CORONER'S COURT OF THE AUSTRALIAN CAPITAL TERRITORY

Case Title:	**Inquest into death of THEADORA ZAAL**
Citation:	**[2019] ACTCD 17**
Findings Date:	6 November 2019
Before:	**Coroner Boss**
Decision:	See [46]-[50].
Catchwords:	**CORONIAL LAW** – cause and manner of death – in-hospital cardiac arrest following elective surgical procedure – history of heart condition – whether delay in defibrillation – whether subsequent failures to defibrillate shockable rhythms – whether sufficient appropriately trained staff available to assist in resuscitation – possibility that defibrillator did not detect shockable rhythm – unable to rely on resuscitation record – whether sufficient medical staff available at private hospital to cover emergencies – two matters of public safety – hearing unnecessary – recommendations made
Legislation applicable:	*Coroners Act 1997* (ACT), s 13(1)(c), 34A, 52, 55
File Number:	CD 162 of 2015

CORONER BOSS:

Background

1. Theadora Zaal was a 75 year old woman when she was admitted to the Calvary John James Hospital on 7 August 2015 for debridement surgery on an ulcer on her left ankle and leg. Around 1998 Mrs Zaal was bitten by a white tail spider in that location and the bite wound became ulcerated. In July 2015 she received advice from a private physician in Sydney that she would require amputation of her leg below her knee. Mrs Zaal sought a second opinion and on 30 July 2015 she attended upon Dr David Hardman in Canberra. Dr Hardman suggested that the dead tissue of the ulcer could be excised and the wound treated with a vacuum assisted closure device, instead of below the knee amputation. He advised Mrs Zaal the ulcer would likely never heal completely but the smell would go and the pain would be improved. Mrs Zaal agreed to undergo this surgery and it was booked for 7 August 2015.

2. Mrs Zaal had a complicated medical history. She had previously been successfully treated for ovarian cancer some ten years earlier. She also had a history of high blood pressure and episodes of deep vein thrombosis, for which she was medicated. An electrocardiogram (ECG) undertaken on 6 August 2015, the day before she was to be admitted to hospital, indicated she suffered from sinus tachycardia and left ventricular hypertrophy, and displayed lateral ST-T changes consistent with left ventricular strain and/or ischaemia. Generally, Mrs Zaal's family considered that she had a fairly healthy diet, and was only moderately impaired in her mobility by the ulcer on her foot.

3. Mrs Zaal was admitted to Calvary John James Hospital at about 8:45am on 7 August 2015. The anaesthetist who would assist Dr Hardman in the surgery, Dr Caroline Fahey, conducted a pre-operative assessment of Mrs Zaal. As part of that assessment Dr Fahey listened to Mrs Zaal's heart, and heard a systolic ejection murmur. Mrs Zaal denied any history of valvular disease, and stated that she saw a cardiologist some four or so years ago but was advised there was no need for follow-up. Dr Fahey considered whether Mrs Zaal needed a transthoracic ECG prior to surgery, but ultimately decided (after discussing the matter with a cardiac anaesthetist colleague) that the procedure was unnecessary at that time: Mrs Zaal had a reasonable exercise tolerance and no

chest pain, and even if severe aortic stenosis was found she would be unsuitable for a valve replacement until after the ulcer debridement.

4. At about 11am Mrs Zaal was taken to the operating room. Dr Fahey observed that Mrs Zaal had poor peripheral perfusion and decided to measure Mrs Zaal's saturations with an ear probe. Mrs Zaal had initial hypotension post-induction but that was settled with several doses of Metaraminol. Dr Hardman undertook the procedure - which was said to have occurred uneventfully - and Mrs Zaal remained stable with minimal blood loss or need for further medication. The procedure was completed at about 12:32pm and Mrs Zaal was moved to the recovery ward. Shortly after arrival there she was extubated by Dr Fahey and her observations were said to be stable. However, Dr Fahey noted that Mrs Zaal continued to have bilateral persistent poor perfusion of the fingers. She discussed the issue with Dr Hardman, and they decided that Mrs Zaal's perfusion was adequate and not concerning. Dr Hardman also made special arrangements to have Mrs Zaal accommodated in a ward with specialist skill in geriatric patients and which was immediately adjacent to the Intensive Care Unit (ICU) should there be a need for further review.

5. At about 2pm Mrs Zaal was transferred to the ward. At about 2:15pm observations were taken and recorded on her chart. Mrs Zaal's blood pressure at this time was very low and at a level that, according to the hospital's own procedures on a Modified Early Warning Score (MEWS) chart, should have generated a Medical Emergency Team (MET) call. No MET call was made by nursing staff, however Dr Pearlman, then a locum Resident Medical Officer (RMO) at Calvary John James Hospital, was asked to review Mrs Zaal. At this time Dr Pearlman was the only doctor in the hospital available to see ward patients. He arrived on the ward at about 2:30pm and assessed Mrs Zaal for approximately 20 minutes. Dr Pearlman diagnosed Mrs Zaal as being hypovolaemic; he ordered that she be given additional intravenous fluids.

6. At some point in the afternoon (she cannot recall specifically when), Dr Fahey was advised of Mrs Zaal's low blood pressure. However, Dr Fahey could not attend Mrs Zaal at that time as she was in surgery with another patient. Dr Fahey requested that Mrs Zaal be reviewed by a doctor and then she or Dr Hardman be contacted.

7. Dr Pearlman returned to review Mrs Zaal at about 3:10pm. Her condition was unchanged, indicating that she had not responded to the fluid therapy.

Specifically, her blood pressure reading still met the criteria for a MET call. Additionally, the reservoir for the vacuum drain on Mrs Zaal's ulcer was very full given Mrs Zaal had only just come from surgery. Dr Pearlman declined a request from nursing staff to change the MET criteria for Mrs Zaal and decided to make a MET call, only to be told by nursing staff that he was the primary responder for that call. Dr Pearlman then called Dr Hardman, who requested that Mrs Zaal be reviewed by an intensivist. Dr Hardman also suggested pausing the vacuum drain for four hours.

8. Dr Pearlman then went to ICU to speak with Dr Marta Kot, the ICU Consultant, about Mrs Zaal. Dr Kot suggested that Dr Pearlman order an ECG and the taking of bloods for testing. Those investigations were commenced by Dr Pearlman with nursing staff but then Dr Pearlman was called away to assist in an urgent caesarean section surgery at approximately 5pm. At this time Mrs Zaal appeared to be in no distress and her blood pressure, while remaining low, was stable.

9. Dr Kot and Dr Pearlman next reviewed Mrs Zaal at approximately 5:45pm. The results of the ECG were discussed. During this conversation Dr Kot agreed to admit Mrs Zaal to ICU for better monitoring overnight of her low blood pressure.

10. At 6:15pm and 6:30pm nursing staff took observations of Mrs Zaal. Her blood pressure was again at a low enough level that the hospital's procedures on the MEWS chart should have generated a MET call. However, no MET call was made.

11. Sometime between 6:45pm and 7:12pm (the timing of this is not material) Mrs Zaal was transported and formally admitted to ICU. Observations taken on arrival in ICU indicate Mrs Zaal continued to have a low blood pressure (although it had slightly risen from the last observations), and sinus tachycardia. Mrs Zaal was said to be breathing normally, in no pain, and alert and responsive. She was administered medications.

12. At about 7:15pm Mrs Zaal had a transthoracic ECG conducted. The results showed moderate concentric left ventricle hypertrophy with suspected later wall mild hypokinesia. The observations taken at this time showed an increased blood pressure. Mrs Zaal was reviewed again by Dr Pearlman and Dr Fahey (for the first time since recovery) at about 7:30pm. At this time Mrs Zaal appeared comfortable and alert.

13. At about 7:47pm Mrs Zaal went into cardiac arrest. Although aspects of what occurred during the resuscitation are not clear, and will be discussed later in these findings, the undisputed facts are these. Nursing staff made a MET call. Drs Kot and Fahey were nearby and were alerted to the arrest: Dr Fahey witnessed Mrs Zaal's collapse while talking with a nurse. Dr Kot took the lead in directing cardiopulmonary resuscitation (CPR) and resuscitation efforts. Dr Fahey went to Mrs Zaal's head and took over management of Mrs Zaal's airway. Dr Kot gave directions to a group of nurses to operate the defibrillator and to undertake chest compressions. Dr Pearlman attended and assisted with chest compressions, as did nearby wardsmen. Mrs Zaal was shocked at least once and administered medication during the resuscitation attempt, but at about 8:20pm efforts were discontinued when Mrs Zaal showed no sign of life and in Dr Kot's opinion, Mrs Zaal had a high likelihood of brain injury and a very low probability of survival.

Coronial Investigation

14. The ACT Coroner has jurisdiction over Ms Zaal's death because at the time she died, the *Coroners Act 1997* required that all deaths of patients within 24 hours of having undergone surgery were reportable to the Coroner. (This time-based criterion has now been replaced with a causation-based criterion.)

15. I am required by section 52(1) of the *Coroners Act 1997* to make findings as to the identity of the deceased person, when and where they died, and the manner and cause of their death. I am also required by section 52(4)(a) of the *Coroners Act 1997* to state whether a matter of public safety is found to arise in connection with the inquest, and if I find such a matter, to comment upon it.

16. The then Chief Coroner Walker gave directions for the conduct of a post-mortem examination of Ms Zaal. A post mortem report was subsequently prepared by Associate Professor Sanjiv Jain dated 13 September 2015. In that report, A/Professor Jain recommended that former Chief Coroner Walker direct an expert review of Mrs Zaal's post-operative management at Calvary John James Hospital. He declined to suggest a medical cause of death at that time, but noted that Mrs Zaal suffered from aortic stenosis (of moderate to severe severity), coronary artery disease and left ventricular hypertrophy, and there were no suspicious circumstances surrounding Mrs Zaal's death.

17. Additionally, the Court had been contacted by Mrs Zaal's family shortly after the death to express concerns that there may have been a delay in defibrillating Mrs Zaal due to the unfamiliarity of staff with a new defibrillator. (They also raised concerns about the communication between the family and the hospital in the period immediately before and after Mrs Zaal's death, but such matters fall outside my jurisdiction to investigate.)

18. Accordingly, former Chief Coroner Walker arranged for Dr Edward Stachowski, an anaesthetist and intensivist, to review Mrs Zaal's records and provide a report for my assistance. Of relevance, in his report dated 30 November 2015, Dr Stachowski stated the following:

    a. There were indications on the rhythm strip that Mrs Zaal should have been defibrillated at approximately 13:42 minutes after the first record, but the record suggests that defibrillation occurred at 18:28 minutes, a delay of approximately 4.5 minutes;

    b. There are further cardiac rhythm disturbances recorded on the strip beyond the 19 minute mark but there is no record in the patient progress notes or resuscitation record of further defibrillation attempts;

    c. A time delay in defibrillation in the order of three minutes would be regarded as prolonged, with an impact on an individual's chance of survival;

    d. One would not expect skilled staff from an ICU to be unfamiliar with a defibrillator such that a delay of greater than three minutes occurs between an identifiable cardiac rhythm disturbance, which warrants defibrillation, and the actual delivery of a shock;

    e. The responsibility for the assessment of the rhythm and instruction to deliver a shock from the defibrillator rests with the cardiac arrest team leader, or their delegate;

    f. The responsibility for the delivery of the shocks rest with the staff tasked to manage the defibrillator; and

    g. It is important to note that Mrs Zaal suffered from aortic stenosis complicated by left ventricular hypertrophy. Resuscitation of a patient who has a cardiac arrest with these conditions is often difficult and

may be unsuccessful, even in situations where the time to first defibrillation is short and all other circumstances are optimised.

19. At the direction of former Chief Coroner Walker a brief of evidence was prepared by Constable Stevenson of the AFP, including statements from all the key treating professionals involved with Mrs Zaal's surgery and resuscitation. The statements were taken at a point in time before Dr Stachowski's report was available.

20. I also provided a copy of the brief of evidence and Dr Stachowski's report to Calvary John James Hospital for their review and comment.

Potential Matters of Public Safety

21. Based on the brief of evidence, and Dr Stachowski's report, three matters of fact are of concern:

    a. Failures to follow hospital policy in relation to MET calls having regard to the MEWS chart, at 2-2:15 pm, 3:10pm, and 6:15-6:30pm;

    b. A delay to first defibrillation; and

    c. Further shockable rhythms not resulting in the delivery of shocks.

<u>MET calls</u>

22. In relation to the factual background described above at paragraph 5, Calvary John James Hospital agreed that Mrs Zaal's condition objectively met the criteria for a MET call at 2pm and 2:15pm. However, the hospital said that it considered the nurses' response was appropriate and sensible in the circumstances noting particularly the rapid escalation to Dr Pearlman and his prompt attendance. It said that given the resourcing requirements of a MET call – involving numerous staff members leaving their tasks with other patients to attend – means that MET calls should only be made when appropriate and staff must exercise discretion when making MET calls. The hospital submitted that it would not have been appropriate to activate a MET call for Mrs Zaal at 2:15pm.

23. In relation to the events at 3:10pm described above at paragraph 7, Calvary John James Hospital agreed that doctors are able to vary the MET criteria for individual patients based on their baselines. The hospital could not comment on Dr Pearlman's recollection of what was said to him by nursing staff but submitted that had a MET call been made at that time, an appropriate number of staff would have been available and responded (without providing specific details of

which staff would have been available at 3:10pm, noting only that sufficient staff attended the MET call at 7:47pm).

24. In relation to the events at 6:15pm and 6:30pm described above at paragraph 10, Calvary John James Hospital agreed that Mrs Zaal's condition objectively met the criteria for a MET call at those times. The hospital commented that both Drs Pearlman and Kot had examined Mrs Zaal during the period that these readings were taken, and it was at this time that arrangements were made by Dr Kot to transfer Mrs Zaal to ICU. The hospital submitted that it would not have been appropriate to activate a MET call for Mrs Zaal at this time.

25. Overall I am unable to find that the failures of Calvary John James Hospital staff to make the MET calls that were otherwise warranted by the MEWS chart and Mrs Zaal's low blood pressure contributed to her death. It is clear that Dr Pearlman was asked to see Mrs Zaal at appropriate times when a MET call should have been made, or that doctors were present attending on Mrs Zaal at those times.

26. I am however concerned that a system expressly designed to highlight early warning signs in patients was overridden without good evidence of the reasons why. There was nothing in Mrs Zaal's patient progress notes from which I can be confident that nursing staff understood that a MET call was suggested by the MEWS chart, that a decision was made not to make a MET call, and the reasons being recorded. I accept the submission of Calvary John James Hospital that there must be discretion open on the part of nursing staff in relation to activating MET calls. It is however my view that where that discretion is exercised to not make a MET call that is otherwise warranted, the exercise of that discretion and the reasons behind it should be formally recorded in the patient progress notes to put beyond doubt that patient warning signs have not been overlooked or disregarded. I recommend that Calvary John James Hospital implement training and changes to its procedures accordingly.

27. It is also of great concern to me that when Dr Pearlman considered making a MET call he was told it would have been of little effect as he was down as the first responder. Calvary John James Hospital doubts as a matter of fact whether, had a MET call been made, that Dr Pearlman would have been the only responder, but it does not (and cannot) dispute Dr Pearlman's recollection. That is, in my view, an inappropriate exercise of a discretion to not make a MET call. I will return to the issue of lack of medical staff on the ward later in my findings.

Issues with defibrillation

28. Dr Kot appears to have reflected deeply on the events of Mrs Zaal's death and possible process improvements. She prepared a statement for the Coroner shortly after Mrs Zaal's death in which she stated that she was unfamiliar with the nurses involved in the MET call and did not know their names or their levels of competency, as she worked at Calvary John James Hospital only in a locum capacity. However, she was required to give feedback to correct the chest compression techniques on a number of occasions. She also had to give directions how to prepare some of the drugs used for resuscitation.

29. Dr Kot said that in her opinion, the nurse she initially allocated to use the defibrillator "*was not able to manage the defibrillator confidently, based on the delays for switching on the equipment, connecting the pads to the cable, and operating the settings at [her] request*". Further, Dr Kot stated "*when I ordered to stop chest compressions, I observed the defibrillator was not ready to be used yet, so I ordered immediately to recommence effective chest compressions … until the defibrillator was ready to use*". Dr Kot was unable to recall who the nurses were who were unfamiliar with the defibrillation equipment, just that it was a nurse who worked in ICU. Concerned about the delays, Dr Kot said she directed that Registered Nurse Georgette Wheeler, the ICU Manager, be contacted to attend the MET call. Nurse Wheeler arrived shortly afterwards and took over operation of the defibrillator to Dr Kot's satisfaction.

30. Dr Kot stated that she had given instructions during the resuscitation that another nurse should act as scribe and record all events and times, however not all relevant information was ultimately documented in Mrs Zaal's medical record. Dr Kot stated that after the event she was not able to be precise as to times, even to provide estimates as to when Nurse Wheeler became involved, due to the nature of running an active MET call and resuscitation.

31. Dr Kot reflected in her statement to me that the nursing staff's unfamiliarity with defibrillation equipment and current Basic Life Support (BLS) and Advanced Life Support (ALS) guidelines was probably related to limited exposure (given the elective nature of the patients admitted to Calvary John James Hospital) and lack of frequent training. Dr Kot stated that she had discussed with nursing staff, and Drs Hardman and Fahey, that ongoing regular education is required particularly because Calvary John James Hospital generally deals with low

complexity and severity patients, making acute crises and cardiac arrests a relatively rare event.

32. As against Dr Kot's evidence:

    a. Dr Fahey stated she did not notice whether there were any delays in the use of the defibrillator as she was concentrating on her role in the resuscitation, concentrating on the airway and improving IV access;

    b. Dr Pearlman stated he did not observe anything untoward during the resuscitation;

    c. Registered Nurse Siby George, who assisted with administering drugs during the resuscitation in accordance with the instructions of Dr Kot, stated she did not observe anything untoward during the resuscitation; and

    d. Nurse Wheeler stated that it was she who made the MET call, and she was part of the resuscitation team from the beginning. She had no issues with staff or equipment during the resuscitation, and she did not recall any issues being raised by anyone about the resuscitation.

33. Calvary John James Hospital is critical of a number of aspects of Dr Kot's evidence and disagrees with Dr Kot's recollection of the sequence of events. It notes that no other persons present at the resuscitation refer to any identified problems with the defibrillator, and Dr Kot is the only person to have a recollection of there being a difficulty or delay in the use of the defibrillator – which I accept. The hospital notes that all of the persons who responded to the MET call had, as a minimum, been trained and assessed in BLS within the preceding 12 months, and some of the nursing staff had also been trained in ALS. They accept that Dr Kot may well have had to give feedback to wardsmen to correct chest compression technique, as although trained in CPR some wardsmen may not have used it in a real situation. However, Calvary John James Hospital submits that this need to correct technique did not impact upon the outcome. The hospital also submits that any need by Dr Kot to give directions for preparation of resuscitation drugs was most likely due to misunderstanding or miscommunication, rather than a lack of knowledge or training.

34. Although highlighting the inconsistencies between the evidence of Dr Kot and other witnesses, Calvary John James Hospital provides no reasons why I should

give lesser weight to the observations and opinions of Dr Kot. I note it is undisputed that Dr Kot led the resuscitation team; accordingly, she was in the best position to oversee the exercise in its entirety and observe any difficulties or complications. Other witnesses were actively involved in the resuscitation attempts and therefore would may not have been best placed to observe issues with treatment. There is no reason apparent on the face of the materials I have or put forward by Calvary John James Hospital as to why Dr Kot would be untruthful.

35. I consider also that Dr Kot's suggestion of a delay in defibrillation is independently corroborated by the following:

    a. Although not a matter on which I place significant weight, I note that Mrs Zaal's family contacted the Court immediately after her death suggesting that they had been told there was a delay in defibrillation (see paragraph 17 above); and

    b. The report of Dr Stachowski discussed above at paragraph 18.

36. Dr Kot's information provides an explanation for the delay and lack in defibrillation observed by Dr Stachowski on the cardiac rhythm strip. I observe that if Dr Kot was unable to determine which nurses were the nurses she identified as not being familiar with the defibrillator, then it is impossible for me to determine their identity at this late stage. Accordingly, I make no adverse comment against any person involved in Mrs Zaal's resuscitation attempt. For the avoidance of doubt, I make no adverse comment against Dr Kot, who while in overall command of the resuscitation, was herself focussed on the need to provide specific instruction to staff in relation to chest compression technique and drawing up of medications.

37. Dr Kot should have been able to rely upon appropriately trained and experienced staff to assist in the attempt to save Mrs Zaal's life. The fact that she was unable to so rely is fundamentally a failing of Calvary John James Hospital and I find that the lack of appropriately trained staff in life saving techniques constitutes a matter of public safety.

38. I find however that the evidence does not rise to a level that I can find the delay in defibrillation was contributory to Mrs Zaal's death; both Dr Kot and Dr Stachowski say that it is impossible to predict the potential outcome for Mrs Zaal based only on the time to defibrillation.

39. In terms of the general failure to defibrillate, Calvary John James Hospital has clarified to me that the cardiac rhythm strip reviewed by Dr Stachowski is from the central cardiac monitoring system linked to Mrs Zaal's bed, not the defibrillator being used in the resuscitation. It has also informed me that the defibrillator being used in the resuscitation of Mrs Zaal was being operated in automatic mode (by which I understand it would monitor Mrs Zaal's heart rhythm and direct a shock if a shockable rhythm was detected) and not in manual mode (where shocks are manually administered by the input of staff on the machine). The hospital reflects that the commentary by Dr Stachowski in relation to who in the resuscitation team had the responsibility to administer shocks (at paragraphs 18.e and 18.f) are only applicable in the event of a manual defibrillation, which was not the case for Mrs Zaal. I accept this. Its explanation for why Mrs Zaal was not shocked when Dr Stachowski thinks she should have been shocked was that the defibrillator must not have detected a shockable rhythm, or that shocks were delivered but not recorded in the resuscitation record. I am not in a position to make any finding of fact in relation to this issue given the state of the evidence.

40. Calvary John James Hospital provides no reasons how it is that Mrs Zaal's cardiac rhythm may have been detected in different ways by the central cardiac monitoring system and the defibrillator being used for resuscitation. If both machines were operating correctly, then the same rhythm should have been detected by each machine. I am unable to determine on the material before me whether each machine was properly operating at the time of Mrs Zaal's death, and this is a matter which cannot now be determined given the other uses of the machines since Mrs Zaal's death. I recommend that Calvary John James Hospital undertake as a matter of priority an audit of its central cardiac monitoring systems and defibrillators to ensure that they are all operating correctly and that there is no discrepancy between the rhythms being detected on each machine when used on patients.

41. The other possibility is that shocks were given that were not formally recorded in the records. I observe that Dr Stachowski indicated difficulty in interpreting the resuscitation record, and Dr Kot also noted that the records did not accurately record the resuscitation efforts. It appears, and Calvary John James Hospital has suggested, that I cannot have confidence in the completeness of the resuscitation record. This failure to properly scribe the resuscitation efforts has

hampered my ability to make findings as to the specific events that occurred in Mrs Zaal's case. I recommend that Calvary John James Hospital undertake refresher training of its staff as to the importance of keeping accurate records, and specifically, the need to properly scribe resuscitation efforts.

Lack of staffing

42. Dr Kot also raised for my consideration the issue that the RMO (I presume this is Dr Pearlman) was unable to attend the patient early as he was called to assist in an elective operation. Dr Kot stated that she had discussed with Dr Hardman the need to have permanent medical cover on the ward and the RMO should not be distracted to elective operations. Dr Kot also requested that Dr Hardman refer Mrs Zaal's case to the Calvary John James Hospital Clinical Review Committee.

43. Calvary John James Hospital agrees that Dr Pearlman was the only doctor seeing ward patients that day but states that this is usual in the context of public hospitals, where patients are under the care of their admitting Visiting Medical Officer (VMO). It stated that most private hospitals only have one RMO on duty for emergencies, and indeed, some private hospitals do not have any doctors on duty specifically for emergencies.

44. I am unable to conclude that any delay in seeing Mrs Zaal was a material contributor to her death. In particular, I note that Dr Kot was briefed by Dr Pearlman as to Mrs Zaal's condition at a time around 4pm, and that when Mrs Zaal went into cardiac arrest both Drs Kot and Fahey were in close proximity. However, it is clear that the lack of medical coverage on the wards when Dr Pearlman intended to make a MET call, and when Dr Pearlman was called into surgery, increased the risk to patients and altered their clinical course. This is a failing of Calvary John James Hospital, and I find that it amounts to a matter of public safety. I recommend that Calvary John James Hospital consider rostering two RMOs on duty to deal with emergencies during peak surgery times when many VMOs and other doctors will be in surgery on other cases.

Other matters

45. For completeness, I note that Dr Kot also identified a number of specific issues for my consideration as follows (my comments also follow):

    a. The patient's post-operative transfer from recovery room to ward with hypotension. Dr Kot stated that she had discussed with Dr Fahey the

need to review criteria for discharge for patients from recovery. (I take this to mean that perhaps Mrs Zaal should not have been transferred from recovery to the ward but should have gone straight to ICU.) However, I am unable to conclude that even had the earlier transfer occurred, there would have been a different outcome for Mrs Zaal.

b. Limited medical records available pre-operatively, so adequate antibiotics for the patient's prior Pseudomonas were not given. I note that as infection does not appear to have had a role in Mrs Zaal's death, I make no comment on this matter.

c. The patient's probably unrecognised very high probability of adrenal insufficiency due to long term steroids. Dr Kot noted that adrenal insufficiency was likely a significant contributor to Mrs Zaal's hypotension, which especially in the context of Mrs Zaal's chronic hypertension, could have produced reduced blood supply to her heart. I note Dr Kot's observation, but again, I am unable to conclude that any failure to diagnose adrenal insufficiency would have led to a different outcome for Mrs Zaal, particularly in light of her significant heart conditions.

Conclusion

46. In all the circumstances, in my view there is no necessity to hold a public hearing in relation to Mrs Zaal's death, and her manner and cause of death are sufficiently disclosed. I believe I have all the evidence which exists or is likely to exist which could possibly bear on the decisions I must make. There is no issue about which I would be empowered to hold a public hearing and which in and of itself warrants that course being taken.

47. On the basis of the facts above, I make the findings of fact required under the *Coroners Act 1997* as follows:

> Theadora Zaal died on 7 August 2015 at Calvary John James Hospital, 173 Strickland Crescent, Deakin in the Australian Capital Territory; and
>
> The manner and cause of Ms Zaal's death is cardiac arrest, in the context of aortic stenosis (of moderate to severe severity), coronary artery disease and left ventricular hypertrophy.

48. I have found two matters of public safety arise in connection with this inquest:

    a. insufficient medical coverage of the wards; and

    b. a lack of appropriately trained staff in life saving technique.

49. Calvary John James Hospital disputes that there were any matters of public safety arising from the manner in which Mrs Zaal's resuscitation was carried out; however it also informs me that it has implemented a plan to have all of its ICU staff trained in ALS by the end of 2019, and after Mrs Zaal's death it provided a supplementary training session for ICU staff in using the defibrillator. On that basis I am satisfied that the risk to public safety in respect of the defibrillation process employed in the attempted resuscitation of Mrs Zaal is sufficiently ameliorated.

50. I make the following recommendations:

    a. I recommend that Calvary John James Hospital implement training and changes to procedures such that where a discretion is exercised to not make a MET call that is otherwise warranted, the exercise of that discretion and the reasons behind it should be formally recorded in the patient progress notes to put beyond doubt that patient warning signs have not been overlooked or disregarded accordingly: see paragraph 26 above.

    b. I recommend that Calvary John James Hospital undertake as a matter of priority an audit of its central cardiac monitoring systems and defibrillators to ensure that they are all operating correctly and that there is no discrepancy between the rhythms being detected on each machine when used on patients: see paragraph 40 above.

    c. I recommend that Calvary John James Hospital undertake refresher training of its staff as to the importance of keeping accurate records, and specifically, the need to properly scribe resuscitation efforts: see paragraph 41 above.

    d. I recommend that Calvary John James Hospital consider rostering two RMOs on duty to deal with emergencies during peak surgery times when many VMOs and other doctors will be in surgery on other cases: see paragraph 44 aboveabove.

51. I direct that a copy of my findings and recommendations be forwarded to the Attorney-General, the Minister for Health, and the Little Company of Mary (who operate Calvary John James Hospital), for their information. I also direct that these findings be published in due course on the Coroner's Court website, together with any response I receive in relation to my findings and recommendations.

52. I extend my condolences to Mrs Zaal's family, friends and work colleagues. I acknowledge in particular the efforts of Dominic Zaal in advocating for his mother.

DATED 6 November 2019

B.C. BOSS
CORONER