

SOUTH



AUSTRALIA

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 26th and 27th days of March 2002 and the 23rd day of May 2002, before Wayne Cromwell Chivell, a Coroner for the said State, concerning the death of Nicole Memory Faye Davies (also known as Azure Davies).

I, the said Coroner, find that, Nicole Memory Faye Davies aged 17 years, late of 229 Lady Gowrie Drive, Largs North, South Australia died at Largs North, South Australia on the 4th day of April 2000 as a result of mixed drug toxicity.

1. Background

- 1.1. Nicole Davies was born in Melbourne on 25 July 1982. At the time she died she was only 17 years old.
- 1.2. On 18 March 2000 Nicole came with her younger sister Chantelle to live with their grandparents at Largs Bay 'to get away from the drug scene in Melbourne' (Exhibit C9a, p1).
- 1.3. Chantelle's statement, which is unsworn and upon which I rely only for the purpose of supplying background information, gives the following background to Nicole's heroin use:

'Azure has been using heroin for about four years, during that time she would use about \$50 dollars (a \$50 rock) a day. She started on the Methadone program about a week ago but we have been using heroin a couple of times since then, about 2-3 times in the past week. The last time I saw Azure use heroin was on Saturday night (01/04/00) at about 10 p.m. She used about 10 units, I'm not sure how much that costs. She told me at the time that it (the heroin) didn't really hit her. She was already high on methadone and tablets before she took the heroin.'

(Exhibit C14a, p1)

1.4. Dr Turner

Nicole first consulted Dr Richard Turner at his surgery at Old Port Road, Hendon on 23 March 2000. She asked to be placed on the methadone program. Dr Turner was an 'Accredited Opioid Substitution Prescriber' ('AOSP'). This accreditation is received from the Department of Human Services and is received after undergoing training assessments through the Drug and Alcohol Services Council which then makes a recommendation to the Opioid Dependence Prescriber Review Committee which then makes a recommendation to the Department.

- 1.5. During her initial consultation with Dr Turner, Nicole told him that, in addition to heroin, she was also taking Valium (diazepam), Normison (temazepam), Zyprexa (olanzapine), and Prozac (fluoxetine). He said:

'Well they'd been prescribed by a psychiatrist and also I assume she was in the middle of Benzodiazepine dependence treatment.'

(Exhibit C19, p3)

He assumed, from what she told him, and the fact that she had been prescribed olanzapine, that Nicole had a schizophrenic illness (T14). Dr Turner was unable to recall whether he had made any further enquiries with Nicole about the name of her former psychiatrist so that he could follow these matters up (T12).

- 1.6. Nicole told Dr Turner that she had been injecting herself three times per day with heroin, using about \$150 per day.

- 1.7. Dr Turner prescribed a number of medications to assist Nicole with a 'home detox'. In other words, the medications were to assist with any symptoms she experienced in withdrawing from heroin. These medications included:

- pramin (metoclopramide hydrochloride), an antiemetic;
- myoquin (quinine bisulfate), a muscle relaxant;
- nurofen, a non-steroidal anti-inflammatory;
- tazac (nizatidine), for hyperactivity, reflux and ulcers;
- doloxene (dextropropoxyphene napsylate), a narcotic analgesic;
- clonidine (clonidine hydrochloride), an antimigraine, antihypertensive agent.

- 1.8. Nicole returned to see Dr Turner on 24 March 2000. She told him she had used heroin since she last saw him. She saw Dr Turner again on 27 March 2000, telling

him that she had used \$300 worth of heroin over the weekend. They discussed whether she should go on the methadone program. She told Dr Turner she had been on methadone in Melbourne, with a daily dose of 65mg (Exhibit C19, p9).

1.9. Dr Turner obtained a telephone authority to prescribe methadone from Mr Geoffrey Anderson, Senior Pharmacist at the Pharmaceutical Services Branch, Department of Human Services. Mr Anderson is the delegate of the Minister for Health, and is empowered to authorise the prescription or supply of a drug of dependence pursuant to Section 33 of the Controlled Substances Act (Exhibit C18a).

1.10. A verbal authority was issued by Mr Anderson. Dr Turner submitted a written application the same day, but a written authority was not issued, since at that time these applications took up to two months to process. This has now been reduced to within one week (Exhibit C18a, p3).

1.11. Commences on methadone

Dr Turner commenced Nicole on methadone, with an initial dose of 35mg, on 27 March 2000. On 28 March he increased the dose to 45mg, and she received this dose on 29 March as well. On 30 March he increased the dose again to 55mg because she told Dr Turner that she had used \$150 worth of heroin in the last two days, and was having 'withdrawal symptoms' such as aches and pains and vomiting (Exhibit C19, p21). On 31 March the dose was increased again to 60mg and on 1 April 2000 it was increased again to 70mg.

1.12. On 1 April 2000, Dr Turner also prescribed Normison (temazepam), 2 x 20mg tablets at night. Normison is a short acting hypnotic to sleep. He also prescribed Deptran (Doxepin), an antidepressant with a sedative action (Exhibit C19, p30).

1.13. When interviewed by Detective Senior Constable Brown during his investigation of this matter, Dr Turner said that Nicole's presentation to him did not give him cause for concern:

'She was presenting reasonably alert and rational and coherent and apart from her sister interjecting, we could carry on a conversation. So her – even though it's just a small sample of her day, her presentation to me didn't provide any concern about the use of the Benzodiazepines or the other medication.'

(Exhibit C19, p32)

- 1.14. This rather sanguine view was not shared by Nicole's grandmother. She said that Nicole would be 'very drowsy' after having her methadone. She said:

'My husband Alan would have to help her to get out of the car when we got home because she was so unsteady on her feet. We would then put her to bed to sleep.'

(Exhibit C9a, p3)

2. Events of 3 April 2000

- 2.1. Nicole's sister Chantelle described the earlier events of the day as follows:

'This morning (03/04/00) Azure was up before me, grandpa (Alan Davies) came in and woke me up at about 9:00 a.m. When I first saw Azure in the lounge room I could tell that she was high, her eyes had changed colour and she was all hazy, by that I mean that she was falling asleep not walking properly. I asked her what she was on she told me that she had taken some Doloxene and Deptran, she usually takes three of each but today she had taken more. I could tell that she had taken more by her reaction to the tablets and because she told me, she didn't tell me how many she had taken. She usually melts down the pills and injects them but she has told me that her veins have become too hard. So I don't know how she took the pills this morning.'

(Exhibit C14a, p2)

- 2.2. Nicole's grandmother drove her to the Vaughan and Hatswell Pharmacy on Commercial Road at Port Adelaide. The Pharmacist, Ms Gilda Vaughan, had administered the methadone in liquid form to Nicole on several previous occasions.

- 2.3. When Nicole attended on 3 April 2000, Ms Vaughan noticed some signs that she was already intoxicated. For example, she was talking about having just attended a job interview which, in view of her condition, was preposterous. Ms Vaughan said:

'Her signs of intoxication were just that she was talking and not really making any sense. She was certainly not falling all over the place. She was able to stand, she was able to talk. It's just that her conversation made no sense. Her mouth seemed a little dry with white bits on the edges, which isn't always a sign of intoxication, but it is sometimes a sign if someone is using and that is why I called the doctor. It's – and you know, that is not always a sign that they are using as well, they might just have a dry mouth. But yes, it was mainly her conversation and her eyes were rolling a little bit. Her movement was exaggerated a little bit. But she was certainly conscious and able to talk and walk and things. I mean, I don't think she would pass a driving test, but she -'

(Exhibit C20, p11)

- 2.4. Ms Vaughan was clearly concerned about Nicole's presentation. She telephoned Dr Turner, although her memory now is that this telephone call occurred on 2 April 2000,

not 3 April 2000. She said that she told Dr Turner of Nicole's presentation, and discussed with him whether she should continue to supply methadone to her.

- 2.5. Ms Vaughan said that Dr Turner told her that his aim was to administer a sufficient dose of methadone to Nicole which would deter her from using heroin by 'blocking the high' (T58). She said that he advised her that if Nicole was still conscious and able to walk and talk and stand up straight, it was appropriate to continue providing methadone (T59). In that context, Ms Vaughan supplied Nicole with 70mg of methadone syrup.
- 2.6. Dr Turner agreed that he had received a telephone call from the pharmacist, but he said that the call occurred on 3 April 2000, about an hour prior to Nicole's visit. He had no notes to support that contention (Exhibit C19, p34).
- 2.7. Having regard to this evidence, there are no grounds for criticising Ms Vaughan for administering the dose. She was appropriately concerned about Ms Dann's condition, and she checked with the prescriber.
- 2.8. I heard evidence from Dr Robert Ali who is the Director, Clinical Policy and Research at the Drug and Alcohol Services Council, an incorporated unit of the South Australian Health Commission. Dr Ali had very broad experience of issues relating to alcohol and drug related problems, and has been extensively involved in developing policies and clinical practices in relation to treatments involving methadone. In reviewing a pharmacist's options, Dr Ali said:

'They can withhold the dose, and what they are meant to do then is seek guidance from the prescriber. It would be for them to - if the prescriber then said that they were prepared to accept responsibility for the dose, I am not aware of any pharmacist then continuing to withhold the dose.' (T86-87)

- 2.9. After Nicole and received the dose of methadone, the two girls were taken to Dr Turner's surgery. Chantelle described what happened at that appointment:

'When the doctor came out to see us in the waiting room, Azure was all woozy, falling asleep, not being able to walk properly. The doctor had to carry her into his office.'

We were in his office for about 20 minutes, the doctor took her blood pressure and looked at her foot (she said it was sore). The doctor tried to give her an injection to reverse the effects of the methadone and pills but she wouldn't let him. During the time we were at the doctors she was acting really stupid, falling off her chair and thinking that it's funny, falling asleep and stuff like that. The doctor gave her a prescription for her sore foot, I'm not sure what the medication was that he prescribed.' (Exhibit C14a, p2-3)

- 2.10. Dr Turner also said that when Nicole appeared, she was ‘sleepy, staggering, appeared intoxicated, her speech was slurred’ (Exhibit C19, p33). He said that he suggested to Nicole that he should give her Narcan, which would have reversed the intoxication if it was due to an opiate, either heroin or methadone. He said:

‘Both she and her sister said no and that they would charge me with assault if I pursued that line.’

(Exhibit C19, p38)

- 2.11. In view of that, Dr Turner did not persist with the Narcan idea. He allowed Nicole’s grandmother to take her home, advising Mrs Davies to secure all medications and only allow her to take one 20mg temazepam tablet, and one 10mg olanzapine tablet. He said that he did not consider suggesting that Nicole be taken to hospital, although in retrospect he acknowledged that it might have been more appropriate (Exhibit C19, p40).

- 2.12. Dr Turner said that Nicole did not seem drowsy when she left his surgery, although he acknowledged that he had to assist her to the vehicle (Exhibit C19, p41).

- 2.13. Nicole’s grandmother’s statement records what happened after they left Dr Turner’s surgery:

‘After her appointment I spoke with Dr Turner and he told me to take away all her prescription drugs and to bring them into him on her next appointment which was the next day. Dr Turner also gave me a letter explaining her condition. When I left the clinic with Azure she was very unsteady on her feet, her speech was slurred and she seemed quite incoherent. This was how she had been since she started on the methadone program, although I thought her condition actually got worse over time.

I went straight home with her and Alan had to help her from the car to the house. We would have got home around midday. We put her to bed with her clothes on. Azure shared a double bed with Chantelle. Within a few minutes of putting her on the bed she was fast asleep. Chantelle picked up all Azure’s tablets which were already in a plastic bag and gave them to Alan.’

(Exhibit C14a, p4)

- 2.14. Nicole remained asleep for the rest of the day. Her grandparents checked her several times an hour and she remained deeply asleep. When her grandmother checked her at around 10pm she said:

‘It appeared she had hardly moved since we put her to bed.’

(Exhibit C9a, p5)

- 2.15. At around midnight her grandfather checked Nicole and found that she felt cool. Her grandmother noted a blue tinge to her skin. She only had a slight pulse and did not appear to be breathing.
- 2.16. An ambulance was called and dispatched at 12:35am arriving at 12:42am. The Paramedics attempted resuscitation including intubation and ventilation and intravenous adrenalin, but all of this was to no effect and resuscitation was discontinued. They learned that the last time any life signs were noted was between 11pm and 11:30pm. Death was pronounced at 1:02am (Exhibit C10a, p2-3).

3. Cause of death

- 3.1. A post-mortem examination of the body of the deceased was performed by Dr R A James, Chief Forensic Pathologist on 4 April 2000. He concluded that the cause of her death was 'mixed drug toxicity'. Toxicological analysis revealed the presence of the following drugs in her blood:

'(1) 0.84 mg methadone per L.	(potentially lethal)
(2) 0.97 mg doxepin per L.	(toxic)
(3) approximately 0.52 mg fluoxetine per L.	(high therapeutic)
(4) 0.36 mg codeine per L.	(excess but not fatal)
(5) 0.67 mg propoxyphene per L.	(non-toxic/therapeutic)
(6) 0.19 mg olanzapine per L.	(uncertain significance)
(7) approximately 0.6 mg diazepam per L.	(non-toxic/therapeutic)
(8) approximately 1.1 mg nordiazepam per L.	(non-toxic/therapeutic)
(9) approximately 7 mg paracetamol per L.	(non-toxic/therapeutic)

1. Alcohol was not detected in the blood.
2. Morphine was not detected in the blood.'

(Exhibit C12a, p1)

- 3.2. Dr James commented:

'The toxicology shows a reasonably high methadone level but it must be bought in mind that the lethal dosage of methadone can overlap the therapeutic dose particularly during the early phase of elevating the methadone dose during methadone program maintenance. It is the presence of the high levels of Doxopin and Codeine in particular and to a lesser extent the other sedative and analgesic drugs that have resulted in her drowsy condition and subsequently her death. She has been deeply unconscious and was developing bronchopneumonia at the time of her death.' (Exhibit C11a, p4)

- 3.3. Dr Ali commented that the level of methadone in Nicole's bloodstream (0.84mg per litre) was more than double what might be expected having regard to the dose she was receiving. Indeed, Dr Ali questioned the accuracy of the toxicology, so I arranged for the sample to be re-analysed, and a report from the State Forensic Science discloses that, upon further analysis, the methadone level was 0.88mg per litre, even higher than before. Dr Ali said that he would have expected something in the vicinity of 0.3mg per litre. He said that the fluoxetine (Prozac) may have artificially elevated the level, by interfering with the metabolism of the drug, or Ms Davies may have stockpiled methadone, or bought more illicitly (T87). He said:

'There are a variety of plausible explanations but it is a large quantity for somebody to have at the end of the first week' (T87)

4. Assessment of medical treatment

- 4.1. Dr Ali said that Dr Turner's initial approach, namely a 'home detox' using doloxine and clonidine as part of the withdrawal program was appropriate and common practice, although he had some reservations about the use of those particular drugs.
- 4.2. Dr Ali was critical of Dr Turner's decision to commence Nicole on the methadone program without seeking to ascertain details of her previous psychiatric treatment and methadone treatment in Melbourne. He said that information given by patients is often inaccurate because:

'Patients often confuse their doses or overstate their doses of methadone as they are concerned that new prescribers may underdose them.'

(Exhibit C21a, p2)

Dr Ali said that even if patients are unwilling to supply this information, it is possible to obtain it by indirect means (T71). Indeed, from a layman's point of view, one would be suspicious of a patient who is unwilling to supply the information. Dr Ali explained that this information is important because:

'In helping to understand the course of clinical treatment and any problems that the other person may have experienced, it's my experience quite helpful to make contact with them and to get an understanding of the accuracy of their claims about both their substance use and the progress of treatment.' (T71)

- 4.3. Having regard to Nicole's presentation, it is arguable whether Dr Turner should have treated her. Perhaps he should have referred her to a psychiatrist. Dr Ali said:

'People who have major psychiatric conditions like schizophrenia represent a real challenge for treatment of drug addiction, and I would have liked him to have had some discussion with the psychiatrist that commenced the treatment or a fuller understanding of the symptoms that the individual was experiencing, because in schizophrenia,

sometimes they have delusional thoughts and they can do things that are quite harmful to themselves without recognising the potential to be harmful. I'm not clear about the basis of whether or not it was schizophrenia and if it was, what were the components.' (T81)

- 4.4. Dr Ali was particularly critical of Dr Turner's decision to increase the dose increments of methadone after only one or two days. He said that the guidelines recommend an increment of 5mg to 10mg no more than every fourth day. Methadone has a long half-life, and increasing the dose in a shorter time than that is dangerous and also pointless, since it is not possible to assess the effect of the previous increase if the dose is increased again too quickly. He said:

'Methadone is a very safe drug when you are on a stable dose. The risk - particularly if you are on doses of 60 milligrams, because your tolerance to opiates is substantially increased and so if you took heroin and other drugs at the same time, your risks of dying are very low. But when you are starting Methadone – when you are stabilising on it - it is a drug that you have to give respect to. You need to be vigilant of making sure that you are not giving too much too quickly, because you can overshoot.' (T76)

And later:

'Drug users believe that only drugs solve problems, so their belief system is that if you don't change the dose you are not treating them. The point you have made is exactly correct; that half life is somewhere between 24 and 72 hours individual variability. It takes four half lives for a change in dose to have an effect, so you are really not seeing the benefit of the drug for the first four days. We know they are not going to be feeling well, and it's about cajoling them, and so the dose increases of 5 to 10 milligrams over four days is to give them the sense of you are taking their concern seriously, but you are not doing it in a way that's dangerous to them.' (T77)

- 4.5. Dr Turner explained that he increased the dose because Nicole was complaining of 'withdrawal symptoms'. Dr Ali said that the symptoms noted by Dr Turner on 30 March 2000, namely aches and pains and nausea and vomiting just as consistent with methadone toxicity rather than withdrawal symptoms. This should have induced Dr Turner to consider either reducing, or at most maintaining the dose until it stabilised, rather than increasing it. He said:

'In a non-tolerant individual - so if you gave that to a person that wasn't tolerant to the effects of opiates, that's a potentially dangerous rate of increase. The difficulty that I could see in the presentation was that in the notes it would appear that on a daily basis the person was complaining that they were getting an inadequate dose, that they were feeling as if the dose was inadequate, so - but some of the symptoms that they complained of are actually symptoms of toxicity, of having too much of the dose - the nausea and the vomiting are very typical of people who are getting too much opiates, (rather than) not enough.' (T76)

- 4.6. Nicole was not only using heroin, and receiving methadone treatment, she was also dependent on benzodiazepines having regard to the quantity she was taking. Dr Ali

said that although these drugs are not dangerous in themselves, they are central nervous system depressants, and potentiate the sedative effects of opiates.

- 4.7. Prozac (fluoxetine) also interferes with the stabilisation of methadone to the extent that it causes methadone levels to be increased significantly. Dr Ali said that this is an unpredictable phenomenon which can lead to toxicity and so extra vigilance is required if the patient is receiving both of these medications. He said:

‘A. Benzodiazepines are very safe substances, but they are central nervous system depressant drugs, and they will have an additive effect particularly if you take them in combination with opiates. So you need to be mindful of people who are taking large quantities, and the quantities she was taking she was physically dependent on those drugs. If she abruptly stopped them, she would have gone through withdrawal. You need to take that into account in determining the doses that you are giving. Fluoxetine is a - Prozac is a drug that actually interferes with Methadone metabolism. It artificially elevates the Methadone serum levels, and so - but it does so in an unpredictable way. Some people appear to be more sensitive to that than others, but it's something you need to be mindful of and vigilant about - particularly looking for signs of toxicity when you are starting somebody on that substance. It's not the only drug that does that. There are many drugs that interfere with Methadone metabolism, but it's one that you need to be mindful of.

Q. Is that such that consideration should be given to withdrawing the Fluoxetine and replacing it or is it just a case of being extra vigilant that the signs of toxicity.

A. Extra vigilant, so if you're aware that it's a potential to cause - you're particularly looking for signs of toxicity and making sure that there aren't any concerns in that area.' (T78-80)

- 4.8. Dr Ali said that it was inappropriate that Nicole received her dose of methadone on 3 April 2000 in circumstances where she was clearly already intoxicated with a cocktail of doloxine and doxepin. He said that she may still have been partly intoxicated from the methadone she received on the previous day (Exhibit C21a, p3). He said that Dr Turner should have been put on notice by the call received from Ms Vaughan, whether it occurred on 2 April or 3 April 2000, that she was showing signs of intoxication such that continued dosage was inappropriate. He said:

'The pharmacist was anxious about giving the dose of methadone and had consulted the prescribing doctor. Their usual practice would be to turn an intoxicated individual away to return at a time when they were no longer drug affected. The death may have been averted if the last dose of methadone had been withheld.'

(Exhibit C21a, p3)

- 4.9. Dr Ali pointed out that deaths often occur several hours after the last methadone dose has been received. He said that if there was any sign of toxicity, the patient's welfare

should not be entrusted to non-professional people unless they have very clear written instructions to test the patient's conscious state by attempting to rouse them periodically. He said in Nicole's case it would have been preferable if she had been taken to hospital. He said:

'In the way that her presentation at his surgery was described, I would have been insisting on her being supervised in a medical environment and if the patient refused to do that, then I would be insisting that they were being supervised by a non drug using adult. I would be quite clear to everybody about how seriously concerned I was about the situation. I have had patients incidentally who have refused to go to hospital.' (T85)

- 4.10. In the event that she refused, Dr Ali said that her carers should have received careful instructions about how to check whether the extent of her intoxication had worsened by checking her level of consciousness. He said:

'Deaths commonly occur in that induction phase of Methadone several hours after the timing of the dose and if there was careful inquiry about their rousability and whether or not they were making sense, their quality of their speech, to entrust the safety of an individual who appears to be toxic from an opiate to people who aren't medically trained requires very clear guidance and preferably written guidance about exactly what to do, because people can become quite confused about what it was you were concerned about and making contact with them and asking clear questions about their level of consciousness, their quality of their speech, their understanding, their thought processes would be quite important guidance on whether or not the situation had deteriorated further from the time she was seen in surgery.' (T83-84)

5. **Conclusions**

- 5.1. There are no grounds for criticising the pharmacist, Ms Vaughan.
- 5.2. Having regard to the totality of the evidence before me, I find that the treatment given to Ms Davies by Dr Turner was inappropriate in a number of respects:
- He failed to properly investigate her psychiatric and drug-treatment history in Melbourne;
 - He increased the dose of methadone too much and too frequently, thereby causing her methadone level to 'overshoot';
 - He authorised Ms Vaughan to administer the dose of methadone on 3 April 2000 when she was already clearly intoxicated by the previous methadone and/or other drugs she had taken;
 - He failed to ensure that she was placed in an environment where her level of consciousness could be closely observed, having regard to the likelihood that the dose of methadone she received on 3 April 2000 would intoxicate her even further.

5.3. Having regard to the medical and psychiatric complexities of this case, Dr Turner might have been better advised to refer Ms Dann to an agency which specialises in handling more complex cases, such as Warinilla, or to a psychiatrist for a proper assessment of her psychiatric condition.

6. Recommendations

6.1. Pursuant to Section 25(2) of the Coroner's Act, I recommend that Dr Turner reviews his clinical approach to methadone maintenance treatment to ensure that it complies with appropriate standards.

Key Words: Drug Overdose; Heroin; Methadone; Medical Treatment

In witness whereof the said Coroner has hereunto set and subscribed his hand and

Seal the 23rd day of May, 2002.

Coroner