IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2011 003564

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 60(1)
Section 67 of the ***Coroners Act 2008***

Inquest into the Death of: Maria Dolores COLIERO

Delivered On:	30 November 2015
Delivered At:	Coroners Court of Victoria 65 Kavanagh Street Southbank Victoria 3006
Hearing Dates:	24 February 2015
Findings of:	Coroner Paresa Antoniadis SPANOS
Representation	The family of Ms Coleiro attended the inquest unrepresented. Ms Debra FOY of Counsel instructed by Ms Emma Turner from Western Health Corporate Counsel appeared on behalf of Western Health.
Police Coronial Support Unit	Leading Senior Constable A. Maybury, assisting the Coroner

I, PARESA ANTONIADIS SPANOS, Coroner,

having investigated the death of MARIA DOLORES COLEIRO

and having held an inquest in relation to this death at Melbourne

on 24 February 2015,

find that the identity of the deceased was MARIA DOLORES COLEIRO

born on 16 May 1942, aged 69

and that the death occurred on 22 September 2011

at Western Hospital, 160 Gordon Street, Footscray, Victoria 3011

from:

I (a) INADVERTENT INTRAVENOUS ADMINISTRATION OF ORAL CIPROFLOXACIN IN THE SETTING OF ASPIRATION PNEUMONIA, EMPHYSEMA AND OSTEOMYELITIS.

II CONTRIBUTING FACTORS

CEREBROVASCULAR DISEASE, DIABETES MELLITUS, CORONARY ARTERY ATHEROSCLEROSIS.

in the following circumstances:

BACKGROUND AND PERSONAL CIRCUMSTANCES[1]

1. Maria Dolores Coleiro (also known as Mary) was a 69-year-old woman from Delahey with a significant medical history. In 2010, Ms Coleiro suffered a stroke, with a dense left hemiparesis.[2] As a result, she required assistance with all activities of daily living and her family cared for her at home. Ms Coleiro's medical history also included atrial fibrillation, insulin dependent diabetes mellitus, osteomyelitis of the base of skull with left ear involvement and a suspected left ear tumour.[3]

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[1] This section is a summary of facts that were uncontentious, and provide a context for those circumstances that were contentious and will be discussed in some detail below.

[2] Total paralysis of the arm, leg and trunk on the same side of the body.

[3] Ms Coleiro had been diagnosed with malignant otitis externa - a disorder that involves infection and damage of the bones of the ear canal and at the base of the skull.

2. On 13 September 2011, Ms Coleiro underwent a day procedure to have a peripherally inserted central catheter (PICC) positioned for a scheduled admission and on the following day was admitted to Western Hospital for a planned biopsy and debridement of a malignant otitis externa, complicated by base of skull osteomyelitis. The procedure was cancelled when it was ascertained that Ms Coleiro had a high INR and was at an increased risk of bleeding.[4]

3. On 15 September 2011, Ms Coleiro aspirated while eating porridge. She was reviewed by the dietician who determined that she would be 'nil by mouth'. The speech pathologist also assessed Ms Coleiro's swallowing function and ordered a pureed diet with thickened fluids. Moreover, caution was to be taken with all oral intake and Ms Coleiro was to be monitored closely for signs of aspiration.[5]

4. On 16 September 2011, Ms Coleiro underwent the planned procedure. The biopsy showed features consistent with infection and she was prescribed antibiotics. On the first postoperative day, Ms Coleiro had decreased oxygen saturations due to suspected aspiration and a 'code blue' was called. She was diagnosed with aspiration pneumonia,[6] however, after review by the intensive care staff, she remained settled on the ward and a nasogastric tube (NGT) was inserted for feeding.

5. On 18 September 2011, Ms Coleiro pulled out the NGT and refused re-insertion, telling nursing staff it was uncomfortable.[7] As a result she was again 'nil by mouth.' The speech pathologist reviewed Ms Coleiro on 19 September 2011 and documented that Ms Coleiro's swallow had deteriorated since the last (recent) review. Nevertheless, Ms Coleiro's family did not want the NGT reinserted despite the aspiration risk with all oral intake.[8] The following day the dietician reported Ms Coleiro's intake was estimated to be less than 35%

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[4] The INR is a measure of how long it takes for blood to clot. The INR for a person not taking warfarin is 1. The higher the INR, the longer it takes for blood to clot; Exhibit D – Coronial Brief of Evidence, p 84.

[5] Exhibit D, p 87.

[6] Pneumonia is an inflammation and infection of the lungs caused by bacteria or virus. It causes the air sacs and small airway of the lungs to become inflamed and to fill with fluid and pus. As a result the lungs are not able to work properly.

[7] Exhibit D, p 100.

[8] Ibid, p 103.

of what was required.[9] NGT re-insertion was discussed with the family again, but they were steadfast in their refusal.

6. On 20 September 2011, Ms Coleiro was reviewed by the speech pathologist again. Her swallow appeared marginally better, but she remained at risk of aspiration with all oral intake. A pureed diet and mildly thick fluids were ordered to be continued. On 21 September 2011, Ms Coleiro's oxygen saturations decreased. Upon review by medical staff she was believed to be in acute pulmonary oedema[10] and a 'code blue' was called.

7. At this time, a chest x-ray confirmed acute pulmonary oedema with right lower lobe consolidation, due to 'query aspiration'. An electrocardiograph showed Ms Coleiro was in rapid atrial fibrillation and she was transferred to the Intensive Care Unit (ICU) as a high dependency patient. It was again determined that Ms Coleiro would be 'nil by mouth' and the NGT was reinserted to administer much needed nutrition and oral medication. She remained on bi-level positive airway pressure ventilation for acute pulmonary oedema and lung infection.

8. Dr Kubicki, ICU Registrar, discussed with Ms Coleiro's daughter and grand-daughter that she had a significant infection, which carried a high mortality rate. Also that she was at risk of continued aspiration and pneumonia, despite enteral feeding. Moreover her pre-existing poor mobility due to dense hemiparesis would impair her ability to clear chest secretions. Ms Coleiro's poor cardiac function was confirmed by a transthoracic echocardiogram. In light of these developments, a medical decision was made not to support Ms Coleiro with invasive cardiopulmonary resuscitation (CPR) if she were to deteriorate.

9. A form entitled 'Resuscitation Options' was completed by Dr Kubicki and placed on the medical records.[11] The form detailed that Ms Coleiro was 'not for CPR, intubation, or ventilation, is for active ward management'. She was also 'not for inotropes' or 'return to ICU'.[12] In the 'action in crisis' section of the form, Dr Kubicki indicated that Ms Coleiro was 'not for code blue, [but was to have] full ward management, call primary team and/or

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[9] Ibid, p 105. Suspected

[10] Fluid accumulation in the air spaces and parenchyma of the lungs. It leads to impaired gas exchange and may cause respiratory failure.

[11] Exhibit D, p 65.

[12] Ibid.

ICU liaison.'[13] The order was a 'medical decision that some modes of resuscitation would not be in the patient's best interests', Dr Kubicki noting her 'poor premorbid function, massive stroke, aspiration risk, severe infection (malignant otitis externa)'.[14]

10. At about 9.20pm, Ms Coleiro was transferred from the ICU back to Ward 2 West. Registered Nurse Joseph Bonavia was the nurse in charge of the night shift. RN Alysha Cockburn and RN Gail Reynolds were allocated to Ms Coleiro. RN Reynolds took primary care of Ms Coleiro and was informed at handover that she was 'not for resuscitation' and that a 'code blue' was not to be called if Ms Coleiro's condition deteriorated.[15] A white box of oral ciprofloxacin (an antibiotic) accompanied Ms Coleiro when she returned to the ward. RN Bonavia stated that he told RN Reynolds and Cockburn that the ciprofloxacin was to be crushed and administered via Ms Coleiro's NGT.

11. At about 10.30pm, the medical staff asked for blood to be taken from Ms Coleiro for pathology testing. The sample was to be obtained via the PICC line. RN Reynolds informed RN Cockburn that she had no prior experience with PICC lines so obtained the sample and instructed RN Reynolds on the correct technique.[16] At about 11.30pm, repeat bloods were requested. According to RN Reynolds, at about this time, RN Bonavia and Cockburn realised that Ms Coleiro's scheduled 8pm medication, including ciprofloxacin and frusemide, had not been administered. RN Reynolds was asked to administer the medications and also to obtain the blood sample via the PICC line. She agreed to do so under RN Cockburn's supervision.[17]

12. RN Cockburn and Reynolds attended the drug room together to prepare the medications. RN Cockburn prepared the intravenous frusemide and instructed RN Reynolds to crush the oral ciprofloxacin and form a paste, to enable administration via the NGT. RN Reynolds stated that she drew the paste into a standard non-luer lock syringe in error, even though she intended to administer the medication via the NGT. The medication should have been drawn into a syringe with a larger nozzle, suitable for attachment to the NGT. Both

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[13] Ibid.

[14] Ibid.

[15] Ibid, p 22.

[16] Ibid, p 24.

[17] Ibid, p 25.

medications were placed into a kidney dish for transport to Ms Coleiro's bedside where RN Cockburn checked the medication chart against the Ms Coleiro's identification label.

13. At the time, RN Bonavia was attending to Ms Coleiro's NGT feeding. RN Bonavia reported that Ms Coleiro's oxygen saturations were low so he repositioned the pulse oximetry sensor to Ms Coleiro's earlobe and observed the oxygen saturations increase and then decrease.[18]

14. Under the supervision of RN Cockburn, RN Reynolds took blood from the PICC line, cleansed it with chlorhexadine and administered the prescribed intravenous frusemide. The PICC line was cleansed with saline. RN Bonavia then informed RN Reynolds that any medications administered via the PICC line are to be administered with a 20ml luer lock syringe.[19] RN Reynolds returned to the drug room to obtain a luer lock syringe and transferred the ciprofloxacin from the original non-luer lock syringe to the luer lock syringe.

15. At about 12.10am on 22 September 2011, RN Reynolds administered the ciprofloxacin into Ms Coleiro's PICC line and cleansed the line with saline. In her statement, she said that "*a short time later I observed the patient becoming cyanosed and her oxygen dropping to 80%.*"[20] RN Bonavia and Cockburn immediately attended Ms Coleiro's bedside. She was observed to begin Cheyne-Stokes respirations,[21] and shortly afterwards, she became unresponsive. Nursing staff did not call a code blue because Ms Coleiro was subject to an NFR order.[22] The hospital medical officer attended and pronounced Ms Coleiro deceased.

INVESTIGATION – SOURCES OF EVIDENCE

16. This finding is based on the totality of the material the product of the coronial investigation of Ms Coleiro's death. That is the brief of evidence compiled by Leading Senior Constable Amanda Maybury of the Police Coronial Support Unit of Victoria Police, the statements, reports and testimony of those witnesses who testified at inquest and any documents

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[18] Ibid, p 32.

[19] Ibid, p 32.

[20] Ibid, p 27.

[21] Also known as periodic respiration, as an abnormal pattern of breathing with cycles of respiration that are increasingly deeper then shallower with possible periods of apnoea.

[22] Exhibit D, p 28.

tendered through them. All of this material, together with the inquest transcript, will remain on the coronial file.[23] In writing this finding, I do not purport to summarise all the material and evidence, but will refer to it only in such detail as is warranted by its forensic significance and in the interests of narrative clarity.

PURPOSE OF A CORONIAL INVESTIGATION

17. The purpose of a coronial investigation of a *reportable death* is to ascertain, if possible, the identity of the deceased person, the cause of death and the circumstances in which death occurred.[24] The *cause* of death refers to the *medical* cause of death, incorporating where possible the *mode* or *mechanism* of death. For coronial purposes, the *circumstances* in which death occurred refers to the context or background and surrounding circumstances, but is confined to those circumstances sufficiently proximate and causally relevant to the death, and not merely all circumstances which might form part of a narrative culminating in death.[25]

18. The broader purpose of any coronial investigations is to contribute to the reduction in the number of preventable deaths through the findings of the investigation and the making of recommendations by coroners, generally referred to as the *prevention* role.[26] Coroners are also empowered to report to the Attorney-General in relation to a death; to comment on any matter connected with the death they have investigated, including matters of public health or safety and the administration of justice; and to make recommendations to any Minister or public statutory authority on any matter connected with the death, including public health or

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[23] From the commencement of the *Coroners Act 2008* (the Act), that is 1 November 2009, access to documents held by the Coroners Court of Victoria is governed by section 115 of the Act.

[24] Section 67(1) of the *Coroners Act 2008*. All references which follow are to the provisions of this Act, unless otherwise stipulated.

[25] This is the effect of the authorities – see for example *Harmsworth v The State Coroner* [1989] VR 989; *Clancy v West* (Unreported 17/08/1994, Supreme Court of Victoria, Harper J.)

[26] The 'prevention' role is now explicitly articulated in the Preamble and purposes of the Act, cf: the *Coroners Act 1985* where this role was generally accepted as 'implicit'.

safety or the administration of justice.[27] These are effectively the vehicles by which the prevention role can be advanced.[28]

19. It is important to stress that coroners are not empowered to determine the civil or criminal liability arising from the investigation of a reportable death, and are specifically prohibited from including in a finding or comment any statement that a person is, or may be, guilty of an offence.[29]

20. In relation to Ms Coleiro's death, most of the matters I am required to ascertain, if possible, were uncontentious from the outset. Her identity, the date and place of death were not at issue. I find, as a matter of formality, that Maria Dolores Coleiro, born on 16 May 1942, aged 69, died at the Western Hospital, 160 Gordon Street, Footscray, Victoria, on 22 September 2011.

MEDICAL CAUSE OF DEATH

21. The medical cause of death was similarly uncontentious. On 26 September 2011, Forensic Pathologist Dr Heinrich Bouwer from the Victorian Institute of Forensic Medicine (VIFM) performed a full post-mortem examination or autopsy on the body of Ms Coleiro, reviewed the circumstances of death as reported by the police to the coroner, Western Health's medical deposition and post mortem CT scanning of the whole body (PMCT) undertaken at VIFM, and prepared a detailed written report of his findings.

22. Dr Bouwer advised that the autopsy demonstrated refractile foreign material in the vessels of the brain, lungs and heart, consistent with intravenous administration of an oral drug. Significant natural disease was detected. The lungs were heavy and congested, with histological features of emphysema and severe aspiration pneumonia. In addition there was evidence of previous strokes, cardiac fibrosis, coronary artery atherosclerosis, liver fibrosis and marked arteriolonephrosclerosis.

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[27] See sections 72(1), 67(3) and 72(2) regarding reports, comments and recommendations respectively.

[28] See also sections 73(1) and 72(5) which requires publication of coronial findings, comments and recommendations and responses respectively; section 72(3) and (4) which oblige the recipient of a coronial recommendation to respond within three months, specifying a statement of action which has or will be taken in relation to the recommendation.

[29] Section 69(1). However, a coroner may include a statement relating to a notification to the Director of Public Prosecutions if the coroner believes an indictable offence may have been committed in connection with the death. See sections 69(2) and 49(1).

23. Toxicological analysis of post-mortem samples detected frusemide, irbesartan, warfarin and lignocaine at levels consistent with therapeutic use. A postmortem tryptase level[30] was negative, making anaphylaxis an unlikely contributor to death. The C-reactive protein level[31] was markedly raised, consistent with infection or an inflammatory process. Histology also demonstrated inflammation within the middle ear structures.

24. I find that Ms Coleiro died as a result of an inadvertent intravenous administration of oral ciprofloxacin in the setting of aspiration pneumonia, emphysema and osteomyelitis with indirect contribution from cerebrovascular disease, diabetes mellitus and coronary artery atherosclerosis.

FOCUS OF THE CORONIAL INVESTIGATION AND INQUEST

25. In common with many other coronial investigations, the primary focus of the coronial investigation and inquest into Ms Coleiro's death was on the circumstances in which she died. Specifically, incorrect administration of oral medication via the PICC line, the making of the NFR order, the status of an NFR order in the event of an iatrogenic event and the adequacy of remedial measures taken at Western Health to minimise the risk of such errors in drug administration.

INADVERTENT ADMINISTRATION OF MEDICATION

26. In her statement, RN Reynolds stated "*I realised almost immediately after Ms Coleiro had deceased that I had administered the oral antibiotic through the PICC line when in fact this should have been administered via the NG tube.*"[32] To her credit, RN Reynolds made full disclosure to nursing, medical and hospital staff and documented the error in Ms Coleiro's progress notes.

27. All clinical staff at Western Health are required to adhere to the Drug Prescription, Supply, Storage and Administration Procedure.[33] This procedure details the procedural steps covering the prescription, supply, storage and administration of medications at Western

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[30] Marker of anaphylaxis.

[31] Marker of inflammation.

[32] Exhibit D, p 28.

[33] Ibid, p 35.

Health. Dr Mark Garwood, Executive Director of Medical Services at the time of Ms Coleiro's death, testified that adverse incidents that occur as a result of a medication error are discussed at the unit level as part of the morbidity and mortality review process. This review recommended that a Root Cause Analysis (RCA) be undertaken.[34]

28. Dr Garwood also advised that the Medication Safety Committee reviews all medication incidents that have an incident severity rating of one to three. This committee may refer medication incidents to the Adverse Outcomes Committee. The activities of both committees are reviewed by the Clinical Governance Committee, Western Health's most senior clinical committee.

29. Dr Garwood acknowledged that in February 2008, Western Health received a 'quality use of medicines alert' from the Department of Health. The alert highlighted the importance of oral dispensers to prevent wrong route administration errors.[35] At the time of the incident, Western Health was still engaged in the final processes of implementing the measures outlined in that alert.

30. RN Wendy Davis, Director of Nursing at Western Health's Sunbury Day Hospital provided a statement to the Court that detailed the factors identified by the RCA. Dr Garwood reported that since Ms Coleiro's death, Western Health has implemented a number of measures including:

    a. Mandating that all medications given via the enteral feeding tube route are to be administered using an amber oral/nasogastric dispenser;

    b. Nursing staff who have not undertaken PICC e-learning packages are not to be allocated to care for patients with a PICC and are not to access PICC lines for the purposes of medication and fluid administration or to access bloods from the patient;

    c. Medical staff are provided ongoing education regarding the appropriate prescribing of per oral or intravenous drug orders and a combination of per oral / intravenous orders are not to be used;

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[34] Exhibit A, p 41.

[35] Ibid.

d. Reinforcing education to medical staff that a doctor altering a medication order must sign or initial the alteration so that they can be identified.[36]

31. RN Davis' evidence was that audits have been conduct on of the storage on the wards of amber oral dispensers and also nurse administration using amber oral dispensers. The requirement to use amber oral dispensers has been incorporated into the Western Health Drug Prescription, Supply, Storage and Administration Procedure.[37]

32. At inquest, Dr Garwood stated it is no longer physically possible to inadvertently connect an amber oral dispenser with an IV line.[38] He gave evidence that casual or bank nursing staff are required to undertake PICC line education. To ensure this takes place, extra nursing educators have been employed and the e-learning package creates an electronic record which is easily checked before a staff member is assigned a patient with a PICC line. Staff are also asked at first instance whether they are familiar with PICC lines.[39]

33. Western Health reported there has been one other incident of wrong route administration of medication since Ms Coleiro's death, which occurred shortly after her in December 2011.[40] As a result of this error, a change was made in the way the drug in question was provided to the wards for administration. At inquest, Dr Garwood said no other incidents of wrong route administration have occurred since.[41]

NOT FOR RESUSCITATION ORDERS

34. The Western Health 'Not For Cardiopulmonary Resuscitation' procedure guides the approach to NFR orders in all units at Western Health.[42]

35. The procedure states that a NFR order refers to withholding invasive life-supportive therapies such as CPR, defibrillation and mechanical ventilation. Other active treatments to maximise the patient's comfort and wellbeing may be continued. A valid NFR order must

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[36] Ibid, pp 41-42.

[37] Exhibit D, p 58.

[38] Transcript of evidence p 8.

[39] Ibid, pp11-12.

[40] Exhibit A, p 42.

[41] Transcript of evidence, p 12.

[42] Exhibit B, p 45.

be documented on the 'Resuscitation Options' form and placed on the front of the medical file. Such an order is valid only for the current hospital admission, is reversible and should be reviewed regularly.[43]

36. The procedure states that Western Health has Western Health have NFR orders *"so that we don't use futile therapies which might only prolong a patient's illness and cause further pain and suffering. Patients with advanced illness rarely benefit from resuscitation of a cardiac arrest. Even if the initial resuscitation is successful, it is rare that the patient would be able to recover to be discharged from hospital... Having a NFR policy allows the medical teams to identify such patients, have a framework for open discussion and hence limit the futile therapies, but continue therapies which will benefit the patient."*[44]

37. The procedure further details a valid NFR order requires the patient's consultant take responsibility for the order and the patient, their legally appointed Agent with Enduring Power of Attorney, or the family must be fully informed about the reasons for a NFR order and agree with the decision for a NFR order.[45] The procedure acknowledges that frequently a patient is unable to speak for themselves and in these circumstances, there must be a detailed discussion with the patient's Agent and/or the family prior to establishing a NFR order.[46]

38. At inquest, Dr Garwood gave evidence about consultation with a patient's family, testifying that *"we certainly endeavour to do that in all circumstances".*[47] He further stated that each patient's situation varies *"but our best practice approach would be to certainly speak with and engage with the family members... [and] discuss it as fully as we can..."*[48]

39. Dr Andre Nel, Executive Director of Medical Services at Western Health gave evidence that he expects a medical practitioner to spend as much time as they can to clearly explain to the family the circumstances and reasons for a decision for NFR and to document that

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[43] Ibid.

[44] Ibid, p 46.

[45] Ibid, p 45.

[46] Ibid pp 46-47.

[47] Transcript of evidence, p 14.

[48] Ibid.

discussion.[49] Medical staff should also make the effort to contact the most appropriate family member and where there is a disagreement, offer a second opinion. This is considered good medical practice.[50]

40. Associate Professor Debra Griffiths provided an independent expert report and gave evidence at the inquest. She testified that ongoing communication with family about NFR orders is really important and must be documented.[51]

41. An NFR order can either be made by a doctor, referred to as a medical decision, on the instructions of the patient or, if the patient is not legally competent, the instructions of their Medical Enduring Power of Attorney.[52] Therefore, there may be occasion when a patient's family disagree with a medical decision that a patient is to be managed with a NFR restriction. Dr Garwood's conceded this is a complex situation and reiterated the need for medical staff need to engage with the family, but maintained ultimately that a medical decision to make an NFR order was indicated where providing care would be futile and/or would amount to doing harm to the to the patient.[53]

42. As regards Ms Coleiro, medical staff were concerned that measures such as CPR and mechanical ventilation were not in her best interest as she had a number of significant medical problems and had already required the calling of two code blues during her admission.[54] CPR would not improve her underlying medical conditions could cause further harm.[55] Ms Coleiro's NFR order clearly specified the care that would be provided and the care that would not be provided.[56] Western Health submitted that the NFR order made on 21 September 2011 was a reasonable clinical decision that was made in Ms

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[49] Ibid, p 77.

[50] Ibid.

[51] Ibid, p 83.

[52] 'Resuscitation Options' form, Exhibit D, p 65.

[53] Transcript, p 16.

[54] Ibid, p 17.

[55] Ibid.

[56] Ibid, p 25.

Coleiro's best interests because her medical condition was extremely fragile and she was at risk of deteriorating further from aggressive resuscitative treatment.[57]

43. Communication with Ms Coleiro's family about the NFR was documented a number of times in the medical records and the notes entered describe very clearly that a medical decision was made and CPR would not be initiated in the event of her deterioration.[58]

44. What is not clear from the medical records is whether her family understood that a NFR was in place as a result of a medical decision and what that meant for Ms Coleiro's ongoing clinical management and care. It was apparent at inquest that at least some members of the family did not understand the implications of the NFR order.

45. Dr Garwood's evidence was that it is often difficult to convey to families what a NFR order means as it is a challenging situation that involves very difficult decisions and the level of understanding of each family member may be different.[59] Dr Garwood stated there is no requirement for families to sign a NFR order and there is no space allocated on the 'Resuscitation Options' form. The form needs to be read in conjunction with the medical records where discussions with family should be recorded. Dr Garwood believed Dr Kubicki tried to convey the NFR order to Ms Coleiro's family in clear language.[60]

46. Associate Professor Griffith's evidence was that talking to a patient's family about a NFR order can be one of the most difficult conversations health professionals can have.[61] She acknowledged that the medical records suggest Western Health staff, including medical practitioners, nursing staff and allied health staff made continued efforts to discuss Ms Coleiro's condition with her family and her future medical management, including the decision not to commence CPR in the event of further deterioration.

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[57] Ibid, p 110.

[58] See Exhibit D, pages 115-117 and 119-120.

[59] Exhibit B, p 44B

[60] Ibid, p 23.

[61] Transcript of evidence, p 84.

47. Western Health submitted that the making of Ms Coleiro's NFR order was discussed with her family a number of times and they were very involved in considering and directing Ms Coleiro's treatment.[62]

NOT FOR RESUSCITATION AND IATROGENIC[63] EVENTS

48. Intravenous administration of oral ciprofloxacin is an iatrogenic event. The evidence at inquest was that nursing staff did not know an iatrogenic event had occurred, meaning that at the time, they did not attribute her sudden decline to the administration of ciprofloxacin but believed it to be a progression of her significant medical problems.[64] Therefore, when Ms Coleiro deteriorated, a code blue was not called because of the existence of a NFR order.

49. RN Reynolds realised *after* Ms Coleiro was deceased that she had administered medication via the wrong route. In Ms Coleiro's case, active CPR would not have been successful, because the administration of oral ciprofloxacin via the PICC line was an irreversible iatrogenic event, as was conceded by Dr Garwood.

50. Associate Professor Griffiths stated *if there was a known iatrogenic event*, the expectation would be that a code blue would be called so that medical staff could assess the nature of the iatrogenic event and whether or not it was amenable to treatment; it should be a medical decision to treat, not a decision made by nursing staff.[65] In such circumstances the fact of an extant NFR order should not preclude the calling of a code blue.[66] Some iatrogenic events may be reversible, for example an overdose of insulin. An NFR order is not considered a palliation order and treatment is given to patients in appropriate circumstances.[67] Dr Garwood explained the aim of a code blue is to relieve the distress of the patient as soon as possible.[68]

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[62] Ibid, p 110.

[63] From *iatrogenesis* "the creation of additional problems or complications resulting from treatment by a physician or surgeon" – Dorland's Illustrated Medical Dictionary (31st edition) page 923. Here the administration of a prescribed medication via the wrong route – PICC line/intravenous rather than oral/NGT.

[64] Ibid, p 29

[65] Ibid, pp 81-82.

[66] Ibid, pp32-33.

[67] Ibid, pp 32-33

[68] Ibid, p 28.

51. Ms Debra Foy, Counsel for Western Health, submitted that if an iatrogenic event was known and it caused a reversible condition, a code blue would be called irrespective of a NFR order.[69] During submissions, Ms Foy also took the opportunity to express the hospital's very sincere regret that Ms Coleiro died in the circumstances she did and expressed their condolences.[70]

CONCLUSIONS

52. The standard of proof for coronial findings of fact is the civil standard of proof, on the balance of probabilities, with the *Briginshaw* gloss or explication.[71] The effect of the authorities is that Coroners should not make adverse findings against or comments about individuals, unless the evidence provides a comfortable level of satisfaction that they caused or contributed to the death.

53. Having applied the applicable standard to the available evidence, I find that:

    a. Western Health medical staff discussed the rationale for an implications of an NFR order with Ms Coleiro's family, as documented in the medical records.

    b. Ms Coleiro's multiple co-morbidities and clinical condition provided ample justification for the imposition of the NFR order.

    c. Intravenous administration of oral ciprofloxacin was an irreversible iatrogenic event and CPR would not have changed the fatal outcome for Ms Coleiro.

    d. For all its catastrophic consequences, the intravenous administration of oral ciprofloxacin was a simple human error.

    e. Nursing staff did not recognise the error immediately and did not attribute Ms Coleiro's decline to the error.

    f. The decision of nursing staff not to call a code blue was made in good faith pursuant to an extant NFR order documented during the current admission.

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[69] Ibid, p 112.

[70] Ibid, p 79.

[71] *Briginshaw v Briginshaw (1938) 60 C.L.R. 336 esp at 362-363.* "The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding, are considerations which must affect the answer to the question whether the issues had been proved to the reasonable satisfaction of the tribunal. In such matters "reasonable satisfaction" should not be produced by inexact proofs, indefinite testimony, or indirect inferences..."

g. If the occurrence of an iatrogenic event had been known at the time of Ms Coleiro's sudden decline, best practice required a code blue to be called despite the NFR order, so that a medical assessment could be made as to the nature of the iatrogenic event and whether it was amenable to treatment.

h. Western Health undertook a Root Cause Analysis (RCA) as to Ms Coleiros' death pursuant to (then) Department of Health requirements for sentinel events, defined to include a medication error leading to the death of a patient, and took comprehensive remedial action in accordance with the recommendations of the RCA such that the risk of a similar error occurring in the future has been minimised and patient safety enhanced.

COMMENTS

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comment/s connected with Ms Coleiro's death:

1. The circumstance surrounding Ms Coleiro's death highlight the importance of good communication with families about end of life care, specifically the need for an NFR order or any restriction of clinical management and care sought to be imposed, particularly where this is a medical decision imposed without the explicit concurrence of the patient or the patient's family.

2. This case also highlights an important caveat on the force of NFR orders. That where a patient's deterioration is known or suspected to be due to a iatrogenic cause, a code blue should be called irrespective of the existence of an NFR order or its terms, so that a timely medical assessment can be made of the nature and extent of the iatrogenic cause and whether it is amenable to reversal or treatment.

I direct that a copy of this finding be provided to:

Ms Coleiro's family

Western Health

Associate Professor Debra Griffiths

Australian Commission on Safety and Quality in Healthcare

Signature:

PARESA ANTONIADIS SPANOS
Coroner
Date: 30 November 2015