QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Renae Jean MANN**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Southport
FILE NO(s):	2014/1703
DELIVERED ON:	26 September 2018
DELIVERED AT:	Southport
HEARING DATE(s):	13 – 15 September 2017, 13 December 2017
FINDINGS OF:	James McDougall, Coroner
CATCHWORDS:	Suspected overdose of Amitriptyline, adequacy and appropriateness of the care and treatment provided in hospital, medical clearance, assessment pods, sufficiency of changes to hospital policy and procedures

REPRESENTATION:

Counsel Assisting:	Ms Rhiannon Helsen
Gold Coast Hospital & Health Service:	Mr Damian Atkinson i/b Minter Ellison Lawyers
Dr Larissa Snaith & Dr Benjamin Hadisukomo:	Mr David Schneidewin i/b Avant Mutual Ltd
Parents of the Mann Family:	Mr Stephen Colditz i/b Smith's Lawyers
Ms Raelee Jeffs:	Ms Sally Robb i/b Roberts & Kane Lawyers

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Introduction

1. An inquest into the death of Renae Jean MANN was held at the Coroners Court at Southport from 13 September 2017 until 15 September 2017 and resumed on 13 December 2017.

   The inquest addressed the following issues:-

   I. The findings required by s. 45 (2) of the *Coroners Act 2003;* namely the identity of the deceased person, when, where and how she died and the cause of her death.

   II. The specific circumstances surrounding Ms Mann's death.

   III. The adequacy and appropriateness of the care and treatment provided to Ms Mann by hospital staff following her admission, including her medical clearance and nursing care.

   IV. The appropriateness of utilising assessment pods for patients in the hospital.

   V. The sufficiency of the changes made to relevant hospital policies and procedures following Ms Mann's death.

   VI. Whether any recommendations can be made to prevent deaths from occurring in similar circumstances.

2. In addition to the aforementioned issues, consideration as to any potential recommendations, which may be made pursuant to s. 46 of the *Coroners Act 2003* (the Act), was also examined.

Factual background

3. Renae Jean Mann was 43 years of age at the time of her death. She was a much loved mother, sister and daughter.

4. Ms Mann had a notable medical history, having suffered from immune disorder hypogammaglobinaemia, for which she had received regular treatment through an implanted port-a-cath between 2002 and 2014. She had also presented to the emergency department (ED) on two occasions in 2014 in relation to seizures, for which she was noted to have been drowsy and suffering from sinusitis. Whilst further MRI and neurology testing was conducted, it seems that panic attacks were suspected as the likely cause.

5. Ms Mann also suffered from depression for which she had been medicated since 2006. In 2008, Ms Mann had been involved in a motor vehicle collision, following which she suffered from chronic pain. It was for this pain that she was prescribed Amitriptyline and diazepam.

6. At 7.05pm on 13 May 2014, Ms Mann was brought into the Gold Coast University Hospital (GCUH) following a suspected overdose of anti-

depressant, Amitriptyline. She remained in the ED overnight, before being 'medically cleared' and moved to the Mental Health Assessment pods at around 6.30am the following morning.

7. At 7.33am, Ms Mann was found to be unresponsive by an Assistant in Nursing. A MET call was then made, and despite resuscitation efforts, she was declared deceased at 8.30am on 14 May 2014.

Sequence of events

8. At 6.05pm on 13 May 2014, the Queensland Ambulance Service (QAS) were called to attend Ms Mann's residence after she was found by her daughter drowsy suffering from a suspected drug overdose. Her daughter had left the residence earlier that day at around 8.00am, and returned that evening finding her mother in the same position. She allegedly told QAS officers that her mother had become increasing depressed in recent months, and she was concerned that she may have intentionally overdosed. She was unsure, however, as to the exact prescription medications she may have used.

9. When QAS officers attended the residence, Ms Mann's GCS was found to be 10, which increased to 12 after a short time. Her pulse was recorded as 86/min with her blood pressure found to be 119/70. She was afebrile and had a normal cardiac rhythm. At no time did Ms Mann exhibit an abnormally high pulse rate, abnormally low blood pressure or have a seizure. It was noted that Ms Mann appeared to be confused. An ECG conducted by QAS at 6.30pm, reports a corrected QT interval of 476msec with QRS intervals of 128 msecs. Readings from the ECG conducted note that it was an 'Abnormal ECG unconfirmed', with a right bundle branch block. During the inquest, this ECG was found to indicate an abnormal wave pattern, with T-wave changes in B2 and B3.

10. Ms Mann was subsequently transported to the GCUH, where she arrived at 7.01pm.

Admission

11. Upon presentation, Ms Mann was triaged as a category 2, due to her decreased level of consciousness, which meant she was required to undergo further assessment within 10 minutes of being triaged. RN Melissa Arnott, who was responsible for triaging admissions, recalls that she called the Nurse in Charge of the Acute Pod of the ED to inform her that there was a category 2 patient (Ms Mann), who required further assessment. Ms Mann was subsequently allocated to Acute Bed 21. At the time, the Acute Pod was located in the middle of the ED main area and was allocated for use by acutely unwell patients.

12. In Ms Mann's medical records, it was noted that she had a history of 'severe depression', autoimmune disease requiring previous treatment, bilateral total knee replacement, bronchiectasis, and panic attacks. Her regular medication was listed as including, amitriptyline, diazepam, Lasix, paracetamol and ibuprofen. Initially, Ms Mann had a poor response to

verbal stimuli, although would open her eyes for painful stimuli and would answer questions with a lot of prompting. The medical records suggest that she admitted to taking an overdose of amitriptyline, however, denied consuming any other medications.

13. Testing to ascertain Ms Mann's amitriptyline level was not requested upon her admission. This is standard medical practice, as a specialist analysis is required to be performed, the results of which are rarely received in a clinically meaningful timeframe. As such, it is an accepted practice when managing patients with suspected amitriptyline overdose to do so by way of clinical findings, with blood levels not used to guide treatment.

14. On Duty Consultant, Dr Thomas Torpie was responsible for the resuscitation area of the ED on the evening of 13 May 2014. He recalls attending to Ms Mann at some time between 7.30pm and 8.00pm, when she was first admitted. He states that his role was to *assess for immediate life threat and initiate treatment as required.* At the inquest, Dr Torpie recalled that Ms Mann was drowsy upon admission, and was unable to have a conversation with staff.

15. When treating patients who are suspected of suffering from amitriptyline toxicity, clinicians look for evidence of tachycardia and broadening of the QRS waves (contraction phase of the heart), which can predispose patients to other heart rhythms. An ECG conducted following Ms Mann's admission at 7.29pm was found to be abnormal, and suggested that she had a right bundle branch block with a corrected QT interval of 468Ms Subtle T wave inversion in B2 and B3 was noted.

16. Having considered the results of the testing conducted upon admission, Dr Torpie was of the view that Ms Mann had likely taken an overdose of amitriptyline and benzodiazepines. As she was breathing for herself, was able to be roused and had no abnormality of pulse or blood pressure, he considered that it was safe for her to be placed on cardiac monitoring whilst under observation. During the inquest, Dr Torpie noted that patients with suspected amitriptyline overdoses have an affected level of consciousness, can suffer seizures and have *dangerous effects on the heart*. Accordingly, treating doctors customarily look for a patient having low blood pressure and tachycardia.

17. RN Rebecca Learmonth was allocated Ms Mann's care upon her admission, and provided with a handover from QAS officers. She performed the initial and second set of vital signs and GCS, as well as the initial ECG. She recalls being concerned as to Ms Mann's condition, which appeared to be deteriorating, as evidenced by her decreasing GCS and increasing oxygen requirement. In consultation with RN Sara Syme, it was decided that Ms Mann should be moved to bed A18, as this would allow her to be visualised by staff at all times. RN Syme is said to have advised RN Learmonth that she would discuss their concerns with the nursing team leader and treating doctors. RN Learmonth and RN Syme handed over Ms Mann's care to the night shift nursing staff at 9.00pm.

18. During the inquest, RN Learmonth described Ms Mann's alertness upon admission as being *up and down*. Whilst her medical records indicated that her GCS had increased from 12 at the time of her admission to 14 by 7.35pm, RN Learmonth recalls that it was fluctuating between these two ranges.

19. At 9.00pm, ED RN Chloe Enriquez commenced her shift, following which she was handed over care of Ms Mann, who had been moved to bed A18. She was recorded as her GCS having dropped to 9 at this time. During observations that evening, Ms Mann was said to be *difficult to rouse, awoke to stimulus of pain, would follow simply commands, however, was disorientated and quite sleepy*. During the night, Ms Mann remained on cardiac, ECO2 and oxygen monitoring.

20. RN Nicole Gregory was also caring for Ms Mann with RN Enriquez that evening. During handover at 9.00pm when she commenced her shift, she recalls that Ms Mann's fluctuating GCS was flagged as a concern. It was decided that she should be moved to bed A18 to allow for closer observation, as the bed was located directly opposite the nurse's station. The Clinical Nurse Consultant (CNC) Simone Stephens was responsible for overseeing patients care, staffing issues and general flow within the ED for the night shift. Between 9.30pm and 5.30am the following morning, Ms Mann's vital signs were said to have remained stable. At 10.37pm, a further ECG was conducted, which was also abnormal, with a corrected QT interval of 513ms, with continued subtle T wave inversion in B2 and B3.

21. While her ECG's were abnormal, Dr Torpie was of the opinion that Ms Mann did not show any evidence of tachycardia or widened QRS complexes to suggest cardiac toxicity secondary to amitriptyline. Having considered previous ECG's conducted during hospital admissions in February 2014, he was of the view that Ms Mann had unexplained heart issues, which were not thought to be connected to her amitriptyline overdose. During the inquest, Dr Torpie clarified that the abnormalities found were not typical of an amitriptyline overdose, however, may be an indicator of *significant underlying heart disease*. He agreed that these findings should have influenced Ms Mann's treatment, including her period of observation and the need for a further ECG to be conducted prior to her medical discharge. Dr Torpie acknowledged that Ms Mann was at high risk of developing complications following her overdose.

22. It was also thought that Ms Mann did not have cardiac toxicity from the apparent amitriptyline overdose but was suspected to have possibly taken other medications, particularly benzodiazepines, to explain the sedation. Biochemical testing upon admission showed anaemia with a haemoglobin of 102g/L (normal 115-160). Normal white cell and platelet counts were found.

23. Dr Torpie recalls reviewing Ms Mann on a further two occasions (before his shift finished at 11.00pm) and considered that her clinical presentation was in keeping with a drug overdose, noting that her condition had not

appeared to have deteriorated further. It seems that the plan was for Ms Mann to continue to be observed in the ED with continuous cardiac monitoring and IV fluids, with a mental health assessment to be conducted when she was fully conscious (GCS 15).

24. At 10.30pm, Ms Mann's care was handed over to Emergency Registrar, Dr Rachel Atkins and Dr Larissa Snaith by Dr Torpie. According to Dr Atkins, she was *handed over a large number of patients from the late shift and the A&E was at capacity. I believe I was the only senior registrar servicing these patients.*

25. According to Dr Atkins, she was advised of the following in relation to Ms Mann during handover:-

> *Ms Mann had been found by her daughter difficult to rouse at 800 in the morning of May 13 2014. Her daughter had gone to work and come home at 1800 and found she had not moved and had her brought to hospital. It was thought that she had taken an overdose of amitriptyline of unknown dose and possibly desvenlafaxine sometime before 0800 in the morning. I was handed over that her blood tests on admission had been essentially normal and her ECG's were essentially normal. I was not made aware that an amitriptyline level had been undertaken. I do not recall seeing the ECG's myself. <u>The plan was to observe her monitored until she was GCS 15 (alert and normal behaviour) after which she would require mental health assessment which usually occurs in the mental health rooms</u>*

26. Dr Torpie claims that, based upon Ms Mann's abnormal ECG's and the likelihood she had ingested amitriptyline, he had requested that she continued to be monitored. He does not recall providing specific advice as to when monitoring could be discontinued, however, is of the view that it would have been appropriate to continue until the ECG normalized or the period of risk was clarified with the patient when she was more alert and could provide information as to the time and amount of medication taken. He recalls that he had observed Ms Mann on a few occasions over the course of the evening, and she had appeared to be waking up. Dr Torpie was of the view that she should continue to be monitored until she had clinically improved, that is, with normal blood pressure and a normal pulse rate. He noted that it would have been beneficial for a further ECG to be conducted before Ms Mann's monitoring was discontinued to ensure it had normalized. At the inquest, Dr Torpie indicated that he had anticipated Ms Mann would make an uneventful recovery.

27. Dr Atkins further recalled that at the time of handover, Dr Torpie requested that a troponin test be added to Ms Mann's blood testing, as this had been omitted during the initial assessment. At inquest, Dr Torpie explained that he thought this test was necessary to assist in explaining the subtle T wave inversion in B2 and B3 seen in Ms Mann's current ECG, as opposed to those conducted in February 2014. He noted that whilst these changes were not typical of an amitriptyline overdose, he had hoped that a troponin test may assist in determining their significance, and whether there was

cardiac strain. Had the results of the initial troponin test raised any concerns by indicating an elevation, a further repeat test would have been necessary.

28. Whilst Dr Atkins did print out the request for the troponin test, she was distracted by questions from other staff in relation to other patients, and the pathology form was never sent to the laboratory. Dr Atkins notes that the medical tests undertaken had been completed prior to her shift commencement, and handed over to her as *essentially normal with no concerning features*. At inquest, she clarified that she understood this to mean that she had not demonstrated any acute changes, which would be associated with amitriptyline overdose on the ECG's. Furthermore, she understood that the continuous cardiac monitoring showed no arrhythmias or changes whilst Dr Atkins was managing Ms Mann. At handover, she claims that she was not made aware that an amitriptyline level had been ordered.

29. Dr Atkins recalls consulting with Ms Mann on two occasions during the shift before she was transferred to the MH assessment pods. Firstly, during the initial handover at around 10.30pm when she recalls Ms Mann appeared to be sleepy but able to cough on command. Dr Atkins recalls conducting a brief physical assessment where it was found that she had a pressure area on her left collar bone, but no other evidence of injury.

30. At around 1.20am, RN Enriquez assessed Ms Mann's GCS to be 11/15, which was an improvement on her level of consciousness from the previous evening. Her pupils were size 3 and reactive. RN Enriquez also recorded a set of vital signs, which were regularly being monitored by the observation machine Ms Mann was connected to. Oxygen was also being administered by way of nasal prongs at 3L/min.

31. At 2.50am, RN Jerusha Morris, who was also responsible for caring for Ms Mann in the acute area, recalls that she requested a glass of water. She expressed confusion as to why she had been brought into hospital, and what had occurred the previous day. When RN Morris mentioned that she may have overdosed, Ms Mann allegedly became quite distressed and denied that she had tried to overdose. Dr Atkins conducted a 'brief examination' of Ms Mann again at around 5.00am on 14 May 2014, during which she had pushed herself up into a sitting position on the bed and was drinking a cup of water and had a GCS of 15.

32. At 5.30am, RN Enriquez took Ms Mann's vital signs and assessed her GCS as 14/15. She had no complaints of pain at the time, with a respiratory rate of 18, and blood pressure 135/77. Ms Mann was said to be quite tearful, however, and questioned why she had been brought into hospital. She continued to be appear confused, although denied having taken any tablets deliberately, and apologised for wasting the staff's time. By this stage, Ms Mann did not require any oxygen therapy. RN Enriquez was not involved in the transfer of Ms Mann to the MH assessment rooms

33. RN Gregory recalls that during one Pod round conducted that shift, the possibility of moving one patient to a less acute area was discussed with CNC Stephens and Dr Atkins. At this time, Ms Mann was identified as a suitable candidate, if the need arose (i.e. Code Brown). It was felt, however, that it would be in her best interests to remain in the acute area until the day shift staff commenced (around 6/6.30am), with suggestion that she may be at risk of having a seizure and the MH rooms were quite isolated. According to CNC Stephens, it was decided that as Ms Mann had remained stable overnight she could be discharged to the MH unit, so long as her ECG was satisfactory and she remained haemodynamically stable. During the inquest, CNC Stephens clarified that this necessitated the need for a further ECG to be conducted prior to Ms Mann being medically discharged.

34. During the inquest, RN Gregory recalls that Ms Mann's condition seemed to improve throughout the course of her shift, and she describes her as responding appropriately to staff towards the early part of the morning. That being the case, she recalls having had a discussion with CNC Stephens and Dr Atkins at around 5.30am in relation to patient movements, where it was decided that Ms Mann should remain in the acute area of the ED until the morning shift staff commenced, as she had been *labile with her GCS overnight*. She agreed that there was concern as to moving Ms Mann to a secluded area, which was thought not to be in her best interest at the time, due to her altering level of consciousness.

35. Ms Mann is said to have remained on full non-invasive monitoring, including cardiac monitoring until her transfer to the MH assessment room. Dr Atkins recalls having had two conversations with CNC Stephens regarding Ms Mann's suitability for transfer to the MH assessment rooms. Initially, sometime early in the morning on 14 May 2014, Dr Atkins requested that Ms Mann remain in the emergency department for further observation as she was still drowsy. At 5.00am, Dr Atkins asked for Ms Mann to be monitored for a further hour to ensure she was stable and had a GCS of 15, before being moved to the assessment room. At this time, Ms Mann had been in the emergency department for around 11 hours fully monitored, which was thought to be around 22 hours since ingestion of the medication. Dr Atkins states that:

    It is normal practice to observe amitriptyline overdose patients for 6 to 12 hours post ingestion time until their ECG's are normal and they clinically improve. I had been handed over that Ms Mann's ECG's had been normal and she clinically improved throughout my shift with no arrhythmias or changes on cardiac monitoring.

36. At around 6.00am on 14 May 2014, a motorbike trauma patient presented to the ED requiring assessment, as did a child with difficulties breathing. At some time, whilst Dr Atkins was attending to these two patients, she was advised by RN Morris that Ms Mann had continued to improve and was asked whether she could be transferred to the MH assessment rooms. This was done before Dr Atkins was able to observe her directly,

as she was still attending to the recent trauma patient arrivals. Dr Atkins confirmed that Ms Mann could be transferred. She states that:

It is accepted practice in a busy Emergency Department to rely on other clinical staff to be able to alert senior staff to any form of patient deterioration or any concerns regarding a patient's clinical condition.

37. In relation to use of the MH assessment rooms, Dr Atkins claims that it was her understanding that patients had to be medically cleared of acute medical issues before being transferred. Dr Atkins claims that at no time did any staff indicate to her that Ms Mann was not behaving normally, or expressed any concerns that she may not be fit for transfer.

38. During the inquest, Dr Atkins acknowledged that had she considered Ms Mann's previous ECG's from her prior admissions and those taken earlier in the evening, she would have,---

…been more task focused when I was asked to do the troponin, because I would've wanted to know if there'd been any kind of heart muscle damage associated with that change. And I would have been less likely to discharge her at daylight…to the mental health room.

Okay. And why is that? ---Because she would've required a second troponin to see whether it was changing or not.

Yes? --- And I would've been discussing her further investigation, if any was required, with the medical doctors. But I don't know what their response would've been.

But you would've thought those further investigations were necessary before she was medically cleared; is that right? --- Yes, I would've.

Would you have thought a further ECG was necessary? --- If I'd realised, I would've done another one, but because I didn't realise, I didn't think it was an absolute necessity because she would continue to improve all night.

39. Dr Atkins acknowledged that with the benefit of hindsight having now considered the ECG's conducted, Ms Mann was prematurely discharged from the acute area of the ED to the MH Assessment Unit. Since Ms Mann's death, Dr Atkins has made a number of changes to her personal practice when dealing with patients, including measures to ensure tests are followed up, the need to observe patients prior to discharge and also keeping patients in acute areas longer for further observation if necessary.

40. As to the need to record a patient's condition, Dr Atkins claims that it was not 'usual practice' at the time of the incident to document this in the medical notes if the patient's clinical course was progressing as expected. Accordingly, as Ms Mann's condition had followed the anticipated clinical course, Dr Atkins did not make any notes regarding her condition. She

did, however, make personal notes about her care of Ms Mann on 15 May 2014, following her death, from which she drafted her statement.

41. During the inquest, it became clear that at the time of Ms Mann's death, medical clearance of a patient from the acute area of the ED was not required, either by way of a formal policy or established practice, to be documented in the records or by way of a completed form.

42. In relation to the duration for which Ms Mann was observed prior to her medical discharge from the ED, Dr Torpie acknowledged during the inquest that she was at a high risk of developing complications following her overdose, which merited her being observed for a longer period of time before being cleared. He clarified, however, that based upon other clinical factors, and the fact that she had no signs of tachycardia or progression of changes on the ECG, her observation for 12 hours in the ED was reasonable.

43. At around 6.00am, RN Morris removed Ms Mann's indwelling catheter and contacted the MH unit to handover her care. At the time, she was awake and alert.

Transfer to the Mental Health Assessment Unit

44. The MH assessment unit is located within the ED of the GCUH, and consists of three MH assessment rooms. It is a secluded and isolated area, which can only be accessed by swipe card. It is intended to be used to house patients who have been medically cleared or are medically fit and awaiting a MH assessment. The level of monitoring required of a patient in the unit is dependent upon whether they are admitted voluntarily or by way of an involuntary order. The applicable Mental Health Nurse Guidelines Protocol in effect as of 2014, stipulated that unless a patient was mandated to have 15 minutes observations taken by way of an involuntary order, then only four hourly observations were required to be documented.

45. In 2014, a MH Health Liaison Nurse and an Assistant in Nursing (AIN) were allocated to manage the unit each shift, performing different roles. The RN was required to liaise with medical doctors and the MH team to facilitate patient assessments and interviews, admissions and discharges, as well as overseeing, managing and monitoring patient activity within the MH assessment area of the ED. The AIN was required to provide assistance to the RN, and monitor the three MH assessment rooms via CCTV footage.

46. At around 6/6.20am, RN Raelee Jeffs, who was allocated to the MH assessment unit of the ED for the night shift commencing on 13 May 2014 (9.00pm to 7.30am), received a call from RN Morris and was advised that Ms Mann was to be transferred to the MH area having been medically cleared. AIN Margarita Molina was also allocated to assist RN Jeffs in the MH assessment unit that shift. During the inquest, AIN Molina acknowledged that she had never been trained on how to observe CCTV

footage. Whilst it wasn't the duty of the primary RN to watch the CCTV, according to AIN Molina this did sometimes occur as the RN used to be seated next to the AIN. RN Jeffs acknowledged in her evidence that whilst the RN may incidentally view some of the CCTV footage, they have other discrete tasks, which they were required to attend to separate from the AIN.

47. At around 6.10am, the night clinician on shift for the Acute Care Team, Psychologist Carla Ferrari was called by RN Jeffs to advise that Ms Mann had been medically cleared and would soon be moved from the acute area of the ED to the MH assessment pod. Ms Ferrari received a further call at 6.20am from RN Jeffs confirming Ms Mann was now in the MH area. She described Ms Mann as 'quite bizarre', and explained that she had become teary when told that she was not guaranteed admission to the MH unit. It was determined that a comprehensive psychiatric assessment needed to be conducted, as Ms Mann had only recently moved to Queensland from New South Wales, and as such, this should be conducted by the morning shift clinicians, who were due to commence at 7.20am.

48. At around 6.30am, RN Jeffs collected Ms Mann from the Acute Pod with the assistance of wards man, Mr. Andrew Knight. RN Jeffs describes Ms Mann as drowsy but coherent. According to Mr. Knight, she was mumbling incomprehensibly and talking to the nurse when he arrived. When he assisted her to sit in a wheelchair, she appeared to be 'high stepping' whilst walking. At one point during transfer, Ms Mann is said to have leant forward whilst seated in the chair, and Mr. Knight placed his hand on her shoulder to steady her. He placed her in a stationary chair in the MH Assessment Unit, before returning to the ED.

49. Initially, Ms Mann was placed in an interview room (with no CCTV available) in the MH area. RN Jeffs claims that when she explained that Ms Mann was to remain in the area until being psychiatrically assessed, she allegedly became *verbally aggressive (yelling in a loud voice) and stated that she wanted to be admitted and taken upstairs*. AIN Molina also claims that she heard Ms Mann *screaming and verbally abusing Ms Jeffs*. RN Jeffs states that she tried to *deescalate the patients behaviour* by providing her with her belongings, which included her clothing, and offering her some food and a coffee. She claims that Ms Mann then,

    …stood herself up off her wheelchair, picked up a cup off the floor specifically showing me, how much milk she would like in her cup. I went to the staff room (approximately 10 metres away) and proceeded to make her a cup of coffee. On return to the room, patient was sitting in the chair (she had walked from the wheelchair to the chair, which was in the room), and I gave her the coffee… I returned to the mental health office, which is approximately 5 metres away, where I contacted Karla (Mental Health Nurse) that she was from NSW, to see if we could get any information on her, which Karla informed, because she was from NSW, we had no access to the information. I also informed Karla of her agitated behaviour. I went back to the interview room with Margarita (AIN) where Renae was, and

informed her, that EPS would be around approximately 0800hr, and asked her, would she like to lay down. She replied, 'yes'. She walked to the safe room (with Margarita and I present) where she sat on the bed. This room has a camera and can be monitored. I left the door opened so she could walk in and out, and she could come and knock on the door at any time, if she needed anything.

At this time, I reassured her that EPS would be coming to assess her. At this time she became verbally aggressive again and yelling out. To help de-escalate this situation, we offered her warm blankets and tried to settle her down…She remained sitting up in bed, so we assisted her to lay down, and advised her to have a rest and get some sleep until the EPS arrived to assess her. I moved the pillow, to place her in a more comfortable position, put warm blankets over her, but she remained verbally aggressive, stating, she wanted to be admitted and taken upstairs. At approximately 0700hrs, she rolled onto her left hand side, which we viewed from the camera (in the safe room) and appeared comfortable. At approximately 0710hrs, I handed over to morning staff. Believing she had settled down and gone to sleep…

50. According to AIN Molina, when she heard Ms Mann verbally abuse RN Jeffs she went into the MH assessment interview room where she saw her *slogging her body, refusing to sit up*. During the inquest, AIN Molina confirmed that she had observed Ms Mann deliberately waving and flailing her arms around. RN Jeffs was said to have been offering her coffee and something to eat to try and help her calm down. She suggested to RN Jeffs that Ms Mann be moved to another room where she could monitor her via the security camera. AIN Molina claims that Ms Mann, *was capable of walking to this new room on her own with minor assistance or direction from Andy the Wardie.* She placed two blankets on Ms Mann, before returning to watch the monitoring screens. She claims that she saw her reposition her body from sleeping on her stomach to face the wall lying on her side.

51. From the CCTV footage, AIN Molina is last seen to leave Ms Mann's room at 6.33am.

52. MH RN Rheanna Bender commenced her shift at 7.00am on 14 May 2014. AIN Rebecca Cross also commenced her shift at 7.00am that morning. During her handover that morning, which went from 7.10–7.20am, RN Bender was advised that Ms Mann had presented with an intentional overdose of amitriptyline and was medically cleared by an emergency doctor after around 16 hours of observations, before being transferred to the MH assessment pod at 6.00am that morning, awaiting an assessment by Emergency Psychiatric Service. She was advised that Ms Mann had also been *combative and non-compliant when first entering the mental health pod, however, shortly settled and was observed sleeping in bed on last round/CCTV.* At the time of the handover, Ms Mann was said to have been observed by the regular AIN through CCTV to be sleeping in the prone position.

53. At around 7.20am, Ms Mann's mother, Lynette called the MH assessment pods to inquire about her daughter. RN Bender advised that she was presently sleeping, and was awaiting assessment by emergency psychiatric service. Following this call, RN Bender commenced orientating an agency AIN to the MH assessment pod. At this time, AIN Cross went into Ms Mann's room to adjust her blankets, as part of her body appeared to be exposed via the CCTV stream. She noticed that Ms Mann appeared to be unwell and was unresponsive. She claims that she touched Ms Mann, however, could not tell if she was breathing. She called for assistance, at which time RN Bender went into Ms Mann's room. A code blue was subsequently activated, as Ms Mann had an absent respiratory rate and was unresponsive to sternal rubbing. During the inquest, AIN Cross indicated that she was not required to be trained in basic life saving measures to perform her role as an AIN in the MH assessment area.

54. Ms Mann was moved to a flat prone position, with the emergency trolley called in and CPR commenced. A specialist team arrived a short time later and took over management of the resuscitation effort. Ms Mann was moved to the resuscitation bay for further treatment.

55. Blood tests taken shortly after Ms Mann was declared deceased showed a markedly abnormal biochemistry with high sodium and potassium and glucose levels, marked decrease in the total protein from the time of admission from 61 to 39g/L (normal 60-83), and marked elevation of alanine and aspartate transaminase from normal levels to 3710 and 4670 U/L respectively. Ms Mann's calcium level was also low with raised phosphate and magnesium levels and high osmolality (which had previously been normal). Her cardiac troponin level at this time was 0.42mg/L. A full blood count showed a fall in haemoglobin to 80g/L, and although the white cell count was not elevated mild toxic changes were noted. Coagulation screen showed mild elevation of all parameters.

CCTV from the MH assessment room

56. CCTV footage from the MH assessment room shows Ms Mann enter at 6.30am. She appears to be somewhat unsteady on her feet, and is escorted into the room by RN Jeffs and a wardsman. She can be seen to be shuffling. They assist her to sit on the side of the bed. AIN Molina enters the room at 6.31am. RN Jeffs subsequently leaves the room to retrieve Ms Mann's belongings, during which she can be seen to slump forward into a hunched position in what appears to be an involuntary manner. AIN Molina is with her at the time. When RN Jeffs re-enters the room at 6.31.40am, Ms Mann is still slumped over and she assists her to lie down on her back on the bed. She can be seen to have her arm awkwardly hanging off the bed. RN Jeffs then pulls Ms Mann by her ankles so she is positioned further down the bed. RN Jeffs leaves the room to retrieve a packet of sandwiches and a drink, which she places on the floor by the head of the mattress before leaving the room at 6.32.28am.

57. At this time, Ms Mann is lying on her back with her arm still hanging off the bed. AIN Molina re-enters the room a short time later to provide her with

further blankets. She exits the room at 6.33.14am. No staff return to Ms Mann's room following this time. She can be seen to make a number of attempts to sit up, which she successfully does at 6.38am, before lying back down and eventually rolling on to her side whilst still partially covered by a blanket. After a short while, her buttocks become exposed. The last time Ms Mann can be seen to move or take a breath is at 6.49am, following which there is no evidence of movement or respiration. A staff member does not enter the room again until 7.33am, where it takes almost 4 minutes for her to request the assistance of other nursing staff. A Code Blue is only then called.

58. During the inquest, RN Jeffs explained that she was holding Ms Mann's hand and reassuring her as they entered the MH assessment room, which was her common practice. Whilst she acknowledged that on the CCTV footage Ms Mann does appear to be shuffling as she entered the room, she does not recall noticing this at the time. In relation to the apparent involuntary slump forward Ms Mann can be seen to do whilst sitting on the bed in the MH assessment room, RN Jeffs stated that at the time, she thought this movement (which she did not witness) may have been deliberate based upon her recent behaviour in the interview room. Having viewed the CCTV footage during the hearing, RN Jeffs acknowledged that she now had a different view, and with the benefit of hindsight this would have given her sufficient cause for clinical concern that she would have conducted a set of observations. RN Jeffs also acknowledged that it was not accepted clinical practice to pull a patient further down a bed by their ankles, and should not have occurred. She further agreed that she was not as astute to Ms Mann possibly suffering from medical issues, and expressed regret that now knowing the tragic outcome, she wished she had been.

59. During the inquest, AIN Molina was asked why she did not enter the MH assessment room to cover Ms Mann up when her buttocks became exposed. She claimed that due to Ms Mann's past behaviour, she was concerned that this may disturb her, which she thought was more important than covering her up and checking on her wellbeing. When pressed further, AIN Molina agreed that normally if she had seen that a patient had their buttocks exposed whilst asleep in an assessment room she would have covered them up to preserve their dignity. However, in Ms Mann's case, because of her alleged behaviour in the interview room earlier, she decided not to.

Autopsy findings

60. On 15 May 2014, an external and full internal post-mortem examination was performed by Forensic Pathologist, Dr Dianne Little. A number of toxicological tests were also conducted. The internal post-mortem examination revealed a mildly enlarged heart with areas of fine scarring on examination under the microscope. Dr Little noted that this condition increases the risk for development of arrhythmias, and may have allowed the development of a fatal arrhythmia at a lower blood level of amitriptyline than would usually be required.

61. Toxicological analysis of blood samples taken shortly after her admission to Hospital (7.50pm), after she was found unresponsive on 14 May 2014 (8.20am) and at autopsy, all revealed a level of amitriptyline above the reported therapeutic range. Both the amitriptyline and nortriptyline levels rose between the hospital admission sample and the sample taken after she was found unresponsive in the mental health assessment pod. Dr Little noted that while the amitriptyline level remained just below the reported fatal range, the nortriptyline level was within the reported fatal range at the time she was found unresponsive. This suggests that Ms Mann was continuing to absorb the drug during the period (although there was no tablet debris seen in her stomach or duodenum by the time of autopsy). This rise in nortriptyline level was due to a breakdown of the amitriptyline by the body.

62. Dr Little also noted that the levels of amitriptyline and nortriptyline detected at autopsy had been falsely elevated due to post-mortem redistribution. Therapeutic levels of the drugs diazepam, codeine and ibuprofen were also detected.

63. Dr Little noted that the toxic effects of amitriptyline frequently manifest as heart arrhythmias, which can be fatal. Ms Mann was investigated for evidence of cardio-toxic effects of the drug, however, was thought to have none. According to MIMS, fatal arrhythmias can occur up to 56 hours after overdose and therefore *close monitoring of cardiac function for not less than five days is advisable.*

64. The cause of Ms Mann's death was found to be as a result of the acute toxic effects of amitriptyline. Other significant conditions noted were cardiomegaly with interstitial fibrosis.

Review by the Gold Coast Hospital and Health Service

65. Immediately following Ms Mann's death, Assistant Director of Nursing at GCUH, Ms Jo-Anne Timms was responsible for conducting a review of the circumstances and identifying any deficiencies in current processes, which may require immediate rectification. In order to conduct this review, Ms Timms considered Ms Mann's records, viewed the CCTV footage and spoke to staff involved in her care and treatment.

66. The following deficiencies in procedures and processes were subsequently identified:

    - A lack of a bedside handover;

    - Assistant Director of Nursing role with CTC representative on handover committee;

    - Lack of workplace guideline for medical clearance need for senior medical input and consideration of ECG for all toxicology patients prior to movement to mental health pod;

- Observations of patients in behavioural pod need to be considered and documented in the patient's plan of care when they arrive in the behavioural pod;

- Educator responsible for organizing basic lifesaving training for all AIN's in ED and refresher in priorities of observation for patients in behavioural unit; and

- Review seniority or RN allocation for placement in the behavioural pod.

67. In addition, an interim medical clearance form for patients admitted to the ED MH Assessment unit was created, which was intended to be used on a temporary basis to ensure any discharge decisions were documented and made on a sound basis.

68. Given these identified concerns, on 16 May 2014, Ms Jane Hancock, the Executive Director of Operations at GCUH issued a memorandum titled, *Immediate actions to be instituted to support the management and care of patients in Safe Rooms – Emergency Departments Gold Coast Hospital and Health Service,* which stipulated that:

    a) Constant visual observations of patients in *Safe Pods* was 'to be reinstituted pro-term';

    b) Any staff members who have responsibility for visual surveillance of a patient in a *Safe Room* must be competent in basic life support, visual surveillance outcomes;

    c) A bedside handover must be undertaken and documented for all patients who are being transferred to or from a *Safe Room;*

    d) Medical clearance form must be completed prior to a patient transfer to a *Safe Room;* and

    e) Visual surveillance outcomes are to be documented (including respiratory rate) every 15 minutes.

Root Cause Analysis

69. Following Ms Mann's death, a Root Cause Analysis (RCA) was conducted by the GCHHS. An RCA is a quality improvement tool, which involves a systematic process for analysing serious clinical incidents in order to identity what and why an event happened and how it could have been prevented. A report detailing the findings of the RCA was subsequently provided for the purposes of the coronial investigation.

70. Having considered the circumstances of Ms Mann's death, the following contributing factor and recommendation was made:

a) *Contributing factor: Ms Mann's death occurred due to insufficient observation that created a delay to recognition and response to her clinical deterioration. The insufficient observation was the result of the woman being moved to the Mental Health Assessment room in the ED without adequate Medical evaluation/declaration (as per procedure 1210 Medical Evaluation Baseline, due review 05/11/16) and, the Mental Health assessment room was under the supervision of the Mental Health Liaison Registered Nurse and the Mental Health Liaison Assistant in Nursing.*

The medical evaluation/declaration that was obtained verbally for the woman did not adequately reflect the level of risk in the patient's condition; specifically

- Documented GCS variability
- Observed unsteadiness when mobilising with support
- Urinary retention requiring an IDC

This is said to have occurred due to a variable understanding by the ED and ACT staff of the existing procedure 1210 Medical Evaluation Baseline (due review 05/11/16). This variable understanding created variable expectations regarding adherence to procedure 1210 Medical Evaluation Baseline.

Recommendation

Recommended development, implementation and evaluation of a quality assurance action plan to provide improved reliability of adherence to procedure 1210 Medical Evaluation Baseline for optimising patient safety when transitioning care within the ED to the mental health assessment room for all ED Nursing and Medical Staff.

Review team suggested a Medical Declaration form requiring completion prior to transitioning ED into the mental health assessment room be named *Renae's Form* if family members are in agreement.

71. A number of Lessons Learnt were also identified during the review, namely:

a) *Lesson Learnt 1:* The CCTV footage contains crucial information for ED improvement about response times, escalation in critical situations and maintaining a patient's dignity.

It was proposed that with Ms Mann's family's consent, a portion of the CCTV could be shown to the HHS Leadership team for the purpose of ensuring engagement and leadership in the cultural improvement action plan. A roleplay by actions to support the cultural improvement action plan for ED Medical and Nursing staff, and to stimulate ED staff to identify specific improvement opportunities around; response times, escalation in critical situations and maintaining patient's dignity.

b) *Lesson Learnt 2:* The medical evaluation/declaration clearing the patient for transfer from the ED sub-acute area to the mental health assessment room area obtained verbally for Ms Mann did not adequately reflect the level of risk in her condition. This occurred because the focus of Ms Mann's care shifted from physiological to mental health. There is an unconscious bias towards those patients perceived as suffering from a mental health disorder. This resulted in diminished situational awareness of the patient's physiological deterioration.

   It was recommended that the ED develop an action plan to create awareness of the need to provide a minimum standard of care to those patients that represent due to substance dependence or mental health problems. This is to include the cultural improvement work for ED staff and mental health consumers.

c) *Lesson Learnt 3:* there was no formal open disclosure process activated following this SAC-1 reportable event. It was recommended that the quality assurance measures in place be developed, implemented and evaluated as to the adherence to procedure 1001 Open Disclosure Management Procedure.

72. It was also acknowledged in the RCA that there was a possibility of unconscious bias towards MH patients in the ED, which had the potential of negatively impacting on their healthcare outcome.

73. GCHHS claim that all of the above recommendations and lessons learnt (aside from staff viewing of the CCTV) have been implemented. Extensive reviews of policies and procedures have been undertaken for MH referrals to the ED, which significantly includes the reformulation of a mandated formal transfer form titled, *ED Triage/Referral to Acute Care Team.* This form ensures that a decision by a medical practitioner medically discharging a patient from the acute area of the ED is documented, and requires that the practitioner has assessed the patient and they are fit for an ACT assessment.

74. Extensive further training has been provided to medical and nursing staff in relation to a myriad of matters, including the development of Mental Health Learning Packages for ED nursing staff working with MH patients, further training and education for medical staff in relation to MH care and treatment, as well as yearly Basic Life Saving training and education in relation to Vital Signs and Observations.

75. In addition, a number of further actions have also been undertaken, including:

a) A further review of the circumstances leading to Ms Mann's death were undertaken since the formal RCA. A further range of issues has been identified requiring remediation, including:

- Medical handover between Dr Torpie and Dr Atkins was not done according to SBAR and documented on the comments screen.

- No communication between RN Gregory and RN Stephens when she went on break.

- There was no communication from RN Enriquez and RN Morris to RN Stephens to notify her that they were transferring Ms Mann.

- No observations recorded by either RN Enriquez or RN Morris prior to the transfer to Emergency Mental Health Assessment Area.

b) Three further policies have been introduced as a result of Ms Mann's death, which relate to visual observations, management of an aggressive patient and nurse special procedure.

c) Since 2015, the Mental Health Clinical Improvement Team from the Mental Health and Alcohol and Other Drugs Branch in Brisbane has provided GCHHS with a comprehensive project plan to implement education, training and skill development strategies to all clinical staff as to the use of the Health of the Nation Outcome Scale and outcome scores and its utilization at the clinical and service level.

d) The Queensland Adult Deterioration Detection System (Q-ADDS) for mental health facilities has been implemented and compliance is assessed as part of the GCHHS wide ADDS audit.

e) Extensive training in a number of areas, including Clinical Deterioration, with scenario-based training offered.

f) Extensive improvements have been made in the use of the electronic record CIMHA. It is now used routinely and documentation compliance is routinely audited, which involves 10 randomly selected clinical records and corresponding medication charts.

Comments by Dr David Spain, Senior Staff Specialist in Emergency Medicine

76. Dr David Spain, Senior Staff Specialist in Emergency Medicine, GCUH has since provided a report in relation to the circumstances of Ms Mann's death, as well as the implementation of the RCA recommendations.

77. In relation to the circumstances of Ms Mann's death, Dr Spain relevantly noted that:

a) It is usual practice to provide a verbal hand-over of patients between doctors with a change of shift.

b) Given Ms Mann's improving status following 11 hours of monitoring with no concerning trends, normal blood pressure and normal heart rate throughout, he was of the view that *'it would be normal that she be medically cleared'.*

c) Typically, it is recommended that patients suspected of overdosing on tricyclics, like amitriptyline and desvenlafaxine, should be observed medically until awake, not confused and with normal pulse and blood pressure.

d) In hindsight, considering her troponin elevation and decline, as well as the subtle ECG changes, he expressed the view that Ms Mann may have had some cardiac strain or minor cardiac ischaemia, which may have contributed to her cardiac arrest.

78. Dr Spain was of the view that Ms Mann did not have ECG features consistent with a tricyclic overdose, such as tachycardia, QRS broadening or ventricular arrhythmia on any ECG or during continuous ECG monitoring overnight. He did note, however, that the full ECG's conducted were abnormal and showed subtle T-wave changes in B2 and B3, which were different to that observed on the ECG's conducted in February 2014. As a clinician, Dr Spain indicated during the inquest that these abnormalities would have caused him to conduct a troponin test, as they may be an indication of cardiac issues or drug toxicity. He also acknowledged that he would have thought it necessary for a further full ECG to have been conducted prior to medically clearing Ms Mann.

79. Dr Spain stated that having considered the circumstances of Ms Mann's admission, medical history and the results of investigations conducted during her admission, he is of the view that she was likely prematurely medically cleared from the acute area of the ED to the MH assessment unit, which dynamic testing for intoxication would have likely identified. Further education provided since Ms Mann's death has emphasized the need to ensure a patient has a GCS of 15, and their gait is examined during clearance.

80. In relation to staffing levels at the GCUH at the time of Ms Mann's death, Dr Spain noted that the new hospital had only been open for 9 months, and due to government fiscal restraint, promised additional staffing and resources did not eventuate, which posed a significant challenge to the ED. He noted that on 13 May 2014, 6 medical officers and 22 nurses were on duty in the ED. Since that time staffing levels have improved.

EXPERT REPORTS

Clinical Forensic Medical Unit review

81. Forensic Medical Officer, Dr Nelle van Buuren was also requested to consider the circumstances of Ms Mann's death, and provide comment on the adequacy and appropriateness of the care she was provided at the

GCUH. Her opinion was detailed in a final report received on 16 February 2017.

82. Dr van Buuren provided a factual overview of the events preceding Ms Mann's death, as well as a summary of the autopsy and RCA findings and recommendations, which accords with that outlined previously.

83. Dr van Buuren notes that amitriptyline is an anti-depressant medication, which can also be prescribed as an adjunct in pain management. It is metabolised to nortriptyline, which may be largely responsible for the medication's antidepressant effect, and another active compound, desmethylnortriptyline. The serum half-life of amitriptyline ranges from 9-25 hours (average 15 hours) and the mean half-life of nortriptyline is 26 hours. This means that, as nortriptyline is an active metabolite, there is likely to be persistence of clinical signs and symptoms attributable to the medication, for a considerable amount of time.

84. The daily dose for the drug for out-of-hospital patients can range from 10 to 150 mg. For hospitalised patients, the daily dose can be increased to 200 mg.

85. Adverse reactions to amitriptyline include, drowsiness, blurred vision, dry mouth, postural hypotension, dizziness, arrhythmias, confusion, anxiety, urinary retention and hallucinations.

86. Measured post-mortem blood amitriptyline concentrations where death has been due to amitriptyline toxicity, range from 0.6-86 mg/kg, and the blood nortriptyline concentration (0.72 mg/kg) falls into the published post-mortem range.117 Ms Mann's ante-blood amitriptyline level of 0.47 mg/kg was just below the ranges recorded post-mortem in cases of amitriptyline overdose, but the blood nortriptyline concentration (0.72 mg/kg) falls into the published post-mortem range.

87. In relation to the management of patients with tricyclic antidepressants, like amitriptyline, it was noted that late complications, including cardiac arrhythmias, have been reported to occur as long as several days after the overdose. However, in all of these cases there were significant signs of toxicity at a much earlier stage. There were no reports of late complications for patients who were clinically stable, alert, normo-tensive and had no ECG abnormalities after 6 hours of observations.

88. Patients with tricyclic antidepressant toxicity/overdose, were said to be high risk if they had a GCS below 14/15 and cardiac arrhythmias.

89. In Ms Mann's case, the year before her death, Ms Mann received 12 prescriptions for amitriptyline 50mg tablets from 3 GP's, and the GCUH. It seems likely that from 6 May 2013 until before 9 May 2014, she would have been provided with prescriptions for amitriptyline, which would have permitted 1600 x 50mg tablets to have been dispensed. This would have provided her with an average of 4.5 amitriptyline 50mg tablets per day, and a range of 2.5-15 per day when calculated on prescribing intervals.

90. Dr van Buuren highlights that in the GP and medical records obtained, there was no mention of any of the doctors being concerned that Ms Mann may have been taking 200mg or more of amitriptyline daily, either because she told them or it was implied by the frequency of prescription requests. However, she notes that this is not expected as *amitriptyline is not usually regarded as a medication likely to be abused or misused except in acute overdose and there were no entries in her medical records that she was suicidal or likely to self-harm.*

91. Dr van Buuren notes that as blood amitriptyline and nortriptyline concentrations are not predictive of adverse reactions or outcomes, assessment of a person who has a likely amitriptyline overdose should include clinical signs and symptoms attributable to amitriptyline toxicity. In Ms Mann's case, this included likely urinary retention, confusion and an altered level of consciousness.

92. Dr van Buuren agrees with Professor Kelly's view that Ms Mann's amitriptyline therapy may have been a factor in her early presentations to GCUH in 2014. In relation to Ms Mann's admission to GCUH on 13 May 2014, Dr van Buuren expresses the following views:

    a) She was triaged appropriately upon admission.

    b) In relation to transfer to the MH assessment room, it is noted that there are limitations to monitoring a person by way of CCTV footage only. As in this case, it is difficult, if not impossible, to distinguish from the CCTV footage alone whether a person is asleep, deceased or unconscious. She is of the view that CCTV visual monitoring is inappropriate for use with patients, who have medical problems, which could result in clinical deterioration, and should not replace usual medical observations and monitoring.

    c) She questions whether Ms Mann was 'alert' or had a GCS of 15 at the time she was moved to the MH assessment room. Given her presentation on the CCTV footage whereby she was required to be supported/guided by two people and the confusion she was recorded to have suffered shortly before transfer, it seems questionable as to whether her clinical observations made by medical and nursing staff are in fact commensurate with her demeanour on the CCTV recording. She notes that, *one interpretation could be that she had a fluctuating level of consciousness or alertness, and did not meet the discharge criteria, which include non-cardiac indicators of tricyclic anti-depressant toxicity.*

    d) From the CCTV, it appears that Ms Mann's time of death may have been earlier than when she was found unresponsive at 7.33am, as movement was last seen on the CCTV footage at around 6.49am. If this is the case, then the rise in amitriptyline concentration, commented on by Dr Little, from Ms Mann's admission blood sample

to after resuscitation was commenced, can be explained as being post-mortem redistribution.

e) Written documentation of medical clearance from the ED is appropriate, whether to other hospital departments or into the community. This is addressed in the RCA.

f) It would be appropriate to have admission criteria for the MH assessment room, excluding patients with medical conditions, which may result in clinical deterioration. CCTV monitoring and 15-minute observations will not prevent adverse outcomes in patients, who may deteriorate, particularly where the medical (including intoxication) can result in a decreased level of consciousness.

g) Ms Mann's appearance on the CCTV recording does not consistently correlate with information provided in staff statements, particularly the allegations that Dr Atkins was told Ms Mann had continued to improve and RN Jeffs' claim that she could stand up and walk unaided. However, RN Bender's recollection of the account provided at handover, that she was 'rousable to sternal rub' and RN Enriquez's description of her being confused, are commensurate with observations of Ms Mann's appearance on the CCTV.

h) It is not certain that had Ms Mann continued to be monitored in the ED, rather than placed in the MH assessment room, that her death would have been avoidable.

Emergency Medicine Specialist, Professor Anne-Maree Kelly

93. Expert opinion considering the care provided to Ms Mann at the GCUH was sought from Professor Anne-Maree Kelly, who is the Head of Emergency Medicine at Wester Health in Footscray, Victoria. Two expert reports were subsequently provided.

94. Having considered the relevant material, Dr Kelly expressed the view that Ms Mann does not appear to have exhibited features consistent with severe tricyclic antidepressant toxicity. She had a normal blood pressure and heart rate throughout her ED stay, exhibited the expected improvement in conscious state over time, and had no seizure activity or ECG features suggesting a high risk of cardiac arrhythmia. She was also monitored for around 12 hours, which is when the maximum toxicity for such a drug would have been expected.

95. Professor Kelly notes that whilst it would have been optimal to have the changes to the ST segments and T waves on the ECG investigated by way of serial troponin assays, as this would have provided evidence of acute heart damage, on balance she believes that this was unlikely, and that the minor troponin elevation found in the initial blood tests may be due to the enlarged heart and whatever was causing the cardiac scarring. During the inquest, Professor Kelly acknowledged that these findings, however, were significant enough to warrant further investigation. She

agreed that a further full ECG in Ms Mann's case would have been clinically helpful.

96. Professor Kelly referred to the *Guideline for the Management of Tricyclic Antidepressant Overdose139* by Body et al, whereby it states: *Serial ECG recordings should be examined for the presence of QRS prolongation (>100ms), QTc prolongation (>430ms) and R/S ration >0.7 in lead a VR. These changes identify patients at high risk of developing complications following TCA overdose. Part 7.7: Following TCA overdose asymptomatic, stable patients who have had no significant ECG abnormalities six hours after ingestion may be safely discharged…*

97. In relation to Ms Mann's QTc recordings, which were higher than 430ms, Professor Kelly noted that her baseline level from previous ECG's was abnormal, which was relevant to determining whether a reading was clinically significant. She further reiterated that it was generally accepted that major complications associated with a tricyclic overdose usually presented within six hours of ingestion.

98. Professor Kelly does express concern as to the lack of monitoring Ms Mann received whilst she was in the MH assessment room. She is of view that whilst monitoring patients in a mental health area may primarily be for behavioural issues, there is also a responsibility to observe patients for clinical deterioration. She notes that Ms Mann can be seen on the CCTV not to have moved or taken a breath from 6.49am, however, no one checked on her until 7.33am. Professor Kelly is of the view that this failing to recognise and respond to this is a *significant failure of clinical care and probably contributed to her death*.

99. In relation to Ms Mann's physical presentation whilst in the MH assessment room, Professor Kelly commented that there is clearly a change in her demeanour when she is attempting to sit up whilst lying on the bed, and further when she does not move whilst thought to be asleep. Professor Kelly is of the view that this change in her behaviour warranted further examination by nursing staff.

100. Professor Kelly is of the view that there should be admission criteria for the MH assessment rooms, excluding patients that have medical conditions where they may suffer clinical deterioration. Any patients admitted to this area should be low clinical risk, particularly as CCTV footage and 15 minute observations cannot detect all adverse events.

101. Professor Kelly was asked to comment upon the adequacy and appropriateness of the medical assessment treatment of Ms Mann whilst she was in the ED. Relevantly, she noted the following:

    a) An appropriate triage category was assigned to Ms Mann upon her presentation to the GCUH.

    b) Ms Mann underwent an assessment by a senior clinician within a suitable time frame, who ascertained the nature of the event and her

clinical condition. Professor Kelly concurs with Dr Torpie's assessment of a likely overdose of amitriptyline possibly with diazepam, with no evidence of severe toxicity from which an uneventful recovery would be expected. She agrees that a troponin test in view of the ECG findings was advisable.

c) Ms Mann was closely monitored during her approximately 11 hour stay in the ED, with continuous cardiac monitoring and vital signs at appropriate intervals.

d) Dr Atkins' decision to authorize Ms Mann's medical clearance with respect to amitriptyline toxicity based on the lack of clinical evidence of significant toxicity (no abnormally fast or slow heart rate, normal blood pressure and no seizures or abnormal heart rhythms) and an expected improvement in conscious state to GCS 15 for at least an hour is reasonable.

102. In relation to the tests, which should be carried out on a patient with a suspected amitriptyline overdose, Professor Kelly states that these are clinical and supported by an ECG analysis. Close clinical and physiological monitoring for a period of at least 6 hours is recommended. Guidelines state that following tricyclic anti-depressant overdose, asymptomatic, stable patients with no significant ECG abnormalities six hours after ingestion may be safely discharged. According to an expert review, late complications (>6 hours) are 'extremely low'.

103. Severe amitriptyline toxicity is usually clinically evidenced (within 1-2 hours of ingestion) by low or a deteriorating conscious state, fast heart rate, low blood pressure, seizures and arrhythmias. An ECG analysis is also undertaken in order to identify a patient's heart rhythm, as well as signs of toxicity, such as prolonged QRS and QT interval duration. Routine blood tests, including measurement of blood sugar and blood gas analysis for acidosis is also advisable.

104. Professor Kelly notes that amitriptyline levels are rarely measured in an ED setting, as only a few testing sites can analyse samples, meaning that the results are rarely available in a clinically useful timeframe.

105. Overall, Professor Kelly is of the view that the assessments conducted of Ms Mann were adequate and appropriate, and in accordance with published guidelines.

106. Professor Kelly is of the view that criteria-based medical clearance should be documented, before a patient is discharged or transferred to another department from the acute area of the ED. She notes that the criteria should be pre-specified by an appropriately qualified senior doctor, however, could be applied by a nurse or medical doctor depending on the work flow and load of the ED.

107. In relation to the RCA and recommendations made, Professor Kelly is of the view that the proposed changes are sufficient to address the concerns

raised in Ms Mann's case. She is of the view that the main deficiency in this case is the failing by staff to identify her clinical deterioration whilst she was in the Mental Health assessment room. If this had been identified earlier, by way of physical monitoring at appropriate intervals, Ms Mann's outcome may have been different.

108. With the benefit of hindsight, Professor Kelly is of the view that Ms Mann's health related events in early 2014 may have been evidence of adverse cardiac effects related to anti-depressant agents. She was taking two types at the time of her death, namely desvenlafaxine and amitriptyline, which may have increased her risk of sudden death or ventricular arrhythmias. Accordingly, these presentations were missed opportunities to identify an arrhythmia as a possible cause of her symptoms and alter her medication to reduce the risk.

109. In Professor Kelly's opinion, Ms Mann's sudden cardiac death on 14 May 2014 was most likely due to an arrhythmia related to anti-depressant use, but was unpredictable from her clinical presentation and ECG.

ANALYSIS OF THE CORONIAL ISSUES

The findings required by s. 45 of the Coroners Act 2003

110. In accordance with section 45 of the *Coroners Act 2003,* a coroner who is investigating a suspected death must, if possible, make certain findings.

111. On the basis of the evidence presented at the inquest, I make the following findings:

    a) The identity of the deceased person is Renae Jean MANN;

    b) Ms Mann died whilst awaiting assessment in the Mental Health assessment pod of the Gold Coast University Hospital having been admitted to the emergency department the previous evening for a suspected tricyclic overdose;

    c) The date of Ms Mann's death was 14th May 2014;

    d) The place of Ms Mann's death was the Gold Coast University Hospital, Queensland; and

    e) The cause of Ms Mann's death was as a result of the acute toxic effects of amitriptyline.

The adequacy and appropriateness of the care and treatment provided to Ms Mann by hospital staff following her admission, including her medical clearance and nursing care.

112. It has been acknowledged by senior staff at the GCUH, as well as those that were responsible for Ms Mann's care and treatment shortly prior to her death, that her medical discharge from the acute area of the ED on 14

May 2014 was likely premature. Whilst the level and duration of monitoring she received prior to discharge may have been acceptable considering current applicable Australian Guidelines in relation to patients with tricyclic overdoses, when considering Ms Mann's entire clinical picture, particularly her abnormal ECG's and the failure to conduct a troponin testing to explain these abnormalities, it is acknowledged that there were missed opportunities to appropriately explore these possible indicators of 'significant underlying heart disease'. At inquest, it was generally accepted that these findings should have influenced Ms Mann's period of observations and the need for a further ECG to have been conducted prior to her medical discharge from the acute area of the ED. During the inquest, Dr Atkins freely acknowledged that this was the case, and that she would have been less likely to discharge her to the MH assessment area had she considered her previous medical history and conducted the troponin tests as requested by Dr Torpie. It is clear that following Ms Mann's death, Dr Atkins has made a number of changes to her personal practice.

113. I am satisfied that Ms Mann's swift discharge from the acute area of the ED to the MH assessment pod following the arrival of a trauma patient and child in respiratory distress on the morning 14 May 2014, was inappropriate as she had not been properly observed and assessed by a medical practitioner immediately before the transfer. A suitable notation was also not included in the medical records. This has since been sufficiently rectified by way of the introduction of the formal transfer form, which must be completed by a medical practitioner prior to discharge.

114. Such missed opportunities need to be considered in the context of an incredibly high volume and under resourced ED, which was clearly the case at the time of Ms Mann's admission in May 2014. Whilst these limitations have since been rectified with increased staff and further beds being made available, I am satisfied that such factors played a role in the short comings evident in Ms Mann's clinical care and treatment decisions.

115. In relation to Ms Mann's admission to the MH assessment area, it is clear from the CCTV footage that she was unsteady on her feet and had involuntary movements, which should have given staff cause for clinical concern. Unfortunately, these actions were thought to be deliberate and incorrectly attributed to a behavioural issue. Despite Ms Mann not making any movements after 6.49am whilst lying in the MH assessment neither the AIN nor RN entered her room for some 45 minutes. This failing is hard to fathom, and clearly demonstrates a lack of sufficient observation, as well as the obvious limitations of relying on CCTV footage to effectively monitor patients. Whilst there was no requirement that staff conduct 15 minute observations, questions as to the welfare of a patient should have reasonably been aroused when they fail to make any movement for an extended period of time. Even if Ms Mann had behaved in the manner as alleged by RN Jeffs and AIN Molina, this is not a sufficient reason to justify this failing to recognise her clinical deterioration. Given the time that had passed, it seems unlikely that any resuscitation attempts, no matter how intensive, could possibly have been successful.

116. With the benefit of hindsight, RN Jeffs expressed regret for having not been as astute as she could have been to changes in Ms Mann's clinical presentation, which may have warranted further investigation. She acknowledged that Ms Mann's actions as seen on the CCTV footage would normally have given her cause for clinical concern.

The appropriateness of utilising assessment pods for patients in the hospital

117. Whilst the use of MH assessment rooms are certainly necessary in a tertiary hospital, the tragic circumstances of Ms Mann's death clearly highlights the need for a patient to meet a strict criteria before being deemed suitable for transfer to this area. Significantly, a patient should not be deemed suitable for admission to the MH assessment area if there is any risk of them suffering clinical deterioration given the medical basis for their admission, or their known medical history.

118. Whilst the observation of patients by way of CCTV footage has its place, such a method has obvious and significant limitations, which pose a notable risk to patient safety if not coupled with reasonable physical observations that should be documented.

119. The circumstances of Ms Mann's death, and the delay in recognizing her deterioration, also suggests that any staff member who is allocated to the MH assessment pod should be proficient in Basic Life Saving measures.

The sufficiency of the changes made to relevant hospital policies and procedures following Ms Mann's death.

120. Immediately, following Ms Mann's death, various actions were undertaken by GCUH to identify and rectify the deficiencies that contributed to Ms Mann's death. Constant visual observations of patients in the MH assessment pods were instantly reinstituted, and an interim Medical Clearance Form introduced, which was required to be completed by a medical practitioner prior to a patient transfer to the MH assessment area.

121. Following the RCA, the *Ed Triage/Referral to Acute Care Team* Form is now formally mandated for transfers of a patient to the MH assessment area, and must detail the decision by a medical practitioner to medically discharge a patient, who is deemed suitable for an ACT assessment. In addition, extensive education and training has been provided to nursing and medical staff in relation to a myriad issues, including MH care and treatment and basic life saving measures.

RECOMMENDATIONS IN ACCORDANCE WITH S. 46

122. Section 46 of the Act provides that a coroner may comment on anything connected with a death that relates to:

    a. public health and safety,

b. the administration of justice, or

c. ways to prevent deaths from happening in similar circumstances in the future.

123. I find that provided the various measures introduced by the GCUH, particularly those aimed at ensuring proper medical clearance and adequate monitoring in the MH assessment rooms, remain implemented, such actions are sufficient to address the concerns clearly arising in relation to the care and treatment provided to Ms Mann following her admission on 13 May 2014 until her tragic death on 14 May 2014.

I close the inquest.

James McDougall
Coroner, Southern Region
Southport
26 September 2018