



2010 ANNUAL REPORT SUMMARY





CONTACT DETAILS

Victorian Audit of Surgical Mortality (VASM)
Royal Australasian College of Surgeons
College of Surgeons' Gardens
250-290 Spring Street
East Melbourne VIC 3002

Web: www.surgeons.org/VASM

Email: vasm@surgeons.org

Telephone: +61 3 9249 1153

Facsimile: +61 3 9249 1130

Postal address:

Victorian Audit of Surgical Mortality
GPO Box 2821
Melbourne VIC 3001



CHAIRMAN'S REPORT

The death of a patient can be a learning experience.

The end of a calendar year encourages many to look back and also toward what may lie ahead. The Victorian Audit of Surgical Mortality (VASM) can look back on three years of activity and, with the ongoing support of the Victorian Government and its Department of Health, it can look forward to at least a further three years. This support has been augmented to permit recruitment of the private health sector to participate in VASM and to provide some remuneration to our second-line assessors who put in many hours of work reviewing cases.

In 2010, the Australia and New Zealand Audit of Surgical Mortality (ANZASM) really did become 'national' and plans commenced for a bi-national expansion in 2011. The commencement of the Australian Capital Territory and the Northern Territory means all states and territories are now participating. New Zealand is still looking at an audit model that best suits their needs. We hope it will be compatible with the Australian audit. ANZASM published the first 'national' report in 2010. This featured the results from all states. The 2011 national report will include data from the territories.

We feel it necessary to produce an annual report that represents all facets of the data collected. Achieving this creates a rather large tome that not all stakeholders will choose to read avidly from cover to cover. Many are seeking the salient findings only. This year we are therefore providing a written synopsis of the findings. The full report can be accessed on our website <http://www.surgeons.org/VASM>

We will be interested in your feedback on this approach to publishing our findings.

Over the past three years VASM has successfully recruited all eligible Victorian public hospitals providing surgical services and has already gained promising support from our foray into the private hospital sector. The positive recruitment story would have less meaning if not accompanied by a rise in

participation by surgeons. Such participation is now at 89.0% and is slowly still rising. In 2010, for the first time, the College required participation as an essential component of recertification for Continuing Professional Development. Whatever the reason for increasing participation, I thank all participating hospitals and surgeons for the ongoing support.

Missing data is an issue that continues to hinder our progress and ability to identify trends. We have reviewed the frequency with which individual questions are not completed and have listed these. The question which resulted in the most incomplete answers has already been reformatted to make it user friendly. We would really like to see this trend in missing data reversed!

This annual report contains clinical information on some 1,886 deaths associated with surgical care and the outcomes of the peer review process in 1,113 of these. Although the information presented in this report is still a relative snapshot of surgical deaths in Victoria, some data trend is emerging. Significant among these is an increase in the direct involvement of consultant surgeons in cases where there is need for an unplanned return to the operating room, usually occasioned by a complication of the initial surgery.

We must pay attention to clinical issues that have been raised in the course of the audit. The issue raised with the greatest frequency is delay in delivery of definitive care to patients. This is a multifaceted issue, echoed by other states, with delays occurring at a number of levels in the patient journey. The factor that seems to underpin the delay issue is 'delay in establishing the true diagnosis'. Causes suggested are patients presenting with problems outside the comfort zone of one specialty having an inappropriate diagnosis entertained for too long. This is an important issue where there is increasing specialised and fragmented care. In some instances, there still seems to be a relative failure to recognise early clinical deterioration. Those responsible for delivery of care are encouraged to review relevant practices in their institutions.



We recently published our second 'Case Note Review Booklet' and hope the themes presented resonated with many of you. Some of these themes emerge in this annual report, in particular 'delays in implementing definitive treatment'. We feel the themes in the case note review booklet are of interest to a wide range of health care workers. The initial booklet required a second print run to ensure we could expand the readership to junior medical staff, nursing staff and others involved in patient care.

As a part of the ongoing support provided by the Victorian Department of Health, we are required to undergo periodic external evaluation. To this end, we have appointed a group of external consultants with considerable experience in the area of health care. We look forward to their report and the opportunities this might present. As this is the first major review of any of the audits of surgical mortality, emerging opportunities will be shared.

Our management committee has been very supportive and continues to provide good advice and

constructive ideas. VASM continues to work closely with the Victorian Surgical Consultative Council (VSCC) to monitor, analyse and report trends associated with potentially preventable surgical mortality. We would also like to acknowledge the cooperation of the quality and health information management departments in all participating hospitals.

It is important to note that the VASM staff make all this possible. Their attention to detail and adherence to protocol is the solid foundation on which the audit is built. With their help, and the support we receive from many others, I can only remain confident about the future.

Colin Russell
VASM Chairman



EXECUTIVE SUMMARY

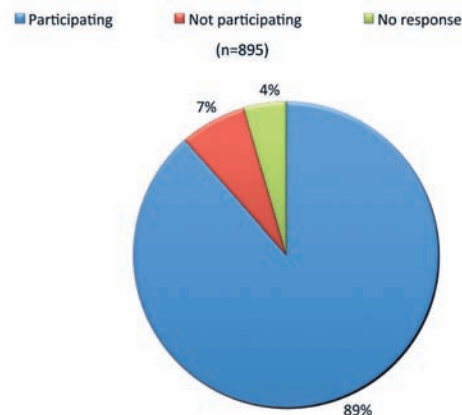
The Victorian Audit of Surgical Mortality (VASM) commenced auditing surgical mortality in Victorian public hospitals in January 2008. This report represents data collected to the end of June 2010. The many rate-limiting steps in the audit process mean we have only completed the audit process in half of these cases.

Audit participation

The Royal Australasian College of Surgeons determined in 2010 that participation in the Australian and New Zealand Audit of Surgical Mortality (ANZASM) should be a required component of recertification in the Continuing Professional Development Program. This places a greater onus on Fellows of the College to participate

in their state audit of surgical mortality. Participation in VASM by Victorian Fellows has risen to 89.0% (see Figure 1) since its commencement in January 2008. This increase in intention to participate is matched by evidence of actual participation. The return of case record forms, necessary for the audit to function, has risen to 79.0%. Participation and case record form return rates are similar among the surgical specialties. Compliance in completing all necessary fields in the various forms can, however, still improve. In the majority of instances, the clinical information provided in these forms was provided by the treating consultant and not by junior medical staff. This is further acknowledgement of the level of surgeon participation.

Figure 1: Surgeon agreement to participate as percentage of eligible College Fellows in Victoria in 2010



All public hospitals with relevant surgical activity are also now participating by providing notifications of death associated with surgery. It is acknowledged that the majority of hospital deaths occur in the public sector. This is not a reflection on the level of care provided in the public sector, but is a result of the less complex case-mix generally receiving care in the private hospital sector. It is important, however, to review deaths that occur in the private sector, and to this

purpose our funding has been increased and we are currently encouraging Victorian private hospitals to join the audit process. At the time of writing some 24 (43.0%) private hospitals have agreed to participate.

When we examine two separate and complementary, rather than parallel, sources of information on surgically-related deaths, it would appear that we may not be receiving notification of all deaths. The gap, however, has decreased compared with previous years.



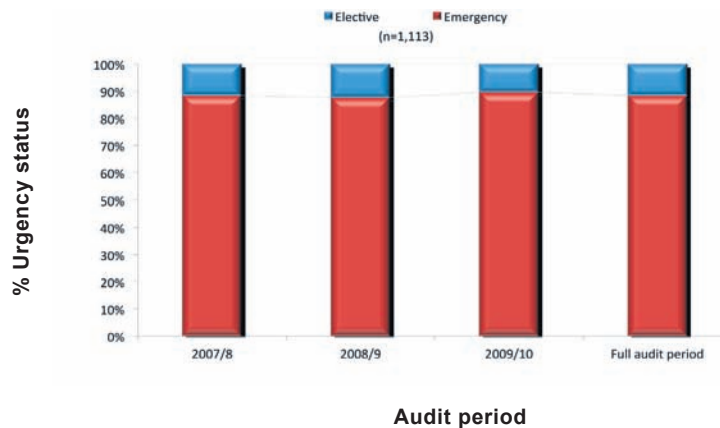
The number of patients in whom death has been attributed to surgery is 2,551 over the 2.5 year period covered by this audit. In one single year, financial year 2009/10, some 352,677 patients underwent surgical procedures in the Victorian public sector. The number of deaths (2,551) attributed to surgery is, therefore, a very small percentage of the number of patients who actually underwent surgery over the same period.

Demographic and risk profile

Review of the demographic and risk profiles of the 2,551 deaths reported to VASM confirms the trends described in previous reports. Of the 1,113

cases which have been peer reviewed, the majority of surgical deaths occurred in elderly patients with underlying health problems, admitted as an emergency with an acute life threatening condition often requiring surgery (see Figure 2). The actual cause of death was often linked to their pre-existing health status in that the cause of death frequently mirrored the pre-existing illness. Death was most often adjudged to be not preventable and to be a direct result of the disease processes involved, not the treatment provided. The most common causes of death reported are cardiac and respiratory failure. This is congruent with the most common comorbidities in this series of patients.

Figure 2: Urgency status of deceased over sequential audit periods



Risk management

Risk management strategies for this generally elderly, sicker group of patients are especially important. The audit looks at three parameters: venous thromboembolism (VTE) prophylaxis to reduce the likelihood of pulmonary embolus, use of critical care facilities and fluid balance management.

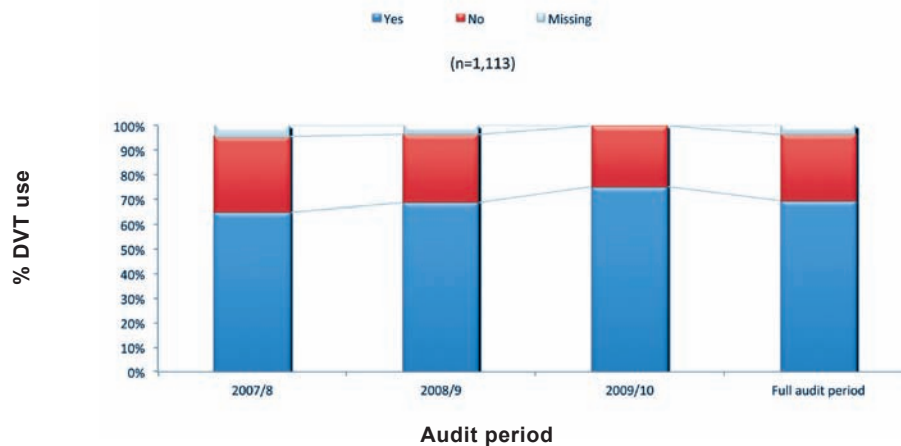
- **VTE prophylaxis:** Prophylaxis was provided in over two thirds of audited deaths. A conscious decision to withhold prophylaxis was the reason given for non-provision in the other third. This

was generally necessitated by some clinical contraindication to prophylaxis. Inadvertent omission of prophylaxis is rare, only occurring in 1.7% of cases (see Figure 3).

When the appropriateness of withholding prophylaxis was reviewed, there was generally agreement by assessors that the decision was correct. However, in 5.0% of cases where it was withheld, assessors felt the decision was questionable, although the decision did not affect the final outcome.



Figure 3: Venous thromboembolism (VTE) prophylaxis use during the audit period



- **Use of critical care facilities:** Close to half of the patients in this audited series received critical care support during the course of their hospital stay. This appears constant over the time period. The review process looks at the deaths where patients did not receive such support. Assessors felt critical care support might have benefited a higher percentage of patients. Second-line assessors were more likely to raise this criticism and did so in 19.0% of cases that did not receive critical care. The reasons why support was not provided are a recent addition to the clinical information gathered, and data is not yet available for analysis.
- **Fluid balance during treatment:** This may have been an issue of management in only 2.6% of cases reviewed.

Operative profile

In a small percentage of patients (12.9%, 144 patients) no operative intervention occurred. This was the result of an active decision not to proceed and usually occurred in patients admitted as an emergency for an irretrievable clinical problem. A total of 1,453 separate episodes of surgery occurred in 900

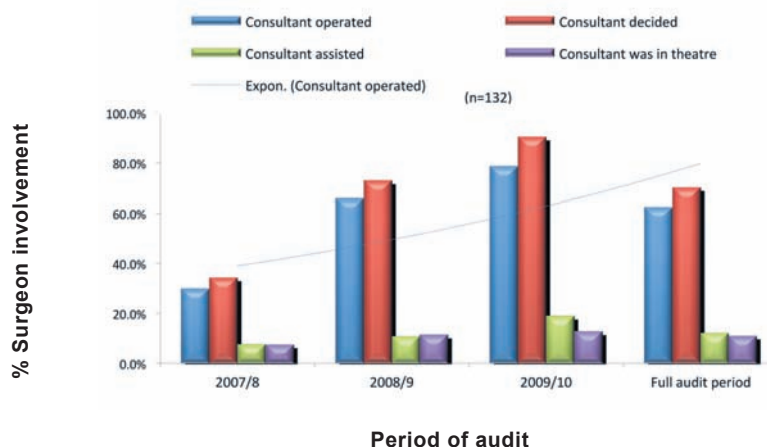
patients. In these surgical episodes, 1,752 operative procedures were recorded. The most frequent operative procedures described were for trauma or acute abdominal pathology. This reflects the high percentage of patients admitted as emergencies in this series. A consultant made the decision to proceed to surgery in more than 60.0% and performed the surgery in 54.0% of instances.

There was an unplanned return to the operating room in 132 (14.7%) of the 900 patients who underwent a surgical procedure. Unexpectedly the rate of unplanned return to the operating room was significantly higher in patients admitted electively. This occurred despite a higher percentage of elective cases being operated on by a consultant surgeon. There is no obvious explanation for this trend. This will be monitored over time.

Unplanned return to the operating room is often, but not always, necessitated by a complication of the initial procedure and is associated with increased risk of death. Consultant involvement in such cases is highly desirable. Direct consultant involvement (decided, operated, assisted, in theatre) in such cases has risen from around 30.0% in 2007/08 to 80.0% in 2009/10. This recognition of the need for direct consultant involvement is to be commended.



Figure 4: Seniority of surgeons performing unplanned procedures



The demand for time in the operating room to manage emergency cases remains a significant problem for hospitals. The issue is well recognised in this and other countries. The Victorian Department of Health has made a significant contribution to the issue in the form of a position paper on good practice in managing emergency surgery (http://www.health.vic.gov.au/surgery/good_practice.pdf).⁽¹⁾

There continues to be a low rate of postoperative complications as reported by treating surgeons.

Inter-hospital transfers

Twenty-two percent of cases in the audited series required inter-hospital transfer. Such transfers are usually necessitated by the need for higher levels of care. Issues of patient care related to transfer were raised in a third of these cases. The most common criticism was that transfer occurred inappropriately late in the course of the patient's illness.

Peer review outcomes

Assessors involved in the audit process review and appraise the appropriateness of the clinical care provided to each case reported to VASM.

- **Second-line assessments (SLA):** The frequency of need for SLA could be seen as an indirect measure of quality of care. Second-line

assessments are requested for cases in which the clinical care needs to be looked at more closely or the treating surgeon did not provide sufficient information to reach a conclusion. Such assessments were required in 14.3% of audited cases. This rate is similar to other states. Importantly, the rate has decreased from 18.0% in 2007/08 to 8.6% in 2009/10.

It is disappointing that SLA was most commonly required because the clinical information provided by the treating surgeon was inadequate but remedial with further education.

The need for SLA was similar among surgical specialties, and metropolitan and rural hospitals.

- **Clinical management issues:** Assessors use a standard spectrum of criticism to convey their perceptions of appropriateness of care. These are described in detail in section 3.1.2 of the full VASM annual report.

In 88.0% of audited deaths, no or only minor issues of patient care were perceived. However, in 12.0% of cases more major issues of care were identified (areas of concern and adverse events). Over the audit period (2007 to 2010), there has been a significant decrease in the frequency with which assessors are identifying clinical management issues. The incidence of more major criticisms of clinical care is similar among the



surgical specialties. It is of some interest that in cases in which there was no operative procedure, there was a significantly higher rate of areas of concern or adverse events. The available data does not tell us the reason.

There is no evidence that specific hospitals or surgical specialties have attracted higher rates of criticism than others.

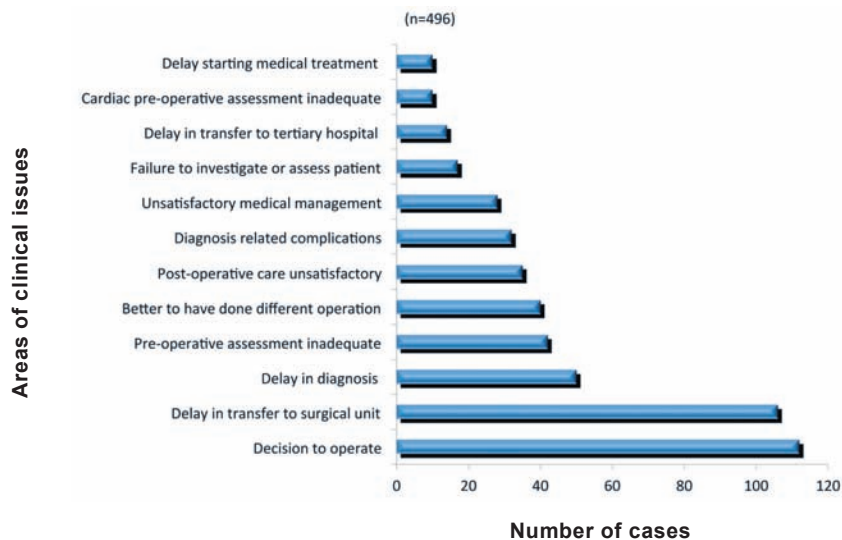
It is important to remember that criticism of clinical care is not always attributable to the surgical team. A third of the issues identified were attributed to other specialty areas.

- **Perceived impact of identified issues on clinical outcome:** There was a perception that the clinical management might have been better in 395 of the 1,113 audited deaths (35.0%). In only 47 of these 395 patients (4.0% of audited series), the clinical management was deemed likely to have contributed to the adverse outcome.

The perceived relationship of clinical management to outcome was less clear in the remaining cases.

- **Frequency of specific issues of clinical management:** The most common clinical issue among the 496 specific issues identified was delay in delivery of definitive care. This occurred at multiple levels in the care pathway. The underlying problem is usually delay in establishing the true diagnosis leading to late referral and delay in implementing definitive treatment. A similar pattern has been reported in recent reports by the Western Australian Audit of Surgical Mortality (WAASM) and the South Australian Audit of Perioperative Mortality (SAAPM). The recent 'Case Note Review Booklet' published by VASM features clinical cases that exemplify this problem. Patients with the clinical risk profile demonstrated in this audited series do not tolerate such delays in treatment.

Figure 5: Frequency of specific clinical issues of management



Data quality

Data quality is an essential component of this and other audits. We have looked at the frequency of missing data in this audit. The volume of missing data is most prevalent in a few sections. We have recently

reformatted two of these sections to make it more user-friendly. We take this opportunity to emphasise the importance of accuracy and completeness of all clinical information provided to VASM.



RECOMMENDATIONS

Many of the 2009 recommendations have been implemented. Collaboration between the Department of Health, Victorian Surgical Consultative Council, Coroner's Office, hospitals and health services continues to facilitate our progress.

Objectives for the coming year are:

- Improve the return rate of quality information in case record forms and increase participation by surgeons.
- Continue to collaborate with VSCC and other agencies, such as the Coroner's Office.
- Continue to disseminate important messages emanating from the audit.
- Enhance the electronic interface to allow Fellows to complete assessments online.
- Facilitate communication and information sharing with other state mortality audits.
- Contribute to the development of a national mortality audit report.
- Evaluate the audit program.

CONCLUSIONS

The audit process is designed to highlight the system, process errors and identify trends in mortality and surgical care. A significant and positive trend in direct consultant involvement in patients with postoperative complications requiring unplanned return to the operating room has been demonstrated.

This is a reversal of a trend identified in earlier reports. There have been no adverse trends identified.

Data quality remains a concern. The volume of incomplete sections of clinical data may mask identifying trends.



ESTABLISHMENT OF EXTERNAL EVALUATION

In 2011 VASM will conduct an external evaluation of the entire audit process. The aim is to ascertain to what extent VASM is achieving its objectives.

The scope of the evaluation includes:

- Effectiveness of processes used to collect, analyse, maintain and report the VASM data.
- A qualitative analysis of the effectiveness of communication between VASM and health services/clinicians with recommendations arising from the audit process.

- A qualitative analysis of the effectiveness of the relationship and governance arrangements.

The outcomes from this external review will suggest opportunities for improving the audit. This will enhance our ability to achieving our goal of improving safety and quality in surgery in Victoria.

REFERENCES

1. Good practice in management of emergency surgery: a literature review October 2010.
Available from: http://www.health.vic.gov.au/surgery/good_practice.pdf.



ACKNOWLEDGMENTS

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- Royal Australasian College of Surgeons for their infrastructure and oversight of this project
- Participating Victorian hospitals
- Participating Victorian Fellows and International Medical Graduates
- Assessors, in particular the dedicated and specialty-specific assessors
- Surgeons who have acted as assessors, for the time and effort providing detailed and valuable case-note reviews
- Hospital medical records departments
- Victorian Surgical Consultative Council (VSCC)
- Western Australian Audit of Surgical Mortality (WASSM)
- Tasmanian Audit of Surgical Mortality (TASM)
- The National Coroners Information System (NCIS)
- South Australian Audit of Perioperative Mortality (SAAPM)
- Queensland Audit of Surgical Mortality (QASM)
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VASM MANAGEMENT COMMITTEE

Colin Russell	Chair,Victorian Audit of Surgical Mortality
Peter Field	Chair,Victorian Surgical Consultative Council
Andrew Clarke	VASM Contract Manager, Quality, Safety & Patient Experience Branch, Department of Health
Anne-Maree Szauer	Manager, Clinical Councils Unit, Quality, Safety & Patient Experience Branch, Department of Health
Ian Faragher	Chair,Victorian State Committee & Colorectal Surgical Society of Australia and New Zealand
Andrew Cochrane	Australasian Society of Cardiac and Thoracic Surgeons
Bernie Lyons	Australian Society of Otolaryngology, Head and Neck Surgery
Keith Stokes	Australasian Association of Paediatric Surgery
Lee Gruner	Censor in Chief, Royal Australasian College of Medical Administrators
Christos Kondogiannis	Australian Orthopaedic Association
Jocelyn Shand	Dental Practice Board of Victoria
Alex Babarczy	Australian and New Zealand College of Anaesthetists
Patrick Lo	Neurosurgical Society of Australasia
Douglas Druitt	Urological Society of Australia and New Zealand
Heather Cleland	The Australian Society of Plastic Surgeons
Gary Fell	Board in Vascular Surgery
Heather Cleland	Australian Society of Plastic Surgeons
Ivan Kayne	Medal of Order of Australia, Consumer representative

VASM STAFF

Colin Russell	Clinical Director
Claudia Retegan	Project Manager
Jessele Vinluan	Senior Project Officer
Karen Crowley	Project Officer
Mary Jane Sterry	Project Officer
Rajneet Arora	Administrative Research Officer
Jamaine Ansell	RMIT Placement student
Andrew Chen	RMIT Placement student

VASM BIOSTATISTICAL CONSULTANTS

Nick Andrianopoulos	Senior Research Fellow, Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine Monash University
Christopher Reid	Associate Director of the Monash Centre of Cardiovascular Research and Education in Therapeutics, School of Public Health and Preventive Medicine Monash University







Victorian Audit of Surgical Mortality
GPO Box 2821
Melbourne VIC 3001