



ANZCA

AUSTRALIAN AND NEW ZEALAND
COLLEGE OF ANAESTHETISTS

Safety of Anaesthesia

A review of anaesthesia-
related mortality reporting
in Australia and New Zealand
2003-2005

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Report of the Working Group convened under the auspices of the Australian and New Zealand College of Anaesthetists

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Leona Wilson

The long established practice of collection and analysis of anaesthesia-related mortality data has helped ensure the high quality and safety of anaesthesia in Australia and New Zealand. Australian and New Zealand anaesthetists are leaders in this field; their commitment is shown by the high rate of reporting despite this being in most cases voluntary. The mortality committees have been supported by the proclamation of confidentiality by the respective governments, and the cooperation of the state coroners.

This is the fifth triennial report collated and published by the Australian and New Zealand College of Anaesthetists (ANZCA). In various formats, there has been reporting of deaths in association with anaesthesia since 1960. Reporting was first started in New South Wales (1960), with subsequent committees established in Victoria (1976), Queensland (1976), Western Australia (1978), South Australia (1987), and New Zealand (1981). The Australian committees' reports were first collated and published under the auspices of the National Health and Medical Research Council (NHMRC) in 1985; after two reports under their auspices, ANZCA assumed responsibility for the triennial reports. The New Zealand reports were published separately, but the committee (the Anaesthesia Mortality Assessment Committee) ceased to function in the late 1980s after a report was obtained by the police under subpoena. It is intended that New Zealand data will be joined with Australian data once mortality reporting resumes in New Zealand.

In Australia, the state committees have varied in their functionality. It is of concern that the present report has data only from three committees (New South Wales, Victoria and Western Australia). It recently became apparent that the committees of Queensland and South Australia had not been functioning for some time, and a committee has not as yet been set up in the Australian Capital Territory. The Tasmanian committee is now functioning well, but was established after 2005, thus could not contribute to this report. Mortality reporting is a long recognised method of monitoring the quality of health care, and is undertaken worldwide. ANZCA is advocating that there should be regular reporting of anaesthesia-related mortality in all Australian states and territories and in New Zealand. This should be a priority for the respective Governments. This report includes information on the current status of anaesthesia-related mortality reporting in each region.

The three states that have contributed to this report represent about two-thirds of the population of Australia. There has been a reduction in anaesthesia-related mortality in this triennium in these three states compared with the previous triennium, with a decrease in deaths in which there was a correctable factor identified, and in which the patient's medical condition was not a significant factor. Deaths in which no correctable factors were identified, are an important area for further research.

This report provides a rich source of information for anaesthetists, anaesthesia trainees and their supervisors, particularly the documentation of causal and contributory factors. The information will be disseminated to all appropriate bodies in order to contribute to further improvements in patient safety.

The efforts of all involved are gratefully acknowledged; without them, there would be no report. I would particularly like to acknowledge the work of the mortality committees and the reporting anaesthetists, as well as the cooperation of the coroners.

Leona Wilson
President, ANZCA
Chair, ANZCA Mortality Working Group

Mortality Working Group

The Mortality Working Group Members that produced this report include the President of the Australian and New Zealand College of Anaesthetists (ANZCA), the Chairs or Coordinators of currently functioning State Mortality Committees, and other interested parties as listed:

ANZCA President

Dr Leona Wilson, Chair, Mortality Working Group

ANZCA Vice President

A/Prof Kate Leslie

Chairs or Coordinators of Currently Functioning (2009) Australian State Anaesthesia Mortality Committees

Chairs	Representing
Dr Neville Gibbs	Western Australia
A/Prof Larry McNicol	Victoria
Prof Ross Holland	New South Wales
Dr Margaret Walker	Tasmania

Other Interested Parties

Dr James Troup	Queensland
Prof John Russell	South Australia/Northern Territory
Dr Simon Jenkins	South Australia/Northern Territory
Dr Stephen Brazenor	Australian Capital Territory
Prof Alan Merry	New Zealand

ANZCA Quality and Safety Officer

Ms Pauline Berryman

Details on each jurisdiction, including (where available) Terms of Reference, legislative protection and information regarding Coronial Acts, can be found in the *State, Territory and National Information* section, starting on page 13.

Executive Summary



Neville Gibbs

1. Australian anaesthesia has a distinguished record of mortality investigation and reporting, with national mortality reports being published since 1985. In many ways, despite recognised deficiencies, Australian anaesthesia mortality reporting has been amongst the most comprehensive in the world. The role of the ANZCA Mortality Working Group has been to try to overcome recognised deficiencies, and to extend and improve anaesthetic mortality reporting, both in Australia and New Zealand.
2. Since the publication of the *Safety of Anaesthesia in Australia 2000-2002*¹ report in 2006, independent anaesthesia mortality reporting has been established in Tasmania for the first time, and there has been progress towards the establishment of anaesthesia mortality reporting in the Australian Capital Territory (ACT). There has also been progress towards the re-establishment of anaesthesia mortality reporting in New Zealand. However, the situation with both the Queensland and South Australian anaesthesia mortality Committees has deteriorated, such that neither can provide data for the 2003-2005 triennium.
3. These developments have meant that only three Australian states (New South Wales, Victoria and Western Australia) have been able to provide data for the 2003-2005 triennial report. Tasmania, which used to report to the NSW Committee before 2003, was in transition between 2003 and 2005, and did not report independently. The Northern Territory is usually covered by the South Australian Mortality Committee, but the latter did not function over this period. The ACT and New Zealand are yet to fully establish (or re-establish) anaesthesia mortality committees.
4. The absence of data from Queensland, South Australia, Tasmania, and the Northern Territory is a major setback to anaesthesia mortality reporting in Australia for this triennium. Nevertheless, the data from the three remaining states covers about two thirds of Australia's population. This is a large population in its own right (13.68 million²), and is sufficient to permit continuity, comparison, and the assessment of trends, although clearly the data can no longer be considered 'national'.
5. As with all anaesthesia mortality reporting, it must be appreciated that classification of anaesthesia-related deaths always relies on expert opinion or consensus, and therefore always remains subjective to some extent. It must also be recognised that some anaesthesia-related deaths may be missed. Nevertheless, due to the comprehensive processes in place in all three states, it is unlikely that many cases were missed or classified incorrectly.
6. During the triennium, the number of anaesthesia-related deaths (Categories 1-3, **Table 1**) reported from the three states was 112. However, in only 24 cases were the deaths classified as Category 1 (where it was considered 'reasonably certain' that death was caused by anaesthesia factors *alone*). In 33 cases there was 'some doubt' (Category 2), and in the remaining 55 cases, 'both anaesthetic and surgical' factors were implicated (Category 3). This represents a 9% decrease in the percentage of Category 1 cases compared to the previous triennium (21% vs 30%).
7. During the triennium, the combined population for the three states was about 13.68 million (Australian Population Statistics²), **see Table 5**. Using this figure, the anaesthesia-related mortality rate for these three states was about 2.73 deaths per million population per annum. This is slightly higher than the national figure for the 2000-2002 triennium (2.35 deaths per million population per annum¹). However, it is a slight decrease when the figures for only these three states during the previous triennium are considered (2.96 deaths per million population per annum, **see Table 5**).
8. During the triennium there were about six million individual episodes of anaesthesia care in the three states. This figure was obtained via a data search conducted by the Australian Institute of Health and Welfare³. The data were obtained from coders at all public and private hospitals, who used a coding hierarchy to ensure that only **one** anaesthesia item number was counted per episode of anaesthesia care, **see page 10**. Using this denominator, the anaesthesia-related mortality rate was 1:53,426 for the three states involved, **see Table 12**. This figure is slightly higher than the national figure for the previous triennium (~1:56,000¹). However, again, it is a decrease when compared to the previous data for the three states involved (1:44,397, **see Table 13**).
9. The profile of the anaesthesia-related deaths was similar to the national figures in the previous triennium. The majority (75%) occurred in older patients (age >60 years). Fifty-six percent of patients were female. A small proportion (16%) continues to occur in patients considered low risk (ASA P 1-2). As in previous years, orthopaedic and abdominal surgical procedures were the most common. There were 10 cases involving endoscopy. Fifty percent of all cases were urgent or emergent. There were no cases related to pain management.

10. The percentage of deaths occurring in ward areas (18%) was similar to the previous national figure for the previous triennium (15%). The majority of deaths occurred in an intensive care unit, high dependency unit, or operating theatre. As in previous reports, the majority of deaths occurred in metropolitan teaching hospitals (58%), as would be expected with the acuity of the cases in these hospitals.
11. In this triennium, only a very small number of deaths involved a non-specialist anaesthetist (one in New South Wales, and one in Western Australia). This was a reduction compared to the previous triennium (1.7% vs 7.3% nationally in 2000-2002). There was little change in the number of deaths in which the principal anaesthetist was a trainee (10.7% vs 11.7% nationally for 2000-2002). There was only one case in which the anaesthesia was provided by the operator. All the remaining cases involved specialist anaesthetists.
12. In comparison to the previous national report there was a decrease in the number of anaesthetic causal or contributory factors (1.58 vs 2.42 per case). This was associated with a substantial increase in the percentage of cases in which no correctable factor was identified (33% vs 20%) and in the percentage of cases in which the patient's medical condition was considered a significant factor (58% vs 28%).
13. Overall, the data indicated that for the three states reporting, anaesthesia-related mortality decreased compared to the previous triennium, in relation to both population (see **Table 5**) and the number of episodes of anaesthesia care (see **Tables 12 and 13**). Moreover, there was a further decrease in the number of Category 1 deaths, and in the number of cases in which there was a correctable factor. These figures indicate that anaesthesia safety improved in these states compared to the previous triennium.
14. The anaesthetic mortality rates for the remaining states and territories in Australia, and for New Zealand for 2003-05 are not known. While it might be assumed that the rates are similar to those from New South Wales, Victoria, and Western Australia, this cannot be confirmed without formal anaesthetic mortality reporting in these regions.
15. Despite the demonstrated reduction in anaesthesia mortality, and the extremely low incidence overall, it is clear that there is still room for improvement, especially in low risk patients. This is because the ultimate aim is to prevent all anaesthesia related deaths. In most deaths, there was at least one causal or contributory factor that could be identified. These deaths could theoretically be prevented by improved training, education, or resources. However, in some cases there was no correctable factor. This means that in order to completely eliminate anaesthesia-related deaths, there is a need for continued research as well as continued education.

Neville Gibbs, FANZCA
Editor
Chair, Anaesthetic Mortality Committee
of Western Australia

Recommendations

The ANZCA Mortality Working Group makes the following recommendations:

1. Patients and authorities in New South Wales, Victoria, and Western Australia should be reassured that the anaesthetic mortality rate in their states was very low for the 2003-2005 triennium, and had decreased when compared to the previous triennium.
2. A return to full function of the anaesthetic mortality committees in Queensland and South Australia should be encouraged as a matter of urgency.
3. The establishment of the Anaesthetic Mortality Committee in Tasmania should be welcomed and supported.
4. There should be follow-up and support for the positive developments in the ACT and New Zealand, with a view to the establishment or re-establishment of confidential anaesthetic mortality reporting as soon as possible.
5. The ANZCA Mortality Working Group should continue to support and promote accurate anaesthetic mortality reporting throughout the region, with more effective and timely feedback to the anaesthetic community where possible. While there will always be an inevitable interval due to individual state committee's assessment of cases, it is hoped that future reports will be published within three years of the end of the previous triennium.
6. The importance of anaesthetic mortality reporting as part of a process to monitor and improve the quality and safety in anaesthesia should be recognised by all anaesthetists, hospital administrations, and health care authorities.
7. The contribution of current anaesthesia training, accreditation, and continuing education to achieving and maintaining low anaesthetic mortality rates should be recognised.
8. Even though anaesthesia-related death is exceptionally rare, it is clear that the risk remains ever present, even in low risk patients. Therefore, anaesthesia care should be provided or supervised by specialist anaesthetists wherever possible, although the role of accredited non-specialist anaesthetists in many regions is appreciated. Particular care and additional resources are required for older, sicker patients undergoing major or urgent procedures, and these should extend well into the post-operative period.
9. It should be emphasised that the majority of anaesthesia-related deaths are potentially avoidable and could be reduced by improvements in anaesthetic training, continuing medical education or the greater availability of expertise or resources. However, it should also be recognised that with our current state of knowledge and practice, not all anaesthesia-related mortality is avoidable. There is a small, but significant subset of cases in which only scientific advances will permit a further reduction in anaesthetic mortality.

Methods

Data collection

Confidentiality of information, an absolute requirement for all Committees, was ensured by no primary data being examined in the compiling of the report.

1. State Coronial Acts and the collection of data

Information relating to the various Coronial Acts can be found in the *State, Territory and National Information* section, page 13.

2. Uniformity in analysing reports

To uphold uniformity between the States in analysing reports, the Chairs of the State-based Mortality Committees have continued to utilise the agreed Glossary of Terms – Case Classification form wherever possible. The use of this classification system was agreed to in March 2000 – **see Appendix 1** to view the form in its entirety.

System of classification

The system of classification and the term 'death attributable to anaesthesia' is defined in **Table 1** and the report focuses on deaths in which anaesthesia played a part, i.e., Category 1-3. For the most part, the term 'anaesthesia-attributable' has been replaced with 'anaesthesia-related' in this and other reports. Please note that this classification system is also utilised in States that collect data on anaesthesia-related morbidity in addition to mortality.

Table 1: System of classification by State-Based Anaesthesia Mortality Committees

Death 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.

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.

Death In Which Anaesthesia Played No Part	
Category 4	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 the anaesthetist or surgeon.

Un-assessable Death	
Category 7	Those that cannot be assessed despite considerable data but where the information is conflicting or key data are missing.
Category 8	Cases that cannot be assessed because of inadequate data.

Findings for NSW, VIC and WA

Number of deaths classified

The total number of deaths reviewed by the three States for the triennium was **1404**, of which **112** were considered to be wholly or partly related to anaesthetic factors. Of the **1404** cases reviewed, **185** were classified 'un-assessable' due to inadequate or conflicting data (Category 7 or 8, **Table 1**). Most of the un-assessable cases were from New South Wales.

Table 2: Number of deaths classified by each Committee

	Total Classified	Category 1	Category 2	Category 3	Total Anaesthesia-Related
NSW	979	7	14	32	53
VIC	157	12	6	22	40
WA	268	5	13	1	19
Total	1404	24	33	55	112

The disparity in total cases classified reflects both population differences and different requirements for reporting in different States (see *State, Territory and National Information*, page 13). The differences between states in relation to the various categories may represent some subjectivity in classification, particularly between categories 2 and 3. There is less subjectivity, however, in Category 1 cases, and in 'total anaesthesia-related'.

Number of anaesthesia-related deaths (Category 1-3) in relation to population

Table 3: Number of anaesthesia-related deaths during the 2003-2005 triennium, in relation to the population (of NSW, VIC and WA*)

No. of deaths considered anaesthesia-related	112
No. of anaesthesia-related deaths per million population, 2003-2005	8.19
No. of anaesthesia-related deaths per million population per annum	2.73

*Estimated resident population for 2004 (Australian Bureau of Statistics²).

The 'estimated resident population' is considered more accurate than the 'census' figure.

The number of anaesthesia-related deaths per million population was greater than for the national figure in the previous report (2000-2002¹), in which there were approximately 7.06 anaesthesia-related deaths per million population for that triennium, or 2.35 anaesthesia-related deaths per million population per annum. However, if the data from only NSW, VIC and WA from the previous triennium are compared, the number of anaesthesia-related deaths per million population per annum decreased slightly (2.73 vs 2.96), (See **Table 5**).

Table 4. Number of anaesthesia-related deaths in comparison with previous reports

	1994-96 ⁴	1997-99 ⁵	2000-02 ¹	2003-05
NSW & TAS	62	56	67	(NSW only) 53
VIC	35	32	39	40
SA & NT	10	11	3	-
WA	19	11	16	19
QLD	9	20	12	-
Total	135	130	137	112

Table 5: Number of anaesthesia-related deaths in relation to population in comparison to previous reports

	1994-96	1997-99	2000-02	2003-05
National population (x Million)	17.56	18.9	19.41	20.11
National number of anaesthesia-related deaths	135	130	137	N/A
National anaesthesia-related death rate	7.69 (pa 2.56)	6.88 (pa 2.29)	7.06 (pa 2.35)	N/A
NSW, VIC, WA population (x Million)	12.57*	13.4*	13.75*	13.68
NSW, VIC, WA number of anaesthesia-related deaths	116*	99*	122*	112
NSW, VIC, WA anaesthesia-related death rate	9.23* (pa 3.08)*	7.39* (pa 2.46)*	8.87* (pa 2.96)*	8.19 (pa 2.73)

Population source – Australian Bureau of Statistics² *Includes Tasmania pa = per annum N/A = not available

Findings for NSW, VIC and WA continued

Causal or contributory factors in anaesthesia-related deaths – see Appendix 1

The findings as to which aspect of anaesthetic factors contributed to death are shown in Table 6.

Table 6: Causal or contributory factors in anaesthesia-related deaths

	NSW	VIC	WA	Total
A Preoperative	17	11	3	31
i assessment	12	10	2	24
ii management	5	1	1	7
B Anaesthesia Technique	15	12	14	41
i choice or application	4	7	3	14
ii airway maintenance	8	3	3	14
iii ventilation	1	1	1	3
iv circulatory support	2	1	7	10
C Anaesthesia Drugs	20	13	3	36
i selection	7	2	0	9
ii dosage	11	4	3	18
iii adverse event	2	7	0	9
iv incomplete reversal	0	0	0	0
v inadequate recovery	0	0	0	0
D Anaesthesia Management	9	10	6	25
i crisis management	2	2	1	5
ii inadequate monitoring	4	1	3	8
iii equipment failure	0	1	0	1
iv inadequate resuscitation	3	5	2	10
v hypothermia	0	1	0	1
E Postoperative	8	8	1	17
i management	5	5	1	11
ii supervision	1	2	0	3
iii inadequate resuscitation	2	1	0	3
F Organisational	6	17	4	27
i inadequate supervision or assistance	2	5	2	9
ii poor organisation	3	4	0	7
iii poor planning	1	8	2	11
G No Correctable Factor	25	6	6	37
H Medical Condition of The Patient A Significant Factor	29	24	12	65

In comparison to the previous triennium, the average number of causal or contributory factors per anaesthesia-related death was 1.58 (vs 2.42 in the previous report). The causal or contributory factors were spread across a wide range of potential factors.

In 37 cases (33%) no correctable factor could be identified. This indicates that in some patients, anaesthetic factors contribute to death despite optimal anaesthetic management with our current state of knowledge. This percentage has increased since the previous triennium (20%). Nevertheless, in the majority of cases (67%), at least one causal or contributory factor could be identified.

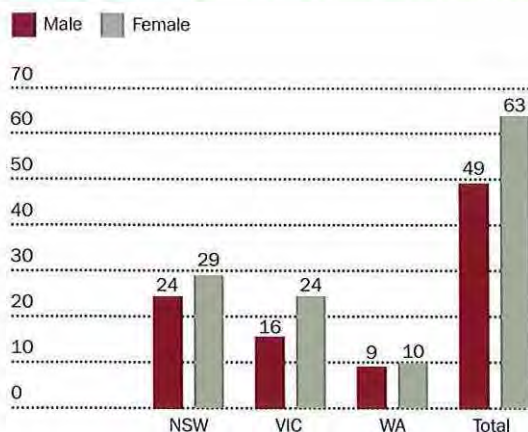
One obvious difference from the previous triennium was the substantial increase in the number of patients in whom the poor medical condition was considered a significant factor in the death (58% vs 28%).

Findings for NSW, VIC and WA continued

Gender

In contrast to previous reports, there were more females than males. The significance of this observation is not known.

Figure 1: Gender distribution in anaesthesia-related deaths



Age

Table 7: Age distribution in anaesthesia-related deaths

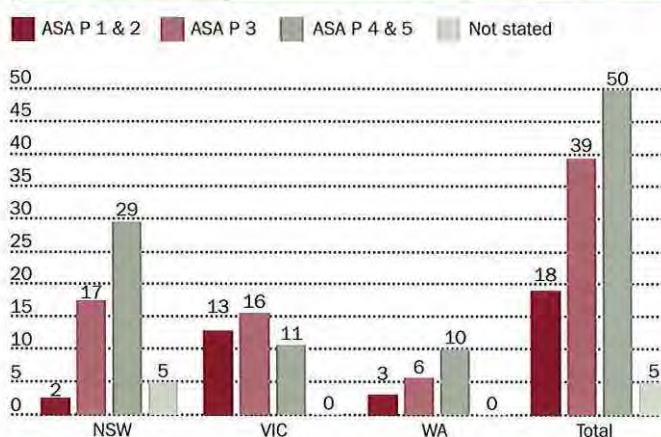
Age (Years)	NSW	VIC	WA	Total
<11	0	0	0	0
11-20	0	2	0	2
21-30	1	2	1	4
31-40	3	4	1	8
41-50	3	3	0	6
51-60	1	7	0	8
61-70	3	2	3	8
71-80	15	12	4	31
81-90	19	8	7	34
>90	8	0	3	11

No anaesthesia-related deaths were recorded in children under one year of age. The majority of the deaths occurred in patients over the age of 60 years (75%). Over two-thirds occurred in patients over 70 years of age.

Level of risk

The level of risk was stratified using the American Society of Anesthesiologists (ASA) Physical Status Classification (see Appendix 2).

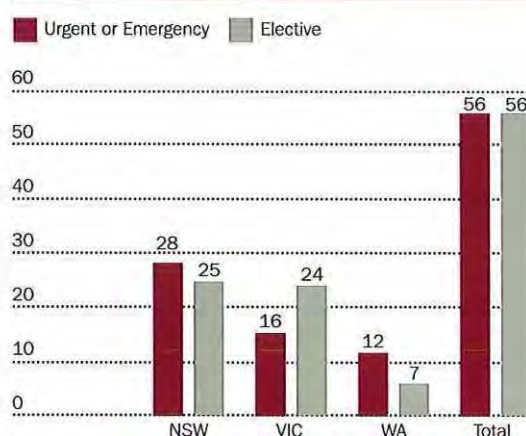
Figure 2: Level of risk of patients by ASA Physical Status



About 45% of anaesthesia-related deaths occurred in patients with the highest levels of risk (ASA P 4-5). However, there were 18 low risk patients (ASA P 1-2). This was a further reduction compared to the previous triennium (16% vs 19%). Nevertheless, the number of anaesthesia-related deaths in low risk patients remains of concern.

Degree of urgency

Figure 3: Degree of urgency of the procedure (with anaesthesia-related deaths)



While the total number of scheduled procedures far outnumbers urgent or emergency procedures, 50% of the anaesthesia-related deaths occurred in patients undergoing urgent or emergency procedures. The increased risk associated with urgent or emergency procedures may relate to the unstable condition of these patients, the inadequate opportunity for complete pre-operative assessment, or a requirement for continued resuscitation at the same time of the administration of anaesthesia.

Findings for NSW, VIC and WA continued

Type of Hospital

Table 8: Type of Hospital

	Metropolitan Public Teaching	Metropolitan Non-Teaching	Rural Base	Rural Public Other	Private	Day Care (free standing)
NSW	29	5	10	3	6	0
VIC	22	6	1	3	8	0
WA	14	0	2	0	3	0
Total	65	11	13	6	17	0

As in previous reports, the majority of anaesthesia-related deaths occurred in metropolitan teaching hospitals. This was not unexpected because these hospitals treat the majority of urgent and emergency patients. They also undertake the bulk of the more complex procedures, which are usually performed on older, sicker patients, often with a higher risk.

Location of death

Table 9: Location of death

	Operating Theatre	Induction Room	PACU	Procedural Room	ICU/HDU	General Ward
NSW	22	0	4	2	18	7
VIC	12	0	1	0	18	9
WA	6	0	4	0	5	4
Total	40	0	9	2	41	20

The majority of the deaths occurred in an intensive care or high dependency unit (37%). A large proportion also occurred in an operating theatre (36%). The remainder occurred in a ward area (18%), in a theatre recovery room (8%), or in a procedural room (2%) – all figures rounded.

Note: that 'location of death' does not necessarily indicate the location of the anaesthesia-related event.

Grade of anaesthetist

Table 10 shows the grade of the anaesthetist. In cases during which two or more anaesthetists were involved, the grade of anaesthetist was taken as the principal anaesthetist involved, as indicated in individual anaesthetists' reports.

Table 10: Grade of anaesthetist

	Specialist	GP Non-Specialist	Trainee/Registrar	Other	Operator
NSW	48	1	2	1	1
VIC	30	0	8	2	0
WA	16	1	2	0	0
Total	94	2	12	3	1

There was only one death involving a non-specialist in New South Wales, one in Western Australia, and none in Victoria. Note that the relative number of cases undertaken by specialists and non-specialists is not known.

Approximately 11% of cases involved unsupervised trainees. While it cannot be determined whether specialist supervision would have altered outcomes in these cases, it would seem advisable to ensure that supervision is available for all higher risk cases. The two cases in Victoria classified as 'Other', involved non-supervised junior medical staff in an Intensive Care Unit.

There was also one case in which the anaesthesia was provided by the operator. It has been previously stated, that it is almost never an acceptable practice to provide anaesthesia and perform a procedure concurrently.

Findings for NSW, VIC and WA continued

Type of surgery or procedure

Table 11: Type of surgery or procedure

	NSW	VIC	WA	Total
Abdominal	8	5	4	17
Cardiothoracic	3	11	2	16
Vascular	3	3	3	9
Neurosurgery	2	0	0	2
Orthopaedic	27	10	6	43
Urology	1	0	0	1
General (Non Abdominal)	4	2	1	7
ENT/Head and Neck	0	2	0	2
Eye	0	0	0	0
Renal	0	0	0	0
Gynaecological	0	0	0	0
Endoscopy	5	2	3	10
Pain Management	0	0	0	0
Other (e.g. Obstetric, Resuscitation, Electroconvulsive therapy, Invasive Monitoring)	0	5	0	5

As in the previous triennium, the most common procedures were orthopaedic (38%) and abdominal (15%). Other common procedures were cardiothoracic and endoscopic. It should be noted that the definition of anaesthesia-related deaths is such that the surgical procedure should not be a direct factor. Care should be taken in attempting to interpret this data, because denominators for each procedure are not known, and the relative levels of risk of patients presenting for various procedures are also not known.

Number of anaesthetics administered

As in the previous report, the total number of 'episodes of anaesthesia care' (denominator) was obtained from the Australian Institute of Health and Welfare (AIHW³). The AIHW receives data (ICD-10) on all medical procedures, including anaesthetic procedures, from public and private hospitals in Australia. As there is often more than one anaesthesia item and code for any single episode of anaesthesia care, coders used a hierarchy to ensure that only one code was counted for each episode. The total number of episodes between July 1, 2004 and June 30 2005 inclusive was then obtained. In order to estimate the denominator for the triennium, this one-year figure was multiplied by three. This information is presented in **Table 12**.

Hierarchy used by coders

During 2004/2005, coders within public and private hospitals applied the following hierarchy, from the Australian Coding Standards (ACS) by the National Centre for Classification in Health⁶, to each episode of anaesthetic care:

ACS 0031 Anaesthesia

Classification, point 1

If more than one anaesthetic from block [1910] Cerebral

*anaesthesia and/or block [1909] Conduction anaesthesia is administered in a 'visit to theatre' (including different anaesthetics for different procedures), assign only **one** code from each block using the following hierarchies (listed from highest priority to lowest):*

[1910] Cerebral anaesthesia

- i. General anaesthesia (92514-XX)
- ii. Sedation (92515-XX)

[1909] Conduction anaesthesia

- i. Neuraxial block (92508-XX)
- ii. Regional blocks (codes 92509-XX, 92510-XX, 92511-XX, 92512-XX)
- iii. Intravenous regional anaesthesia (92519-XX)

Findings for NSW, VIC and WA continued

Table 12: Estimated number of anaesthetics administered during July 2004 – June 2005*

	NSW	VIC	WA	Total
No. Anaesthetics July 04 - June 05* **	921,638	782,182	290,748	1,994,568
No. Anaesthetics x 3 (triennium)	2,764,914	2,346,546	872,244	5,983,704
No. Anaesthesia-related deaths (triennium)	53	40	19	112
No. Anaesthetics per death	52,168	58,664	45,908	53,426

*AIHW³ www.aihw.gov.au

**Australian Hospital Statistics, July 1, 2004 to June 30, 2005. Procedures in ICD-10-AM groupings: 1333; 92506-92507: 1909; 92508-92509: 1920; 92514-92515. These include general, neuroaxial, and combined anaesthetic procedures, total public and private from NSW, VIC and WA.

For the purposes of this report 'episodes of anaesthesia care' applied only when anaesthesia was being provided for a surgical, diagnostic, or other interventional procedure. It excluded episodes where a nerve or other regional block was being performed for analgesia alone. (A decision was made not to include isolated regional or nerve blocks in the denominator. This was based on the presumption that the majority of these blocks were performed for analgesia alone [e.g. intercostal nerve blocks, femoral nerve blocks, etc.]. If these blocks had been performed in association with general anaesthesia or sedation, they would have already been captured using the hierarchy. While it is possible that some regional or nerve blocks were used as the sole anaesthetic for certain procedures, the total number of isolated upper limb and lower limb nerve blocks [ICD-10-AM 92511-92512] during the 2004-2005 period was only 4,548. Even if all these were included, there would have been little effect on the calculated anaesthesia-related mortality rates).

Incidence of death related to anaesthesia

In order to calculate the incidence of death related to anaesthesia, it is necessary to have accurate data on the number of deaths (numerator) and the number of anaesthetics (denominator). Unfortunately, it is rarely possible to obtain completely accurate data of this type, so best estimates must be used. While NSW, VIC, and WA had comprehensive procedures in place to assess and record anaesthesia-related mortality, there is no way of ascertaining whether all anaesthesia-related deaths were reported or classified correctly. Nevertheless, it is unlikely that a large number of cases would have been missed or classified incorrectly.

The estimated anaesthesia-related mortality for the three reporting states was 1:53,426 procedures (see Table 12). This is a slightly higher rate than the national figures for the 2000-2002 triennium (1:56,000¹). However, it is a slight decrease when compared to the previous data for the three states, NSW, VIC and WA (1:44,397, see Table 13).

Table 13: Estimated anaesthesia-related mortality for NSW, VIC, and WA in relation to the number of procedures for the 2000-2002 triennium

	NSW*	VIC	WA	Total
No. Anaesthetics July 01 - June 02**	900,064	647,641	257,762	1,805,467
No. Anaesthetics x 3 (triennium)	2,700,192	1,942,923	773,286	5,416,401
No. Anaesthesia-related deaths (triennium)	67	39	16	122
No. Anaesthetics per death	40,301	49,819	48,330	44,397

*Includes Tasmania

**AIHW Australian Hospital Statistics July 1, 2001 to June 30, 2002⁷

Findings for NSW, VIC and WA continued

Incidence of death in patients considered to be good or fair risk

Table 14: Incidence of death in patients considered to be good or fair risk

Triennium	Number of ASA P 1-2 patients	Total Number of Category 1-3 Deaths	Percentage of deaths considered at good or fair risk
1985-87* ⁸	64	153	42%
1988-90* ⁹	37	92	40%
1991-93** ¹⁰	30	116	26%
1994-96** ⁴	13	135	9.6%
1997-99** ⁵	19	130	14.6%
2000-02** ¹	26	137	18.9%
2003-05	18	112	16.1%

* The first two reports were published by the National Health and Medical Research Council^{8,9}

** Subsequent reports have been under the auspices of the Australian and New Zealand College of Anaesthetists^{10, 4, 5, 1}

This table demonstrates that the number of deaths occurring in patients at good or fair risk remains low. However, deaths in these low risk patients should be preventable.

State, Territory and National Information

New South Wales, Australia

Overview

The Special Committee Investigating Deaths under Anaesthesia in New South Wales (SCIDUA) began its operations in 1960. A problem of doubtful legal immunity led to its suspension in 1980, but legislative protection was upgraded in 1983 and it resumed operations, which have been uninterrupted ever since.

Coronial Act

The NSW Coroners Act 1980 – A Coroner must be notified of any death which occurs during/as a result of/within 24 hours of the administration of an anaesthetic which was given as part of a medical/surgical/dental or similar procedure (excluding a local anaesthetic employed for the purposes of resuscitation).

The above section of the Act has remained unchanged since 1964, however, a request has been made to the Attorney General for the insertion for the words 'or sedation' to follow the word 'anaesthetic'.

Terms of Reference

1. To register, investigate and classify deaths occurring during, as a result of, or within 24 hours of a procedure performed under anaesthesia or sedation.
2. To determine whether further information is required to complete the above investigation, and if so to request such information under guarantee of confidentiality from the attending practitioner(s).
3. To examine information acquired and identify any issues of management which were instrumental in the patient's death.
4. To report the Committee's findings confidentially to the practitioners involved in the patient's care.
5. To report annually to the Minister for Health, drawing attention to any matters which require action to improve the safety of anaesthesia and sedation in New South Wales.
6. To acquaint the medical profession in general and anaesthetists in particular with any matters to which special attention needs to be paid to ensure the safety of anaesthesia and sedation.
7. To submit for publication in appropriate peer-reviewed journals the results of the Committee's investigations in such a way as to preserve undertakings of confidentiality given to respondents.
8. To make available the expertise of its members to the Clinical Excellence Commission in pursuit of systemic improvements to patient care in the fields of anaesthesia and sedation.

Legislative Protection

The Health Administration Act 1982 Section 23 gives the Minister authority to gazette bodies, conducting investigations into morbidity or mortality, for privilege in relation to information obtained. SCIDUA was scheduled as such a body on 9 December 1982 under Section 20(4) of the Act. Freedom of Information Act 1989 Schedule 1 Sections 8, 12, 13 exempts the Committee's documents from public access.

The above makes it an offence for revealing any documentation conveyed to the Committee by an anaesthetist. The principle of double jeopardy then protects both Committee members and the respondents to its enquiries.

Current Developments (2008/2009)

In recent times there have been a number of administrative changes, viz.:

Administrative and budgetary responsibility for the Committee has been undertaken by the Clinical Excellence Commission, a statutory body with its own funding. This has transformed the rather hand-to-mouth existence of the Committee in former years, dependent as it was on informal goodwill from various Departments of Anaesthesia.

Concurrently with this achievement of financial stability, SCIDUA has altered its internal processes by the appointment of a Triage Subcommittee of three members, including the Chairman *ex officio*, which now reviews all deaths notified, and selects those which merit referral to the full committee. This has streamlined the system with much quicker feedback to the respondents.

Appointments to SCIDUA are the prerogative of the Minister for Health in NSW, and are normally made on the advice of the Committee or the bodies represented thereon. However, it has become clear in recent times that equally important is the recruitment of anaesthetists with expertise in the subspecialties of anaesthesia, notably paediatric, cardiac and orthopaedic anaesthesia as well as intensive care medicine and obstetric anaesthesia. Hence recent appointments to SCIDUA have resulted in a membership with a wide spectrum of experience.

SCIDUA meets approximately 6 times per year and reports annually to the Minister for Health on its operations. The outcomes of its deliberations in each particular case are fed back to the anaesthetist concerned in a confidential letter from the Chairman. De-identified statistical data are made available to the ANZCA Mortality Working Group on a triennial basis. From time to time Reports on trends or other matters of clinical importance are submitted to peer reviewed journals.

Prof Ross Holland, FANZCA

Chair

Special Committee Investigating Deaths Under Anaesthesia
in New South Wales

Victoria, Australia

Overview

The Victorian Consultative Council on Anaesthetic Mortality and Morbidity (VCCAMM) was established in 1976 under section 13 of the Health Act 1958 and now operates pursuant to section 24 of the Health Act (as amended).

Composition (2003-2005)

The members of the Council are:

The Chairman, a specialist anaesthetist appointed by the Minister of Health and Cabinet.

13 specialist anaesthetists, nominated by:

- The Australian and New Zealand College of Anaesthetists (3),
- The Australian Society of Anaesthetists (3),
- The Victorian Hospital Sector including Teaching, Regional and Rural (7)

and appointed by the Minister of Health.

6 representatives nominated by:

- The Royal Australasian College of Surgeons
- The Australian and New Zealand Intensive Care Society
- The Australasian College of Emergency Medicine
- The Victorian Institute of Forensic Medicine
- The Royal Australian College of General Practitioners
- The Department of Human Services

and appointed by the Minister of Health

Council is supported by a Confidential Project Officer appointed by the Department of Human Services.

Terms of Reference

- To monitor, analyse and report on key areas of potentially preventable anaesthetic mortality and morbidity within the Victorian hospital system
- To keep a register of anaesthetic mortality and morbidity within the Victorian hospital system
- To liaise with other consultative councils on issues of common concern, including the development of appropriate systems for reporting of relevant cases by practitioners
- To improve the practice of anaesthesia by publication and dissemination of relevant information and practical strategies identified during deliberations of the Council
- To report as required to the Minister of Health and to the Victorian Quality Council
- To respond to specific matters referred to the Council by the Minister for investigation and reporting, as required

The Victorian Council is the only State Mortality Committee that also has a brief to report on significant morbidity associated with anaesthesia.

Legislative Protection

Section 24 A of the Health Act 1958 contains the provisions for the Council pertaining to the preservation of confidentiality and prevention of disclosure (other than that approved by both the Minister and the reporting practitioner) of identifiable information relating to the case report, hospital and reporting practitioner.

Council has an additional layer of protection in that all identifiable information is deleted from case reports prior to deliberation by the Council so that only the Chairman and the Confidential Project Officer have access to such information. This is viewed as important in the maintenance of trust between the Council and the Victorian anaesthesia community.

Coronial Act and the Collection of Data

The Coroner's Act 1985 defines a reportable death associated with anaesthesia as 'a death that occurs during an anaesthetic or that occurs as a result of an anaesthetic and is not due to natural causes'.

Cases are accessed from the Office of the State Coroner with the support of the Clinical Liaison Service (CLS), which was developed by the Victorian Institute of Forensic Medicine.

Case Reporting

Cases are reported to Council from three separate sources, direct reports from practising anaesthetists, coronial cases, and reports forwarded from department of anaesthesia quality assurance co-ordinators. In addition, the Department of Human Services has a clinical risk management program that includes the mandatory reporting of Sentinel Events. Council therefore reviews any cases relevant to anaesthesia that have been referred from this source.

Case Reviews

Council deliberates on cases at monthly meetings, after which a summary of such deliberation is forwarded by the Chairman to the reporting practitioner. This feedback is deemed to be an important component of the quality assurance function of Council. All cases are classified according to the National Classification System and when appropriate, 'keywords' are also attached to the case report to provide enhanced clinical information for the register of cases (knowledge database).

Other Reports

Annual reports were published for 2004 and 2005 and forwarded to the Minister and the Victorian anaesthesia community in 2005 and 2006. Annual reports reflect the work undertaken by Council for that year, and therefore relate to cases that were reviewed but did not necessarily occur during that period. In October 2007, the ninth report of Council (for the triennium 2000-2002) was published. The tenth report of Council (for the triennium 2003-2005) will be published in 2009, and again will include morbidity as well as mortality. Triennial reports relate to cases that actually occurred during the triennium. All reports and issues of clinical importance that emerge from Council case deliberations are available on the Council website.

Council website: www.health.vic.gov.au/vccamm

Current Developments (2008/2009)

The major current issues for VCCAMM are:

- Legislation involving the Review of the Health Act 1958 has been passed during 2008. This will alter the provisions for the Council in that confidentiality will be maintained, but provision for exceptional disclosure deemed by Council to be in the public interest will be possible. There is also provision for mandatory notification of anaesthesia-related mortality and defined morbidity as well as provision for Council to request information from a health service provider which is authorised to provide such information.
- Review of the Coroner's Act 1985 is also before Parliament in 2008 with recommendations for improved definitions of reportable deaths. The category of 'deaths associated with anaesthesia' will no longer exist as a separate entity. Deaths will be reportable in the setting of a 'health related procedure' that will include any medical, surgical or other procedure including the administration of any anaesthetic, analgesic, sedative or other drug. Council has strongly supported such changes.
- In 2007/2008 the Department of Human Services undertook an Evaluation of the Victorian Consultative Council on Anaesthetic Mortality and Morbidity to review its performance against its terms of reference. Recommendations have been developed to enhance infrastructure support and communication strategies.
- In 2008, Council has increased its membership with the appointment of 4 additional specialist anaesthetists from the hospital sector, with resultant improved geographical representation and spread of sub speciality expertise.

Council regards all of these issues as supportive of its terms of reference.

A/Prof Larry McNicol, FANZCA

Chair

Victorian Consultative Council on Anaesthetic Mortality and Morbidity

Western Australia

Overview

During the triennium the Anaesthetic Mortality Committee (AMC) of Western Australia continued its normal activity under the provisions of the West Australian Health Act Amendment Act, 1978.

In June 2005, the Committee received notification of a discussion paper on the development of a New Public Health Act by the Department of Health, and was invited to comment. The Committee's response included a submission that any changes to the Health Act should preserve mandatory reporting, confidentiality, the wide representation, and the other strengths of the current Health Act in relation to the West Australian Anaesthetic Mortality Committee and the reporting provisions in Western Australia.

Composition (2003-2005)

The five permanent members of the Committee are:

- A person nominated by the State Branch of the Australian and New Zealand College of Anaesthetists who is also Chairman of the Committee.
- A medical practitioner nominated by the Executive Director of Public Health.
- A specialist anaesthetist nominated by the Senate of the University of Western Australia.
- A specialist anaesthetist nominated by the Australian Society of Anaesthetists.
- A specialist anaesthetist nominated by the Australian Medical Association.

The seven Provisional members are:

- A specialist obstetrician and gynaecologist nominated by the State Branch of the Australian Council of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists.
- Two general practitioners with a special interest in anaesthesia, nominated by the State Branch of the Royal Australian College of General Practitioners.
- A specialist surgeon nominated by the State Branch of the Royal Australasian College of Surgeons.
- A registered midwife nominated by the State Branch of the Royal Australian Nursing Federation.
- A dental practitioner nominated by the State Branch of the Australian Dental Association.
- The Professor of Clinical Pharmacology of the University of Western Australia.

Reporting of Deaths Related to Anaesthesia

All deaths occurring within 48 hours of an anaesthetic or deaths where the anaesthetic is thought to have been a contributing factor must be reported to the Executive Director of Public Health.

The Executive Director of Public Health, on receipt of a report of such a death, directs the investigator to enquire into the circumstances of the death. If the investigator finds that the death is not likely to have been due to the anaesthetic, he or she reports this to the Executive Director of Public Health, and that, so far as the AMC is concerned, is the end of the matter. If the investigator is of the opinion that the death is likely to have been due in some measure to the anaesthetic, he or she prepares a case report for the Chairman of the Committee.

Scope of the Investigator

The investigator receives a report from the anaesthetist concerned. It is usually possible to make a decision based on this report. If not, the investigator may request further information. This is usually in the form of the hospital file or the autopsy report, which are always made available by the relevant authorities. The investigator may also interview the anaesthetist or any other persons likely to assist in the investigation. No-one else on the Committee is entitled to communicate with any person mentioned in the investigator's report unless that person makes a request in writing.

Calling a Meeting

The Chairman, having received the report, invites all permanent members and selects at least two provisional members to make up a Committee of at least seven. The report is then considered by the Committee, which reaches a consensus opinion on the cause of death and whether the conduct of the anaesthetic played any part.

Legislative Protection/Confidentiality

The report of the investigator to the Chairman is in the form of a medical report with identification of persons and places removed. The Chairman knows the name of the anaesthetist as he or she has to write to the anaesthetist after the meeting. There are strict guidelines for dealing with the material collected by the Committee in a confidential manner. When the Committee has completed its deliberations, the material must be returned to the Executive Director of Public Health for safe custody. The reports of the investigator and the determinations of the Committee may be disseminated for educational purposes, provided that persons involved are not identifiable. The information used by the Committee and its opinions about that information are not admissible in any court of any kind, and no person furnishing information to the Committee is liable in any action for damages. The only exception to the confidentiality clauses are the provisions of the Coroners Act, whereby the adducing of

evidence for a serious offence would take precedence over the confidentiality clauses of the Health Act. With this in mind, the Committee has always deferred any discussion of deaths related to anaesthesia until the Coroner has brought down his or her report. The Freedom of Information Act 1992 opened a way for the public to breach the confidentiality of the Committee. However, under the Health Services (Quality Improvement) Act, 1994, the AMC was exempted from the provisions of the Freedom of Information Act. The members of the Committee believe that the Acts provide watertight protection for its deliberations and those involved in them.

Coroners Act 1996

The death occurs during or as a result of an anaesthetic (and is not due to natural causes).

Current Developments (2008/2009)

- 1. New Public Health Act.** It has been agreed that the legislation in relation to Mortality Committees in Western Australia, including the Anaesthetic Mortality Committee, would remain within the West Australian Health Act Amendment Act, 1978, and would not be amended or incorporated into the New Public Health Act, which will soon be considered by the West Australian Parliament.
- 2. Identification of deaths within 48 hours of anaesthesia.** It is now apparent that information on deaths occurring within 48 hours of anaesthesia can be identified by the West Australian Department of Health. This information could be provided to the Committee and cross checked with reports received. Anaesthetists who had not yet provided a report could be reminded of the responsibilities under the Western Australian Health Act. The Committee is still considering whether it is possible, and also whether it is desirable, to introduce this system to anaesthesia mortality reporting in Western Australia.

Dr Neville Gibbs, FANZCA

Chair

Anaesthetic Mortality Committee of Western Australia

Tasmania, Australia

Overview

During the triennium of 2003-2005, Tasmania did not have an established Anaesthetic Mortality Committee. However, reports may have been submitted to the New South Wales Special Committee Investigating Deaths Under Anaesthesia (SCIDUA) by individual practitioners.

Current Developments (2008/2009)

The Tasmanian Audit of Anaesthesia Mortality has developed significantly over last 2 years.

1. The Audit is being run in tandem with the Tasmanian Audit of Surgical Mortality (TASM), which is based on the West Australian Audit of Surgical Mortality or the Scottish Audit model, for a number of reasons including:
 - I. Sharing of resources including staff, office space, consumables and software
 - II. Funding approval from the State Government was easier to secure for a joint audit, as funding was already in place for the surgical audit, and additional funding for the anaesthesia audit was small in comparison (the initial establishment costs for the surgical audit having been met by RACS)
 - III. Ease of identifying cases – the surgical audit office is notified of all deaths occurring in Tasmania within 30 days of a surgical procedure, so capture rate for post-surgical deaths is high.
2. The Anaesthetic proforma for data collection has been significantly modified so that data collected is that which is required for the ANZCA triennial report.
3. Modifications to the database software which were required in order to record the data required by ANZCA for the triennial report was completed and data is now being entered onto the electronic database. Prior to this, data was being processed manually and kept in hardcopy form only. This means we should be able to easily produce a report annually (as required by the State Government) and triennially in the future. Data will be substantially incomplete for the current triennium, however.
4. As participation in a mortality audit is now a requirement of the State Government for all medical practitioners employed in the public sector, 90% of anaesthetists in Tasmania are now aware of and happy to participate in the audit.
5. The review process is based on a first line assessment of the initial de-identified reporting proforma by a volunteer reviewer, with case note review if requested by the first-line assessor performed by a different second-line assessor. There were some initial concerns about ability to retain anonymity within the small Tasmanian anaesthetic community, but these have proven unfounded to date. The 2 person review process enables us to report back to the individual practitioner within 6 weeks of the initial report with a final determination on their case.

6. The audit is coordinated by a committee consisting of representatives from the 3 main regions (health department regions) of the state.
7. The information collected by TASM is protected by Commonwealth privilege under Part VC of the *Health Insurance Act 1973* and may only be used for Quality Assurance purposes. It is also protected from disclosure to any person outside the Committee by Tasmanian Government Qualified Privilege under the Section 4 of the *Health Act 1997*.
8. Terms of Reference – see below.
9. Current Coronial Act is *Tasmanian Coroner's Act 1995*, in which a reportable death is defined as a death occurring under anaesthesia or sedation, or occurring as a result of anaesthesia or sedation and is not due to natural causes.

Terms of Reference ('Objects')

The 'Tasmanian Audit of Surgical Mortality Safety and Quality Committee' function with the following Terms of Reference (enacted 2006):

1. The objects of the Committee shall be:
 - 1.1. to provide leadership and strategic direction for the development and implementation of the Tasmanian Audit of Surgical Mortality (TASM);
 - 1.2. to oversee the TASM's affiliation with the Western Australian Audit of Surgical Mortality (WAASM) and the proposed national safety and quality surgical mortality audit body which is currently a cross-jurisdictional body;
 - 1.3. to participate in a cross-jurisdictional/national surgical mortality audit process to establish standardised reporting protocols and analytical methodology for comparison of surgical mortality among the States and Territories in Australia;
 - 1.4. to promote the use of the independent audit of surgical mortality among all Tasmanian surgeons;
 - 1.5. to compare surgical mortality outcomes in Tasmania with other Australian States and Territories, and with international standards;
 - 1.6. to collaborate with the WAASM and the cross-jurisdictional/national body in the management of surgical death audit processes;
 - 1.7. in collaboration with the cross-jurisdictional/national project, to develop best practice standards and guidelines for surgical practice in hospitals based on scientific knowledge of clinical efficacy;
 - 1.8. to assist in the wide dissemination of best practice standards and guidelines for surgical practice in hospitals, as provided by the cross-jurisdictional/national body;
 - 1.9. to provide direction and support for first level evaluations of surgical mortality reported on a voluntary basis by participating surgeons;

- 1.10. to coordinate the transfer of de-identified information (case notes) to the cross-jurisdictional/national body for surgical mortality data evaluated as warranting second level audit;
- 1.11. to monitor and evaluate the implementation of recommendations made by the Committee for the improvement of surgical care;
- 1.12. to engage in any other activities that are consistent with the objectives of the Committee;
- 1.13. to publish journal articles, educate surgeons, and/or provide information to the general public deemed appropriate by the Committee, in each case using de-identified data;
- 1.14. in light of discharging the preceding functions, reviewing and recommending improvement to working practices and systems within both Tasmania and other jurisdictions;
- 1.15. to communicate as may be necessary or appropriate with any other committee declared by the Minister under s 4(1) of the *Health Act 1997* to be a Quality Assurance Committee for the purposes of that Act in relation to any matter which falls within the functions of either committee; and
- 1.16. to report in accordance with these Terms of Reference.

Dr Margaret Walker, FANZCA
Coordinator
Tasmanian Anaesthesia Mortality Audit

Queensland, Australia

The Queensland Committee to Enquire into Perioperative Deaths (QCEPOD) was unable to provide data for this 2003-2005 report.

The Queensland Committee was formed in 1975 and gazetted as an official committee of Queensland Health under the chairmanship of the Director-General of Health and Medical Services in 1976. There was continuous operation until 2005. In 2006, in response to the Bundaberg Hospital Commission of Enquiry and the Queensland Health Systems Review, the Queensland Parliament established the Health Quality and Complaints Commission (HQCC). The HQCC was tasked amongst other things with monitoring, reviewing and reporting on the quality of health services in Queensland. The responsibility for oversight of QCEPOD and the Quality Councils (Paediatric and Maternal Councils) was transferred to the HQCC from Queensland Health as it was planned that HQCC would be looking at deaths in hospital as part of its quality agenda. The QCEPOD data was transferred to HQCC. The HQCC as part of its setting up process reviewed the activities of the bodies it had been given responsibility for to see how they would fit into its remit.

In late 2007 the Commission brought down a determination that it would not be able to continue the activities of QCEPOD. The review recommended the '...establishment of a Specialty Advisory Committee to review aggregated recommendations arising from mortality reviews and RCA's.' Approaches have been made to the HQCC for release of the data for the triennium but that has not been possible to be achieved by the time of publishing this report. There have been and will be ongoing efforts by myself and the ANZCA Regional Committee to work with the HQCC and Queensland Health to access data required for further reports.

Dr James Troup, FANZCA
Past Chair

Queensland Committee to Enquire into Perioperative Deaths

South Australia (also covers the Northern Territory)

Overview

Since 2000, the South Australian Perioperative Mortality Committee has been relatively inactive and has produced no report for the 2003-2005 triennium. This has been caused by a number of factors, including doubt about confidentiality.

Current Developments (2008/2009)

A new Health Care Act 2008 was declared in July 2008. This simplifies the confidentiality situation and only requires declaration of the Minister.

Members of the committee met informally in November 2008 and it is planned to seek the Ministerial approval in 2009. It is hoped that this will regenerate the committee activity. At present there are a number of cases waiting for review.

Prof Walter John Russell, FANZCA

Dr Simon Jenkins, FANZCA

Chair

ANZCA SA/NT Regional Committee

Australian Capital Territory

ANZCA Regional Committee Report

Overview (2003-2005)

The ANZCA Australian Capital Territory (ACT) Regional Committee has been working for six years to establish an Anaesthetic Mortality and Morbidity Committee. Although we are disappointed that this has not yet been achieved, there have been real and significant steps taken over the past 12 months. There was however no committee during the period 2003-2005 and subsequently no data were submitted for this triennial report.

Current Developments (2008/2009)

ACT Health is well aware that the ACT is one of the few jurisdictions not covered by an Anaesthetic/Sedation Mortality and Morbidity Committee.

Under the auspices of the Patient Quality & Safety Unit, a working party led by the Director of the ACT Patient Quality and Safety Unit has been working to rectify this situation. At present (October 2008), a discussion paper is being written. This is based upon a plain English description of the projected structure and function of the Mortality and Morbidity Committee provided by the ANZCA Regional Committee. The discussion is scheduled to be released momentarily.

This discussion paper will be circulated to all relevant parties and will be reviewed by the College legal advisors and by the ANZCA Mortality Working Group.

A review of the Coronial legislation is currently being undertaken by the Department of Justice and Community Services. It will be important for there to be input to this review as the Coroner currently receives notification of deaths occurring within 72 hours of an operation or other medical procedure. This is an important potential source of mortality reporting for the projected Committee.

Although the process of formation of this Committee has been laboriously slow in the past, the ANZCA Regional Committee is committed and confident that this will be achieved during the 2009-2011 triennium. In order to join the other states and territories, and to protect the population of the ACT, we will be working to form the Committee early in this period.

Dr Stephen Brazenor, FANZCA

Chair

ANZCA Australian Capital Territory Regional Committee

New Zealand

Current Developments (2008/2009)

The Quality Improvement Committee (QIC), which is a New Zealand Ministerial Advisory Committee, put forward a proposal to the Health Minister to re-establish mortality reporting within New Zealand. Unfortunately, the recent elections have delayed approval of this proposal. It is hoped that the incoming Minister will approve it.

Prof Alan Merry, FANZCA

Chair

ANZCA Quality and Safety Committee

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www.anzca.edu.au/resources/books-and-publications

Appendices

Appendix 1: Glossary Of Terms – Case Classification

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.

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 anaesthetists is identified which could or should have been done better subcategory G should also be applied.
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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 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.
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Unassessable 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.
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Casual or Contributory Factors

Note that it is common 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

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|-------------------------------|--|
| (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. Postoperative

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|--------------------------------|---|
| (i) Management | Death as a result of inappropriate intervention or omission of active intervention by the anaesthetist or a person under their direction (eg. 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

- | | |
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| (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 Professional Document on supervision of trainees. |
| (ii) Poor Organization 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.

Appendix 2: American Society Of Anesthesiologists (ASA), 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.

P 6

A declared brain-dead patient whose organs are being removed for donor purposes.

E

Patient requires emergency procedure.

Website address – www.asahq.org/clinical/physicalstatus.htm

Excerpted from American Society of Anesthesiologists 2009 Relative Value Guide (RVG).

A copy of the publication can be obtained from ASA, 520 N Northwest Highway, Park Ridge, Illinois 60068-2573, USA

