QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

Non-inquest findings

CITATION:	**Investigation into the death of William Charles Wallrock**
TITLE OF COURT:	Coroner's Court
JURISDICTION:	Brisbane
FINDINGS OF:	Christine Clements, Brisbane Coroner
CATCHWORDS:	Pain relief following extraction of 3 wisdom teeth -Inappropriate supply by general practitioner of Physeptone (methadone) - Interaction with norfluoxetine and codeine

Introduction

1. William James Wallrock (Will) was an apparently fit young man, aged only 22 when he died suddenly and unexpectedly at his family home at 43 Langside Rd Hamilton in Queensland. He was found deceased in his bed shortly before 3pm on the afternoon of 19 June 2011. The cause of his death was unknown and his death was therefore reported to the Coroner to investigate and to establish the cause and circumstances leading to his unexpected and premature death.

2. Four days prior to his death, on 15 June, Will had three wisdom teeth extracted and suffered pain and subsequent swelling requiring pain relief.

Background

3. Will had recently returned to his family home on the 29 May 2011 after spending 12 months in Florida, USA. He studied a marine mechanic course during this period. Upon his return, his mother Margaret recalled her son looked particularly fit and he had not mentioned any period of illness during his time overseas. He did however indicate his wisdom teeth were painful, one in particular. On 15 June 2011 Will attended the family dentist, Dr David Hogan.

4. Will had attended the dental practice from 2003 and was reviewed in 2010 prior to his overseas trip. It was anticipated that three wisdom teeth would eventually require removal. By 3 June 2011 Will was experiencing discomfort and Dr Hogan assessed him on 15 June and made arrangements to remove teeth numbered 18, 28 and 48 on the OPG radiograph. In Dr Hogan's opinion it was an optimal time for the procedure as, at his age, the roots would be shorter and the bone softer.

5. Dr Hogan considered it was not necessary to refer Will to an oral surgeon as he did not consider the extractions would be complicated. A local anaesthetic would be sufficient. In preparation, Dr Hogan prescribed the use of a Penthrox inhaler (methoxyflurae) which is an analgesic/relaxant to be used as an adjunct to local anaesthetic on the day of the extraction.

6. Dr Hogan extracted three teeth without a problem. He documented the use of xylocaine, septacaine, septanest and the penthrox inhaler which were all used to establish sufficient local anaesthetic effect to enable extractions to proceed.

7. Will was advised by Dr Hogan to expect some bleeding, swelling and pain following the extraction. He was provided with a printed post-operative instruction sheet which detailed the recommended use of Nurofen 200 milligrams, up to 3 times a day during the first 24 to 48 hour period. This could be supplemented with paracetamol if required. He was advised to contact Dr Hogan if he experienced any problems. Will's mother Margaret picked him up following the extraction and took him home after attending the pharmacy at Albion. Gauze and Nurofen Zavance 40 liquid capsules were purchased.

8. When Margaret Wallrock next saw her son at the completion of her work later on the afternoon of the 15 June, she observed Will's cheeks had become swollen.

She recalled his level of pain did not improve during the next two days. She understood he was taking Nurofen as well as Pandeine extra which was purchased over the counter at the Albion day night Pharmacy.

9. Will's father, Nicholas Wallrock confirmed his son was experiencing significant pain and swelling which was escalating, resulting in the use of stronger pain relief. He recalled that it was either Thursday the 16th of Friday the 17th he drove Will to the pharmacy to obtain over the counter medication. He could not recall details.

10. On Friday 17 June Will telephoned Dr Hogan at about 8:30 in the morning. Dr Hogan recalled Will's speech was normal but he indicated he was sore particularly on the right hand side of his face. He also told Dr Hogan he had been taking a Forte type of analgesia, which Dr Hogan had not prescribed for him. As Will mentioned swelling on the right hand side as well as a sore throat Dr Hogan faxed a prescription for Penicillin V 500 milligram to be taken four times a day. There were twenty five capsules prescribed. The prescription was faxed to the Albion Day and Night Pharmacy and his mother drove him to the pharmacy to pick up the penicillin.

11. During that day, Margaret Wallrock became concerned with the level of Will's continuing pain and swelling. She decided he should see a family friend of thirty years, Dr Jeanette Tait, who lived nearby at Albion. Dr Tait was not the Wallrock's family doctor, but on occasion, the Wallrock's children had seen her, if for example, they became ill over the weekend. Margaret Wallrock phoned Dr Tait, who agreed that she would see Will at her home at 7pm that Friday evening. Margaret Wallrock dropped Will at Dr Tait's home and picked him up about half an hour later.

12. Dr Tait told Mrs Wallrock she had provided Will with a prescription for Mersyndol Forte as well as seven Physeptone (Methadone) tablets in a blister pack in the medication box. Dr Tait showed Mrs Wallrock the instructions she had written on the box for Will. The instructions stated '1 tab every 6 - 8 hours'.

13. Mrs Wallrock queried the need for two medications. Dr Tait told her it would be fine if Will followed the instructions she had given him. She explained the Physeptone medication had previously been prescribed to her for her back pain after an accident. She said the tablets were out of date, but would be fine.

14. At about 9am the next morning, on Saturday the 18 June, Margaret Wallrock entered Will's bedroom to check on him. He appeared to be asleep. She noticed two of the seven Physeptone had been taken in accordance with Dr Tait's instructions.

15. Will was then awake and he asked his mother to leave the tablets which she did, and then left him.

16. It was immediately after this that Will's sister, Lara questioned their mother about why Dr Tait had given Will methadone. Margaret had not realised that physeptone is methadone and she immediately rang Dr Tait and asked her the question. Margaret recalled Dr Tait explained the medication was an excellent pain killer but must be taken as prescribed. Margaret was reassured by this explanation and had

seen that Will had only taken two tablets at this time, which was in accordance with the directions.

17. Will's parents were at work during the day and returned home about 4pm that afternoon before going out to dinner. Will was on the balcony with his sister and some friends. He appeared normal to his mother and was not drowsy or under the influence.

18. Mr and Mrs Wallrock returned home about 11pm on the Saturday evening and Will was up watching television. They spoke with him and he was perfectly lucid. Margaret Wallrock retired to bed and Will went to the bedroom and spoke with her for a short period. He lay on the bed and she recalled that when she tickled his back, like when he was a child, he did not appear to feel it, which she thought was strange .

19. Will then returned to the lounge room and spoke with his father Nick. His father thought his son seemed better in terms of his pain. Will told his father he had eaten some chicken for dinner. Previously he had been unable to eat solids. He appeared more cheerful as he went to bed.

20. On Sunday the 19 June Will's parents left the house while Will was still asleep. They were at work at about 3pm that afternoon when their daughter Lara rang them in distress, saying she thought Will was dead. She had already rung 000. Nicholas Wallrock telephoned Dr Tait and she arrived at their home shortly after Will's parents had returned. Dr Tait examined Will and confirmed he was deceased, and had been so for several hours. Ambulance and police officers then attended.

Police investigation

21. The investigation into Will's sudden and unexpected death was led by Detective Sergeant Damon Mulcahy of the North Brisbane Criminal Investigation Branch.

22. After ambulance officers had attended and confirmed that Will had been deceased for some time and was unable to be resuscitated, police examined his bedroom.

23. The following medication was located in Will's bedroom.

    1. Empty Blister Sheet of Physeptone 10 milligram tablets. The medication box was labelled Jeanette Tait with instructions to take 1 tablet every 8 hours. The reverse side of the box had a handwritten notation 'William Wallrock - 1 tab every 6 - 8 hours'.

       Information provided to the police was that the packet given to Will at 7pm on Friday the 17 June by Dr Tait, had one blister sheet with seven Physeptone tablets in place.

    2. Packet of Mersyndol Forte tablets prescribed by Dr Jeanette Tait dispensed on the 17 June. The tablets contained 450 milligrams of paracetamol, 30 milligrams of codeine phosphate and 5 milligrams of doxylamine succinate. The packaging warned the medication may cause drowsiness. Alcohol was

to be avoided. The medication was not to be taken with other products containing paracetamol unless advised to do so by a doctor or pharmacist.

Six of 20 tablets had been used.

3. Packet of panadeine extra 500 milligram paracetamol/15 milligram codeine caplets. This was labelled as pharmacist only medicine with the name Nick Wallrock and dated 16 June 2011. The packaging stated take two caplets every six hours when required. May cause drowsiness and increase effects of alcohol.

   Twenty of 24 tablets had been used.

4. Packet of Florine Fludrocortinesone 100 mcg pharmacist only capsules. The packet of 20 capsules was labelled for Will Wallrock and dispensed on the 16 June 2011. The packaging stated take 1 to 2 tablets every 4 to 6 hours when required. Maximum of 8 tablets per day. May cause drowsiness and increase effects of alcohol.

   Seven tablets of 20 had been taken.

5. Blister sheet of Nurofen Zavance, purchased from Albion Day And Night Pharmacy on the 15th of June 2011.

   Eight tablets of 10 had been removed from the blister pack, but 2 remained on the bedside table, indicating 6 had been used.

6. Two bottles of penicillin.

   1 bottle of Abbocillin VK tablets had been prescribed by Dr Hogan and dispensed to Will Wallrock on the 17th of June.

   Twelve of the 25 tablets had been taken.

   A second bottle of 50 penicillin tablets was unopened.

24. Police were satisfied there were no suspicious circumstances evident at the scene of Will's death.

25. No injury was evident and the outcome of the autopsy report was awaited before further investigation was pursued.

Autopsy

26. Will Wallrock's sudden and unexpected death required an autopsy to establish the cause of death. Autopsy examination was performed by the Forensic Pathologist Professor Ansford. Professor Ansford noted the right side of Will's face was swollen. There were no signs of injury to his body. A forensic odontologist, Dr Forrest assisted in the examination, noting signs of recent surgical extraction's of both upper eight molars. The sockets appeared to be healing normally whereas

there was abscess cavity draining puss in the socket of the lower right eight molar which extended into soft tissue of the cheek, but remained localised.

27. There was no definite evidence of systemic sepsis although there were some changes in the heart consistent with circulating toxins.

28. Toxicology testing was performed on femoral blood. The results of tests were as follows

- Alcohol not detected
- Morphine .08 milligrams per kilogram
- Codeine .23 milligrams per kilogram
- Total morphine (morphine plus morphine glucronidis) .13 milligram per kilogram
- Total codeine (codeine plus codeine glucurinode) .27 milligrams per kilogram
- Methadone .16 milligram per kilogram
- Doxylamine .11 milligram per kilogram
- Norfluoxetine detected less than .02 milligram per kilogram
- Paracetamol approximately 15 milligrams per kilogram
- No other drugs detected.

29. Professor Ansford noted a number of pain killing drugs detected in toxicology testing was consistent with medications found by police at the scene of Will's death. He noted the morphine detected could be present as a metabolite derived from codeine. He also noted that no alcohol was present.

30. His concluding remarks of the autopsy report are as follows

'While none of these drugs individually are present in potentially lethal levels, when taken together and particularly associated with aspiration of stomach contents, this is likely to be a lethal combination.

There was no evidence that the socket abscess has spread beyond the tissues of the mouth and jaw so that systemic sepsis appears to be ruled out.'

31. He concluded that death was due to mixed drug toxicity as a consequence of dental abscess due to impacted wisdom teeth which had been surgically treated.

32. His final comment was

‘Death due to inadvertent excess usage of painkilling medications is said not to be an uncommon cause of death during dental surgery.’

Statement from Dr Jeanette Tait

33. Dr Tait’s statement confirmed she had been involved with the Wallrock family over a thirty year period as a family friend. She confirmed she was a registered General Practitioner working at The Grange Central Medical Practice at the time.

34. Her statement indicated the initial contact regarding Will was from his mother Margaret who telephoned Dr Tait stating he was in pain and was suffering from swelling following the removal of wisdom teeth.

35. Will himself phoned Dr Tait at about 6:40pm on Friday 17 June. He told Dr Tait he was taking four tablets of Panadeine Extra but still had pain and swelling. He was concerned that large doses might damage his liver. Dr Tait suggested he come over to her house and Margaret Wallrock dropped him off that evening.

36. Dr Tait noted a large swelling along the right jaw line. Will complained of pain in his throat and ear. While this was likely due to the extraction of teeth, Dr Tait considered the possibility of a viral infection as well.

37. She prescribed Mersyndol Forte (2 tablets every 4 hours as necessary). She also told Will he could take Physeptone (methadone) at night time. She gave him physeptone which was already in her possession which had been prescribed to her in 2006 or 2007. This had been prescribed to her for back pain following an accident. The medication had expired in September or October 2010.

38. Dr Tait gave Will seven tablets of physeptone and the packet that it came in. She had written on the box the dosage to take which was 1 tab every 6 to 8 hours. She said she carefully spoke to Will about what he was taking as he was also taking penicillin and over the counter medications from the chemist to help him sleep.

39. Dr Tait considered Will was perfectly lucid. She described him as very happy and communicative that evening. When Margaret returned to pick him up, Dr Tait explained to her the prescription of Mersyndol Forte and also that she had given him some physeptone tablets. She said there were seven in the pack and she had told Will he might need these at night.

40. The next morning on Saturday the 18 June, Margaret rang Jeannette and asked her whether she had given Will narcotics? Dr Tait told her that yes, she had and that she had explained this the previous night.

41. Dr Tait said to Margaret she had given Will seven tablets and asked if Margaret had seen Will that morning. She asked her to check what Will had taken overnight as Will had taken one Physeptone tablet before leaving Dr Tait’s residence. Margaret Wallrock did so and confirmed that Will had taken a total of two tablets, including the tablet already consumed at the doctor’s home. There was some discussion about taking the box out of his room. Margaret said she had not done so as she had spoken to Will and she was sure he knew what he was doing. Dr Tait said she would ring Will later in the morning. At about 11:30am that morning,

Dr Tait rang and spoke with Will. She thought he sounded fine and he confirmed the pain was not worse, but the swelling was going down his neck. Dr Tait thought this was not uncommon and was not concerning as his voice was normal and he did not sound to be short of breath. She checked with him how many tablets of physeptone he had taken. He told her two. He said that 'They knock you about a bit.' She agreed and told him he should be alright just with the Mersyndol during the day.

42. Will said the pain tablets were much better than the ones he had. She clarified and he said the Mersyndol Forte. She confirmed he could take these every 4 hours if he needed to. She told him to keep the physeptone for night time, when he needed to sleep.

43. She was confident he understood her instructions and he would ring her again if he was getting any worse.

44. Dr Tait thought he would settle but the swelling would take five to six days to resolve. She told him she would ring him Sunday morning.

45. On Sunday morning, 19 June, she spoke with Margaret Wallrock by phone at their business premise around 9.30am. The conversation was about furniture. She asked about Will and there was no concern expressed.

46. Dr Tait then rang the home at about 11:50am but there was no response. Dr Tait did not consider this was of concern.

47. She received a phone call from Nicholas Wallrock at 3pm. He told her his daughter had just rung him and said that she, Lara thought Will was dead.

48. Dr Tait went to the Wallrock home immediately where she met Nicholas and Margaret Wallrock who had returned home. Dr Tait examined Will and confirmed he was deceased and had been for some hours.

49. Dr Tait remained at the Wallrock home and cooperated with police. She was perplexed by what had caused Will's death.

Consideration of the established cause of death.

50. Independent expert advice was obtained from a number of experts regarding the medications revealed in the post mortem toxicology testing.

Clinical Forensic Medicine Unit

51. Dr Adam Griffin, the Director of the Independent Clinical Forensic Medicine Unit provided a report to the Coroner. He was asked to advise whether the medication or the dosage prescribed by Dr Hogan and Dr Tait was appropriate.

52. With respect to Mersyndol Forte he noted this is a prescription only schedule four combination medication containing paracetamol 450 milligrams, codeine 30 milligrams and Doxilamine 5 milligrams per tablet. A maximum recommended dose would be two tablets every four to six hours with a maximum of eight tablets in a 24 hour period. These tablets were prescribed on the evening of the 17 June and

a total of six tablets had been consumed. Therefore, Will had not consumed more than the recommended dose of this medication. The doxilamine in the Mersyndol Forte was noted to be a central nervous system depressant which would be additive to other opiates. Codeine is also a central nervous system depressant and Dr Griffin noted the level of codeine detected was .3 milligrams per kilogram, suggesting a higher dose of codeine was consumed. He commented a level of .25 milligrams per kilogram is considered an upper limit for a level of codeine taken regularly when prescribed therapeutically.

53. Physeptone (Methadone) was stated by Dr Griffin to be a prescription only schedule 8 dangerous drug. The drug is not to be used in acute pain management in ambulant or in opiate naïve individuals.

54. Dr Griffin noted the presence of morphine in the toxicology tests most likely indicated a metabolite of the codeine in the circumstances. This inference was supported by the fact that the codeine levels are much greater than the morphine levels when morphine is present as a metabolite of codeine.

55. Dr Griffin noted there is a very broad range for therapeutic levels of morphine with significant overlap between the therapeutic and toxic levels. Tolerance in the individual develops over time but those with little or no tolerance can be fatally affected by lower levels of the drug.

56. Dr Griffin discussed the medication Physeptone (methadone). This is a synthetic opioid (narcotic) analgesic with pharmacological actions equivalent to morphine. It is indicated as a suitable analgesic in conditions where morphine would make a reasonable alternative, particularly for pain of a visceral origin. It is not recommended for use in ambulant patients. Dr Griffin was relying on the pharmaceutical publication *MIMS* when expressing this statement. The recommended dose is 5 to 10 milligrams by mouth 6 to 8 hourly, adjusted to the degree of pain relief obtained.

57. The risks with prescribing methadone are due to the marked individual variation in the metabolism. The half-life varies from between 15 and 60 hours in different individuals. Peak level in plasma is achieved after only 4 hours. Therefore, this medication is a poor choice for acute pain management. But levels vary from individual to individual and require close monitoring.

58. The adverse effects of methadone therapy include sedation, dizziness, nausea, weakness, diaphoresis, anorexia, visual disturbances, headache, insomnia, constipation, bradycardia, palpitations and a respiratory depressions. Overdose is characterised by stupor, muscle flaccidity, respiratory depression, papillary constriction and low blood pressure and coma. The combination of methadone with other opiate analgesics is not recommended unless administered to an opiate dependant individual with acute pain. Dr Griffin noted Will had been prescribed two opiates and was an opiate naïve patient. The information with Mersyndol Forte indicates concurrent use with other opiates is ‘Usually inappropriate as additive central nervous system depression, respiratory depressant and hypotensive effects may occur.’

59. Dr Griffin had no criticisms of the medication regime prescribed by the Dentist, Dr Hogan.

60. With respect to the medication prescribed and provided by Dr Tait, Dr Griffin noted that only the Mersyndol forte was provided as a prescription. This would have been an appropriate pain killer for an individual not responding to lower doses of codeine and the anti-inflammatory analgesic ibuprofen.

61. However he considered the addition of physeptone (methadone) was inappropriate. He noted it had not been properly prescribed. It had expired and he could not comment on the impact of this. He considered the drugs should not have been chosen at all for an ambulant patient.

62. Dr Griffin noted the instructions written on the box by Dr Tait meant up to 40 milligrams could be taken in a 24 hour period. He said the 70 milligrams alleged to have been given to Mr Wallrock could have been consumed in a 42 hour period in accordance with the instructions. He noted methadone is most commonly used as an opiate replacement drug in opiate addicted patients. It is rare to provide 20 milligrams a day in the first week of treatment for these opiate adapted individuals due to the risk of adverse reactions that are not predictable from individual to individual.

63. He also noted that the physeptone medication had been prescribed and dispensed to the Doctor for herself and then subsequently supplied to Mr Wallrock.

64. He considered referral of Dr Tait to the Australian Health Practitioners Registration Authority, now more relevantly, the Office of the Health Ombudsman in Queensland.

65. It is noted at this point that William had consumed all seven of the tablets of the physeptone provided by Dr Tait. This was in excess of the recommended dosage explained by Dr Tait.

66. Finally Dr Griffin noted that the anti-depressant medication fluoxetine was detected in toxicology results. However, it was a metabolite only and therefore indicated ingestion in the preceding 3 to 15 days.

Dr Frank Thomas, Director of Pain Management, St Vincent's Hospital

67. Investigating police obtained advice from the Director of Pain Management at St Vincent's Hospital, Dr Frank Thomas. He noted-

> 'Acute pain after wisdom tooth extraction is the most extensively studied model for testing post-operative analgesics, and there are good evidence based guidelines available for prescribers. Paracetamol and non-steroidal anti-inflammatory drugs (for example ibuprofen) are first line analgesics. If these drugs are not sufficiently effective, then the addition of a low dose opioid (for example codeine) is usually appropriate. It would appear that none of the treating practitioners has taken the time to optimise the dose of paracetamol and anti-inflammatory (ibuprofen) for Will. For example he should have been

told to take 1 gram of paracetamol 4 times daily, add in Ibuprofen 400 milligrams every 4 to 6 hours to a maximum of 3 to 4 doses in the short term, and if that wasn't sufficient to add small doses of codeine for example by substituting a paracetamol codeine preparation for solely paracetamol. If this wasn't sufficient, he should have been instructed to have his pain relief reviewed.'

68. Dr Thomas listed suitable low dose opioids as codeine, tramadol, oxycodone and morphine. These agents should be prescribed as immediate release preparations and not slow release preparations that are usually reserved for longer term pain conditions.

69. He noted that methadone, while not a slow release preparation, is a long acting opioid analgesic and consequently inappropriate for the treatment of acute pain. It has long and unpredictable half-life (range 4 to 190 hours) posing a risk of accumulation and delayed overdose. A typical regime for methadone would be 5 to 10 milligram twice daily with increases in dose only permitted at 5 to 7 day intervals to reduce the potential for overdose. He referred to an American guideline stating-

    'A safe starting dose in most opioid naïve patients is 2.5 milligrams every 8 hours, with dose increases occurring no more frequently than weekly.'

70. Dr Thomas noted patients prescribed methadone need to be made fully aware of the risk of delayed overdose with increase in dose. There is an additional risk with methadone compared to other opioids, namely a risk of potentially fatal arrhythmias usually with higher doses. These factors make methadone an unsuitable opioid for use in acute pain.

71. Dr Thomas concluded on the information available to him it appeared possible that inadequate advice regarding the optimum use of paracetamol and Ibuprofen, and additionally when to consider the opioid containing agents was provided to Will. The supply of several compound analgesics to Will would potentially prove confusing and increase the risk of toxicity if all drugs were used together.

72. Finally he remarked the use of methadone in this case was entirely inappropriate and, in the absence of other contributing pathology, the primary contributor to Will's death.

Dr Geraldine Moses

73. Dr Geraldine Moses is a consultant pharmacist who was asked to provide an expert opinion on the cause of death, clarification regarding the extent to which the methadone contributed to Will's death and any other issues particularly with respect to drug interactions.

74. Dr Moses noted that no Ibuprofen was detected in the blood sample. It was remarked that this was supposed to be the mainstay of Will's pain management. Given the elimination rate of that medication she concluded he must have stopped taking this medication by Thursday the 16th of June.

75. Dr Moses commented on the varying medication which included codeine including Panadeine Extra, Fiorinal Dental and Mersyndol Forte. Codeine is metabolised to morphine.

76. Methadone had some particular advantages in the management of chronic pain however disadvantages are the long half-life, a delayed onset of action and complicated metabolic pharmacokinetics which can lead to mis-prescribing and overdose.

77. She highlighted the variability in the half-life between 6 and 60 hours. Significantly, safe prescribing of methadone requires understanding that the drug accumulates systemically quite quickly so that the initial doses should be very small. (2.5 to 10 milligrams) with the dosage of interval of 8 to 12 hours. As the drug accumulates the dosage interval should lengthen to every 24 hours.

78. Of particular interest, Dr Moses noted the presence of Norfluoxetine. This anti-depressant, often prescribed under the brand name Prozac was apparently previously used at some point by Will Wallrock. There is no indication on the information available that his parents, his dentist or Doctor Tait were aware that he had taken this medication.

79. There was the possibility that he had sought treatment for depression previously. There was also the possibility that he had used this medication illicitly. It is sometimes used to potentiate the effects of recreational drugs and sometimes for weight loss.

80. There is no information regarding this possibility other than to indicate that it was not the parent drug Fluoxetine that was detected in the blood sample. This suggested to Dr Moses that he had stopped taking the anti-depressant medication some weeks before his death. The half-life of the metabolite, Norfluoxetine is between 4 and 16 days after acute and chronic administration. A metabolite persists for weeks to months after the fluoxetine has been completely eliminated.

81. This drug however is of particular significance in relation to the pharmacokinetic interaction between Norfluoxetine and methadone. Norfluoxetine is a very potent inhibitor in the cellular efflux transport protein of methadone in the intestines and the brain. This can result in methadone persisting in the systemic circulation and the brain and the level of methadone could increase in the presence of Norfluoxetine, by up to 75%.

82. Norfluoxetine also impacts on the conversion of codeine to morphine. Dr Moses noted this may well explain why the consumption by Will of high doses of codeine were ineffective.

83. Dr Moses noted there was an important pharmacokinetic dynamic interaction between overlapping use of codeine and methadone. Between the 16th and the 18th of August Dr Moses noted he had at least 560 milligrams of codeine more if Mersyndol Forte was included. (This in fact had been the case as 6 of the 20 tablets had been used.) This combination was high enough to risk respiratory depression

on its own, especially for an opiate naïve individual. From the evening of the 17th of June, methadone was additionally consumed.

84. Lethal respiratory depressive effects can occur with methadone as low as 30 milligrams in non-tolerant persons. The peak respiratory depressant effect usually appear later and persists longer than its peak analgesic effects, especially early in treatment.

85. Significantly, individuals prescribed methadone for pain generally experience relief for 4 to 8 hours, but methadone remains pharmacologically active for much longer periods, potentially leading to toxicity. The risk of respiratory depression for methadone multiplies when the drug is used in combination with other respiratory depressants, as here with codeine and its active metabolite, morphine.

86. Dr Moses concluded that Will Wallrock died as a result of excessive exposure to methadone, most likely due to its respiratory depressant effect or, due to sudden cardiac death from fatal QT prolongation or both.

87. A major contributory factor to the toxicity of the methadone would have been the drug interaction with Norfluoxetine, which by inhibiting CYP2D6 metabolism and P-Glycoprotein elimination would have caused the methadone to persist in his systemic circulation.

88. Other factors contributing to the toxicity of the methadone were:

- Will was probably opiate naïve,
- He took a very high dose of codeine prior to the methadone,
- Both drugs contribute to the risk of respiratory depression,
- He took 5 tablets (50 milligrams in 1 day,) which was contrary to advice.

Conclusion

89. William Charles Wallrock died on 19th of June 2011 due to mixed drug toxicity. The primary drugs contributing to his death were Physeptone (methadone) and the interaction with Norfluoxetine and a very high dose of codeine.

90. It is presumed that Will's parents, his dentist Dr Hogan, and Dr Tait were all unaware that Will had recently taken fluoxetine at some recent time and that the metabolite of this medication, norfluoxetine persisted in his system. The provision of physeptone (methadone) by Dr Tait to a presumably opiate naïve ambulant patient was inappropriate in the first instance. The dosage written on the medication pack directed 1 tablet (10 milligrams) every 6 to 8 hours. Seven tablets were supplied. The dosage was too high, particularly in association with previous high use of codeine and concurrent prescription of codeine containing medication (Mersyndol Forte).

91. Dr Tait also provided verbal advice to Will to use the Mersyndol forte during the day and to reserve the physeptone (methadone) for the night, but this was not the instruction written by her on the medication box.

92. The written and verbal instructions were inconsistent**.**

93. It is concluded Will took five physeptone tablets between 9 am on Saturday morning and 3pm Sunday afternoon when he was found deceased. There was evidence he had been deceased for some hours.

94. It is unknown at what times Will took the five remaining physeptone tablets observed by his mother at about 9am on Saturday 18 June.

95. He did not apparently reserve the physeptone (methadone) tablets only for use during the Saturday night. If he had done so, one would expect there would be two or three tablets remaining on Sunday.

96. If he took the five remaining tablets at 6 hourly intervals from 9am on Saturday (at 9am, 3pm 9pm, Sunday 3am, 9am) then all the tablets would have been consumed by 9am on Sunday 19 June.

97. If he took the remaining physeptone tablets at 8 hourly intervals from 9am on Saturday 18 June (at 9am, 5pm, Sunday 1am, 9am) then one would expect one remaining tablet when he was found deceased at 3pm that Sunday.

98. The consumption by Will of 5 tablets (50 milligrams) of physeptone (methadone) within about 30 hours was contrary to the verbal medical advice provided, but not to the written instruction provided by Dr Tait on the medication box.

99. Optimisation of the initially appropriate regime of paracetamol plus ibuprofen plus codeine had not been achieved. Subsequent use of a multiplicity of over the counter pharmacy only medication was likely to have confused the issue of exactly how much of each drug was being consumed, the interaction and associated risks. This was then compounded by the addition of medication (physeptone) that was inappropriate for acute pain to an ambulant opiate naïve patient.

    Tragically, William Wallrock's death was avoidable.

Coronial findings

The identity of the deceased is William Charles Wallrock.

William died four days after having three wisdom teeth extracted by his dentist Dr David Hogan. He was advised by his dentist to use Panadol and Ibuprofen to manage his pain and to refer back to his dentist if necessary. He commenced taking additional over the counter pharmacy medication containing codeine as well as paracetamol from 16 June 2011. He contacted his dentist on 17 June and informed the dentist he was taking some 'forte' pain medication and had swelling and a sore throat. He was prescribed antibiotics but no additional pain medication. On the evening of 17 June 2011 he sought medical advice from a medical practitioner (and family friend) Dr Jeanette Tait. She prescribed Mersyndol and physeptone (methadone). Physeptone was an inappropriate medication to prescribe an opiate niaive ambulatory patient suffering from acute pain. The amount prescribed was inappropriately high given the variability of individual response to the medication and the risk of overdose, particularly in initial phase of medication use.

The verbal instructions provided by Dr Tait of when to take the physeptone tablets were inconsistent with the instructions she wrote on the medication box for William. It was most probably unknown by William's family and by Dr Tait and Dr Hogan that William had recently taken fluoxetine, an anti-depressant medication. The metabolite of this medication interacted both with codeine (to make it less effective) and with physeptone (to prolong the half-life of the medication increasing the risk of respiratory depression.)

William consumed two 10 milligram physeptone tablets between 7pm 17 June and 9 am 18 June. Between 9am 18 June and the time he was found deceased at 3pm on 19 June 2011, he had consumed the remaining five physeptone tablets provided to him.

William died on 19 June 2011.

He died at his home at 43 Langside Road Hamilton Queensland.

William died due to inadvertent mixed drug toxicity as a result of medications taken following the development of a dental abscess. This formed after dental surgery to remove impacted wisdom teeth.

Consideration of inquest

William's family requested an inquest into his tragic death.

There is sufficient documentary evidence available to establish the facts required for coronial findings.

The doctor who inappropriately prescribed medication has been referred to the Queensland Office of Health Ombudsman.

There is a well-documented protocol for treatment of pain following dental procedures which was referred to in these findings by Dr Frank Thomas.

It is unlikely that an inquest could help prevent the occurrence of another death in similar circumstances.

Christine Clements
Brisbane Coroner
26 November 2014
Brisbane