CORONERS ACT, 1975 AS AMENDED

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 23rd and 25th days of July, and 5th day of October 2001, before Wayne Cromwell Chivell, a Coroner for the said State, concerning the death of David Richmond Gear.

I, the said Coroner, find that, David Richmond Gear aged 34 years, died at Yatala Labour Prison, 1 Peter Brown Drive, Northfield, in the State of South Australia on or about the 31st day of December, 1999 as a result of mixed methadone and thioridazine toxicity. I find that the circumstances of the death were as follows:

1. Reason for inquest

1.1. On the 13th October 1999 in the Mount Barker Magistrates Court, Mr K P Edgecomb SM sentenced David Richmond Gear to a total of 21 months imprisonment, to commence on the 29th June 1999.

1.2. Accordingly, when he died on 31st December 1999 Mr Gear was "detained in custody" pursuant to an Act or law of this State within the meaning of Section 12(1)(da) of the Coroners Act, and an Inquest was therefore mandatory pursuant to Section 14(1a) of that Act.

2. Background

2.1 David Richmond Gear was born on the 28th June 1965 in Sydney. He went to school in Armidale. He described a happy and secure family environment to social workers and psychologists who prepared reports concerning him (Exhibit C20).

2.2 Mr Gear took up an apprenticeship as a printer, and became qualified in that field, and continued to work as a printer in the Armidale area. He was married at age 20, but his marriage broke down, and he was arrested for possession of cannabis. He left Armidale and moved to Townsville in Queensland and then to Adelaide in 1991. He was employed as a printer for four years but was dismissed. This appears to have resulted in a period of heavy alcohol and drug use.

2.3 In mid 1996 Mr Gear was involved in a motorcycle accident as a result of which he sustained serious injuries. He was hospitalised for six weeks and underwent extensive treatment to injuries to his left leg, pelvis and shoulder. During this period, he appears to have become addicted to pethidine and morphine. When his treating doctors attempted to withdraw him from morphine, he began using other substances and he was admitted for detoxification at Warinilla Clinic in 1996 and 1997.

2.4 Mr Gear was imprisoned between August 1997 and March 1998 at the Adelaide Remand Centre, and following his release began using heroin again. In November 1998 he attended again at Warinilla and was placed on the methadone program. He commenced on a dosage of 80mg per day, and this was increased to 110mg per day, which was his dosage at the time he was admitted to Yatala Labour Prison (YLP) on 30th June 1999.

2.5 In addition to being on the methadone program, it would appear that Mr Gear continued to abuse benzodiazepines to the extent that, on admission to YLP on 30th June 1999 he required detoxification (see evidence Dr Creaser, T47).

2.6 <u>History of Heart Disease</u>

While he was in the Adelaide Remand Centre during the earlier sentence of imprisonment, Mr Gear complained of pain down the left arm, radiating into the chest, and shortness of breath. He was referred to the Royal Adelaide Hospital where x-rays showed some minor collapse in his left lung indicating an infection, and an electro-cardiogram (ECG) demonstrated a "left anterior vesicular block", which is a slight abnormality in the electrical conduction system of the heart (see evidence Dr Creaser, T54). No treatment, apart from minor pain relief, was undertaken at that time.

2.7 On the 12th February 1998 Mr Gear again complained of left sided chest pain and a further ECG was performed which was reported as normal. The assessment was "a typical chest pain probably musculoskeletal" (T54).

3. Last admission to prison

3.1 As I have said, Mr Gear was admitted to YLP on the 30th June 1999. Dr Creaser said that at that time he was "quite unwell", and was admitted to the infirmary and given a detoxification regime for benzodiazepines. His methadone was continued at 110mg per day (T47).

3.2 Mr Gear's condition improved after the acute phase of withdrawal was completed and he remained reasonably well.

3.3 On the 7th October 1999, Mr Gear consulted Dr Nambiar, a consultant psychiatrist at YLP. He complained of decreased energy, poor sleep and anxiety. A past depressive episode at the Adelaide Remand Centre was noted. From the casenotes, Dr Creaser told me that Dr Nambiar's assessment was that Mr Gear was suffering from major depression, but he was not suicidal. He prescribed the anti psychotic medication thioridazine (Melleril), with a dose of 100mg at night. This is a relatively low dose, which has anti-anxiety and sedative properties to help him sleep. Dr Nambiar also prescribed sertraline (Zoloft), an anti depressant medication on a dosage of 50mg to be taken in the morning.

3.4 Dr Nambiar saw Mr Gear again on the 28th October 1999. Dr Creaser saw Mr Gear on the 10th November and thought that he was still depressed. On the 25th November 1999, Dr Nambiar saw Mr Gear again, and by this time he reported that he had improved considerably and that he did not need to see him again for three months (T52).

3.5 On the 1st December 1999 Dr Creaser saw Mr Gear again, and this time he was complaining of heartburn and gastric reflux. She noted that his weight had increased considerably and that he was complaining of constipation which could have been a side effect of methadone. She prescribed mucaine, an antacid medication (T58).

4. Events of 30/31 December 1999

4.1 Ms Lesley Work, who was then the coordinator of the methadone program at YLP, told me that the usual routine in relation to prisoners on the methadone program is that they are taken to the Medical Centre between 8.00am and 9.00am by a prison officer. The doses of methadone are pre-packed at the pharmacy, and kept in a safe at the Medical Centre, and as they are removed they are signed out by the Registered Nurse.

On presentation of the prisoner at the Medical Centre, a photographic identification card is produced and, once identification is verified, the medication is shown to the prisoner and the details checked, the safety seal on the bottle is opened and the methadone is taken orally by the patient while facing the nurse. A check of the prisoners mouth is then undertaken to ensure that the liquid has been swallowed, and a drink of either water or prune juice is then provided. Following receipt of the dose, both the nurse and the prisoner sign forms confirming that the dose has been taken, and the prisoner is returned to his division. The empty container is then returned, to be checked later (T18-20).

4.2 Ms Work told me that throughout this process, the nurse closely observes the prisoner, looking for any symptoms of overdose including signs of excessive sedation, or sweatiness, and notes his general demeanour. She told me that she had never seen any such symptoms displayed by Mr Gear, that he had a positive attitude to the program, and had no desire to return to his previous drug-abusing lifestyle (T22).

4.3 The medical record (Exhibit C16b) confirms that Mr Gear received his usual dose (110mg) of methadone on the morning of 30th December 1999 (T26).

4.4 Ms Work told me that, having regard to the strictness of the procedures adopted, and the written acknowledgement by both the nurse and the prisoner, and the general standard of record keeping, she did not believe it possible that Mr Gear may have received an accidental overdose of methadone that morning, nor did she believe it possible that he was deliberately stockpiling the medication in some way (T31).

4.5 As is the usual procedure at YLP, all prisoners in Mr Gear's division (B division) were locked in their cells at 4.00pm. Registered Nurse Mulqueen performed the evening medication round between approximately 7.30-8.00pm, accompanied by prison officer Denner. Consulting her records, she confirmed that she gave Mr Gear his evening dose of thioridazine (100mg), together with his Zoloft tablet for the following morning, together with a vitamin tablet. She was unable to remember anything unusual about the medication round that night (Exhibit C4a, p3).

4.6 According to the prison records, Correction Officers Cock and Devine performed a count of prisoners at 11.00pm, and Correction Officers Eggers and Morton performed patrols of B division at 1.30am, 3.35am and 5.25am. On each occasion they noted in the log as "patrol of division all appears OK."

4.7 YLP Local Operating Procedure 26 requires officers to:

> "…operational duties permitting, conduct a patrol of the division at intervals of not more than two hours and sight each prisoner."
>
> "observe the prisoner by shining a torch through the lexan panel, observing prisoner through the spy hole in the cell door to ascertain if the prisoner is showing signs of physical or mental stress."
>
> "… record in the journal that the patrolling officer sighted all prisoners."

This last procedure was not complied with by the officers concerned here, and this is a matter which should be addressed by YLP administration. The officer should be in a position to state that they sighted each prisoner. "All appears OK" is not good enough.

4.8 Between 8.10 and 8.30am on 31st December 1999, Correction Officer Sly was performing an unlock of the cells on the western side of B division when he opened Cell 118, occupied by Mr Gear. He was lying on his left side, still in bed, facing the wall. Mr Sly thought he was still asleep. He slammed the door closed in an effort to wake him up.

4.9 When the unlock process was complete, Mr Sly had still not had a response from Cell 118, so he went back to the cell and, upon opening, saw the Mr Gear had not moved. He shook him on the right shoulder and there was no response. He removed the blanket, was unable to find a pulse and so he called on his hand-held radio and activated the "code black" alarm, designating a medical emergency.

4.10 When the officers tried to roll Mr Gear on to his back, they were unable to do so, presumably due to rigor mortis. As they attempted to move him, a large quantity of fluid ran from his nose.

4.11 Nurses Gawlik and Mulqueen arrived at the cell at about 8.30am and attempted to resuscitate Mr Gear. They used oxy-viva equipment, and continued resuscitation attempts until approximately 8.41am. At 8.50am an ambulance crew arrived but took no further action. At 8.55am, Dr Creaser arrived at the cell and pronounced Mr Gear's life extinct.

5. Cause of Death

5.1 A post mortem examination on the body of the deceased was performed by Dr J D Gilbert, Forensic Pathologist, on the 2nd January 2000.

A blood sample taken by Dr Gilbert was analysed by Mr P D Felgate, Forensic Scientist and disclosed the presence of:

"1. 1.9mg methadone per L. (toxic/potentially fatal)
2. approximately 0.4 mg sertraline per L. (greater than therapeutic)
3. approximately 1.0mg thioridazine per L. (therapeutic)
4. approximately 5mg paracetamol per L. (therapeutic)"

(Exhibit C2a)

5.2 Dr Gilbert commented:

"1. Death has been attributed to methadone toxicity. The blood level of methadone (1.9mg/L) was greater than therapeutic and within the potentially lethal range. The blood also contained therapeutic levels of thioridazine and paracetamol and a greater than therapeutic level of sertraline. The central nervous system depressant effects of thioridazine may have contributed additively to those of methadone. No other common drugs including alcohol were identified in the blood.

No other cause of death was identified though sudden death associated with use of thioridazine cannot be excluded.

It is difficult to see why the deceased apparently succumbed to methadone toxicity when he was on the same dose of methadone (110mg/day) for over five months leading up to his death and similarly his doses of thioridazine and sertraline had not changed.

Both thioridazine and sertraline are metabolised by the same cytochrome P450 (CYP2D6) and this could account for the higher than therapeutic level of sertraline noted in the toxicology findings.

Some questions about the deceased's methadone treatment arise:

a. Why was he maintained on a relatively high dose of methadone for months on end without any attempt to bring the dosage down, as is normally the case?

b. Perusal of the Prison Medical Record does not readily allow one to determine the dosage of methadone administered regularly. I noted 'Methadone Daily Sign Sheets' for the deceased. They record the deceased's signature for each administration but they more often than not fail to record the administering nurse's signature. They also do not indicate the daily dose administered. The lack of documentation in the medical record raises the possibility that a mistake in dosage could have been made particularly if the methadone was administered by someone unfamiliar with the deceased's regular dosage. No nurse's signature accompanies the record of the deceased's last 3 doses of methadone.

2. There were no injuries or other markings on the body to indicate the involvement of another person in the death.

3. No natural disease that could have caused or contributed to the death was identified at autopsy.

5.3 I also heard evidence from Dr Nicholas Buckley, who was then the Senior Consultant in Clinical Pharmacology and Toxicology, and who was also a General Physician at the Royal Adelaide Hospital.

5.4 In relation to Dr Gilbert's first question, Ms Work told me that the policy of gradually weaning prisoners off methadone had been discontinued. She explained that, since August 1999 methadone maintenance programs were adopted at YLP which involved maintaining a consistent dose of methadone over quite extended periods of time, in conformity with modern thinking on the subject. Dr Buckley supported this change (T79). He added that the blood concentration of 1.9mg per litre was insignificant, since people receiving methadone over an extended period develop a high degree of tolerance to the drug (T84).

5.5 As to Dr Gilbert's second question about record keeping, it would appear that Dr Gilbert received a copy of the form signed by the prisoner, but not the form signed by the nurse. The forms are separate because they are kept on either side of the barrier at the prison. Having regard to the evidence given by Ms Work, which I outlined earlier, I accept that the record keeping was of a sufficiently rigorous standard to exclude the possibility of an accidental overdose.

5.6 <u>Role of Thioridazine</u>

As part of the autopsy, Dr Gilbert noted that Mr Gear's heart was slightly enlarged, at 439 grams, and that the chambers were flabby and dilated which suggested, but did not necessarily confirm, that Mr Gear may have been suffering from cardiomyopathy consistent with the electrical disturbance noted in 1998.

5.7 Of the various medications Mr Gear was receiving, Dr Buckley said that thioridazine (Melleril) had no interactive affect with methadone, nor did the paracetamol Mr Gear received when it was required. The sertraline (Zoloft) may have inhibited metabolism of methadone and thereby increased the concentration, but the increase would have been marginal and should not have lasted longer than about ten days, so it was unlikely to have been contributory to Mr Gear's death (T88). Dr Buckley said that the same comments applied to mucaine (T89).

5.8 Dr Buckley said that thioridazine was not usually prescribed as a sedative but, since, Mr Gear had been addicted to benzodiazepines prior to his admission to prison, he did not criticise its use as a sedative. He pointed out that the dosage was low in any event (T91).

5.9 However, it has become known since Mr Gear's death that thioridazine has been implicated in a number of unexpected deaths because it is liable to produce cardiac arrhythmias. Dr Buckley said this had become generally known in the medical profession as a result of articles published in early 2000 (T92). On that basis Dr Nambiar's prescription of it in 1999 cannot be criticised.

5.10 Dr Buckley said that since this potentially lethal effect has become known, an ECG is required to be performed prior to the patient receiving the medication. Patients particularly at risk have an abnormality demonstrated on the ECG known as a "q-t prolongation". Neither of the ECG's performed on Mr Gear in January or February of 1998 displayed this irregularity, although the abnormalities described in the January 1998 ECG, are probably sufficient to have contra-indicated the drug in light of later knowledge.

5.11 Dr Buckley said that the effects of thioridazine on the heart are unpredictable, and do not necessarily occur early in the course of therapy. He suggested that another possibly trivial issue, such as a minor infection or a fever, might have been sufficient to trigger a fatal arrhythmia in a patient taking thioridazine.

5.12 Dr Buckley also pointed out that although the peak effect of methadone usually occurs within three to four hours of administration, which would have been around midday on the 30th December 1999 in Mr Gear's case, most deaths involving methadone occur at night. He said that during rapid eye movement (REM) sleep, many muscles of the body are paralysed, including some of those involved in breathing. This, combined with the sedative effects of methadone, makes the person more susceptible to death by over-sedation.

5.13 Taking all these matters into account, Dr Buckley disagreed with Dr Gilbert's suggested cause of death as methadone toxicity. He said that, in his opinion, a better description would be "mixed drug toxicity involving both methadone and thioridazine". He said it was impossible to be definite, and that Mr Gear's death could have resulted either from the sedative effects of methadone while he was deeply asleep, or from a fatal arrhythmia due to thioridazine, or a combination of the two (T102).

5.14 I accept Dr Buckley's opinion on the matter and find that the cause of Mr Gear's death was mixed methadone and thioridazine toxicity.

6. Recommendations

6.1 Having regard to the evidence of Ms Work, Dr Creaser, and Dr Buckley, I have no criticism of Mr Gear's medical treatment at YLP, and in particular the decision to maintain him on the methadone program at the dosage prescribed. It is well known that there is always a slight risk of sudden death as a result of prolonged methadone usage, however this is seen as preferable in most cases to the risk of relapse into abuse of heroin, benzodiazepines and other drugs if methadone is not prescribed. Certainly, Mr Gear's medical history demonstrated that he was at high risk of relapse, and he made an informed decision to enter the program. Ms Work's comments about his responsible attitude towards the program indicates this.

6.2 As far thioridazine is concerned, I was told by Dr Creaser that, since the risk of cardiac arrhythmia has become known, the drug is no longer used at YLP (T57).

6.3 In those circumstances, I make no recommendations pursuant to Section 25(2) of the Coroner Act.

Key Words: Death in Custody, Drugs, Methadone, Thioridazine

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 5th day of October, 2001.

……..……
Coroner

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