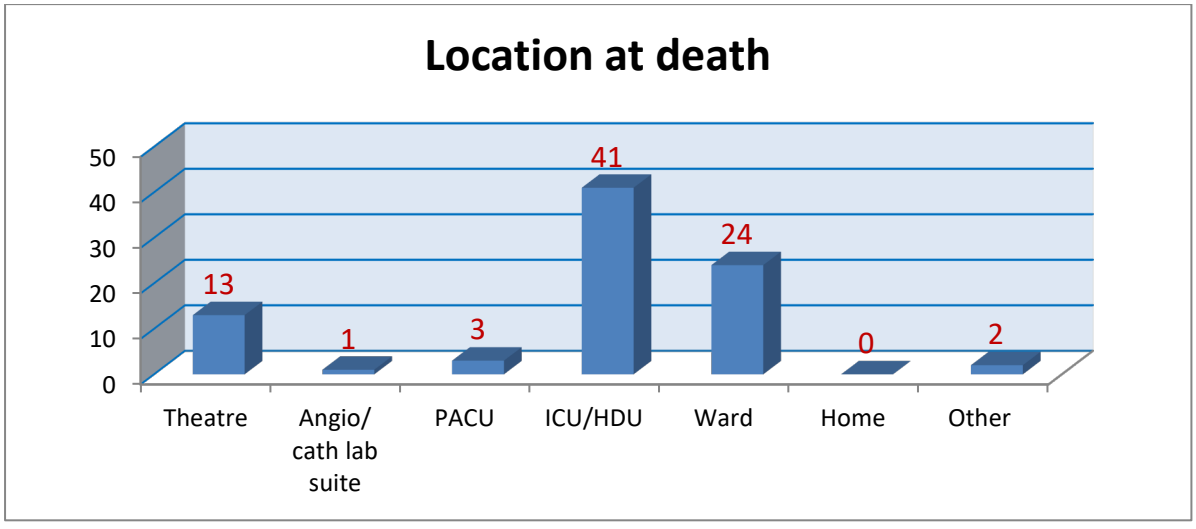


- The majority of the deaths continue to be in older patients, with 75% of the patients aged ≥ 61 years old, 28 % ≥ 81 years old and 11 % > 90 years old
  Age range: 18- 96, mean 69, and median 75 years.
- This is similar to the age distribution in previous years.

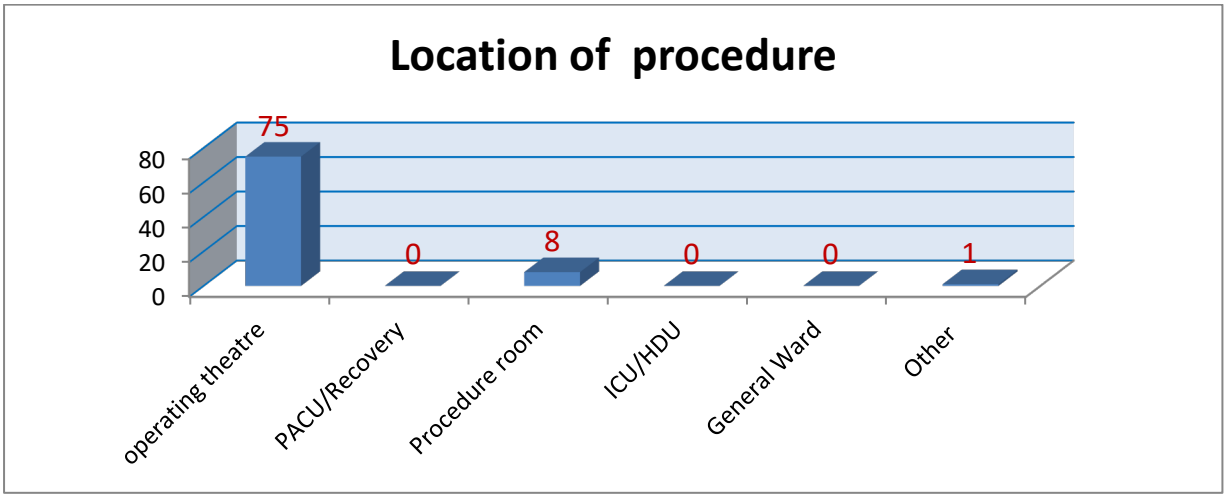




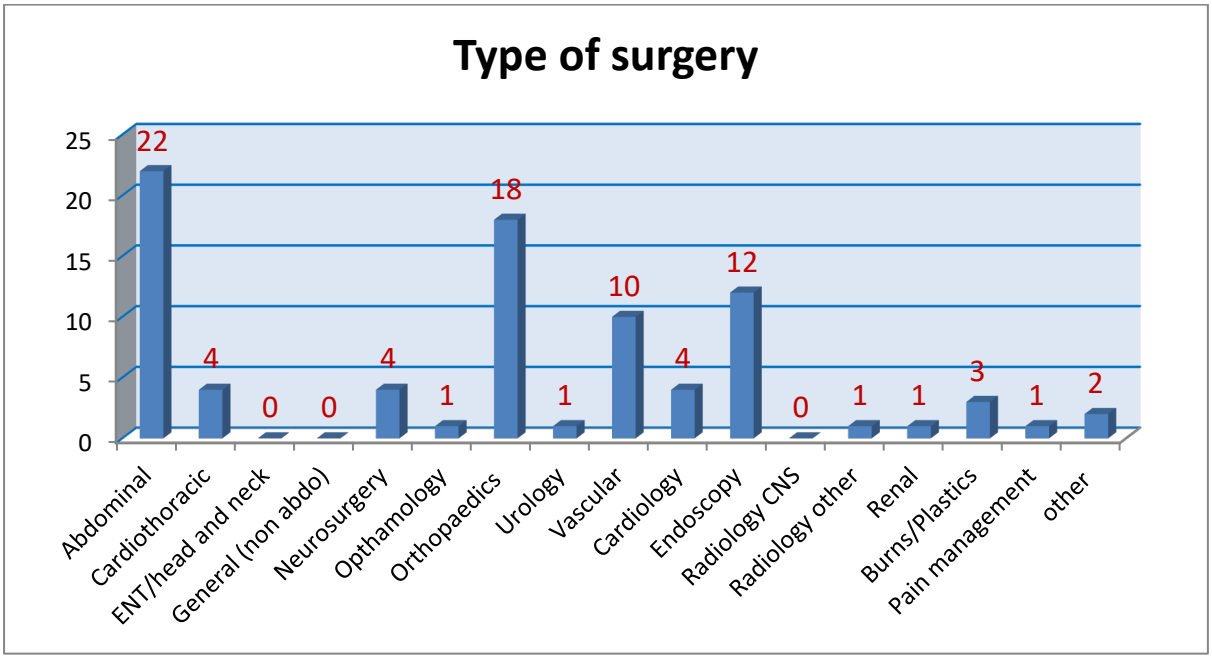
- 17% of the deaths occurred in the operating theatre, 26% in the first 12 hours, 23% between 12-24 hours from the induction of anaesthesia and 27 % in the 24 -48-hour period. There were 6 deaths meeting reporting criteria that occurred more than 48 hours after the induction of anaesthesia.
- Range in hours: 0.47 – 71, mean duration 22.73 hours and median duration 21.34 hours
- Compared to last year a greater percentage died in the theatre (8% in 2021), otherwise the numbers were similar.



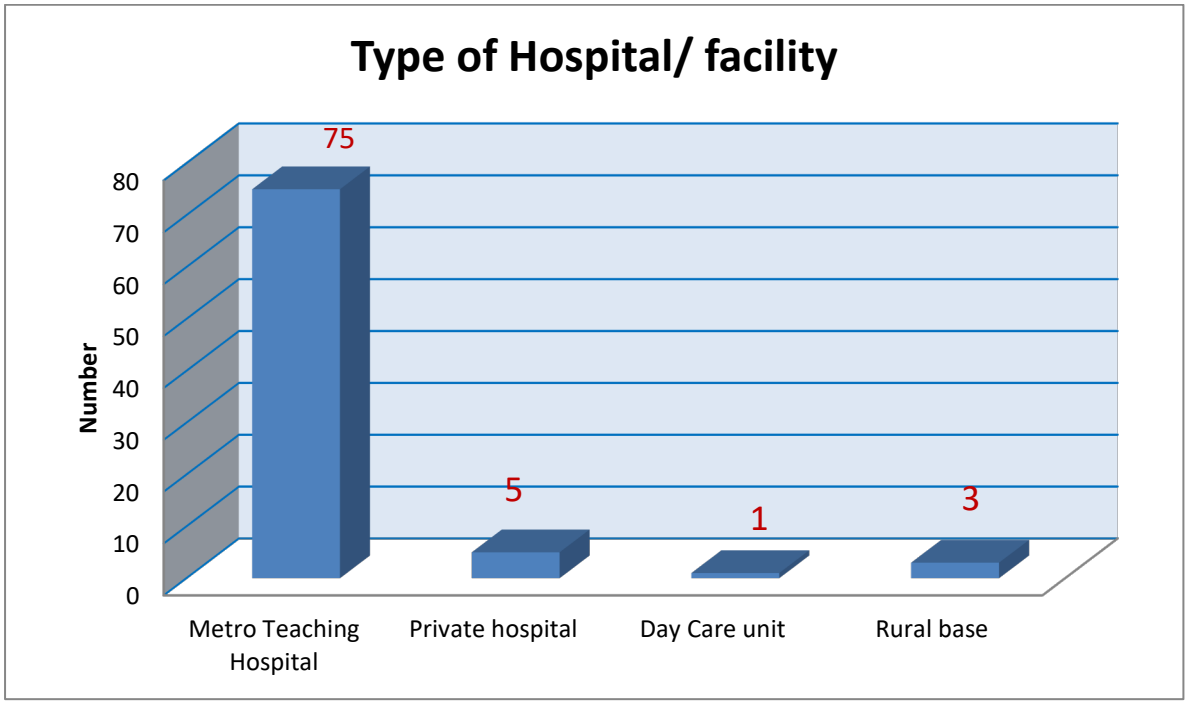
- The majority of the deaths, 48%, occurred in ICU/HDU, 15% of the deaths occurred in the operating theatre and 28 % in the ward environment.
- Of note there were 3 deaths in out of theatre anaesthetising locations (catheter lab, radiology suit and ED)
- Overall, these numbers were similar to previous years reporting periods
    - Cases assessed in the 2021 report: ICU/HDU 52%, OT 7 %, ward 20 %
    - Cases assessed in the 2020 report: ICU/HDU 61%, OT 11%, ward 17%
    - Cases assess in the 2019 report: ICU/HDU 55%, OT 11 %, ward 26%
    - Cases assessed in the 2018 report: ICU/HDU 52%, OT 13%, ward 28%.
    - Cases assessed in the 2017 report: ICU/HDU 59%, OT 10%, ward 18%



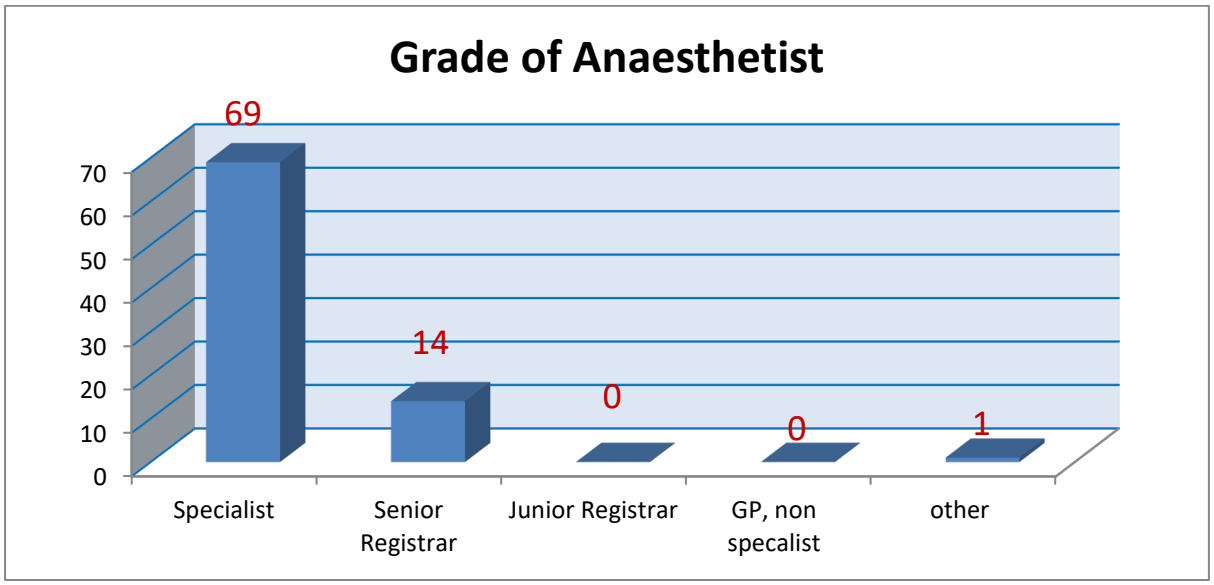
- Note procedure rooms include cardiology suits, radiology suites, and endoscopy suites
- Other: Emergency department



- The most common surgical specialities associated with perioperative mortality were: Abdominal Orthopaedic Surgery, Endoscopic procedures, Vascular surgery, Neurosurgery, cardiothoracic surgery and cardiology procedures. The other classification included trauma with multidisciplinary involvement.
- The 3 most common types of procedures associated with death within 48 hours are unchanged from last year.



- 89 % of the deaths occurred in metropolitan teaching hospitals reflecting the complexity and urgency of the case mix.
- This is in comparison to the cases assessed in the previous four reports in which 81%, 80%, 91% and 75 % of the deaths occurred in metropolitan teaching hospitals.



- In 82 % of cases there was a specialist or consultant anaesthetist involved in the patient's care.
- In was higher in comparison to last year (73%) period, however it is similar to the previous reporting periods, (86- 89%).

Comments on data:

- Overall, there was a similar number of deaths reported in comparison to last year (82). This compares to, 70 in 2020, 119 cases in 2019, 61 in 2018 and 60 in 2017.
- As we do not have complete information about the number of anaesthetics administered in WA (denominator) as per the report above, therefore we cannot accurately determine mortality rates for deaths associated with anaesthesia in WA. In addition, we cannot determine if variability in the data is related to changes in the number of anaesthetics administered, case mix, death rate or reporting practices. In particular, the impacts of the COVID pandemic on changing surgical practice in WA between 2020 and 2022 with lockdowns and cancellation of elective surgery is unknown.
- During the reporting period 4 reported cases were withdrawn from assessment as they did not meet the reporting criteria. If an anaesthetist is unsure if a case meets reporting criteria, we encourage them enquire or report anyway to ensure all relevant cases are reported. Some of the cases that were withdrawn were reported by the WAASM which have different reporting criteria for assessing the anaesthetic contribution to a death.
- Overall, the data indicates that anaesthesia related deaths occur in older, sicker patients having non-elective surgery.
- The numbers of deaths reported are generally too small to make statistical comparisons with previous years; however the distribution of age, ASA, location of death, time to death and grade of anaesthetist was similar to past reports.
- Some cases meeting the reporting requirements may not have been reported. This may be in situations where an anaesthetist is unaware a patient died especially if the death was delayed, unexpected or occurred in a different facility after a patient was transferred. In addition some medical practitioners may still not be aware of the reporting requirements. We are trying to continue to improve awareness of reporting requirements with information available on the WA ANZCA website, the WA ASA website and through communication with hospitals and individuals regarding reporting requirements.

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GLOSSARY OF TERMS: CASE CLASSIFICATION

A. Deaths Attributable to Anaesthesia	
Category 1	Where it is reasonably certain that death was caused by the anaesthesia or other factors under control of the anaesthetist.
Category 2	Where there is some doubt whether death was entirely attributable to the anaesthesia or other factors under the control of the anaesthetist.
Category 3	Where death was caused by both surgical and anaesthesia factors.
Explanatory Notes: • *The intention of the classification is not to apportion blame in individual cases but to establish the contribution of the anaesthesia factors to the death.* • *The above classification is applied regardless of the patient's condition before the procedure. However if it is considered that the medical condition makes a substantial contribution to the anaesthesia-related death subcategory **H** should also be applied.* • *If no factor under the control of the anaesthetist is identified which could or should have been done better subcategory **G** should also be applied.*	
B. Death In Which Anaesthesia Played No Part	
Category 4	Surgical death where the administration of the anaesthesia is not contributory and surgical or other factors are implicated.
Category 5	Inevitable death, which would have occurred irrespective of anaesthesia or surgical procedures.
Category 6	Incidental death which could not reasonably be expected to have been foreseen by those looking after the patient, was not related to the indication for surgery and was not due to factors under the control of anaesthetist or surgeon.
C. Unassessable Death	
Category 7	Those that cannot be assessed despite considerable data but where the information is conflicting or key data is missing.
Category 8	Cases, which cannot be assessed because of inadequate data.

CAUSAL OR CONTRIBUTORY FACTORS IN CATEGORY A DEATH

Note that it is usual for more than one factor to be identified in the case of anaesthesia attributable death.

SUBCATEGORIES

A. Preoperative	
(i) Assessment	This may involve failure to take an adequate history or perform an adequate examination or to undertake appropriate investigation or consultation or make adequate assessment of the volume status of the patient in an emergency. Where this is also a surgical responsibility the case may be classified in Category 3 above.
(ii) Management	This may involve failure to administer appropriate therapy or resuscitation. Urgency and the responsibility of the surgeon may also modify this classification.
B. Anaesthesia Technique	
(i) Choice or application	There is inappropriate choice of technique in circumstances where it is contraindicated or by the incorrect application of a technique, which was correctly chosen.
(ii) Airway Maintenance Including Pulmonary Aspiration	There is inappropriate choice of artificial airway or failure to maintain or provide adequate protection of the airway or to recognise misplacement or occlusion of an artificial airway.

(iii) Ventilation	Death is caused by failure of ventilation of the lungs for any reason. This would include inadequate ventilator settings and failure to reinstitute proper respiratory support after deliberate hypoventilation (e.g. bypass).
(iv) Circulatory Support	Failure to provide adequate support where there is haemodynamic instability, in particular in relation to techniques involving sympathetic blockade.
C. Anaesthesia Drugs	
(i) Selection	Administration of a wrong drug or one, which is contraindicated or inappropriate. This would include "syringe swap" errors.
(ii) Dosage	This may be due to incorrect dosage, absolute or relative to the patient's size, age and condition and in practice is usually an overdose.
(iii) Adverse Drug Reaction	This includes all fatal drug reactions both acute such as anaphylaxis and the delayed effects of anaesthesia agents such as the volatile agents.
(iv)Inadequate Reversal	This would include relaxant, narcotic and tranquillising agents where reversal was indicated.
(v)Incomplete Recovery	e.g. prolonged coma
D. Anaesthesia Management	
(i) Crisis Management	Inadequate management of unexpected occurrences during anaesthesia or in other situations, which, if uncorrected could lead to death or severe injury.
(ii) Inadequate Monitoring	Failure to observe minimum standards as enunciated in the ANZCA policy document or to undertake additional monitoring when indicated e.g. use of a pulmonary artery catheter in left ventricular failure.
(iii) Equipment Failure	Death as a result of failure to check equipment or due to failure of an item of anaesthesia equipment.
(iv) Inadequate Resuscitation	Failure to provide adequate resuscitation in an emergency situation.
(v) Hypothermia	Failure to maintain adequate body temperature within recognised limits.
E. Postoperative	
(i) Management	Death as a result of inappropriate intervention or omission of active intervention by the anaesthetist or a person under their direction (e.g. Recovery or pain management nurse) in some matter related to the patient's anaesthesia, pain management or resuscitation.
(ii) Supervision	Death due to inadequate supervision or monitoring. The anaesthetist has ongoing responsibility but the surgical role must also be assessed.
(iii) Inadequate Resuscitation	Death due to inadequate management of hypovolaemia or hypoxaemia or where there has been a failure to perform proper cardiopulmonary resuscitation.
F. Organisational	
(i) Inadequate supervision, inexperience or assistance	These factors apply whether the anaesthetist is a trainee, a non-specialist or a specialist undertaking an unfamiliar procedure. The criterion of adequacy of supervision of a trainee is based on the ANZCA policy document on supervision of trainees.
(ii) Poor Organisation of the Service	Inappropriate delegation, poor rostering and fatigue contributing to a fatality.
(iii) Failure of interdisciplinary Planning	Poor communication in peri-operative management and failure to anticipate need for high dependency care.
G. No Correctable Factor Identified	
Where the death was due to anaesthesia factors but no better technique could be suggested	
H. Medical Condition of the Patient	
Where it is considered that the medical condition was a significant factor in the anaesthesia related death.	