The value of the Victorian Audit of Surgical Mortality (VASM)

Knowledge-based sharing in the health industry
The Royal Australasian College of Surgeons
Presented By: Claudia Retegan
Date: 16 June 2017
Presentation outline

● Overview of the VASM audit process,
● Results and benefits from the audit,
● Tools to monitor patient safety,
● Potential impact,
● Recommendations and
● Future directions.
An external, peer-reviewed audit of the process of care associated with surgically related deaths.

- Protected by Qualified Privilege.
- National program management transferred to RACS (2005),
- All States and Territories under ANZASM (2010),
- CHASM administered by the Clinical Excellence Commission (CEC).
VASM Collaboration

192 Victorian surgical sites

2400 Victorian Fellows
VASM Audit Flow

**Notification**
- ASM receives notification of death
- Surgical case form sent to Fellow for completion

**Reflection**
- Completed surgical case form returned to ASM and de-identified

**Assessment**
- Case form sent for FLA
  - SLA required?
    - Yes
      - SLA
    - No

**Reporting**
- Feedback to Fellow
  - Appeal lodged?
    - Yes
    - No
      - Case closed
Management issues classification (ACONS)

- 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 hospitalization or to temporary or permanent impairment or disability of the patient at the time of discharge, or which contributes to or causes death.
VASM findings

Audit numbers
- 12,346 reported
- Approx. 2,000 deaths/year
- Approx. 680,000 surgeries/year
- 54% audited
- 12% pending review
- 15% terminal
- 29% excluded

Operations
- 91% operative sessions
- 15% unplanned return to theatre
- 9% with >1 operative procedures
- 64% emergency admissions

Compliance
- 100% Surgical site
- 93% Fellows

Risk factors
- 91% with >1 comorbid factors
- 86% moderate to high risk profile

Demographics
- Mean age 73
- 43% female & 57% male
- 84% emergency
- 21% transfers

Top comorbid factors
- 23% cardiovascular
- 20% age
- 12% respiratory

Trauma
- 87% falls
- 10% road accident
- 3% violence

Infections
- 32% clinically significant

Type of infection
- 15% pneumonia
- 8% septicaemia
- 5% intra abdominal sepsis

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VASM outcomes as assessed by assessors

Trends of clinical management issues

- Audit period
- Issues (%)
- Trends in top five preventable clinical management issues

Issues (%)

- None: 68.2% 64.3% 68.9% 73.2%
- Consideration: 19.4% 22.7% 18.6% 16.0%
- Concern: 8.5% 9.1% 7.7% 7.4%
- Adverse event: 3.9% 3.9% 4.8% 3.4%

Operative management issues
- Delay issues
- Protocol issues
- Postoperative care issues
<table>
<thead>
<tr>
<th>Concord area</th>
<th>n</th>
<th>Concord</th>
<th>Gwet’s AC score</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU care benefit if not received</td>
<td>95</td>
<td>84.21%</td>
<td>0.81</td>
<td>0.71-0.91</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>HDU care benefit if not received</td>
<td>90</td>
<td>77.78%</td>
<td>0.71</td>
<td>0.57-0.85</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Fluid balance</td>
<td>523</td>
<td>84.70%</td>
<td>0.80</td>
<td>0.76-0.85</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Clinical management issues</td>
<td>623</td>
<td>57.14%</td>
<td>0.17</td>
<td>0.09-0.25</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Preoperative management/ preparation</td>
<td>570</td>
<td>75.44%</td>
<td>0.64</td>
<td>0.58-0.70</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Decision to operate at all</td>
<td>572</td>
<td>80.77%</td>
<td>0.75</td>
<td>0.70-0.80</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Choice of operation</td>
<td>574</td>
<td>82.75%</td>
<td>0.79</td>
<td>0.74-0.83</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Timing of operation</td>
<td>564</td>
<td>83.69%</td>
<td>0.79</td>
<td>0.74-0.83</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Intraoperative/technical management</td>
<td>565</td>
<td>82.12%</td>
<td>0.77</td>
<td>0.72-0.82</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Grade/experience of surgeon deciding</td>
<td>562</td>
<td>96.44%</td>
<td>0.96</td>
<td>0.95-0.98</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Grade/experience of surgeon operating</td>
<td>563</td>
<td>95.38%</td>
<td>0.95</td>
<td>0.93-0.97</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Postoperative care</td>
<td>554</td>
<td>77.44%</td>
<td>0.67</td>
<td>0.61-0.73</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Individual Surgeon’s Report

Deficiencies of care identified by the peer review assessors

<table>
<thead>
<tr>
<th>Clinical management issues</th>
<th>Your cases %</th>
<th>Cases in VIC %</th>
<th>Cases nationally %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50% (1/2)</td>
<td>43% (29/68)</td>
<td>40% (65/161)</td>
</tr>
<tr>
<td>No</td>
<td>0% (0/2)</td>
<td>41% (28/68)</td>
<td>47% (76/161)</td>
</tr>
<tr>
<td>Data not provided</td>
<td>50% (1/2)</td>
<td>16% (11/68)</td>
<td>12% (20/161)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area</th>
<th>Events % of your patients</th>
<th>Events in VIC % of patients</th>
<th>Events nationally % of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>0% (0/2)</td>
<td>40% (27/68)</td>
<td>37% (59/161)</td>
</tr>
<tr>
<td>Concern</td>
<td>0% (0/2)</td>
<td>13% (9/68)</td>
<td>13% (21/161)</td>
</tr>
<tr>
<td>Adverse event</td>
<td>0% (0/2)</td>
<td>6% (4/68)</td>
<td>6% (9/161)</td>
</tr>
<tr>
<td>Data not provided</td>
<td>0% (0/2)</td>
<td>0% (0/68)</td>
<td>2% (3/161)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Preventable</th>
<th>Events % of your patients</th>
<th>Events in VIC % of patients</th>
<th>Events nationally % of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely</td>
<td>0% (0/2)</td>
<td>6% (4/68)</td>
<td>5% (8/161)</td>
</tr>
<tr>
<td>Probably</td>
<td>0% (0/2)</td>
<td>28% (19/68)</td>
<td>29% (46/161)</td>
</tr>
<tr>
<td>Probably not</td>
<td>0% (0/2)</td>
<td>15% (10/68)</td>
<td>12% (20/161)</td>
</tr>
<tr>
<td>Definitely not</td>
<td>0% (0/2)</td>
<td>0% (0/68)</td>
<td>1% (2/161)</td>
</tr>
<tr>
<td>Data not provided</td>
<td>0% (0/2)</td>
<td>10% (7/68)</td>
<td>10% (16/161)</td>
</tr>
</tbody>
</table>
Hospital Clinical Governance Reports

Potentially preventable deficiencies of care identified at your site

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-operative assessment inadequate</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>ADVERSE FACTORS IN MANAGEMENT</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Decision to operate</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Drug interaction</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Treatment did not conform to guidelines/protocols</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Unsatisfactory medical management</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Delay to surgery (ie earlier operation desirable)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
<td><strong>6</strong></td>
<td><strong>3</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Unplanned return to theatre

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospital 1</th>
<th>Hospital 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013-2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014-2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-2017</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hospital Surgical Performance Reports

Preventable mortalities

- HospitalID
  - - - - Sign. 5%
  _ _ _ Sign. 0.2%

Preventable clinical management issues

- HospitalID
  - - - - Sign. 5%
  _ _ _ Sign. 0.2%

Note:
Sig: significant contour overlay
> 0.2% Sig = 204, 172 (negative outlier)
< -0.2 % Sig = 129 (positive outlier)

Note:
Sig: significant contour overlay
> 5% Sig. = 172 (negative outlier)
> 0.2% Sig. = 198 (negative outlier)
Recommendations for clinical stakeholders

- Improved leadership in patient care,
- Improved perioperative management,
- Improved protocol compliance,
- Action on evidence of clinical deterioration,
- Futile surgery and end of life care,
- Improved awareness of surgical emergencies, transfers and sharing of care,
- Infection control,
- In-hospital fall prevention and
- Improved communication.
Mortality rate

Victoria

National
Independent review of VASM

Target Zero

● VASM has credible processes and can provide conclusive evidence of preventable harm.

Aspex

● Streamlined operational processes suggest the program has reached a degree of maturity,
● Secure processes are in place,
● Inter-assessor reliability demonstrates agreement in relation to clinical management issues identified,
● Surgeon and hospital participation in the audit is strong,
● Timely and good quality feedback and
● Hospital reports generated for internal quality improvement initiatives.
Future directions

• Maintain surgical trust and commitment in the audit,

• Continue to evaluate processes & outcomes,

• Enhance current audit processes in collaboration with SCV, VSCC, VCCAMM and surgical sites,

• Develop active educational strategies, seminars and publications,

• Continue to identify innovative methods of analysis,

• Continue to provide relevant feedback to VASM stakeholders,

• Enhance current processes and

• Monitor the audit quality loop.
Acknowledgments

• Collaborators,
• Participating Victorian hospitals,
• Participating Victorian Fellows and IMGs,
• Participating Victorian hospital stakeholders,
• Management committee,
• Royal Australasian College of Surgeons,
• VASM and ANZASM staff.
Thank you