Audit impacts practice

VASM, AVA

Barry Beiles FRACS
Audits of Surgical Mortality

• ANZASM is a bi-national network of regional audits of mortality under auspices of Royal Australasian College of Surgeons

• Funded by State and Territory Governments

• Classified as a ‘quality assurance’ activity under the “Commonwealth Qualified Privilege” Scheme
Origins of Audits of Surgical Mortality

- Scottish Audit of Surgical Mortality-1994
- WA Audit of Surgical Mortality-2001 (Uni WA)
- TAS Audit of Surgical Mortality (2004)
- WAASMSM transferred to RACS (2005)
- SA Audit of Surgical Mortality (2005)
- All States and Territories under ANZASM (2007)
Overview

• Quality assurance project designed to highlight system and process errors associated with surgical mortality at State and National level

• Deaths in hospital after surgical procedure or under care of a surgeon or discharged <30 days

• Independent peer review of surgeons by surgeons

• Educational tool *not* punitive

• Compulsory for CPD requirements
Hospital submits Notification of Death (NOD) to VASM

Treating surgeon completes Case Record Form (CRF)

Anonymous First-Line Assessment (FLA)

Anonymous Second-Line Assessment (SLA) using case notes

Need for case note review?

Yes: Anonymous Second-Line Assessment (SLA) using case notes

No: Feedback to treating surgeon

Audit of case closed

Perceived area of concern /adverse event reported to VSCC

Annual summary reports submitted to Hospitals, VSCC, Fellows, DH
RACS Fellow participation

91% - RACS

55% - RANZCOG
Hospital participation

![Bar chart showing hospital participation over different audit periods. The chart displays an increase in participation from 2007-2010 to 2012-2013, with public and private hospital participation tracked separately. The chart also includes a trend line indicating a growing participation rate.](#)
Risk management issues - DVT prophylaxis
Assessor verdict on decision to withhold prophylaxis

- Appropriate: 85.07%
- Would have benefited: 12.45%
- Unknown: 2.48%
Risk management issues-ICU/HDU

![Graph showing percentage critical care utilisation over audit periods from 2007-2010 to 2012-2013. The graph indicates a trend with a peak in 2010-2011 at 67% and a lower percentage in 2012-2013 at 45%. The bars are color-coded to represent CCU provided in blue and CCU not provided/unknown in red.]
Risk management issues-fluid balance
Role of consultant

The chart shows the percentage of consultant involvement over different audit periods. The categories include:

- Consultant decided
- Consultant operated
- Consultant assisted
- Consultant was in theatre

The data is presented for the following audit periods:

- 2007-2010
- 2010-2011
- 2011-2012
- 2012-2013
- Audit period

A linear trend is also shown for consultant operated involvement.
Consultant involvement with unplanned return (15%)
Clinical management issues-classification

- An area for CONSIDERATION is where the clinician believes areas of care COULD have been IMPROVED or DIFFERENT, but recognizes that it may be an area of debate.
- An area of CONCERN is where the clinician believes that areas of care SHOULD have been better.
- An ADVERSE EVENT is an unintended injury caused by medical management rather than by disease process, which is sufficiently serious to lead to prolonged hospitalisation or to temporary or permanent impairment or disability of the patient at the time of discharge, or which contributes to or causes death.
Clinical management issues identified by assessors (n=3,947)
Comparison of Surgeon and FLA-clinical management issues (n=3,947)

P < 0.0001
Comparison of Surgeon and SLA-clinical management issues (n=680)
Clinical management issues over time

The bar chart shows the percentage of issues categorized into four types: None, Consideration, Concern, and Adverse event. The data is presented for different time periods: 2007-2010, 2010-2011, 2011-2012, and 2012-2013. The highest percentage of issues is seen in the 'None' category for the 2012-2013 period.
Clinical management issues by treatment status

% Adverse event and area of concern

Audit period

2007-2010 2010-2011 2011-2012 2012-2013

No operative procedures (19%)
Operative procedures
Power (No operative procedures)
Power (Operative procedures)
Clinical management issues over time

The chart illustrates the percentage of cases handled by Surgeon, First-line, and Second-line over time from 2007-2010 to 2012-2013. The data shows a significant increase in cases handled by Second-line in the first period, followed by a decline in other years.
Frequency of issues identified by assessors

<table>
<thead>
<tr>
<th>Clinical management issues</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>Operation inappropriate</td>
<td>652 (22.06%)</td>
</tr>
<tr>
<td>Delay in definitive treatment</td>
<td>592 (20.03%)</td>
</tr>
<tr>
<td>Preoperative care issues</td>
<td>389 (13.45%)</td>
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<tr>
<td>Management or protocol issues</td>
<td>370 (12.51%)</td>
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<tr>
<td>Postoperative care issues</td>
<td>316 (10.69%)</td>
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<tr>
<td>General complications after surgery</td>
<td>182 (6.15%)</td>
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<tr>
<td>Communication or poor documentation</td>
<td>171 (5.78%)</td>
</tr>
<tr>
<td>Adverse events</td>
<td>93 (3.15%)</td>
</tr>
<tr>
<td>Critical Care issues</td>
<td>47 (1.58%)</td>
</tr>
<tr>
<td>Intra-operative complication</td>
<td>47 (1.58%)</td>
</tr>
<tr>
<td>Septicaemia and wound</td>
<td>42 (1.42%)</td>
</tr>
<tr>
<td>Anaesthesia related</td>
<td>36 (1.21%)</td>
</tr>
<tr>
<td>Transfer problems</td>
<td>19 (&lt;1%)</td>
</tr>
</tbody>
</table>
Top 5 clinical management issues over time

- Delay in definitive treatment
- Operation inappropriate
- Management or protocol issues
- Preoperative care issues
- Postoperative care issues
VAED mortality data \((p<0.0001)\)
Feedback from Fellows on VASM and its publications

• “More awareness of events leading to poor outcome.”
• “Enabled surgeons to have a common platform on which to discuss difficult cases.”
• “My Fellow colleagues and I learn from the adverse events in these critical situations and make every effort to avoid the complications encountered by others.”
• “Lead us to question why we are doing operations.”
• “Has promoted discussion between surgical staff and anaesthetic staff as to how to reduce unnecessary delays in surgery.”
• “Delays are what caused a lot of these problems. This is at all levels. The solution is not to audit but to act.”
• “It definitely makes us sit back and look at what we are doing, and ways to improve.”
• “Has provided a focus, in particular regarding appropriate types of surgery to be done at this hospital.”
• “Has contributed to better quality surgical audits in our health service.”
• “Has good ideas for improved care and outcomes.”
• “Tabled and discussed at medical advisory committee.”
• “Cases are reviewed by a committee which make appropriate adjustments to current policies and procedures to minimise mortality risks.”
Key points-VASM

• VASM has improved practice, both according to feedback from Fellows and outcomes....... 
• Decrease in surgical mortality over time 
• Assessors identify more clinical issues than the surgeon 
• Decrease in clinical management issues by surgeon and assessors 
• Decrease in specific issues of; delay in treatment and operation inappropriate 
• Increase in CCU utilization
The Australasian Vascular Audit

What do we do about outliers?
Structure of AVA

• Compulsory vascular audit ANZVS since 2010
• Privacy and absolute confidentiality
• Web-based data entry
• Discharge outcomes of 4 index operations
• Real time comparisons
• Reports for unit/personal audit/logbook
• Complete audit loop with outlier algorithm
• Audit monitoring committee
Audit parameters (at discharge)

- Mortality after aortic surgery (open and EVAR)
- Stroke/death after Carotid Endarterectomy and Stents
- Graft occlusion and amputation rate after lower limb bypass
- Occlusion rate after AV Fistula creation
Risk-adjusted funnel plot AAA (2012)
Risk-adjusted funnel plot occlusion IIB 2010-2
AUDIT MONITORING COMMITTEE (AMC) IDENTIFIES A "VARIANT RESULT"

AMC notifies the member.

The member & AMC review the relevant cases. Date relevant to the review are collated & checked for accuracy.

The review demonstrates satisfactory results.

Continue audit.

The surgeon agrees to stop the procedure on a permanent basis.

Surgeon requests temporary halt, pending re-training and re-credentialling by Board of Vascular Surgery.

The member may appoint a surgical colleague to assist him/her with review.

The surgeon may request review of the data by a member of the ANZSVS.

The review demonstrates unsatisfactory results. De-identified data sent to the President of the ANZSVS for review. The surgeon is informed in writing of the outcome of the review and advised to stop performing the procedure(s).

Surgeon does not want to stop performing the procedure(s).

ANZSVS notifies:
   - Head of the appropriate vascular unit.
   - Director of Medical Services at the hospital.
   - RACS via President of ANZSVS.
Conclusions

• Both audits have become a part of the national surgical landscape
• Both audits are complementary but fundamentally different
• Challenges remain for both; accuracy and validation of data, attaining total participation, application of risk-adjusted outcomes and handling of outliers