IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2006 4595

FINDING INTO DEATH WITH INQUEST

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

(Amended pursuant to s76 of the *Coroners Act 2008*
on the 5th September 2013)

Inquest into the Death of: JOHN CRIVERA

Delivered On:	21 May 2013
Delivered At:	Level 11, 222 Exhibition Street Melbourne 3000
Hearing Dates:	31 January 2011
Findings of:	JANE HENDTLASS, CORONER
Representation:	Ms Foy appeared for Eastern Health
Police Coronial Support Unit	Leading Senior Constable King Taylor

I, JANE HENDTLASS, Coroner having investigated the death of JOHN CRIVERA

AND having held an inquest in relation to this death on 31 January 2011
find that the identity of the deceased was JOHN CRIVERA
born on 31 December 1974
and the death occurred on or about 3 December 2006
at 11 Wynette Street, Upper Ferntree Gully Victoria 3156
from:
1 (a) Quetiapine toxicity in a man consuming sertraline and mirtazapine

in the following circumstances:

1. John Crivera was 31 years old when he died. He lived as a boarder at 11 Wynette Avenue in Upper Ferntree Gully. The owner of the property and co-resident was Sandy Pandelias.

2. Ms Pandelias told the Court that Mr Crivera had lived at her house for five or six months. She did not get to know him well in that time. She said he was a very very quiet person.

3. Mr Crivera's medical history included bipolar affective disorder and abuse of alcohol, amphetamines, cannabis and LSD. Mr Crivera denied that his long-term low libido was associated with childhood sexual abuse. An electrocardiograph performed on 26 September 2006 did not disclose any abnormality in cardiac function.

4. Mr Crivera was subject to a Community Treatment Order administered through Chandler House Community Mental Health Service which is part of Eastern Health. His Case Manager was Seigrid Cooke. Ms Cook told the Court:

   "(A)s the case manager my role is to monitor people's mental state in the community. To regularly review them, to address any social issues that might possibly have an impact on their mental state and the stability of their mental state."

5. Mr Crivera's consultant psychiatrist was Dr Nuala Moran. His treating medical officer was Dr Stephen Xu. Dr Xu and Dr Moran prescribed diazepam, quetiapine, lithium, sertraline and sodium valproate. These medications were dispensed by Hawkes Pharmacy. Mr Crivera was also required to submit to intramuscular administration of 125mg zuclopenthixol deconate every two weeks at Chandler House.

6. Ms Cook expressed the opinion that Mr Crivera seemed to understand that he needed to remain compliant with his medication and that illicit substances had a significant impact on his illness. Therefore, she believed that he had reasonable insight into his circumstances.

7. Further, between June and the beginning of October 2006, Mr Crivera continued to manage his illness quite well:

- On 9 June, Ms Cook described Mr Crivera as well, relaxed, pleasant, engagable, with good rapport and euthymic in mood. He admitted to reducing his sertraline dose a month earlier and started a new job as a welder. He was drug and alcohol free and admitted that speed had caused his most recent relapse. He was attending Chandler House regularly and reliably for his depot injections.

- On 23 June, he moved accommodation to be nearer work and more independent. He was taking his medication. He felt he had control of his life.

- On 7 July, he had stopped taking his antidepressants and reduced his quetiapine but his lithium levels were stable. He was looking for a girlfriend.

- On 21 July, he was content and rational. Dr Moran began to consider discharge from his Community Treatment Order.

- On 2 August, Dr Xu referred Mr Crivera back to Dr Hershel Goldman at Hampton Park Medical Centre. In his referral note, Dr Xu noted that he had ceased his Zoloft (sertraline) himself and was currently stable.

- On 4 August, he was still working full time and was still concerned about his sex drive. Dr Moran referred him to a sexual health clinic and decreased Mr Crivera's zuclopenthixol from 125mg to 75mg because he was taking his mood stabiliser, quetiapine, and his mental state seemed stable.

- On 24 August, in the absence of Dr Moran, Dr Neerim Gill assessed Mr Crivera and began to consider cessation of his depot injections and discharge from the Community Treatment Order. On 25 August, he underwent a number of blood tests which indicated that he was complying with his oral medication regime.

- On 15 September 2006, Mr Crivera reported that he was happy with his current regime but he would like to stop his injections because of erectile issues.

- On 26 September, Mr Crivera's prolactin levels were low and his lithium and sodium valproate levels were adequate. He was still working full time.

- Dr Xu accepted that Mr Crivera's low prolactin levels could be a side effect of his zuclopenthixol. He decreased his zuclopenthixol dose further to 50mg. This is less than half the dose he was administered until 4 August. This new zuclopenthixol dose commenced on 13 October 2006.

8. Then, on 13 October 2006, Mr Crivera told Ms Cook that he had suicidal thoughts but no plan. He remained pre-ooccupied with sexual function issues but there was a delay in obtaining an appointment from a specialist urologist. He said he was compliant with his medication. He was bored at work. His land lady was hassling him.

9. Ms Cook was concerned about Mr Crivera's mental state so she organised for him to be reviewed immediately by Dr Xu.

10. Mr Crivera also told Dr Xu that felt low occasionally with suicidal thoughts but denied any intention to carry it out. He acknowledged he had become withdrawn and did not fit in because people thought he was weird. However, he refused an antidepressant and required persuasion to accept an appointment with Dr Moran.

11. On 20 October 2006, Dr Moran assessed Mr Crivera's mood as 1-2/10; his motivation had decreased; he had very negative thoughts, suicidal thoughts and anxiety; he was convinced his problems were due to social rather than psychiatric illness. Dr Moran diagnosed Mr Crivera in a depressed phase of his bipolar illness.

12. Mr Crivera agreed to restart taking sertraline (Zoloft) and diazepam as required for anxiety. Hawkes Pharmacy dispensed the sertraline on 20 October 2006 with advice to take one tablet or 100mg each morning.

13. Afterwards, Ms Cook also rang Mr Crivera's father but Mr Crivera was already at his place having a sleep.

14. On 24 October 2006, Mr Crivera's mental state had not improved. He reported quitting work and said his mood remained low but there was some improvement in his anxiety.

15. On 25 October, Mr Crivera accepted his second injection of 50mg zuclopenthixol. Dr Xu also reviewed Mr Crivera. He was too shy to approach Centrelink for unemployment funding. He was worried that he would not be able to have an implant. He had no thoughts of self harm and promised not to overdose on diazepam. He was going to Echuca for a few weeks. Dr Xu prescribed more diazepam. This prescription was filled on the same day.

16. On 10 November 2006, Dr Xu reviewed Mr Crivera. His mood was better. However, the urologist could not exclude alternative explanations or agree to an implant until alternative pharmaceutical management of the issue had been attempted.

17. On 14 and 20 November 2006, Mr Crivera failed to keep appointments for his depot injections. His father explained that they had been together for the last week and was planning to return home on 24 November.

18. On 24 November 2006, Dr Moran assessed Mr Crivera after Mr Crivera's father contacted her to express his concerns. Mr Crivera admitted occasional thoughts of suicide but denied a plan. He denied non-compliance with his medication. He accepted his depot injection of 50mg zuclopenthixol and his daily sertraline was increased to 250mg. This was dispensed on 28 November.

19. On 28 November 2006, Dr Moran reviewed Mr Crivera again. His mood remained 3/10. He had low motivation and energy and was unable to work. He slept excessively. He had low self esteem but no current plan or intent to self harm.

20. Dr Moran advised Mr Crivera to increase his sertraline to 300mg if his mood did not improve over the weekend. She was concerned about his mental state and she made arrangements for Mr Crivera to spend another weekend with his father. He was referred for blood tests to check his compliance with his medication and further review on 4 December 2006.

21. Mr Crivera failed to have the blood tests to confirm he was complying with his medication before he went to stay with his father. On 2 December 2006, he returned to Ferntree Gully.

22. On 2 December 2006, Hawkes Pharmacy dispensed 60 tablets of quetiapine, 200 tablets of lithium and 200 tablets of sodium valproate. All this medication had been prescribed for Mr

Crivera by Dr Xu on 27 June 2006. On the same day, Mr Crivera was last seen by Ms Pandelias' son.

23. At 2.00pm on 3 December 2006, Ms Pandelias found Mr Crivera unresponsive in his bedroom. He was unable to be revived. Police found packaging for and unused tablets of lithium, sodium valproate, quetiapine, sertraline and diazepam in Mr Crivera's bedroom.

24. Combining the information available from the police brief and the PBS records I have calculated that these drugs included:

- Two unopened boxes of 100 x 450mg tablets of Quilonum (lithium) prescribed by Dr Xu and dispensed on 30 August 2006 with advice to take 2 ½ tablets each night;
- Two unopened boxes of 100 tablets of Quilonum (lithium) prescribed by Dr Xu and dispensed on 2 December 2006 with advice to take 2 ½ tablets each night;
- Two opened boxes of 100 tablets of Quilonum (lithium) prescribed by Dr Xu and dispensed on 30 June 2006 containing 18 empty blister packs with advice to take 2 ½ tablets each night;
- Two unopened boxes of 100 x 500mg tablets of Valpro 500 (sodium valproate) prescribed by Dr Xu and dispensed on 30 August 2006 with advice to take three tablets at night
- Two unopened boxes of 100 tablets of Valpro 500 (sodium valproate) prescribed by Dr Xu and dispensed on 2 December 2006
- Two opened boxes of 100 tablets of Valpro 500 (sodium valproate) prescribed by Dr Xu and dispensed on 30 June 2006 containing 20 empty blister packs
- One opened box of Valpro 500 (sodium valproate) prescribed by Dr K Yeang and dispensed on 5 February 2006 with two opened blister packs containing 12 tablets.
- One opened box of 60 x 150mg tablets of Seroquel (quetiapine) prescribed by Dr Moran and dispensed on 5 April 2006 containing 26 tablets
- One opened box of 60 tablets of Seroquel (quetiapine) prescribed by Dr Xu and dispensed on 30 June 2006 which was empty

- One opened box of 60 tablets of Seroquel (quetiapine) prescribed by Dr Xu and dispensed on 30 August 2006 which was empty

- One opened box of 60 tablets of Seroquel (quetiapine) prescribed by Dr Xu and dispensed on 2 December 2006 containing three unopened blister packs and 13 used or empty blister packs

- One opened box of 30 x 50 mg tablets Xydep (sertraline) prescribed by Dr Xu and dispensed on 10 November 2006 with all tablets still in the box and advice to take one tablet in the morning;

- One empty box of 30 tablets Xydep (sertraline) and one box with 15 tablets left still in the box prescribed by Dr Xu and dispensed on 28 November 2006 with advice to take 2 ½ tablets in the morning.

- One half full (about 100 x 250mg tablets left) bottle of Lithicard (lithium) prescribed by Dr Yeang and dispensed on 26 May 2006.

- Two empty blister packs for 20 tablets of Valpam (diazepam).

25. Post mortem toxicological analysis detected quetiapine (12mg/L), sertraline (1.7mg/L) and mirtazepine (0.1mg/L). Zuclopenthixol is not usually detected.

26. The forensic pathologist, Dr Noel Woodford, who performed the autopsy formed the opinion that the cause of death was quetiapine toxicity in a man also consuming sertraline and mirtazepine.

27. Dr Woodford is of the view that the post mortem concentrations of quetiapine and sertraline are at potentially excessive levels. In his opinion, the quetiapine was present at markedly excessive levels and is a drug known to cause significant hypotension and central nervous system depression in overdose. Typically serotonin re-uptake inhibitor-type-antidepressants are safer in overdose. Therefore he considered the quetiapine to be the major operative factor in terms of drug toxicity. He included the other drugs in the cause of death because of their potential additive affect with respect to central nervous system depression and the possibility that other factors such as serotonin syndrome may have been an operative factor.

28. However, the forensic toxicologist, Dr Dimitri Gerostamoulos, is of the view that quetiapine is relatively safe in overdose but the concentration of 12mg/L is consistent with excessive and potentially fatal use in combination with sertraline. The blood concentration of 1.7mg/L sertraline is elevated and does suggest use of a significant dose of the drug. However, it is difficult to be precise given the likely post-mortem change in concentration. The presence of three serotonin active drugs (sertraline, quetiapine and mirtazepine) raises the likelihood of any toxicity associated with these drugs. He is of the opinion that, in the absence of any significant natural disease, the combination of toxic levels of quetiapine and elevated sertraline are likely to have caused the death.

29. Accordingly, I encompass these two opinions in finding that John Crivera died from quetiapine toxicity in a man also consuming sertraline and mirtazapine.

COMMENTS

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

1. John Crivera was 31 years old when he died. Since 23 June 2006, he had lived as a boarder at 11 Wynette Avenue in Upper Ferntree Gully.

2. Mr Crivera had a long history of bipolar affective disorder which responded well to medication and abstinence from alcohol and illicit drugs. Mr Crivera denied that his long-term low libido was associated with childhood sexual abuse. Recent electrocardiographs did not disclose any abnormality in cardiac function.

3. On 3 December 2006, Mr Crivera died at home from quetiapine toxicity in a man also consuming sertraline and mirtazapine.

4. In 2006, Mr Crivera was subject to a Community Treatment Order administered through Chandler House Community Mental Health Service which is part of Eastern Health. His consultant psychiatrist was Dr Nuala Moran. His treating medical officer was Dr Stephen Xu. His case manager was Seigrid Cooke.

5. Section 8 of the *Mental Health Act* 1986 provides that a Community Treatment Order can only be imposed on a mental health client if the person cannot receive adequate treatment for the mental illness in a manner less restrictive of his or her freedom of decision.

6. The chief psychiatrist authorises consultant psychiatrists in approved mental health services in Victoria to take responsibility for ensuring that mental health patients are not subject to involuntary treatment orders if they do not meet the criteria established by the *Mental Health Act* 1986.

7. In practice, this means that an authorised consultant psychiatrist must regularly review each involuntary mental health patient. Further, patients who understand the implications of their mental illness, accept treatment voluntarily, comply with the regime advised by their treating team and are not an immediate risk to themselves or other people in the community cannot continue to remain on involuntary treatment orders.

8. Between June and the beginning of October 2006, Mr Crivera reported stopping his antidepressants himself and he had difficulty keeping his medical appointments because of his full time work. Mr Crivera was pre-occupied with an erectile difficulty which was a long-standing condition but he attributed it to his zuclopenthixol.

9. However, in this context, Mr Crivera seemed to be managing his mental illness quite well during this time: He expressed insight into the need to maintain his medication regime. Blood tests confirmed he was complying with his oral medication doses. His mental state was very stable. He was attending Chandler House regularly and reliably. He had moved into new accommodation.

10. Accordingly, in August 2006, Mr Crivera's treating team reduced his zuclopenthixol dose from 125mg to 75mg every two weeks, referred him to a urologist and began to plan for discharge from his Community Treatment Order.

11. On 26 September 2006, his lithium and sodium valproate levels were adequate. He was still working full time.

12. However, Mr Crivera's mental state deteriorated over the following three weeks.

13. On 13 October 2006, Mr Crivera admitted to Ms Cooke that he had suicidal thoughts but no plan. He said he was still complying with his medication but he was unhappy with his work and his impotence. Ms Cook was concerned about his decline.

14. Despite this deterioration in mental state documented on 13 October 2006, Dr Xu continued with the plan to reduce Mr Crivera's fortnightly zuclopenthixol dose to 50mg.

15. Although Mr Crivera continued to comply with the requirement that he present for his depot zuclopenthixol injections, his mental state continued to deteriorate throughout October and November 2006. In particular, Mr Crivera's medical assessments confirmed relapse of the depressive phase of his bipolar illness against a background of continuing pre-occupation about his erectile dysfunction.

16. Retrospective analysis of medication found after his death suggests to me that the deterioration in Mr Crivera's mental state observed by his treating team in October and November 2006 coincided with reduction in his zuclopenthixol dose to 75mg and then 50mg every two weeks and his non-compliance with the lithium and sodium valproate doses prescribed by his treating team from about 20 September 2006.

17. In particular, medication found in Mr Crivera's room after he died included two empty boxes for 100 tablets of lithium dispensed on 30 June 2006 and two unopened boxes of lithium dispensed on 30 August 2006. The prescribed dose would require Mr Crivera to use about 75 tablets a month and he would use about 200 tablets between 30 June and 20 September 2006. Of course, this end date would be extended by any period of partial compliance.

18. Similarly, there were two used boxes for 100 tablets of sodium valproate and two blister packs with 12 tablets of sodium valproate left dispensed on 30 June 2006 as well as two unopened boxes of sodium valproate both dispensed on 30 August 2006. The prescribed dose would require Mr Crivera to use about 90 tablets a month and he would use about 240 tablets between 30 June and 20 September 2006. This end date would also be extended by any period of partial compliance.

19. However, Mr Crivera's treating team did not actively respond to this coincidence in reduction in Mr Crivera's zuclopenthixol dose, non-compliance with his prescribed oral medication and deterioration in his mental state because he denied the non-compliance and Dr Moran and Ms Cooke believed that he was frank with them about his use of medication. Dr Moran told the Court:

".. at the time I was completely convinced that he was compliant with medication because he told me, looking me straight in the eye on three or four occasions that he absolutely was and I believed him and I think the rest of the team believed him. He... appeared to be quite credible in that respect."

20. Blood tests for lithium and sodium valproate taken in October 2006 would have shown that Mr Crivera was not taking his prescribed doses of lithium or sodium valproate. I have no doubt that this knowledge would have initiated an active response to his treating team's increasing concerns about his deterioration following his assessments on 13 and 20 October.

21. The clinical response to Mr Crivera's continuing relapse also seems to have clouded by his pre-occupation with sexual dysfunction and the treating team's accepting the possibility that there was a relationship between his zuclopenthixol and his impotence.

22. Accordingly, no attempt was made to restore Mr Crivera's higher pre-August zuclopenthixol dose or order blood tests to provide collateral confirmation that he was complying with his oral medication regime. Rather, Dr Moran and Dr Xu introduced diazepam and restored increasing doses of sertraline.

23. Further, Mr Crivera filled sertraline prescriptions on 20 October and 10 November 2006. There was no evidence in his room of any sertraline remaining from the medication dispensed on 20 October but there was one unused package of sertraline dispensed on 10 November 2006. The prescribed dose would require him to use about 40 tablets between 20 October and 28 November 2006.

24. Therefore, Mr Crivera seems to have either taken the dose of sertraline prescribed by Dr Xu on 20 October until about 20 November 2006 and then stopped taking it or he missed his doses on eight days during the period to 28 November 2006.

25. Accordingly, I find that treating team was idealistic in accepting his self-reported compliance with his oral medication despite well documented continuing deterioration in and concern about his mental state in October and November 2006, recent history of reducing his medication without consultation and a long-term history of sexual dysfunction which he attributed to the more recent introduction of zuclopenthixol.

26. Further, blood tests ordered on 28 November 2006 also relied on Mr Crivera arranging for the blood to be taken and, even if they had occurred then, would probably have provided information too late to reverse his decline.

27. I have no doubt that collateral evidence of Mr Crivera's non-compliance with oral medication and holistic analysis of his circumstances would have changed the way in which his treating

team managed his deteriorating mental illness and increased his capacity to re-stabilise. **Recommendations 1, 2 & 3**

28. On 28 November 2006, Mr Crivera was still depressed and Dr Moran increased Mr Crivera's sertraline dose to 250mg a day with advice to increase his sertraline dose to 300mg if his mood did not improve over the weekend. She also ordered blood tests to verify his self-reported compliance with his medication. However, Mr Crivera did not present to have the blood taken for testing before he went to stay with his father over the weekend.

29. After Mr Crivera died on 3 December 2006, police found was one empty blister pack and one blister pack with 15 tablets remaining of sertraline dispensed on 28 November 2006 in his room. This means that he used at least 45 tablets of sertraline in the four days between 28 November and 2 December 2006. This is over four times the higher dose prescribed on 28 November and three times the dose advised by Dr Moran if he had not improved.

30. On 2 December 2006, Mr Crivera also filled prescriptions for quetiapine, lithium and sodium valproate but these boxes also remained unopened. Further, he was not prescribed and there is no evidence of the source of the mirtazapine detected in his body after he died and there is no collateral evidence before me that Mr Crivera committed suicide.

31. Therefore, I am unable to say whether Mr Crivera took extra medication on or about 2 December 2006 with the intention to die or whether he was following Dr Moran's advice and taking extra sertraline in a late attempt to reduce the effect of his mental illness.

RECOMMENDATIONS

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendation(s) connected with the death:

1. That Eastern Health review their procedures for monitoring mental health clients' compliance with the requirements of their Community Treatment Orders to encourage early collateral monitoring of their blood medication levels when they present with otherwise unexplained or continuing deterioration in their mental state.

2. That the Chief Psychiatrist advise authorised psychiatrists of the approved mental health services in Victoria of the circumstances of Mr Crivera's death and encourage early collateral monitoring of blood medication levels when clients on Community Treatment Orders present with otherwise unexplained or continuing deterioration in their mental state.

3. That the Royal Australian and New Zealand College of Psychiatrists advise its members of the circumstances of Mr Crivera's death and the importance of collateral evidence of compliance with treatment conditions in the context of otherwise unexplained or continuing deterioration in patients' mental state.

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

Minister for Mental Health

Chief Psychiatrist

Director of Psychiatry, Eastern Health

President, Royal Australian and New Zealand College of Psychiatrists

Signature:

DR JANE HENDTLASS
CORONER
Date: **5 September 2013**