aspex consulting

Royal Australasian College of Surgeons

Victorian Audit of Surgical Mortality Program Follow up Evaluation

Final Report

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List of Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ANZASM	Australian and New Zealand Audit of Surgical Mortality
ANZJS	Australia New Zealand Journal of Surgery
AOA	Australian Orthopaedic Association
BMJ	British Medical Journal
CCOPMM	Consultative Council on Obstetric and Paediatric Mortality and Morbidity
CEO	Chief Executive Officer
DHHS	Department of Health and Human Services
ED	Emergency Department
FLA	First Line Assessor
FRACS	Fellow of the Royal Australasian College of Surgeons
HMO	Hospital Medical Officer
KPI	Key Performance Indicators
RACS	Royal Australasian College of Surgeons
SLA	Second Line Assessor
VASM	Victorian Audit of Surgical Mortality
VAED	Victorian Admitted Episodes Data
VCCAMM	Victorian Consultative Council on Anaesthetic Mortality and Morbidity
VMIA	Victorian Managed Insurance Authority
VSCC	Victorian Surgical Consultative Council
VTE	Venous Thromboembolism

1 Executive Summary

1.1 Background

The Victorian Audit of Surgical Mortality (VASM) commenced in 2008 to review all deaths associated with surgical care in Victorian hospitals. The audit is funded by the Victorian Department of Health and Human Services (DHHS) and administered by the Royal Australasian College of Surgeons (RACS). Overall findings are published on an annual basis, together with tailored reports for individual hospitals across the state, and case reviews to highlight key issues of clinical significance to surgical fellows. VASM also contributes jurisdictional findings to the broader Australian and New Zealand Audit of Surgical Mortality (ANZASM).

In 2011, an external evaluation was commissioned to determine the extent to which VASM had met the objectives it had been established to achieve. The major outcomes of evaluation focused upon identifying strengths and areas for improvement in relation to: the scope of activities undertaken by VASM; the efficiency and effectiveness of current program operations; and future development to improve the impact of VASM activities. A number of recommendations arose from this evaluation to further streamline the operational processes and outcomes of audit activities.

In 2014 this follow-up evaluation was commissioned to determine the extent to which VASM has implemented the recommendations of the original review with a view to:

- Identifying key improvement areas resulting from the previous evaluation;
- Identifying current areas of strength and areas for ongoing improvement to maximise the efficiency of audit processes; and
- Making recommendations to promote the future effectiveness of the audit program.

1.2 Methods

Follow-up evaluation findings are based upon an analysis of documents and data supplied by VASM, and targeted consultations with 23 key stakeholders including, the RACS, VASM staff, The Department of Health and Human Services, Chairs of the Victorian Surgical and Anaesthetics Consultative Councils, and a number of Directors of Surgery/Hospital Quality Managers across Victorian public and private hospitals.

1.3 Findings

1.3.1 THE APPROPRIATENESS OF VASM ACTIVITIES

VASM has undertaken a range of activities to promote awareness, understanding and participation in the audit process. Hospital participation has increased over time. Participation by individual surgeons, was made mandatory in 2012 and enforced since 2014 (covering around 7% of surgeons). Strict monitoring and enforcement of 100% compliance

has been introduced to comply with continuing professional development activities from 2015.. In this context, further work is required to monitor the ongoing participation rates of individual public and private hospitals, in addition to the participation rates of individual surgeons.

1.3.2 THE EFFICIENCY OF VASM PROCESSES

In the original review, there were 12 recommendations to improve process efficiency of the audit. The majority of these have been fully addressed. Despite difficulties with the provision of IT support services, access to and utilisation of online reporting by surgeons has remained relatively consistent at around 50% between 2012 and 2014. Processes for case report assessment have been strengthened by the provision of guidelines relating to terminology and definitions and the implementation of workshops for new and/or existing participants in the audit assessment process. The case record form has also been modified to improve the clarity and flow of questions.

In addition, VASM has undertaken work to establish the levels of inter-rater reliability for assessments undertaken between three groups; including, surgeons and First Line Assessors (FLAs), surgeons and Second Line Assessors (SLAs), and between FLAs and SLAs. Additional analysis undertaken for the current report is consistent with these findings and demonstrates that rates of inter-rater reliability have remained consistent over the past 4 years within each of the three groups of raters. A number of options have been recently explored in order to validate the outcomes of audit activities with other independent sources of data.

Attempts have also occurred to determine the degree of audit 'coverage' (through identification and comparison of the number of cases identified by VASM with an appropriate denominator of all relevant deaths occurring during and up to 30 following hospitalisations involving surgical interventions. Emerging patterns, identified through the audit process, have also been communicated to surgeons and other interested stakeholders in order to promote system level quality improvement activities.

1.3.3 THE EFFECTIVENESS OF THE AUDIT PROCESS

Very recently, tailored reports of audit findings have been developed and provided to individual health services. These have been favourably received but it is too early to provide a definitive outcome as to their effectiveness. Seminars have also been provided to explore issues arising from audit findings over the past three years, and feedback from participants has been positive. The annual report has attempted to include a plain language summary of findings for a broader range of interested readers. Notwithstanding, further work is required to identify and appropriately communicate future directions arising from the audit findings, particularly for other government agencies and programs attempting to improve the quality and safety of surgical services across Victoria. The level of presentations arising from the work of VASM has generally increased since 2011, despite a more recent decline in 2014. The level of effective website access and utilisation has also increased, particularly when compared to other State/Territory surgical mortality audits.

1.3.4 SUMMARY OF PERFORMANCE AND FUTURE DIRECTIONS

In summary, there were 25 specific recommendations arising from the original VASM evaluation in 2011. All of these recommendations have been considered by VASM and followed-up where appropriate. At the current point in time 88% (n=22) of these recommendations have been achieved or otherwise resolved. Ongoing activities are required to address the residual 12% (n=3) of original recommendations.

A number of recommendations have been provided for ongoing consideration by VASM. In order to support ongoing internal monitoring and evaluation of performance a total of five Key Performance Indicators (KPIs) have been developed for ongoing calculation and monitoring on an annual basis, relating to:

- The level of hospital participation in the audit process;
- The level of surgeon participation in the audit process;
- The ongoing levels of inter-rater reliability associated with audit processes;
- The future identification and reporting of the level of audit coverage; and
- The perceived value of information provided by VASM in order to promote ongoing improvements to surgical safety, quality and confidence across the Victorian health system.

Detailed findings arising from this follow-up review are presented in the following Sections of this report.

2 Background

2.1 VASM

The Royal Australasian College of Surgeons (RACS) is a bi-national, non-profit, organisation training surgeons and maintaining surgical standards in Australia and New Zealand. The College administers training, examinations and fellowship services for surgeons in both jurisdictions. The College's purpose is to be the unifying force for surgery in Australia and New Zealand, with FRACS standing for excellence in surgical care.

In 2004 the Council of the RACS endorsed coordinating the roll out of Audits of Surgical Mortality in Australia and New Zealand. The VASM is a component of this bi-national approach to ensure appropriate governance, standardisation and consistency. VASM is a member of the Australian and New Zealand Audit of Surgical Mortality (ANZASM) Management Committee.

The audits are an example of the College's commitment to the highest standard of safe and comprehensive surgical care through excellence in education, training, professional development and support.

2.2 2011 Evaluation

In 2011, Aspex Consulting was commissioned to undertake an independent evaluation to determine the extent to which VASM had met the objectives it had been established to achieve. The major outcomes of evaluation focused upon identifying strengths and areas for improvement in relation to: the scope of activities undertaken by VASM; the efficiency and effectiveness of current program operations; and future development to improve the impact of VASM activities. The evaluation gathered information through stakeholder consultation, focussing on:

- Qualitative analysis of the effectiveness of the relationship and governance arrangements.
- Qualitative and quantitative (where possible) assessment of the effectiveness of the processes used to collect, maintain and report the VASM data.
- Qualitative analysis of the effectiveness of communication between VASM and health services/clinicians regarding recommendations arising from the audit process.

2.3 Requirements of the current evaluation

The aim of this follow up evaluation is to determine the extent to which VASM has implemented the recommendations of the external review conducted in 2011, and to provide a relevant and timely report with a view to:

- Identifying key improvement areas implemented from the previous external review recommendations provided to VASM;

- Identifying areas of strength and improvement to promote efficient operation of the VASM audit program; and
- Recommendations to promote the future operation and impacts of VASM activities.

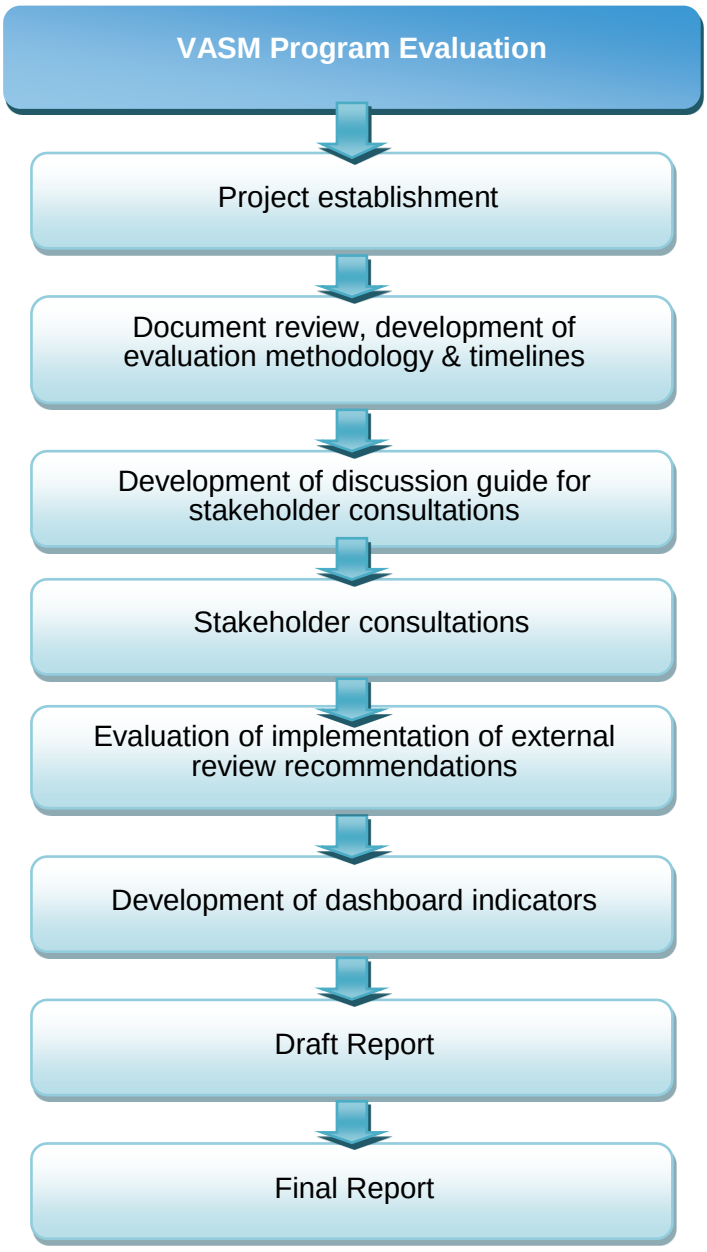
Specifically, the evaluation has focussed on the key areas identified in the external evaluation report relating to:

- Maintaining surgical trust and commitment;
- Streamlining a range of current audit processes;
- Extending analysis of data;
- Promoting integration of information; and
- Targeting messages identified through the audit.

3 Evaluation methodology

The proposed approach for this follow up evaluation is illustrated below and sets out the elements of the framework undertaken in conducting the work. The subsequent sections provide a more detailed description of the elements of the framework.

Figure 3-1: Key stages of evaluation



3.1 Project Establishment

The purpose of this stage was to ensure a common set of expectations were established with respect to the methodology, key deliverables, project administration, and timelines amongst other things. The following activities were undertaken as part of this establishment phase:

- An initial client meeting to discuss and confirm project scope and discuss and finalise the methodology to ensure consistency with project scope requirements. Follow up working session with VASM Evaluation Executive Group (Project Manager, VASM Clinical Director and ANZASM Manager) was conducted to ensure that all issues were appropriately canvassed;
- Confirmation of management structures (i.e., VASM staff and/or Steering Committee/Group), its terms of reference, and any meeting schedules established for the project;
- Identification of key day-to-day contacts within the College and an appropriate method and timelines for communication about project activities and outcomes;
- Agreement on a list of key issues that should be addressed throughout the course of the review;
- Finalisation of a list of key stakeholder contacts together with appropriate methods and timelines for communication about key project activities;
- An agreed work plan/evaluation framework for the project; and
- Agreement on basic structure of evaluation report.

3.2 Documentation review, evaluation methodology and timelines

The purpose of this stage of the project was to develop a picture of the key processes and issues associated with the implementation of recommendations from the 2011 evaluation by VASM. This involved an appraisal of available documentation relating to the implementation of findings and included:

- VASM policy and procedure documents;
- VASM agendas and minutes of any relevant meetings;
- Annual reports and progress reports;
- Case review booklets;
- Posters and presentations;
- Newsletters and media releases;
- Data specifications for Fellow website interface;
- Presentation surveys and feedback forms;
- Documented outcomes of case reviews;
- Substantiation of quality assurance and quality improvement activities;

- Relevant correspondence with key stakeholders including email correspondence;
- The results of internal reviews of the program undertaken by the College following the external review including relevant data when available; and
- Other documentation produced and revised pertaining to VASM (e.g., Hospital Reporting Guides, Assessor Guidelines, definitions and terminology etc.).

Content of key documents, guidelines and the suite of communication materials generated by VASM activities, particularly material produced subsequent to the external review, has been reviewed against the progress of the audit. This process in turn informed the refinement of the methodology and timeframes

3.3 Development of discussion guide

Following review of the documentation noted above, and based on project initiation phase, separate discussion guides were developed to facilitate meetings with identified internal and external stakeholders. The directed questions were intended to elicit information relating to areas targeted for enhancement of VASM. The guides focused on:

- Awareness of initiatives promoting early awareness and understanding of VASM;
- Understanding of the role of VASM in the broader system;
- Ability to distinguishing VASM from other surgical registries;
- Awareness of information relating to challenges to qualified privilege arrangements;
- Processes in place for:
  - Re-investigating requirements for patient de-identification;
  - Hospital processes for location of medical records;
  - Monitoring electronic submission of case reports;
  - Exploring criteria for 'levels' of completion in case reporting;
  - Strengthening processes for first line assessment; and
  - Clarifying current case report questions;
- Systems instituted for extending analysis of data including:
  - Undertaking specific studies of inter-rater reliability;
  - Validating findings with other sources of data;
  - Monitoring and reporting the degree of audit 'coverage';
  - Focusing upon emerging patterns of performance;
  - Monitoring outcomes in 'areas of concern'; and
  - Extending analysis to focus upon selected morbidity;
- Processes in place for developing and disseminating summary reports for participating hospitals;

- Exploring options for customisation of reports to health services, for example, for CEOs or Quality Boards;
- Awareness of strategies that target messages identified through the audit including:
  - Promoting seminars to discuss key issues of concern;
  - Developing a plain language summary of the annual report;
  - Reporting future directions arising from the audit;
  - Increasing publications and presentations;
  - Exploring methods to enhance the use of the web site.

The discussion guides are included Appendix 1.

3.4 Stakeholder consultations

The RFQ (Section 3.4, p.6) required that *"a number of interviews will be conducted with key stakeholder representatives such as management committee members, VASM department staff, ANZASM department staff, hospital surgical leaders, safety and quality hospital staff, key associations and professional organisations such as Department of Health and Human Services (formerly the Department of Health), Victorian Surgical Consultative Council and the College Council to explore issues arising from document analysis and broader stakeholder surveys. The most appropriate methods of engaging key stakeholder groups will be specified prior to the process of consultation."*

A total of 23 consultations were undertaken using a variety of formats deemed most relevant to the particular stakeholder group and availability these included face-to-face meetings, teleconferences, group consultations, and attendance/presentation, and/or consultation at pre-designated meetings. A final list of key stakeholders for consultation was decided in conjunction with the College (Appendix 2) and included representatives from:

- Department of Health and Human Services x 3 consultations as follows:
  - Victorian Surgical Consultative Council x 2 - (Chairs);
  - DH Program staff x 1
- RACS x 6 consultations as follows:
  - VASM (Manager) x 3;
  - VASM (Director) x 2;
  - ANZASM x 2;
- Chair of the Victorian Consultative Council on Anaesthesia Mortality and Morbidity x1;
- Directors of Surgery x 10 consultations as follows:
  - 5 x public hospitals;
  - 5 x private hospitals;
- VASM Advisory Group x 2 sessions; and
- Presentation to VASM Management Committee.

3.5 Evaluation of implementation of external review recommendations

This phase brings together the findings from the document review and consultations for evaluation of VASM's effectiveness in implementing the short-term recommendations of the external review, progress towards medium-term recommendations and planning that has occurred to address the longer-term challenges.

This stage examined work that had been undertaken by VASM to address in the **short-term** in relation to:

- Reinforcing governance for the release of public information amongst any new Management Committee Members or other staff involved with VASM;
- Clarifying current case report questions in need of revision;
- Exploring methods of re-engaging disaffected audit participants as active assessors in the audit process;
- Re-investigating requirements for patient de-identification, and if unsuccessful assisting in identifying hospital processes for location of medical records;
- Exploring options for different 'levels of case reporting' with a focus upon hospital information technology platforms that may auto-populate pre-existing patient information prior to form completion by individual surgeons;
- Strengthening processes for first line assessment to monitor the consistency between ratings provided by different surgeons;
- Enhancing analysis of audit coverage via discussion with the Department and subsequent reporting of VASM findings against linked VAED – Office of Births, Deaths and Marriages data;
- Monitoring electronic interfaces between surgeons and VASM (e.g., attempts to complete case report information on line and general use, duration and interest in the VASM web-site) so that pro-active improvements can be made to enhance the value of these forms of communication (rather than waiting for negative feedback);
- Reporting future directions arising from the work of the audit in subsequent annual reports, together with a plain language summary of the annual report for readers who may be less informed about surgical practice or statistical tables and graphs; and
- Placing greater emphasis in annual reporting on emerging patterns of performance that have been identified through the audit, particularly where new patterns may be indicated (compared with information obtained from other sources).

Medium-term actions in relation to:

- More active involvement in undergraduate and specialist medical training to improve early awareness and familiarity with the audit place, purpose, processes and impacts upon the health system;
- Specific studies of inter-rater reliability and validity of audit findings against a broader range of independent sources of information;

- Selective Monitoring outcomes in a broader range of 'areas of concern'; and
- Ongoing monitoring and reporting of any challenges to qualified privilege arrangements protecting information reported to the audit.

3.6 Development of dashboard indicators

Based on the findings from the document review and the tenor of feedback from consultations, a set of dashboard reports for performance monitoring for VASM have been developed to provide a tool for ongoing monitoring of the Audit on a regular basis. These not only provide a basis for ongoing internal monitoring – both point in time and trend analysis - but also provide the basis for any subsequent evaluation (Appendix 3).

3.7 Draft and final reporting

A draft report was prepared outlining the:

- Background to the review (including the overview of the available documentation);
- Methodology of the review;
- Key findings, relating implementation of actions to address:
  - Maintaining surgical trust and commitment;
  - Streamlining the range of current audit processes;
  - Extending analysis of data;
  - Promoting integration of information;
  - Targeting messages identified through the audit;
- Identify areas of strength and improvement to promote efficient operation of the VASM audit program; and
- Recommendations to promote the future operation and impacts of VASM activities.

Following feedback from the Evaluation Executive Group and the College, the report will be finalised, submitted and approved by the College, concluding the project.

4 Ongoing appropriateness of the audit

Following evaluation in 2011, a number of recommendations were made to highlight the appropriateness of activities undertaken by VASM within the Victorian health system. Specifically, it was recommended that VASM undertake further work to:

- Promote early awareness and understanding of the audit process;
- Re-engage disaffected audit participants;
- Explain the role of audit activities within the broader health system (including Craft specific registries);
- Update participants if there are legal challenges to qualified privilege arrangements;
- Maintain audit participation in public hospitals; and
- Increase audit participation by private hospitals.

In summary, VASM has undertaken a range of activities to promote awareness, understanding and participation in the audit process. Hospital participation has increased over time. Participation by individual surgeons has been mandatory since 2012. Whilst levels of mandatory participation have been enforced since 2014 (covering around 7% of surgeons), strict monitoring and enforcement of 100% compliance has been introduced from 2015. In this context, further work is required to monitor the ongoing participation rates of individual public and private hospitals, together with the impact of new enforcement policies upon the participation rates of individual surgeons.

4.1 Promoting awareness and understanding of VASM

4.1.1 PRIOR RECOMMENDATION

The 2011 Evaluation recognised that early education and awareness of audit activities would enhance the recognition and cultural acceptance of the rationale for auditing surgical mortality. This recommendation was made in response to the questions raised by some surgeons regarding the need to participate in the audit process. It was reasoned that acceptance of the audit process would be enhanced if ongoing education focused on the:

- Rationale for auditing surgical mortalities;
- Beneficial outcomes which can be achieved by auditing surgical mortalities; and
- The role of auditing within the broader health system to promote quality and safety of patient management.

4.1.2 KEY VASM ACTIVITIES

VASM has undertaken a series of activities to promote awareness and understanding of the audit process, largely relating to seminars and presentations to a variety of professional fora. Specific activities have included:

- ***Presentations to hospital clinical staff*** regarding the aims and objectives of VASM (e.g., Goulburn Valley Hill, 6 June, 2012);
- ***Induction sessions*** at the Royal College of Surgeons (e.g., 19, August 2013);
- ***Professional placements*** at VASM for undergraduate biomedical science students (e.g., 2013;
- ***Co-ordinated seminars with other surgical audits*** (e.g., VASM and the Australian Vascular Audit, August 2014); and
- ***Conference presentations*** (e.g., 2013 Australasian Injury Prevention and Safety Promotion).

4.1.3 OUTCOMES ARISING FROM VASM ACTIVITIES

Stakeholder feedback indicated that surgeons were well aware of the existence and requirements of VASM. Most surgeons were reported to accept the audit process, acknowledging that participation will become strictly monitored for 100% compliance as a mandatory requirement of continuous professional development by the College (from 2015).

"Everyone just accepts it now - especially as it is part of ongoing professional development."

Nevertheless, some continued to consider it to be a waste of time – particularly where multiple reports were required to different bodies (such as the Victorian Coroner) at the same time.

"VASM is still seen as a waste of time by some"

Furthermore, there is also the recognition that making anything mandatory does not necessarily make it any more appealing.

"Mandatory audit or mandatory anything is always irritating, it's not a philosophical objection, but most people hate being made to do something."

Methods of targeting particular groups that might benefit from further information about VASM were not reported. In addition, specific outcome measures to assess the effectiveness of VASM activities to improve professional awareness and understanding of the audit were not available for review.

4.1.4 ONGOING RECOMMENDATIONS

It is appreciated that awareness of VASM has been enhanced by the introduction of mandatory participation as part of the College's continuing professional development program. Notwithstanding, outcome measures are lacking to identify that the work undertaken by VASM is targeted appropriately, and of benefit to professional peers. Accordingly:

It is recommended that ongoing feedback is collected (where practical) to evaluate the utility of seminars provided by VASM.

4.2 Re-engaging disaffected audit participants

4.2.1 PRIOR RECOMMENDATION

The initial evaluation of VASM recognised that some surgeons remained dissatisfied with the audit process and/or outcomes. In an attempt to engage these individuals in ongoing audit participation, it was recommended that active attempts be made to involve them in first and second line case assessment in order to:

- Allow more critical feedback to be received by VASM by these surgeons for the purposes of ongoing quality improvement; and
- Promote a greater understanding of the strengths, weaknesses and overall importance of the audit process for disaffected surgeons.

4.2.2 KEY VASM ACTIVITIES

In response to this recommendation, VASM has undertaken a number of activities to promote broader and ongoing engagement in the audit process. In the main, these activities have included presentations and written correspondence with College Fellows from the Clinical Director. Specific actions undertaken by VASM were reported to include:

- **Approaching Fellows** to consider peer reviewing cases for specific specialities (11 September 2012);
- **Distributing written correspondence to non-participating surgeons** requesting that they sign an agreement to participate in the audit process, and return outstanding case report forms (13 March 2013, 28 July 2014); and
- **Seminars** and/or presentations on how to conduct second line assessments (e.g., 18, October, 2013).

4.2.3 OUTCOMES ARISING FROM VASM ACTIVITIES

Whilst audit participation rates have improved over time, the outcomes of specific attempts to re-engage disaffected surgeons via the introduction of mandatory reporting have not yet been available. Accordingly, the success of activities to promote greater co-operation cannot be readily ascertained at the current point in time.

4.2.4 ONGOING RECOMMENDATIONS

Given the strict monitoring and enforcement of audit compliance since 2015,

It is recommended that participation (case report form return) rates of individual surgeons are actively monitored. Individual correspondence to promote participation from individual surgeons should also be monitored, together with the impact upon subsequent audit participation.

4.3 Distinguishing the role of VASM in the broader system

4.3.1 PRIOR RECOMMENDATION

The initial evaluation identified a degree of confusion by some surgeons about the role of VASM as distinct from other pre-existing quality and safety improvement activities conducted by individual hospitals, Craft groups or by the Victorian Department of Health and Human Services (DHHS). Accordingly, it was recommended that VASM and DHHS develop a framework to increase surgeons' understanding of the role that VASM plays within a broader health system including (but not limited to):

- **Hospital Activities**, including: Morbidity and Mortality Review Committees; Sentinel event reviews (including where relevant, root cause analysis); Surgical departmental reviews; Collegiate discussions; and, Hospital patient complaints and resolution procedures;
- **College activities**, including: specialty-specific morbidity and/or mortality registries, other jurisdictional audits of surgical mortality and ANZASM;
- **Department of Health and Human Services' activities** including: the VSCC and the Surgical Outcomes Information Initiative; VCCAMM; CCOPMM; The Clinical Risk Management program; and
- A range of **other bodies and/or associates**, including; The Office of the Health Services Commissioner; The Australian Health Practitioner Regulation Agency; The Australian Medical Association; The Office of the State Coroner; The Victorian Managed Insurance Authority, and Private Medical Indemnity associations.

4.3.2 KEY VASM ACTIVITIES

A number of activities have occurred to promote better understanding of the role of VASM within the health care system. It is noteworthy that these activities have been initiated by VASM, and have not included the DHHS. Such activities have included (but are not limited to):

- **Correspondence with other peak bodies**, such as the Australian Orthopaedic Association, and discussion of VASM finding at local Morbidity and Mortality meetings (e.g., 1 August 2014);
- **A clinical audit session and master class** at the Annual Scientific Congress of the Royal Australasian College of Surgeons (e.g., June 2013); and
- **Information sessions** about the role of VASM (e.g., 30 October 2012).

Other activities have focused specifically upon distinguishing VASM from the work undertaken by other Craft group registries, such as:

- **Correspondence to distinguish** VASM from other audits (e.g., 11 February 2014);
- **Correspondence relating to participation** in VASM auditing activities, specifically the Australian Orthopaedic Association (e.g., 1 August 2014); and
- **Collaboration with RACS**, with correspondence and newsletters utilised to inform Craft groups of the RANZCOG approved formal collaboration (e.g., September 2012).

4.3.3 OUTCOMES ARISING FROM VASM ACTIVITIES

In general, stakeholders who were interviewed as part of the follow-up evaluation considered that surgeons understood the role of VASM as distinct from other Craft group or hospital-related quality and safety processes. For example:

"I think they are aware of the differences between VASM and clinical registries."

However, some stakeholders expressed ongoing frustration about the inability to assimilate VASM findings into pre-existing hospital quality and safety systems.

"VASM is a one way process. It is difficult to integrate the process into hospital M&M or quality programs."

"The VASM report is used as a trigger but often the timing of the VASM report is not ideal as it comes out too late so it is not helpful prospectively."

Some continued to perceive that the activities of VASM were redundant with those of the State Coroner, particularly in relation to the reporting of major trauma cases.

"Trauma reporting to VASM is a waste of time. The major review program is within the hospital and trauma is also reviewed by the Coroner."

"VASM involvement in trauma is seen as an unnecessary interference from the College, with little contribution – the VASM review of such cases is superficial."

These comments highlighted the ongoing need for clear communication about the role, benefits and limitations of the audit process and how the outcomes of VASM activities can be integrated into the broader quality and safety infrastructure operating across the Victorian health care system.

Others had a clearer understanding of the benefits and limitations of the audit process, particularly the trade-off between anonymity/de-identification of findings and surgeon willingness to participate in the audit process under qualified privilege arrangements.

"It [the VASM hospital report] is more a validation process."

"The reports help us see how we are tracking compared to other hospitals like us. They don't necessarily reveal new information, but confirm that the issues we are facing are similar to others – that we are not alone."

Feedback from DHHS recognised a need for clearer communication distinguishing the role of VASM from other departmental and non-departmental initiatives focusing upon the quality and safety of patient care. Department representatives were willing to work with VASM to clarify and map these relationships for clearer communication to all stakeholders.

4.3.4 ONGOING RECOMMENDATIONS

The role of VASM appears to be clearly understood by the majority of surgeons and other stakeholders involved in quality and safety improvements across the health sector. Some misperceptions about the role of VASM continue. Moreover, there has been no single integrated document to depict the role of VASM from the range of other quality and safety improvement activities undertaken by local health services and other state-wide organisations or agencies (as outlined in Section 4.3.1). Accordingly,

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It is recommended that VASM and the Department of Health and Human Services collaborate to develop a basic diagram and explanation of the roles and functions of all inter-related quality and safety initiatives operating in Victoria. This information could be included as a regular appendix in the VASM annual report.

4.4 Communicating challenges to Qualified Privilege

4.4.1 PRIOR RECOMMENDATION

In 2011, surgeon concerns about the robustness of arrangements pertaining to qualified privilege were one of the biggest impediments/hesitations about participating in VASM. Accordingly, it was recommended that any attempts to challenge these arrangements be promptly communicated to reinforce audit participation.

4.4.2 KEY VASM ACTIVITIES

It is noteworthy that no challenges to established arrangements for qualified privilege have been reported since VASM commenced. Whilst VASM has independently provided information to college fellows in relation to legal issues for surgical audits (e.g., 1 August 2014), no further actions against this recommendation have been required.

4.4.3 ONGOING RECOMMENDATIONS

Given the mandatory compliance requirements with future audit activities (from 2012),

It is recommended that VASM continue to scan for any challenges to qualified privilege arrangements, and formally communicate the nature and outcome of any challenges to College Fellows when and if they occur.

4.5 Maintaining and increasing participation rates

4.5.1 PRIOR RECOMMENDATION

The 2011 evaluation found that VASM had achieved high rates of public hospital participation. It was recognised that future efforts should focus upon maintaining these participation rates, together with encouraging a higher proportion of private hospitals to take part in the audit process.

4.5.2 KEY VASM ACTIVITIES

Multiple publications, presentations and communications from VASM to surgeons and other public and private hospital staff have occurred to maintain and improve overall participation in the audit.

In 2012 (May), VASM actively sought re-engagement with a small proportion of private hospitals who were not participating in the audit process. In the same year (April), individual surgeons who had not participated in the audit were informed of the upcoming requirement for mandatory participation and actively re-invited to participate via Newsletter. At the same time a number of surgeons who were not directly affiliated with the College had actively decided not to comply with audit processes and were thus deemed to be “non-participants”.

4.5.3 OUTCOMES ARISING FROM VASM ACTIVITIES

Since the original review, participation rates for public hospitals have been maintained (Figure 4-1). Private hospital involvement in VASM plateaued at around 79% throughout 2012. Following a concerted effort by VASM to engage with private hospital groups, private participation subsequently increased to 100% coverage by mid-2013 and has remained at this level up until the end of 2014. Insufficient data exists to evaluate public and private hospital participation in early 2015 (given the 2 month allowance for return of case notifications relating to patient deaths in January 2015). When sufficient data becomes available, it is expected that overall hospital participation rates will remain at 100% given the mandatory requirement for individual surgeons to participate in the audit process.

The percentage of surgeons submitting case reports within 60 days of notification commenced at 61% in early 2009, and has remained (on average) at this level up until the end of 2014 (Figure 4-2). A significantly higher percentage of case report returns were observed in the October-December quarter of 2009 (70%), and again in the July-September

quarter of 2014 (70%). A significantly lower percentage of case report returns were observed in the January-March quarter of 2012 (52%). As with hospital participation when sufficient data becomes available, it is expected that participation rates will rise from January 2015, given the mandatory requirement for individual surgeons to participate in the audit process for their continuous professional development. The period of time taken to achieve 100% compliance will require careful monitoring from March 2015 forward.

Figure 4-1: Audit participation by public and private hospitals in Victoria

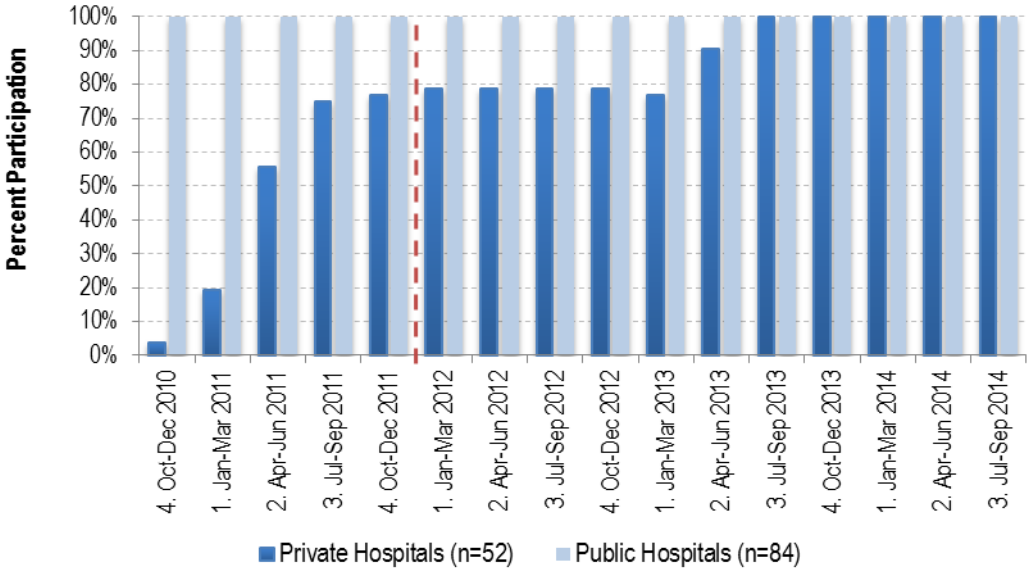
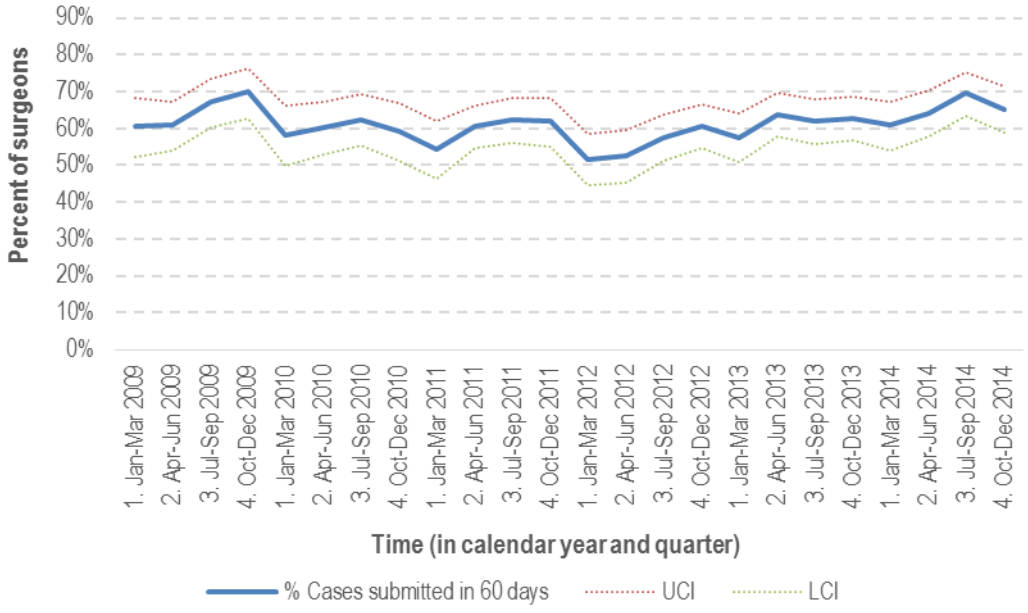


Figure 4-2: Audit compliance by individual surgeons



Consultation with a variety of stakeholders was consistent with VASM data, indicating that ongoing compliance rates by individual surgeons continued to vary across different public and private hospitals, ranging from as low as around 50% to as high as 100% compliance with requests for case information.

"There is approximately 50% compliance of surgeons at XXXX [hospital] with the CME requirements [for VASM case reports] at present."

"Making reporting to VASM mandatory was a good thing. The current return rate at XXXX [hospital] is 49% - so the College needs to get real about this."

4.5.4 ONGOING RECOMMENDATIONS

Based upon VASM data and stakeholder reports of variable participation by individual surgeons,

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It is recommended that VASM continue to monitor and employ strategies to actively increase participation rates for individual hospitals AND individual surgeons (accredited through the College) as data becomes available from March 2015 forward.

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5 Ongoing efficiency of audit processes

Several recommendations were made following the initial VASM evaluation (2011) to improve the efficiency of audit processes, including:

- A review of the ongoing need to de-identify patient notifications from VASM to individual surgeons, and/or more efficient methods of re-identifying patients by individual hospitals;
- Implementation of strategies to minimise the burden of reporting to surgeons (e.g., clarifying current case report questions, encouragement of electronic submission, implementation of auto populated fields in case report forms etc.);
- Further improvements to audit processes for case assessment;
- Identifying and reporting the ongoing degree of audit coverage;
- Validating audit findings with other sources of data; and
- Ongoing monitoring of any changes in key audit findings.

In summary, despite difficulties with the provision of IT support services, access to, and utilisation of, online reporting by surgeons has remained relatively consistent at around 50% between 2012 and 2014.

Processes for case report assessment have been strengthened by the provision of guidelines relating to terminology and definitions and the implementation of workshops for new and/or existing participants in the audit assessment process.

The case record form has been modified to improve the clarity and flow of questions.

In addition, VASM has undertaken work to establish the levels of inter-rater reliability for assessments undertaken between three groups; including, surgeons and First Line Assessors (FLAs), surgeons and Second Line Assessors (SLAs), and between FLAs and SLAs. Further analysis undertaken for this review is consistent with these findings and demonstrates that rates of inter-rater reliability have remained consistent over the past four years within each of the three groups of raters.

A number of options have been recently explored to validate the outcomes of audit activities with independent sources of data. Attempts have also been made to determine the degree of audit 'coverage' by identifying an appropriate denominator of all relevant deaths occurring during and up to 30 following hospitalisations involving surgical interventions. Emerging patterns, identified through the audit process have also been communicated to surgeons and other interested stakeholders to promote system level quality improvement activities.

5.1 Patient de-identification and location of medical records

5.1.1 PRIOR RECOMMENDATIONS

The State of Victoria was the only jurisdiction where patient names were required to be de-identified when case notifications were sent to individual hospitals. This requirement

represented a significant impost upon surgeons willing to participate in the audit, particularly where patients were seen in private clinics or hospitals. Some hospitals also expressed concern about the unnecessary steps of having to re-identify the names of patients in order to locate relevant medical records. Thus, it was recommended that VASM review the requirements for patient de-identification with the DHHS, and that VASM separately identify better practices of hospital re-identification to share amongst other health services participating in the audit.

5.1.2 KEY VASM ACTIVITIES

VASM, in response to the recommendation, made contact with the Department to clarify state based legislative and/or regulatory limitations to providing de-identified patient information to hospitals and/or surgeons in relation to:

- The Victorian Health Records Act (e.g., 22 November 2011); and
- Application of Victorian Information Privacy Principles, specifically Principle 2 – Use and Disclosure (e.g., 11 September 2012).

Subsequent advice received from the Department has indicated that it was up to individual health services as to whether (or not) they were willing to receive identified patient names to assist in the location of relevant patient medical records. Victorian hospitals were notified of changes in VASM processes via correspondence dated 11 September 2012.

5.1.3 OUTCOMES ARISING FROM VASM ACTIVITIES

Based upon the advice received from the DHHS and disseminated by VASM, any perceived difficulties in identifying relevant patient files for case note reporting reside with individual hospitals. VASM re-iterates the advice received from the Department where there are ongoing concerns arising from hospital staff, and recommend they discuss internal processes with the relevant hospital personnel.

5.1.4 ONGOING RECOMMENDATIONS

Based upon the recommendations of the DHHS and advice provided to Victorian hospitals, any perceived concerns relating to the receipt of de-identified patient information by VASM will need to be addressed by individual health services.

Earlier recommendations for VASM to identify and disseminate better practices of locating de-identified patient medical records between hospitals have been appropriately addressed.

5.2 Strategies to minimise the burden of reporting for surgeons

Several recommendations were made on the basis of the original evaluation, to minimise the burden of completing case reports for surgeons. Specifically, it was recommended that:

- Surgeons are actively encouraged to submit reports via the VASM on-line portal;
- Methods of auto-population of case report forms be investigated; and
- Consideration be given to developing a 'short form' of case reporting for patients who were deemed to be at a higher risk of death prior to any surgical procedure.

5.2.1 KEY VASM ACTIVITIES

VASM had previously implemented an electronic submission of case reports system, allowing surgeons to access necessary information online. Some difficulties had initially arisen with access to online reporting, relating to surgeon registration of usernames and passwords. In recognition of these issues VASM has been working to improve online access for surgeons by:

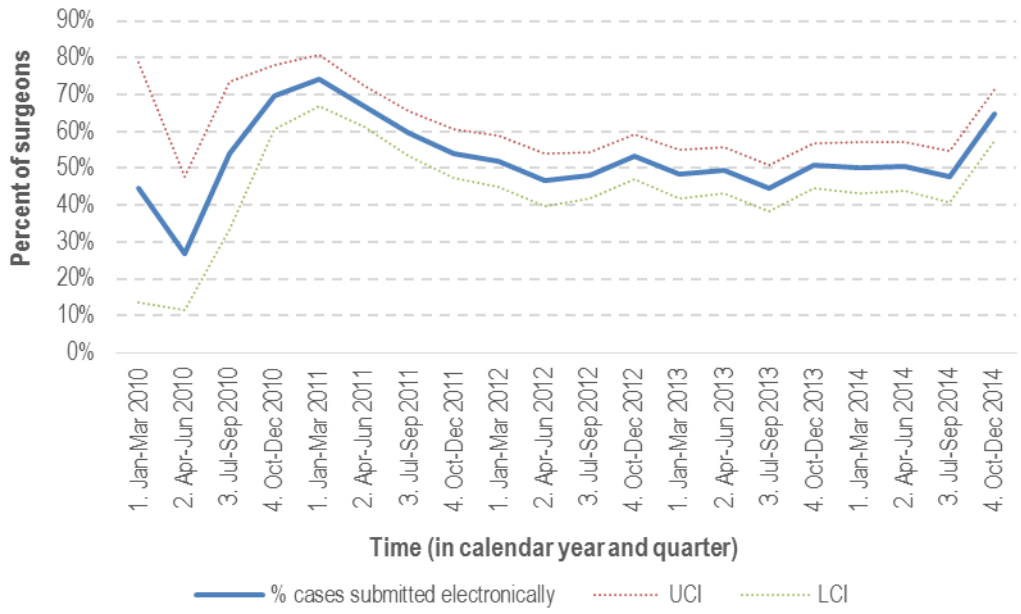
- **Correcting login errors** to facilitate website access; and
- **Communicating with Fellows** detailing the corrections to the online portal, and encouraging greater use of the website to submit case reports (e.g., June 2014).

VASM has also considered the possibility of developing shorter forms of case reporting. Following discussion it was determined that omission of any data items in the current case report form would compromise the quality of information available for analysis and reporting by VASM. As an alternative method of reducing the reporting burden for surgeons, it was noted that a number of hospitals have independently sought to populate basic patient information for those who choose to complete hard copy case reports. Methods of auto-populating fields in electronically submitted case reports via the VASM web portal are the subject of ongoing discussions between VASM and website management staff at RACS.

5.2.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Trends in electronic submission of case reports by surgeons are presented in Figure 5-1. Following the introduction of the website portal in early 2010, there was a significant increase in the percentage of fellows utilising electronic case reporting up to, and including, the January-March quarter of 2011 (74%). Web portal utilisation then declined significantly by the end of 2011 (54%), corresponding with the access difficulties reported by surgeons. Since this period around 50% of all case reports have been submitted electronically by surgeons (on average). Following VASM communication with Fellows in June 2014, there has been a marked increase in electronic submission of case reports by October-December 2014 (65%).

Figure 5-1: Electronic case reporting by surgeons



Stakeholder feedback in relation to electronic submission indicated that, older surgeons who were more comfortable with hard copy records might be less inclined to submit case reports via the VASM website.

"I think web based submission of case reports will depend on the age of the surgeon. While younger surgeons are more familiar with the internet, older surgeons may tend to prefer hard copy records."

Improvements to web based case reporting and case assessment were also suggested, including automated links to the online reporting/assessment portals, and the use of a "pop-up" screen offering a brief re/orientation to assist in navigating their way through the process.

"It may be useful that when a surgeon is notified about a case that there is specific information and links to the login process and invitation to use an education model to familiarise themselves with what is required."

Others were very satisfied with their capacity to access information via the VASM web portal.

"As a reviewer, the system is well set up, it's easy to log on and work through the case, sometimes the information is patchy, but you can get more information if needed. 95% of cases are OK."

From a hospital perspective, it was suggested that the current web interface could be improved further with the introduction of a specific portal for the transfer of electronic records from hospitals directly to VASM for the purposes of Second Line Assessment of cases.

"Given the need for electronic file transfer a useful innovation for VASM would be introduction of a secure file transfer portal."

5.2.3 ONGOING RECOMMENDATIONS

Based upon the evidence gathered through the current evaluation:

It is recommended that VASM continues to encourage the use of on-line case reporting by surgeons, and consider the introduction of a pop-up offer to re/orient surgeons and case assessors to the online reporting requirements and processes. It is also suggested that VASM consider developing a specific portal for the secure transfer of electronic medical records from hospitals for the purposes of SLA.

5.3 Strengthening processes for first line assessment

The initial evaluation report recommended two potential approaches to strengthen the processes of FLA by College fellows. The first of these involved monitoring the level of agreement between surgeon case reports and appraisals made by first line assessors. Where individual assessors demonstrated a consistent pattern of disagreement with surgeon reports, an independent first line assessor could be asked to review their appraisals and discuss any systematic areas of difference in case assessment between the two raters. The second approach was to pair new first line assessors with a more experienced assessor in order to promote a more standardised approach to case report review.

5.3.1 KEY VASM ACTIVITIES

VASM has undertaken a series of activities to promote the consistency of FLAs. These key activities included (but are not limited to):

- **Defining Terminology.** VASM regularly updated documents required to maintain currency of terminology to FLAs and SLAs, and for Case Record Forms (e.g., 18 July 2012); and
- **Conducting Workshops** on the correct way to conduct a second line VASM peer reviewed assessment (e.g., 18 October 2013).

5.3.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Data obtained from VASM has detailed that there has been a steady increase in the number of enrolled assessors with almost half (49%) of enrolled RACS fellows participating as both FLAs and 44% participating as SLAs. Unfortunately, these activities (e.g., workshops) were not formally evaluated to identify the perceived quality and utility of information presented. However, more recent work examining the inter-rater reliability of audit findings does indicate improvements in the consistency of interpretation and assessment of case reports through both first and second line assessments (discussed in Section 5.5, below).

Feedback from stakeholders indicates that surgeons are responsive to VASM's calls for enrolment as FLAs and SLAs and find value in being part of a quality improvement process. Specific comments questioned the structure and language of the review form, suggesting potential changes.

> *"In terms of the review form, the flow of the questions could be improved. For example, no death is expected, so it's a strange question – [it] would be better to ask, was the outcome avoidable?"*

5.3.3 ONGOING RECOMMENDATIONS

VASM now has a system for standardising interpretation of information presented in case report forms. Specific workshops relating to the process of conducting case assessments has also appeared to have a positive impact on the consistency of case report assessment. Accordingly,

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It is recommended that regular workshops are conducted for new case assessors (e.g., annually) and that feedback relating to the utility of these workshops be formally collected to enhance ongoing quality improvement.

5.4 Revising the case record form to clarify questions

The original evaluation proposed revisions to **questions 17 and 21** in the case report forms, to both simplify language and improve the cognitive flow of question placement.

5.4.1 KEY VASM ACTIVITIES

Following these recommendations, VASM reviewed the current questions presented in the case report form, and subsequently:

- **Revised** the order and content of the questions presented, including the recommendations that both Question 17 and 21 be simplified and reordered; and
- **Improved** the First Line Assessor and Second Line Assessor Forms to facilitate the flow of questions.

5.4.2 OUTCOMES ARISING FROM VASM ACTIVITIES

The changes made by VASM have resulted in a more logical flow of questions for surgeons. Subsequent consultation with a range of surgeons has indicated that further refinements might be considered to provide additional information including in reports to hospitals. For example:

> *"The language in the reports is not helpful, nor the reporting categories, for example – 'pre-operative prophylaxis delay' or 'Issue with fluid balance'– what is the issue?"*

As previously noted, VASM has produced (and regularly updates) terms and definitions associated with the case report form. This is considered to be a more appropriate method of clarifying questions into the future, as it minimises further changes to the report structure which would weaken comparability of longitudinal data collected and reported through the audit process.

5.4.3 ONGOING RECOMMENDATIONS

Based upon current systems established by VASM, previous recommendations to clarify the content and flow of case report questions have been addressed. Systems to standardise definitions for interpretation of case report questions have also been established. Accordingly, there are no further recommendations relating to these issues.

5.5 Undertaking specific studies of inter-rater reliability

Inter-rater reliability was an important feature within the 2011 report recommendations, with detailed studies suggested to be performed (relatively easily on the basis of current data) and emphasis placed on FLA concordance. The Report recommendation stated that a sample of current case reports could be selected from experienced FLA's and provided to a second FLA for completion – with levels of agreement calculated for key questions. A similar concordance analysis could be performed for SLA's.

5.5.1 KEY VASM ACTIVITIES

In response to the 2011 report, VASM performed a series of key activities to establish the inter-rater reliability of the audit report outcomes, with particular emphasis placed on FLAs, but also extended to include SLA's. Specific activities taken by VASM include (but are not limited to):

- **FLA Validation Audit.** VASM performed a validation audit **(11 September 2013)** whereby 103 peer reviews were performed by a secondary FLA to determine concordance. Of the 103 peer reviews performed, 88 (85%) had a matching assessment;
- **SLA Validation Audit.** Whilst completing the FLA Validation Audit, VASM also performed a SLA audit **(20 September 2013),** whereby an inter-rater reliability rating of 85% was received for matching clinical issues;
- **Policy Review.** In response to the Audit, VASM reviewed its policies on managing outliers (e.g., **1 August 2014)**; and
- **A comprehensive review and assessment of inter-rater reliability**.

5.5.2 OUTCOMES ARISING FROM VASM ACTIVITIES

The findings of an independent review of inter-rater reliability are presented between surgeons and FLA's (in Table 5-1), between surgeons and SLA's (in Table 5-2) and between FLA's and SLA's (in Table 5-3). As part of this review, it was recommended that a different inter-rater statistic be calculated (Gwet's AC1) as a more stable estimate compared to the historical calculations undertaken by VASM (using the Kappa statistic). Subsequent review

of the mathematical calculations underlying the AC1 compared with Kappa is consistent with the previous recommendations of the independent reviewer.

Analysis of inter-rater findings (using Gwet's AC1) indicates:

- High levels of agreement between surgeons and FLA's;
- Moderate to high levels of agreement between surgeons and SLA's (with the exception of 'clinical management issues'); and
- Low to moderate levels of agreement between FLA's and SLA's.

These findings are consistent with the level of clinical information available to surgeons, FLA's and SLA's. Case reports provided by surgeons contain a limited amount of requested information which is available to FLA's. Levels of agreement with this limited range of information are generally high. Where an FLA does identify any potential issues or areas of concern, the case is referred for more detailed analysis by a SLA using de-identified information from the medical record. Thus, SLAs are in a more 'informed' position to either confirm or (more typically) disconfirm any queries arising from the FLA. Accordingly, higher levels of agreement are anticipated between surgeons and FLA's (based upon a more limited degree of information), and between surgeons and SLA's (based upon a more detailed understanding of the episode of patient care), than between FLA's and SLA's.

Table 5-1: Concordance between surgeon and FLA responses

CONCORD AREAS	N (%)	% CONCORD	KAPPA SCORE	95% CI	P VALUE	GWET'S AC1 SCORE	95% CI	P VALUE
Risk of death	3911 (79.73%)	89.39%	0.61	0.60 - 0.61	<0.0001	**0.82**	0.81 - 0.83	<0.0001
ICU care benefit if not received	1024 (20.88%)	96.09%	0.12	0.00 - 0.25	<0.0001	**0.96**	0.95 - 0.97	<0.0001
HDU care benefit if not received	968 (19.73%)	92.67%	0.22	0.11 - 0.34	<0.0001	**0.92**	0.90 - 0.94	<0.0001
Fluid balance	4582 (93.41%)	68.53%	0.21	0.21 - 0.22	<0.0001	**0.61**	0.59 - 0.63	<0.0001
Preoperative management/preparation	3771 (76.88%)	87.59%	0.39	0.34 - 0.43	<0.0001	**0.84**	0.83 - 0.86	<0.0001
Intraoperative/technical management	3717 (75.78%)	93.27%	0.34	0.28 - 0.40	<0.0001	**0.93**	0.92 - 0.94	<0.0001
Decision to operate at all	3778 (77.02%)	88.96%	0.31	0.26 - 0.36	<0.0001	**0.87**	0.86 - 0.88	<0.0001
Choice of operation	3767 (76.80%)	93.31%	0.22	0.16 - 0.28	<0.0001	**0.93**	0.92 - 0.94	<0.0001
Grade/experience of surgeon deciding	3722 (75.88%)	98.41%	0.23	0.10 - 0.35	<0.0001	**0.98**	0.98 - 0.99	<0.0001
Grade/experience of surgeon operating	3722 (75.88%)	97.53%	0.23	0.13 - 0.33	<0.0001	**0.97**	0.97 - 0.98	<0.0001
Timing of operation	3758 (76.62%)	92.15%	0.47	0.41 - 0.52	<0.0001	**0.91**	0.90 - 0.92	<0.0001
Postoperative care	3660 (74.60%)	91.15%	0.36	0.31 - 0.42	<0.0001	**0.90**	0.89 - 0.91	<0.0001
Clinical management issues	4880 (99.49%)	77.66%	0.46	0.43 - 0.48	<0.0001	**0.62**	0.60 - 0.65	<0.0001

Table 5-2: Concordance between surgeon and SLA responses

CONCORD AREAS	N (%)	% CONCORD	KAPPA SCORE	95% CI	P VALUE	GWET'S AC1 SCORE	95% CI	P VALUE
Risk of death	729 (86.89%)	84.97%	0.51	0.48 - 0.52	<0.0001	**0.73**	0.70 - 0.76	<0.0001
ICU care benefit if not received	119 (14.18%)	86.55%	0.18	0.00 - 0.39	<0.0001	**0.84**	0.76 - 0.92	<0.0001
HDU care benefit if not received	115 (13.71%)	80.87%	0.18	0.00 - 0.35	<0.0001	**0.76**	0.65 - 0.87	<0.0001
Fluid balance	783 (93.33%)	70.37%	0.23	0.19 - 0.25	<0.0001	**0.63**	0.59 - 0.68	<0.0001
Preoperative management/preparation	701 (83.55%)	72.61%	0.27	0.20 - 0.35	<0.0001	**0.57**	0.51 - 0.63	<0.0001
Intraoperative/technical management	689 (82.12%)	81.71%	0.27	0.18 - 0.36	<0.0001	**0.76**	0.71 - 0.80	<0.0001
Decision to operate at all	701 (83.55%)	82.03%	0.16	0.07 - 0.25	<0.0001	**0.77**	0.73 - 0.81	<0.0001
Choice of operation	702 (83.67%)	81.62%	0.15	0.07 - 0.23	<0.0001	**0.77**	0.73 - 0.81	<0.0001
Grade/experience of surgeon deciding	685 (81.64%)	94.89%	0.04	0.00 - 0.14	<0.0001	**0.95**	0.93 - 0.96	<0.0001
Grade/experience of surgeon operating	683 (81.41%)	94.73%	0.23	0.07 - 0.39	<0.0001	**0.94**	0.93 - 0.96	<0.0001
Timing of operation	696 (82.96%)	78.30%	0.23	0.15 - 0.31	<0.0001	**0.70**	0.65 - 0.75	<0.0001
Postoperative care	682 (81.29%)	75.96%	0.18	0.10 - 0.26	<0.0001	**0.66**	0.61 - 0.72	<0.0001
Clinical management issues	833 (99.28%)	58.10%	0.21	0.21 - 0.26	<0.0001	**0.19**	0.12 - 0.26	<0.0001

Table 5-3: Concordance between FLA and SLA responses

CONCORD AREAS	N (%)	% CONCORD	KAPPA SCORE	95% CI	P VALUE	GWET'S AC1 SCORE	95% CI	P VALUE
Risk of death	751 (89.51%)	84.71%	0.49	0.44 - 0.55	<0.0001	**0.73**	0.70 - 0.76	<0.0001
ICU care benefit if not received	153 (18.12%)	54.90%	0.25	0.18 - 0.29	<0.0001	**0.36**	0.24 - 0.48	<0.0001
HDU care benefit if not received	233 (27.77%)	53.65%	0.28	0.27 - 0.34)	<0.0001	**0.32**	0.22 - 0.42	<0.0001
Fluid balance	748 (89.15%)	45.19%	0.12	0.07 - 0.14	<0.0001	**0.23**	0.18 - 0.29	<0.0001
Preoperative management/preparation	656 (78.19%)	59.60%	0.29	0.24 - 0.30	<0.0001	**0.44**	0.39 - 0.49	<0.0001
Intraoperative/technical management	640 (76.28%)	70.78%	0.39	0.30 - 0.40	<0.0001	**0.62**	0.57 - 0.67	<0.0001
Decision to operate at all	678 (80.81%)	68.58%	0.27	0.22 - 0.29	<0.0001	**0.60**	0.55 - 0.65	<0.0001
Choice of operation	665 (79.26%)	68.72%	0.30	0.28 - 0.32	<0.0001	**0.60**	0.55 - 0.65	<0.0001
Grade/experience of surgeon deciding	643 (76.64%)	80.87%	0.26	0.23 - 0.36	<0.0001	**0.78**	0.74 - 0.82	<0.0001
Grade/experience of surgeon operating	644 (76.76%)	80.75%	0.34	0.31 - 0.41	<0.0001	**0.78**	0.74 - 0.81	<0.0001
Timing of operation	648 (77.23%)	66.67%	0.32	0.31 - 0.35	<0.0001	**0.56**	0.51 - 0.61	<0.0001
Postoperative care	640 (76.28%)	57.19%	0.25	0.21 - 0.29	<0.0001	**0.41**	0.35 - 0.46	<0.0001
Clinical management issues	826 (98.45%)	70.10%	0.08	0.01 - 0.15	0.006	**0.56**	0.50 - 0.62	<0.0001

Additional analysis was undertaken as part of the current review to:

- Determine if particular groups of questions could be combined into sub-scores, enabling an overall reliability estimate to be calculated and monitored (compared with having to calculate estimates for each individual question);
- Estimate the inter-rater reliability for a broader number of items in the case report form, specifically, those relating to the VSCC case classification of 'preventability of outcome'; and
- Identify changes in inter-rater reliability over time for ongoing monitoring by VASM.

Identification of underlying sub-scales

Three groups of case report and assessor questions were examined to determine if they could be combined into an overall subscale (to minimise the burden of future inter-rater reliability reporting). Question groups included:

- 7 questions determined to be relatively 'general' appraisals of case management[1];
- 8 questions relating to potential improvement in clinical management[2]; and
- 13 questions relating to reasons for potential preventability of patient outcomes[3].

Each group of questions were 'dichotomised' into 'Yes' and 'Non-Yes' responses[4]. Correlations were examined between items in each group to determine the level and significance of relationships between individual questions. The individual questions in each group were then subjected to multivariate analysis[5] in order to determine whether they comprised a single sub-scale.

Analysis of each of the three groups of questions revealed that they could not be combined into sub-scales[6]. Thus, future reporting of inter-rater reliability estimates will be required for individual questions.

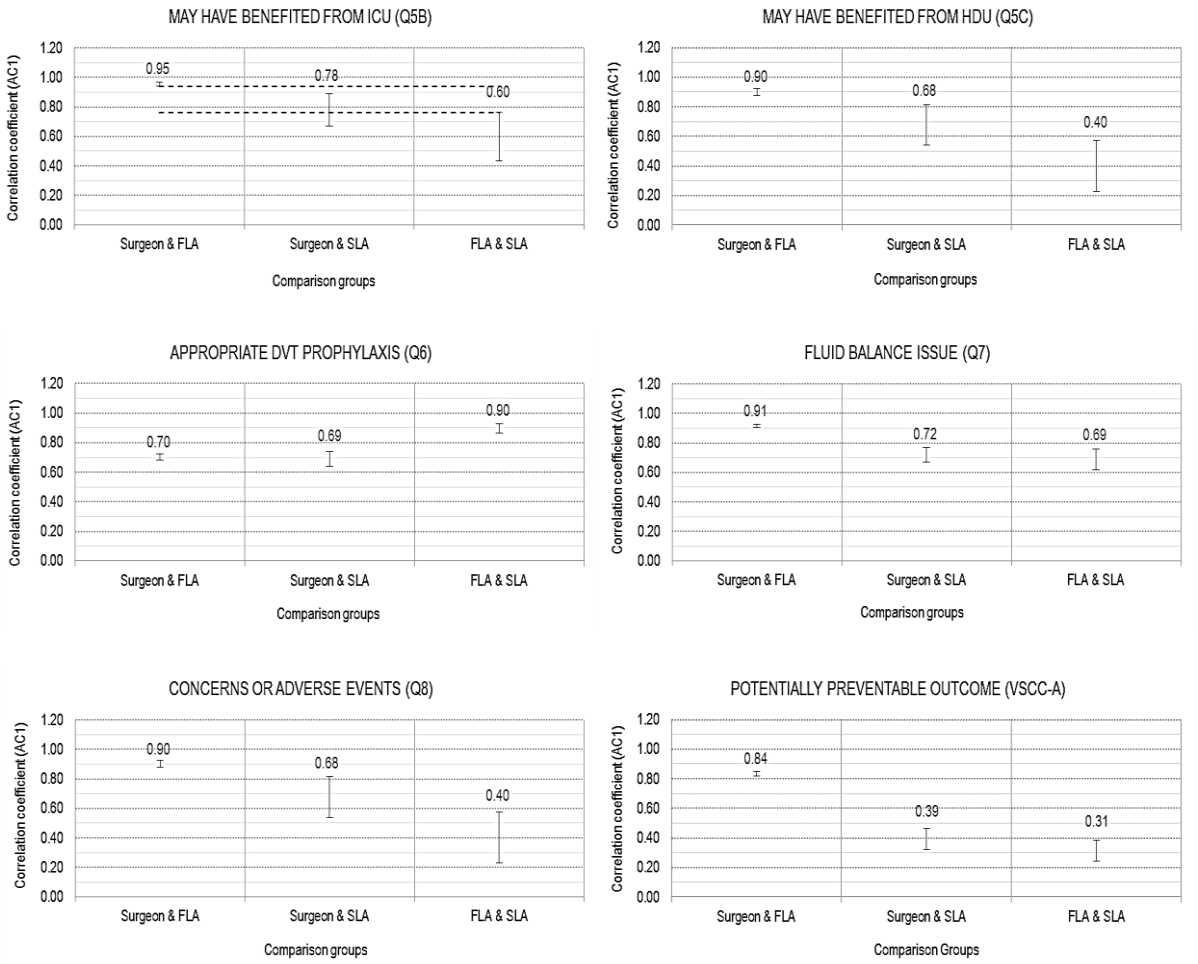
Replication and extension of inter-rater reliability analysis

Gwet's correlations were re-calculated[7] on *the total available sample of specific questions* in the case report forms, first line assessments and second line assessments. Inter-rater reliability estimates were compared between the three groups of raters (Surgeon-FLA; Surgeon-SLA; FLA-

1. Including: Overall risk of death (Q4); Potential benefit from ICU treatment (Q5b); Potential benefit from HDU treatment (Q5c); Appropriate DVT prophylaxis (Q6); Issues with fluid balance (Q7); Areas of concern (Q8); and Consideration of preventable outcome (VSCC item A).
2. Question 8a.
3. Including all 'rated" items under Section A of the VSCC Case Classification report (i.e., Questions V, W, X, Y, 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 3.1, and 3.2).
4. 'Non-Yes' responses included 'No' and 'N/A' as these were identified to be dependent upon individual surgeon or assessor interpretation of the response options in Q8a. (i.e., individuals tended to select either 'No' or 'N/A' ratings to relevant questions in this group). 'Don't know' responses were excluded from analysis.
5. Multivariate methods included a Principle Components Analysis followed by Orthogonal (Varimax) Factor Rotation. The number of factors extracted from each analysis was determined according to Cattell's (1969) Scree Criteria.
6. Individual questions 'loaded' on a separate 'factors' in each of the three groups that were analysed.
7. Re-calculations were based upon methods previously described ('Yes' vs "Non-Yes'). This enabled a larger sample size to be utilised for analysis when compared with previous results presented in Tables 5-1 to 5-3.

SLA). Reliability coefficients together with their observed 95% confidence intervals are reported to identify major differences[8] between the three groups of raters for each question.

Figure 5-2: Replication of inter-rater reliability for 'general appraisal' items



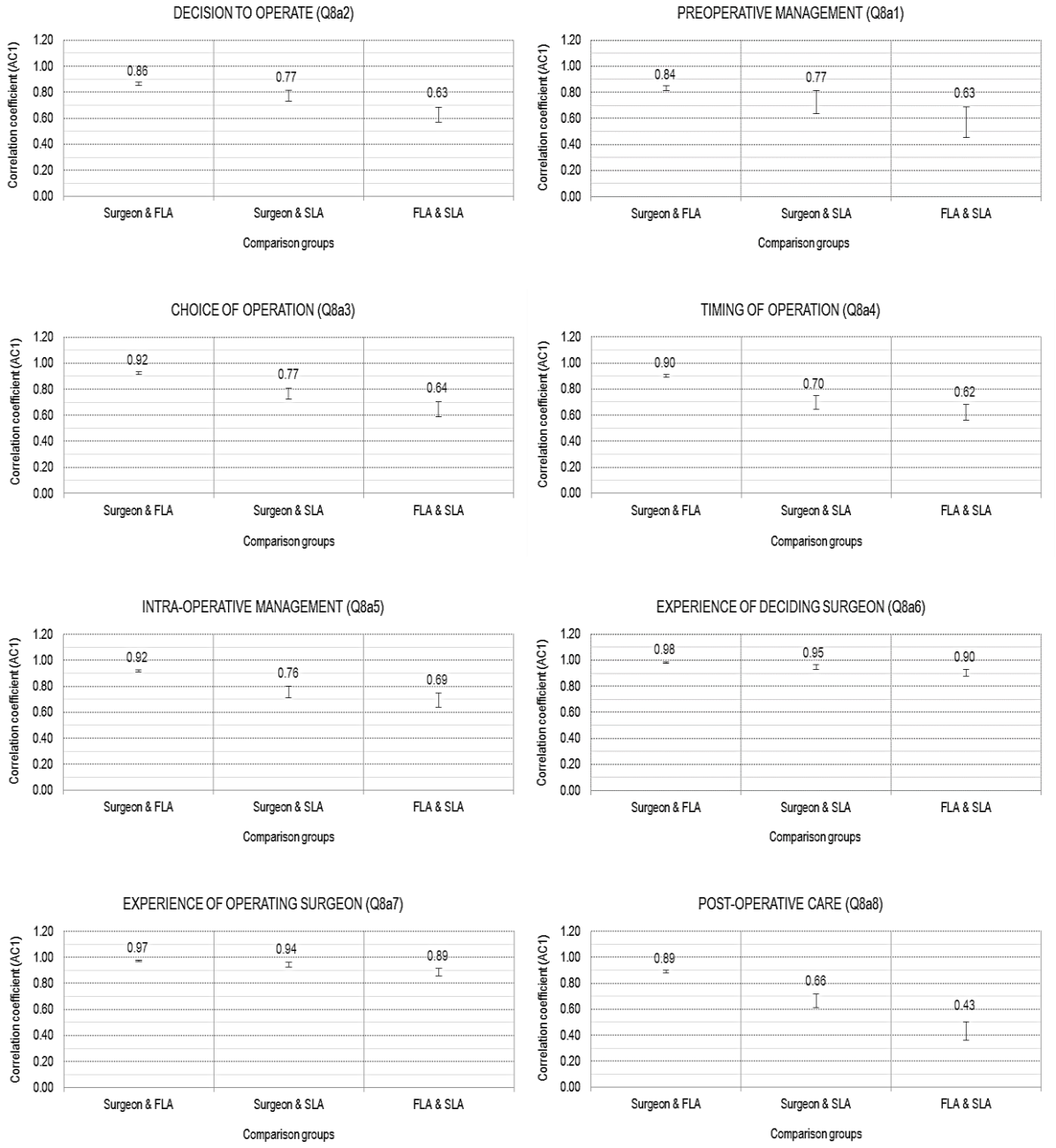
Levels of inter-rater reliability for 'general appraisal' items (Questions 5b, 5c, 6, 7, 8, VSCC-A) scored by the three groups are presented in Figure 5-2, which indicate that:

- For the majority of items (with the exception of DVT prophylaxis), the highest levels of reliability were observed between Surgeons and FLA's. The reliability estimates were notably lower (and more similar) between Surgeon-SLA and FLA-SLA ratings.
- For ratings of DVT prophylaxis, the reliability of FLA-SLA ratings was notably higher, and reliability estimates were more comparable between Surgeon-FLA and Surgeon-SLA appraisals.

8. Major differences were identified by comparing non-overlapping confidence intervals between each group of raters in each graph. It must be noted however, that *the significance of these differences is more difficult to determine* as the samples are not truly independent (e.g., Surgeons, FLAs, and SLAs are in more than one group that is being compared). In addition, overlapping confidence intervals may still be significantly different, depending upon the degree of overlap. As such, these findings must be treated as indicative (rather than definitive). Specific assessment of significant differences between these groups of raters would require further investigation.

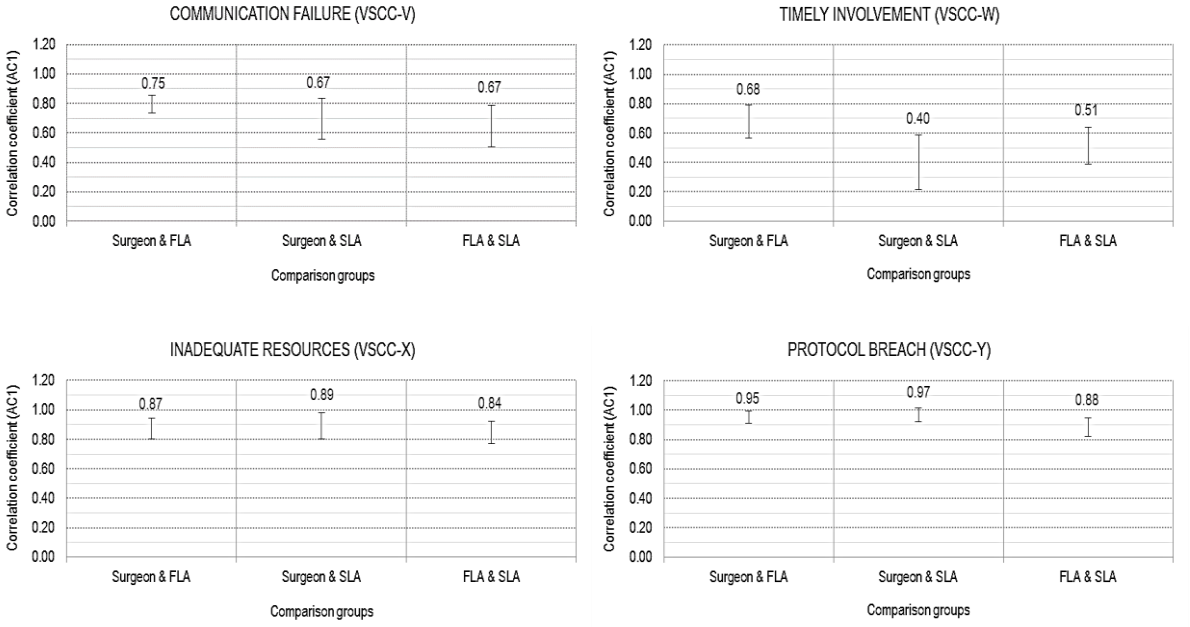
Levels of inter-rater reliability for 'clinical management' items (Question 8a) scored by the three groups are presented in Figure 5-3 - which indicated a similar pattern to the majority of 'general appraisal' items, where the highest levels of reliability were observed for Surgeon-FLA ratings, followed by Surgeon-SLA and/or FLA-SLA ratings.

Figure 5-3: Replication of inter-rater reliability for 'clinical management' items



Inter-rater reliability estimates for the first four VSCC items were similar (Figure 5-4, with the exception of 'timely involvement', where higher levels of agreement were observed between surgeons and FLAs (compared to other groups).

Figure 5-4: Inter-rater reliability for general 'VSCC' items



For VSCC questions assessing pre-operative management (Figure 5-5), estimates of inter-rater reliability between the three groups were similar for items measuring 'general investigations' and 'diagnosis'. For other items, higher levels of reliability were observed between surgeon-FLA assessments compared with FLA-SLA assessments.

For questions assessing intra-operative management (Figure 5-6), high levels of reliability were observed across each of the three pairs of raters. For questions relating to post-operative care (Figure 5-7), surgeon-FLA ratings demonstrated higher reliability than those made between FLAs and SLAs.

Figure 5-5: Inter-rater reliability for pre-operative 'VSCC' items

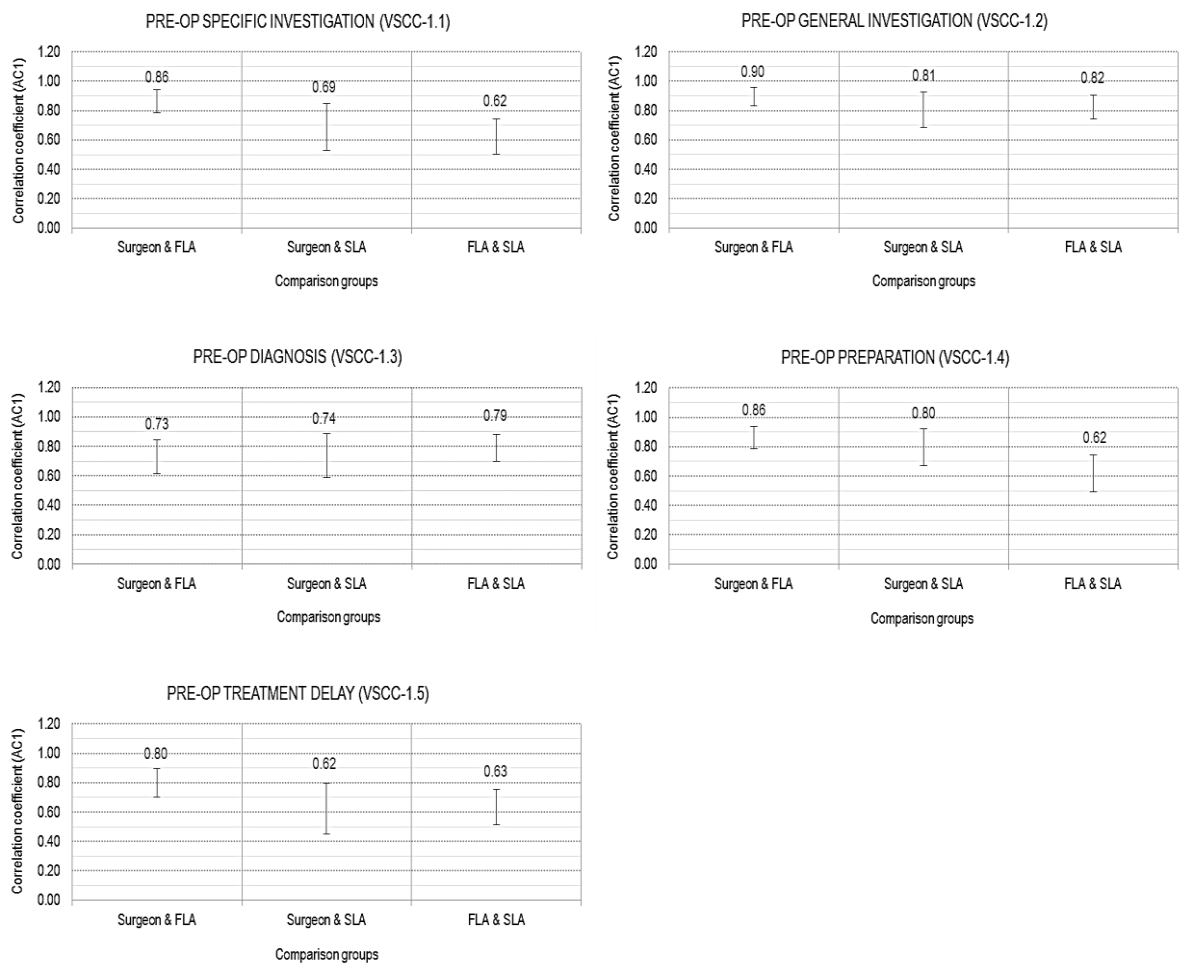


Figure 5-6: Inter-rater reliability for intra-operative 'VSCC' items

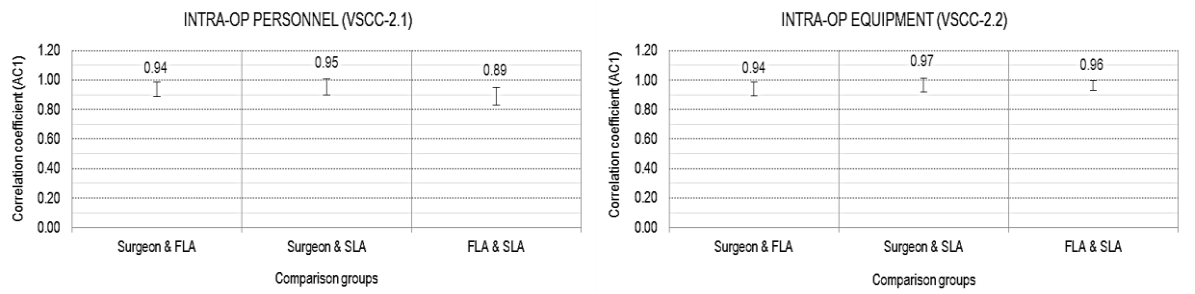
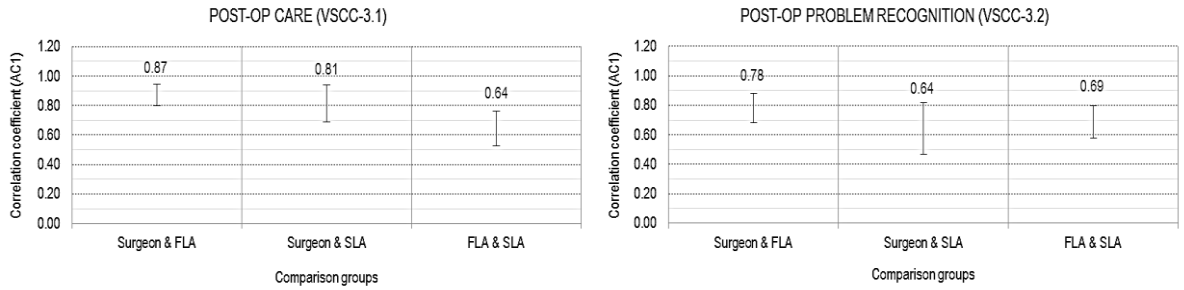


Figure 5-7: Inter-rater reliability for post-operative 'VSCC' items



Changes in inter-rater reliability over time

Graphical and tabular summaries of changes in inter-rater reliability over time for surgeons, FLAs and SLAs are presented in Appendix 4 and Appendix 5. Examination of these findings between the periods of 2010 and 2013[9] identified a consistent and stable pattern of inter-rater reliability over time for each question rated by the three groups.

There were significant improvements in inter-rater reliability between **surgeons and FLAs** for one item measuring the appropriateness of 'DVT prophylaxis' between 2010 (AC1 = .64) and 2013 (AC1 = .77), and for another item measuring 'choice of operation' between 2012 (AC1 = .91) and 2013 (AC1 = .96).

5.5.3 ONGOING RECOMMENDATIONS

Based upon the findings outlined above:

It is recommended that ongoing examination of inter-rater reliability between surgeons, FLAs and SLAs be performed and reported on an annual basis.

5.6 Validating findings with other sources of data

The 2011 review of VASM identified a need to validate major audit trends with other external sources of data, such as:

- **Recommendations arising from the Victorian Surgical Consultative Council** and their Surgical Outcomes Improvement Initiative;
- **Department of Health and Human Services** data relating to adverse events via the Victorian Hospital Information Management System;
- **The Victorian Coroner's** Office; and
- **Scientific Literature** overviews in key areas of concern undertaken by VASM or in collaboration with other agencies.

9. Earlier and later periods of time were excluded from analysis due to the relatively small sample sizes compared with 2010 to 2014.

5.6.1 KEY VASM ACTIVITIES

Responding to the recommendations within the 2011 Report, VASM has undertaken a series of activities to validate audit findings with other sources of data. Examples of key activities performed by VASM include:

- **Engagement with the AIHW,** to discuss and investigate the potential conditions of release of AIHW data (e.g., 1 May 2015);
- **Corresponding with the VSCC,** regarding a "trial system" for referred VASM cases (e.g., 21 May 2014);
- **Investigating** the potential to obtain aggregate VMIA Claims data (e.g., 22 July 2014);
- **Obtaining** access to the Sentinel Event Program Annual Report from the Department of Health and Human Services (formally Department of Health) (e.g., 22 June 2014); and
- **Seeking** the potential of creating linkages between VASM Reports and the Victorian Institute of Forensic Medicine (Coroner's Office) Reports (e.g., 14 August 2014).

More recently, VASM has instituted a new initiative, '*Closing the Loop',* to seek feedback from surgeons about the FLA/SLA process. This in turn will provide VASM with more information to examine emerging themes from the feedback and respond with further refinements to case report and assessment forms.

5.6.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Whilst VASM has recently undertaken a number of strategies in an attempt to validate audit findings with multiple independent sources of data, specific outcomes arising from these activities are yet to be observed.

Stakeholders interviewed for the current review raised additional concerns about the decreasing availability of post-mortem information that might otherwise be used to validate audit findings. This was attributed to declining rates of autopsy and in general, and a perceived reduction in the capacity of many health services to undertake post-mortem examinations.

Further to this, there are concerns regarding the limited autopsies performed in Victoria, and associated problems including: funding, lack of planning, facilities not readily available, and difficulties in training (as it requires access to forensic pathologists).

> *"We need to know the pathology and causation for deaths. Ideally, surgeons would like an autopsy for each patient who has died, but the number of autopsies currently conducted is very small."*

5.6.3 ONGOING RECOMMENDATIONS

Noting that attempts to validate audit findings with other sources of information has been relatively recent:

It is recommended that the outcomes of any data validation be further pursued and published (as data becomes available) in annual reports.

5.7 Monitoring and reporting the degree of audit 'coverage'

VASM is designed to follow-up all deaths occurring within 30 days of a surgical procedure. Accordingly, the 2011 review recommended that attempts be made by VASM to identify a comprehensive 'denominator' of all deaths related to surgical intervention across Victoria.

Whilst a difficult task to achieve, the capacity to capture all deaths is only problematic if the audit attempts to claim a level of generalisability from the results when adequate coverage of data collection is not available. It was recommended that data coverage is investigated and reported against deaths contained within other reports. For example, this coverage of data could be obtained through comparing the number of death notifications within the Victorian Admitted Episodes Data (VAED), which has been linked to the Office of Births, Deaths, and Marriages. Following the 'level of capture' being obtained through the VAED, the level of coverage of VASM death notifications can be identified.

5.7.1 KEY VASM ACTIVITIES

Several attempts have been made to access data that might indicate deaths associated with surgical intervention. Discussions have taken place with DHHS in an attempt to examine all deaths occurring during hospitalisation, and deaths up to 30 days after surgical procedures (via data linkage). More recent feedback from the Department has confirmed their willingness to facilitate access to this information via their Data Linkage Unit. Unfortunately however, it is also recognised that any data linkage undertaken by DHHS and the Victorian Death Register may not contain information about the specific cause of death (only that a patient death has occurred up to 30 days following a surgical procedure).

Discussions have also occurred between VASM and the AIHW in relation to gathering information about the number of patients undergoing surgery, surgery-related deaths in hospital, and linking this information with ABS data that contains more detailed information recording cause of death up to 30 days following a given procedure.

5.7.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Future attempts to identify post-surgical in-hospital deaths, together with post-procedural 30 day (all cause) mortality appear to be promising. However, the capacity to specifically link VASM data with information collected by the AIHW and ABS is restricted due to existing qualified privilege arrangements established for the audit.

5.7.3 ONGOING RECOMMENDATIONS

Several recommendations arise from the activities and outcomes achieved in order to identify the degree of audit coverage (via establishment of a denominator for all surgery-related deaths in Victoria).

First, the ability to capture in-hospital deaths of patients who have had a surgical intervention appears to be relatively straight forward. This can be achieved through an annual request for data from the DHHS VAED. Accordingly:

It is recommended that VASM undertake further collaboration with DHHS to obtain an annual extract of VAED data in order to identify an appropriate 'denominator' of all in hospital deaths that may be related to surgical procedures.

Second, the capacity to identify potential surgery-related deaths up to 30 days following a procedure is more problematic. Whilst Death Registry data (that could be linked with VAED information by the DHHS) may be available, it may not contain the sufficient level of detail to identify whether death post hospital was actually related to any procedures performed upon the patient during their hospital stay. Accordingly:

It is recommended that VASM re-consider the scope of audit activities to those that occur during hospitalisation, which can be realistically identified on an annual basis.

More detailed information on specific cause of death appears to be collected by the ABS. The AIHW also appears to have access to the number and type of surgical procedures performed in Victoria (and other Australian jurisdictions), together with information about the number of in-hospital deaths that occur. This information could be linked (by the AIHW) and provided as a report to VASM. However, the timelines associated with finalisation of data collected by the AIHW and ABS is unlikely to be congruent with the requirements of VASM. Moreover, the costs of undertaking these activities on an annual basis are yet to be determined. Accordingly:

It is recommended that any attempts to link hospital-related data with mortality data collected at a national level, be considered by ANZASM rather than VASM, given the relevance to the bi-national audit program.

These activities could be undertaken as a separate project, and repeated at agreed time periods negotiated between ANZASM and the AIHW. This information would then serve as supporting evidence for the 'estimated' number of surgery-related deaths that occur up to 30 days following a given surgical procedure.

5.8 Focusing upon emerging patterns of performance

Stakeholder feedback during the 2011 review suggested that, as the audit process matured, VASM might consider identifying and reporting on emerging issues that were arising from the data (rather than focusing reports on findings that were "already known" to surgeons and/or health services).

5.8.1 KEY VASM ACTIVITIES

VASM has increasingly focused on collating and analysing emerging issue across the Victorian public and private health systems. This in turn has been used to inform seminars and highlighted within the Case Note Review Booklets. For example, issues highlighted in CNRB since 2012 include the following emerging issues:

- *Delay in management* – noting there was ongoing concern in both the diagnosis and initiation of management of the deteriorating patient;
- *Quality documentation* –poor documentation and poor quality of handwriting was noted in 2012 as being a point of repeated commentary from reviewers. It was noted that this in turn raised issues for medico-legal implications of inadequate and illegible notes. The issue was subsequently highlighted in 2013 and 2014, noting that the case record was an essential tool for identifying clinical trend and management plans and thus must contain clear, accurate documentation of events and plans.
- *Availability of on*-call specialists – noting that there had been a "few instances" of on-call consultants not being contactable, leading to delay in patient treatment and contributing to mortality;
- *Preoperative and postoperative management* - appropriate preoperative preparation and management and postoperative orders were identified as factors in decreasing operative complications and promoting successful recovery. Specifics of what should be included were also detailed;
- *Improved leadership in patient care* – highlighted the need for clear, demonstrable leadership in management of complex cases; and
- *Improved awareness of surgical emergencies and sharing of care* – indicating that the audit revealed that surgical emergencies were at greater risk for patients where care is shared.

This final issue was also the seminar topic in February 2014 on *Surgical Emergencies and Shared Care* which was attended by 134 participants.

5.8.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Most stakeholders interviewed for the current review concurred that there was an ongoing need to examine deaths that may be related to surgical procedures. Several stakeholders had attended VASM seminars and considered them to be useful. Feedback regarding the Case Note Booklets was also favourable.

"[We] need to look at deaths and learn from them"

"It is important to analyse causes of death, for example in orthopaedic deaths are dominated by NOF usually with other comorbidities – it may be more useful to focus on other areas."

"I attended a VASM workshop – related to a key safety issue of drain tubes. The issue taken up by VASM also reflected issue identified at the hospital, this is useful validation of an emerging issue."

Some stakeholders suggested additional areas for monitoring of emerging trends including mortality rates associated with elective versus emergency surgery, together with more targeted scrutiny of specific procedures conducted in different surgical specialties.

Others suggested that it may be beneficial to focus on patterns of outcome where multiple proceduralist are involved, and where pre-operative and/or post-operative care was delivered by other medical or surgical colleagues who were not directly involved in patient surgery.

"Perioperative treatment is becoming an increasing problem because the people who are involved with perioperative care are not the people who do the pre-operative assessment."

As noted in the above section, this has been highlighted in the most recent CNRB as an emerging.

5.8.3 ONGOING RECOMMENDATIONS

Based upon current stakeholder feedback:

It is recommended that VASM consider further analysis of emerging trends in performance relating to elective and emergency surgery, specific higher-risk procedures, and where continuity of patient care involves individuals other than the operating surgeon.

5.9 Monitoring outcomes in 'areas of concern'

The 2011 report suggested targeting areas of ongoing concern through a small number of additional questions over a given period of time with a view to monitor the impact of any interventions targeting system-wide improvement.

This recommendation has been specifically considered by the VASM Management Committee, and deemed to be beyond the core business of the audit. Accordingly, any future activities relating to this recommendation have not been pursued.

5.10 Extending analysis to focus upon selected morbidity

Options to extend the audit and monitor high-level morbidity was also identified as an area for future consideration by VASM in 2011.

Again, this recommendation has been specifically considered by the VASM Management Committee, and deemed to be beyond the core business of the audit. Accordingly, any future activities relating to this recommendation have not been pursued.

6 Ongoing effectiveness of audit outcomes

Several recommendations were made following the initial VASM evaluation (2011) to improve the effectiveness of audit processes, including:

- The development of tailored reports of audit findings for participating hospitals;
- The conduct of independent or joint seminars to discuss key issues arising from audit findings;
- The development of a plain language summary of the annual report that can be understood by a broader range of (non-clinical) stakeholders who are interested in the work undertaken by the audit;
- The reporting of future directions that appear to arise from the findings of the audit;
- Increasing the number of publications and presentations relating to the work of VASM; and
- Exploring methods to improve website utilisation by surgeons and other interested stakeholders.

In summary, tailored reports of audit findings have recently been developed and provided to individual health services. These have been favourably received. Seminars have also been provided to explore issues arising from audit findings over the past three years, and feedback from participants has been positive. The annual report has attempted to include a plain language summary of findings for a broader range of interested readers. Notwithstanding, further work is required to identify and appropriately communicate future directions arising from the audit findings, particularly for other government agencies and programs attempting to improve the quality and safety of surgical services across Victoria. The level of publications arising from the work of VASM has generally increased since 2011, despite a more recent decline in 2014. The level of effective website access and utilisation has also increased, particularly when compared to other State/Territory surgical mortality audits.

6.1 Developing summary reports for participating hospitals

A specific recommendation from the 2011 review was that VASM provide basic summary information to individual hospitals, about the characteristics of death notifications received from each hospital, without compromising the confidentiality of information provided by individual surgeons. It was suggested that customisation of reports to health services, for example, for CEOs or Quality Committees may add value to the VASM initiative by providing information that could be used to validate internal organisational processes, and compare similar organisations across Victoria.

6.1.1 KEY VASM ACTIVITIES

The first tranche of tailored hospital reports were circulated to health services in November 2014. The sample reports available for review were structured to:

- Provide a summary of audit results for the specific hospital from the inception of VASM in 2007 through to 31 June 2013 including all notifications from the hospital during the period by specialty by year;
- The notifications for the hospital were also provided as a proportion of total notification to VASM during the same period;

- Notifications of death with completed surgical case record forms by specialty; and
- Notified deaths and their status by the specific hospital, Victoria and nationally.
- Audit findings include:
  - Main characteristics of audited deaths including mean age, gender, whether emergency admission, ASA Grade, risk of death before surgery and the three most common co-morbid factors, amongst others;
  - The three most reported confirmed surgical diagnoses among audited deaths; and
  - Cause of death for audited deaths.
- Clinical indicators selected by VASM to track changes in the clinical management of audited deaths as reported by surgeons and assessors.

It is unclear whether this structure will be retained for future tailored reports or if the individual reports will move to an annual update and include additional commentary that may be sought from individual health services based on feedback about the utility of the report.

6.1.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Based on consultation feedback these reports have been well received by health services. They are seen to provide a level of detail and specificity that allowed health services to marry internal information with the VASM audits.

"The tailored report was useful to the hospital - it was good for risk management. It was both accurate and useful."

"The hospital and surgeons would much prefer that VASM provided feedback with case identification but the tailored feedback reports are an improvement."

Some considered these reports to be lacking in specificity, precluding the health service from identifying individual patients and ensuring that hospital processes had in fact identified and reviewed the same cases submitted to VASM. Others requested greater detail in the tailored reports to provide enable them to probe issues specific to their internal quality assurance processes.

"The language in the reports is not helpful nor the reporting categories; for example – 'pre-operative prophylaxis delay' or 'Issue with fluid balance'– what is the issue?"

"Post care inadequate, or diagnosis missed unspecified – doesn't tell you anything."

"It would be good to drill down to be able to review and look into cases at an organisational level."

"In future, would we would like to see individual hospital reports evolve into something more useful for [us] that we can use to drill down."

"It would be useful to have higher level themes for each hospital – i.e. a hospital level report of themes specific to their data."

6.1.3 ONGOING RECOMMENDATIONS

Based upon the feedback from stakeholders about the recently introduced hospital level reports:

It is recommended that VASM consider developing more detailed and thematic reports for participating health services when sufficient data is available to preserve confidentiality.

6.2 Promoting seminars to discuss key issues of concern

It was recommended within the 2011 report that VASM should explore approaches to addressing issues of concerned that have been identified through the audit process.

6.2.1 KEY VASM ACTIVITIES

VASM has taken action recommended in the 2011 Report, by performing various activities to follow-up issues identified through the auditing process. In addition to tailored hospital reporting, and case note publications (previously mentioned), examples of other activities have included:

- **Seminars on Managing Deteriorating Patients**, with over 200 participants, from various levels of experience, such as; fellows, interns, HMO's, ED physicians etc. (e.g., 23 February 2012);
- **Seminars on Patients Transfers – between hospitals and within hospitals,** with 190 participants, including 18 regional centres (e.g., 21 February 2013); and
- **CPD Accredited Seminar on Surgical Emergencies & Shared Care**, to various stakeholders, comprising of 134 attendances (e.g., 19 February 2014).

6.2.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Following the seminars undertaken by VASM, participant surveys were undertaken. In general, available survey feedback indicated that seminar activities were perceived to be beneficial and educational (>81% satisfaction rate, n>90). Free text responses were also positive.

"It definitely makes us sit back and look at what we are doing, and ways to improve."

"[It] has provided a focus, in particular regarding appropriate types of survey to be done at this hospital."

"Increased awareness and lesson[s] learned have influenced our processes for managing the deteriorating patient."

6.2.3 ONGOING RECOMMENDATIONS

Based upon current feedback:

> *It is recommended that VASM continue to undertake seminars issues arising from the audit findings (and routinely measure participant feedback).*

6.3 Developing a plain language summary of the annual report

In 2011, stakeholders who were interviewed as part of the review suggested that the annual report would benefit from a plain language summary. Such a summary was considered to be potentially useful to clinical staff (who may not have time to read the entire report), and to non-clinical stakeholders (including members of the public), who may wish to understand the activities and outcomes associated with the audit.

6.3.1 KEY VASM ACTIVITIES

In response to this feedback, VASM have commenced publication of a summary report within the 2011 and 2012 annual reports.

6.3.2 OUTCOMES ARISING FROM VASM ACTIVITIES

Following publication of the first summary report in 2011 a number of stakeholders suggested that improvements could be made to increase the accessibility of the language, particularly for non-clinical readers.

> *"This summary report [2011] was more of an executive summary – if the audience was intended as the general community than the style is still not accessible"*

This feedback was incorporated into the 2012 summary report, which was considered more appropriate for community readers.

> *"The 2012 summary report was more informative and accessible to the general community. The report placed surgical deaths and purpose of audit in context."*

It is noted that a plain language summary was not included in the 2013 annual report. VASM representatives indicated that following discussion at the Management Committee, it was determined that any plain language summary was considered to be redundant, given the general levels of education and understanding by consumers of health services.

However, based on feedback from the interview process, it is the reviewers' view that dissemination of information by VASM needs to be better tailored to suit the needs of specific stakeholders. The issue of appropriately adapting information is further discussed in the broader context of targeted reporting in Section 6.4 below.

6.3.3 ONGOING RECOMMENDATIONS

Based upon the current findings:

It is recommended that VASM continue to provide a plain language summary document with the release of their annual reports.

6.4 Reporting future directions arising from the audit

In order to "close the loop" in relation to audit findings and their implications for policy, program development and clinical practice it was recommended in 2011 that future directions or implications arising from annual audits be reported on an ongoing basis.

6.4.1 KEY VASM ACTIVITIES

VASM has been considering a suitable approach to address the needs, and alleviate the concerns, received from some stakeholders. One recent initiative introduced by VASM to implement this recommendation is "Closing the Loop" which provides for feedback from the concerned surgeon regarding the FLA/SLA process. In future, with sufficient volume, this will provide the basis for examining emerging themes from the feedback.

6.4.2 OUTCOMES ARISING FROM VASM ACTIVITIES

The VASM is now maturing to a point where its systems and processes are well-embedded and recruitment of surgeons and health services are consolidated. Accordingly, it is now appropriate to examine the role of the audit in system-level improvements. The primary objective of the audit (as funded by DHHS) is to conduct a "peer review of death associated with surgical care" in Victoria. Accordingly, there is greater potential to advise and inform other Victorian government programs and agencies focusing upon improvements in the safety and quality of patient care.

This may require further role delineation between the VASM and the VSCC and further collaboration with VCCAMM to better achieve these objectives. Until recently, VASM reports to the VSCC have been limited to reports that provide a "counting" of various indicators with limited analysis and assessment of potential for systemic improvements and introduction of refinements to processes and protocols. Indeed, stakeholder feedback specifically suggested that:

"There needs to be better understanding of targeting the politics of the system and reassuring the public."

The VASM needs to develop a stronger capacity to provide policy advice/briefings on relevant issues in a timely and informative manner (Appendix 6). Ongoing dialogue with DHHS, in order to understand and thereby tailor reporting to align with current policy directions, program initiatives and other structures which may benefit from the audit outcomes, would facilitate this process. In this way, VASM will be in a stronger position to answer questions from some stakeholders who were interviewed for the current review.

"Does it make a difference?"

6.4.3 ONGOING RECOMMENDATIONS

To ensure the ongoing value to the system, VASM can better demonstrate that there is correlation between the public investment in the audit and strategies to promote a decline in surgical mortality in Victoria. Thus:

It is recommended that regular dialogue be conducted between VASM and the Department of Health and Human Services to establish current government policy directives and program area responsibilities, so that information can be better tailored to the needs of government.

Furthermore, it should become standard practice that the Annual Report is presented to the Department for approval by the Minister with an accompanying briefing detailing the key features for the year in review, and how this information has been used to improve the quality, safety and public trust in in the Victorian health.

6.5 Increase peer-reviewed publications and professional presentations

Since the commencement of VASM, significant work has been undertaken to promote the work of the audit, through a variety of methods. It was noted within the 2011 report that attention to peer reviewed publications arising from or related to VASM would represent another important outcome arising from the work performed by the audit.

6.5.1 KEY VASM ACTIVITIES

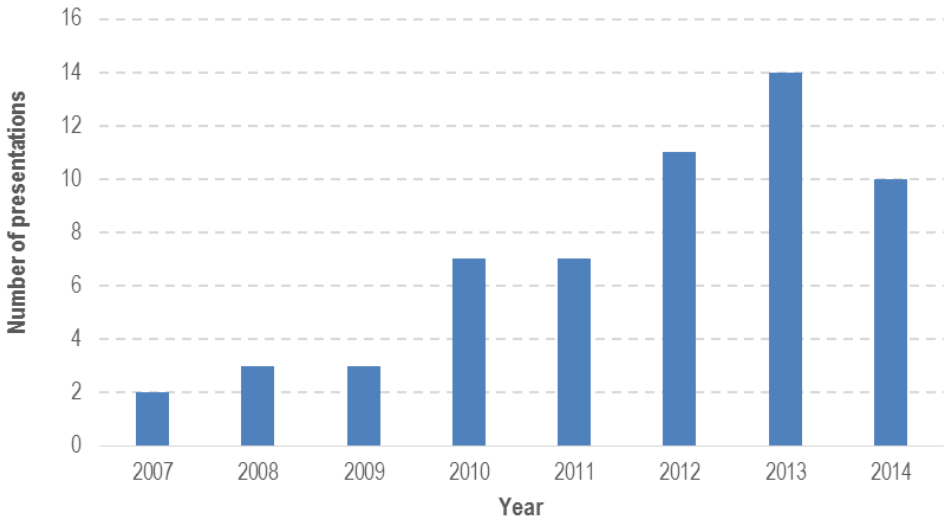
In response to the recommendation, VASM has undertaken a number of activities to address the need to pursue greater attention to publication and dissemination of information to the healthcare community. Activities include, for example:

- **Presentations** to key stakeholders, on topics including, use of data dictionaries, auditing of auditors, new frontiers in data analysis, reflections of auditing, etc. (e.g., 16 March 2012, 10 May 2012, 12 November 2012);
- **Publication and acceptance** of papers within journals such as the, ANZJS, BMJ, and BJS. (e.g., July 2014, August 2014); and
- **Workshops** for stakeholders including, surgeons, interns, students, nurses, data managers etc, on topics such as; understanding the literature and preparing for journal submissions. (e.g., 1 May 2014).

6.5.2 OUTCOMES FROM KEY ACTIVITIES

The number of publications relating to VASM has increased since 2011 (Figure 6-1).

Figure 6-1: Number of presentations by VASM staff



6.5.3 ONGOING RECOMMENDATIONS

Based upon these outcomes:

It is recommended that ongoing attention focus upon peer reviewed publications and ongoing regular presentations arising from or relating to the work undertaken by VASM.

6.6 Enhanced use of the VASM web-site

The 2011 evaluation found that the VASM website was lacking in visibility and usability. The website was noted as being imbedded within the RACS website, and thus limited in its use by surgeons as it was not easily accessible.

6.6.1 KEY VASM ACTIVITIES

VASM has appropriately attempted to increase the use and visibility of its website through various mechanisms. Work has bene undertaken to increase the traffic flow to the website and to ensure communications include reference to the site for cross information gathering. Examples of such activities have included (but are not limited to);

- **Contracting a web-designed based company** to evaluate and redesign the VASM website (October 2013);
- **Encouraging** and reminding stakeholders of the use of the Fellows Interface, and that surgeons apply for login details to access a greater suite of activities online (e.g., September 2012); and

- **Corresponding** with stakeholders through VASM Newsletters, Web News and other mechanisms to encourage the use electronic submission of cases (e.g., June 2014, August 2014).

6.6.2 OUTCOMES FROM KEY ACTIVITIES

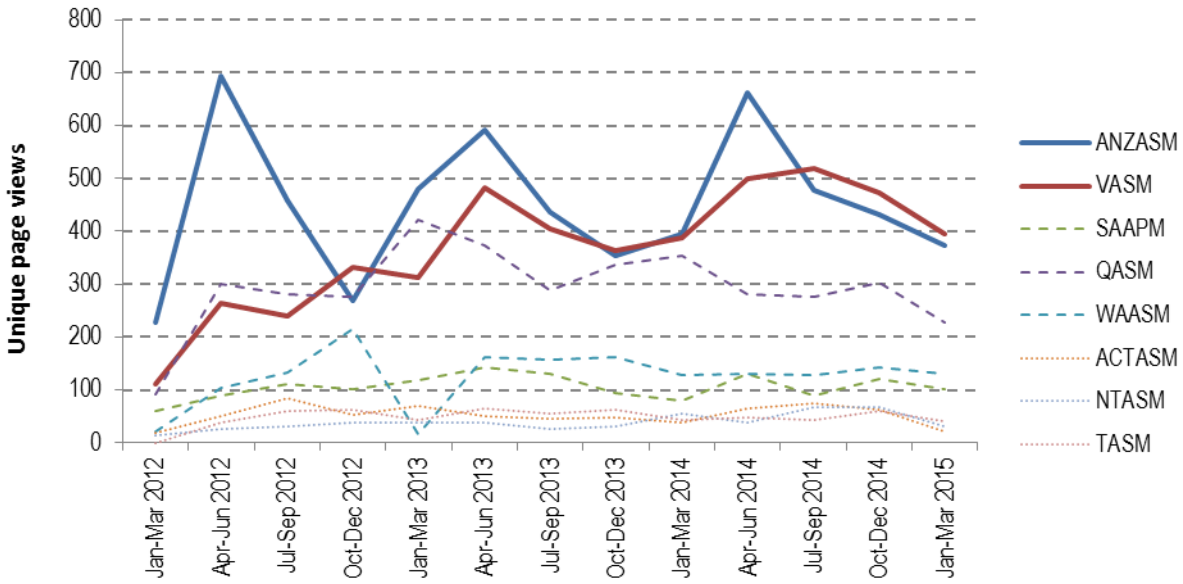
As identified in Figure 6-2, VASM has had the highest number of website 'hits' than any other State/Territory jurisdictional audit. The number of surgeons and others using the interface has gradually increased to a peak in July-September 2014, after which it appears to have declined. The RACS web-hit counter system is unable to distinguish who access the website, but it is generally recognised that the site is primarily accessed by surgeons and hospitals. Interestingly, this trend appears to mirror an increase in mid-year website utilisation observed for the national audit (ANZASM). These peaks in mid-year utilisation have been attributed by VASM to the release of the annual report together with advertising of educational events which tend to occur during this period. Despite this, there were comments from stakeholders that indicated ongoing dissatisfaction with the website:

"The website is good for new staff but doesn't tell anyone in the field anything new."

"Structure of the website is visually not appealing – it's too long."

"The VASM website is a bit confusing. May be useful that when a surgeon is notified about a case that there is specific information and links to the login process and invitation to use an education model to familiarise themselves with what is required."

Figure 6-2: Number of unique page views to surgical audit websites in Australia



6.6.3 ONGOING RECOMMENDATIONS

Whilst VASM has attempted to improve the appearance, and use of its website, further work should continue, based upon stakeholder feedback. For this reason:

It is recommended further feedback is obtained from stakeholders pertaining directly to the use and functionality of the website. Work is required to ensure a smooth interface is achieved in a user experience, and that information is freely and easily obtainable from the website.

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7 Summary scorecard of VASM performance

A summary of achievements made by VASM against all recommendations outlined in the 2011 review is presented in Table 7-1. Of the 25 original recommendations VASM has achieved or is on track to achieve 88% (following resolution of issues identified in the current report). More specifically:

- 14 recommendations have been fully achieved;
- 3 recommendations have been considered and determined to be no longer applicable; and
- 8 recommendations have been partially achieved: of these,
  - 3 recommendations have been delayed due to IT service provider difficulties; and
  - 2 recommendations are awaiting future data and subsequent analysis.

A remaining 12% (n=3) of the recommendations that have been partially achieved and require specific attention to fully complete. These recommendations relate to:

- Provision of a plain language summary in the VASM annual report (missing in 2013);
- Reporting of future directions arising from the audit (tailored according to the outcomes of future discussions with DHHS in relation to current policy and program directions); and
- Increasing of ongoing presentations arising from VASM (which appears to have declined in 2014).

Table 7-1: Summary of progress against original recommendations

AREA	PRIOR RECOMMENDATION	STATUS	ONGOING RECOMMENDATION
APPROPRIATENESS	1. Promoting early awareness and understanding of VASM.	**Achieved**	No further action recommended
	2. Exploring methods of re-engaging disaffected participants.	**Achieved**	Ongoing monitoring of participation rates (including correspondence and response from individual surgeons)
	3. Emphasising the role of VASM in the broader system. 4. Distinguishing VASM from other surgical registries.	**Achieved**	Further work with DHHS required to identify the role of VASM in the broader health system
	5. Communicating challenges to qualified privilege arrangements.	***Not Applicable***	Ongoing monitoring and action as per original recommendation (where appropriate)
	6. Maintaining high / increasing participation rates	**Achieved**	Ongoing monitoring of participation by hospital and individual surgeons (see KPI 1 & 2 below)

AREA	PRIOR RECOMMENDATION	STATUS	ONGOING RECOMMENDATION
EFFICIENCY	7. Re-investigating requirements for patient de-identification. 8. Hospital processes for location of medical records.	**Achieved**	No further action recommended
	9. Monitoring electronic submission of case reports. *10. Exploring criteria for 'levels' of completion in case reporting.*	*Partially achieved*	*Encourage future online reporting.* *Develop 'pop-up' orientation/education options for website submissions.* *Develop secure portal for online transfer of medical records.*
	11. Strengthening processes for first line assessment.	**Achieved**	Ongoing workshops for new assessors. Ongoing feedback and response from current assessors.
	12. Clarifying current case report questions.	**Achieved**	No further action recommended
	13. Undertaking specific studies of inter-rater reliability.	**Achieved**	Annual ongoing monitoring and reporting (see KPI 3 below)
	14. Validating findings with other sources of data.	*Partially achieved (awaiting availability of comparison data)*	*Ongoing validation and reporting required*
	15. Monitoring and reporting the degree of audit 'coverage'.	*Partially achieved (awaiting availability of comparison data)*	*Annual request to DHHS for VAED extract to confirm number of "in hospital" deaths. (See KPI 4 below)* *Reconsider scope of 30 day mortality coverage.* *Discuss and follow-up national data linkage between AIHW and ABS with ANZASM*
	16. Focusing upon emerging patterns of performance.	**Achieved**	Extended data analysis recommended
	17. Monitoring outcomes in 'areas of concern'.	**Achieved** (and identified as not appropriate)	No further action recommended
	18. Extending analysis to focus upon selected morbidity	**Achieved** (and identified as not appropriate)	No further action recommended

AREA	PRIOR RECOMMENDATION	STATUS	ONGOING RECOMMENDATION
EFFECTIVENESS	19. Developing summary reports for participating hospitals. 20. Exploring options for customisation of reports to health services, for example, for CEOs or Quality Boards	**Achieved**	More 'theme-based' reports
	21. Promoting seminars to discuss key issues of concern.	**Achieved**	Ongoing activities recommended
	22. Developing a plain language summary of the annual report.	**Partially achieved (information missing for 2013 report)**	**Ongoing activities recommended**
	23. Reporting future directions arising from the audit.	**Partially achieved**	**Regular dialogue with DHHS to understand policy and program directions and tailor advice and reports accordingly (See KPI 5 below).** **Annual Report to be formally tabled for approval by the Minister for Health.**
	24. Increasing presentations.	**Partially achieved (publications declining in 2014)**	**Ongoing activities recommended**
	25. Exploring methods to enhance the use of the web site	*Partially achieved (attributed to difficulties with IT service providers)*	*Further improvements in functionality of website recommended.* *Ongoing monitoring and response to feedback about website utility by surgeons and other stakeholders.*

7.1 Recommendations for future reporting

Based upon the findings of the follow-up evaluation, a number of Key Performance Indicators (KPIs) are recommended for ongoing monitoring and reporting including:

- The percentage of hospital participation in the audit process;
- The percentage of surgeon compliance with audit requirements;
- The average agreement between surgeon reports and VASM assessments;
- The percentage of audit coverage against all surgical deaths in Victoria; and
- The perceived quality of information received from VASM.

Each of these KPIs, together with sub-component indicators is outlined in the following sections.

7.1.1 KPI 1: HOSPITAL PARTICIPATION

It is recommended that ongoing levels of hospital participation be monitored on an annual basis. A suitable KPI and sub-component indicators relating to **hospital participation** is provided in Table 7-2.

Table 7-2: Performance indicators for hospital participation

KPI 1	HOSPITAL PARTICIPATION
Numerator	The number of Victorian hospitals participating in the audit process
Denominator	The total number of public & private hospitals performing surgical procedures in Victoria
Frequency	Annual calculation and reporting
Sub-groups	Public Victorian Hospitals Private Victorian Hospitals

In addition to reporting an annual overall rate of participation, additional calculation and monitoring might also be considered separately for public and private hospitals in Victoria.

7.1.2 KPI 2: SURGEON COMPLIANCE

It is recommended that ongoing levels of surgeon participation also be monitored on a six monthly basis. A suitable KPI and sub-component indicators relating to **surgeon participation** is provided in Table 7-3, together with a worked example of indicator calculation for a specific case.

Table 7-3: Performance indicators for surgeon compliance

KPI 2	SURGEON COMPLIANCE
Numerator	The number of cases submitted by 60 days within the reporting period*
Denominator	The number of cases due by 60 days within the reporting period*
Frequency	6-monthly calculation and reporting
Sub-groups	Individual CRAFT Groups Private Victorian Hospitals Public Victorian Hospitals

*For example: Case notification dispatched by VASM on 1 January 2015. Add 60 days to obtain a 'due date'(denominator) of 1 March 2015. If the individual case report was submitted on 5 March 2015, subtraction of this date from 1 March 2015 = 4 days overdue, and this case would NOT be counted in the numerator. However, if the case report was submitted on 1 March 2015, subtraction from 1 March 2015 = 0 days overdue, and this case WOULD be counted in the numerator. Similarly, if the case report was submitted on 28 February 2015, subtraction of this date from 1 March 2015 = -1 days overdue, and this case WOULD also be counted in the numerator. That is, after subtracting the submission date from the due date, all values less than or equal to 0 would be summed to achieve the Numerator for the KPI.

In addition to reporting the overall rates of surgeon participation, additional calculations and monitoring might also be considered separately for individual Craft groups, and/or public, and private hospitals in Victoria.

7.1.3 KPI 3: INTER-RATER RELIABILITY

The current report also recommends ongoing monitoring of the inter-rater reliability of selected Case Report, FLA and SLA assessment items (Table 7-4). A calculation tool to assist this process has been provided for ongoing assessment and reporting by VASM. Note that whilst confidence intervals have also been calculated to facilitate identification of major changes in reliability over time, specific testing of statistically significant differences (accounting for the inter-relationships between each of the groups) would need to be separately undertaken if required.

Table 7-4: Performance indicators for VASM reliability

KPI 3	INTER-RATER RELIABILITY
Correlation	The correlation[a] obtained from a matched sample[b] of coded[c] case report questions (provided by surgeons and subjected to FLA and SLA by VASM)
Percentage Agreement	The percentage of agreement ((number of agreed 'yes' ratings + number of agreed 'no' ratings)/total cases rated) that is obtained from a matched sample of coded case report questions (provided by surgeons and subjected to FLA and SLA by VASM)
Frequency	Annual calculation
Sub-groups	Nil

[a] Using the GWET'S AC1 statistic.

[b] An appropriate sample size would need to be calculated for the purposes of assessing this indicator.

[c] A standardised coding frame for responses to individual questions would need to be applied to both surgeon reports and assessor reports.

7.1.4 KPI 4: AUDIT COVERAGE

Several options for the ongoing identification and calculation of a suitable "denominator" for audit coverage have been recommended in the current report. The most straightforward of these recommendations relates to an annual calculation of the number of "in hospital deaths" that occur following a surgical intervention. A suitable KPI and sub-component indicators relating to **audit coverage** is provided in Table 7-5.

This data could most easily be obtained from the Victorian Admitted Episode Dataset (VAED: to capture individuals who die prior to separation from hospital). Data linkage between the VAED and the Victorian Death Registry could also be examined to determine whether 'cause of death' data is available, and of sufficient specificity to be used as a denominator of all potentially surgical-related deaths on an annual basis. If Victorian Death Register data is not specific enough to reliably identify 'cause of death', further discussions with ANZASM are recommended to investigate the feasibility of State/Territory data linkage by the AIHW (using nationally reported hospital data, linked to the ABS Mortality Dataset). The frequency of conducting this data linkage would need to be determined by ANZASM following discussion with the AIHW.

Table 7-5: Performance indicators for audit coverage

KPI 4	AUDIT COVERAGE
Numerator	The number of death notifications identified by VASM during the reporting period
Denominator	The total number of deaths identified from the Victorian Admitted Patient Dataset (held by the DHHS – which may or may not include linked data to the Victorian Death Register).
Frequency	Annual calculation
Sub-groups	Public Victorian Hospitals Private Victorian Hospitals

7.1.5 KPI 5: THE PERCEIVED QUALITY OF VASM INFORMATION

The current report has also recommended a more structured and frequent approach to obtaining feedback from key VASM stakeholders. A suitable KPI and sub-component indicators relating to **the perceived quality of information provided by VASM** is provided in Table 7-6.

Table 7-6: Performance indicators for perceived quality of VASM information

KPI 5	PERCEIVED UTILITY OF VASM INFORMATION (QUALITATIVE)
Minimum overall rating	The minimum rating to any question answered by a sample of stakeholders
Maximum overall rating	The maximum rating to any question answered by the same sample of stakeholders
Median overall rating	The median rating to 3 questions answered by the same sample of stakeholders
Suggestions	Areas for improvements in the nature or quality of information reported by VASM
Frequency	Annual brief interviews and calculations
Sub-group calculations	Individual questions VASM/ANZASM vs Other independent stakeholder groups Specific stakeholder groups (or group representatives)

Feedback could be obtained from an annual telephone conversation with a selected group of key stakeholders who are asked to provide structured answers to a small number of questions, together with open ended comments about the nature and quality of information received over the designated reporting period (see example questions provided below).

Example Feedback Questions for KPI 5

"On a scale of 1 to 10…"

1. **"How comprehensively have you read information published by VASM over the past 12 months? (Open Question: Which bits of information did you read?)"**
2. **"On the same scale, how would you rate the quality of the information reported by VASM? (Open Question: Which publications could be improved and how?)"**
3. **"Again using the same scale, how useful has this information been to you as a surgeon/director of surgery/member of [insert relevant Department, Committee, Office or Agency]? (Open Question: How has the information helped?)"**

In relation to a representative sample, a total of 16 brief telephone interviews or face-to-face meetings could be conducted around the same time each year with:

- RACS (3 senior executive level staff);
- Department of Health and Human Services (1 representative from each of following areas):
  - The Clinical Councils Unit (1 member not on VASM Steering Committee);
  - Quality and Safety Branch; and
  - Clinical Networks Program.
- Public hospital directors of surgery (3 representatives not on VASM Steering Committee);
- Private hospital directors of surgery (3 representatives not on VASM Steering Committee);
- The Victorian State Coroner's Office (1 representative);
- The Victorian Ombudsman's Office (1 representative);
- The Office of the Health Complaints Commissioner (1 representative); and
- The Victorian Managed Insurance Authority (1 representative).

A total of 5 short group feedback sessions could also be undertaken by attending existing meetings for the following committees (by providing individual copies of the 3 questions with rating scales to each member, and seeking group feedback to the 3 open ended questions to save time):

- Members of the VSCC (22 members not on VASM Steering Committee);
- Members of VCCAMM (22 members not on VASM Steering Committee);
- All members of the VASM Steering Committee (18 members); and
- ANZASM Steering Committee Members (7 members not on VASM Steering Committee).

This would yield feedback from 13 key VASM stakeholder groups comprising up to 85 individuals, 60 of whom are totally independent of the day to day operations of VASM.

7.2 Conclusion

Taken as a whole, VASM has made significant progress against the 25 recommendations outlined in the 2011 review to enhance the perceived appropriateness, operational efficiency and overall effectiveness of the audit process. Partial progress against three of these recommendations requires further follow-up. Ongoing attention will need to focus upon maintaining levels of hospital participation, individual surgeon participation (particularly given the strict monitoring and enforcement of 100% compliance introduced in early 2015), inter-rater reliability, audit coverage, and perceived value of outputs generated by VASM to a variety of stakeholders. Five key performance indicators have been proposed to facilitate ongoing internal monitoring and evaluation of these issues by VASM staff on an annual basis.

Appendix 1 Discussion Guides

Stakeholder Discussion Guide (External Stakeholders) September 2014

The Victorian Audit of Surgical Mortality (VASM) was established in 2007 to conduct 'peer-review of all deaths associated with surgical care' in Victoria. VASM undertakes a range of activities to promote hospital and surgeon participation, case reporting and assessment, and feedback to a range of stakeholders about the outcomes arising from the audit process. VASM is one of a number of surgical mortality audits conducted across Australia under the umbrella of the Australian and New Zealand Audit of Surgical Mortality (ANZASM).

In 2011, the Royal Australasian College of Surgeons (RACS) commissioned Aspex Consulting to undertake an external evaluation of VASM to determine the extent to which it had achieved its objectives.

A wide range of enhancements were suggested to maximise the future operation and impact of VASM by those that had participated in the evaluation process. These suggestions were taken in the context of the overall findings of the evaluation and used as a basis for suggested areas of ongoing improvement as follows:

- Maintaining surgical trust and commitment;
- Streamlining a range of processes;
- Extending analysis of data;
- Promoting integration of information across the health system, and
- Targeting messages identified through the audit to a range of different audiences.

The aim of this evaluation follow up is to determine to what extent VASM has implemented the recommendations of the external review conducted in 2010 -2011 and to provide a relevant and timely report with a view to:

- Identifying key improvement areas implemented from previous external review recommendations provided to VASM;
- Identifying areas of strength and improvement to promote efficient operation of the VASM audit program; and
- Recommendations to promote the future operation and impacts of VASM activities. This discussion guide includes a full range of questions to be addressed by external stakeholders (Directors of Surgery). A separate discussion has been prepared for interviews with internal stakeholders.

DISCUSSION GUIDE FOR EXTERNAL STAKEHOLDERS
DIRECTORS OF SURGERY

Maintaining surgical trust and commitment

4. How did you first become aware of the VASM program?
5. Are you aware of any initiatives being undertaken to promote awareness of VASM during undergraduate and post-graduate/specialist training?
6. What is your understanding of the rationale for the audit of surgical mortality and its role in quality and safety within healthcare?
7. Do you believe this is well conveyed to undergraduates, postgraduates and those undertaking specialist training?
8. Are you aware of other surgical registries, if so, can you distinguish the role of VASM vis a vis other registries?
9. What is your understanding of arrangements relating to qualified privilege arrangements?
10. Have you participated as a case assessor, if not, what are any inhibiting factors?

Promoting integration of information across the health system

11. Does your hospital receive a summary report of basic information about the characteristics of death notifications received from your hospitals?
12. If not, would you see such a report as useful for informing quality and safety issues within your hospital?

Targeting messages identified through the audit to a range of different audiences.

13. Are you aware of, and do you use, the VASM website?
14. Are you aware of specific workshops or seminars that have been conducted by VASM and the VSCC?
15. Are you aware of work being undertaken by VASM in promoting change of practice resulting from findings of the audit process?
16. Are you aware of the summary VASM Annual Report? Do you find it a sufficiently useful as a “plain language” summary for communicating about VASM and responding to public concerns, the media and other non-professional audiences?
17. Are you aware of any publications arising from the work of the surgical audits conducted by VASM? Have you contributed to any such publications?

Stakeholder Discussion Guide (Internal Stakeholders) September 2014

The Victorian Audit of Surgical Mortality (VASM) was established in 2007 to conduct 'peer-review of all deaths associated with surgical care' in Victoria. VASM undertakes a range of activities to promote hospital and surgeon participation, case reporting and assessment, and feedback to a range of stakeholders about the outcomes arising from the audit process. VASM is one of a number of surgical mortality audits conducted across Australia under the umbrella of the Australian and New Zealand Audit of Surgical Mortality (ANZASM).

In 2011, the Royal Australasian College of Surgeons (RACS) commissioned Aspex Consulting to undertake an external evaluation of VASM to determine the extent to which it had achieved its objectives.

A wide range of enhancements were suggested to maximise the future operation and impact of VASM by those that had participated in the evaluation process. These suggestions were taken in the context of the overall findings of the evaluation and used as a basis for suggested areas of ongoing improvement as follows:

Maintaining surgical trust and commitment;

Streamlining a range of processes;

Extending analysis of data;

Promoting integration of information across the health system, and

Targeting messages identified through the audit to a range of different audiences.

The aim of this evaluation follow up is to determine to what extent VASM has implemented the recommendations of the external review conducted in 2010 -2011 and to provide a relevant and timely report with a view to:

- Identifying key improvement areas implemented from previous external review recommendations provided to VASM;
- Identifying areas of strength and improvement to promote efficient operation of the VASM audit program; and
- Recommendations to promote the future operation and impacts of VASM activities. It is noted that this discussion guide includes a full range of questions for all internal stakeholders including RACS and VASM staff, VASM Steering Group and DH staff. Particular questions will be of more relevance to specific stakeholders.

DISCUSSION GUIDE – VASM STAFF

Streamlining a range of processes

1. Have any new processes/procedures been promoted by RACS/VASM in relation to information sharing between health services for streamlining the identification of patients and location and provision of medical records, for more timely provision of case report information to VASM?

2. Has the Department of Health, together with RACS, agreed appropriate policy and guidelines for the release of public information in relation to Victorian surgical mortality?

3. What is the current status of discussions between RACS and the Department of Health in relation to obtaining an appropriate determination of state legislation vis a vis Commonwealth protections currently in place relating to the requirement for patient de-identification in case reports?

4. Has VASM been monitoring on-line reporting access for surgeons? Have any specific issues been identified and addressed?

5. Has VASM reviewed the level of detail required for case reporting, including potential for short-form reporting, particularly in the context of pre-surgical assessment which has identified 'considerable' or 'expected' overall risk of death?

6. Have there been any processes implemented to strengthen the case assessment process?

7. Has there been any consideration of the need to revise the case record form to clarify questions that have been previously queried by surgeons and assessors – specifically, questions 17 and 21?

Extending analysis of data

8. Has VASM undertaken any additional studies relating to inter-rater reliability? Can VASM provide details on the methodology and rationale used?

9. Has VASM investigated the potential for undertaking validation studies with other sources of data such as VSCC data or matching with findings of the Coroner's Office? If so, are the details of findings available?

10. Has further work been undertaken to investigate a basis for establishing a "comprehensive denominator" of deaths relating to surgical intervention across the State?

11. Has VASM investigated the potential for using its data to highlight new and emerging issues with the potential to impact upon patient management?

12. Has VASM pursued the potential for increasing the capacity of the audit to capture targeted "areas of concern"?

Appendix 2 List of Individual Stakeholders Consulted

CONTACT	ORGANISATION
Mr Barry Beiles	Clinical Director, VASM
Ms Claudia Retegan	Project Manager, VASM
Assoc Prof Wendy Babidge	Director, Research, Audit and Academic Surgery Division, ANZASM
Mr Gordon Guy	ANZASM Manager
Ms Vickie Veitch	Manager, Clinical Councils Unit , DHHS
Dr Larry McNicol	Chair of the Victorian Consultative Council on Anaesthesia Mortality and Morbidity
Mr Peter Field	Chair, VSCC (to Nov 2014)
Trevor Jones	Chair, VSCC (from Nov 2014)
Mr Michael Grigg	President, RACS
Prof Bill Johnson	Clinical Program Director of Surgery, Anaesthetics, Perioperative Medicine and Ambulatory Care, Alfred Health
Ms Sarah Larwill	Risk Manager, Alfred Health
Mr David Plueckhahn	Clinical Risk Manager, Barwon Health
Mr Michael Grigg	Director Medical Services, Eastern Health
Ms Eveline Soon	Quality Coordinator Surgery Program, Monash Health
Mr James Stoney	Divisional Director Surgery, St Vincent's Hospital
Dr Peter Lowthian	Medical Director, Cabrini Hospital
Mr Steven McConchie	Clinical Audit, Innovation & Reform, Epworth Hospital
Mr Michael Condous	Department of Surgery, St John of God Ballarat
Dr Bill Kelly	Medical Services, St Vincent's Private Hospital
Ms Nicole Payne	Health Information Services, St Vincent's Private Hospital
Dr Nicholas Yap	Registrar, St Vincent's Private Hospital
Ms Jennifer Broadbent	Quality and Risk, Warringal Private Hospital

Appendix 3 Example Dashboard Indicator Report

Royal Australasian College of Surgeons

Victorian Audit of Surgical Mortality Program Follow up Evaluation

Final Report

July 2015

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INTRODUCTION

Background

The Victorian Audit of Surgical Mortality (VASM) is part of the Australian and New Zealand Audit of Surgical Mortality (ANZASM), a bi-national network of regionally-based audits of surgical mortality that aim to ensure the highest standard of safe and comprehensive surgical care.

The project is funded by the Quality, Safety and Patient Experience Branch of the Victorian Department of Health and Human Services (DHHS).

Objectives

The objective of the audit is 'peer review of all deaths associated with surgical care'. This includes:

- Deaths that occur in a hospital following a surgical procedure; and
- Deaths that occur in a hospital whilst under the care of a surgeon, even though no procedure was performed.

If VASM receives notifications of deaths that have occurred following discharge from a hospital, but within 30 days of a procedure or an inpatient stay under a surgical unit, these cases are also subject to review.

The audit process is designed to highlight system and process errors and is intended as an educational rather than a punitive exercise.

KEY PERFORMANCE INDICATORS

The Key Performance Indicators (KPIs) identified for ongoing monitoring and reporting are:

- The percentage of hospital participation in the audit process;
- The percentage of surgeon compliance with audit requirements;
- The average agreement between surgeon reports and VASM assessments;
- The percentage of audit coverage against all surgical deaths in Victoria; and
- The perceived quality of information received from VASM.

Each of these KPIs, together with sub-component indicators is specified in this dashboard report.

KPI 1: HOSPITAL PARTICIPATION

KPI 1	HOSPITAL COMPLIANCE
Numerator	The number of Victorian hospitals complying with the audit process
Denominator	The total number of public & private hospitals performing surgical procedures in Victoria
Frequency	Annual calculation and reporting
Sub-groups	Public Victorian Hospitals Private Victorian Hospitals

A brief paragraph providing commentary on the trend over the previous year together with any mitigating reasons for variation should also be included in this section to allow the reader to obtain a snapshot view of how participation is trending.

KPI 2: SURGEON COMPLIANCE

KPI 2	SURGEON COMPLIANCE
Numerator	The number of cases submitted by 30 days within the reporting period*
Denominator	The number of cases due by 30 days within the reporting period*
Frequency	Monthly calculation and reporting
Sub-groups	Individual CRAFT Groups Private Victorian Hospitals Public Victorian Hospitals

* For example: Case notification dispatched by VASM on 1 January 2015. Add 30 days to obtain a 'due date'(denominator) of 31 January 2015. If the individual case report was submitted on 5 February 2015, subtraction of this date from 31 January 2015 = 5 days overdue, and this case would NOT be counted in the numerator. However, if the case report was submitted on 31 January 2015, subtraction from 31 January 2015 = 0 days overdue, and this case WOULD be counted in the numerator. In effect, after subtracting the submission date from the due date, all values less than or equal to 0 would be summed to achieve the Numerator for the KPI.

A brief paragraph providing commentary on the trend over the previous year together with any mitigating reasons for variation should also be included in this section to allow the reader to obtain a snapshot view of how surgeon compliance is trending.

KPI 3: PERFORMANCE INDICATORS FOR VASM RELIABILITY

KPI 3	INTER-RATER RELIABILITY
Correlation	The correlation[a] obtained from a matched sample[b] of coded[c] case report questions (provided by surgeons and subjected to FLA and SLA by VASM)
Percentage Agreement	The percentage of agreement ((number of agreed 'yes' ratings + number of agreed 'no' ratings)/total cases rated) that is obtained from a matched sample of coded case report questions (provided by surgeons and subjected to FLA and SLA by VASM)
Frequency	Annual calculation
Sub-groups	Nil

[a] Using the GWET'S AC1 statistic.

[b] An appropriate sample size would need to be calculated for the purposes of assessing this indicator.

[c] A standardised coding frame for responses to individual questions would need to be applied to both surgeon reports and assessor reports.

A brief paragraph detailing consistency of inter-rater reliability should be provided including commentary on any variation that occurs.

KPI 4: AUDIT COVERAGE

KPI 4	AUDIT COVERAGE
Numerator	The number of death notifications identified by VASM during the reporting period
Denominator	The total number of deaths identified from the Victorian Admitted Patient Dataset (held by the DHHS – which may or may not include linked data to the Victorian Death Register).
Frequency	Annual calculation
Sub-groups	Public Victorian Hospitals Private Victorian Hospitals

A brief paragraph providing commentary on the trend over the previous year together with any explanatory rationale for variation should also be included in this section to allow the reader to obtain a snapshot view of how mortality is trending.

KPI 5: THE PERCEIVED QUALITY OF VASM INFORMATION

KPI 5	PERCEIVED UTILITY OF VASM INFORMATION (QUALITATIVE)
Minimum overall rating	The minimum rating to any question answered by a sample of stakeholders
Maximum overall rating	The maximum rating to any question answered by the same sample of stakeholders
Median overall rating	The median rating to 3 questions answered by the same sample of stakeholders
Suggestions	Areas for improvements in the nature or quality of information reported by VASM
Frequency	Annual brief interviews and calculations
Sub-group calculations	Individual questions VASM/ANZASM vs Other independent stakeholder groups Specific stakeholder groups (or group representatives)

An annual telephone conversation with a selected group of key stakeholders who are asked to provide structured feedback to a small number of questions, together with open ended feedback about the nature and quality of information received over the designated reporting period.

This section should include the questions asked of the sample stakeholders. Including details of the open ended questions such as those provided below.

Example Feedback Questions for KPI 5

On a scale of 1 to 10…

1. How comprehensively have you read information published by VASM over the past 12 months?
   - (Open Question: Which bits of information did you read?)

2. On the same scale, how would you rate the quality of the information reported by VASM?
   - (Open Question: Which publications could be improved and how?)

3. Again using the same scale, how useful has this information been to you as a surgeon/director of surgery/member of [insert relevant Department, Committee, Office or Agency]?
   - (Open Question: How has the information helped?)

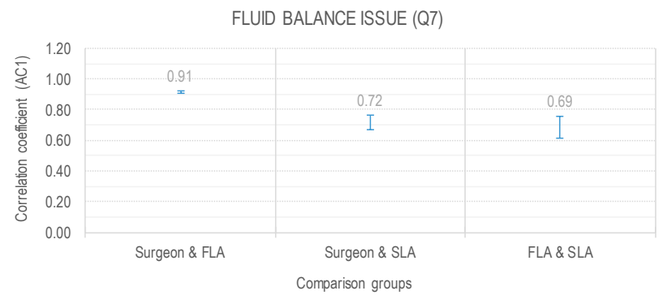
Appendix 4 Correlation Analysis – Overall (Surgeon, FLA, SLA)

		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q5b ICU	Percent agreement	95.67%	82.29%	76.34%
	Kappa	0.16	0.16	0.43
	Gwet's AC1	**0.95**	**0.78**	**0.60**
	n	**923**	**96**	**93**
	Lower 95% CI	**0.01**	**0.11**	**0.17**
	Upper 95% CI	**0.01**	**0.11**	**0.17**

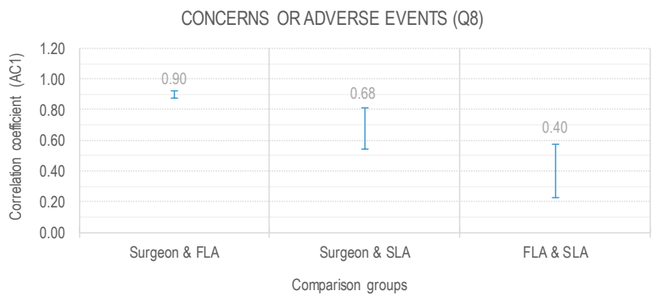
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q5c HDU	Percent agreement	91.15%	76.04%	66.97%
	Kappa	0.21	0.16	0.30
	Gwet's AC1	**0.90**	**0.68**	**0.40**
	n	**859**	**96**	**109**
	Lower 95% CI	**0.02**	**0.14**	**0.17**
	Upper 95% CI	**0.02**	**0.14**	**0.17**

		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q6a DVT prophylaxis	Percent agreement	79.34%	76.31%	90.91%
	Kappa	0.36	0.05	0.19
	Gwet's AC1	**0.70**	**0.69**	**0.90**
	n	**4405**	**667**	**506**
	Lower 95% CI	**0.02**	**0.05**	**0.03**
	Upper 95% CI	**0.02**	**0.05**	**0.03**

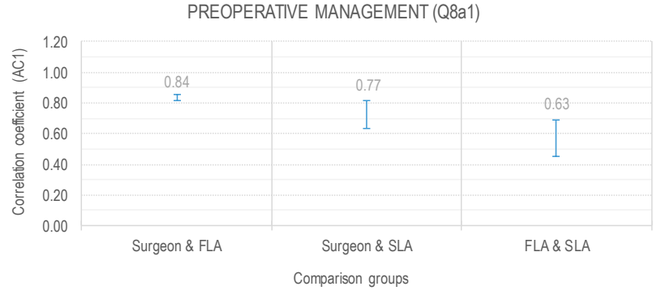
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q7 Fluid	Percent agreement	93.01%	79.77%	79.17%
	Kappa	60.90%	29.65%	37.58%
	Gwet's AC1	**0.91**	**0.72**	**0.69**
	n	**3389**	**682**	**384**
	Lower 95% CI	**0.01**	**0.05**	**0.07**
	Upper 95% CI	**0.01**	**0.05**	**0.07**



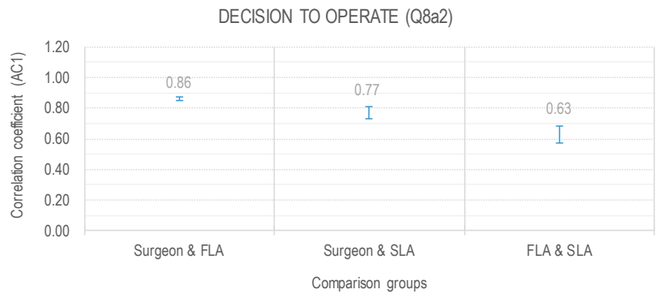
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8 Adverse Events	Percent agreement	91.15%	76.04%	66.97%
	Kappa	21.06%	15.98%	29.55%
	Gwet's AC1	**0.90**	**0.68**	**0.40**
	n	**859**	**96**	**109**
	Lower 95% CI	**0.02**	**0.14**	**0.17**
	Upper 95% CI	**0.02**	**0.14**	**0.17**



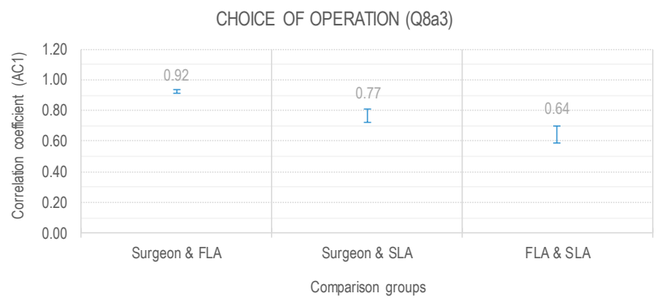
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.1 Preop	Percent agreement	87.02%	82.00%	75.07%
	Kappa	37.90%	15.96%	25.63%
	Gwet's AC1	**0.84**	**0.77**	**0.63**
	n	**3876.00**	**700.00**	**678.00**
	Lower 95% CI	**0.01**	**0.04**	**0.06**
	Upper 95% CI	**0.01**	**0.04**	**0.06**



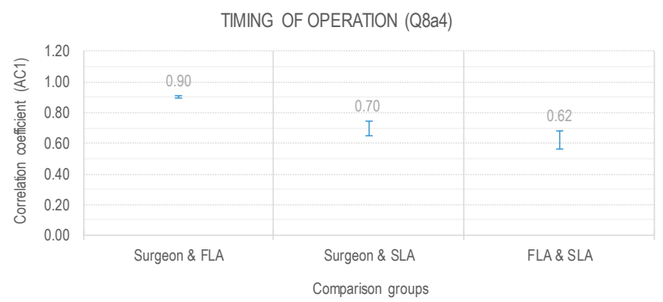
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.2 Decision to Operate	Percent agreement	88.57%	82.00%	75.07%
	Kappa	30.42%	15.96%	25.63%
	Gwet's AC1	**0.86**	**0.77**	**0.63**
	n	**3883**	**700**	**678**
	Lower 95% CI	**0.01**	**0.04**	**0.06**
	Upper 95% CI	**0.01**	**0.04**	**0.06**



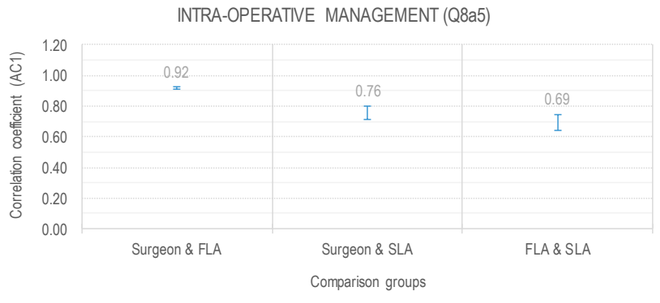
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.3 Choice of Operation	Percent agreement	92.97%	81.62%	76.24%
	Kappa	21.60%	14.86%	28.91%
	Gwet's AC1	**0.92**	**0.77**	**0.64**
	n	**3871**	**702**	**665**
	Lower 95% CI	**0.01**	**0.04**	**0.06**
	Upper 95% CI	**0.01**	**0.04**	**0.06**



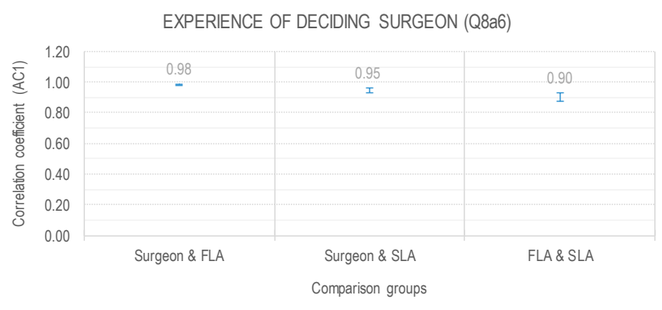
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.4 Timing of Operation	Percent agreement	91.76%	78.13%	76.12%
	Kappa	45.51%	22.58%	35.43%
	Gwet's AC1	**0.90**	**0.70**	**0.62**
	n	**3859**	**695**	**649**
	Lower 95% CI	**0.01**	**0.05**	**0.06**
	Upper 95% CI	**0.01**	**0.05**	**0.06**



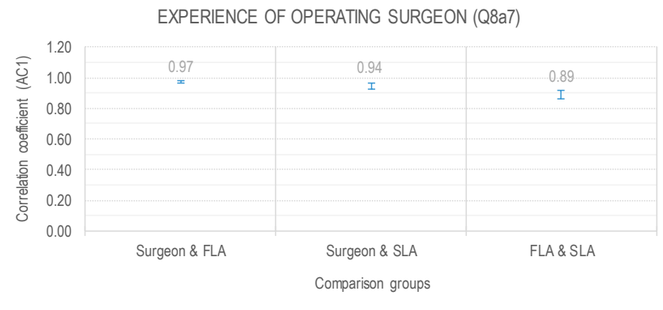
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.5 Intra-Operative	Percent agreement	92.68%	81.69%	80.16%
	Kappa	32.78%	26.75%	44.20%
	Gwet's AC1	**0.92**	**0.76**	**0.69**
	n	**3823**	**688**	**640**
	Lower 95% CI	**0.01**	**0.04**	**0.05**
	Upper 95% CI	**0.01**	**0.04**	**0.05**



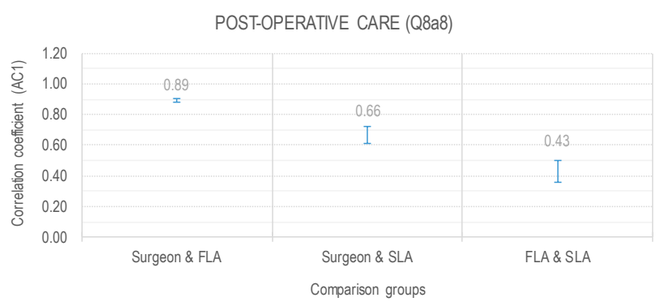
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.6 Surgeon Deciding	Percent agreement	98.27%	94.88%	91.28%
	Kappa	20.82%	3.34%	15.64%
	Gwet's AC1	**0.98**	**0.95**	**0.90**
	n	**3825**	**684**	**642**
	Lower 95% CI	**0.00**	**0.02**	**0.03**
	Upper 95% CI	**0.00**	**0.02**	**0.03**



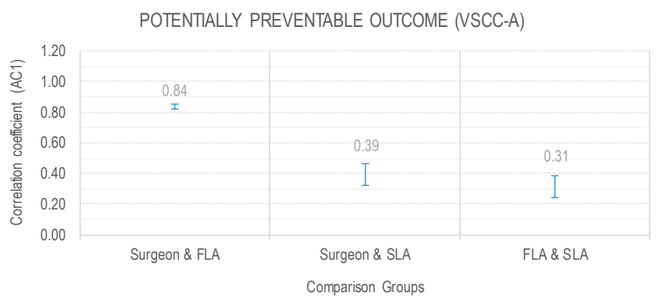
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.7 Surgeon Operating	Percent agreement	97.39%	94.72%	90.36%
	Kappa	22.28%	22.86%	31.91%
	Gwet's AC1	**0.97**	**0.94**	**0.89**
	n	**3826**	**682**	**643**
	Lower 95% CI	**0.01**	**0.02**	**0.03**
	Upper 95% CI	**0.01**	**0.02**	**0.03**



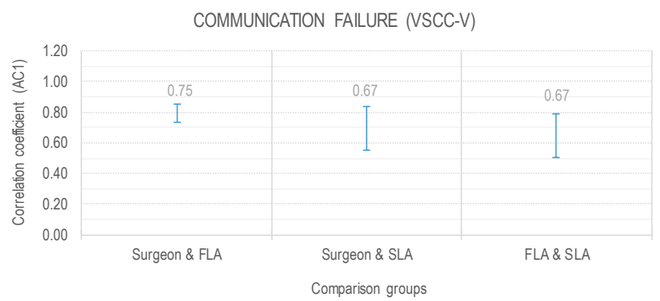
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
Q8a.8 Post - Op	Percent agreement	90.59%	76.06%	67.29%
	Kappa	36.14%	18.64%	24.56%
	Gwet's AC1	**0.89**	**0.66**	**0.43**
	n	**3760**	**681**	**639**
	Lower 95% CI	**0.01**	**0.05**	**0.07**
	Upper 95% CI	**0.01**	**0.05**	**0.07**



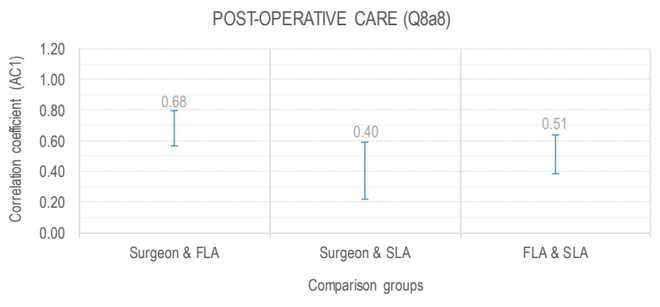
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.a.1.1 Potentially Preventable	Percent agreement	87.65%	68.08%	63.16%
	Kappa	50.28%	35.44%	24.36%
	Gwet's AC1	**0.84**	**0.39**	**0.31**
	n	**3627**	**614**	**646**
	Lower 95% CI	**0.02**	**0.07**	**0.07**
	Upper 95% CI	**0.02**	**0.07**	**0.07**



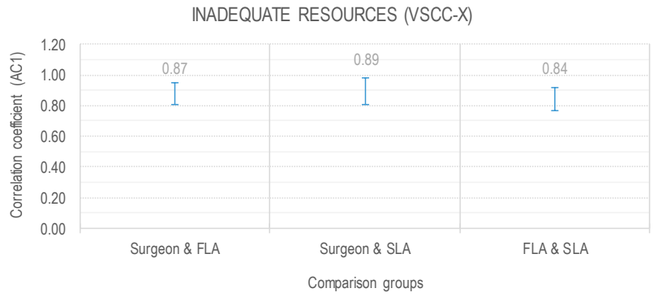
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.a.v. Communication	Percent agreement	85.81%	78.38%	78.67%
	Kappa	67.46%	39.47%	40.90%
	Gwet's AC1	**0.75**	**0.67**	**0.67**
	n	**148**	**74**	**150**
	Lower 95% CI	**0.11**	**0.17**	**0.12**
	Upper 95% CI	**0.11**	**0.17**	**0.12**



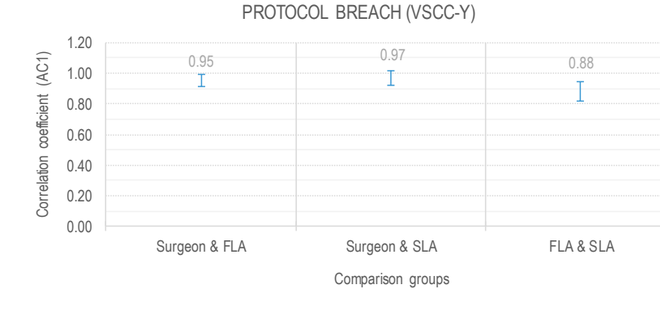
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.a.w. Timely	Percent agreement	83.85%	70.11%	75.57%
	Kappa	67.73%	41.34%	50.88%
	Gwet's AC1	**0.68**	**0.40**	**0.51**
	n	**161**	**87**	**176**
	Lower 95% CI	**0.11**	**0.19**	**0.13**
	Upper 95% CI	**0.11**	**0.19**	**0.13**



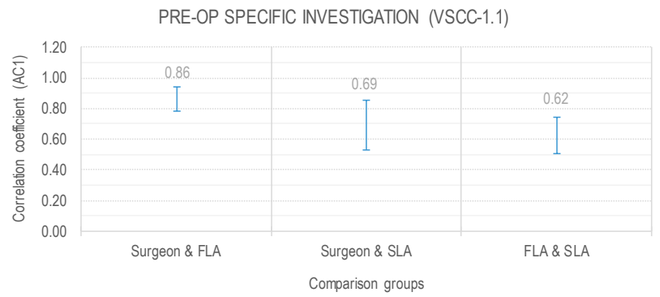
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.a.x. Resources	Percent agreement	89.43%	90.77%	86.96%
	Kappa	32.45%	36.89%	18.07%
	Gwet's AC1	**0.87**	**0.89**	**0.84**
	n	**123**	**65**	**138**
	Lower 95% CI	**0.07**	**0.09**	**0.08**
	Upper 95% CI	**0.07**	**0.09**	**0.08**



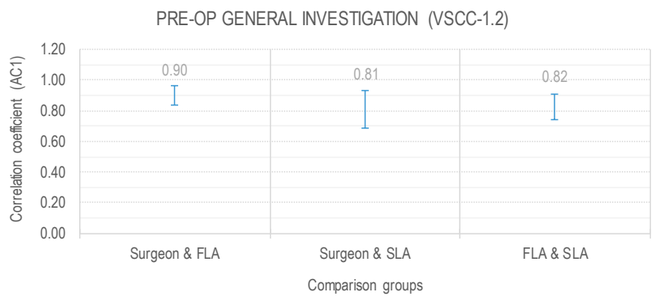
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.a.y. Protocol	Percent agreement	95.83%	96.97%	89.93%
	Kappa	59.35%	65.26%	24.63%
	Gwet's AC1	**0.95**	**0.97**	**0.88**
	n	**120**	**66**	**139**
	Lower 95% CI	**0.04**	**0.05**	**0.06**
	Upper 95% CI	**0.04**	**0.05**	**0.06**



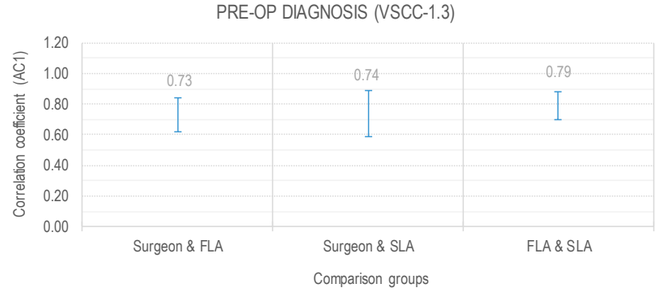
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.1.1 Preop-specific condition Investigation	Percent agreement	90.98%	80.00%	77.02%
	Kappa	73.58%	44.22%	40.86%
	Gwet's AC1	**0.86**	**0.69**	**0.62**
	n	**133**	**75**	**161**
	Lower 95% CI	**0.08**	**0.16**	**0.12**
	Upper 95% CI	**0.08**	**0.16**	**0.12**



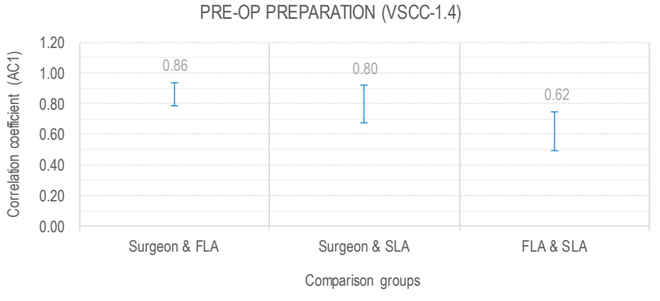
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.1.2 Preop-General Investigation	Percent agreement	91.34%	84.06%	85.71%
	Kappa	47.66%	8.00%	25.49%
	Gwet's AC1	**0.90**	**0.81**	**0.82**
	n	**127**	**69**	**140**
	Lower 95% CI	**0.06**	**0.12**	**0.08**
	Upper 95% CI	**0.06**	**0.12**	**0.08**



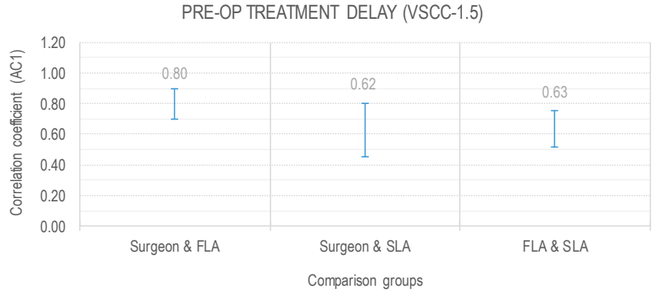
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.1.3 Preop-Diagnosis	Percent agreement	83.21%	83.78%	85.81%
	Kappa	55.66%	57.51%	55.55%
	Gwet's AC1	**0.73**	**0.74**	**0.79**
	n	**131**	**74**	**148**
	Lower 95% CI	**0.11**	**0.15**	**0.09**
	Upper 95% CI	**0.11**	**0.15**	**0.09**



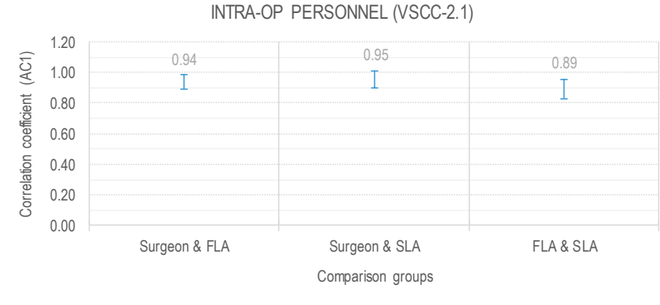
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.1.4 Preop-Preparation	Percent agreement	89.23%	84.51%	73.47%
	Kappa	50.78%	33.87%	13.10%
	Gwet's AC1	**0.86**	**0.80**	**0.62**
	n	**130**	**71**	**147**
	Lower 95% CI	**0.07**	**0.13**	**0.13**
	Upper 95% CI	**0.07**	**0.13**	**0.13**



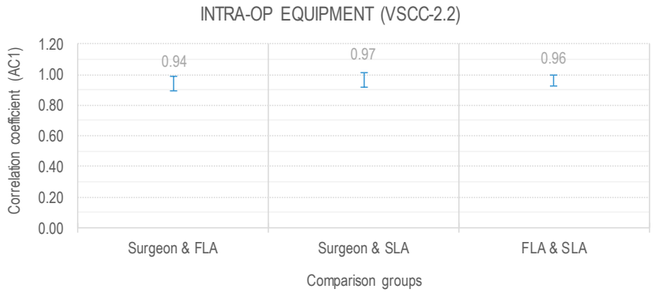
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.1.5 Preop-Treatment Delay	Percent agreement	88.11%	79.22%	78.75%
	Kappa	71.23%	54.40%	49.86%
	Gwet's AC1	**0.80**	**0.62**	**0.63**
	n	**143**	**77**	**160**
	Lower 95% CI	**0.10**	**0.17**	**0.12**
	Upper 95% CI	**0.10**	**0.17**	**0.12**



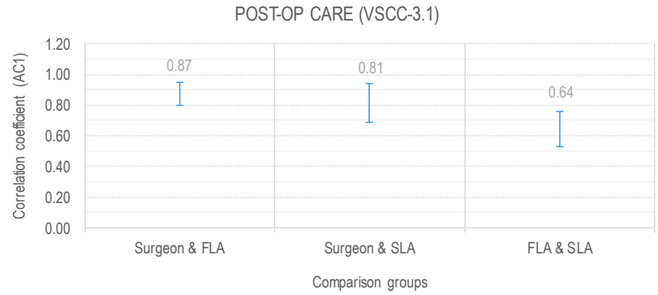
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.2.1 Interop-Personnel	Percent agreement	94.40%	95.38%	90.65%
	Kappa	50.48%	0.00%	38.47%
	Gwet's AC1	**0.94**	**0.95**	**0.89**
	n	**125**	**65**	**139**
	Lower 95% CI	**0.05**	**0.06**	**0.06**
	Upper 95% CI	**0.05**	**0.06**	**0.06**



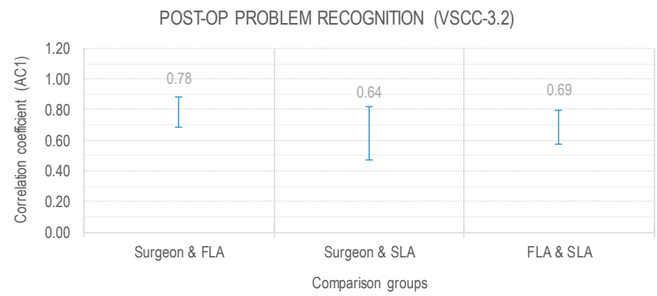
		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.2.2 Interop-Equipment	Percent agreement	94.26%	97.01%	96.32%
	Kappa	0.20	0.73	-0.02
	Gwet's AC1	**0.94**	**0.97**	**0.96**
	n	**122**	**67**	**136**
	Lower 95% CI	**0.05**	**0.05**	**0.03**
	Upper 95% CI	**0.05**	**0.05**	**0.03**



		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.3.1 Postop-Postop Care	Percent agreement	91.43%	87.84%	76.73%
	Kappa	0.75	0.65	0.33
	Gwet's AC1	**0.87**	**0.81**	**0.64**
	n	**140**	**74**	**159**
	Lower 95% CI	**0.07**	**0.12**	**0.12**
	Upper 95% CI	**0.07**	**0.12**	**0.12**



		Surgeon & FLA	Surgeon & SLA	FLA & SLA
VSCC i.3.2 Postop-Problem Recognition	Percent agreement	86.23%	78.67%	80.75%
	Kappa	0.63	0.48	0.50
	Gwet's AC1	**0.78**	**0.64**	**0.69**
	n	**138**	**75**	**161**
	Lower 95% CI	**0.10**	**0.17**	**0.11**
	Upper 95% CI	**0.10**	**0.17**	**0.11**

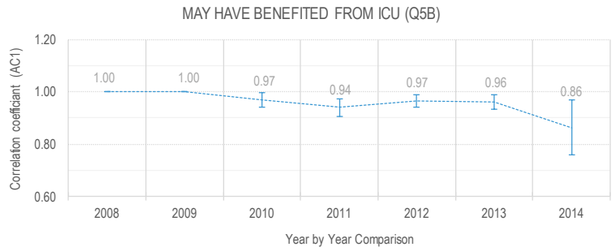


Appendix 5 Correlation Analysis – Year by Year (Surgeon, FLA, SLA)

MAY HAVE BENEFITED FROM ICU (Q5B)

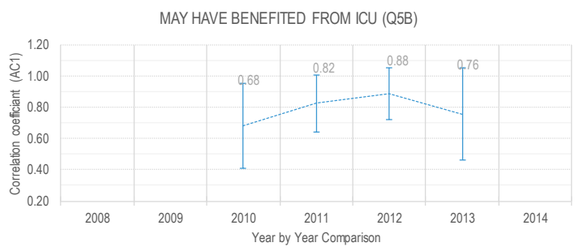
Surgeon & FLA agreement and inter-rater reliability estimates

		2008	2009	2010	2011	2012	2013	2014
Q5b	Percent agreement	100%	100%	97%	94%	97%	96%	88%
	Kappa	1.00	#DIV/0!	0.43	0.00	-0.01	0.19	-0.03
	Gwet's AC1	**1.00**	**1.00**	**0.97**	**0.94**	**0.97**	**0.96**	**0.86**
	n	**11**	**15**	**165**	**210**	**245**	**219**	**58**
	Lower 95% CI	**0.00**	**0.00**	**0.03**	**0.04**	**0.02**	**0.03**	**0.11**
	Upper 95% CI	**0.00**	**0.00**	**0.03**	**0.04**	**0.02**	**0.03**	**0.11**



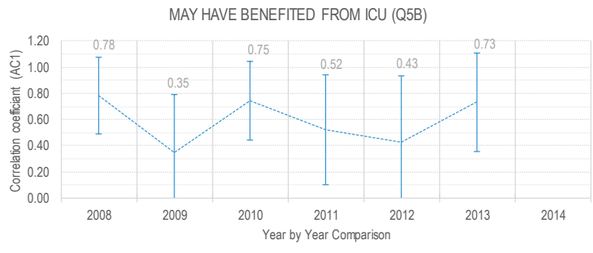
Surgeon & SLA agreement and inter-rater reliability estimates

		2008	2009	2010	2011	2012	2013	2014
Q5b	Percent agreement			75%	86%	90%	80%	
	Kappa			0%	29%	46%	0%	
	Gwet's AC1			**0.68**	**0.82**	**0.88**	**0.76**	
	n	**<5**	**<5**	**24**	**28**	**21**	**15**	**<5**
	LCI			**0.27**	**0.18**	**0.17**	**0.29**	
	UCI			**0.27**	**0.18**	**0.17**	**0.29**	



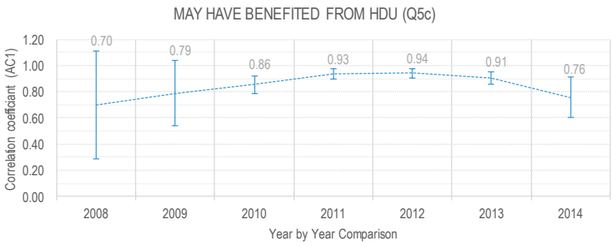
FLA & SLA agreement and inter-rater reliability estimates

		2008	2009	2010	2011	2012	2013	2014
Q5b	Percent agreement	88%	65%	81%	73%	64%	83%	
	Kappa	74%	27%	29%	44%	5%	56%	
	Gwet's AC1	**0.78**	**0.35**	**0.75**	**0.52**	**0.43**	**0.73**	
	n	**17**	**17**	**16**	**15**	**14**	**12**	**<5**
	LCI	**0.29**	**0.44**	**0.30**	**0.42**	**0.50**	**0.37**	
	UCI	**0.29**	**0.44**	**0.30**	**0.42**	**0.50**	**0.37**	

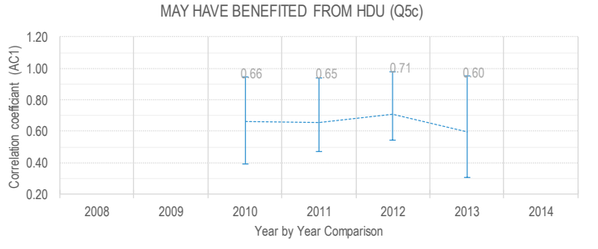


MAY HAVE BENEFITED FROM HDU (Q5c)

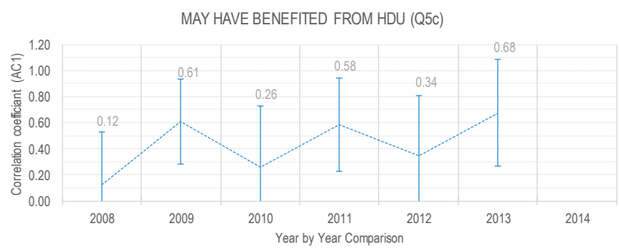
		2008	2009	2010	2011	2012	2013	2014
Q5c	Percent agreement	82%	82%	87%	94%	95%	92%	80%
	Kappa	56%	0%	7%	32%	38%	16%	0%
	Gwet's AC1	**0.70**	**0.79**	**0.86**	**0.93**	**0.94**	**0.91**	**0.76**
	n	**11**	**17**	**151**	**199**	**226**	**200**	**55**
	LCI	**0.41**	**0.25**	**0.07**	**0.04**	**0.03**	**0.05**	**0.15**
	UCI	**0.41**	**0.25**	**0.07**	**0.04**	**0.03**	**0.05**	**0.15**



		2008	2009	2010	2011	2012	2013	2014
Q5c	Percent agreement			74%	75%	78%	72%	
	Kappa			0%	19%	23%	21%	
	Gwet's AC1			**0.66**	**0.65**	**0.71**	**0.60**	
	n	**<5**	**<5**	**23**	**24**	**23**	**18**	**<5**
	LCI			**0.28**	**0.29**	**0.27**	**0.36**	
	UCI			**0.28**	**0.29**	**0.27**	**0.36**	

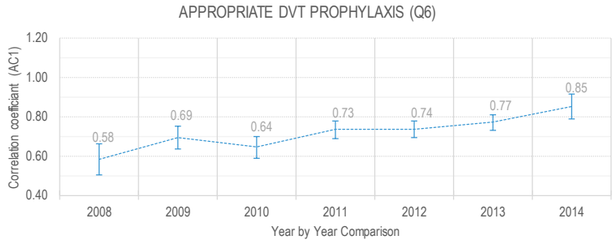


		2008	2009	2010	2011	2012	2013	2014
Q5c	Percent agreement	56%	77%	56%	76%	63%	83%	
	Kappa	14%	49%	-4%	44%	19%	67%	
	Gwet's AC1	**0.12**	**0.61**	**0.26**	**0.58**	**0.34**	**0.68**	
	n	**18**	**22**	**18**	**21**	**16**	**12**	**<5**
	LCI	**0.41**	**0.33**	**0.47**	**0.35**	**0.46**	**0.41**	
	UCI	**0.41**	**0.33**	**0.47**	**0.35**	**0.46**	**0.41**	

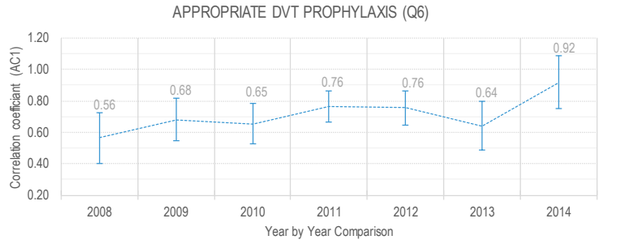


APPROPRIATE DVT PROPHYLAXIS (Q6)

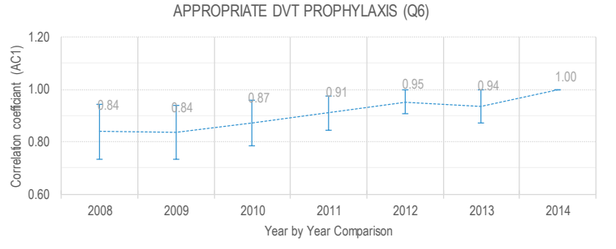
Q6		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	70%	76%	73%	79%	79%	81%	87%
	Kappa	3%	6%	3%	6%	6%	3%	6%
	Gwet's AC1	**0.58**	**0.69**	**0.64**	**0.73**	**0.74**	**0.77**	**0.85**
	n	**383**	**552**	**655**	**726**	**801**	**751**	**185**
	LCI	**0.08**	**0.06**	**0.06**	**0.04**	**0.04**	**0.04**	**0.06**
	UCI	**0.08**	**0.06**	**0.06**	**0.04**	**0.04**	**0.04**	**0.06**



Q6		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	69%	75%	74%	81%	81%	74%	92%
	Kappa	3%	-3%	7%	7%	10%	5%	0%
	Gwet's AC1	**0.56**	**0.68**	**0.65**	**0.76**	**0.76**	**0.64**	**0.92**
	n	**97**	**102**	**121**	**132**	**113**	**87**	**13**
	LCI	**0.16**	**0.13**	**0.13**	**0.10**	**0.11**	**0.15**	**0.17**
	UCI	**0.16**	**0.13**	**0.13**	**0.10**	**0.11**	**0.15**	**0.17**

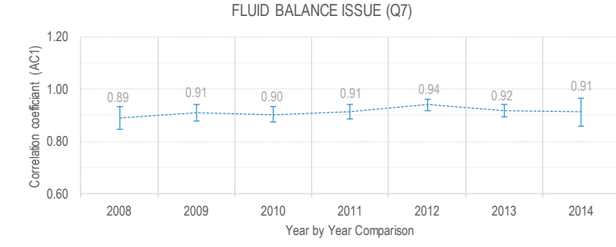


Q6		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	86%	86%	89%	92%	96%	94%	100%
	Kappa	9%	19%	34%	16%	-2%	-3%	#DIV/0!
	Gwet's AC1	**0.84**	**0.84**	**0.87**	**0.91**	**0.95**	**0.94**	**1.00**
	n	**73**	**81**	**84**	**98**	**89**	**67**	**12**
	LCI	**0.11**	**0.10**	**0.09**	**0.06**	**0.05**	**0.06**	**0.00**
	UCI	**0.11**	**0.10**	**0.09**	**0.06**	**0.05**	**0.06**	**0.00**

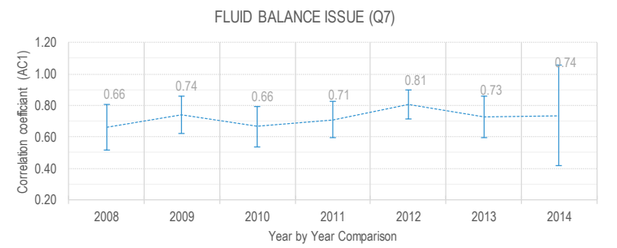


FLUID BALANCE ISSUE (Q7)

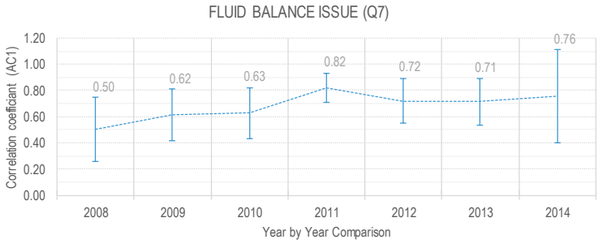
Q7		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	91%	93%	92%	93%	95%	93%	93%
	Kappa	57%	63%	63%	55%	66%	59%	63%
	Gwet's AC1	**0.89**	**0.91**	**0.90**	**0.91**	**0.94**	**0.92**	**0.91**
	n	**307**	**473**	**533**	**608**	**664**	**643**	**154**
	LCI	**0.04**	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.05**
	UCI	**0.04**	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.05**



Q7		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	77%	83%	76%	79%	85%	80%	79%
	Kappa	28%	52%	21%	24%	28%	19%	-11%
	Gwet's AC1	**0.66**	**0.74**	**0.66**	**0.71**	**0.81**	**0.73**	**0.74**
	n	**99**	**112**	**118**	**133**	**117**	**88**	**14**
	LCI	**0.14**	**0.12**	**0.13**	**0.11**	**0.09**	**0.13**	**0.32**
	UCI	**0.14**	**0.12**	**0.13**	**0.11**	**0.09**	**0.13**	**0.32**

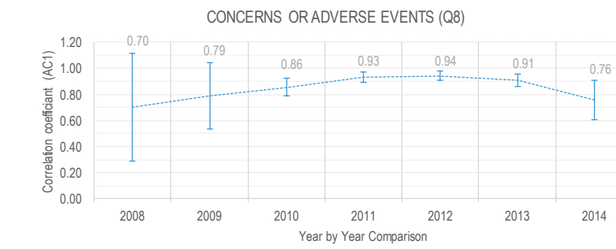


Q7		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	71%	77%	75%	87%	79%	80%	80%
	Kappa	28%	46%	25%	57%	22%	30%	0%
	Gwet's AC1	**0.50**	**0.62**	**0.63**	**0.82**	**0.72**	**0.71**	**0.76**
	n	**51**	**62**	**60**	**87**	**58**	**54**	**10**
	LCI	**0.25**	**0.20**	**0.20**	**0.11**	**0.17**	**0.18**	**0.36**
	UCI	**0.25**	**0.20**	**0.20**	**0.11**	**0.17**	**0.18**	**0.36**

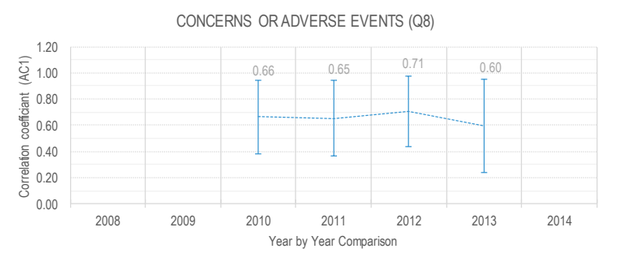


CONCERNS OR ADVERSE EVENTS (Q8)

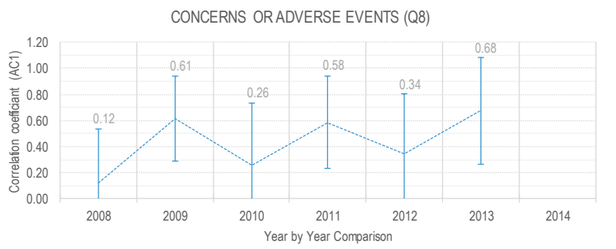
Q8		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	82%	82%	87%	94%	95%	92%	80%
	Kappa	56%	0%	7%	32%	38%	16%	0%
	Gwet's AC1	**0.70**	**0.79**	**0.86**	**0.93**	**0.94**	**0.91**	**0.76**
	n	**11**	**17**	**151**	**199**	**226**	**200**	**55**
	LCI	**0.41**	**0.25**	**0.07**	**0.04**	**0.03**	**0.05**	**0.15**
	UCI	**0.41**	**0.25**	**0.07**	**0.04**	**0.03**	**0.05**	**0.15**



Q8		2008	2009	2010	2011	2012	2013	2014
	Percent agreement			74%	75%	78%	72%	
	Kappa			0%	19%	23%	21%	
	Gwet's AC1			**0.66**	**0.65**	**0.71**	**0.60**	
	n	**<5**	**<5**	**23**	**24**	**23**	**18**	**<5**
	LCI			**0.28**	**0.29**	**0.27**	**0.36**	
	UCI			**0.28**	**0.29**	**0.27**	**0.36**	

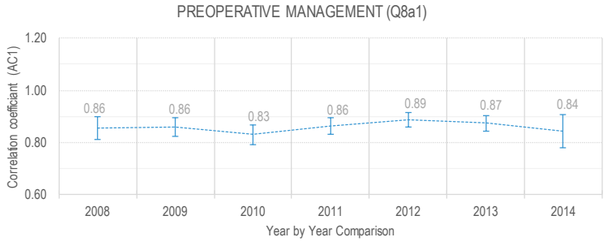


Q8		2008	2009	2010	2011	2012	2013	2014
	Percent agreement	56%	77%	56%	76%	63%	83%	
	Kappa	14%	49%	-4%	44%	19%	67%	
	Gwet's AC1	**0.12**	**0.61**	**0.26**	**0.58**	**0.34**	**0.68**	
	n	**18**	**22**	**18**	**21**	**16**	**12**	**<5**
	LCI	**0.41**	**0.33**	**0.47**	**0.35**	**0.46**	**0.41**	
	UCI	**0.41**	**0.33**	**0.47**	**0.35**	**0.46**	**0.41**	

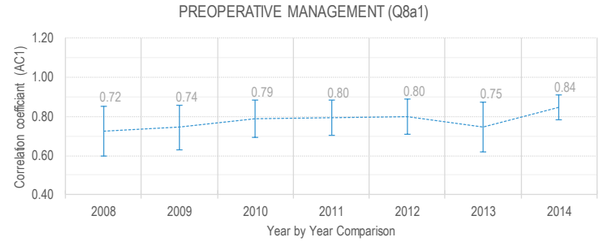


PREOPERATIVE MANAGEMENT (Q8a1)

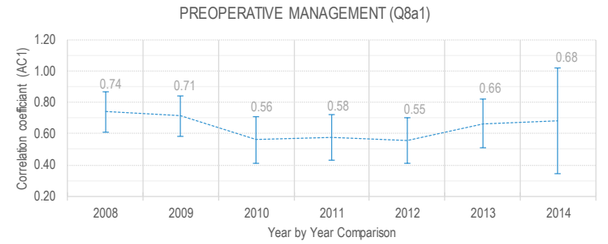
		2008	2009	2010	2011	2012	2013	2014
Q8a.1	Percent agreement	88%	88%	86%	88%	90%	90%	87%
	Kappa	20%	34%	23%	26%	33%	39%	33%
	Gwet's AC1	**0.86**	**0.86**	**0.83**	**0.86**	**0.89**	**0.87**	**0.84**
	n	**367**	**532**	**590**	**674**	**774**	**738**	**198**
	LCI	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.03**	**0.06**
	UCI	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.03**	**0.06**



		2008	2009	2010	2011	2012	2013	2014
Q8a.1	Percent agreement	80%	81%	83%	83%	84%	80%	87%
	Kappa	23%	26%	13%	7%	10%	15%	33%
	Gwet's AC1	**0.72**	**0.74**	**0.79**	**0.80**	**0.80**	**0.75**	**0.84**
	n	**98**	**115**	**124**	**131**	**128**	**87**	**198**
	LCI	**0.13**	**0.11**	**0.10**	**0.09**	**0.09**	**0.13**	**0.06**
	UCI	**0.13**	**0.11**	**0.10**	**0.09**	**0.09**	**0.13**	**0.06**

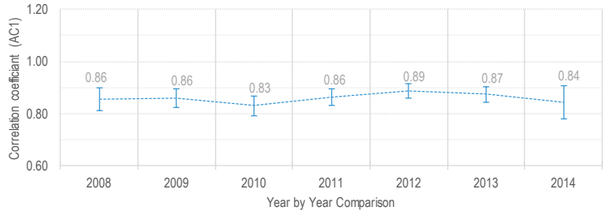


		2008	2009	2010	2011	2012	2013	2014
Q8a.1	Percent agreement	82%	82%	71%	72%	69%	77%	75%
	Kappa	43%	50%	17%	19%	2%	35%	-14%
	Gwet's AC1	**0.74**	**0.71**	**0.56**	**0.58**	**0.55**	**0.66**	**0.68**
	n	**95**	**109**	**124**	**121**	**127**	**84**	**16**
	LCI	**0.13**	**0.13**	**0.15**	**0.15**	**0.15**	**0.16**	**0.34**
	UCI	**0.13**	**0.13**	**0.15**	**0.15**	**0.15**	**0.16**	**0.34**

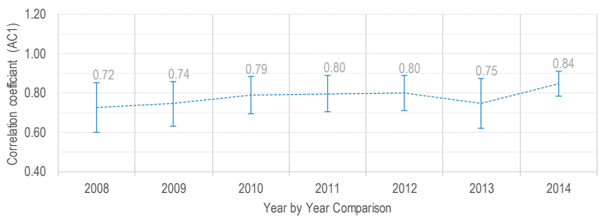


DECISION TO OPERATE (Q8a2)

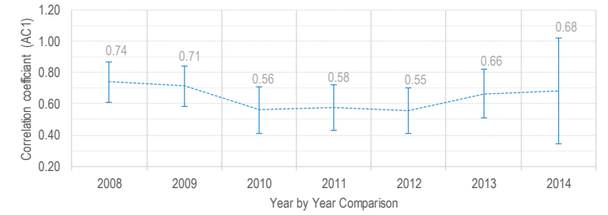
		2008	2009	2010	2011	2012	2013	2014
Q8a.2	Percent agreement	88%	88%	86%	88%	90%	90%	87%
	Kappa	20%	34%	23%	26%	33%	39%	33%
	Gwet's AC1	**0.86**	**0.86**	**0.83**	**0.86**	**0.89**	**0.87**	**0.84**
	n	**367**	**532**	**590**	**674**	**774**	**738**	**198**
	LCI	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.03**	**0.06**
	UCI	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.03**	**0.06**



		2008	2009	2010	2011	2012	2013	2014
Q8a.2	Percent agreement	80%	81%	83%	83%	84%	80%	87%
	Kappa	23%	26%	13%	7%	10%	15%	33%
	Gwet's AC1	**0.72**	**0.74**	**0.79**	**0.80**	**0.80**	**0.75**	**0.84**
	n	**98**	**115**	**124**	**131**	**128**	**87**	**198**
	LCI	**0.13**	**0.11**	**0.10**	**0.09**	**0.09**	**0.13**	**0.06**
	UCI	**0.13**	**0.11**	**0.10**	**0.09**	**0.09**	**0.13**	**0.06**

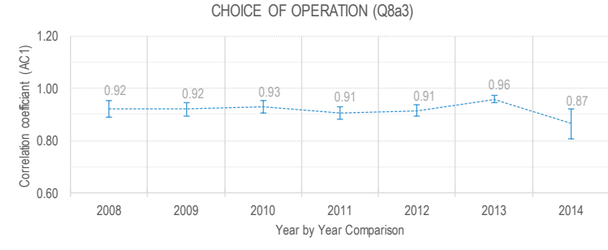


		2008	2009	2010	2011	2012	2013	2014
Q8a.2	Percent agreement	82%	82%	71%	72%	69%	77%	75%
	Kappa	43%	50%	17%	19%	2%	35%	-14%
	Gwet's AC1	**0.74**	**0.71**	**0.56**	**0.58**	**0.55**	**0.66**	**0.68**
	n	**95**	**109**	**124**	**121**	**127**	**84**	**16**
	LCI	**0.13**	**0.13**	**0.15**	**0.15**	**0.15**	**0.16**	**0.34**
	UCI	**0.13**	**0.13**	**0.15**	**0.15**	**0.15**	**0.16**	**0.34**

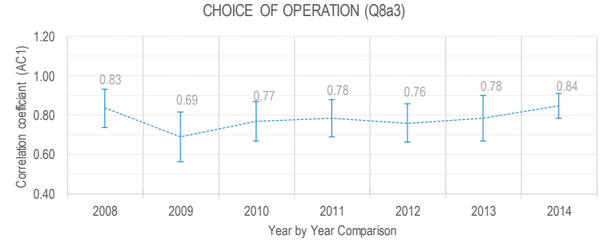


CHOICE OF OPERATION (Q8a3)

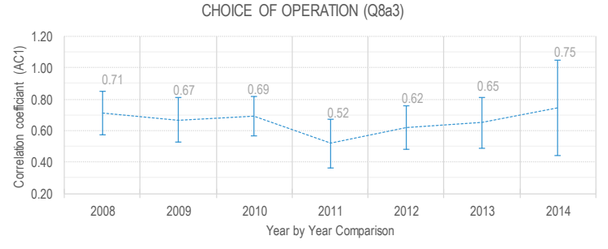
		2008	2009	2010	2011	2012	2013	2014
Q8a.3	Percent agreement	93%	93%	94%	91%	92%	96%	88%
	Kappa	17%	29%	32%	13%	18%	28%	12%
	Gwet's AC1	**0.92**	**0.92**	**0.93**	**0.91**	**0.91**	**0.96**	**0.87**
	n	**361**	**526**	**587**	**676**	**777**	**738**	**196**
	LCI	**0.03**	**0.03**	**0.02**	**0.03**	**0.02**	**0.02**	**0.06**
	UCI	**0.03**	**0.03**	**0.02**	**0.03**	**0.02**	**0.02**	**0.06**



		2008	2009	2010	2011	2012	2013	2014
Q8a.3	Percent agreement	86%	77%	81%	83%	81%	83%	87%
	Kappa	28%	15%	0%	16%	14%	23%	33%
	Gwet's AC1	**0.83**	**0.69**	**0.77**	**0.78**	**0.76**	**0.78**	**0.84**
	n	**95**	**114**	**126**	**132**	**131**	**87**	**198**
	LCI	**0.10**	**0.13**	**0.10**	**0.09**	**0.10**	**0.12**	**0.06**
	UCI	**0.10**	**0.13**	**0.10**	**0.09**	**0.10**	**0.12**	**0.06**

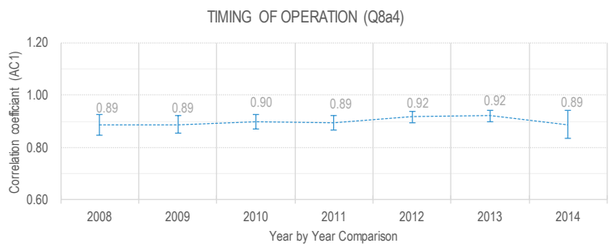


		2008	2009	2010	2011	2012	2013	2014
Q8a.3	Percent agreement	80%	78%	78%	71%	75%	76%	81%
	Kappa	28%	37%	29%	29%	25%	23%	29%
	Gwet's AC1	**0.71**	**0.67**	**0.69**	**0.52**	**0.62**	**0.65**	**0.75**
	n	**88**	**106**	**120**	**124**	**126**	**83**	**16**
	LCI	**0.14**	**0.14**	**0.12**	**0.15**	**0.14**	**0.16**	**0.30**
	UCI	**0.14**	**0.14**	**0.12**	**0.15**	**0.14**	**0.16**	**0.30**

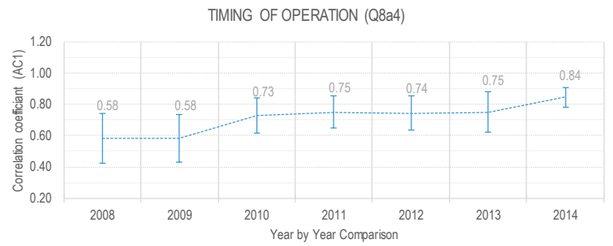


TIMING OF OPERATION (Q8a4)

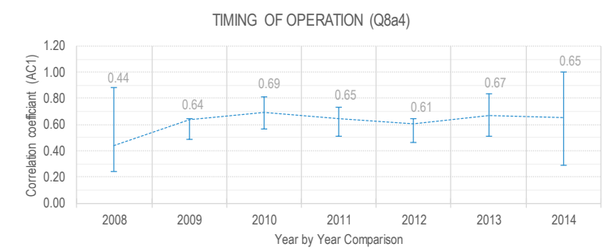
		2008	2009	2010	2011	2012	2013	2014
Q8a.4	Percent agreement	90%	91%	91%	91%	93%	93%	91%
	Kappa	36%	51%	37%	40%	56%	46%	42%
	Gwet's AC1	**0.89**	**0.89**	**0.90**	**0.89**	**0.92**	**0.92**	**0.89**
	n	**365**	**526**	**587**	**670**	**773**	**737**	**192**
	LCI	**0.04**	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.05**
	UCI	**0.04**	**0.03**	**0.03**	**0.03**	**0.02**	**0.02**	**0.05**



		2008	2009	2010	2011	2012	2013	2014
Q8a.4	Percent agreement	72%	72%	80%	81%	81%	81%	87%
	Kappa	22%	15%	23%	20%	33%	28%	33%
	Gwet's AC1	**0.58**	**0.58**	**0.73**	**0.75**	**0.74**	**0.75**	**0.84**
	n	**97**	**113**	**124**	**130**	**129**	**86**	**198**
	LCI	**0.16**	**0.15**	**0.11**	**0.10**	**0.11**	**0.13**	**0.06**
	UCI	**0.16**	**0.15**	**0.11**	**0.10**	**0.11**	**0.13**	**0.06**

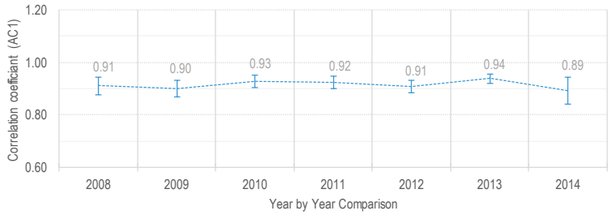


		2008	2009	2010	2011	2012	2013	2014
Q8a.4	Percent agreement	69%	78%	80%	76%	75%	78%	73%
	Kappa	30%	46%	43%	27%	32%	37%	-11%
	Gwet's AC1	**0.44**	**0.64**	**0.69**	**0.65**	**0.61**	**0.67**	**0.65**
	n	**90**	**101**	**120**	**118**	**121**	**82**	**15**
	LCI	**0.19**	**0.15**	**0.13**	**0.14**	**0.14**	**0.16**	**0.36**
	UCI	**0.44**	**0.01**	**0.12**	**0.08**	**0.03**	**0.17**	**0.35**

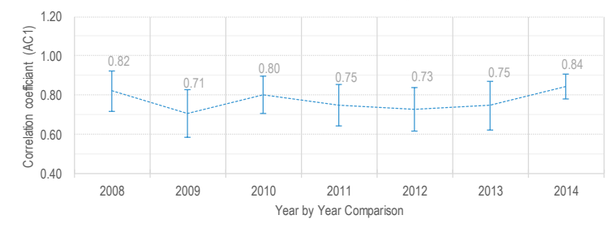


INTRA-OPERATIVE MANAGEMENT (Q8a5)

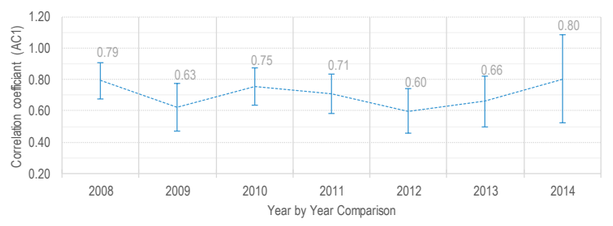
		2008	2009	2010	2011	2012	2013	2014
Q8a.5	Percent agreement	92%	91%	94%	93%	92%	94%	91%
	Kappa	25%	31%	40%	36%	31%	32%	32%
	Gwet's AC1	**0.91**	**0.90**	**0.93**	**0.92**	**0.91**	**0.94**	**0.89**
	n	**362**	**516**	**576**	**664**	**766**	**736**	**193**
	LCI	**0.03**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.05**
	UCI	**0.03**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.05**



		2008	2009	2010	2011	2012	2013	2014
Q8a.5	Percent agreement	86%	79%	85%	82%	79%	80%	87%
	Kappa	41%	23%	40%	32%	15%	5%	33%
	Gwet's AC1	**0.82**	**0.71**	**0.80**	**0.75**	**0.73**	**0.75**	**0.84**
	n	**94**	**112**	**121**	**130**	**125**	**89**	**198**
	LCI	**0.10**	**0.12**	**0.09**	**0.10**	**0.11**	**0.12**	**0.06**
	UCI	**0.10**	**0.12**	**0.09**	**0.10**	**0.11**	**0.12**	**0.06**

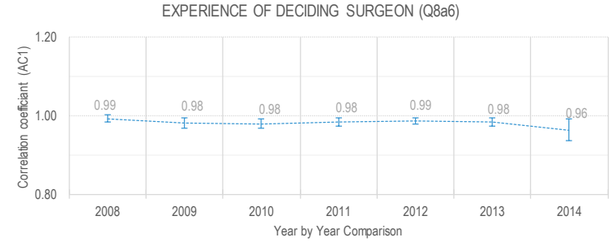


		2008	2009	2010	2011	2012	2013	2014
Q8a.5	Percent agreement	85%	77%	84%	82%	75%	78%	87%
	Kappa	49%	39%	52%	55%	31%	36%	59%
	Gwet's AC1	**0.79**	**0.63**	**0.75**	**0.71**	**0.60**	**0.66**	**0.80**
	n	**88**	**103**	**111**	**118**	**122**	**81**	**15**
	LCI	**0.12**	**0.15**	**0.12**	**0.13**	**0.14**	**0.16**	**0.28**
	UCI	**0.12**	**0.15**	**0.12**	**0.13**	**0.14**	**0.16**	**0.28**

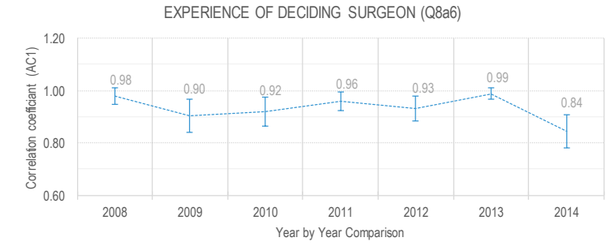


EXPERIENCE OF DECIDING SURGEON (Q8a6)

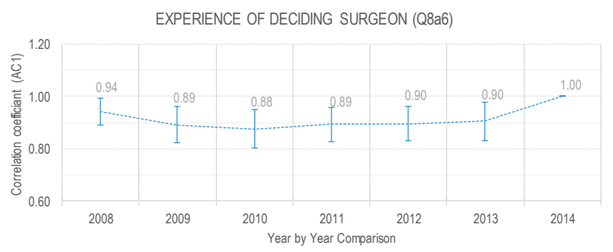
		2008	2009	2010	2011	2012	2013	2014
Q8a.6	Percent agreement	99%	98%	98%	98%	99%	98%	96%
	Kappa	0%	37%	32%	15%	26%	0%	-1%
	Gwet's AC1	**0.99**	**0.98**	**0.98**	**0.98**	**0.99**	**0.98**	**0.96**
	n	**362**	**523**	**576**	**666**	**763**	**731**	**194**
	LCI	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.03**
	UCI	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.03**



		2008	2009	2010	2011	2012	2013	2014
Q8a.6	Percent agreement	98%	91%	93%	96%	94%	99%	87%
	Kappa	0%	-4%	-3%	28%	-1%	0%	33%
	Gwet's AC1	**0.98**	**0.90**	**0.92**	**0.96**	**0.93**	**0.99**	**0.84**
	n	**92**	**112**	**120**	**131**	**125**	**87**	**198**
	LCI	**0.03**	**0.06**	**0.05**	**0.04**	**0.05**	**0.02**	**0.06**
	UCI	**0.03**	**0.06**	**0.05**	**0.04**	**0.05**	**0.02**	**0.06**

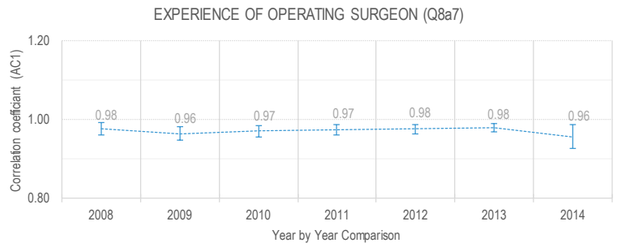


		2008	2009	2010	2011	2012	2013	2014
Q8a.6	Percent agreement	95%	90%	89%	91%	91%	91%	100%
	Kappa	26%	-5%	20%	22%	22%	0%	#DIV/0!
	Gwet's AC1	**0.94**	**0.89**	**0.88**	**0.89**	**0.90**	**0.90**	**1.00**
	n	**92**	**102**	**112**	**118**	**120**	**80**	**16**
	LCI	**0.05**	**0.07**	**0.07**	**0.07**	**0.06**	**0.07**	**0.00**
	UCI	**0.05**	**0.07**	**0.07**	**0.07**	**0.06**	**0.07**	**0.00**

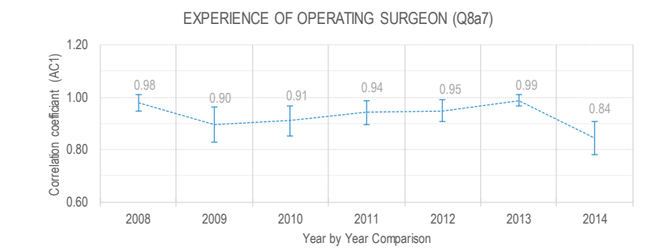


EXPERIENCE OF OPERATING SURGEON

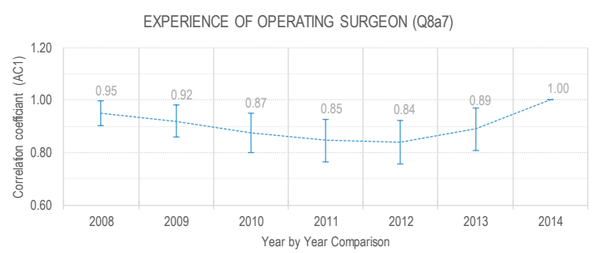
		2008	2009	2010	2011	2012	2013	2014
Q8a.7	Percent agreement	98%	97%	97%	97%	98%	98%	96%
	Kappa	19%	29%	26%	25%	24%	12%	-1%
	Gwet's AC1	**0.98**	**0.96**	**0.97**	**0.97**	**0.98**	**0.98**	**0.96**
	n	**362**	**524**	**576**	**665**	**762**	**733**	**194**
	LCI	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.03**
	UCI	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.03**



		2008	2009	2010	2011	2012	2013	2014
Q8a.7	Percent agreement	98%	91%	92%	95%	95%	99%	87%
	Kappa	49%	33%	-2%	20%	23%	0%	33%
	Gwet's AC1	**0.98**	**0.90**	**0.91**	**0.94**	**0.95**	**0.99**	**0.84**
	n	**93**	**111**	**121**	**129**	**124**	**87**	**198**
	LCI	**0.03**	**0.07**	**0.06**	**0.04**	**0.04**	**0.02**	**0.06**
	UCI	**0.03**	**0.07**	**0.06**	**0.04**	**0.04**	**0.02**	**0.06**

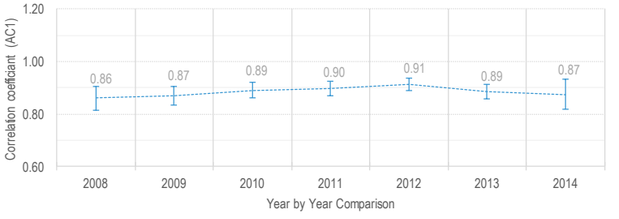


		2008	2009	2010	2011	2012	2013	2014
Q8a.7	Percent agreement	96%	93%	89%	87%	87%	90%	100%
	Kappa	64%	50%	34%	22%	21%	0%	#DIV/0!
	Gwet's AC1	**0.95**	**0.92**	**0.87**	**0.85**	**0.84**	**0.89**	**1.00**
	n	**93**	**102**	**114**	**117**	**119**	**80**	**16**
	LCI	**0.05**	**0.06**	**0.07**	**0.08**	**0.08**	**0.08**	**0.00**
	UCI	**0.05**	**0.06**	**0.07**	**0.08**	**0.08**	**0.08**	**0.00**

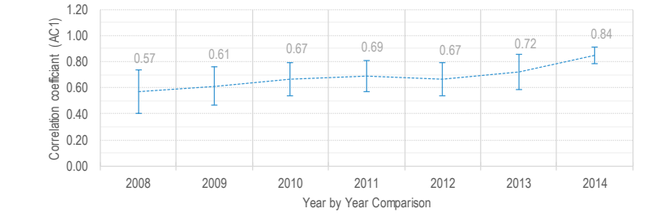


POST-OPERATIVE CARE (Q8a8)

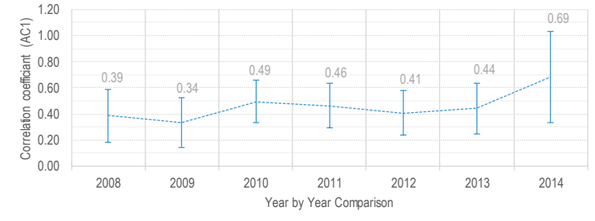
		2008	2009	2010	2011	2012	2013	2014
Q8a.8	Percent agreement	89%	89%	90%	91%	93%	90%	90%
	Kappa	38%	32%	21%	33%	51%	34%	39%
	Gwet's AC1	**0.86**	**0.87**	**0.89**	**0.90**	**0.91**	**0.89**	**0.87**
	n	**343**	**516**	**563**	**649**	**760**	**727**	**192**
	LCI	**0.05**	**0.04**	**0.03**	**0.03**	**0.02**	**0.03**	**0.06**
	UCI	**0.05**	**0.04**	**0.03**	**0.03**	**0.02**	**0.03**	**0.06**



		2008	2009	2010	2011	2012	2013	2014
Q8a.8	Percent agreement	71%	73%	76%	77%	77%	80%	87%
	Kappa	13%	17%	16%	5%	24%	29%	33%
	Gwet's AC1	**0.57**	**0.61**	**0.67**	**0.69**	**0.67**	**0.72**	**0.84**
	n	**94**	**113**	**120**	**128**	**120**	**89**	**198**
	LCI	**0.17**	**0.14**	**0.13**	**0.12**	**0.13**	**0.14**	**0.06**
	UCI	**0.17**	**0.14**	**0.13**	**0.12**	**0.13**	**0.14**	**0.06**

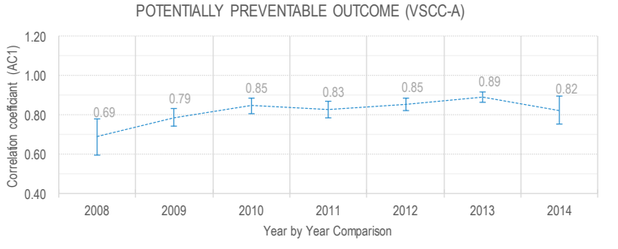


		2008	2009	2010	2011	2012	2013	2014
Q8a.8	Percent agreement	66%	63%	71%	67%	66%	69%	81%
	Kappa	27%	17%	32%	14%	19%	34%	56%
	Gwet's AC1	**0.39**	**0.34**	**0.49**	**0.46**	**0.41**	**0.44**	**0.69**
	n	**86**	**105**	**116**	**114**	**119**	**81**	**16**
	LCI	**0.20**	**0.19**	**0.16**	**0.17**	**0.17**	**0.20**	**0.35**
	UCI	**0.20**	**0.19**	**0.16**	**0.17**	**0.17**	**0.20**	**0.35**

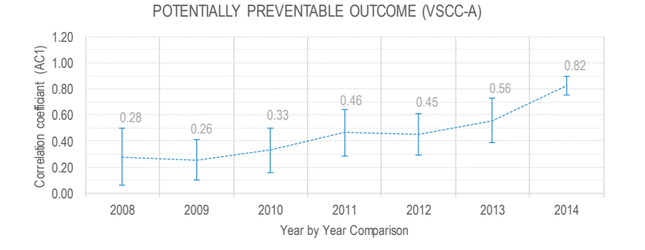


POTENTIALLY PREVENTABLE OUTCOME

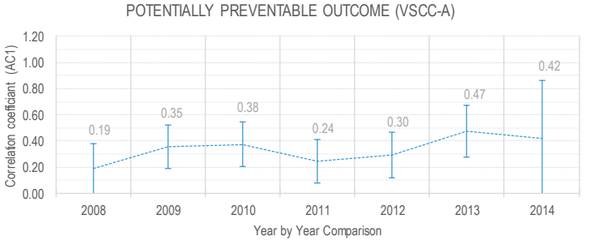
		2008	2009	2010	2011	2012	2013	2014
VSCC i.a.1.1	Percent agreement	80%	85%	88%	87%	89%	91%	87%
	Kappa	46%	46%	48%	48%	54%	53%	54%
	Gwet's AC1	**0.69**	**0.79**	**0.85**	**0.83**	**0.85**	**0.89**	**0.82**
	n	**232**	**596**	**542**	**516**	**803**	**751**	**187**
	LCI	**0.09**	**0.05**	**0.04**	**0.04**	**0.03**	**0.03**	**0.07**
	UCI	**0.09**	**0.05**	**0.04**	**0.04**	**0.03**	**0.03**	**0.07**



		2008	2009	2010	2011	2012	2013	2014
VSCC i.a.1.1	Percent agreement	64%	62%	64%	71%	70%	76%	87%
	Kappa	29%	29%	28%	40%	36%	50%	54%
	Gwet's AC1	**0.28**	**0.26**	**0.33**	**0.46**	**0.45**	**0.56**	**0.82**
	n	**72**	**108**	**112**	**94**	**123**	**88**	**187**
	LCI	**0.22**	**0.16**	**0.17**	**0.18**	**0.16**	**0.17**	**0.07**
	UCI	**0.22**	**0.16**	**0.17**	**0.18**	**0.16**	**0.17**	**0.07**



		2008	2009	2010	2011	2012	2013	2014
VSCC i.a.1.1	Percent agreement	55%	63%	65%	60%	64%	73%	69%
	Kappa	5%	20%	27%	19%	30%	44%	41%
	Gwet's AC1	**0.19**	**0.35**	**0.38**	**0.24**	**0.30**	**0.47**	**0.42**
	n	**100**	**119**	**110**	**119**	**106**	**77**	**13**
	LCI	**0.20**	**0.17**	**0.17**	**0.17**	**0.17**	**0.20**	**0.45**
	UCI	**0.20**	**0.17**	**0.17**	**0.17**	**0.17**	**0.20**	**0.45**



Appendix 6 Policy context

As a DHHS funded program, VASM needs to better understand the policy context within which it operates. This includes improved clarity within the VASM Secretariat as to the governance environment within which it operates, specifically interactions with other advisory groups to the Minister and its relationship within the College.

As discussed in section 6.4.2, there needs to be ongoing dialogue with the Department of Health and Human Services to better determine the current policy directions, program initiatives and other structures which may benefit from the audit outcomes and thereby provide more meaningful input to the overall quality process.

As part of this, there needs to be a stronger capacity to provide policy advice/briefings on relevant issues in a timely and informative manner.

Policy Briefing

A policy briefing is a short, stand-alone document that focuses on an issue. It should be no more than two pages long (use bullet points) and should ideally be structured to clearly specify:

- **Recipient** – who is the target audience? Is it the Minister, a program manager, the VSCC or other body;
- **Purpose** – what is the purpose of the briefing document? This could include presenting a report for approval, seeking advice or endorsement on an issue, or requesting noting of an issue;
- **Background** – provide a paragraph detailing the background to the issue. This provides the context for the information being provided. Whether in response to a request or as required under contract or because there has been an unforeseen event that requires the matter being raised with the particular person/body;
- **Issues/commentary** – this needs to provide the key issues that need to be highlighted to the recipient with appropriate commentary. Maintain the intent of the briefing and identify the salient points to support this aim and may include specific supportive data/research/analysis. Detailing of issues and the commentary needs to be brief and on point – distil points to provide the most essential information, no extraneous matter should be included. Supportive information can be included as attachments and clearly referenced within the body of the briefing;
- **Options/implications** (if applicable) – if there are alternative courses of action, these should be detailed in a clear and concise form with the implications for each option highlighted;
- **Recommendations** - provide a recommendation/s whether it is to note, endorse, determine one of the provided options etc.