



Government of **Western Australia**  
Department of **Health**

# From Death We Learn

## 2013

## Acknowledgements

Ms Ros Fogliani, State Coroner, Western Australia

Mr Alastair Hope, State Coroner, Western Australia (retired)

Ms Evelyn Vicker, Deputy State Coroner, Western Australia

Mr Dominic Mulligan, Mr Barry King and Mr Peter Collins, Coroners, Western Australia

Dr Robert Turnbull and Dr Suzanne Redknap, Medical Advisors to the Office of the State Coroner

Dr Gary Geelhoed, Chief Medical Officer, Department of Health, Western Australia

The Office of the State Coroner, Western Australia

The Health Services' Safety, Quality and Performance Units

All medical and nursing staff involved in the reporting and review of death

The patients and their families

The Patient Safety Surveillance Unit (PSSU) welcomes suggestions on how this publication series may be improved. Please forward your comments to [PSSU@health.wa.gov.au](mailto:PSSU@health.wa.gov.au).

Extracts of this document may be reproduced by public hospitals and health care agencies within Western Australia, provided due acknowledgement is given to the PSSU, Department of Health, Western Australia. Reproduction of this work for sale or commercial purposes should only be undertaken following written permission of the Executive Director, Patient Safety and Clinical Quality.

From Death We Learn and coronial inquest finding documents identified in this text can be downloaded from: [www.safetyandquality.health.wa.gov.au/mortality/coronal\\_liaison.cfm](http://www.safetyandquality.health.wa.gov.au/mortality/coronal_liaison.cfm).

## Disclaimer

All information and content in this material is provided in good faith by the WA Department of Health, and is based on sources believed to be reliable and accurate at the time of development. The State of Western Australia, the WA Department of Health and their respective officers, employees and agents, do not accept legal liability or responsibility for the material or any consequences from its use.

## Table of Contents

State Coroner's foreword	2
Editorial	3
Introduction to the Coronial Liaison Unit	4
Introduction to inquested cases	5
Documentation and communication	6
Vital signs are vital	8
A Big Day Out	11
Discharge medication dangers	13
An unusual presentation of a lethal complication	15
Death of a prisoner	17
VTE prophylaxis	19
An accidental death at work	21
Illicit drug use	23
Medication reaction	25
Concerns regarding clinical care	27
Confidentiality vs best interests	29
Unanticipated complications	31
Post-operative sepsis	33
The risks of telephone advice	35
Missing information	36
Emergency department overcrowding	37

## State Coroner's foreword

Families whose loved ones have died unexpectedly after seeking and/or receiving medical treatment may struggle to come to terms with the circumstances attending the death. Often, they look to an inquest to understand what happened and why, and expect that the death of their loved one will result in changes which could prevent similar deaths occurring in the future.

The most fundamental responsibility of any coroner is to investigate the circumstances of a reportable death to determine the cause and manner of death. The death may be investigated at an inquest and that investigation may or may not reveal contributing factors that result in recommendations being made in the interests of public health or safety.

In determining the circumstances attending a person's death, a coroner does not apportion blame. In keeping with the ethos of patient safety, a coroner may make comments about procedural and systemic improvements that could be made to prevent recurrence. Coronial recommendations provide health services with an opportunity to address risks to patient safety.

From a number of the cases summarised in this booklet it is clear that effective communication, including accurate and complete documentation, is essential in health care provision such that it enables informed clinical decision-making. It is a critical tool for the health professional's own continued management of the patient. Its importance cannot be overstated in circumstances of the transfer and/or handover of the patient to another health professional.

I urge all health professionals to be mindful of the risks inherent in inadequate communication, and the dire consequences that can transpire as a result.

The Patient Safety Surveillance Unit has provided these short clinical summaries to allow health professionals to benefit from the clinical messages and lessons learned.

I encourage all health services to utilise these summaries as a means of raising awareness of important messages which have come from the investigation of the circumstances attending these deaths so that lessons learned can protect the living.

Ms Ros Fogliani  
**STATE CORONER**

## Editorial

This is the eighth edition of *From Death We Learn*, released by the Coronial Liaison Unit within the Patient Safety Surveillance Unit, with the aim of increasing awareness of both the coronial process and the lessons learned from inquests over the past year. The large number of cases included in this edition reflects the increased efficiency of the Office of the State Coroner in addressing the cases that have accumulated over previous years.

Several cases in this edition highlight the importance of recognising and acting on abnormal vital signs. This area is increasingly recognised as contributing to adverse clinical events; in the past year 19 (6% of total) SAC1 incidents (clinical incidents resulting in serious harm or death) identified a failure to recognise or respond to clinical deterioration as a contributing factor. All clinicians should be aware of the WA Health *Recognising and Responding to Clinical Deterioration Policy* and their responsibilities with respect to patient care.

The first steps in recognising and responding to clinical deterioration are regular measurement and documentation of physiological observations. The frequency of these observations should be consistent with the clinical status of the patient (i.e. increased in frequency and rechecked when an abnormal finding is made) and any abnormal observations require communication and appropriate, timely response. “Track and Trigger” systems<sup>1</sup> have been shown to help with this process by specifying different levels of abnormal parameters and outlining the response or action required<sup>2</sup>; as a result WA Health has developed and implemented the *Adult Observation and Response Chart and the Children’s Early Warning Tool* which are now in use in all facilities across WA. Modifications to the response criteria on such charts should only be made in exceptional circumstances and with sound clinical justification<sup>3</sup>.

Finally, the Coronial Liaison Unit would like to extend a welcome to our new State Coroner, Ms Ros Fogliani. Ms Fogliani is a former Deputy Director and head of the Perth Office of Commonwealth Director of Public Prosecutions and has practised criminal law in WA for many years. She also has extensive administrative and managerial experience within the legal system. We look forward to working with her as she continues to develop and refine coronial processes in WA.

The Editors:

Dr Jennefer Love, Senior Clinical Advisor, Patient Safety Surveillance Unit

Dr Helga Weaving, Senior Clinical Advisor, Patient Safety Surveillance Unit

Ms Sarah Lamb, Senior Policy Officer, Patient Safety Surveillance Unit

<sup>1</sup> Systems designed to provide clinicians with an objective decision making process. Tracking refers to the graphing and monitoring of observations. A trigger is a predetermined observation threshold or clinical finding which triggers action. (NSQHS Standard 9, P.6)

<sup>2</sup> Australian Commission on Safety and Quality in Health care. Safety and Quality Improvement Standard 9: Recognising and Responding to Clinical Deterioration in Acute Health Care (October 2012). Sydney. ACSQHC 2012, p. 16.

<sup>3</sup> WA Health Clinical Deterioration Policy p4.

## Introduction to the Coronial Liaison Unit

The Coronial Liaison Unit (CLU) is situated within the Patient Safety Surveillance Unit at the WA Department of Health. Currently the CLU consists of two Senior Clinical Advisors and a Senior Policy Officer. It was established in 2005 as a health initiative to improve communication between WA Health and the Office of the State Coroner. The CLU facilitates the allocation of health-related findings from coronial inquests for implementation in hospitals and health services.

The CLU reviews all public inquests that have a health care aspect to them and places the recommendations via the Chief Medical Officer with the appropriate area within WA Health. Expert advice and comment on the recommendations and actions taken to improve patient safety in response to the inquest findings are fed back to the State Coroner in a biannual report.

The CLU also receives non-inquested<sup>4</sup> case reports from the Office of the State Coroner's Medical Advisors for the purpose of quality improvement. If there are aspects to these cases which are of concern, the CLU raises these issues with the appropriate clinical director from the relevant health service and seeks assurance that the death has been reviewed in a quality improvement environment.

For the purpose of quality improvement, the Coroner's Ethics Committee allows the CLU access to post mortem reports to assist clinicians to undertake mortality reviews. Where clinicians require post mortem findings to effectively review a death, an application for the preliminary results can be made via the CLU.

The CLU continues to work with the Office of the State Coroner to share lessons learned from mortality review to improve future patient care.

---

<sup>4</sup> Deaths which are reportable to the Coroner, that do not require a public inquest, but may have an aspect which needs investigation or review by the health system.

## Introduction to inquested cases

Under the *Coroners Act 1996 (WA)* every regional magistrate is contemporaneously a coroner. However, in practice the majority of Western Australian inquests in 2013 were conducted by: the State Coroner Mr Alistair Hope; Deputy State Coroner Ms Evelyn Vicker; and Coroners Mr Dominic Mulligan, Mr Barry King, and Mr Peter Collins.

Approximately 2,830 deaths are reported to the Office of the State Coroner each year. Of these, approximately 675 deaths are subsequently dealt with by the treating doctor by the issuing of a death certificate recording a cause of death. The remainder are accepted as coronial cases for further investigation and approximately 56 cases each year are subject to a public inquest.<sup>5</sup>

Public inquests are legal cases conducted in open courtrooms, and the coroner has a similar role to that of a judge of the Supreme Court. The objective of an inquest is to establish the facts surrounding the death of the person in question; it is not to determine any question of liability.

After hearing an inquest, a coroner must find, if possible:

- the identity of the deceased
- how the death occurred
- the cause of death
- the particulars needed to register the death under the *Births, Deaths and Marriages Registration Act 1998 (WA)*.

They are then able to make comments and recommendations regarding any matter connected with the death, including the provision of healthcare or the actions of other public sector agencies.

WA Health notes all coronial recommendations pertaining to health care, and provides regular reports to the Office of the State Coroner outlining the responses to each. These responses have been included in this report where the timeframe has allowed a response to be formulated prior to publication.

---

<sup>5</sup> Office of the State Coroner. Annual Report: 2012-2013 [internet]. 2013. Government of Western Australia. [cited 2014 January 24]. Available from: [http://www.coronerscourt.wa.gov.au/\\_files/Coroners\\_Court\\_Annual\\_Report\\_2013.pdf](http://www.coronerscourt.wa.gov.au/_files/Coroners_Court_Annual_Report_2013.pdf).

## Documentation and communication

### Key messages:

- Good communication; both between medical practitioners and patients, and between medical practitioners themselves, has the potential to save lives.
- Patients should be provided with all relevant discharge documentation at the time of discharge, and any follow-up plan should be clearly included in this documentation.

A 60-year-old woman died as a result of multi-organ failure following haemorrhage from her left femoral artery after a coronary angiography procedure. She had a history of coronary artery disease and this procedure was performed to investigate new symptoms consistent with unstable angina.

The angiography was performed via the left femoral artery and was documented to be an uncomplicated procedure. The deceased was reviewed by her cardiologist the following morning and was noted to have only a small haematoma to the left groin with mild tenderness. She was able to walk without any difficulty or discomfort. She was discharged with analgesia to take as required, ongoing anti-platelet medication (aspirin and prasugrel) and a 10-day course of Clexane to prevent acute thrombosis. She was also given a patient advice document advising her to contact the cardiologist or senior nurses at the hospital if the haematoma worsened.

The deceased complained of increasing pain and bruising in the groin over the next three days. She presented to her GP for review where she was noted to be in significant pain and bruising and haematoma was seen to extend down the thigh and over the lower abdomen. The extent to which the haematoma had expanded since discharge was not clear to the GP as there was no discharge documentation available and no attempt was made to contact the hospital or the treating cardiologist to obtain further information. The deceased was prescribed strong opiate analgesia and antibiotics and was sent home.

Her condition continued to deteriorate at home, and two days later she was taken by ambulance to a regional hospital. On arrival at the hospital, the deceased was in cardiac arrest secondary to hypovolaemic shock. She was resuscitated and transferred to a tertiary hospital where she underwent surgery to control bleeding from the angiogram puncture site.

Unfortunately, she developed complications including extensive ischaemic necrosis of the bowel, respiratory failure and renal failure. Despite several further surgeries and aggressive treatments in the intensive care unit she died from these complications seven days after her initial procedure.

### Inquest findings

The State Coroner found that death arose by way of accident and was due to multiple organ failure following haemorrhage from penetration of the femoral artery.

The State Coroner believed that had the deceased or her GP followed advice and sought input from her treating cardiologist or the hospital in the days immediately following the angiography her life may have been saved.



It was also considered likely that the outcome of this case would have been different had a discharge summary been forwarded directly to the deceased's GP informing her of the deceased's condition at discharge. The State Coroner recognised that medical practitioners are extremely busy and are reluctant to complete more paperwork than necessary, but felt that this case highlighted the fact that providing adequate communication to patients and their GPs is an important part of the provision of health treatment in hospitals. Discharge summaries need not be lengthy; standard forms and templates can be used while still enabling effective communication (which may save lives) to occur.

## State Coroner's recommendations

1. That all hospitals at which angiograms are performed should provide patients with a discharge summary, preferably containing a diagram of the body on which the extent of any haematoma could be marked and which would provide reliable information as to the extent of any bleeding, pain levels and medications at the time of discharge.
2. That any such discharge summary given to a patient should encourage the patients to retain that document and take it to any doctor seen in the event of complications, such as ongoing bleeding.
3. That any discharge summary provided to the patient should also be provided electronically or otherwise as quickly as practicable, to the patient's general practitioner.

### WA Health actions:

- Procedure Specific Information Sheets provide information about procedures including alternative treatments, any complications, expected outcomes and information about recovery. Patients are encouraged to retain the leaflet and use it to discuss their issues with a healthcare professional.
- Electronic discharge summaries are often provided to the patient's GP to facilitate follow-up care.
- Health services have reported that patients are advised to retain discharge summaries, or other clinical documentation, and present to their healthcare professional for follow-up care.

Reference: see [ASLETT inquest findings](#)<sup>6</sup>

<sup>6</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Aslett\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Aslett_finding.pdf)

# Vital signs are vital

## Key messages:

- Failure to recognise clinical deterioration is recognised as a significant factor in a significant proportion of adverse events.
- Regular measurement and documentation of physiological observations is an essential requirement for recognising and responding to clinical deterioration.
- Abnormal observations need to be responded to promptly and each hospital must have a formal documented escalation procedure that sets out actions required to respond to different levels of abnormal physiological observations.
- Effective communication and team work among clinicians is also essential. This includes structured clinical handovers which identify patients who are, or are at risk of, deteriorating and information about the most recent observations and clinical assessment particularly vital signs *outside of normal range*.

A 46-year-old woman died as a result of complications of an air embolism which occurred during an endoscopic procedure undertaken to correct complications of earlier surgeries.

Approximately six months prior to her death the deceased had undergone an elective laparoscopic sleeve gastrectomy (removal of a large part of the stomach) as a treatment for obesity. During this procedure a mechanical stapling device malfunctioned and the surgeon was required to hand-sew a portion of the stomach closed.

Following her surgery the deceased was admitted to a ward and for the first 24 hours her recovery proceeded as expected. However during the second night she developed elevated heart rate, blood pressure and respiratory rate with a low oxygen saturation. Sweating, fever and shoulder-tip pain were also documented along with greenish fluid in the abdominal drains. At no point were concerns raised regarding these observations. The deceased was seen the next morning by her surgeon who documented her to be “stable”.

The deceased remained unwell with persistently elevated heart rate and respiratory rate, fever and hypoxia requiring supplemental oxygen. She was commenced on IV antibiotics by her treating surgeon for a presumed chest infection, however was not physically reviewed by him. She was also requiring morphine for increasing pain. Routine observations were continued four to six-hourly. Despite these observations indicating progressively severe sepsis and almost constantly meeting the criteria for a “medical emergency team” (MET) call, no such call was made, the frequency of observations was not increased and no additional medical assessment was requested. The deceased remained on the ward for three days with her condition deteriorating before she returned to surgery to drain an intra-abdominal abscess and repair a leak in the stomach staple line.

The deceased remained critically ill and required intensive care following her second procedure. She subsequently developed a number of complications including further leakages from the stomach suture line, intra-abdominal abscesses and peritonitis, all of which required multiple repeat surgeries and procedures over the ensuing months.

Ultimately, due to ongoing inflammation, numerous surgical incisions and scar formation, the deceased developed entero-cutaneous fistulae (tracks connecting her bowels to the surface of the abdominal skin). Repair of these fistulae was attempted by a second surgeon at a separate tertiary hospital however during this difficult procedure air was able to enter her blood vessels and heart causing a cardiac arrest. She was resuscitated in the operating theatre but died six days later in the intensive care unit after it was demonstrated that she had sustained extensive hypoxic brain injury during the arrest.

## State Coroner's comments

The State Coroner was concerned that the poor quality of treatment and care provided to the deceased by the surgeon and nursing staff at the initial hospital contributed to her death. It was felt that the failure to take adequate observations of a patient who was seriously ill constituted a gross failure on the part of the hospital and the nurses involved in the treatment of the deceased.

The State Coroner also felt that the quality of care and treatment provided by the initial treating surgeon was grossly inadequate. There were a number of features of the case which should have resulted in particularly careful and close monitoring of the deceased's condition, yet this did not occur. As a result reference was made to the Australian Health Practitioner Regulation Agency (AHPRA) regarding the surgeon.

It became clear during the course of the inquest that there were serious inadequacies in the extent of communication between nurses in relation to the deteriorating health of the deceased. In particular nurses gave evidence that they would have made a medical emergency call, had they been alert to observations contained in the observation charts, but said that these had not been drawn to their attention. It appeared that there was a lack of communication between nurses on the shifts and a lack of communication at the time of handover from shift to shift.

## Inquest findings

The cause of death was found to be a result of complications following cardio-respiratory arrest in association with an air embolism during a gastroscopy and stenting procedure for a chronic abdominal fistula following a sleeve gastrectomy for obesity.

The State Coroner found that death arose by way of misadventure.

## State Coroner's recommendations

1. Communication regarding abnormal vital signs
  - a) In the event that vital signs of a patient are significantly outside the normal range, the nurse taking the observations should be required to advise the senior nurse of the shift of those changes.
  - b) At the time of the next handover, information about any vital signs detected during the shift to be significantly outside the normal range should be communicated to the next nursing shift.
  - c) There should be an entry in the Integrated Progress Notes relating to those vital signs indicating why it was considered that the vital signs were out of range, whether they were improving or getting worse and what action was being taken in respect of those signs.
  - d) When observations record vital signs outside the normal range, the next set of observations should be taken within a short period of time, not left until the next routine observations are due.
2. Private hospitals should put in place a system of audits to ensure that when MET calling criteria are met, MET calls are in fact being instigated and appropriate action is being taken.

## WA Health actions:

- The development and implementation of the Adult Observation and Response Chart (A-ORC) was an outcome of the Recognising and Responding to Clinical Deterioration program. The chart, supported by the *Recognising and Responding to Clinical Deterioration Policy* (2014), stipulates the physiological trigger points and escalation levels when treating the deteriorating patient. The Children's Early Warning Tool (CEWT) is used in the paediatric health care setting.
- The *Clinical Handover Policy* (2013) outlines the iSoBAR framework for handover to ensure that all relevant patient information is communicated during clinical handover of patients.

## References:

[McKAY-HALL inquest findings](#)<sup>7</sup>

[WA Health Clinical Deterioration Policy 2014](#)<sup>8</sup>

[Clinical Handover Policy 2013](#)<sup>9</sup>

---

<sup>7</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/McKay-Hall\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/McKay-Hall_finding.pdf)

<sup>8</sup> [http://www.health.wa.gov.au/circularsnew/circular.cfm?Circ\\_ID=13070](http://www.health.wa.gov.au/circularsnew/circular.cfm?Circ_ID=13070)

<sup>9</sup> [http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ\\_ID=13048](http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ_ID=13048)

## A Big Day Out

### Key messages:

- All medical personnel should maintain an awareness of illicit drugs in use within the community and clinical features of intoxication with these drugs.
- Abnormal vital signs should be rechecked and acted upon promptly.

A 17-year-old girl died of acute methylenedioxy-methylamphetamine (MDMA), commonly known as ecstasy, toxicity following ingestion of three tablets of ecstasy at an outdoor rock concert.

The deceased had taken one MDMA tablet at home prior to attending the concert. She had taken a further two tablets while queuing to enter the venue. About an hour after entering the venue, the deceased was noted to have developed symptoms including muscle twitches and difficulty balancing. She was taken to a first-aid post where she deliberately gave false information regarding both her age and her drug use.

She was seen by a first-aid volunteer and noted to have had an elevated heart rate of 120 beats per minute and respiratory rate of 22 breaths per minute. However in the absence of any knowledge about her drug use, the significance of these findings was not appreciated at the time. Her temperature was not measured. After approximately 25 minutes she stated that she was feeling better and had drunk some water and she left the first-aid post with her friends.

Almost an hour later, the deceased developed more serious features of MDMA toxicity and collapsed. She was taken by security staff to another first-aid post where she then had a seizure. She was found to be more tachycardic with a pulse of over 150 beats per minute and she was hot to touch suggesting hyperthermia. It was only then that the correct information regarding her earlier drug ingestion was disclosed. Attempts were made to actively cool her and she was transferred by emergency ambulance to a tertiary hospital.

The deceased arrived at the hospital approximately three hours after her ingestion. She had a reduced level of consciousness with a Glasgow Coma Score of 6, and severe hyperthermia with temperature 43°C. Her serum potassium was elevated and she had resultant cardiac arrhythmias. Her condition continued to deteriorate and she developed severe acidosis, acute renal failure, acute respiratory distress syndrome and disseminated intravascular coagulation. Despite aggressive treatment, she died approximately 24 hours after her ingestion of the ecstasy tablets. A toxicology analysis detected lethal levels of MDMA in samples of the deceased's blood taken both before and after her death.

### Coroner's comments

During the inquest the level of medical and first-aid services provided at the concert was evaluated. At the time of the deceased's death event organisers were required to comply with a set of guidelines published by the Department of Health. The number of first-aiders and first-aid posts provided was found to have been in excess of the minimum requirements outlined in the guidelines, however it was felt that the first-aid officers did not have sufficient training or expertise in relation to the nature and effect of illicit drugs, or how to identify and respond to a person suffering from an overdose. It was noted that in the case of the deceased that the job of the first-aid officer was made very difficult by the deliberate provision of false information. Overall, with the benefit of hindsight and experience, the medical precautions taken at the time were not considered adequate to

deal with major medical emergencies such as that of the deceased. There was also some confusion regarding the level of qualifications of privately contracted staff employed in the role of “paramedic”.

During the course of the inquest, the Coroner attended a similar event – the 2013 Big Day Out, and found that medical services had been significantly increased, were of a very high standard and were well in excess of the requirements of current guidelines.

## Inquest findings

The cause of death was found to be a result of acute MDMA toxicity, following the ingestion of three ecstasy tablets. The Coroner found that death arose by way of accident.

## Coroner’s recommendations

1. That the Director General of Health should consider revising the current Guidelines for Concerts, Events and Organised Gatherings 2009, so that organisers of future similar large-scale public events are required to provide the standard of medical care achieved at the 2013 Big Day Out.
2. That the Director General of Health consider creating a definition of ‘paramedic’ and that he considers a form of registration that will ensure that only appropriately qualified people are entitled to use the title of paramedic and to be able to practise in Western Australia as a paramedic.

### WA Health actions:

- The Coroner’s recommendations and concerns will be considered in the revision of the *Guidelines for Concerts, Events and Organised Gatherings 2009*. Any changes would be supported by changes to the appropriate legislation.
- WA Health continues to engage in the process to review the regulation of the paramedic profession at a national level through the development of a Decision Regulatory Impact Statement to be considered by the Australian Health Workforce Ministerial Council.

Reference: see [THOMS inquest findings](#)<sup>10</sup>

<sup>10</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Thoms\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Thoms_finding.pdf)

## Discharge medication dangers

### Key messages:

- Decisions regarding patient care should be made with all relevant information at hand. Where historical or multidisciplinary information is not readily available, all efforts should be made to obtain it.
- Use of electronic health records provides timely access to necessary patient information and documentation but relies on all involved parties having access to the record.

A 21-year-old man died from complications of a pharmaceutical drug overdose.

The deceased had a history of drug and alcohol abuse which began in his teenage years and escalated in the two years prior to his death. He had experienced psychotic episodes secondary to drug use and also had a history of self harm.

Six weeks prior to his death, the deceased had been admitted to a peripheral urban hospital psychiatric unit following an attempted suicide. He was diagnosed with depression with psychotic features and paranoid ideation as well as a borderline personality disorder. He continued to drink alcohol during this admission and at times absconded to obtain more alcohol. Due to ongoing concerns of self harm and clinical deterioration during his admission, the deceased was twice made an involuntary patient under the *Mental Health Act 1996 (WA)* and was cared for in a secure environment. He remained an inpatient for almost seven weeks and was discharged with a supply of his regular medications including an antidepressant, an antipsychotic and naltrexone to assist in managing his substance abuse problems. Follow up was arranged with the mental health service.

A week after his discharge, the deceased fell from an escalator whilst intoxicated and fractured his left wrist. He was admitted to a tertiary hospital in order to undergo surgery to repair the fracture. The surgery was uncomplicated and he was discharged four days later with a supply of analgesic medication including tramadol and oxycodone. His naltrexone had been ceased due to his requirement for strong (opiate) analgesia.

Although the deceased was seen by staff from the psychiatry service prior to his discharge from the tertiary hospital, no formal assessment of his mental state or risk of self harm was conducted. There was no database for mental health admissions that was shared or accessible by both the tertiary hospital and the peripheral hospital, so no information was obtained regarding his recent psychiatric admission. His treating doctors were not aware of his recent suicide attempt or his history of self harm.

Less than six hours after his discharge from the tertiary hospital, the deceased was returned to the Emergency Department having been found collapsed at his accommodation. He had taken an overdose of the oxycodone tablets he had been given earlier that day. Despite resuscitation efforts he sustained a significant hypoxic brain injury and died three days later in the intensive care unit. A post mortem examination was performed and also found evidence of pneumonia.

### Coroner's comments

The Coroner felt that the lack of access to relevant patient information within mental health databases was sub-optimal and in need of revision.



It was also felt that, given the deceased's recent and prolonged hospitalisation in a Mental Health Unit, the mental health review undertaken during the deceased's admission at the tertiary hospital was sub-optimal and poorly documented.

## Inquest findings

The Coroner found that the death occurred as a result of acute hypoxic ischaemic encephalopathy and pneumonia in a man with recent traumatic wrist injury and combined drug effect (principally oxycodone).

The Coroner did not believe that the deceased consumed the drugs with the intent of committing suicide and therefore ruled that death arose by way of accident.

## Coroner's recommendations

No recommendations were made by the Coroner however during the inquest note was made of multiple improvements that had been put in place at the tertiary hospital involving care of patients requiring psychiatric assessment, the prescription of strong analgesics and also the quality of medical documentation. Improvements in inter-hospital communication were also noted, in particular the increased access to the mental health documentation database.

The Coroner felt that the changes made by the hospital were commendable and were likely to improve the quality of patient care and reduce the risks of harm to those suffering mental illness especially in circumstances where they have a need for strong analgesia.

Reference: see [CARROLL inquest findings](#)<sup>11</sup>

---

<sup>11</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Carroll\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Carroll_finding.pdf)



## An unusual presentation of a lethal complication

### Key messages:

- Communication between all parties involved in patient care is essential to ensure safe decisions are made.
- Medical personnel should ensure they are aware of risks and complications of procedures that their patients have undergone, even if they are not directly involved with the management of that procedure.

A 55-year-old woman died as a result of aspiration of gastric contents and gastric necrosis associated with a gastric band device.

The deceased had a gastric band device inserted, as part of treatment for obesity, approximately 21 months before her death. She had been well educated on the management of the device and was aware of the associated risks. Other than occasional vomiting she had experienced no problems with the device and had lost a considerable amount of weight.

The deceased had two different general practitioners (GPs): one whom she had known for many years and provided regular, ongoing care for her medical conditions and attended her at home as required; and a second GP whom she only consulted regarding weight loss issues and who corresponded with her surgeon. Her regular GP was aware that she had had a gastric band device inserted but was not involved in either the pre- or post-operative care.

Four days before her death the deceased became unwell with nausea, dizziness and ear pain. She thought she was developing a viral infection and stayed in bed to rest. After two days of worsening symptoms the deceased's husband contacted her regular GP who visited her at home. She was vomiting and had developed a fever but the doctor was unable to find any cause for her symptoms. She was treated with an antiemetic medication and analgesia and advised to seek further review if she did not improve.

Her GP attended the deceased at home again 24 hours later because her symptoms had worsened. She continued to complain of ear pain and had persistent vomiting. She still had no abdominal pain and denied any suggestion that her gastric band device could be contributing to her symptoms. The surgeon managing her gastric band device was not contacted. Again no cause for her symptoms could be found and she was advised to attend hospital for further assessment. The deceased declined to go to hospital, preferring to see if she improved with antibiotics at home.

The next morning, the deceased was found collapsed and unresponsive at home by her family. Ambulance services were called and attended rapidly but the deceased was not able to be resuscitated.

A post mortem examination revealed herniation of part of the stomach through the gastric band device, with associated development of ischaemia and necrosis. There was also evidence of a large aspiration of gastric contents into both lungs. It was recognised that it was unusual for a patient with gastric herniation and subsequent necrosis not to have experienced significant abdominal pain.

## Deputy State Coroner's comments

It was recognised that this case was very unusual in that the deceased, despite developing gastric herniation and severe necrosis, did not complain of abdominal pain. A possible link between stomach pathology and ear pain has been attributed to the position of the vagus nerve in some patients.

It was felt that had the deceased contacted her surgeon early in the course of her illness, her death may possibly have been prevented by removal of the band. In view of the extent of the necrosis by the time of death it was considered likely that she would also have required surgical intervention to remove necrotic tissue.

The inquest highlighted the difficulties faced by doctors when patients attend more than one GP and there is a lack of communication between the various medical practitioners and the patient. The inquest also highlighted a necessity for all medical practitioners to receive education in the identification and management of complications arising out of gastric band placement. The Deputy State Coroner noted that in view of the frequency with which gastric banding is performed, there is a need to ensure patients and GPs are well informed about the risks and side effects.

## Inquest findings

The cause of death was identified as respiratory arrest following aspiration of gastric contents in association with gastric necrosis.

The Deputy State Coroner found that the death arose by way of misadventure.

## Deputy State Coroner's recommendations

The Deputy State Coroner recommended that a specialist General Practice group should be implemented to examine the development and extension of training programs to raise awareness about the common and life-long concerns and complications associated with gastric bypass surgery including the significance of prolonged vomiting in these patients.

### WA Health actions:

- The Coronial Liaison Unit disseminated the findings to the Australian Medical Association (WA Branch), the Royal Australian College of General Practitioners and each of the Medicare Local regions for their consideration and action.

Reference: see [LEVISSIANOS inquest findings](#)<sup>12</sup>

<sup>12</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Levissianos\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Levissianos_finding.pdf)

## Death of a prisoner

### Key messages:

- Clozapine levels require strict monitoring as there are numerous pharmacological and non-pharmacological interactions with this medication.
- Consideration should be given to the communication of potential drug interactions at the time of discharge, particularly for uncommon or potentially lethal medications.

A 38-year-old male prisoner in a remand facility died from acute clozapine toxicity.

The deceased suffered from schizophrenia for which he had had many hospital admissions. He had recently been charged with serious offences and was remanded to a forensic mental health facility for stabilisation as an involuntary patient under Section 26 of the *Mental Health Act 1996*. He remained an inpatient for just over four months before being transferred to a remand centre to continue his treatment whilst awaiting a court hearing.

At the time of his discharge, the deceased was taking clozapine, citalopram, sodium valproate and using nicotine patches. He was discharged with a 7-day supply of most of his medications, and a 10-day supply of clozapine. This was to allow time for blood tests to be performed prior to ongoing prescription of clozapine. He was not discharged with nicotine patches.

Once in the remand centre, though he was apprehensive of his situation, the deceased was cooperative and compliant with medical interventions. Due to concerns regarding his potential for self harm, he was placed in a Crisis Care Unit within the centre where he was regularly observed throughout the day. Counselling and support were provided and the deceased attended these sessions. He had free access to tea and coffee, but no access to cigarettes.

Five days after his discharge from hospital, the deceased was reviewed by a GP. There were no concerns at the time of review, and forms were completed to arrange for the necessary blood tests for ongoing clozapine monitoring. The deceased gave a history of smoking about a pack of cigarettes a day but did not ask for, nor was he prescribed, the nicotine patches he had used whilst in hospital.

Overnight the deceased was observed by a prison officer every two hours. The required observations performed were solely to ensure that each prisoner was in their allocated cell. The deceased was documented as appearing to be asleep all night but was found dead in his cell the following morning.

Post mortem toxicology revealed very high caffeine levels and clozapine levels in the fatal range. Such high levels can result in arrhythmias and seizures. A toxicology expert was of the view that recent cessation of smoking and the unlimited access to caffeine containing beverages in the crisis care unit was sufficient to explain the toxic levels of clozapine and caffeine seen at post mortem examination of the deceased.

## Deputy State Coroner's comments

The Deputy State Coroner was satisfied the deceased's death was sudden and unexpected due to clozapine toxicity arising out of the confluence of all the factors in the deceased's circumstances at that time. Having had his caffeine intake restricted while in hospital, the deceased over-compensated on arrival at the remand centre by drinking more caffeine-containing products than he had before. That, in combination with his medications, cessation of smoking and situation of increased emotional stress caused a fatal cardiac arrhythmia once the deceased had retired for the night.

While the Deputy State Coroner did not believe more could have been done in this instance, she noted that this case highlighted the need for education of prison medical staff to reinforce the need for care with prisoners prescribed clozapine, and that the knowledge of prisoner blood levels of clozapine may assist in this regard.

## Inquest findings

As there was no evidence of an intentional overdose, the Deputy State Coroner found that death arose by way of misadventure as a result of acute drug toxicity.

## Deputy State Coroner's recommendations

The Deputy State Coroner made the following recommendation relating to WA Health:

That patients on clozapine who are returned to the Department of Corrective Services have a formal handover to the treating psychiatrist at the relevant custodial facility. The handover should include a comprehensive report of the previous and current management of the patient's clozapine therapy including:

- all dosage changes during their inpatient care
- all changes in relevant drug and lifestyle changes which are likely to impact on clozapine levels
- all clinical screening completed during this time
- all clozapine blood levels.

The Deputy State Coroner made two further recommendations which were directed to the Department of Corrective Services.

### WA Health actions:

- WA Health services are required to comply with the WA Health Clinical Handover Policy to ensure the Department of Corrective Services (DCS) has access to all relevant information when a patient on clozapine is returned to DCS.

Reference: see [McDONALD inquest findings](#)<sup>13</sup>

<sup>13</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/mcdonald\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/mcdonald_finding.pdf)

## VTE prophylaxis

### Key messages:

- Abnormal vital signs need to be documented, communicated and acted upon promptly.
- All patients should have a risk assessment for venous thromboembolism (VTE) with consideration given to thromboprophylaxis as appropriate.

A 47-year-old male died as a result of a pulmonary thromboembolism following a laparoscopic cholecystectomy.

The deceased's past medical history included schizophrenia, depression, obesity, dyslipidaemia and gastroesophageal reflux. He had quit smoking nine months before his death. The deceased lived in a rural town and was required to travel five hours by road to the nearest regional hospital to have surgery. He travelled to the hospital on the morning of his operation.

On arrival at the hospital the deceased underwent routine preoperative checks where nursing staff noted him to have slightly low oxygen saturations of 94% and a resting tachycardia of 103 beats per minute. The nurses assessed him to be high risk for VTE due to his weight, age and that he was having abdominal surgery, however the surgical team considered him to be low risk due to the short time required for laparoscopic surgery and short recovery period. His history of smoking and his long coach journey that morning was not taken into account in either risk assessment. He was provided with anti-thrombotic stockings and heparin at the time of surgery, but not post-operatively.

The surgery and immediate post-operative period were remarkable only for low oxygen saturations which required ongoing low-level oxygen supplementation. This was recorded but not escalated for medical review. He was reviewed the following morning and considered fit for discharge. However he remained in hospital due to the requirement for transport to be arranged for him to return home.

On his second morning after his surgery, the deceased reported shortness of breath, chest pain, dizziness and sweating. He was reviewed by medical and surgical staff and immediately given supplemental oxygen, intravenous fluids and antibiotics. Anticoagulation was commenced as soon as internal bleeding was excluded. Despite this treatment his condition deteriorated and he had a cardiac arrest. Resuscitation was performed but was unsuccessful.

A post mortem examination was performed and this revealed blood clots in the arteries to each of the lungs (pulmonary thromboembolism) and residual clots in the deep veins of both legs (deep vein thrombosis).

### Inquest findings

The Deputy State Coroner found that death arose by way of natural causes and was a result of pulmonary thromboembolism in association with deep vein thrombosis.

## Deputy State Coroner's comments

The Deputy State Coroner believed that having knowledge of the fact that the deceased had travelled to the regional hospital on the morning of his operation, resulting in five hours of reduced mobility, may have prompted the use of medications for venous thromboembolism prophylaxis.

The Deputy State Coroner noted the lack of escalation of care and treatment when low oxygen saturations were observed. It was noted, however, that an oxygen therapy protocol and the Adult Observation and Response Chart had already been implemented in the hospital and these had resulted in clearer decision making as to when to involve medical staff in active review of patients.

## Deputy State Coroner's recommendations

The Deputy State Coroner recommended that the Health Service facilitate a review of the VTE Risk Assessment Form and consider the inclusion of the type/duration of recent travel for pre-operative patients.

### WA Health actions:

- The WA Country Health Service endorsed the National Health and Medical Research Council's (NHMRC) *Clinical Practice Guideline for the Prevention of Venous Thromboembolism in Patients Admitted to Australian Hospitals 2009*, which includes a prompt for consideration of prolonged immobilisation in the risk assessment process.

Reference: see [SQUIRES inquest findings](#)<sup>14</sup>

<sup>14</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/squires\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/squires_finding.pdf)

## An accidental death at work

### Key messages:

- Drug misuse occurs rarely amongst healthcare workers but has high potential for escalation with catastrophic consequences.
- The Australian Health Practitioner Regulation Agency (AHPRA) has published National '*Guidelines for Mandatory Notifications*' which apply to all registered health practitioners and provide guidance on recognising and reporting notifiable conduct and other concerns.

A 27-year-old midwife died at work following a self-administered overdose of fentanyl. An inquest was held into the deceased's death in order to identify any steps that could be taken at hospitals to reduce the potential for similar deaths occurring.

The deceased had a history of misusing prescription medications, particularly opiates, for the previous 12 months which began after the death of her mother. She had seen a psychiatrist who had diagnosed her with major depression and the possibility of Bipolar Affective Disorder and commenced her on antidepressant and psychotropic medications. Very few of her work colleagues were aware of her depression and none were aware of her drug misuse.

At the time of her death, the deceased was working a 12-hour night shift and was part of a team of nurses and midwives caring for ward patients. She had assisted another colleague with preparation of a patient-controlled intravenous analgesia (PCIA) device containing fentanyl which was prepared according to the prescription and then connected to the patient's intravenous fluid line. The deceased did not prepare the medication, only observed and checked that it was drawn up correctly. The amount of analgesia used by the patient was then monitored every hour according to standard protocol and only small volume changes were noted. This was as expected and consistent with analgesia use by the patient. There were no other patients receiving fentanyl during the shift.

The deceased was found by her colleagues in the early hours of the morning, slumped on the floor and unresponsive. She had locked herself in the staff toilet, and beside her on the floor were two empty syringes with a cannula attached to one of the syringes. Her colleagues commenced CPR and called the emergency medical team but she was unable to be resuscitated.

Post mortem toxicology studies identified lethal levels of fentanyl as well as lower levels of codeine, morphine and antidepressants.

Shortly after the deceased was found, a check of all drug cupboards on the ward was conducted but no discrepancy was found. It was felt that the deceased most likely obtained the fentanyl by removing it from the patient's PCIA device and replacing the missing volume with saline.

### Inquest findings

The Coroner felt that it was unlikely that the deceased was aware that the dose of fentanyl she administered to herself was fatal or that she used it intending to cause her own death.

The Coroner concluded that the cause of death was opiate toxicity which occurred by way of accident.



## Coroner's comments

The Coroner commented on a gap in security that exists at the point of administration of patient-controlled analgesic devices. However the coroner found insufficient evidence to allow him to recommend a step that would be effective and economically feasible to deal with that gap.

## Coroner's recommendations

The Coroner did not make any recommendations following the inquest. However the coroner commented that WA Health should continue to review and improve the means by which the unauthorised access to Schedule 8 drugs is controlled.

Reference: see [FISHER inquest findings](#)<sup>15</sup>

---

<sup>15</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Fisher\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Fisher_finding.pdf)



## Illicit drug use

### Key messages:

- Consideration should be given to storage and monitoring of all drugs with the potential for misuse, however in some cases a balance must be reached between restricting unauthorised usage and enabling genuine emergency access.

A 39-year-old nurse was found dead in his home following a self-administered overdose of propofol. An inquest was held into the deceased's death in order to identify any steps that could be taken at hospitals to reduce the potential for similar deaths occurring.

The deceased worked as a clinical nurse in operating theatres. He was well respected by his colleagues and considered to be a capable professional who was reliable and good at his job.

When his colleague was unable to contact the deceased by phone after he failed to attend for a night shift at work, she went to his house the next day to check on him. After getting no response, she contacted police to seek assistance. Police officers found the deceased lying in the main bedroom, dead from an apparent overdose of drugs. There were opened vials of propofol in the bedroom. Large quantities of other drugs and medical items were also located in the unit. The drugs were all of a nature and form consistent with having been taken from a hospital.

A post mortem examination revealed multiple old and fresh puncture sites on both elbows and both wrists. Toxicology analysis of the deceased's blood revealed propofol at a lethal level as well as lower levels of other drugs.

Propofol is a Schedule 4 medication widely used for the induction and maintenance of general anaesthesia and for procedural sedation. During the inquest it was highlighted that at the time of the deceased's death, he had unrestricted access to propofol in his role as a night duty theatre nurse. The medication was kept with other drugs in unlocked cupboards in the central preparation area and in a trolley in each theatre. Stocks of propofol were not audited or monitored closely enough for any discrepancies to be noticed.

### Coroner's comments

The Coroner noted that various approaches were under consideration to prevent unauthorised access to propofol whilst balancing legitimate urgent access.

The Coroner recognised that unlike the requirements that apply to the possession of controlled drugs covered by Schedule 8 of the Poisons Act 1964, there was no requirement to keep a register or make regular inventories of Schedule 4 drugs. However, the coroner felt that the potential for propofol to be used recreationally and the inherent dangers of such use provided good reasons for its storage and management to be strictly controlled.

### Inquest findings

The Coroner concluded that the deceased had misappropriated propofol from his place of work in order to use recreationally. Death occurred as a result of propofol toxicity and the Coroner found that death arose by accident.

## Coroner's recommendations

Given the potential danger associated with unauthorised use and abuse of propofol, and given the likelihood that a practical means of restricting unauthorised access to it without jeopardising emergency access to it can be found, the following recommendation was made by the coroner:

1. If reasonably practicable, the Department of Health and all hospitals in the Western Australian health system implement a means of restricting the unauthorised use of propofol without placing patients at risk.

### WA Health actions:

- The Chief Pharmacist has issued a revision of the operational directive *Storage and recording of Restricted Schedule 4 (S4R) medicines (OD 0528/14)* which subjects propofol to stricter restrictions while making allowances for access in emergency settings. This directive was enacted in July 2014.
- Many hospitals had already taken steps to enhance the storage and recording controls over propofol in advance of the new policy.

Reference: see [DOHERTY inquest findings](#)<sup>16</sup>

---

<sup>16</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Doherty\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Doherty_finding.pdf)

## Medication reaction

### Key messages:

- A comprehensive medication history should be recorded for all patients, and the nature of adverse drug reactions or allergies should be clarified wherever possible.
- Clinically important drug reactions must be documented on the patient's medication chart and the cover of the medical notes and these patients are to be identified by a red alert bracelet.
- Adverse drug reactions should be communicated to all stakeholders at transitions of care, however the onus rests with the prescriber to check allergies and contraindications prior to prescribing new medications.
- Caution should be exercised when initiating any new pharmacological agent in a patient with a history of severe or life threatening hypersensitivity to any drug.

A 68-year-old woman died of anaphylaxis following cataract surgery at a rural hospital.

It was clearly documented throughout the deceased's medical notes that she was allergic to "sulpha drugs" and on admission to the hospital she was given a red alert wristband to draw attention to this. The exact nature of her allergy was not documented.

The surgery on the deceased's eye was performed under local anaesthesia, and the procedure was uncomplicated and apparently successful. Postoperatively the deceased was prescribed a single dose of acetazolamide by her surgeon in order to reduce pressure within the eye and therefore reduce the risk of developing acute glaucoma. The surgeon had not read the deceased's hospital file, was unaware of her allergy to sulphonamides, and was unaware of the significance of the red wristband.

Within 10 to 15 minutes of taking acetazolamide the deceased developed severe shortness of breath, hypertension, tachycardia and diaphoresis. Her oxygen saturations dropped from 96% to 24% and wheeze and crackles were heard throughout both sides of the chest. She was given adrenaline to treat apparent anaphylaxis; salbutamol, ipratropium and hydrocortisone for bronchospasm; and IV frusemide and glyceryl trinitrate (GTN) infusion for acute pulmonary oedema. The deceased initially responded to these treatments and appeared to stabilise. However whilst arrangements were being made to transport her to a tertiary centre for further management she suffered a cardiac arrest and was unable to be resuscitated.

A post mortem examination was performed and determined the cause of death to be consistent with anaphylaxis.

Sulpha medications are divided into two groups according to their chemical structure – antibiotic sulphonamides and non-antibiotic sulphonamides. It is common that patients are allergic to the antibiotic group, but there is no evidence of cross-reactivity between the two groups. Nonetheless, it is recommended that non-antibiotic sulfonamides are used with caution in patients with a history of allergy or hypersensitivity to antibiotic sulphonamides.

### Inquest findings

The Coroner found that the cause of death was consistent with anaphylaxis and concluded that death arose by way of misadventure.

## Coroner's recommendations

The Coroner recommended that the Director General of Health:

1. Circulate a directive to all nurses, doctors and surgeons employed by the hospital to remind and require them to appropriately record the precise nature of each patient's known allergy to medications, in order that this information can be found by prescribers of any subsequent medication.
2. Develop a protocol which mandates the minimum acceptable standards of practice which visiting doctors and surgeons must agree to adopt before being allowed to practice in the hospital. These protocols should highlight to the physician the existence of any protective procedures or systems such as the wearing of a red identity wristband which signify the wearer as suffering from a known allergy including an allergy to a medication.

### WA Health actions:

- A number of health services reported reviewing their policies and guidelines in relation to ensuring allergies are adequately documented.
- Health services reported a number of mechanisms to identify patients with allergies and regular auditing practices to measure compliance.

References:

[WHITEFORD inquest findings](#)<sup>17</sup>

[WA Clinical Alert \(Med Alert\) Policy 2014](#)<sup>18</sup>

[Medication Safety Alert: Recording and communication of adverse drug reactions \(ADR\)](#)<sup>19</sup>

<sup>17</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/mcdonald\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/mcdonald_finding.pdf)

<sup>18</sup> [http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ\\_ID=13081](http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ_ID=13081)

<sup>19</sup> [http://www.watag.org.au/wamsg/docs/WAMSG\\_alert\\_ADR.pdf](http://www.watag.org.au/wamsg/docs/WAMSG_alert_ADR.pdf)

## Concerns regarding clinical care

### Key messages:

- A death is reportable to the Coroner where anyone has expressed any concerns regarding the cause of the deceased person's death or regarding medical treatment.
- Care must be taken when prescribing many medications in the elderly as drug metabolism is often altered, multiple comorbidities often exist and they may be taking multiple other medications. Smaller doses are often recommended.

An 87-year old nursing home resident died in hospital after questionable management including a large dose of morphine by a locum GP.

Although elderly, the deceased was considered to be generally quite fit and well. She was able to walk unassisted but needed some help with other activities of daily living.

Seven days before her death, the deceased developed a cough and was noted to be unsteady when walking. Her regular doctor was away, so nursing home staff arranged for a locum doctor to visit and review her. Nurses checked on the deceased regularly during the course of the day and she remained quite stable until the early evening when she developed shortness of breath and cyanosis (blue face and lips). The deceased appeared distressed and was clutching her chest. Observations at this time recorded a high blood pressure (210/105mmHg) and heart rate (115/minute) and an oxygen saturation level of 84% which improved with supplemental oxygen.

The locum doctor attended shortly afterwards. Nursing home staff members were concerned that the doctor expressed little interest in the deceased's condition or past medical history and did not review the recorded observations or check the medical record. The doctor diagnosed a myocardial infarction (heart attack) and administered an intramuscular dose of 20mg morphine to the patient. She instructed the nurses to arrange an ambulance transfer to the nearest hospital and then left the nursing home.

The deceased subsequently became drowsy and increasingly unresponsive, and her respiratory rate slowed. By the time the ambulance officers arrived, the deceased was pale and clammy, had a Glasgow Coma Score of 9, respiratory rate of 10/minute and pinpoint pupils suggesting significant opiate toxicity.

Once at the hospital, the deceased was diagnosed with right-sided pneumonia, congestive cardiac failure and respiratory depression secondary to opiate overdose. She was given naloxone (a reversal agent for opiate medications such as morphine) and her conscious state and respiratory rate improved. She was also given antibiotics and medications to treat cardiac failure. The deceased was admitted to the ward for ongoing management, but despite an initial improvement her condition deteriorated and she died after seven days in hospital.

It was during the deceased's admission that her usual GP contacted the hospital to express his concern over the treatment provided by the locum doctor – not only was the dose of morphine considered extremely high but the lack of safer first-line treatments (such as aspirin and GTN) was also noted. Accordingly, at the time of death, the treating hospital doctor passed on these concerns to the Coroner.

A post mortem examination was performed which revealed features of chronic congestive cardiac failure and right-sided pneumonia. Focal areas of severe coronary artery disease were also noted, but there was no evidence of recent myocardial infarction.

Analysis performed on specimens of blood taken on the deceased's arrival to the hospital found a high level of morphine that, given her age, comorbidities and existing respiratory failure, would almost inevitably have caused serious respiratory depression and would carry a significant risk of lethality.

## Inquest findings

The coroner found that death was as a result of heart failure and probable pneumonia in an elderly lady complicated by morphine toxicity.

Although it was accepted that the excessive dose of morphine contributed to the deceased's death, the degree to which it did so was unable to be quantified. As such the coroner could not determine whether the death arose from misadventure or from natural causes, and made an open finding as to the manner of death.

## Coroner's recommendations

The coroner did not make any recommendations in relation to this case.

In determining whether to refer the evidence of this case to the Australian Health Practitioners Regulation Agency, the coroner was satisfied that the Western Australian State Administrative Tribunal had recently ordered the medical practitioner's name be removed from the Register of Medical Practitioners.

References:

[TAYLOR inquest findings](#)<sup>20</sup>

[Death in Hospital Form and Guidelines](#)<sup>21</sup>

---

<sup>20</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Taylor\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Taylor_finding.pdf)

<sup>21</sup> [http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ\\_ID=13097](http://www.health.wa.gov.au/CircularsNew/circular.cfm?Circ_ID=13097)

## Confidentiality vs best interests

### Key messages:

- *Good Medical Practice: A Code of Conduct for Doctors in Australia* outlines the requirements for confidentiality and privacy when dealing with information about patients, and providing information to carers and family members.
- Occasionally conflicts arise between sharing information with family members, duty of care and requests of patients and these instances require careful consideration and judgement.

A 39-year-old woman died abroad from complications arising following ingestion of a strong sedative medication. At the time of her death the deceased was on a Community Treatment Order (CTO) and was considered an involuntary patient under the *Mental Health Act 1996*.

Prior to her death the deceased had been struggling with severe depression. She had initially accepted a voluntary admission to a mental health unit but found the experience intrusive and distressing. She was allowed to take leave, but her condition deteriorated at home and she was subsequently made an involuntary patient under the *Mental Health Act 1996*.

During her admission documents and travellers cheques were discovered in her room that indicated plans to travel to abroad. The deceased gave excuses and reasons for having these documents and denied planning overseas travel. Although her treating clinicians did not believe her, they could not force her to be truthful about her plans.

The deceased had a significant mistrust of the mental health system and was difficult to engage. All the clinicians involved in her care attempted to establish trust and rapport with her, however none of them felt this had been successful. In addition, the deceased had repeatedly and specifically given instructions that her sisters were not to be provided with any information. She requested information only be provided to her estranged husband, with whom she wished to reconcile, however it was clear that whilst he remained responsible for the care of their children, he was not prepared to accept responsibility for the ongoing care of the deceased. Her husband assumed that information from the hospital regarding the deceased was also being provided to the deceased's sisters who remained her main source of support in the community.

After six weeks of inpatient care the deceased was discharged on a Community Treatment Order (CTO) requiring her to take regular oral medications and participate in frequent visits by specialist mental health nurses. It was hoped that this less restrictive approach would enable the deceased to be monitored appropriately and safely integrated back into the community. Her sisters were not aware of her discharge and the deceased did not contact them.

Three weeks after her discharge, the deceased advised her treating team of plans to travel to the countryside. She instead flew to Mexico where it appears she consumed a substance alleged to be pentobarbital; a short acting but strong barbiturate medication used as a sedative. She was discovered in a comatose state in her hotel and taken to hospital but unfortunately her condition deteriorated and she died several days later. Suicide notes were found in the hotel room.



Doctors at the Mexican hospital had issued a death certificate giving the cause of death as septic shock, nosocomial pneumonia and respiratory distress. No toxicology analysis was undertaken and the deceased was cremated in Mexico thereby preventing a post mortem examination.

The deceased's sisters expressed concern that they had not been kept informed, albeit at the request of the deceased, about the deceased's treatment and management decisions. They recognised the constrictions the clinicians dealing with the deceased had felt themselves under with respect to the deceased's confidentiality, but felt that they may have been able to provide necessary additional support to the deceased during her crisis and potentially may have prevented her suicide.

## Inquest findings

The Deputy State Coroner found that the death was as a result of septic shock and nosocomial pneumonia in a woman with acute respiratory distress syndrome. The Deputy State Coroner found that death arose by way of suicide.

## Deputy State Coroner's comments

The Deputy State Coroner noted that while the deceased's supervision, treatment and care while in the community was not optimal, this appeared to be due to the systems available for community supervision and resource issues, more so than a lack of care. There is nothing to suggest the care provided was below accepted practice at that time.

It was the view of the Deputy State Coroner that the issue of clinical judgment as to the appropriate ways to breach the confidentiality of a person with involuntary status still remain fundamentally unclear. The competing tensions around patient confidentiality as they stand currently make it extremely difficult for those involved in an involuntary patient's care to reconcile the conflict between sharing information with family members and their duty of care and the restrictions placed upon them by law, privacy issues and health services policies.

## Deputy State Coroner's recommendations

The Deputy State Coroner did not make any recommendations in relation to this matter but noted a review of the deceased's treatment and management by the Chief Psychiatrist. The review made eight recommendations with respect to improvements in the policies and procedures for the mental health unit and nine recommendations to improve the clinical supervision of CTOs. The Deputy State Coroner was satisfied that the relevant facilities had appropriately responded to these recommendations and implemented them where possible.

Reference: see [Ms D inquest findings](#)<sup>22</sup>

---

<sup>22</sup> [http://www.coronerscourt.wa.gov.au/files/Ms\\_D.pdf](http://www.coronerscourt.wa.gov.au/files/Ms_D.pdf)



## Unanticipated complications

### Key messages:

- Documentation of all clinical encounters should be clear, concise and contemporaneous.
- Clinical decisions and the rationale underlying them should be clearly conveyed such that those who are subsequently involved in patient care can follow and understand the course of the patient's progress.

A 75-year-old woman died in a regional hospital after she underwent surgery to repair a recurrent umbilical hernia.

At the operation the mesh from the deceased's previous surgery was found to be adherent to a segment of small bowel. This required careful separation and the surgeon closely inspected the bowel to ensure no injury had occurred prior to completing the operation. The anaesthetic and the immediate post-operative period were unremarkable. The deceased was admitted to a ward for routine management including IV fluids and analgesia as required.

That evening the deceased complained of severe pain and was noted to be sweaty and to have vomited. This information was not recorded in the patient notes until 3:00am the following morning, by which time the documenting nurse observed that the deceased had been given analgesia and that she was sleeping comfortably. No medical review was requested.

The deceased was seen several times by the surgical team the following day. Initially she appeared to be recovering well but later developed abdominal pain and vomiting. She was treated with analgesia, antiemetics and IV fluids but no documentation was made of these reviews and recommended blood tests were not ordered.

On her second post-operative day, the deceased continued to complain of abdominal pain and intermittent vomiting. As her recovery was taking longer than expected, she was commenced on prophylaxis for venous thromboembolism. That afternoon the deceased was noted to be cold and clammy with a heart rate of 110bpm and low oxygen saturations of 90%. Her abdominal pain was becoming more severe and blood tests indicated acute renal failure. Her IV fluids were increased and she was commenced on antibiotics for potential sepsis.

The deceased deteriorated further overnight with worsening pain, tachycardia and hypotension. The night doctor commenced IV fluid resuscitation and additional antibiotics and obtained a CT scan which showed features of small bowel infarction. Arrangements were made for urgent transfer of the deceased to a tertiary centre for further intervention and intensive care but unfortunately she continued to deteriorate and before the retrieval service could arrive she had a cardiac arrest and was unable to be revived.

Post mortem examination revealed infarction and necrosis of a segment of the small intestine with features of peritonitis. There was moderate atherosclerosis in the aorta but no thrombus in any of the abdominal vessels. It was accepted that the bowel ischaemia was due to an occlusion of one or more branches of the superior mesenteric artery but it was not possible to identify exactly how or why this had occurred. An Enterococcus bacteria was grown from blood specimens. This was considered to be an infection that arose secondary to the bowel infarction rather than from an external source or during the operation.

## Deputy State Coroner's comments

It was recognised that ischaemic bowel is a rare condition and extremely difficult to diagnose. By the time the deceased became symptomatic and efforts were commenced to arrange transfer, it was already, tragically, too late to save her life. The inquest also established that although the deceased could have received prophylaxis for venous thromboembolism prior to surgery, this would have been unlikely to have had any effect on preventing the arterial occlusion.

The Deputy State Coroner noted that close examination of post-operative events inevitably revealed unwanted occurrences in a patient's care. This was true in the deceased's case, particularly in respect to the documentation of multiple medical reviews, but there was no evidence that any of the identified deficiencies caused or even contributed to her death.

## Inquest findings

The Deputy State Coroner found that the death was caused by abdominal infection following surgery, and that the death arose by way of natural causes.

## Deputy State Coroner's recommendations

The Deputy State Coroner recommended:

1. That all staff should be reminded about the importance and requirement for effective documentation.
2. That hospitals should consider increasing clinical supervision to allow more real time audits of documentation, including provision of more clinical nurse coordinators.

### WA Health actions:

- Health services employ a number of strategies to ensure that staff are aware of the importance of documentation, including orientation, training, compliance auditing. Projects aligned with the National Safety and Quality Health Service Standards are also driving improvements in documentation.
- The WACHS Clinical Practice Audit program assists the organisation to identify clinical risks, monitor compliance and the effectiveness of policy and clinical practice, including documentation.

Reference: see [JONES inquest findings](#)<sup>23</sup>

<sup>23</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Jones\\_Wilma\\_findings.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Jones_Wilma_findings.pdf)

## Post-operative sepsis

### Key messages:

- Health care staff should improve patient care by (with the patient's consent) involving and communicating with family.
- The most basic aspects of care, such as the prevention and management of pressure sores, can be the most important for patient comfort.
- Laboratory investigations require robust processes to ensure that required tests are undertaken, the level of clinical urgency is clear, that there is timely delivery of results back to clinicians and that abnormal results are reviewed and acted upon.

An elderly lady was admitted to a regional hospital with a femoral fracture after a fall at home. She had a medical history which included recurrent urinary tract infections and atrial fibrillation for which she was taking warfarin.

On admission, the deceased was noted to be anti-coagulated with INR of 2.5. She was also found to have had significant anaemia. A plan was made to administer vitamin K to reverse the action of warfarin, and to give a blood transfusion. Surgery was planned for two days later, allowing time for her INR to normalise and transfusions to be given. It was intended to repeat her INR after the vitamin K was given but this did not occur and when the level was repeated two days later it remained elevated and her surgery was delayed further.

Once the anticoagulation had been adequately reversed, the deceased's operation was performed without complications. A catheter was inserted prior to her operation and it was noted that her urine appeared cloudy. There had been no urine specimen collected prior to this. The surgeon noticed pressure areas on the deceased's heels and a sacral pressure sore was noted by nursing staff. On return to the ward post-operatively, the deceased's mattress was changed to one more suitable for pressure areas and pressure care was instigated. She appeared to be recovering well initially.

Two days after her surgery the deceased became unwell with low blood pressures and low temperatures. An *E. coli* was grown from the urine and blood cultures. Treatment with antibiotics and IV fluids was commenced but she continued to deteriorate rapidly and developed signs of multi-organ failure. Inotropic support was started and a transfer to a metropolitan ICU was arranged but she died before the retrieval occurred.

A post mortem examination revealed features of chronic heart failure which were considered to have exacerbated the deceased's deterioration.

The deceased's family had been distressed by the pressure sores they observed during her admission and the pain associated with them. The deceased had become very frightened and distressed at the changing plans for her care. Her family felt that her level of fear and agitation could have been reduced with appropriate counselling and family input.

### Inquest findings

The Deputy State Coroner found that the death resulted from complications following a recent fracture and surgical repair of the right hip in an elderly lady and that the death arose by way of accident.

The Deputy State Coroner noted that, at the time of inquest, recent protocols had been introduced at the hospital including a ‘Fractured Neck of Femur Pathway’, “Older Patient Initiative”, and new nursing protocols including a “turn clock” for the management of pressure areas.

## Deputy State Coroner’s recommendations

The Deputy State Coroner made the following recommendations:

1. The Health Service consider increasing the education of staff and reinforcing the need and requirement for documentation, including timing entries, documenting family concerns, and communications between doctors and nurses.
2. The Health Service to consider increasing education of staff and reinforcing the need for staff to communicate with patients and their families in relation to the patient’s treatment and plan for care.
3. The pathology request forms in use have a clear field for the urgency of results, and there be a protocol as to when and how results are delivered, and to whom.
4. The Health Service continue with the audits already in place to ensure real time appropriate adherence to policies, procedures, documentation and the relevant completion of all forms requiring action.

### WA Health actions:

- WACHS is developing a Clinical Practice Standard that will establish the recommended practice standards for documentation throughout WACHS.
- A WACHS Clinical Handover Working Group was established to improve the quality of clinical handover within the health service, which includes work on engaging patients and carers in the process.
- Consumer engagement case studies have been developed to recognise and promote best practice consumer engagement across WACHS.
- Communication and workflow around pathology requests have been reviewed.

Reference: see [FORD inquest findings](#)<sup>24</sup>

<sup>24</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Ford\\_Valma\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Ford_Valma_finding.pdf)

## The risks of telephone advice

### Key messages:

- It is the condition of the patient, not the height of the temperature that is important.
- Diagnosis and treatment over the phone is unwise.

A six-month-old infant died as a result of pneumococcal meningitis.

At the onset of her symptoms the infant appeared unwell and had vomited. She had just had a bottle of milk and because she had been a 'vomity baby', her mother was not overly concerned. She had one further vomit, was quiet and slept during the afternoon. She became more unwell over the evening, continuing to vomit with a temperature of 38.8°C. Her mother noted she was breathing in a fast shallow way and was whimpering.

Her mother telephoned Healthdirect for advice. The transcript of this call with a Healthdirect nurse was reviewed in evidence.

Healthdirect Australia contracts to Medibank Health Solutions to provide a 24-hour health advice line. Healthdirect employs nurses to provide advice to callers using a set of protocols and guidelines. The function of the Healthdirect triage is to ascertain the patient's disposition so that the caller can be advised whether to attend a hospital emergency department immediately, see a doctor within a stated timeframe or recover at home. It is not designed to provide a diagnosis to a caller/patient.

Based on a review of these transcripts the coroner stated that, in his opinion, the nurse clearly left the mother with the impression that her baby had a tummy virus and that medical intervention was unwarranted.

Based on the advice received, the mother continued to observe her baby at home, overnight. The following morning she noted that the baby had turned blue around the mouth, had a yellow colour to her skin, had a rash on her thighs, and was grunting. She called an ambulance and the baby was taken to a tertiary hospital. There, she deteriorated over the following days and was pronounced dead seven days after the onset of her symptoms.

### Inquest findings

Death was as a result of pneumococcal meningitis and the coroner found that death arose by way of natural causes.

### Coroner's recommendations

The coroner made the following recommendations:

1. That Healthdirect require registered nurses employed by it, who are undertaking telephone triage duties, to tell callers/patients the nature of the triage service being provided and expressly advise callers/patients that they are unable to provide a diagnosis over the telephone.
2. That Healthdirect work to improve the content of its guidelines and the training given to registered nurses undertaking triage in order to ensure that those presenting with subtle symptoms of difficult and complex cases such as pneumococcal meningitis [are triaged appropriately].

Reference: see [SCAFIDAS inquest findings](#)<sup>25</sup>

<sup>25</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Scafidas\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Scafidas_finding.pdf)

## Missing information

### Key Messages:

- Good communication between general practitioners and hospitals is vital.
- Deficiencies in hospital processes such as the availability of notes can have detrimental consequences.
- Direct questioning of patients may be the best method of screening for important risk factors

An elderly man died at a district hospital as a result of acute myocardial ischaemia following recent surgical repair of a left-sided inguinal hernia.

The deceased had a medical history which included atrial fibrillation, valvular heart disease and ischaemic heart disease.

He had a repair of a right-sided inguinal hernia three months earlier. Post-operatively he experienced several episodes of chest pain. He was referred to his GP for follow up of this chest pain.

During his pre-assessment for his planned left-sided inguinal hernia repair, the GP anaesthetist and assessing nurse did not have access to the hospital notes and were not informed by the patient of any prior chest pain. Therefore the patient was not referred to a cardiologist for assessment prior to his general anaesthetic.

Post-operatively in recovery the patient developed respiratory distress. After not responding to treatment, he was re-intubated. Subsequent investigations demonstrated acute myocardial infarction. He continued to deteriorate and died early the following morning.

### Inquest findings

Death was as a result of acute myocardial ischaemia in an elderly man with valvular and ischaemic heart disease following recent operative surgery.

The coroner was satisfied that based on the evidence and expert review, death arose by way of natural causes.

### Coroner's recommendations

The coroner made the following recommendations:

1. That any GP referring a patient for surgery provide a detailed medical history to the surgeon and the hospital where the surgery will be performed, to be distributed, in advance of the surgery, to the anaesthetist who will administer the anaesthetic during the surgery and the practitioner who performs the hospital pre-admission check.

### WA Health actions:

- WA Health distributed the findings to the Royal Australian College of General Practitioners for their consideration and action.

Reference: see [KERR inquest findings](#)<sup>26</sup>

<sup>26</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Kerr\\_finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Kerr_finding.pdf)

## Emergency department overcrowding

### Key messages:

- It is easy for important information to be lost during transfers and handovers.
- Clinical handover is an essential skill.
- ED overcrowding compromises patient safety and is associated with adverse events.

A 24-year-old woman died at a tertiary hospital following a cardiac arrest.

The deceased had an extensive medical history including diabetes which was very difficult to manage and from which she had developed multiple complications including previous myocardial infarctions, cardiac arrhythmias and cardiac arrests. She was, nonetheless, living at home with support from her family and additional services.

Twelve days before her death, the deceased had presented to a metropolitan hospital with a blistering rash on her lower limbs. Emergency medical staff felt that she was unwell and would benefit from specialist dermatology input regarding the rash, so a transfer to a tertiary hospital was arranged.

There was a delay in the transfer due to numerous factors. The woman eventually arrived shortly after midnight. Her transfer letter was not seen by the triage nurse. Due to spelling errors, additional information regarding her presentation and medical history, which had been telephoned, was not accessible on the computer system.

On her arrival, the emergency department was overcrowded and she was placed in the only available cubicle in a minor theatre room where she was out of the view of staff. This decision was again made in the absence of knowledge regarding her medical history or the concerns of referring doctors.

She was assessed briefly by nursing staff on arrival and subsequently found, approximately 27 minutes later, unresponsive and without a pulse. She was resuscitated and transferred to the intensive care unit where over the ensuing days it became apparent she had sustained hypoxic brain injury and was not going to recover. Life support was withdrawn 11 days after her admission and she died in the ICU.

The coroner found that the woman's death was due to natural causes but commented on the multiple logistical and communication issues that had affected this case.

### Inquest findings

Death was as a result of hypoxic brain injury following unexplained cardio-respiratory arrest and the coroner found that death arose by way of natural causes.



## Coroner's recommendations

The coroner made the following recommendations:

1. That doctors accepting patients on doctor/hospital transfer ensure they provide the ED with clinical information supporting their reason for accepting transfer at the time the decision is made and request it be placed on EDIS.
2. That tertiary EDs consider the use of "smart computers" to interrogate entries to EDIS where there may be an error in name spelling or date of birth to assist with effective repopulation of patients' files.
3. That triage assessments be done by sighting appropriate discharge/transfer information, especially where they provide a base line for further assessments.
4. That team leaders in the ED making decisions about appropriate placement of patients awaiting assessment, ensure that they understand the significance of transfer documents to ensure decision-making for placement is as informed as possible.
5. That the ED consider the facility of introducing some vital sign observations at triage and any following primary assessment rather than reliance on ABC alone where there is likely to be a delay before secondary assessment and/or medical assessment due to the pressure on ED when operating over capacity.

### WA Health actions:

- Health services reported undertaking a number of strategies to ensure adequate handover to emergency departments, including the development of expectant patient handover pro formas, orientation information about the process of accepting, documenting and advising on expectant patients, and programs for frequently admitted patients that would enable easy access to medical histories at triage.

Reference: see [NIELSON inquest findings](#)<sup>27</sup>

<sup>27</sup> [http://www.safetyandquality.health.wa.gov.au/docs/mortality\\_review/inquest\\_finding/Nielson\\_Finding.pdf](http://www.safetyandquality.health.wa.gov.au/docs/mortality_review/inquest_finding/Nielson_Finding.pdf)











This document can be made available  
in alternative formats on request for  
a person with a disability.

Produced by the Patient Safety Surveillance Unit  
© Department of Health 2014

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the *Copyright Act 1968*, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.