

SAAPM REPORT 2015



ROYAL AUSTRALASIAN
COLLEGE OF SURGEONS



The Royal Australian
and New Zealand
College of Obstetricians
and Gynaecologists



South Australian Audit
of Perioperative Mortality



Government
of South Australia

SA Health



Australian and New Zealand
Audit of Surgical Mortality

SOUTH AUSTRALIAN AUDIT OF PERIOPERATIVE MORTALITY

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The information contained in this annual report has been prepared by the Royal Australasian College of Surgeons, South Australian Audit of Perioperative Mortality Management Committee.

The South Australian Audit of Perioperative Mortality is a confidential project with legislative protection at a state level by the *Health Care Act 2008* under Part 7 (Quality improvement and research) (gazetted June 2014).

The Australian and New Zealand Audit of Surgical Mortality (ANZASM), including the South Australian Audit of Perioperative Mortality, also has protection under the Commonwealth Qualified Privilege Scheme under Part VC of the *Health Insurance Act 1973* (gazetted 23 August 2011).

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Chairman's Report

This is the 10th report issued by the South Australian Audit of Perioperative Mortality (SAAPM). Last year the report was revised to highlight key findings in important areas such as clinical management issues, rather than showing lots of graphs and figures relating to variables that have remained unchanged (e.g. demographic data). We have continued that format this year as it was well accepted. We have several pieces of good news this year.

Our aim of 100% completion of surgical case forms (SCFs) is close to being a reality. The percentage of completed SCFs rose from 87% in 2012/13 to 93% in 2013/14, and has now increased to 96%. We remain second in the completion stakes, behind the Tasmanian Audit of Surgical Mortality (TASM), which has had 100% completion for several years. Involvement in the SAAPM is a requirement for all operating surgeons – otherwise the Royal Australasian College of Surgeons (RACS) cannot issue a continuing professional development (CPD) certificate. The CPD department has continued to be active in 2015 in checking compliance with the CPD requirements.

Hospital involvement remains strong, with all South Australian hospitals that perform surgery being involved. In general, the medical records departments are very helpful in providing the notifications of death and copies of the case notes if a second-line assessment (SLA) is needed. SA Health is also very helpful in assisting us in achieving the goals of the audit and in providing advice and other data as needed.

Last year I referred to data that suggested a decrease in the number of deaths occurring in the perioperative period. The SAAPM recorded a decrease in the number of notifications of death in 2013/14, from 638 in the previous audit period to 616. The trend has continued with a further fall to 564 in 2014/15. Other regions have noted a similar fall.

I cannot allow the 10th anniversary to pass without acknowledging the contribution of so many people over the last 10 years, and in particular the contributions made by my predecessor, Paul Dolan, and David Walsh, who have both served on the management committee from day one.

Please read this report and note the lessons. I encourage all surgeons to fully complete the SCFs that are generated from their activities. I also thank the many first- and second-line assessors who have helped us in 2014/15. I acknowledge the dedicated work by Sasha Stewart as project manager and Kimberley Cottell as senior project officer.

Glenn McCulloch FRACS
SAAPM Clinical Director and Chairman

SAAPM EXECUTIVE SUMMARY 2015

Participation...

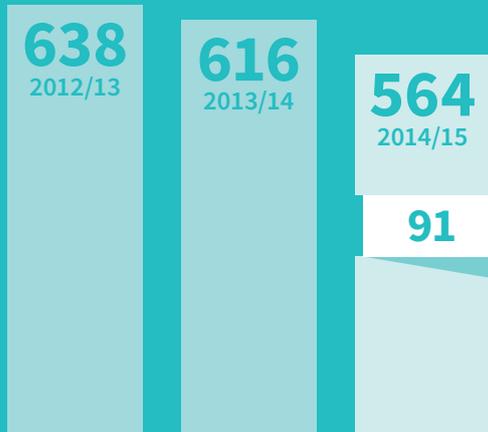
100% OF ELIGIBLE HOSPITALS
98% OF ELIGIBLE RACS FELLOWS
96% RETURN OF SURGICAL CASE FORMS

Surgical mortality...

564 SURGICAL DEATHS REPORTED
91 CASES WITH CLINICAL MANAGEMENT ISSUES
40 CASES WITH SERIOUS CLINICAL MANAGEMENT ISSUES



SURGICAL MORTALITY CASES:
TOTAL CASES OVER THE PAST 3 YEARS

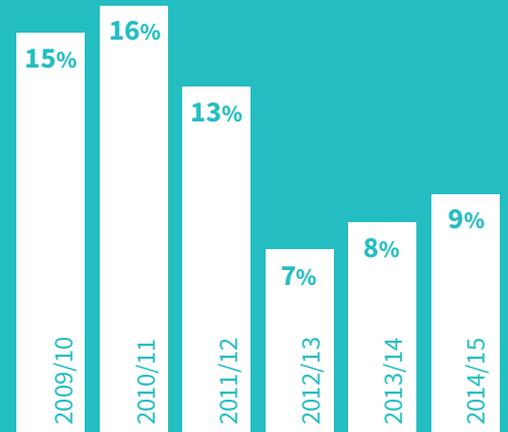


MOST COMMON SERIOUS CLINICAL MANAGEMENT ISSUES:
1. INADEQUATE ASSESSMENT/DIAGNOSIS
2. TECHNICAL ERROR
3. DECISION TO OPERATE;
TRANSFER PROBLEMS/DELAY;
UNSATISFACTORY POSTOPERATIVE CARE.

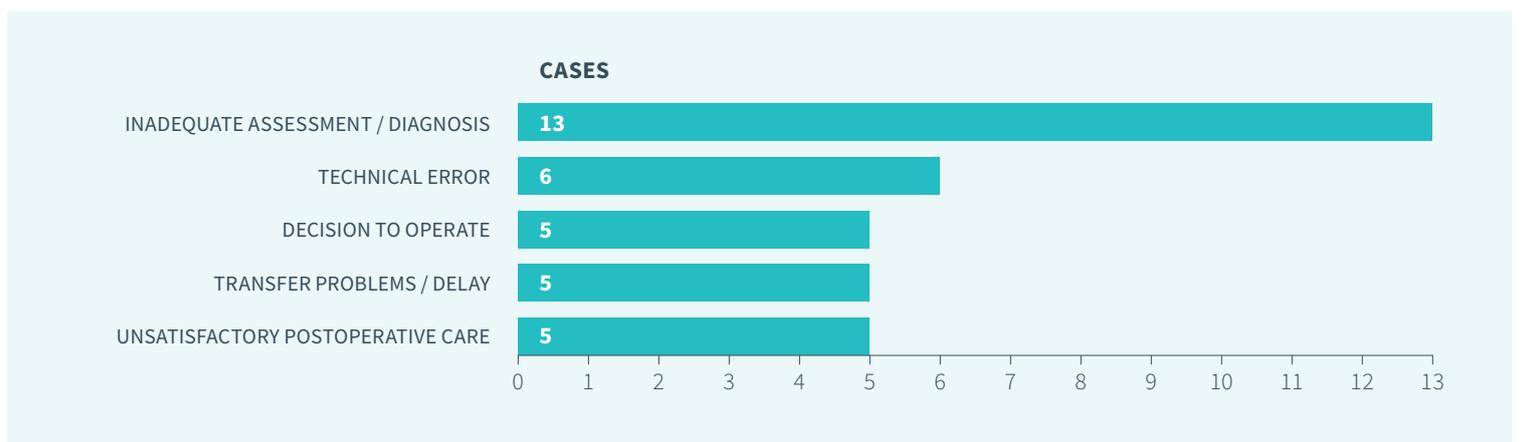
91 CASES HAD CLINICAL MANAGEMENT ISSUES.
40 CASES HAD SERIOUS CLINICAL MANAGEMENT ISSUES.



TREND IN SERIOUS CLINICAL MANAGEMENT ISSUES:
PROPORTION OF CASES (%)



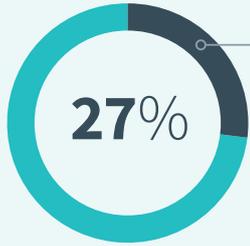
Most common serious clinical management issues identified by assessors – all cases...



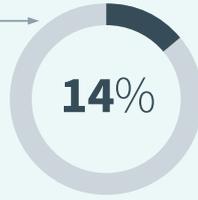
Clinical indicators...

Transfers

CASES WITH TRANSFERS

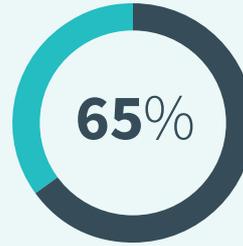


PROPORTION OF TRANSFERS WITH CONCERNS

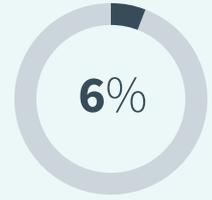


Critical Care Units

USE OF CRITICAL CARE UNITS (CCU)

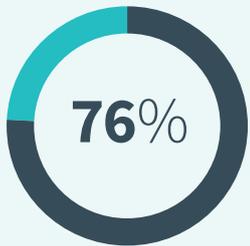


CASES WITH NO CCU, ASSESSOR FELT THAT IT WOULD HAVE BEEN BENEFICIAL

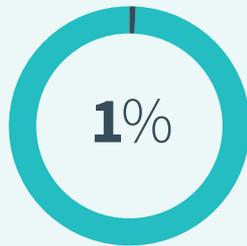


DVT Prophylaxis

USE OF DVT PROPHYLAXIS

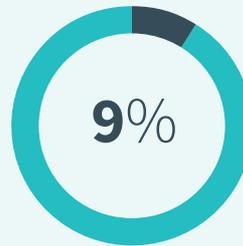


USE OR NON-USE OF DVT PROPHYLAXIS CONSIDERED INAPPROPRIATE



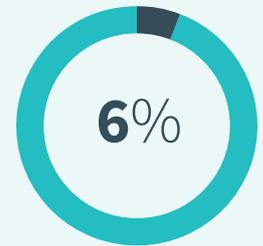
Fluid Balance Management

FLUID BALANCE CONSIDERED AN ISSUE



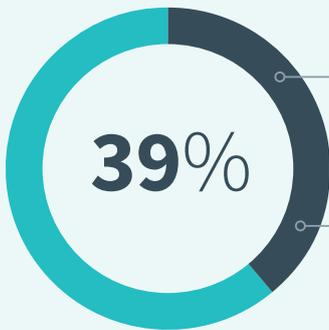
Diagnosis

DELAY IN DIAGNOSIS

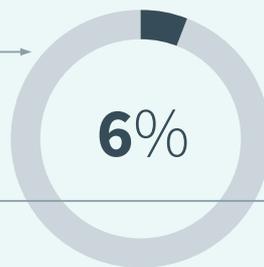


Infections

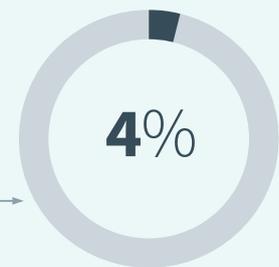
PATIENT DIED WITH A CLINICALLY SIGNIFICANT INFECTION



PROPORTION OF INFECTIONS = SURGICAL SITE

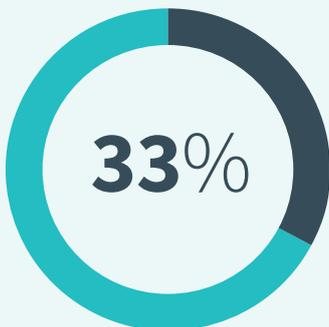


PROPORTION OF INFECTIONS = INVASIVE SITE



Postoperative Complications

OPERATIVE CASES WITH POSTOPERATIVE COMPLICATIONS



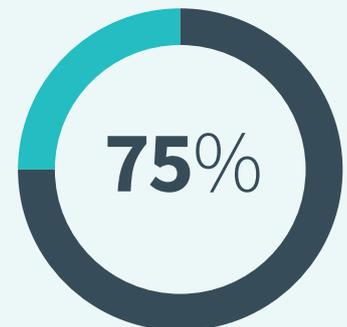
POSTOPERATIVE COMPLICATIONS WERE MORE PREVALENT AMONG ELECTIVE VS EMERGENCY PATIENTS

THE MOST COMMON POSTOPERATIVE COMPLICATIONS WERE:

1. POSTOPERATIVE BLEEDING
2. SEPSIS / INFECTION
3. TISSUE ISCHAEMIA

Consultant Involvement

SURGICAL PROCEDURES: CONSULTANT OPERATED, ASSISTED, OR WAS IN THEATRE

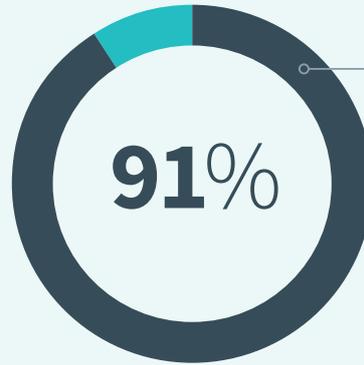


THE DECISION TO OPERATE OR NOT.

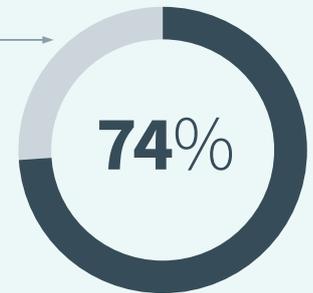
OVER **100** ATTENDEES

The program and presentations are available at:
www.surgeons.org/saapm

SEMINAR ATTENDEES FELT THAT THEY HAD GAINED VALUABLE KNOWLEDGE AND SKILLS



THE KNOWLEDGE AND SKILLS WOULD PRODUCE BETTER RESULTS IN THEIR ROLES



Recommendations to hospitals / health departments...

- > Ensure that medical records are accurate and up to date.
- > In response to the higher proportion of postoperative complications and serious clinical incidents among elective admissions, continue education on the importance of recognising the signs of the deteriorating patient.
- > Continue to promote Advance Care Directives among health care professionals and the community. Improve systems to ensure that existing Advance Care Directives are easily identified at the point of care and are incorporated into patient management as appropriate.

Recent and upcoming reports / activities...

✦ **Apr. 2016**

Clinical Governance Reports for hospitals

✦ **Apr. 2016**

9th National Case Note Review Booklet from the Australian and New Zealand Audit of Surgical Mortality

✦ **Jul. 2016**

Individual Surgeons Reports

✦ **Aug. 2016**

RACS SA, NT & WA Joint Annual Scientific Meeting

✦ **Oct. 2016**

Seminar: End of life matters

THANK YOU

SAAPM
South Australian Audit of Perioperative Mortality

to all participants & supporters

2013/14 Surgical Case Forms completed

2014/15 Surgical Case Forms completed

2015/16 Let's aim here for next year

93%

96%

100%

Recommendations

Improving the audit:

- Maintain the high return rate of SCFs with an aim to reach 100% compliance (from 96% in 2014/15).
- Continue to utilise the data obtained through the audit and disseminate important information through reports, scientific publications and educational seminars.
- Improve the completion of data collected on the SCFs to reduce the number of SLAs required due to insufficient information.
- Initiate a formal collaboration with anaesthetists to expand the audit to include anaesthetic cases.
- Submit a revised Qualified Privilege application to enable sharing of feedback with nominated members of the treating surgical team.
- Undertake educational activities to inform and promote discussion about issues surrounding end of life care.

Hospitals / health departments:

- Ensure that medical records are accurate and up to date.
- In response to the higher proportion of postoperative complications and serious clinical incidents among elective admissions, continue education on the importance of recognising the signs of the deteriorating patient.
- Continue to promote Advance Care Directives among health care professionals and the community. Improve systems to ensure that existing Advance Care Directives are easily identified at the point of care and are incorporated into patient management as appropriate.

1. Background

The SAAPM is an external, independent, peer-reviewed audit of the process of care associated with surgically-related deaths in South Australia. The SAAPM commenced data collection on 1 July 2005 and is funded by SA Health.

The SAAPM project falls under the governance of the Australian and New Zealand Audit of Surgical Mortality Steering Committee and has protection at a state level under the *Health Care Act 2008* (Part 7: Quality improvement and research) (gazetted 12 June 2014), in addition to federal coverage under the Australian and New Zealand Audit of Surgical Mortality (ANZASM) through the Commonwealth Qualified Privilege Scheme, Part VC of the *Health Insurance Act 1973* (gazetted 23 August 2011).

2. Audit process & conventions

The SAAPM is notified of deaths in all South Australian hospitals when a surgeon was involved in the care of the patient. The SAAPM team provides either a paper-based or electronic SCF to the treating surgeon to obtain the full clinical picture. Surgeons are asked to report against the following criteria:

- **area of consideration:** where care could have been improved or different, but may be an area of debate;
- **area of concern:** where care should have been better managed;
- **adverse event:** an unintended injury, caused by medical management rather than by disease, which is sufficiently serious to lead to prolonged hospitalisation or to temporary or permanent impairment or disability of the patient, or which contributes to, or causes, death.

The completed SCF is de-identified and reviewed by another consultant surgeon from the same specialty: this process is referred to as first-line assessment (FLA). The assessor completes an FLA form, providing comments on the case management and level of care provided to the patient. If the first-line assessor considers that there is insufficient information on the SCF to come to a conclusion, or if there are factors that warrant further investigation, an SLA is recommended. On completion of the assessment(s) the SAAPM team provides the feedback to the treating surgeon.

3. Audit participation

All eligible hospitals in South Australia currently participate in the audit (53 hospitals)¹.

All participating hospitals have provided notifications of surgical deaths for the 2014/15 reporting period. The majority of surgical deaths occurred in public hospitals (86%, 487/564), reflecting the higher number of complex procedures and high-risk patients treated in the public system.

In terms of participation by South Australian surgeons, 98% (365/371) of practising RACS surgeons have provided signed consent to participate in the audit. There were no recorded deaths associated with any of the six surgeons who are yet to return a participation form.

In 2012, the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Board approved a formal collaboration with the SAAPM. All gynaecology surgical deaths are now reported to the audit and RANZCOG Fellows are invited to participate voluntarily. To date, 100% (6/6) of gynaecology deaths reported to the SAAPM have been fully audited.

There has been a reduction in the number of deaths reported to the SAAPM in this reporting period. A total of 564 deaths were reported in 2014/15 compared with 616 deaths in 2013/14.

The proportion of SCFs returned to the SAAPM has increased. At the time of writing, 96% (541/564) of SCFs had been returned for this audit period, an improvement on the return rate reported in 2013/14 (93%, 570/616). Among the cases that were suitable for assessment², a high proportion of SCFs were completed by the consultant (78%, 359/462), with the remainder completed by a Surgical Education and Training Trainee (8%, 38/462), service registrar (8%, 38/462), Fellow (5%, 22/462) or International Medical Graduate (1%, 5/462) (Note: one case missing data).

1. This number is lower than the 54 eligible hospitals reported in 2013/14 due to one hospital no longer performing surgical procedures.
2. This excludes cases in which the treating surgeon indicated that the patient was admitted for terminal care. These cases are excluded from further assessment and no further information is obtained.

4. Assessments

During the reporting period, 564 SCFs were sent to surgeons. Of the 541 cases returned, 14% (78/541) were excluded because the patient was admitted for terminal care. Among the remaining cases that were suitable for assessment (463), five cases were still undergoing FLA, two cases were with the coroner awaiting a finding as to the cause of death, and one case required more information relating to the SCF. The remaining 98% (455/463) of these cases had a completed FLA, and of those cases, 7% (30/455) were referred for SLA. This is an increase in the proportion of cases referred for SLA from 2013/14, in which it was 2% (12/507). Five SLAs were still pending at the time of reporting.

5. Cases for analysis

If an SLA was completed, SLA data only were used in the analysis. For cases with no SLA, FLA data were used.

6. Reporting period

**01.07.2014-
30.06.2015**

Data analysed for this report covered cases reported to the SAAPM from 1 July 2014 to 30 June 2015. Please note that the denominator may change throughout the report. This is primarily due to questions being unanswered, which results in missing data.

564 SURGICAL DEATHS REPORTED

79.7 MEDIAN AGE AT DEATH

284 FEMALE PATIENTS

280 MALE PATIENTS

7. Patient sample demographics

Of the 564 patients who died, the majority were elderly, had pre-existing health problems and were admitted as emergencies for acute life-threatening conditions. Emergency admissions accounted for 88% (400/457, missing data n=6) of all cases for which data were available (FIGURE 1), the remaining 12% (57/457) being elective admissions. This was similar to 2013/14 in which 87% (443/512) of admissions were emergency admissions and 13% (69/512) were elective (FIGURE 2). The median age at death was 79.7 years (interquartile range, 68.7-86.9) and there were almost equal numbers of male patients (50%, 280/564) and female patients (50%, 284/564). TABLE 1 shows the number of cases reported to the SAAPM from each specialty.

Of the cases in which the SCF was returned, 58% (248/427, missing data n=36) of patients had an American Society of Anesthesiologists (ASA) grade of 4 or higher (ASA 4 representing a severe systemic disease that is a constant threat to life), while 90% (413/461, missing data n=2) had at least one significant comorbidity that increased the risk of death*. The most frequently occurring comorbidities were cardiovascular problems (58%, 268/461), advanced age (55%, 254/461) and respiratory disease (32%, 146/461) and these were reflected in the most common causes of death: respiratory and cardiac failure (see FIGURE 3).

*Note: each case can list more than one comorbidity.

TABLE 1: Number of death notifications by specialty (n=564)

Surgical specialty	Number of cases	%
General Surgery	251	44%
Orthopaedic Surgery	100	18%
Neurosurgery	79	14%
Vascular Surgery	45	8%
Cardiothoracic Surgery	42	7%
Urology	21	4%
Plastic and Reconstructive Surgery	12	2%
Otolaryngology Head and Neck Surgery	8	1%
Obstetrics and Gynaecology	3	1%
Paediatric Surgery	3	1%
Total	564	100%

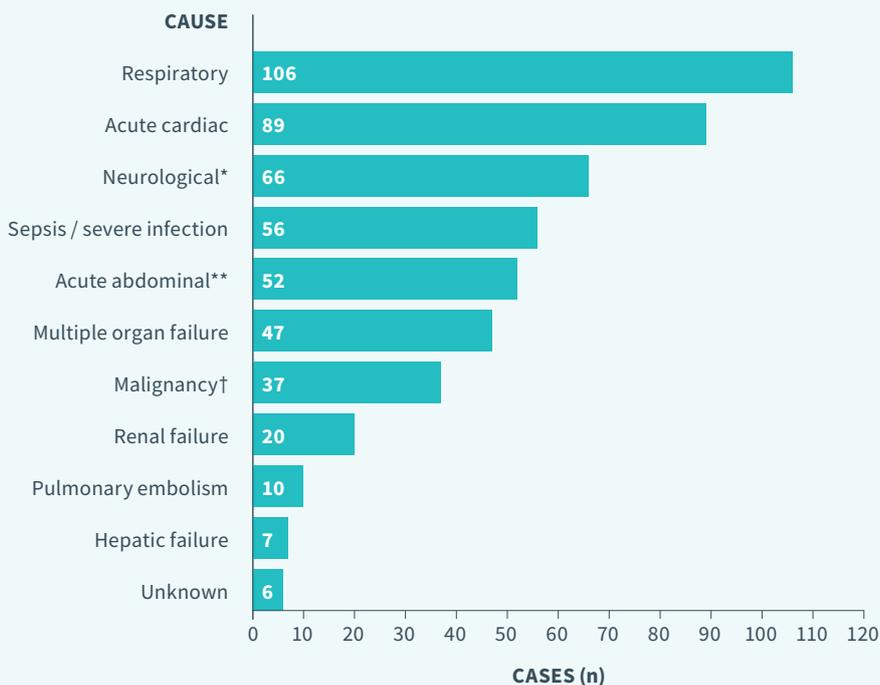
FIGURE 1:
ADMISSION STATUS
2014/2015



FIGURE 2:
ADMISSION STATUS
2013/2014



FIGURE 3:
FREQUENCY OF REPORTED CAUSES OF DEATH (n=463)



Missing data: n=0

Note: cause of death included if reported for five or more cases; cases can have more than one cause of death listed.

* Neurological includes intracranial haemorrhage, cerebral oedema, cerebrovascular accident, anoxic brain damage and head injury.

** Acute abdominal includes bowel obstruction, ischaemia, gastrointestinal haemorrhage, pancreatitis and perforation.

† Malignancy (all areas of the body including abdominal) has been classed as a separate category.

27% OF PATIENTS HAD PREOPERATIVE TRANSFERS 14% OF TRANSFERS HAD TRANSFER-RELATED ISSUES

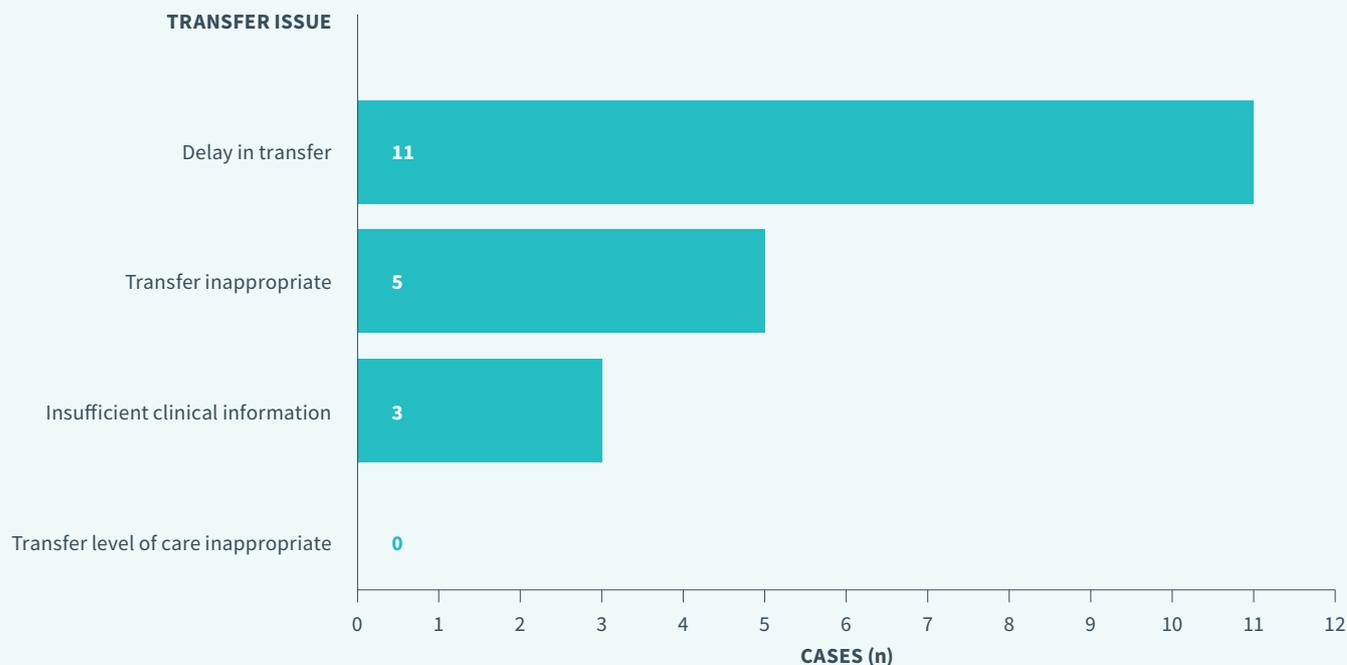
8. Transfers

The treating surgeon reported that preoperative transfer between hospitals occurred in 27% (126/459, missing data n=4) of audited cases. Such transfers were in response to the need for higher levels of care or specific expertise.

In the majority of transfers, no issues of concern were identified. In 14% (17/121, missing data n=5) of transferred cases, issues relating to patient care were identified. **FIGURE 4** shows the frequency of each type of transfer issue.

The most frequently reported transfer issues were 'delay in transfer' (9%, 11/121) and 'inappropriate transfer' (4%, 5/121). Some cases had more than one transfer issue.

FIGURE 4:
TRANSFER ISSUES IDENTIFIED BY TREATING SURGEON (n=121)



Missing data: n=5

65% OF PATIENTS RECEIVED CRITICAL CARE 76% OF PATIENTS RECEIVED DVT PROPHYLAXIS 9% OF PATIENTS HAD FLUID BALANCE ISSUES

9. Risk management

The audit collects data relating to aspects of patient care that are particularly important for high-risk surgical patients, including deep vein thrombosis (DVT) prophylaxis, fluid balance management, and the utilisation of, and level of satisfaction with, critical care units.

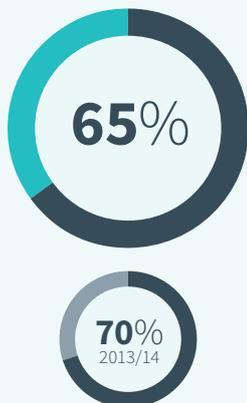
Utilisation of critical care units: critical care facilities were utilised in 65% (302/463) of cases (**FIGURE 5**). In cases where the patient did not receive critical care, the assessors considered that 6% of patients would have benefited from critical care (8/124, missing data n=17, answer 'not applicable' n=18).

DVT prophylaxis: surgeons reported that DVT prophylaxis was used in 76% (346/456, missing data n=7) of cases (**FIGURE 6**), slightly higher than the 74% (379/512) recorded for 2013/14. In most of the cases in which DVT prophylaxis was not used, there was an active decision to withhold it or it was not considered appropriate (98%, 103/105, missing data n=5). In the remaining 2% (2/105, missing data n=5) of cases prophylaxis was not considered. In 0.7% (3/447) of cases the assessors identified that DVT prophylaxis was not used when it should have been.

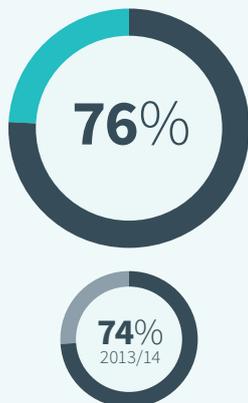
Assessors considered the use of DVT prophylaxis inappropriate in 0.7% (3/447) of cases (missing data n=2).

Fluid balance management: the treating surgeon reported that fluid balance was an issue in 9% (41/446, missing data n=5, answer 'unknown' n=12) of cases (**FIGURE 7**), which is similar to the proportion reported in 2013/14 (8%, 38/474). Fluid balance issues were more common among operative (11%, 34/313, missing data n=2) than among nonoperative (5%, 7/133, missing data n=3) cases (**FIGURES 8 & 9**).

**FIGURE 5:
USE OF CRITICAL CARE UNITS**



**FIGURE 6:
USE OF DVT PROPHYLAXIS**



**FIGURE 7:
FLUID BALANCE ISSUES – ALL CASES**



**FIGURE 8:
FLUID BALANCE ISSUES IN OPERATIVE CASES**



**FIGURE 9:
FLUID BALANCE ISSUES IN NON-OPERATIVE CASES**



6% OF CASES HAD PREOPERATIVE DELAYS IN DIAGNOSIS. OF THESE DELAYS:

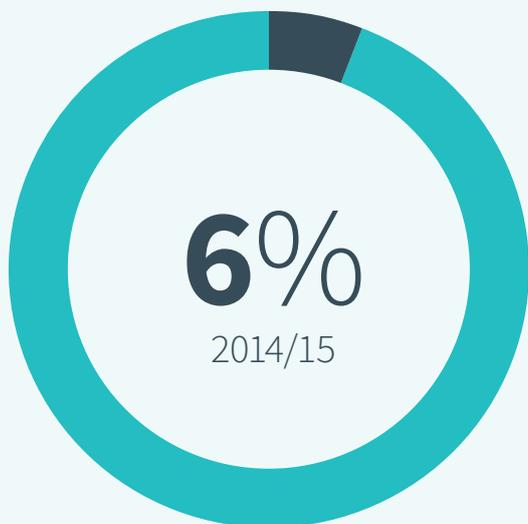
- **7** CAUSED BY FAILURE TO DO CORRECT TEST
- **7** CAUSED BY MISINTERPRETATION OF RESULTS
- **2** CAUSED BY INEXPERIENCED STAFF
- **2** CAUSED BY UNAVOIDABLE FACTORS
- **24%** ASSOCIATED WITH SURGICAL UNIT

10. Preoperative diagnostic delays

A preoperative delay in diagnosis was identified by the treating surgeon in 6% (26/461, missing data n=2) of cases (FIGURE 10). Of these, 24% (6/25, missing data n=1) were associated with the surgical unit.

The most frequently cited causes of diagnostic delays were failure to perform the correct test (7/23), misinterpretation of results (7/23), inexperienced staff (2/23) and unavoidable factors (2/23).

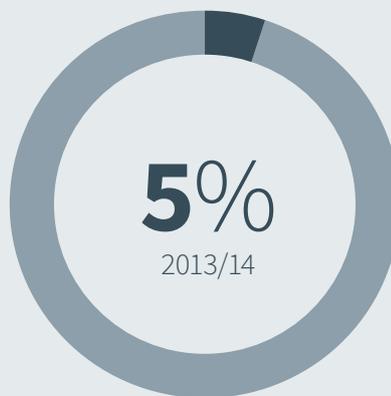
FIGURE 10:
CASES WITH PREOPERATIVE DIAGNOSTIC DELAYS



6%
2014/15

PROPORTION OF PREOPERATIVE
DIAGNOSTIC DELAYS ASSOCIATED
WITH THE SURGICAL UNIT

24%



5%
2013/14

30%



6%
2012/13

30%

488 SURGICAL PROCEDURES FOR **324** PATIENTS
93 PATIENTS HAD TWO OR MORE SURGICAL PROCEDURES
22% OF OPERATIVE CASES HAD UNPLANNED RETURN TO THEATRE
67% OF PROCEDURES HAD CONSULTANT OPERATING

11. Operative and nonoperative deaths

There was no operation performed in 30% (139/463) of audited deaths, and in 50% (60/119, missing data n=20) of those cases this was an active decision made by the surgeon. Other reasons for not operating included: not a surgical problem (43/119), rapid death (17/119) and refusal of treatment by the patient (17/119).

Overall, there were 488 surgical procedures performed on 324 patients. In 29% (93/324) of these cases the patient underwent two or more operations. Cases in which two or more operations were performed were twice as likely to have an area of concern or adverse event identified (RR 1.9233; 95% CI: 1.0421 to 3.5497). In 5% (15/324) of operative cases the operation was abandoned because a terminal situation was found, and in 22% (71/324) of operative cases the surgeon reported an unplanned return to theatre.

A consultant surgeon operated in 67% (309/464, missing data n=24) of the reported procedures (a slight increase from 65%, 337/516 in 2013/14) and made the decision to proceed to surgery in 91% (422/464) of reported procedures (FIGURE 11). Among cases with multiple operations, the level of consultant involvement (operating, assisting or in theatre) was higher for subsequent operations (80%, 118/147) compared with first operations (73%, 231/317), consistent with the 2013/14 report.

FIGURE 11:
CONSULTANT INVOLVEMENT IN OPERATIONS
2009/10 TO 2014/15



*Note: 'in theatre' indicates that the consultant was present in theatre but was not operating.

33% OF OPERATIVE PATIENTS HAD POSTOPERATIVE COMPLICATIONS:
 → **73%** OF ELECTIVE PATIENTS HAD POSTOPERATIVE COMPLICATIONS
 → **26%** OF EMERGENCY PATIENTS HAD POSTOPERATIVE COMPLICATIONS

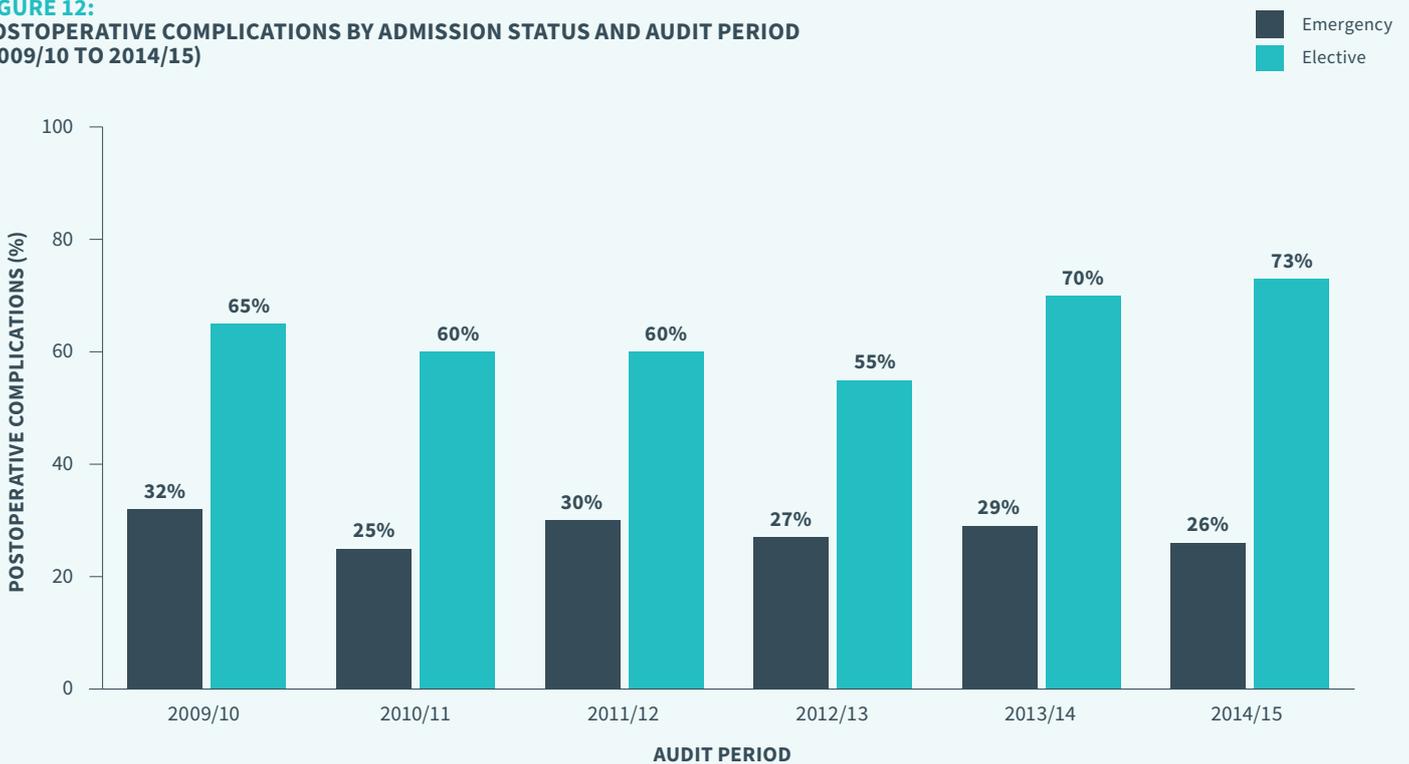
12. Postoperative complications

Postoperative complications are considered a major contributor to mortality in surgical patients. In 2014/15, 33% (106/321, missing data n=3) of operative patients had a postoperative complication (a decrease from 36%, 130/362 in 2013/14). This comprised a total of 129 complications among 106 patients. The most frequently occurring postoperative complications were postoperative bleeding, sepsis/infection and tissue ischaemia.

(Note: denominators not provided as there can be more than one complication per case). As shown in **FIGURE 12**, postoperative complications were more frequently reported for elective patients who died (73%, 38/52) compared with emergency admissions (26%, 68/266) (missing data n=6). This apparent paradox is explained by recalling that emergency patients had a poorer state of health on admission. The proportion of emergency patients who had an ASA score of 4 or higher

was 63% (231/364), compared with 23% (13/57) for elective patients (missing data n=42). A possible explanation for this discrepancy is that the emergency patients were “primed” for a bad outcome because of their comorbidities – they did not “need” a new event to cause their death. In contrast, elective patients were healthier and if they died were more likely to die as a consequence of a new event which will show in our data as a specific postoperative complication.

FIGURE 12:
POSTOPERATIVE COMPLICATIONS BY ADMISSION STATUS AND AUDIT PERIOD
(2009/10 TO 2014/15)



39% OF PATIENTS HAD CLINICALLY SIGNIFICANT INFECTIONS. OF THE INFECTIONS:

- **41%** ACQUIRED PRIOR TO ADMISSION
- **6%** SURGICAL SITE INFECTIONS
- **4%** OTHER INVASIVE SITE INFECTIONS

13. Infections

The audit began collecting data on clinically significant infections in 2011. The proportion of patients who died with a clinically significant infection in 2014/15 was 39% (179/458, missing data n=5), identical to the proportion reported in 2013/14. The types of infection reported are shown in **TABLE 2**.

TABLE 3 shows the stage at which the infection was acquired. The treating surgeon reported that the infection was acquired prior to admission in 41% (69/170, missing data n=9) of cases. Surgical site infections comprised 6% (10/170) of infections acquired during admission, up from 3% in 2013/14.

Other invasive site infections comprised 4% (6/170) of infections acquired during admission, identical to the proportion reported in 2013/14. The treating surgeon reported that the antibiotic regime was appropriate in 97% (169/175, missing data n=4) of cases where data were available, consistent with previous years.

TABLE 2: Type of clinically significant infection (n = 179)

Infection type	Number of cases	%
Pneumonia	94	53%
Septicaemia	39	22%
Other source	23	13%
Intra-abdominal sepsis	20	11%
Cranial/spinal infection	1	1%
Total	177	100%

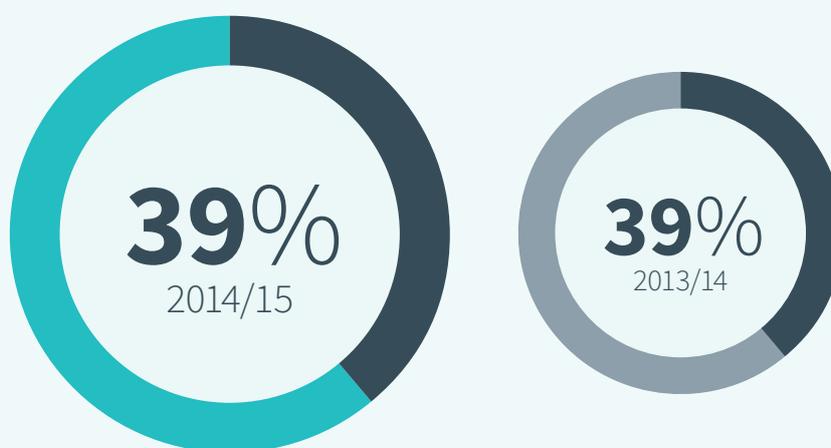
Missing data: n=2

TABLE 3: Timing of clinically significant infection (n=179)

Infection timing	Number of cases	%
Acquired prior to admission	69	40%
Acquired preoperatively	12	7%
Surgical site infection	10	6%
Acquired postoperatively	73	43%
Other invasive site infection	6	4%
Total	170	100%

Missing data: n=9

FIGURE 13: PATIENT DIED WITH A CLINICALLY SIGNIFICANT INFECTION



CLINICAL MANAGEMENT ISSUES – OPERATIVE CASES

- 8% DECISION TO OPERATE
- 6% PREOPERATIVE MANAGEMENT
- 5% POSTOPERATIVE CARE
- 4% CHOICE OF OPERATION
- 4% TIMING OF OPERATION
- 3% INTRAOPERATIVE MANAGEMENT

14. Clinical management issues identified by assessors

For each case reported to the SAAPM the first-line assessor was asked to identify and describe any clinical management issues. In 7% (30/455) of cases a more comprehensive assessment (case note review) was completed by a second-line assessor. An SLA occurs when the first-line assessor considers that insufficient information was provided on the SCF, or there were factors that warranted further investigation. The SLA is used in this analysis for cases that underwent both FLA and SLA.

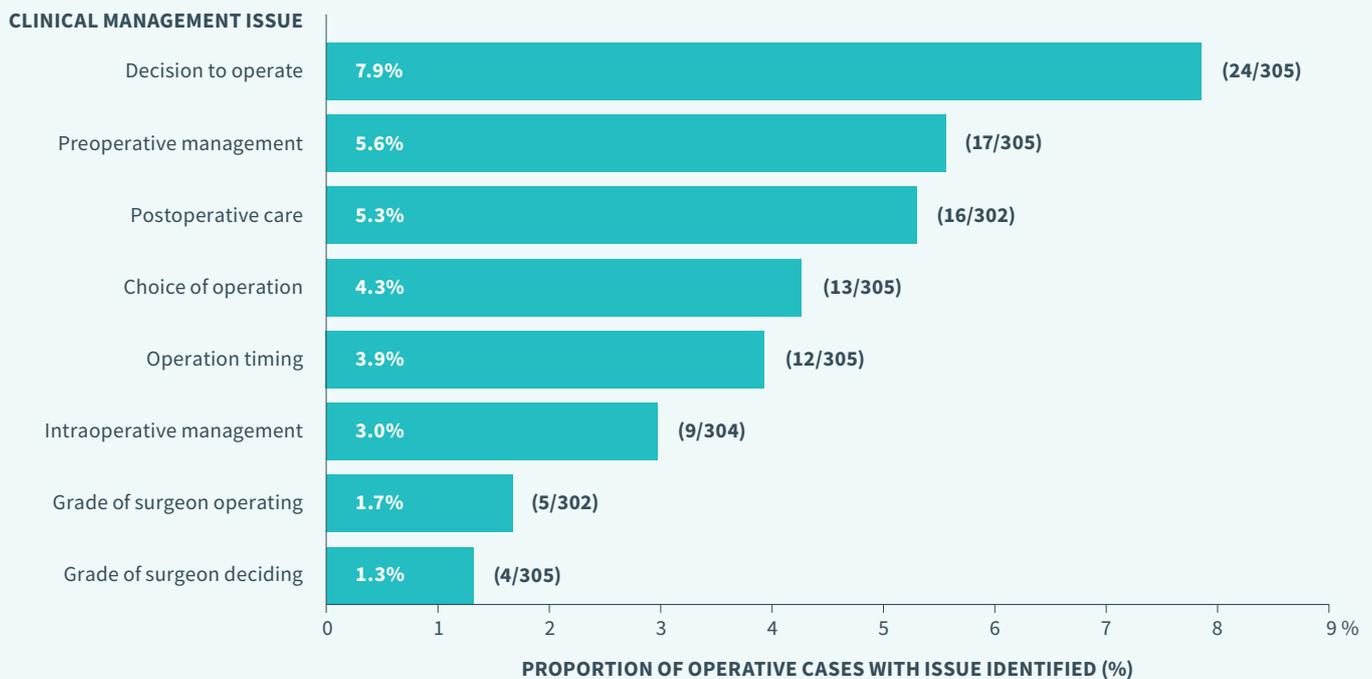
Clinical management issues are identified by assessors in two ways:

1. by indicating (yes or no) whether there were any concerns about specific categories of patient management (operative cases only)
2. by identifying and describing any perceived deficiencies of care in the management of the patient (both operative and nonoperative cases).

Clinical management issues associated with operative cases:

'Decision to operate' was the clinical management issue most frequently identified by assessors (8%, 24/305, missing data n=2, answer 'N/A' n=7), followed by 'preoperative management' (6%, 17/305, missing data n=2, answer 'N/A' n=7). In 2013/14, both 'decision to operate' (13%, 51/378, missing data n=2, answer 'N/A' n=10) and 'preoperative management' (11%, 43/375, missing data n=3, answer 'N/A' n=12) were identified more frequently. **FIGURE 14** shows the frequency of the different issues.

FIGURE 14: CLINICAL MANAGEMENT ISSUES IDENTIFIED BY ASSESSOR (OPERATIVE CASES)



Note: where the assessor noted that an issue was 'not applicable', this has been excluded from analysis.

91% CASES – NO SERIOUS CLINICAL MANAGEMENT ISSUES
117 CLINICAL MANAGEMENT ISSUES REPORTED
 → **48 SERIOUS CLINICAL MANAGEMENT ISSUES**
 → **24 SERIOUS ISSUES CONSIDERED PREVENTABLE**

14. Clinical management issues identified by assessors (continued)

Clinical management issues associated with all cases:

No serious clinical management issues (adverse event or area of concern) were identified in 91% (410/450) of cases which had completed the audit cycle. For these patients, death was due either to the disease process or to complications that were unavoidable given the presence of serious comorbidities. The proportion of cases for which areas of concern or adverse events were identified (9%, 40/450) was similar to the proportion reported in 2013/14 (8%, 41/505). **TABLE 4** shows the number of clinical management issues identified in 2014/15 by category.

The audited surgical team was considered responsible for 66% (63/96, missing data n=21) of the clinical management issues. (Note: Some clinical management issues were associated with more than one team). An overview of the attribution of responsibility for clinical management issues is provided in **TABLE 5**.

The majority of areas of consideration were in the preoperative period. The most frequently identified areas were:

- decision to operate;
- delay to surgery;
- different operation desirable;
- inadequate assessment / diagnosis;
- unsatisfactory postoperative care.

Assessors were asked whether the identified issue caused or contributed to the patient's death and whether it could have been prevented. Of the 48 most serious issues (categorised as areas of concern or adverse events), 75% (36/48) were assessed as having caused or potentially contributed to the death of the patient, and of those issues, 67% (24/36) were considered preventable. An overview of the outcome and preventability of serious clinical management issues is provided in **FIGURE 15**.

Assessors found that an adverse event, the most serious category of clinical management issue, caused the death of the patient in 2% (7/450) of cases. This is identical to the proportion reported in 2013/14.

Assessors identified 11 cases in which an adverse event or area of concern caused the death of the patient. Of the 11 deaths, 1 was considered definitely preventable and a further 7 were considered probably preventable. Intraoperative complications were the most frequently reported type of adverse event.

TABLE 4: Total number of clinical management issues

Clinical management issue	Number of issues
Area of consideration	69
Area of concern	34
Adverse event	14
Total	117

Note: some cases had more than one issue.

TABLE 5: Responsible unit associated with areas of consideration, concern or adverse events

Clinical management issue	Surgical unit	Another clinical unit	Hospital	Other
Area of consideration	38	11	6	2
Area of concern	18	12	2	1
Adverse event	7	6	1	2
Total	63	29	9	5

Note: Some clinical management issues were associated with more than one team; Missing data: n=21 cases.

FIGURE 15: OUTCOME & PREVENTABILITY OF SERIOUS CLINICAL MANAGEMENT ISSUES (AS VIEWED BY ASSESSOR)



*Categorised by assessor as probably or definitely preventable

Since the audit commenced there has been a general downward trend in the proportion of cases with serious clinical management issues, ($R^2 = 0.6929$) (see **FIGURE 16**).

14. Clinical management issues identified by assessors (continued)

In terms of responsibility for serious clinical management issues, assessors attributed 58% (25/43) to the audited surgical team, 42% (18/43) to another clinical team, 7% (3/43) to the hospital and 7% (3/43) to 'other' (note: assessors can attribute responsibility to more than one area, missing data n=5).

Serious clinical management issues were more than twice as common in elective admissions (19%, 10/53) compared with emergency admissions (8%, 30/392) (missing data n=5) (RR 2.23; 95% CI: 1.15 to 4.34), and this is consistent with previous years (see **FIGURE 17**).

This may reflect longer periods of care for elective patients, with emergency patients dying earlier as a result of their poorer health and presenting condition. The average length of admission for elective patients was 28 days, compared with 16 days for emergency patients.

FIGURE 16:
CASES WITH A SERIOUS CLINICAL MANAGEMENT ISSUE BY AUDIT PERIOD 2009/10 TO 2014/15

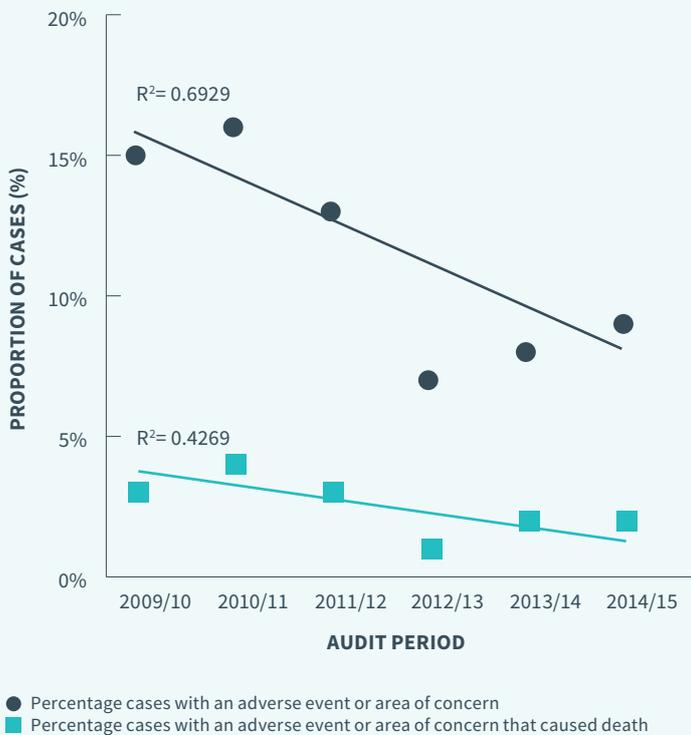
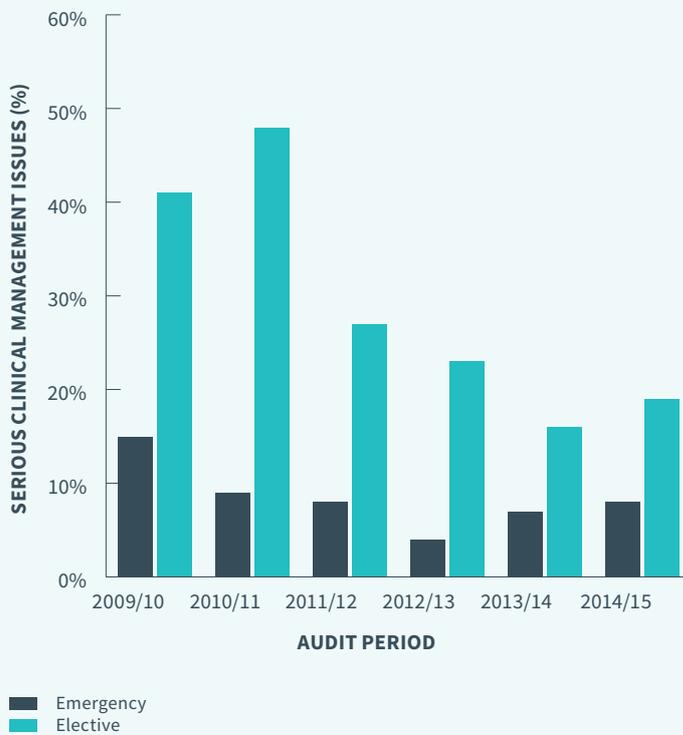


FIGURE 17:
SERIOUS CLINICAL MANAGEMENT ISSUES BY ADMISSION STATUS AND AUDIT PERIOD 2009/10 TO 2014/15



The type and frequency of serious clinical management issues is shown in **FIGURE 19**. Issues at the preoperative stage were the most commonly reported.

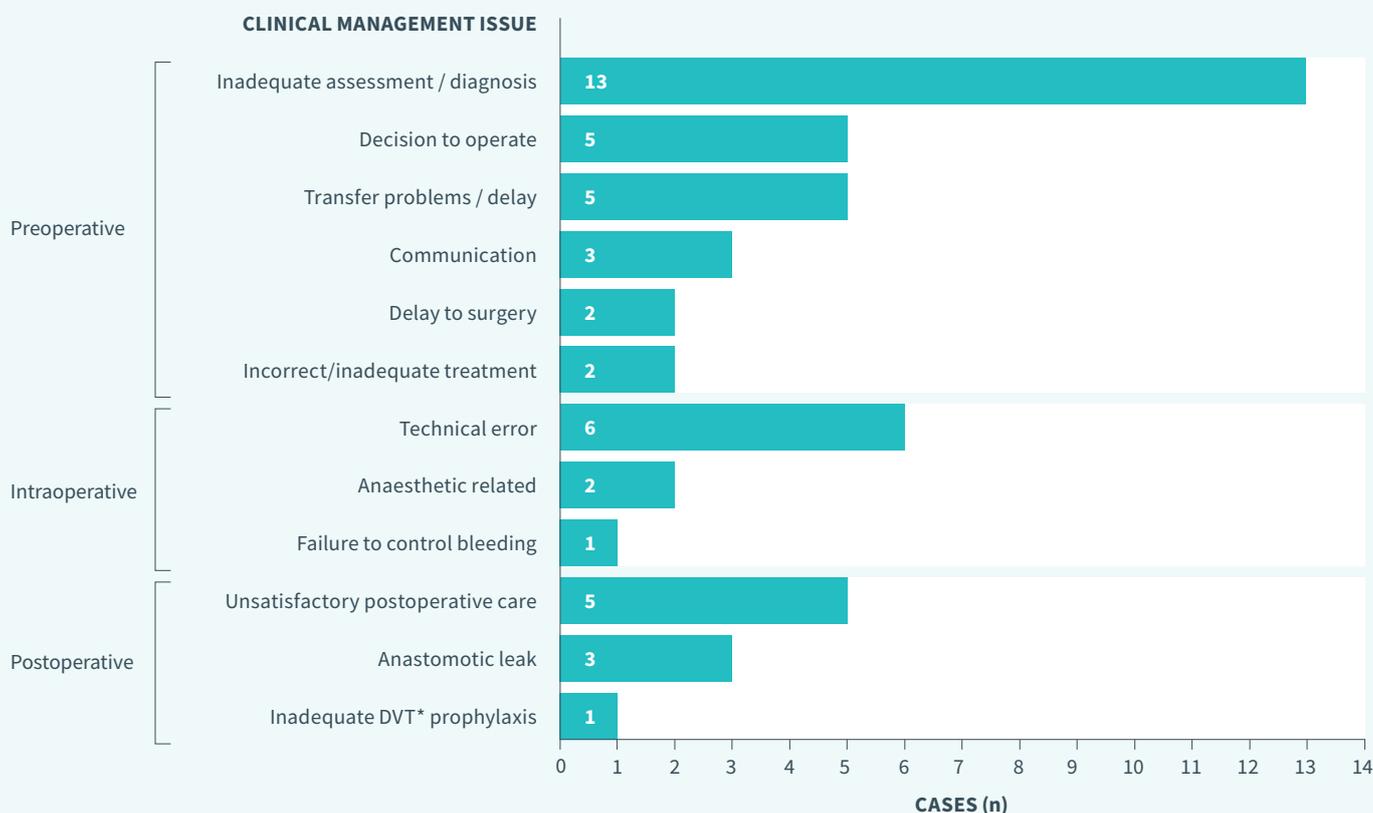
14. Clinical management issues identified by assessors (continued)

FIGURE 18:
SERIOUS CLINICAL MANAGEMENT ISSUES – RESPONSIBILITY



Note: Some clinical management issues were associated with more than one team.

FIGURE 19:
SERIOUS CLINICAL MANAGEMENT ISSUES IDENTIFIED BY ASSESSORS – ALL 2014/15 AUDITED CASES (n=450)



*DVT = Deep vein thrombosis

A number of recommendations were contained in the 2013/14 Annual Report and a summary of the progress in implementing those recommendations is provided in the table below.

15. Progress update

TABLE 6: Implementation of 2013-14 Annual Report recommendations: progress update

RECOMMENDATIONS	PROGRESS
Improving the audit	
Increase the rate of return of SCFs from the current rate of 93%.	Achieved (return rate 96%).
Introduce mandatory electronic submission of forms (SCFs and FLA forms) by the end of 2015.	In progress. Several IT enhancements have been released, based on surgeon feedback, to encourage electronic submission. Surgeons can now: <ol style="list-style-type: none"> 1. Generate their own death notifications (rather than relying on hospitals). 2. Delegate the case form for completion by a surgical colleague involved in the care of the patient. To allow time for the benefits of these enhancements to be promoted, and to assess their effectiveness, the introduction of mandatory electronic submission has been postponed until later in 2016.
Continue to develop and improve clinical governance reports for hospitals based on consultation with stakeholders.	Completed. Following consultation with stakeholders, particularly recipient hospitals, the second annual clinical governance reports are scheduled to be distributed in April 2016.
Increase the focus on targeted information (specialty specific and procedure specific) in publications and communications.	Completed. The SAAPM disseminates targeted information through a variety of media including seminars, individual surgeon reports, clinical governance reports, themed National Case Note Review Booklets and scientific journal articles. A 2015 seminar was held on the topic of 'The decision to operate' and a journal article focussing on clinical management issues in Neurosurgery has recently been accepted for publication in the ANZ Journal of Surgery.
Hospitals / Health Departments	
Obesity itself is a complicating factor in surgical procedures performed on morbidly obese patients. Consideration should be given to providing morbidly obese patients with preoperative weight loss support services in public hospitals and in the community through general practitioner health management plans.	In progress.
Increase education and awareness in medical units of the risk of acute abdomen.	In progress.
Increase education and awareness in emergency departments of the clinical presentation of ruptured aortic aneurysms.	In progress.
Increase education and awareness in medical units of the clinical features of necrotising fasciitis and Fournier gangrene.	In progress.

2015 SEMINAR ATTENDEE FEEDBACK

91% FELT THEY HAD GAINED VALUABLE SKILLS
→ **74%** AGREED APPLYING THOSE SKILLS WOULD
PRODUCE BETTER RESULTS IN THEIR ROLE

16. SAAPM 2015 seminar: The Decision to Operate – or Not

Clinical management issues at the preoperative stage, in particular the decision to operate, are consistently among the most frequently reported in the audit. Problems associated with the decision to operate usually relate to either a delay or failure to operate when doing so would have improved the outcome, or an inappropriate decision to operate in a futile situation. To inform and promote discussion about this issue, the SAAPM held a seminar in July 2015 titled 'The Decision to Operate – or Not'.

Presenters included surgeons from various specialties, as well as other clinicians, who discussed their personal experiences and the use of risk assessment tools to assist with decision making.

The seminar was very positively received with over 100 attendees including surgeons, surgical trainees, anaesthetists, nurses, resident medical officers, physicians, and hospital quality and safety staff.

A post-seminar evaluation survey was sent to all attendees. Of the respondents to the survey, 91% felt that they had gained valuable knowledge and skills, and 74% agreed applying those skills would produce better results in their role.

Comments included:

“All sessions were excellent and complemented each other (various opinions/perspectives).”

“I am often left dealing with the poor outcomes of surgery in elderly patients so found this very relevant to my work.”

“Fine discussion of intricate problem. This is a converted crowd, need to keep discussion going.”

The program and presentations can be viewed at: www.surgeons.org/saapm by clicking on the 'Seminars' link.

SAVE THE DATE!

The SAAPM will continue to conduct annual seminars based on issues identified through the audit.

The 2016 SAAPM seminar on the topic of **'End of Life Matters'** will be held on the evening of **Tuesday 25th October** at the Education Development Centre, Hindmarsh.

Further information will be provided in the coming months. Please register your interest at: saapm@surgeons.org

Examination of an important, common or emerging issue identified through the audit forms part of each report. This report looks at the issue of **END OF LIFE CARE** and patient-centred approaches to decision making.

17. A closer look: End of life care and Advance Care Directives

The issue

It is not surprising that among the cases audited by the SAAPM, surgeons often report having to deal with challenging end of life issues. These include decisions about whether to continue with active treatments, such as surgery, when the treatment has a high risk of death or the end of life is near. Acute hospitals now provide end of life care to the majority of people who die in Australia¹. The majority of surgical deaths occur in high-risk patients. For example, in this report the median age was 80 years and 90% of patients had at least one comorbidity that increased the risk of death (although it should be noted that advanced age itself can be identified as a comorbidity).

Since the inception of the audit the decision to operate has been one of the most common clinical management issues identified by assessors across all specialties. The attendance of more than 100 health professionals at a SAAPM seminar on the topic, held last year, further demonstrates that this is regarded as an important issue.

On the SAAPM SCF the treating surgeon is asked the question “In retrospect, would you have done anything differently?” When the answer is “yes”, many of the comments reflect on the appropriateness of having operated on elderly, high risk or terminal patients.

Cases in which the patient no longer has decision-making capacity are often the most difficult, and the decision about treatment is seen to be influenced by family members or even other clinicians.

For example:

“This patient was clearly not expected to have a good result following operation, the decision to operate was heavily influenced by the patient’s family despite several long conversations which took place and clearly explained the risks of operating.”

“The second operation was deemed to be futile in a patient with global ischaemia. It was difficult not to proceed with the family wishing to pursue all avenues.”

“Sometimes it is very difficult to resist family and other practitioners’ entreaties to operate. In these circumstances, I usually make my views prevail - but that is not always possible and sometimes the compassion has to be that of agreeing to operate.”

Many recognised the need for planning ahead. One case involved an elderly patient with advanced dementia (among a long list of comorbidities) and orthogeriatric input was only provided postoperatively. The treating surgeon commented:

“[Ideally in such cases, the orthogeriatrician would provide] a clear advanced clinical directive regarding comfort care measures postoperatively after discussion with the family with documentation in the record. This should be continuously updated and reviewed.”

It has been suggested by American general surgeon and author Atul Gawande², among others, that surgeons are often ill-prepared for end of life discussions, including when to stop treatment. Suggested barriers to effective communication include time constraints and lack of training. Concerns about the legal implications of limiting treatment may encourage continuation of active treatment.

Most would agree that the patient’s wishes should be the primary consideration in approaches to end of life care. However, this relies on the patient being well informed through open discussion about the implications of treatment or nontreatment, and the clinician having a good understanding of the patient’s wishes.

Tools and guidance

SA Health provides information, policies and procedures for clinicians about the following topics on its webpages, under the heading **End of life care**.

www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/end+of+life+for+health+professionals

The Medical Board of Australia published **Good medical practice: a code of conduct for doctors in Australia in 2014**. This includes section 3.12 End of life care.

www.medicalboard.gov.au/Codes-Guidelines-Policies/Code-of-conduct.aspx

Advance Care Directives

Research has shown that advance care planning can have a positive impact on end of life care, with benefits such as improved patient and family satisfaction and reduced stress and anxiety among surviving relatives.³ *The Advance Care Directives Act 2013 (SA)* and changes to third party consent came into effect on 1 July 2014. The changes promote a rights-based, patient-centred approach to health care and decision making. Under the new Act, the Advance Care Directive (ACD) replaces the existing Enduring Power of Guardianship, Medical Power of Attorney and Anticipatory Directions documents.

An ACD is a legal document that allows people over the age of 18 to:

- write down their wishes, preferences and instructions for future health care, end of life, living arrangements and personal matters, and/or
- appoint one or more Substitute Decision-Makers to make these decisions on their behalf when they are unable to do so themselves.⁴

The ACD only comes into effect in the event of impaired decision-making capacity.

Consent to medical treatment

Just as important as the introduction of the ACD have been the associated amendments to the *Consent to Medical Treatment and Palliative Care Act 1995* that give greater clarity in regard to the legal basis of end of life decision making and care. The fundamental basis on which others must make decisions for an individual who has lost decision-making capacity is now clear: they must genuinely try to do as the person would have wanted and make the decision “as if in their shoes”. There is clarity in regard to the hierarchy of individuals or documents that health practitioners must consult in obtaining consent for treatment: a Substitute Decision-Maker, followed by relevant instructions on an ACD, followed by a legally defined individual known as ‘Person Responsible’.

The legislation supports good end of life care in making it clear that medical practitioners do not have to provide treatment that is of no medical benefit (some call this “futile treatment”) to a dying patient, and that they will be protected in the provision of medication that is adequate in maintaining the comfort and dignity of their patient, even if this may have the secondary effect of shortening life.

17. A closer look: End of life care and Advance Care Directives (continued)

Resuscitation Plan 7 Step Pathway

To support the changes introduced in the new *Advance Care Directives Act 2013 (SA)*, SA Health has developed the Resuscitation Plan 7 Step Pathway. The pathway, (www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/end+of+life+for+health+professionals/resuscitation+plan+7+step+pathway), aims to improve how resuscitation and end of life care planning decisions are made and documented by doctors. This pathway recognises that while an ACD is important in documenting the wishes of an individual, it may not convey clear

enough instructions to be useful if the patient rapidly declines, or suffers a cardiac arrest, and urgent decisions about resuscitation need to be made.

The 7 Step Pathway walks the doctor through seven logical steps in making decisions about resuscitation and end of life care, in alignment with their legal (including ACD and Consent Acts), ethical, and professional responsibilities.

The process results in the development of an agreed resuscitation plan. Of paramount importance, the Resuscitation Planning process asks this essential question:

“If the patient is not for resuscitation or curative care, what are you going to do to ensure the comfort and dignity of your patient?” The aim of standardisation of use and recognition of a single process and form by all sectors - hospital, ambulance service, general practice, community and aged care - increases the chance that clinical instructions aligning with the person’s wishes will actually be carried out.

Increasing the uptake and implementation of Advance Care Directives

The prevalence of ACDs in Australia is low, but increasing rapidly, and when they do exist they are not always applied.⁵

To assist both consumers and health professionals, there is a range of resources including a do-it-yourself kit. (www.advancecaredirectives.sa.gov.au/upload/home/Current_ACD_Guide.pdf).

Changes to the administrative processes on admission to public health service are underway to enable access to ACDs at the point of care when needed, so that staff will know who to contact for third party consent.

The importance of training for health professionals has also been recognised, with a recent trial of a short multimodal education programme proving effective in improving doctors’ confidence in advance care planning.⁶

18. References

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