



SCIDUA

Special Committee Investigating
Deaths Under Anaesthesia

Activities of the Special Committee Investigating Deaths Under Anaesthesia, 2011 - 2012

Special Report



NSW
GOVERNMENT

Health



CLINICAL
EXCELLENCE
COMMISSION

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Contents

FOREWORD	6
SCIDUA MEMBERSHIP, 2011-2012	7
EXECUTIVE SUMMARY	8
1. THE SCIDUA COMMITTEE	10
2. REPORTING DEATHS TO SCIDUA	10
3. CONFIDENTIALITY	10
4. REPORTING BACK	11
5. WHY IS THIS IMPORTANT?	11
6. PROCESS	11
7. SYSTEM OF CLASSIFICATION	12
8. RESULTS	13
8.1 Committee activities	13
8.2 Committee findings	14
8.3 Anaesthesia-related deaths	15
8.3.1 No correctable factor identified	15
8.3.2 Anaesthesia-related with correctable factors	15
8.3.3 Inadequate pre-operative assessment	17
8.3.4 Inappropriate choice or incorrect application of anaesthetic technique	17
8.3.5 Inappropriate drug dose or dose-related drug effect leading to an adverse cardiovascular event	17
8.3.6 Anaphylaxis as a cause of death	18
8.4 Description of anaesthesia-related deaths	19
8.4.1 Age and gender	19
8.4.2 ASA physical status	20
8.4.3 Hospitals	21
8.4.4 Anaesthetists and anaesthesia	22

8.4.5 Surgery and urgency	23
8.4.6 Location of death	24
8.5 Deaths in the operating theatre	24
8.6 Deaths associated with cemented hip arthroplasty	25
8.7 Inevitable deaths	25
8.8 Futile cases	26
8.9 Deaths not able to be assessed	26
APPENDIX A - SCIDUA NOTIFICATION FORM	28
APPENDIX B - ANAESTHESIA MORTALITY	29
APPENDIX C - AMERICAN SOCIETY OF ANESTHESIOLOGISTS PHYSICAL STATUS CLASSIFICATION	32
APPENDIX D - HOSPITAL LEVEL	33
APPENDIX E - URGENCY OF CASES	34

Tables

Table 1: Cases reviewed and classified by SCIDUA 2011-2012	13
Table 2: Cases reviewed and classified by triage sub-committee 2011-2012	13
Table 3: Summary of committee activities 2011-2012	14
Table 4: Classification of cases reviewed in 2011-2012	14
Table 5: Causal or contributory factors identified in anaesthesia-related deaths, 2011-12 (n=102).....	16
Table 6: Classification of deaths in the operating theatre or procedural room by SCIDUA, 2011-2012.....	24

Figures

Figure 1: Age and sex distribution in anaesthesia-related deaths, 2011-2012 (n=102).....	19
Figure 2: Age and ASA distribution in anaesthesia-related deaths, 2011-2012 (n=102).....	20
Figure 3: Distribution of anaesthesia-related deaths by hospital type, 2011-2012 (n=102).....	21
Figure 4: Distribution of anaesthesia-related deaths by grade of anaesthetists and type of anaesthetics administered, 2011-2012 (n=102).....	22
Figure 5: Distribution of anaesthesia-related deaths by surgery type and urgency of surgery, 2011-2012 (n=102).....	23
Figure 6: Distribution of anaesthesia-related deaths by location within the hospital, 2011-2012 (n=102).....	24
Figure 7: Distribution of age and ASA physical status in inevitable deaths, 2011-2012 (n=327).....	26

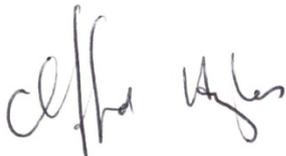
Foreword

Anaesthesia safety is a global public health issue. Modern anaesthetic techniques have made much of today's surgery possible and brought great benefits to patient safety. The administration of anaesthesia has become safer and more routine than ever before. In NSW, more than one million individual episodes of anaesthesia care are recorded annually in all public and private hospitals.

Anaesthesia is very safe in Australia. The reporting of anaesthesia-related deaths has helped ensure the high quality and safety of anaesthetic administration. In NSW, section 84 of the *Public Health Act 2010*, requires health practitioners to notify the Director-General when a patient dies while under, or as a result of, or within 24 hours after, the administration of an anaesthetic or a sedative drug for an operation or a procedure.

The Special Committee Investigating Deaths Under Anaesthesia (SCIDUA) is the expert group appointed by the government. This report presents the committee's findings on anaesthesia- and sedation-related deaths that occurred in NSW between 2011 and 2012. It provides the evidence for demonstrating the safety and risk of anaesthesia. I thank the committee for their good work. I also acknowledge the commitment and support of the anaesthetic community to improving safety. This report would not be possible without their involvement.

I commend it to you.

A handwritten signature in black ink, appearing to read 'Clifford Hughes'.

Clifford F Hughes, AO
Clinical Professor
Chief Executive Officer

SCIDUA membership, 2011-2012

- Dr David Pickford, chair
- Dr Michele O'Brien, deputy chair & medical secretary
- A/Prof John Hilton
- Dr Elizabeth O'Hare
- Dr Frances Smith
- Dr Matthew Crawford
- Prof Arthur (Barry) Baker
- Prof Ross Holland

Executive Summary

The NSW Special Committee Investigating Deaths Under Anaesthesia (the committee) has been reviewing anaesthesia-related deaths since 1960 and is the longest-serving committee of its type in the world. It was the forerunner of the other State anaesthetic mortality committees in Australia. It has been contributing data for the triennial reviews of anaesthesia-related mortality in Australia, published by the Australian and New Zealand College of Anaesthetists (ANZCA), since the mid-1980s. NSW contributed more than half of the data published in the last ANZCA report for the 2006 to 2008 period.

In NSW, the legal requirement to notify a death arising after anaesthesia or sedation for an operation or a procedure is stipulated in s84 of the *Public Health Act 2010*. We currently do not have available a method to verify whether all anaesthesia and/or sedation deaths are reported under that provision. The committee is confident that the data contains a representative sample of deaths in NSW. We now have available other reporting sources, within the Clinical Excellence Commission, to ensure major cases are not missed. Our data also indicates good responses from anaesthetists in providing further details of their notified cases, with 70 per cent of questionnaires completed and returned to the committee. This figure represents a high rate of voluntary reporting of anaesthesia-related mortality.

Between 2011 and 2012, the committee reviewed 632 cases where death had occurred during, due to, or within 24 hours of an anaesthetic. It classified 102 cases to be wholly or partly related to anaesthetic factors. A summary follows.

- The anaesthetic either directly caused or substantially contributed to the patient's death in seven cases. In one case the anaesthetic management was appropriate.
- The anaesthetic contributed to the patient's death in the remaining 95 cases.
- The majority of the patients were elderly, with 87 per cent (n=89) older than 65 and 53 per cent (n=54) older than 81.
- More than half (56%, n=57) were ASA¹ grade 4 or 5, i.e., critically unwell or not expected to survive for 24 hours. Nearly all cases (95%, n=97) were ASA grade 3, 4 or 5, i.e., had significant or life-threatening intercurrent illness².
- In 74 per cent (n=75) of cases, no correctable anaesthetic factor could be identified. Modern anaesthesia still poses a risk to patients undergoing surgery, despite advances in drugs, monitoring and techniques.
- Correctable anaesthetic factors were seen in 26 per cent (n=27) of cases. The most common factors were inadequate pre-operative assessment, inappropriate choice, or incorrect application of an anaesthetic technique and inappropriate drug dosage.

These findings should be viewed in light of the retrospective nature of the committee's deliberations.

¹ The American Society of Anesthesiologists (ASA) physical status rating grades patients according to their health (see Appendix B).

² Intercurrent disease occurs at same time and may impact on other disease processes.

Between 2011 and 2012, the average estimated resident population in NSW reported by the Australian Bureau of Statistics, was about 7.25 million³. Using this figure, the estimated anaesthesia-related mortality rate was about seven deaths per million population per annum. The estimated mortality directly caused by the anaesthetic was less than one death per million population per annum. There were approximately 2.34 million individual episodes of anaesthesia care recorded at all public and private hospitals in NSW during the two-year period⁴. Using this figure, the estimated anaesthesia-related mortality was 1:22,941 procedures. The estimated mortality directly caused by anaesthesia was 1:334,286 procedures.

The key objective of the committee is to improve anaesthetic management, i.e., correctable anaesthetic management. The estimated mortality of anaesthetic deaths with correctable factors for 2011-2012, was 1:86,667 procedures, which indicates a slight improvement on the last reported rate of 1:80,147 procedures in 2010.

The committee feels it is important to consider the increasing age and frailty of patients now undergoing surgery. Orthopaedic and cardiothoracic surgery performed on elderly patients still contribute the majority of cases reviewed by the committee. The community, medical practitioners, the patient and their families need to consider what surgery is appropriate and what constitutes futility.

³ Australian Bureau of Statistics, 2012, *Australian Demographic Statistics*, 'Table 4. Estimated Resident Population, States and Territories (Number)', time series spreadsheet, cat. no. 3101.0, viewed 7 November 2012, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Mar%202012?OpenDocument>

⁴ This figure was obtained from the Australian Institute of Health and Welfare (AIHW) at www.aihw.gov.au. It included cerebral anaesthesia, conduction anaesthesia and analgesia and anaesthesia during labour and delivery procedure. A coding hierarchy was used to ensure that only one anaesthesia item number was counted per episode of anaesthesia care.

1. The SCIDUA Committee

The Special Committee Investigating Deaths under Anaesthesia (SCIDUA) is an expert committee appointed by the Minister for Health. Its terms of reference are:

'to subject all deaths occurring while under, as a result of, or within 24 hours after the administration of anaesthesia, to peer review so as to identify any areas of clinical management where alternative methods could have led to a more favourable result.'

The Minister appoints members for a fixed term of five years, after which, the committee advises the Minister whether re-appointment is appropriate. In the event of a loss of a member by resignation or other reason, the committee may recommend a suitable replacement to the Minister. The Minister may also appoint a member who is a Ministry of Health or Clinical Excellence Commission (CEC) representative. The committee elects its own chairperson, who must be a currently practising anaesthetist.

The committee tries to ensure that anaesthetists from a broad range of clinical specialties and professional organisations are represented. Nominations for membership come from the Australian and New Zealand College of Anaesthetists (ANZCA), the Australian Society of Anaesthetists and academic departments of anaesthetics. There is also a consultant forensic pathologist on the committee, to help review autopsy findings.

2. Reporting deaths to SCIDUA

The notification of deaths arising after anaesthesia or sedation for operations or procedures, is a legal requirement in NSW. This is stipulated in s84 of the *Public Health Act 2010* and applies:

'if a patient or former patient dies while under, or as a result of, or within 24 hours after, the administration of an anaesthetic or a sedative drug administered in the course of a medical, surgical or dental operation or procedure or other health operation or procedure (other than a local anaesthetic or sedative drug administered solely for the purpose of facilitating a procedure for resuscitation from apparent or impending death).'

Health practitioners are required to notify the death by completing the State form (SMR010.511): *Report of death associated with anaesthesia/sedation* (Appendix A). This can be ordered from Salmat (Ph: 02 9311 9999 or www.salmat.com.au). It can also be downloaded at:
http://www.cec.health.nsw.gov.au/__documents/programs/scidua/scidua_fon_august_2011.pdf

3. Confidentiality

The committee's documents are legally protected from disclosure under s23 of the *NSW Health Administration Act 1982*. Confidentiality of all communications between the reporting anaesthetist and the committee is paramount.

4. Reporting back

SCIDUA communicates with its key stakeholders as follows.

- Each individual anaesthetist who provides information to the committee receives a letter from the chairperson explaining the reasons behind the committee's views on his or her case.
- A special report for the preceding calendar year is provided to the Minister.
- The committee provides data to the ANZCA Mortality Working Group, which produces the triennial report of 'Safety of Anaesthesia: A review of anaesthesia-related mortality reporting in Australia and New Zealand'.
- Periodically, the committee submits reports to peer-reviewed journals, in which trends in anaesthesia-related mortality are described. These reach a wide range of anaesthetists in Australia, New Zealand and internationally.

5. Why is this important?

Anaesthesia is not a medical therapy in itself, but is performed so that a medical or surgical procedure can be performed. Ideally, there would be no adverse outcomes from the anaesthetic. Unfortunately, this is an unrealistic expectation, since we know that all current anaesthetic agents are either cardiovascular and/or respiratory depressants and their administration is subject to human error.

It is therefore important to look for emerging trends, because anaesthetic, surgical and medical interventions change with time, and to monitor anaesthetic outcomes and look for ways to reduce any adverse events.

6. Process

When a death is notified to SCIDUA by an anaesthetist or medical practitioner, using the notification form or referral from other mortality review committees, the case is initially reviewed by the SCIDUA's triage sub-committee. The triage process determines whether a more detailed questionnaire needs to be sent to the anaesthetist, or whether the case can be classified based on the available information. A questionnaire is always sent if there is any suspicion that the anaesthetic was involved, or if the patient died during the procedure.

Meetings are normally held once a month, depending on the number of cases prepared. The classification system was developed by the Australian National Anaesthetic Mortality Committee. It relies on expert opinion and consensus. While it is therefore subjective to some extent, the committee has several members who have served for 10-20 years or more. It is important to note that the process is a retrospective review of cases where there has been a known outcome of death. The committee reviews whether alternative management may have altered the outcome.

The committee manages its data in a secure Microsoft Access 2003/SQL server relational database. It stores data on patients and anaesthetists, as well as that collected from the Form B/form of notification, questionnaire and triage sub-committee and committee meetings. SCIDUA's data analyst is responsible for data

management, ensuring accurate reporting, interpretation and verification of anaesthesia-related death data.

7. System of classification

The full system of classification may be seen in Appendix B at the end of this report.

Group A contains deaths where anaesthetic factors are thought to have played a role. There are three categories:

- deaths primarily due to anaesthetic factors are classified Category 1
- deaths where anaesthetic factors may have played some role are Category 2
- deaths where both surgery and anaesthetic factors were thought to have contributed are Category 3.

Group B contains deaths where anaesthesia is thought to have played no part. There are three categories:

- Category 4 for surgical deaths
- Category 5 for inevitable deaths (with or without surgery)
- Category 6 for incidental deaths, where the cause was unrelated to the surgery or anaesthetic.

Group C contains deaths where the factors involved in the patient's death are not fully assessable. There are two categories:

- Category 7 is used when the committee has considerable data, but is unable to find out the actual cause of death
- Category 8 is used for cases in which the available data is inadequate.

8. Results

8.1 Committee activities

Table 1: Cases reviewed and classified by SCIDUA 2011-2012

Meeting no.	Reviewed	Classified	More information
476	10	10	0
477	9	9	0
478	9	9	0
479	8	8	0
480	10	9	1
481	12	12	0
482	10	9	1
483	11	11	0
484	15	15	0
485	9	9	0
486	10	10	0
487	10	10	0
488	12	11	1
489	13	13	0

Table 2: Cases reviewed and classified by triage sub-committee 2011-2012

Triage no.	Reviewed	Classified	More information
79	30*	21	8
80	16	10	6
81	18	14	4
82	27*	17	7
83	39*	25	9
84	17	11	6
85	39*	23	15
86	20*	15	4
87	52*	40	11
88	52	36	16
89	58*	44	12
90	23*	20	1
91	34*	28	5
92	59*	42	13

*The number of cases reviewed by the triage sub-committee includes cases that were excluded due to inappropriate referral.

Table 3: Summary of committee activities 2011-2012

	No. of cases		
	2011	2012	Total
Reviewed by triage	206	278	484
Reviewed by the committee	79	69	148
Total cases reviewed	285	347	632
Classified by triage	136	210	346
Classified by the committee	77	68	145
Total cases finalised	213	278	491

The committee met 14 times during 2011 and 2012 and, together with the triage sub-committee, reviewed 632 cases. Some cases do not fall within the terms of reference of the committee – usually because the patient died more than 24 hours after the operation and anaesthetic. These are called inappropriate referral and are excluded from further study. In total, 491 cases were classified using the system described above.

8.2 Committee findings

Table 4: Classification of cases reviewed in 2011-2012

Death Type	Category	No. of Cases		
		2011	2012	Total
Deaths attributable to anaesthesia	1 & 2*	6	6	12
	3	45	45	90
Deaths in which anaesthesia played no part	4, 5 & 6*	154	218	372
Un-assessable deaths	7 & 8*	8	9	17
	Total	213	278	491

* Aggregated data is reported, due to small numbers, in at least one of the categories (n≤5)

8.3 Anaesthesia-related deaths

The cases of greatest interest to the committee are those where anaesthetic factors are thought to be the main contribution to the death (Categories 1 and 2) and those where both anaesthetic and surgical factors are involved (Category 3). There were 102 anaesthesia-related deaths classified in 2011 and 2012.

It is important to realise that there are two subsets of anaesthesia-related death - those in which the anaesthetic management could have been improved and those in which the committee could not suggest any way in which alternative management could have averted the fatal outcome.

8.3.1 No correctable factor identified

Seventy-five (74%) deaths attributable to anaesthesia were classified with a suffix GH (Appendix 1). For these cases, the committee felt that anaesthetic and surgical factors contributed to the patient's death, but no fault could be found in the anaesthetic management. In other words, the committee considered that these patients might not have died at the time they did, if they had not had surgery and anaesthesia. It was, however, reasonable and expected for the patient to have the operation. The majority of these cases underwent orthopaedic surgery (67%, n=50). In these patients, their intercurrent medical condition was contributory to the death. These results reflect the current willingness to operate on sicker patients.

8.3.2 Anaesthesia-related with correctable factors

The committee classified 27 cases (26%) in 2011 and 2012, as having correctable factors in the anaesthetic management. The most frequently identified were:

- inadequate pre-operative assessment (n=9)
- inappropriate choice, or incorrect application, of anaesthetic technique (n=7)
- inappropriate drug dosage (n=7)
- inadequate post-operative management (n=6).

Table 5 shows the list of causal or contributory factors identified in anaesthesia-related deaths in 2011-2012.

Table 5: Causal or contributory factors identified in anaesthesia-related deaths, 2011-12 (n=102)

Causal or contributory factors	Frequency count
A Pre-operative	
Ai Assessment	9
Aii Management	3
B Anaesthetic technique	
Bi Choice or application	7
Bii Airway maintenance	2
Biii Ventilation	0
Biv Circulatory support	0
C Anaesthesia drugs	
Ci Selection	4
Cii Dosage	7
Ciii Adverse event	4
Civ Incomplete recovery	0
Cv Inadequate recovery	0
D Anaesthetic management	
Di Crisis management	4
Dii Inadequate monitoring	2
Diii Equipment failure	0
Div Inadequate resuscitation	1
Dv Hypothermia	0
E Post-operative	
Ei Management	6
Eii Supervision	4
Eiii Inadequate resuscitation	0
F Organisational	
Fi Inadequate supervision or assistance	3
Fii Poor organisation	1
Fiii Poor planning	4
G No correctable factor	77
H Medical condition of patient a significant factor	88

* The frequency counts add up to more than 102, because some anaesthesia-related deaths have more than one causal or contributory factor identified.

8.3.3 Inadequate pre-operative assessment

The committee identified nine cases where inadequate pre-operative assessment was considered a factor in the patient's death.

In one case, a vital piece of the assessment was missed by the anaesthetist, although the information was available, had communication been better. This led to a delay in diagnosis and better management options, when the patient suddenly deteriorated.

In another urgent case, more critical information was available in the patient's hospital file, but the treating team did not have access to this, partly due to poor communication between several treating medical teams.

In the remaining cases, the committee felt that the anaesthetist failed to adequately assess the severity of the patient's disease. This led to an inappropriate operation in one case and inadequate peri-operative and post-operative planning in the others.

8.3.4 Inappropriate choice or incorrect application of anaesthetic technique

The committee identified seven cases where the anaesthetic technique was considered a factor in the patient's death. In every case, the patient was critically unwell and required an urgent or emergency procedure.

In three cases, the patient had a spinal anaesthetic combined with either sedation or general anaesthesia. Pre-existing hypotension was exacerbated, leading to the patient's death.

In two cases, sedation was provided by non-anaesthetists in the emergency ward to critically unwell patients. The patients may have benefited from alternative drug choices and doses and better airway management, to prevent aspiration.

In one case, propofol sedation was administered to a patient who had several disease processes that would have made that drug a poor choice.

In the remaining case, an inappropriate piece of anaesthetic monitoring equipment was substituted. This ultimately contributed to the patient's death.

8.3.5 Inappropriate drug dose or dose-related drug effect leading to an adverse cardiovascular event

The committee identified seven cases of inappropriate drug dose. All patients were 76 or older and three were over 90.

In four cases, the dose of propofol was considered to have contributed to the patient's death, causing refractory hypotension or cardiac arrest. The doses ranged between 50-100mg.

In two cases, the dose of drugs used in the spinal anaesthetic was considered to have contributed to the difficulties encountered by the anaesthetist.

In the remaining case, the dose of midazolam administered by a non-anaesthetist was considered to be the cause of a respiratory arrest.

8.3.6 Anaphylaxis as a cause of death

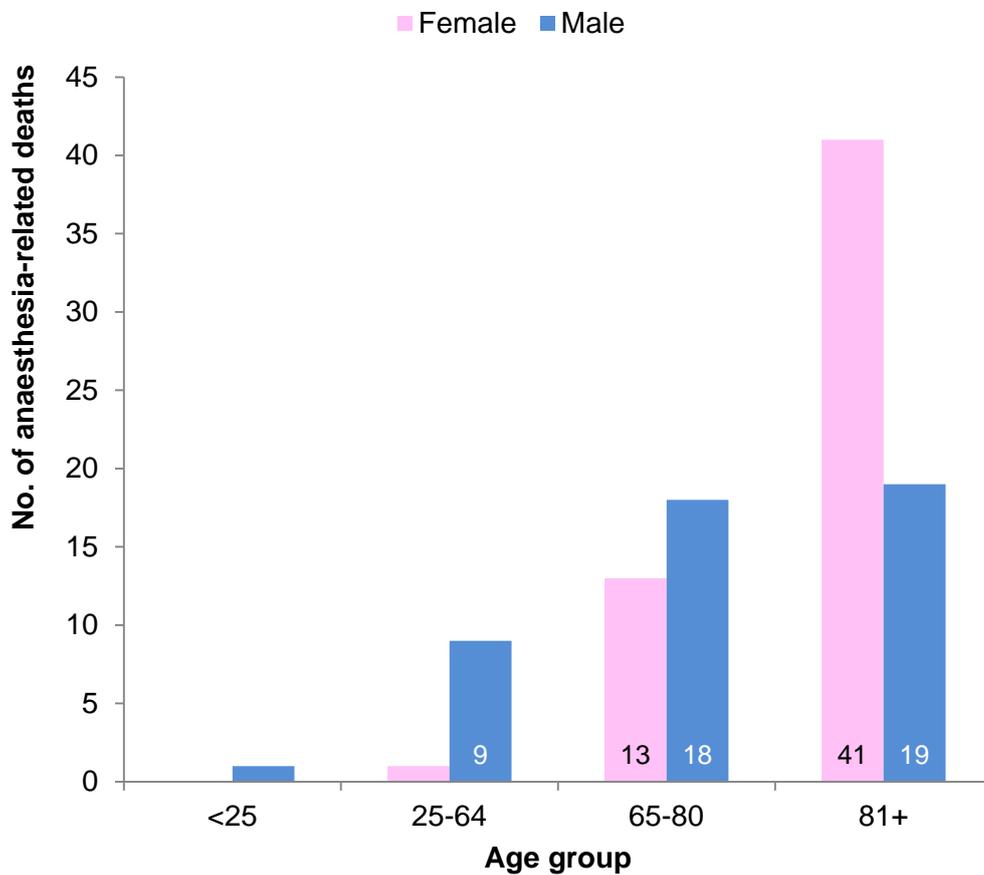
For this reporting period, there were four cases of presumed anaphylaxis. All patients had significant intercurrent disease. The drugs involved were antibiotics in two cases and muscle relaxants (suxamethonium and rocuronium) in the other cases.

The committee was satisfied with the management in three cases, but the diagnosis of anaphylaxis was significantly delayed in the other case and led to inadequate resuscitation.

8.4 Description of anaesthesia-related deaths

8.4.1 Age and gender

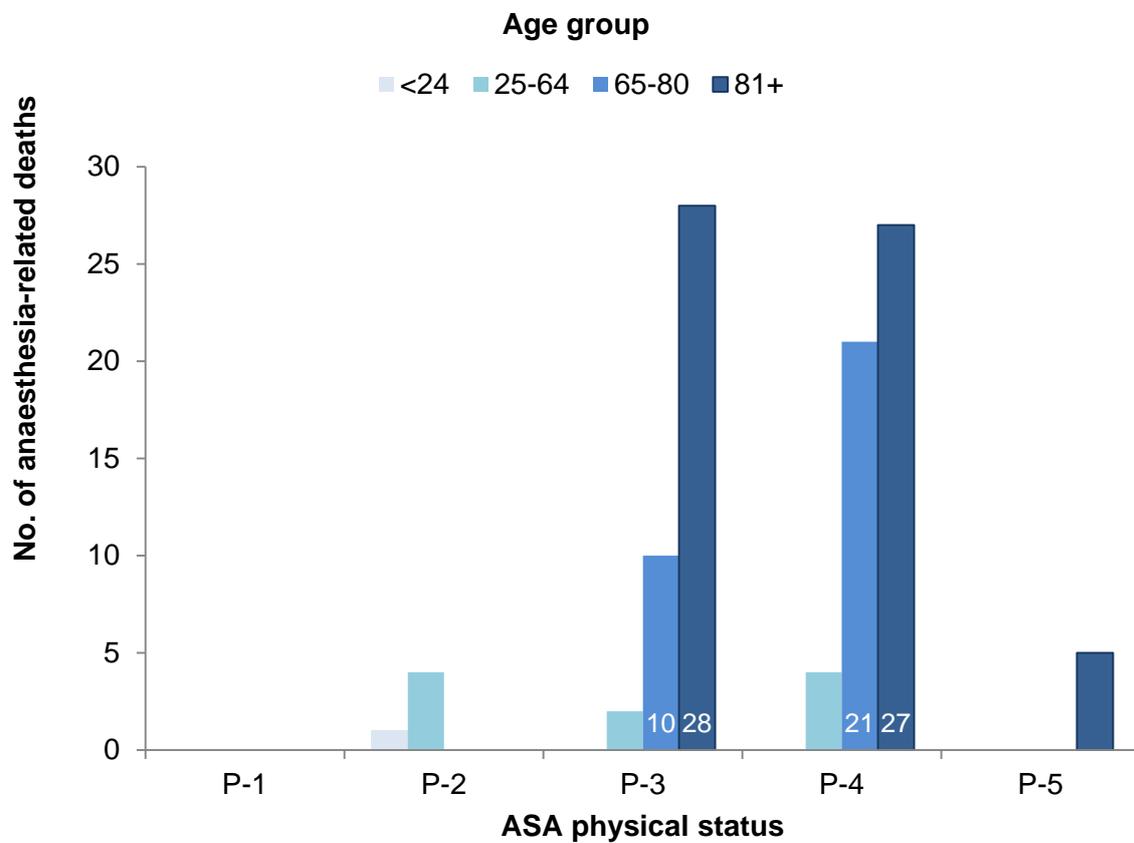
Figure 1: Age and sex distribution in anaesthesia-related deaths, 2011-2012 (n=102)



- There were more females (54%) than males (46%) in anaesthesia-related deaths
- Most patients (89%, n=91) were aged 65 and over
- The median age of patients was 82 years (range: one month – 98 years)

8.4.2 ASA physical status⁵

Figure 2: Age and ASA distribution in anaesthesia-related deaths, 2011-2012 (n=102)



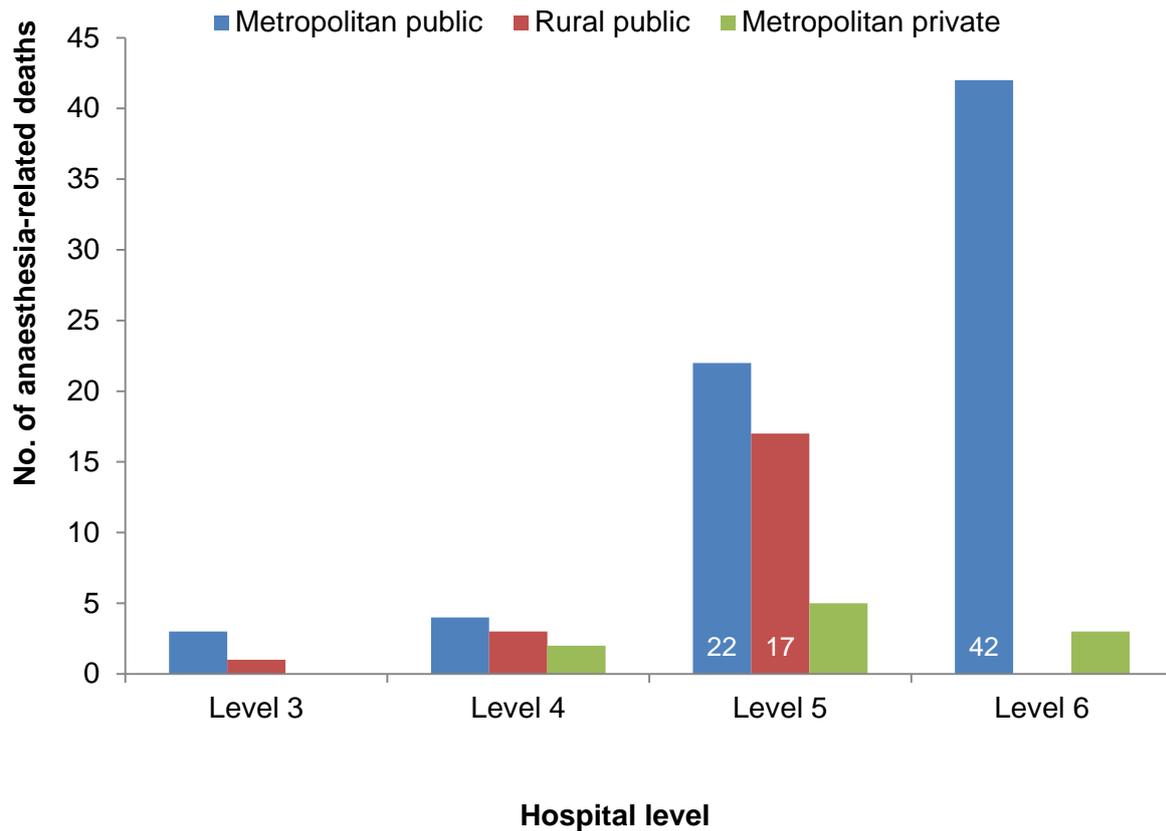
- Most anaesthesia-related deaths (84%, n=86) were ASA grade 3 or 4 and of patients aged 65 and over

⁵ The American Society of Anesthesiologists (ASA) Physical Status rating grades patients according to their health (see Appendix C).

8.4.3 Hospitals

SCIDUA classifies hospitals into six levels, using a numerical system (Appendix D) based on, but not identical to, the NSW Guide to Role Delineation of Health Services. Figure 3 shows the distribution of anaesthesia-related deaths in NSW hospitals.

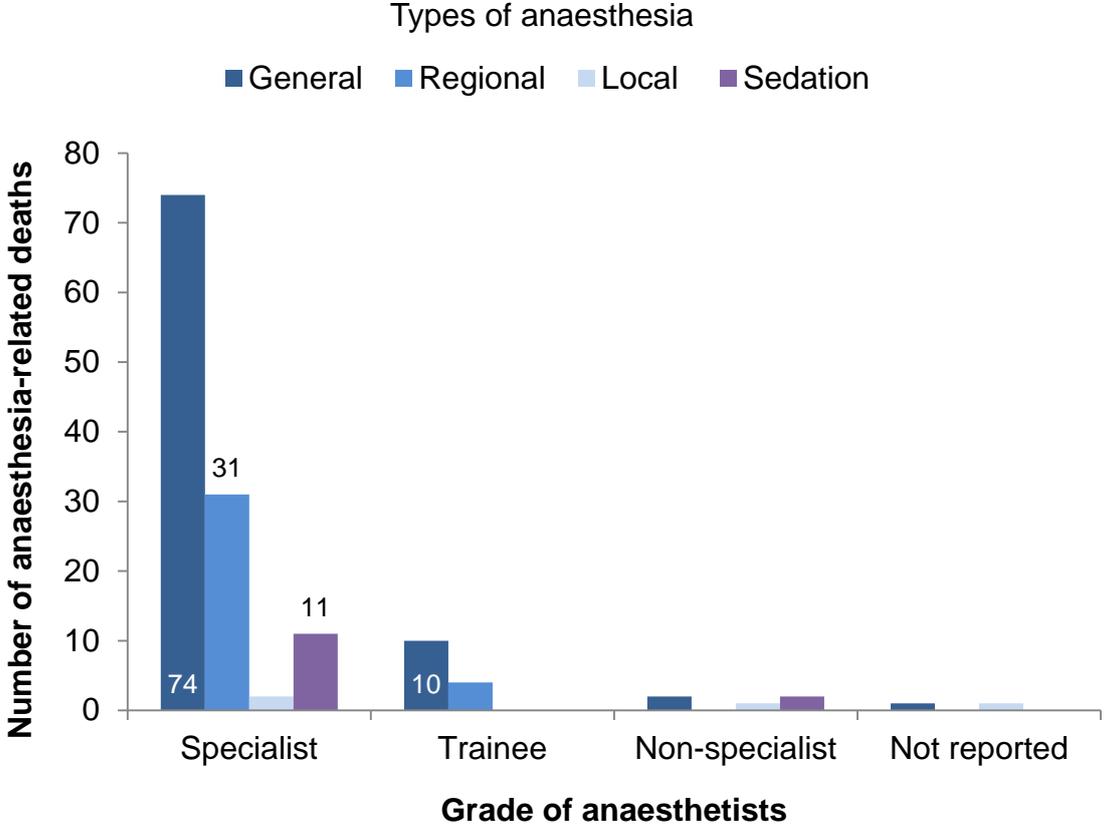
Figure 3: Distribution of anaesthesia-related deaths by hospital type, 2011-2012 (n=102)



- More than half of the anaesthesia-related deaths (54%, n=55) occurred in Level 5 or 6 metropolitan public teaching hospitals
- Ten (10%) anaesthesia-related deaths occurred in metropolitan private hospitals
- No deaths were reported from rural private hospitals

8.4.4 Anaesthetists and anaesthesia

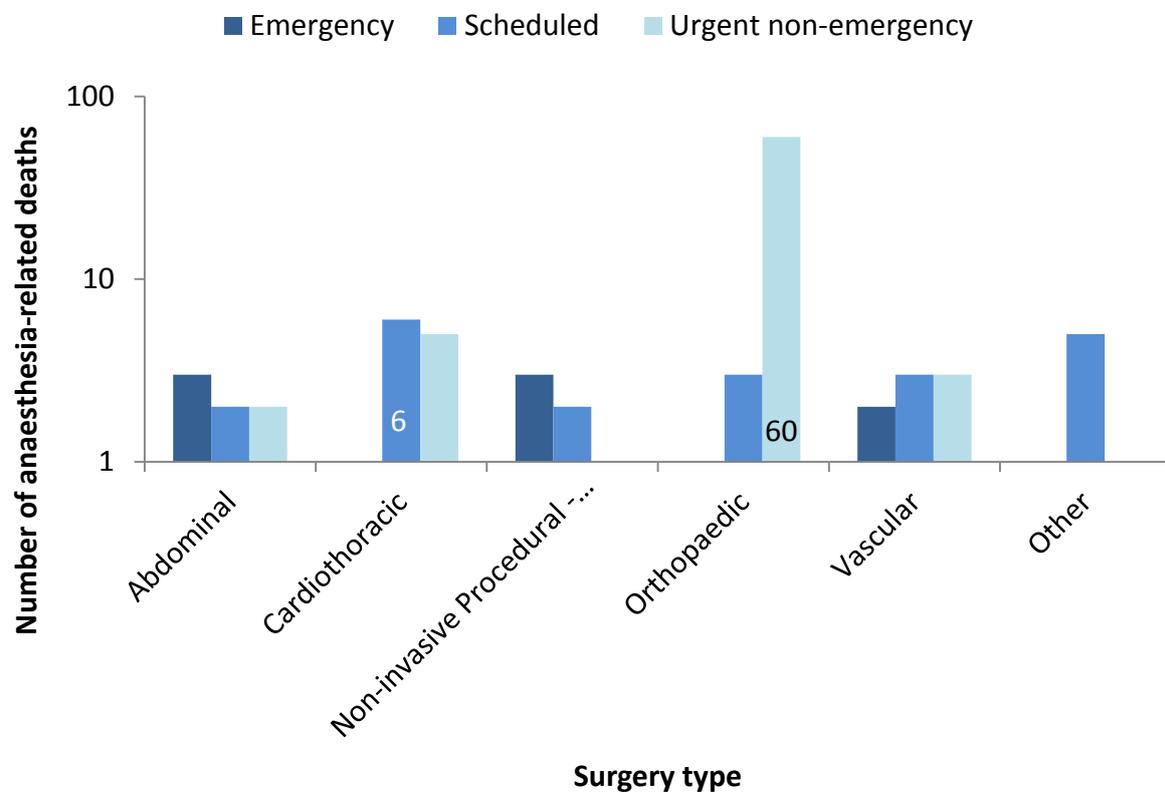
Figure 4: Distribution of anaesthesia-related deaths by grade of anaesthetists and type of anaesthetics administered, 2011-2012 (n=102)



- Most anaesthesia-related deaths (73%, n=74) had a general anaesthetic administered by a specialist anaesthetist
- Sedation was reported in 13 (12.7%) deaths. Nearly all (85%, n=11) were administered by specialist anaesthetists

8.4.5 Surgery and urgency

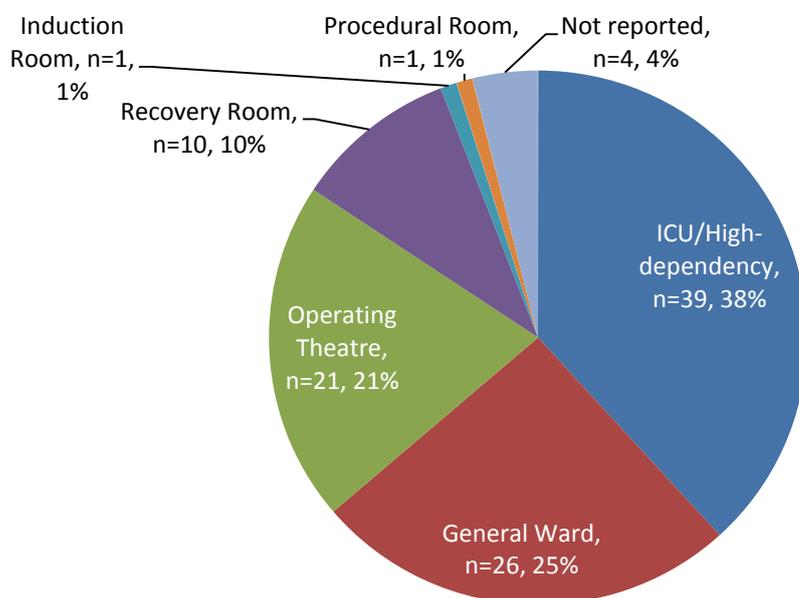
Figure 5: Distribution of anaesthesia-related deaths by surgery type and urgency of surgery, 2011-2012 (n=102)



- Urgent non-emergency orthopaedic surgery accounted for most of the surgery performed in anaesthesia-related deaths (59%, n=60)
- Other surgery includes general (non-abdominal), otolaryngology, urology and no surgery performed

8.4.6 Location of death

Figure 6: Distribution of anaesthesia-related deaths by location within the hospital, 2011-2012 (n=102)



8.5 Deaths in the operating theatre

The most confronting death is the one that happens on the operating table, directly under the anaesthetist's care.

In 2011 and 2012, the committee reviewed 112 deaths that occurred in the operating theatre or procedural room. Of these, 22 (20%) were classified as being anaesthesia-related (Table 6).

Table 6: Classification of deaths in the operating theatre or procedural room by SCIDUA, 2011-2012

Death Type	Category	No. of cases		
		2011	2012	Total
Deaths attributable to anaesthesia	1, 2 & 3*	9	13	22
Deaths in which anaesthesia played no part	4, 5 & 6*	36	50	86
Un-assessable deaths	7 & 8*	1	3	4
	Total	46	66	112

The median age of “on table” anaesthesia-related deaths was 79 (range: 35 - 97). More than half (59%, n=13) were ASA 4, i.e., critically unwell. The rest (41%, n=9) were ASA 2 or 3, i.e., with mild to moderate systemic disease.

Orthopaedic surgery was performed in half these cases (50%, n=11). The remaining underwent abdominal, cardiothoracic, urological or vascular surgery, a cardiac or endoscopic procedure.

Half the cases were urgent (50%, n=11), followed by emergency (27%, n=6) and scheduled (23%, n=5).

The typical anaesthetic-related “on table” death was a patient:

- aged 79
- presented with severe systemic disease
- underwent an orthopaedic procedure
- underwent urgent surgery
- had at least one poor medical condition which contributed to the outcome
- had no correctable factors.

8.6 Deaths associated with cemented hip arthroplasty

There were 17 cases where the committee felt the cause of death was related to bone cement. The typical syndrome described in the medical literature of “bone cement implantation syndrome” was seen in 12 cases, with features of sudden hypotension and hypoxaemia progressing through to cardiovascular collapse. In three cases the patient’s cardiovascular collapse was preceded by atrial fibrillation becoming rapid and requiring intervention. In a further two cases the patient died from a combination of factors, including bone cement. These accounted for three per cent (3/112) of deaths occurring in the operating room or post-anaesthetic care unit.

8.7 Inevitable deaths

The majority of cases reported to the committee in 2011 and 2012 were classified as having no anaesthetic or surgical factors involved and are considered inevitable deaths (Category 5) (67%, n=327). These were cases where the patient’s disease or injury made recovery impossible, despite competent anaesthesia and surgery. The age and ASA grade⁶ distribution among these inevitable deaths are presented in Figure 7.

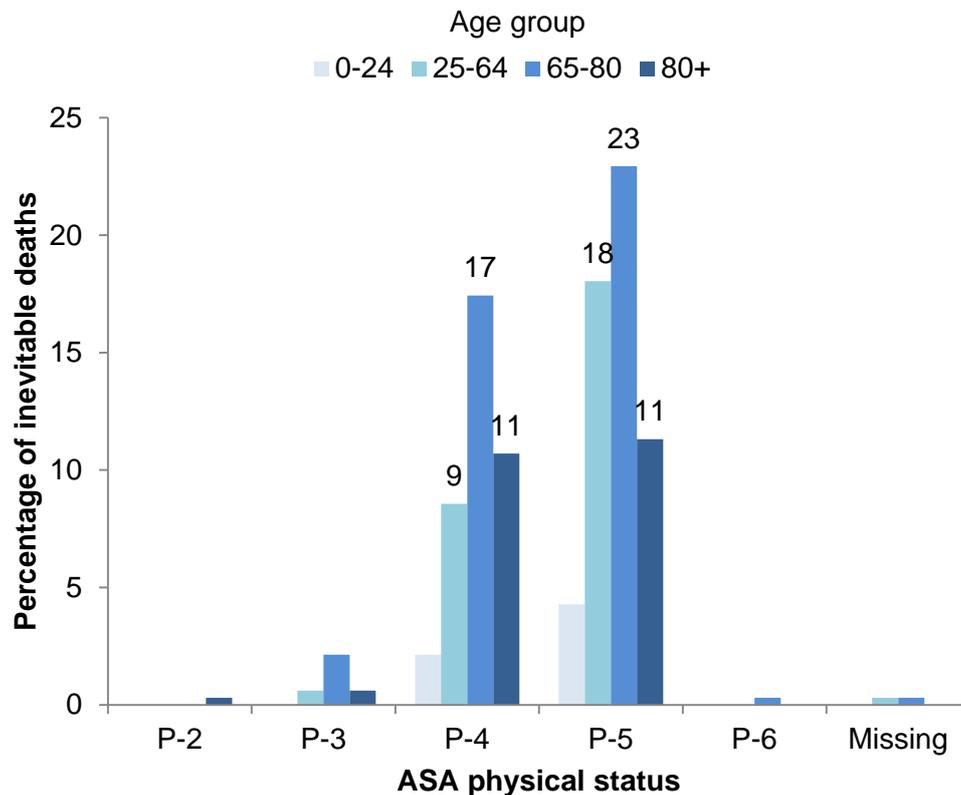
Trauma was reported in 36 (11%) cases. Most inevitable deaths, except for four, occurred after an operation or medical procedure listed as follows:

- Abdominal (43%, n=141)
- Vascular (14%, n=46)
- Cardiothoracic (12%, n=38)

⁶ The American Society of Anesthesiologists (ASA) Physical Status rating grades patients according to their health (see Appendix C).

- Neurosurgery (11%, n=37)
- Endoscopic procedures (9%, n=28)
- Other⁷ (11%, n=37)

Figure 7: Distribution of age and ASA physical status in inevitable deaths, 2011-2012 (n=327)



- Nearly all inevitable deaths (95%, n=312) were ASA grade 4 or 5, i.e., critically unwell or not expected to survive for 24 hours
- Most inevitable deaths were aged 65 years or over (66%, n=216)
- All inevitable deaths under 25 years of age (6%, n=21) were ASA grade 4 or 5

8.8 Futile cases

These are cases where surgery is performed when it is clear before starting, that no favourable outcome could be expected from surgical intervention. The committee classified seven such cases in 2011 and 2012.

8.9 Deaths not able to be assessed

There were 17 cases classified categories 7 and 8. It is important to note that both these categories could have anaesthetic factors involved in the patient's death, but

⁷ Includes multi-trauma, otolaryngology, general (non-abdominal), gynaecology, urology, cardiac procedures, radiological procedures, other non-invasive procedures and resuscitation.

the committee has been unable to assess them, usually due to a lack of information, or, in four cases, despite considerable details being available.

Appendix A - SCIDUA Notification Form

NSW HEALTH	FAMILY NAME		MRN
	GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
Facility:	D.O.B. ____/____/____	M.O.	
ADDRESS			
REPORT OF DEATH ASSOCIATED WITH ANAESTHESIA/SEDATION (PREVIOUSLY FORM B)			
LOCATION			
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE			
LOCATION OF DEATH (eg, OR, ICU, HDU etc)	DATE OF DEATH	TIME OF DEATH	WEIGHT
Pre-operative diagnosis / condition			
ASA classification (please tick) <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> E			
Operation(s) / procedure(s)			
Findings at operation/procedure			
Induction	DATE OF INDUCTION	TIME OF INDUCTION	TIME ANAESTHETIC CEASED
Anaesthetic / Sedation (tick all relevant boxes) <input type="checkbox"/> GA <input type="checkbox"/> Regional <input type="checkbox"/> Local <input type="checkbox"/> Sedation			
List of all drugs given & doses (including premedication if any)			
Brief description of events			
Likely cause(s) of death			
Anaesthetist / Sedationist (Please print name, title and qualifications)		1. _____	
		2. _____	
Contact details of Medical Officer completing this report (for feedback)	PRIVATE MAILING ADDRESS	HOSPITAL ADDRESS	
Name of Medical Officer completing this report:	SIGNATURE	DATE	
Please send completed form to: Director General, c/o Special Committee Investigating Deaths Under Anaesthesia Clinical Excellence Commission, GPO Box 1614, SYDNEY NSW 2001			



Holes punched as per AS2828-1999
BINDING MARGIN - NO WRITING

REPORT OF DEATH ASSOCIATED WITH ANAESTHESIA/SEDATION (PREVIOUSLY FORM B)

SMR010.511

SMR010.511
SPECIAL COMMITTEE INVESTIGATING DEATHS UNDER ANAESTHESIA

Appendix B - Anaesthesia Mortality

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 the 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.
<p>Explanatory notes:</p> <ul style="list-style-type: none"> • 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, <u>sub-category H</u> should also be applied. • If no factor under the control of the anaesthetist is identified which could or should have been done better, <u>sub-category G</u> should also be applied. 	

B Deaths 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 procedure.
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 Un-assessable deaths

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 DEATHS

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

SUB-CATEGORIES

A Pre-operative

(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 contra-indicated, 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 re-institute 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 contra-indicated 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 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 tranquilising agents, where reversal is indicated.
(v) Incomplete Recovery	For example, 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.
(ii) Inadequate Monitoring	Failure to observe minimum standards as enunciated in the ANZCA professional documents, 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 Post-operative

(i) Management	Death as a result of inappropriate intervention or omission of active intervention by the anaesthetist or a person under 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 inadequacy of supervision of a trainee is based on the ANZCA professional 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 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.

Appendix C - American Society of Anesthesiologists Physical Status Classification

P-1

A normal healthy patient

P-2

A patient with mild systemic disease

P-3

A patient with severe systemic disease

P-4

A patient with severe systemic disease that is a constant threat to life

P-5

A moribund patient who is not expected to survive without the operation

E

Patient requires emergency procedure

Appendix D - Hospital Level

The nomenclature is a numerical system based on, but not identical with, the NSW Guide to Role Delineation of Hospitals. It classifies hospitals as follows:

- Level 6:** A multi-disciplinary hospital, which provides facilities for most or all surgical sub-specialties and the intensive care environment to support them. Specialist and sub-specialist anaesthetic staff are on site during the day and anaesthetic registrar cover is on site 24 hours a day. This classification also applies to where a hospital is designated as a trauma centre.
- Level 5:** A hospital which is multi-disciplinary, but only provides some sub-specialty surgery and anaesthesia, with an appropriate post-operative environment. Specialist and sub-specialist anaesthetic staff are on site during the day and anaesthetic registrar cover is on site 24 hours a day, or available within 10 minutes.
- Level 4:** A multi-disciplinary hospital, which does not cater for all surgical specialities, but accepts some trauma and provides a lower level of intensive care, referring any patients in need of specialised life support to a higher-level facility. Specialist anaesthetic staff are on site during the day and provide an on-call service after hours.
- Level 3:** A hospital or day centre which undertakes a limited range of procedures, but does not have the capability to care for high-risk patients or surgery which necessitates high-level post-operative care. Specialist anaesthetic staff are on site during the day.
- Level 2:** A facility at which anaesthesia or sedation is provided to enable a single procedure to be undertaken on good-risk patients (as stand-alone ECT or dentistry).
- Level 1:** Any other location at which anaesthesia or sedation is administered, such as a dental office.

If an institution or facility is in regional NSW, the suffix **R** is added and for private hospitals, the suffix **P**.

Appendix E - Urgency of cases

Emergency

Immediate surgery for life-threatening condition (less than 30 minutes), e.g., ruptured AAA, extra-dural haematoma, prolapsed umbilical cord.

Urgent

At the earliest available time to prevent physiological deterioration (30 minutes-4 hours), e.g., ruptured viscus, appendicitis, open wound, blocked VP shunt.

Urgent non-emergency

The patient has a condition that requires emergency surgery, but there is time to allow medical optimisation and appropriate organisation of operating time and surgeons or surgical teams (4 hours to days), e.g., fractured neck of femur, pacemaker insertion, laparotomy for bowel obstruction.

Scheduled

Where the patient presents for elective surgery.

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