

ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

Obstetrics and Gynaecology Progress Report

in collaboration with the Australian and New Zealand Audits of Surgical Mortality

2009 to 2015



The Royal Australian
and New Zealand
College of
Obstetricians
and Gynaecologists



ROYAL AUSTRALASIAN
COLLEGE OF SURGEONS

ANZASM

Australian and New Zealand
Audit of Surgical Mortality



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1. Background

The Royal Australasian College of Surgeons (RACS) became responsible for the management of the Western Australian Audit of Surgical Mortality (WAASM) in 2005. WAASM was modeled on the Scottish Audit of Surgical Mortality, which has operated since 1988. The RACS has expanded the program to all other states and territories under the umbrella of ANZASM.

Completed RANZCOG data for the period 1 January 2009 to 31 December 2014 are included in this report from Australian Capital Territory, Northern Territory, Queensland, South Australia, Tasmania, Victoria and Western Australia.

Objectives

The principal aims of the audit are to inform, educate, facilitate change and improve quality of practice within surgery. The primary mechanism is peer review of all deaths associated with surgical care. The audit process is designed to highlight system and process errors, and to identify trends in surgical mortality. It is intended as an educational rather than punitive process.

Structure and governance

ANZASM is managed by the Research, Audit and Academic Surgery Division of RACS. ANZASM oversees the implementation and standardisation of each regional audit, to ensure consistency in audit processes and governance structure across all jurisdictions.

The individual regional audits are funded by their respective departments of health. The RACS provides infrastructure support and oversight to the project.

ANZASM receives protection under the Commonwealth Qualified Privilege Scheme, part VC of the Health Insurance Act 1973 (gazetted 23 August 2011).

As at the end of 2014, a total of 556 gynaecologists have agreed to participate in the ANZASM audit process. Participation for the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) surgeons is voluntary under their continuing professional development program.

2. National distribution of cases

There were 137 obstetric and gynaecology (O&G) cases reported to ANZASM between 2009 and 2015.

The national distribution of cases:

- Victoria 36.5% (50/137)
- Western Australia 27.7% (38/137)
- Queensland 15.3% (21/137)
- Tasmania 11.7% (16/137)
- South Australia 6.6% (9/137)
- ACT 2.2% (3/137)
- NT 0.0% (0/137)

This distribution may change as the number of cases reported increases over time.

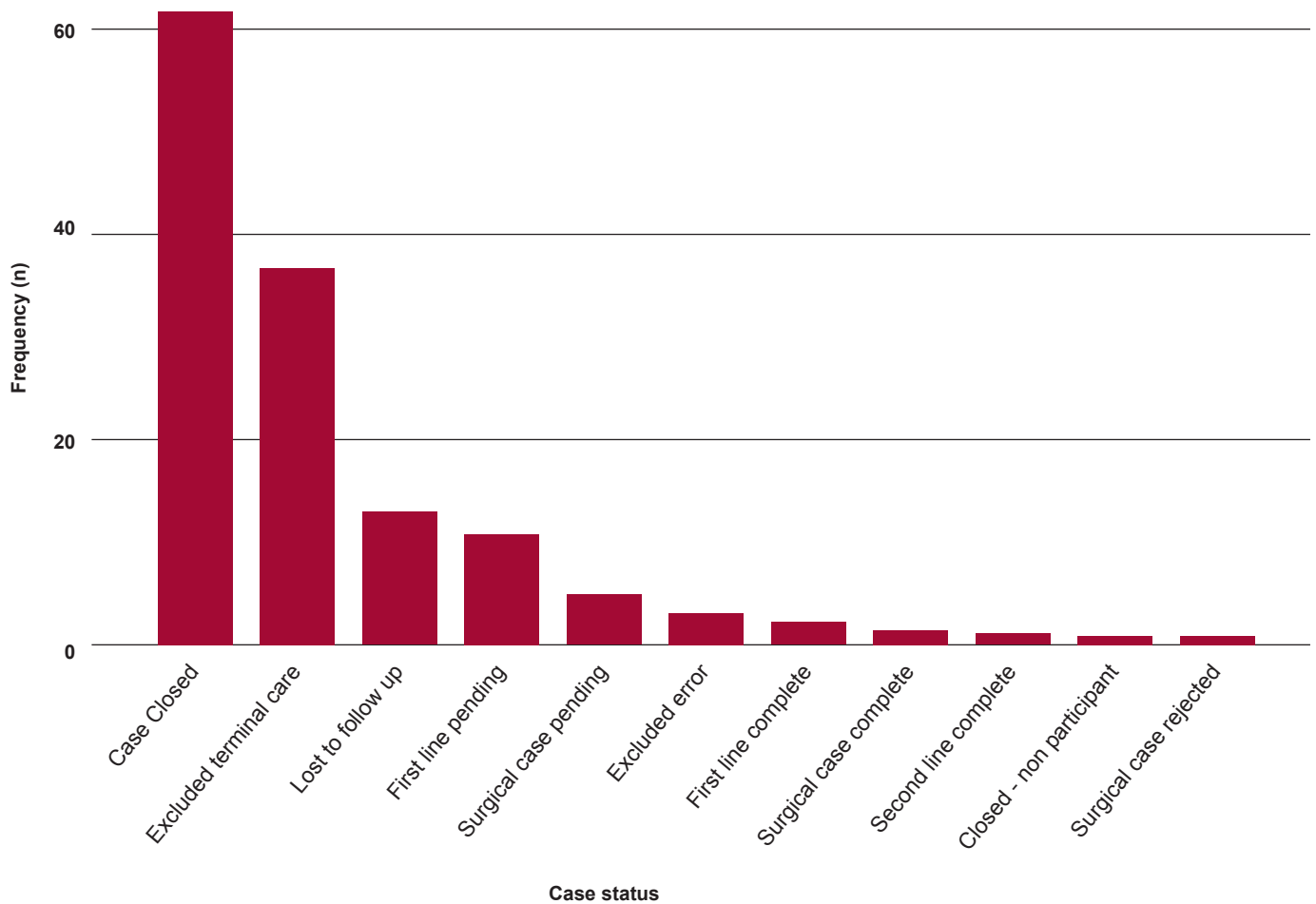
New South Wales does not provide data for obstetrics and gynaecology to ANZASM and therefore is excluded from this report.

3. ANZASM case status

The graph below highlights the case statuses of all the obstetric and gynaecological cases (see Figure 1).

A large proportion of cases were “excluded – terminal care” - 27% (37/137). These cases are not included in the following analysis.

Figure 1: Audit case status 2009-2015 (n=137)

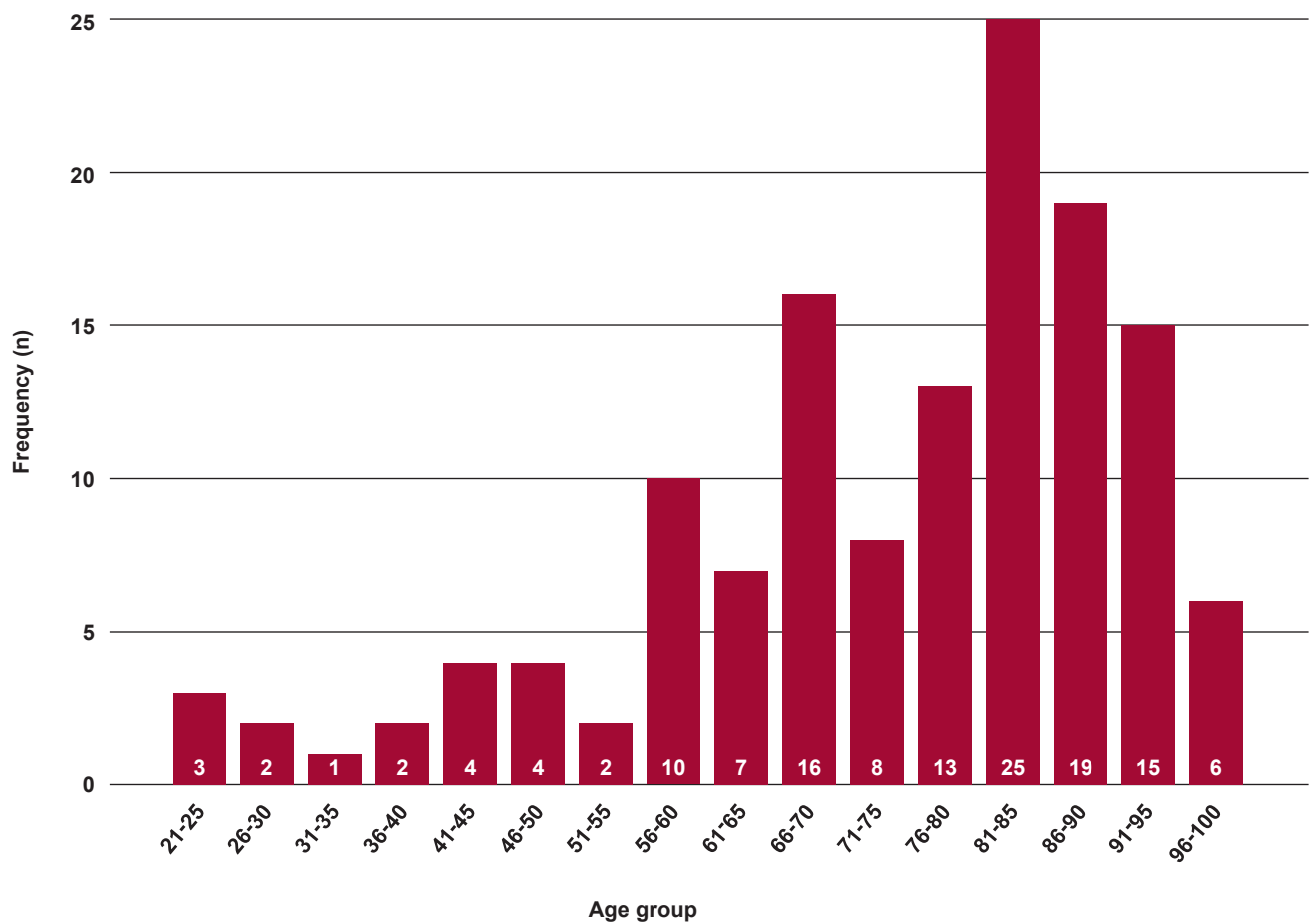


4. Demographics

Age: Obstetric and gynaecological surgical patients' age distribution is as follows (see Figure 2).

- Median age = 79 years
- Interquartile range (IQR) = 65 years to 87 years
- Minimum age = 21 years
- Maximum age = 100 years
- Mean = 74 years (standard deviation (SD) 18 years)

Figure 2: Age distribution by year 2009-2015 (n=137)



NOTE: For sections 5 to 9, only “closed cases” were analysed.

5. American Society of Anesthesiologists (ASA) grade

For obstetric and gynaecological patients, the most common ASA grade was three (see Table 1). All non-gynaecological patients had an ASA grade of four.

Table 1: ASA distribution of O&G patients (n=57)

ASA grade	Number	Proportion
ASA 1	9	15.8%
ASA 2	12	21.1%
ASA 3	24	42.1%
ASA 4	11	19.3%
ASA 5	1	1.8%

ASA 1	A normal healthy patient
ASA 2	A patient with mild systemic disease
ASA 3	A patient with severe systemic disease which limits activity, but is not incapacitating
ASA 4	A patient with an incapacitating systemic disease that is a constant threat to life
ASA 5	A moribund patient who is not expected to survive 24 hours with or without an operation
ASA 6	A brain-dead patient for organ donation

The nine obstetric and gynaecological cases of ASA grade one had the following surgical diagnoses stated on admission*:

- query ectopic pregnancy
- amniotic fluid embolism
- pyelonephritis; inevitable miscarriage
- sepsis from chorioamnionitis
- toxic shock
- twin pregnancy

*Three cases did not record admission diagnoses.

6. Comorbidities

The most common reported comorbidity was advanced malignancy.

- Advanced malignancy 66.2% (45/68)
- Cardiovascular disease 29.4% (20/68)
- Age 10.3% (7/68)
- Neurological issues 7.3% (5/68)

7. Malignancy

Malignancy was present in 66.2% (45/68) of obstetric and gynaecological cases whose cases were peer-reviewed. (note: 69 questions were not answered)

Surgeons felt that in 72.5% (37/51) of cases the malignancy contributed to the deaths of the patients (note: 3 surgeons could not confirm whether the malignancy contributed to the death of the patient.)

Non-malignancy

Obstetric and gynaecological patients who did **not** have malignancy had the following surgical diagnoses **stated**:

- *query haemorrhoids*
- *16 cm ovarian fibroma*
- *amniotic fluid embolism (not confirmed)*
- *ascites, para-ovarian cyst*
- *benign bilateral ovarian cysts*
- *Caesarean section for twins*
- *due to unexpected major vascular injury*
- *peritonitis with pyometra*
- *sepsis from tubo-ovarian abscess*
- *sterilisation*
- *suspected pelvic abscess – not found at operations*
- *uterine fibroid*
- *uterine fibroids*

Those obstetric and gynaecological patients who did not have a malignancy had the following age distribution:

- Median age = 81 years
- Interquartile range (IQR) = 66 years to 89 years
- Minimum age = 49 years
- Maximum age = 100 years
- Mean = 77 years (standard deviation (SD) 15 years)

8. Operations

- 88.3% (68/77) of obstetric and gynaecological patients who died had had operations.
- 10.4% (8/77) of obstetric and gynaecological patients did not have operations.

The most frequent operations were stated as:

- | | | |
|---|-------|---------|
| • <i>laparotomy approach</i> | 18.8% | (13/69) |
| • <i>exploratory laparotomy</i> | 11.6% | (8/77) |
| • <i>diagnostic laparotomy of female pelvis</i> | 10.1% | (8/77) |
| • <i>total abdominal hysterectomy</i> | 7.2% | (5/77) |
| • <i>abdominal hysterectomy and bilateral salpingoophorectomy</i> | 7.2% | (5/77) |
| • <i>radical hysterectomy</i> | 4.3% | (3/77) |

Complications:

Of the patients who had operations, 46.4% (32/69) had a postoperative complication (note: data missing on eight questions).

- Four cases had procedure-related sepsis: 12.5% (4/32).
- Three cases had significant postoperative bleeding: 9.4% (3/32).
- Two cases had a delay in recognising the complication: 6.2% (2/32).
- In closed cases for patients who had an operation, 14.3% (7/49) had an unplanned return to theatre.
- 71.9% (23/32) of complications were stated as “other” (as listed below):

- <i>acute renal failure & aspiration pneumonia.</i>	- <i>postoperative massive cerebral vascular accident</i>	- <i>small bowel perforation</i>
- <i>amniotic fluid embolism</i>	- <i>probably pelvic collection following her diagnostic hysteroscopy</i>	- <i>substantial troponin leak followed by severe congestive cardiac failure and pulmonary oedema</i>
- <i>cardiovascular compromise from gastrointestinal perforation</i>	- <i>progressive deterioration of pre-existing liver disease</i>	- <i>Wound breakdown</i>
- <i>chest infection, pulmonary embolus, pleural effusions.</i>	- <i>2 x pulmonary emboli</i>	- <i>Wound collection</i>
- <i>confusion, atelectasis</i>	- <i>recurrent ascites and problems with gastrointestinal tract function</i>	- <i>Wound infection</i>
- <i>infection/sepsis</i>	- <i>renal failure, urinary tract infection</i>	
- <i>paralytic ileus</i>	- <i>respiratory compromise</i>	
- <i>post-op abdominal sepsis (resection of gynaecological cancer associated with small bowel and rectal obstruction, malignant fistula. Rectal stump leak.</i>	- <i>small bowel injury</i>	

For all cases, when asked: “in retrospect, would you have done anything differently?”, 30.8% (20/65) of surgeons said they would have done something differently for these patient.

9. Clinical incidents

There was 25.8% (16/62) of obstetric and gynaecological patients with preventable clinical incidents (CI).

- Seven CIs were areas of consideration.
- Six CIs were areas of concern.
- Three CIs were adverse events.

area for consideration:

where the clinician believes an area of care could have been improved or different, but recognises that this may be debated

area of concern:

where the clinician believes that an area of care should have been better

adverse event:

an unintended 'event' caused by medical management, rather than the disease process. This event is sufficiently serious to contribute to or cause death.

Only the most serious CI for each patient are included in the list below. (note: many patients had more than one CI).

The most frequent, preventable CIs were:

- | | | |
|--|-------|--------|
| • <i>the decision to operate</i> | 18.8% | (3/16) |
| • <i>preoperative assessment inadequate</i> | 12.5% | (2/16) |
| • <i>postoperative inadequate respiratory monitoring</i> | 6.3% | (1/16) |
| • <i>failure to use deep vein thrombosis prophylaxis</i> | 6.3% | (1/16) |
| • <i>inadequate surgical assistance</i> | 6.3% | (1/16) |
| • <i>delay starting medical treatment</i> | 6.3% | (1/16) |
| • <i>intraoperative bleeding related to endoscopic operation</i> | 6.3% | (1/16) |
| • <i>perforation of small bowel during laparoscopic operation</i> | 6.3% | (1/16) |
| • <i>vascular injury to duodenum during laparoscopic operation</i> | 6.3% | (1/16) |
| • <i>open surgery, technical</i> | 6.3% | (1/16) |
| • <i>pulmonary embolus with no prophylaxis given</i> | 6.3% | (1/16) |
| • <i>injury to small bowel during endoscopic operation</i> | 6.3% | (1/16) |

In non-gynaecological ANZASM patients, the "decision to operate" is also the most frequent preventable clinical incident.

Conclusion

Involvement in ANZASM is a recent phenomenon for the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Surgical mortality audit is extremely important in obstetrics and gynaecology and should be a mandatory activity for practitioners in an effort to improve outcomes.

There are some factors that should be noted in the delivery of obstetric and gynaecological services:

- Obstetric and gynaecological services can be offered by practitioners who have variable experience and training – particularly in the rural setting.
- Very simple gynaecological surgical procedures can rarely result in life threatening complications (for example: unrecognised bowel perforation during a uterine curettage or simple laparoscopic procedure). These simple gynaecological procedures tend to be done on reasonably healthy women. Of note even though the age of the obstetric and gynaecological cohort was no different to the non-obstetric and gynaecological cohort, their most common ASA status was in fact better, being ASA 3 versus ASA 4 for the non-obstetric and gynaecological patients.
- Life threatening conditions resulting from pregnancy can rarely but rapidly occur in otherwise young and fit women.

From the data presented there seems to be three main causes of mortality in obstetrics and gynaecological patients: haemorrhage, sepsis and thromboembolic events. Within each of these areas there are certain common themes that may have led to a patient's poor outcome (namely delay in diagnosis or treatment, lack of surgical skill and failure to implement standard perioperative preventative strategies). Within each of these areas, audit and education will assist in reducing deaths in obstetrics and gynaecology and are therefore essential to improving healthcare outcomes for Australian women.

Dr Susan Valmadre
RANZCOG/ANZASM Representative

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- Associate Professor Ian Bennett (Chair, Research, Audit and Academic Surgery)
- Mr Barry Beiles (VASM)
- Professor Peter Zelas, OAM (CHASM)
- Mr Tony Sparnon (Councillor)
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- Mr Glenn McCulloch (SAAPM)
- Dr Cathy Ferguson (Perioperative Mortality Review Committee representative, NZ)
- Dr John North (QASM/ NTASM)
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- Dr John Tharion (ACTASM)
- Dr Sue Valmadre (RANZCOG Representative)
- Reverend Anthony Taylor (Consumer Representative)

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