



Western

Australia

RECORD OF INVESTIGATION INTO DEATH

Ref: 4 /18

*I, Sarah Helen Linton, Coroner, having investigated the death of **Steven John COLLOFF** with an inquest held at the **Perth Coroner's Court, Court 51, CLC Building, 501 Hay Street, Perth** on **23 January 2018** find that the identity of the deceased person was **Steven John COLLOFF** and that death occurred on **22 November 2015** at **Royal Perth Hospital** as a result of **organ failure following use of synthetic cannabinoids and consequent hyperthermia** in the following circumstances:*

Counsel Appearing:

Mr T Bishop assisting the Coroner.

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INTRODUCTION

1. Steven John Colloff (the deceased) died on 22 November 2015 at Royal Perth Hospital. Prior to his death the deceased had been using synthetic cannabinoids, which were found to have led to heat stroke and organ failure.
2. Pursuant to s 25(2) of the *Coroners Act 1996* (WA) it was determined that it was desirable to hold an inquest into the death to investigate the circumstances of the death and to obtain more information on the dangers of synthetic cannabinoids.
3. I held an inquest at the Perth Coroner's Court on 23 January 2018. The inquest focused primarily on expert evidence in relation to the increasing prevalence of synthetic cannabinoids in the community and how they contributed to the death of the deceased.

BACKGROUND

4. The deceased was born in Staffordshire, England on 4 March 1968. He emigrated to Australia with his family in 1971 when he was still a young child. In 1978 the deceased and his family returned to England and the deceased attended primary school in Cheshire for a period of time before they returned to Australia in 1979.¹
5. While he was still young the deceased's parents separated. After the separation the deceased's mother returned to live in England. The deceased chose to remain living with his father and sister in Australia.²
6. The deceased's mother eventually returned to live in Australia and the deceased began living with his mother and her partner in 2010. The deceased's mother described him as a very polite and loving son. He was a quiet and happy person who enjoyed playing chess and computer games. He was also a Star Wars enthusiast and had an extensive collection of Star Wars models and magazines.³
7. As far as the deceased's mother was aware, the deceased did not have any long term relationships and he was single at the time of his death. He was unemployed and received government benefits.⁴
8. The deceased's general practitioner advised that the deceased had been diagnosed with bipolar disorder, with agoraphobia, which was treated with Risperdal 1mg daily. The deceased also suffered from anxiety and depression, which was treated with citalopram 40mg daily. In addition, the deceased was prescribed xarelto 20mg daily for recurrent deep vein thrombosis and metoprolol 50mg daily for a cardiac condition. The deceased was known to be a cigarette smoker and had been diagnosed with emphysema and chronic obstructive pulmonary disease, for which he used

¹ Exhibit 1, Tab 10.

² Exhibit 1, Tab 10.

³ Exhibit 1, Tab 10.

⁴ Exhibit 1, Tab 10.

an inhaler. There was a suggestion in his medical record that the deceased was not always compliant with his medication regime.⁵

9. The deceased's doctor also reported the deceased had a chronic substance abuse problem and was a hepatitis C carrier. Blood tests performed on the deceased on 13 January 2015, about 10 months before his death, showed normal kidney function and only a minor change to the liver. He had been assessed by the Next Step Program for his chronic substance abuse.⁶
10. The deceased's mother was aware that the deceased used cannabis and generally smoked it with drug paraphernalia. She had asked the deceased not to use drugs when at her home.⁷
11. Information was obtained during the coronial investigation that prior to his death the deceased had been having trouble sourcing cannabis and had instead turned to using a synthetic cannabinoid as a substitute.⁸
12. The deceased was seen by his doctor on 3 November 2015, who referred the deceased to the Rockingham Kwinana adult mental health service for further assessment and management. On 16 November 2015 he was reviewed by his regular doctor again, at which time the deceased was in a good frame of mind. The deceased's doctor was aware the deceased had a mental health appointment arranged by the Rockingham Kwinana mental health team.⁹

CIRCUMSTANCES OF THE DEATH

13. On Saturday, 21 November 2015 the deceased's mother saw the deceased apparently smoking cannabis outside in the backyard of her house.¹⁰ A report to the hospital suggested he had been smoking 'Kronic', a synthetic cannabinoid, all night the previous night. This was contrary to the deceased's mother's instructions not to use drugs at her home. As a result, the deceased's mother asked him to leave the house, which he did.¹¹
14. At the time the deceased left the house the deceased's mother indicated in her statement that he appeared normal to her, although the later hospital records record an account from his mother that he also appeared confused and agitated at that time.¹² The deceased left his mother's house in his car and that was the last time his mother saw him before he was hospitalised.¹³
15. The deceased's whereabouts after leaving home are unknown until he was found later that day at Kwinana Beach.

⁵ Exhibit 1, Tab 9 and Tab 11.

⁶ Exhibit 1, Tab 9 and Tab 11.

⁷ Exhibit 1, Tab 10.

⁸ Exhibit 1, Tab 6.

⁹ Exhibit 1, Tab 11.

¹⁰ Exhibit 1, Tab 10.

¹¹ Exhibit 1, Tab 10.

¹² Exhibit 1, Tab 15.

¹³ Exhibit 1, Tab 10.

16. At about midday the deceased was located by a passerby on the footpath at Kwinana Beach carpark. He appeared to be having a seizure, so a call was made to St John's Ambulance to request an ambulance attend. There was evidence to suggest the deceased had been there for some time before he was found. The air temperature that day was recorded at 32 – 34°C, under an easterly air stream, so it would have been very hot.¹⁴
17. An ambulance attended and found the deceased still having seizures and with a very high recorded body temperature of 42.2°C, which is well above the maximum normal body temperature of 37°C.¹⁵ The deceased also had an increased heart rate of 160 beats per minute and raised blood pressure.¹⁶
18. The deceased was treated with intravenous fluids and given a large dose of the antiepileptic drug midazolam to treat his seizures. However, his fitting continued. The deceased was taken by ambulance to Rockingham Kwinana Hospital.
19. On presentation at the hospital the deceased was in status epilepticus and was not responsive to high dose benzodiazepines. He remained ongoing seizure rigid, with clonus between seizures. His heart rate had increased further to 180 bpm. Treatment included measures attempting to control the arrhythmia and raised blood pressure. Administration of muscle relaxants, intubation and artificial ventilation was required. Other treatments aimed at reversing the severe metabolic derangements that accompany uncontrolled seizure activity were instituted.¹⁷
20. Early blood tests at Rockingham Kwinana Hospital showed ventilatory failure, with carbon dioxide retention and metabolic acidosis, consistent with uncontrolled seizures. There was already evidence of electrolyte disturbance and impaired renal function at this time. The findings imply impaired kidney function of longer duration than his acute seizure disorder, although there was no evidence of impaired renal function when the deceased was tested in January 2015. There was also evidence of extensive damage to skeletal muscles and heart muscle.¹⁸
21. The deceased was transferred to the Intensive Care Unit of Royal Perth Hospital (RPH) for further treatment due to concerns about his worsening multi-organ failure. On admission to the ICU the impression was of heat stroke with dire organ failure that was progressing despite maximal ICU therapy. It was thought that illicit drugs played a part in his presentation, most likely an overdose on the synthetic cannabinoid Kronik, given the history provided. The ChemCentre WA was asked by medical staff to test blood samples taken from the deceased to assist in identifying what substance he had taken.¹⁹

¹⁴ Exhibit 1, Tab 7, Tab 9, Tab 14 and Tab 16.

¹⁵ T 22.

¹⁶ Exhibit 1, Tab 9.

¹⁷ Exhibit 1, Tab 9.

¹⁸ Exhibit 1, Tab 9.

¹⁹ T 17.

22. At 4.55 pm blood tests showed a rapidly evolving disorder of blood coagulation, supporting the diagnosis of disseminated intravascular coagulation, which is also a critical part of the pathophysiology of heat stroke (hyperthermia). This progressively worsened, despite treatments to replace clotting factors. It was also followed by rapidly progressing damage in the kidneys and liver consistent with the clinical evolution of lethal heatstroke.²⁰
23. On 22 November 2015 medical staff held a discussion with the deceased's family. It was explained that the situation had worsened in spite of the increasing organ support and maximal therapy and there was a high likelihood of death from irreversible organ failure. After discussing his poor prognosis with his doctors the deceased's family decided to withdraw therapy and commence palliative care. At 5.50 pm, after a Registrar had assessed the deceased and found no signs of life, he was certified life extinct.²¹

CAUSE AND MANNER OF DEATH

24. On 27 November 2015 a Forensic Pathologist, Dr C. T. Cooke, performed a post mortem examination of the deceased. The examination showed softening and discolouration of the body organs, consistent with organ failure. There was congestion of the lungs, with likely early pneumonia (which is a common complication of artificial ventilation in seriously ill people with established chronic lung disease, like the deceased).²²
25. Toxicology analysis was undertaken of samples obtained from the deceased prior to his death when he was admitted to hospital, as well as after his death. The toxicology analysis of both the ante mortem and post mortem samples showed the presence of two known synthetic cannabinoid substances, AB-CHMINACA and 5F-AMB, together with some medications that were consistent with the deceased's medical treatment for his psychiatric disorder and when in intensive care.²³ The Illicit Drugs Section of the Forensic Science Laboratory at ChemCentre has indicated that over that period of time there were drugs available containing both of those substances, with street names such as "Blue Magic, Dr Evil and Trainwreck Gold"²⁴ although it is also possible the deceased consumed two different substances. There is very limited data available on the effect of those two synthetic cannabinoids in the one substance, making it difficult for the chemist to comment on the potency and toxicity.²⁵
26. From the information available Dr Cooke concluded that it appeared the deceased developed multiple organ failure following an apparent toxic reaction to the use of synthetic cannabinoids. Dr Cooke formed the opinion the cause of death was organ failure following use of synthetic cannabinoids.

²⁰ Exhibit 1, Tab 14.

²¹ Exhibit 1, Tab 16.

²² Exhibit 1, Tab 3 and Tab 9.

²³ Exhibit 1, Tab 3, Tab 4, Tab 5 and Tab 9.

²⁴ T 18.

²⁵ T 19.

27. Professor David Joyce is a clinical pharmacologist and toxicologist who works as a specialist physician in the area of human drug therapy and human toxicology. In other words, Professor Joyce is “a doctor who practises in the area of drug effects on people and toxin effects on people.”²⁶ Professor Joyce was provided with all the relevant materials in relation to the death of the deceased, including the report of Dr Cooke and, based upon all of that information Professor Joyce also offered an opinion about the cause of death.
28. Professor Joyce noted that the clinical presentation was characteristic of lethal heat stroke, with a presenting temperature of 42.2°C, early rhabdomyolysis (damage to skeletal muscle), early coagulopathy and rapid evolution of multi-organ failure. The heat stroke was accompanied by, and probably precipitated by, uncontrollable seizures. Professor Joyce advised that seizures may be both a cause and a consequence of heat stroke. They cause heat stroke through the strenuous, generalized, unremitting muscle contraction that is the most obvious manifestation of generalized seizure disorder.²⁷
29. The deceased was also probably dehydrated before the onset of seizures, based on the early abnormality in electrolytes and renal function. In Professor Joyce’s opinion the likely cause of the dehydration was failure to drink in a hot environment because of confusion caused by intoxication with synthetic cannabinoids. Professor Joyce concluded that the deceased had probably been very dehydrated for many hours before the onset of seizures, as the abnormalities detected do not develop over short times.²⁸ Dehydration would have compromised the deceased’s capacity to thermoregulate (control body temperature physiologically) when he started to have seizures on a hot day, as you need to be well hydrated to sweat, which then helps cool the body.²⁹
30. By the time the deceased reached hospital he had already experienced compromised kidney function, damage to his muscles generally and in particular, damage to his heart muscle. The seizures were resistant to conventional treatment as the ambulance officers had given very large amounts of midazolam, the usual drug treatment, without effect. In the end, the deceased had to be given general anaesthetic to gain control of the seizures and was placed on mechanical ventilation and his dehydration was aggressively managed but by approximately 5.00 pm it was apparent that his heat stroke would have a lethal outcome and that eventually came to pass.
31. Professor Joyce concluded the hyperthermia seen by the ambulance officers was a consequence of uncontrolled seizure activity in a probably dehydrated man on a hot day. Consistent with the opinion of Dr Cooke, Professor Joyce formed the view the cause of the seizures is very likely to have been the synthetic cannabinoid exposure, both in causing him to become dehydrated and because seizures are a recognised manifestation of severe toxicity with

²⁶ T 121.

²⁷ T 22; Exhibit 1, Tab 9.

²⁸ Exhibit 1, Tab 9.

²⁹ T 23.

synthetic cannabinoids. Hyperthermia itself can also cause seizures, thus taking the condition more rapidly to the point of irreversibility.³⁰

32. Professor Joyce noted that both the synthetic cannabinoid substances found in the deceased's system have been individually linked with lethal outcomes, or at least the 5F-AMB and a close relative of the AB-CHMINACA.³¹ In addition, Professor Joyce expressed the opinion that the presence of both compounds probably made it more likely that there would be a negative outcome, as "by and large, drugs which individually cause one form of toxicity will cause it more severely if they're paired with another drug that causes the same form of toxicity."³² Therefore, Professor Joyce was prepared to state that it could be "fairly safely" concluded that the drugs were the cause of his presentation in this case.³³
33. I accept and adopt the conclusion of Dr Cooke as to the cause of death, with the addition of Professor Joyce's explanation for how the synthetic cannabinoids led to hyperthermia that precipitated the organ failure.
34. I find that the manner of death was by way of misadventure.

SYNTHETIC CANNABINOIDS

35. Under s 25(2) of the *Coroners Act*, a coroner may comment on any manner connected with the death including public health or safety or the administration of justice.
36. Synthetic cannabinoids are a subgroup of what are labelled new psychoactive substances or 'NPS' (designed to mimic established illicit drugs). In order to resemble natural cannabis, and to allow it to be smoked like natural cannabis, the synthetic compound is usually sprayed onto plant material. Synthetic cannabinoids are reportedly generally manufactured in clandestine laboratories overseas, rather than in clandestine laboratories in Australia, and are often purchased online and delivered to Australia via mail.³⁴
37. Ms Bianca Douglas, the Manager of Forensic Toxicology at ChemCentre WA, gave evidence that the first samples of synthetic cannabinoids were seen in Western Australia in late 2010. These samples came from items submitted by the WA Police to the Illicit Drugs Section of the Forensic Science Laboratory at ChemCentre in September 2010. The first detection of synthetic cannabinoids in a coronial case was for a case received at ChemCentre in April 2011. At that time, the range of synthetic cannabinoids identified was very limited, in the order of generally three types, and they were not covered by routine analysis at the ChemCentre.³⁵ From that time the number of detections grew exponentially, and in 2011 the ChemCentre

³⁰ Exhibit 1, Tab 4 [35].

³¹ T 26.

³² T 26.

³³ T 27 – 28.

³⁴ T 5 – 6.

³⁵ Exhibit 1, Tab 8.

was inundated with samples following more and more seizures by the WA Police during drug-related investigations and also a large influx of samples submitted for workplace drug testing, the ChemCentre developed methodology to be able to detect and identify the various synthetic cannabinoid compounds in toxicology samples.³⁶ Although there was more than one type of synthetic cannabinoid available, they were generally all sold under the name 'Kronic'.³⁷

38. Currently, Professor Joyce indicated “there is a multitude of synthetic cannabinoids, each of which has a complex formal chemical name”³⁸ although the names are commonly abbreviated. They are all promoted as a drug that can be smoked and that are able to reproduce the intoxication of natural cannabis. They were designed to stimulate the brain receptors as they respond to the natural cannabinoid, tetrahydrocannabinol (THC), from cannabis. They have to have a roughly similar molecular shape to THC to do this, but that can be achieved with a lot of different chemical constructions, hence the many different types of synthetic cannabinoids.³⁹
39. Professor Joyce advised that drug development has focussed on increasing potency, so many are able to achieve cannabis-like effect at very low human exposure. This means the quantity of synthetic cannabinoid used doesn't necessarily equate to what a person would normally use with natural cannabis.⁴⁰
40. There appears to have been a misconception in the past that, because they were advertised as legal, they were also safe. However, it is important to note that they are unregulated and untested and given the chemicals are constantly changing, it is difficult to know what is in each batch of a drug. Given the drugs are synthesised in uncontrolled processes overseas, Professor Joyce observed that there is a high probability that the marketed drug contains other unrecognised chemicals. Professor Joyce advised that hardly any of these chemicals have been submitted to even superficial safety testing. Instead, practically everything we know of their toxicology comes from human misadventure with their use.⁴¹
41. Severe toxicity syndromes that have been observed following the use of synthetic cannabinoids are summarised in the following table, taken from a journal review reporting adverse events associated with use of novel psychoactive substances.⁴²

³⁶ T 3 – 4.

³⁷ T 4 – 5.

³⁸ Exhibit 1, Tab 9 [19].

³⁹ Exhibit 1, Tab 9 [23].

⁴⁰ Exhibit 1, Tab 9.

⁴¹ Exhibit 1, Tab 9.

⁴² Logan et al, *Reports of Adverse Events Associated with Use of Novel Psychoactive Substances, 2013 – 2016: A Review*, J Anal Toxicol. 2017 (Apr) 28:1-38.

Central nervous system	<u>Agitation</u> , psychosis, irritability, <u>seizures</u> , sedation, <u>coma</u> , delirium, hallucinations, paranoia, anxiety, self-harm, psychomotor impairment, <u>anoxic brain injury</u>
Cardiovascular	<u>Tachycardia</u> , hypertension, acute coronary syndrome, <u>arrhythmia</u> , chest pain, myocardial infarction
Pulmonary	Tachypnoea, diffuse alveolar hemorrhages
Other	Nausea, vomiting, <u>fevers</u> , <u>acute kidney injury</u> , hyperglycemia, hypokalemia, <u>multi-organ failure</u>

The signs and symptoms that were manifest in the deceased on the day he became unwell are underlined in the table, as indicated by Professor Joyce.

42. Professor Joyce gave evidence that lethal toxicity syndromes of this nature have been reported after exposure to the synthetic cannabinoid MAB-CHMINACA (a very close relative of AB-CHMINACA that was found in deceased's blood) and 5F-AMB (also detected in the deceased's blood), as well as several other synthetic cannabinoids. Professor Joyce theorised that this sort of toxicity might be a "class effect" that is, something that can occur with anything that is a synthetic cannabinoid as it is a pharmacological effect that they share.⁴³
43. Professor Joyce went on to explain that it is unclear from these cases if it is part of the synthetic cannabinoid pharmacological function that is causing the toxic effect but he was sceptical as it is not something ever seen in natural cannabis. Professor Joyce suggested another possibility is that all the synthetic cannabinoids share some other quality, which is not defined at a pharmacological level yet. The final possibility is that it is not actually the synthetic cannabinoid compounds themselves, but is something that is carried over in the synthesis that is causing the toxicity.⁴⁴
44. Professor Joyce advised that the actual measured blood concentrations of synthetic cannabinoids have only an indistinct relationship to their lethal potential. Professor Joyce gave several reasons for this. Firstly, these compounds are highly potent, so will exert intoxicating and toxic effects at concentrations that are difficult to detect in blood, even with sensitive instrumentation. Secondly, many of them (likely including the two detected in this case) are unstable in biological fluids, so the measured concentrations may underestimate the amounts present in life. Thirdly we do not know with certainty that it is the synthetic cannabinoid itself that is the source of toxicity. Toxic metabolites or an adventitious chemical carrying over from an earlier synthesis step might actually be responsible. Finally, we don't know whether there are any particular aspects of genetics, background illness or other influences that determine individual susceptibility. In the deceased's case, it may simply be observed that other deaths have occurred

⁴³ Exhibit 1, Tab 9.

⁴⁴ T 26.

from synthetic cannabinoids over a range of concentrations, and this case fall in the broad range.⁴⁵

45. In order to respond to the increasing problem of new psychoactive substances the Western Australian government initially took steps to add various new psychoactive substances to the schedules of existing legislation to ban these substances, in particular a number of synthetic cannabinoids. Kronic was one such synthetic cannabinoid, which became prohibited on 17 June 2011 along with a number of other synthetic cannabinoids.
46. Due to the ability of manufacturers to manipulate the chemical structures to avoid this type of regulation, in 2015 the Western Australian government introduced new provisions into *Misuse of Drugs Act 1981* (WA) covering psychoactive substances more generally, in order to close the regulatory gap that has enabled new and emerging psychoactive substances to be sold because they were not captured by or regulated via existing legislation. The new provisions explicitly ban the sale, supply, manufacture, advertising or promotion of any psychoactive substance that was not already captured by existing legislation. These provisions came into effect on 18 November 2015, just prior to the death of the deceased.⁴⁶
47. In late 2015 the staff in the Forensic Science Laboratory at ChemCentre noted that over the preceding 12 to 18 months they had seen a dramatic increase in the number of synthetic cannabinoids detected in coronial cases. In many of the cases the synthetic cannabinoids were detected, but not quantified. A decision was made to attempt quantitation where reliable certified standard solutions could be sourced, with the hope that ultimately it would generate a 'body of work' by which the significance of the drug levels in individual coronial cases could be measured. They focussed attention on the most common of the synthetic cannabinoids.
48. However, since that time Ms Douglas indicated that there has been a decline in the prevalence of synthetic cannabinoids. Following a peak in 2012 to 2013, with nearly 2000 detections, since 2016 there have been relatively few detections of synthetic cannabinoids in the samples received at ChemCentre. The reduction has been attributed to the change in the legislation, which has made these substances less available generally and also less attractive to customers who are concerned about prosecution, but also to the understanding that the significant negative side effects of the newer types of synthetic cannabinoids (as opposed to the early forms that more closely mimicked natural cannabis) have become more publicly known.⁴⁷
49. Professor Joyce similarly observed at the conclusion of his report that,

“Users were prepared to try these drugs at a time when their dangers were unknown, not because they produced a more desirable intoxication than cannabis itself, but because they were represented as harmless and undetectable. That is no longer the case. They are detectable in specialized

⁴⁵ Exhibit 1, Tab 9.

⁴⁶ Sections 8N – 8U, Part 111B, *Misuse of Drugs Act 1981* (WA).

⁴⁷ T 11.

drug screening procedures and they can be lethally harmful. The informed user would seem to have no reason to choose them.”⁴⁸

50. Nevertheless, although there has been a reduction in prevalence, Ms Douglas noted that there is a greater diversity in the types of compounds available, which is the challenge that the chemists at ChemCentre are now presented with.⁴⁹ Ms Douglas indicated that the Illicit Drugs Department of ChemCentre has detected 76 different synthetic cannabinoids and the bulk of that variation has been in the latter part of the timeframe from 2010 to the present, as people try to manufacture a different compound to avoid being captured by legislation.⁵⁰ Ms Douglas also noted that there are always new types coming on the scene.⁵¹ Indeed, Professor Joyce was aware of 169 different types having been identified to date.⁵² Ms Douglas gave evidence the ChemCentre’s method is one of the most comprehensive in Australasia and their ability to detect such substances is generally good.⁵³
51. Although the prevalence is decreasing, Ms Douglas also gave evidence that synthetic cannabinoids are still being detected in coronial cases, both alone or in conjunction with other drugs and alcohol.⁵⁴ Therefore, there remains a concern that members of the public are not appreciating the risk that they run in using these unregulated and potentially toxic substances. As Professor Joyce noted, there is no safe level of intoxication with these drugs as “any level of intoxication is going to place a person open to risk of accident,” and as to risk of dying from using these drugs, there is too little known for any expert to say what is a safe level that can be used.⁵⁵ What is known for sure is that they are “much more dangerous than natural cannabis”⁵⁶ and cannot be used in a similar way or as a safe alternative.⁵⁷

CONCLUSION

52. The deceased had been a long term user of cannabis, without any known serious detrimental effects on his health, until late in 2015. At that time, due to difficulties sourcing his drug of choice, the deceased made the fateful decision to turn to the alternative of using a synthetic cannabinoid. On the morning of 21 November 2015 the deceased was known to have smoked a synthetic cannabinoid prior to leaving his mother’s house. A few hours later he was found at the beach suffering from severe heat stroke and seizures as a result of the effect of the synthetic cannabinoid and its consequences. His physical state was so compromised at that stage that he had no hope of being saved, despite the best efforts of paramedics and medical staff. He died the following day.

⁴⁸ Exhibit 1, Tab 9 [40].

⁴⁹ T 4.

⁵⁰ T 8 – 10..

⁵¹ T 9.

⁵² T 31.

⁵³ T 12 – 13.

⁵⁴ T 20.

⁵⁵ T 28.

⁵⁶ T 28.

⁵⁷ T 29 – 30.

53. While the evidence suggests that the prevalence of the use of synthetic cannabinoids had been on the decline in recent years, they are still being detected in current coronial cases. This suggests they are still available in the community and it is known that more and more varieties exist every day, although contrary to how they are marketed, they are not undetectable and the ChemCentre is advancing every day its techniques to detect and quantify them.
54. Mr Collof's death should serve as a warning to potential users of synthetic cannabinoid substances that they are not a safe alternative to natural cannabis, and neither have they been a legal alternative in Western Australia since the end of 2015.

S H Linton
Coroner
22 March 2018