



## **FINDING OF INQUEST**

*An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 24<sup>th</sup> day of September 2019 and the 10<sup>th</sup> day of January 2020, by the Coroner's Court of the said State, constituted of David Richard Latimer Whittle, State Coroner, into the death of Louisa Jill Josephine Fioretti.*

*The said Court finds that Louisa Jill Josephine Fioretti aged 19 years, late of 27 Kalyra Road, Belair, South Australia died at the Flinders Medical Centre, Flinders Drive, Bedford Park, South Australia on the 12<sup>th</sup> day of October 2015 as a result of 2, 4-dinitrophenol toxicity. The said Court finds that the circumstances of her death were as follows:*

### **1. Introduction**

- 1.1. Ms Louisa Jill Josephine Fioretti was born on 15 August 1996 and died at the Flinders Medical Centre on 12 October 2015, aged 19.

### **2. Mandatory inquest**

- 2.1. At the time of her death a Level 1 Inpatient Treatment Order was in place. As a result, Ms Fioretti's death is a 'death in custody' as defined in the Coroners Act 2003 and it is mandatory that an inquest be held.

### **3. Cause of death**

- 3.1. Dr Neil Langlois, forensic pathologist at Forensic Science South Australia, performed an autopsy and provided a report<sup>1</sup>. His finding, which I accept, is that the cause of death was 2,4-dinitrophenol toxicity.

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<sup>1</sup> Exhibit C3a

- 3.2. A toxicology report<sup>2</sup> states approximately 28mg of 2,4-dinitrophenol per litre was detected in Ms Fioretti's blood. The report states that 2,4-dinitrophenol, commonly known as DNP, has been used commercially since the early 1900s in the manufacture of explosives, dyes, wood preservatives, herbicides and insecticides. In 1933, it was promoted as a weight loss drug but was withdrawn from the market in 1938 due to its harmful effects. It has recently had a resurgence in popularity as a diet aid and is supplied as a dietary supplement in 200mg capsules and can be taken orally in daily doses, apparently, of 200-800mg. The toxicology report states in no uncertain terms that ingestion of excessive quantities of the drug can cause serious harm, including death and further states that exposure may cause nausea, vomiting, hypothermia, diaphoresis, tachypnoea, agitation, tachycardia, coma and death.

#### **4. Background**

- 4.1. A statement of Ms Fioretti's mother, Philippa Fioretti<sup>3</sup>, provides background to her daughter's life. Mrs Fioretti was concerned for her daughter even from the age of four years old. As a result, she was referred for psychological assessment, which suggested that Ms Fioretti had central auditory processing disorder and attention deficit disorder without hyperactivity.
- 4.2. Ms Fioretti's parents did everything they could to give their daughter the best start to life. She encountered various difficulties during her school life, but was well looked after and supported by her parents.
- 4.3. When she was in year 10, while her mother was visiting family in Sydney, Ms Fioretti took an overdose of her prescription medication, Ritalin, after an argument with her father about 'wagging' school, and was admitted to the Women's and Children's Hospital. She was reviewed by the mental health team and it was found that there was no evidence of suicidal ideation or planning. Ms Fioretti refused to discuss the overdose with her general practitioner but did state that she did not want to kill herself and did not know why she had done it. Her general practitioner diagnosed her with depression and prepared a mental health care plan. She was referred to Dr Cate Howell for therapy, support and education aimed at reducing her anxiety. Eventually Ms Fioretti decided not to continue with these sessions.

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<sup>2</sup> Exhibit C4a

<sup>3</sup> Exhibit C13

- 4.4. Ms Fioretti struggled during year 12, suffering badly from anxiety. During the year she decided to study nursing once she finished school, and found some purpose. However, she coped poorly with exams and could not gain entry to a nursing degree. She regarded her year 12 results as a disaster, but with the support and assistance of her parents, in March 2015 she enrolled in Foundation Studies at the University of South Australia. She did very well in her course work. For her first semester subjects she received a distinction and a credit but she was disappointed with the credit and thought that she should have done better. Her parents continued to encourage her but Ms Fioretti was not happy with her marks.
- 4.5. Police investigation of her electronic devices, after her death, revealed that Ms Fioretti was a young woman lacking in confidence and doubting her self-worth. During year 12 in 2014, aged 17 to 18 years, she was portraying herself on Facebook as a different person. She was having difficulties with food, diet and body image. Her mobile phone screensaver was a picture of an unknown, attractive female which she used as motivation to try and look better. In March 2015, whilst attending the University of South Australia, she was using an online profile picture which did not look like her. In chatrooms she was doubting herself and her looks, and rated herself as  $4/10$ . In the same month Ms Fioretti started researching DNP for weight loss.
- 4.6. In September 2015, Ms Fioretti's parents planned to go overseas but they were reluctant to leave their daughter behind. As Ms Fioretti was looking forward to being independent for a period of time, her parents decided to go, and departed Australia. They were due back on 14 October 2015.
- 4.7. Also in September 2015, Ms Fioretti met Mr Francesco Maraia, a driver who delivered food to her. They became friendly through texting and one night went out together, going for a drive, and stopping to look at the city lights. Nothing physical occurred. It is clear that Ms Fioretti had feelings for Mr Maraia, and she rated him in a chatroom as  $10/10$ . He states she was always happy and smiling.
- 4.8. On 25 September 2015, Ms Fioretti searched, 'Interested in buying DNP', on an internet search engine. On the same day, she also visited a website called Localbitcoins.com, a marketplace for trading bitcoins for cash or online payments. It is likely that she purchased DNP online, on that date.

- 4.9. On 4 October 2015, Ms Fioretti sent a text message to her friend Hannah Greenwell, in which she said she was doing well whilst her parents were away.
- 4.10. On 8 October 2015, she was researching ways of self-harming. In chatrooms, she was telling people that she was mentally ill, felt lonely and worthless and was suffering from borderline personality disorder.
- 4.11. A friend, Ms Maddison Press, agreed to help Ms Fioretti hold a party at the family home on Saturday, 10 October 2015. Ms Press described her as happy and excited but also nervous about the party. At the party, a man by the name of Mr Nathan Spencer, who worked with Mr Maraia and had met Ms Fioretti on a few occasions, told her that Mr Maraia may have had a girlfriend. Ms Fioretti appeared to become upset. She sent Mr Maraia angry text messages, which he did not receive but learnt of later. The next day, Mr Maraia spoke with Ms Fioretti by telephone and, during the conversation, told her he did not have a girlfriend. He perceived that she believed him, but nevertheless she told him she no longer wanted to be friends.

## **5. Ms Fioretti's overdose and treatment**

- 5.1. On or about 12 October 2015, Ms Fioretti received by US Postal Service courier a bottle of DNP tablets. The stated sender was a Martin Angelo, of an address in Colorado Springs, Colorado, USA. The stated contents of the parcel were 'Women's Multi-Vitamin Health Supplement'.
- 5.2. Analysis of Ms Fioretti's computer shows that on that day she played some sad songs from her playlist whilst roaming chatrooms for inspiration to commit suicide. She was telling people that she was not looking to be talked out of it and that there were seven billion people in the world and no one would miss her. She was also complaining that boys were ruining her life and that she had met a boy who was rated <sup>10</sup>/<sub>10</sub> but found out that he possibly had a girlfriend. Later that evening, she wrote in the chatrooms she was too lonely to take a break and was pretty suicidal. At about this time she searched, 'What's a good last meal to eat before you die', and, 'How to sedate yourself'.
- 5.3. That evening, Ms Fioretti took approximately 50 x 250mg capsules of DNP and soon afterwards, at 7:45pm, rang for an ambulance, stating what she had taken. Paramedic Andrew O'Connor was unfamiliar with the drug but researched it en route, and understood the seriousness of the situation. When the ambulance arrived at

Ms Fioretti's home, her first words to Mr O'Connor were, 'This is going to get a lot worse'. During further conversation she informed him that she had taken 50 capsules of the drug DNP. The container she showed him falsely referred to the contents as a women's multi-vitamin supplement, which she explained was a decoy to get it through customs after ordering it online. She told him she took so many because she knew it would kill her, and said she had read heaps about it. When Mr O'Connor told her that he knew very little about how the drug works or what the treatment would be, she told him that she knew, 'You get really hot with it, you burn up,' and, 'Your heart beats really fast'. She said she had been binge eating all day with chips and chocolate and said she did not want to try to vomit up the contents of her stomach. When asked if she suffered mental illness, she said she suffered from anxiety but she declined to otherwise explain the reasons why she had overdosed. She said she had not reached out for help or spoken to anyone about what had driven her to take the overdose. She said she had not left a note. Mr O'Connor provided constant reassurance, comforting Ms Fioretti as best he could during her urgent transport to Flinders Medical Centre. Although Ms Fioretti was not expressing unwillingness to be cared for, Mr O'Connor properly exercised his power under section 56 of the Mental Health Act 2009 to formally take her into his care and control, on the basis that he considered she was suffering a mental illness and he perceived a significant risk that she had caused or would cause herself harm and required medical treatment.

- 5.4. Ms Fioretti arrived at the Flinders Medical Centre at 8:28pm and an Inpatient Treatment Order (Level 1) was made at 8:45pm, having regard to her presentation with anxiety and ingestion of an intentional overdose of tablets with a stated aim to kill herself. Although upon arrival she was able to talk, it appears that the Inpatient Treatment Order was not formally explained to her, as her condition rapidly and dramatically deteriorated. I make no criticism of the failure to explain the order to her.
- 5.5. A team of specialists and nursing staff commenced making all possible efforts to save Ms Fioretti's life. Toxicology advice had been given to the treating team that the dose described by Ms Fioretti was a lethal dose and that there was no specific antidote, although a rarely used experimental drug, dantrolene could be tried. As her condition deteriorated, she was given sedatives to manage her distress and intubated to protect her airway. Extracorporeal membrane oxygenation (ECMO) was established, transferring her heart and lung function to machine, with a view to proceeding to

dialysis. Charcoal was administered but was, as expected, ineffective in absorbing the drug. Dantrolene was administered. Despite various cooling measures, her temperature continued to climb. The effect of the DNP was to increase her metabolic rate whilst producing heat.

- 5.6. At 9:50pm Ms Fioretti went into cardiac arrest, whereupon CPR was commenced immediately and efforts to revive her continued until 11:07pm, when she was pronounced deceased.

## **6. Police investigation**

- 6.1. A police investigation was conducted and a thorough and helpful report was prepared by Detective Brevet Sergeant Vija Johnson. To the extent necessary, I have in these findings canvassed matters raised in that report.

## **7. 2,4-Dinitrophenol now prohibited for human use**

- 7.1. Since 1 February 2017, 2,4-dinitrophenol has been included in Schedule 10 of the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) (also commonly known as the Poisons Standard) with the effect that it is declared to be a poison for the purposes of the Controlled Substances Act 1984 (SA) and it is an offence, punishable by a fine of \$10,000, to sell, supply, prescribe or purchase it for human use, or to advertise that it is available for sale or supply for human use. These prohibitions also apply in all States and Territories of Australia, pursuant to corresponding legislation.
- 7.2. Schedule 10 is sub-headed 'SUBSTANCES OF SUCH DANGER TO HEALTH AS TO WARRANT PROHIBITION OF SALE, SUPPLY AND USE'.
- 7.3. In its application for 2,4-dinitrophenol to be included in Schedule 10 of the Poisons Standard, the Advisory Committee on Medicines Scheduling (ACMS) provided the following reasons for the application, which were accepted when the decision to include this poison in Schedule 10 was made:
- 2,4-dinitrophenol is a highly toxic substance when ingested, inhaled or absorbed through the skin;
  - 2,4-dinitrophenol inhibits efficient energy (ATP) production in cells and leads to rapid consumption of energy without generating ATP and consequently increased fat metabolism, increased oxygen consumption and production of heat;

- In the 1930s, 2,4-dinitrophenol was used as a weight loss agent in the treatment of obesity. Adverse effects included cataracts, renal failure and deaths due to hyperthermia;
- The US FDA banned therapeutic use of 2,4-dinitrophenol for weight loss in 1938;
- In the late 1990s, 2,4-dinitrophenol was promoted to the body building community as a 'fat burner'. There has been renewed interest in the use of 2,4-dinitrophenol among body builders and individuals who are anorexic or bulimic;
- There have been reports of intentional overdoses with 2,4-dinitrophenol;
- There has been a recent increase in deaths associated with the use of 2,4-dinitrophenol, particularly in the UK;
- In late 2015, a young woman died in South Australia after the voluntary consumption of around 50 tablets of an unspecified strength of 2,4-dinitrophenol;
- Users of 2,4-dinitrophenol are sourcing the substance and tablets/capsules via the internet;
- The current human use of 2,4-dinitrophenol is not under medical supervision and presents a significant risk to health; and
- 2,4-dinitrophenol for human use presents such a danger to health as to warrant prohibition of sale, supply and use.

7.4. It may be seen that those reasons include a reference to the death of Ms Fioretti.

## **8. Conclusions**

- 8.1. Ms Fioretti died as a result of an intentional overdose of 2,4-dinitrophenol. It was self-administered, either with the intention to end her life or, at the very least, with clear knowledge that there was a high likelihood she would suffer serious harm or death.
- 8.2. It is not clear on the evidence whether, at the time she ordered and paid for 2,4-dinitrophenol online, Ms Fioretti intended eventually to use it to end her life. On balance, having regard to a relative absence of evidence of suicidal intent at that time, I would conclude that she did not.
- 8.3. On the evidence, I am unable to find why Ms Fioretti called an ambulance after taking her overdose and I shall not speculate as to her reason or reasons. I cannot conclude, from the accounts of the conversations after taking her overdose, that she had an

expectation that her life would be saved, although it is certainly clear that she became increasingly anxious as the symptoms of her poisoning intensified.

- 8.4. The Inpatient Treatment Order to which she was subject at the time of her death was lawfully imposed upon proper grounds.
- 8.5. The treatment provided to Ms Fioretti by ambulance officers and at the Flinders Medical Centre during her detention pursuant to the Inpatient Treatment Order was expert and entirely appropriate, but having regard to the nature and quantity of the overdose it was not possible to save her life.
- 8.6. As appropriate steps have been taken to prohibit 2,4-dinitrophenol for human use, I make no recommendations.

*Key Words: DNP Overdose; Prohibited Substance; Overseas Supply*

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

*Seal the 10<sup>th</sup> day of January, 2020.*

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*State Coroner*