CORONERS ACT, 2003

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 18th day of February 2008 and the 25th day of June 2008, by the Coroner's Court of the said State, constituted of Anthony Ernest Schapel, Deputy State Coroner, into the deaths of Zara Marie Schupelius, Callum Daryl Walter Smith, Jake Vincent Hackett, Rachel Von Smith and Paige Louise Clark.

The said Court finds that Zara Marie Schupelius aged 4 months, late of Black Springs Road, Waterloo, South Australia died at Waterloo, South Australia on the 22nd day of June 2005 as a result of suffocation.

The said Court finds that Callum Daryl Walter Smith aged 5 months, late of 4 Greaves Court, Evanston Park, South Australia died at the Lyell McEwin Hospital, Haydown Road, Elizabeth Vale, South Australia on the 8th day of July 2005 as a result of an undetermined cause.

The said Court finds that Jake Vincent Hackett aged 2 months, late of 20 Woolcock Street, Para Hills, South Australia died at Para Hills, South Australia on the 20th day of July 2005 as a result of suffocation.

The said Court finds that Rachel Von Smith aged 5 months, late of 41 Mortimer Street, Whyalla Stuart, South Australia died at Whyalla Stuart, South Australia on the 5th day of August 2005 as a result of suffocation.

The said Court finds that Paige Louise Clark aged 7 months, late of 30 Murray Price Drive, Renmark died at 3 Cooper Street, Berri, South Australia on the 2nd day of July 2006 as a result of an undetermined cause.

The said Court finds that the circumstances of their deaths were as follows.

1. Introduction

1.1. These concurrent Inquests concern the sudden unexpected deaths in infancy (SUDI) of five children the oldest of whom was 7 months. All of the infants died after they had been put to sleep in circumstances that carried an intrinsic risk of asphyxiation, in particular by suffocation which involves the deprivation of oxygen by external obstruction of the airways by an object or surface. The risk of suffocation arose in each instance from either the nature of the bedding or the sleeping position of the child or both. I have found that the cause of three of the infant deaths was suffocation. The cause of death in relation to the other two infants is undetermined, although the circumstances of their deaths are suggestive of possible suffocation.

1.2. It is pertinent to make the observation at the outset that none of the deaths of the five children are attributed to Sudden Infant Death Syndrome (SIDS). Various definitions of what constitutes death by SIDS have been developed over the years. The common feature of all definitions is the unexpected and unexplained death of a child less than a certain age which has arisen in the course of sleeping. It is a cause of death that is said to be derived by way of exclusion. A diagnosis of SIDS will only be recorded as the cause of death if all other possible causes of death have been excluded. For example, if an infant is shown to have died of suffocation, or that such a cause has not been eliminated as a possibility, SIDS as the cause of death would not be appropriately assigned. This is because in those circumstances either a cause of death has been identified or all possible causes of death have not been excluded as the case may be.

1.3. Unfortunately, when infants die of causes such as suffocation, or indeed SIDS, there is little or nothing revealed at autopsy that will identify or otherwise shed light on the cause of death. Accordingly, it is always necessary when examining possible causes of death of a sleeping infant to establish the infant's precise sleeping arrangements and sleeping environment and to establish all of the circumstances relating to the position in which the infant was found upon death. Without a detailed and accurate examination of all of those circumstances, it is very often impossible to arrive at a cause of death. The situation is different with older children and adults where there may be anatomical findings at autopsy that in themselves, quite apart from the surrounding circumstances of the death, indicate a cause of death.

1.4. In circumstances where pathologists are unable to arrive definitively at a cause of death, but are unable to eliminate a particular cause as a possibility, for example suffocation, the cause of death is generally expressed as Undetermined. There is a distinction between saying that a cause of death is undetermined and saying that an infant has died from SIDS. SIDS is a stand-alone syndrome which is the cause of death ascribed to the sleeping infant under a certain age when all other possible causes have been eliminated.

1.5. In assessing the cause of death in the context of a coronial Inquest, the coroner has to bear in mind the standard of proof that is required before any finding of fact can be made. Findings of fact in the Coroner's Court are made on the balance of probabilities. Such a standard of proof is applicable where the cause of death is an issue at inquest. Accordingly, a finding as to the cause of death will be made in the Coroner's Court on the balance of probabilities, that is to say where the particular cause of death has been shown to have been more probable than not. This is to be contrasted with a finding that might have as its underlying basis a belief that the cause of death is, out of a number of competing possibilities, the most likely or strongest of those possibilities. I suspect that forensic pathologists, when expressing an opinion as to the cause of death, sometimes proceed on that basis. I do not suggest that has happened in respect of any of these deaths. However, it is as well to record that in my opinion it would be inappropriate for a coroner to make a finding as to the cause of death on such a basis. In my view the coroner must be satisfied that the particular cause of death is one which in all of the circumstances is more probable than not. In arriving at my findings in respect of the causes of death of the infants with which this Inquest is concerned I have applied the above standard of proof.

1.6. In respect of each of those five infants, either a cause of death has been found on the balance of probabilities, namely suffocation (as in the cases of Schupelius, Hackett and Rachel Smith) or, falling short of that level of satisfaction, a particular identified cause of death has not been eliminated, again suffocation (as was the case in respect of Callum Smith and Paige Clark). Accordingly, it is not appropriate to ascribe SIDS as the cause of death in any of the five instances. I add here that none of the pathologists who performed the post-mortem examinations of the five infants have ascribed SIDS as the cause of death. Professor Roger Byard, an expert in SUDI, performed post mortem examinations in relation to three of the infants. He also gave

oral evidence to the Inquest and he commented upon the possible causes of death in relation to the other two infants. Professor Byard would not have ascribed any of the five deaths in this case to SIDS.

1.7 However, it is as well to recognise that there is a certain measure of overlap between the risk factors that conspire to place an infant at risk of death by SIDS as compared to those risks that expose an infant to death by suffocation. Included among these risk factors are undesirable sleeping arrangements and environments that involve, among other things, inappropriate bedding and sleeping positions, overheating and a cigarette smoke filled environment. The elimination of those risk factors from infants' sleeping environments has significantly reduced the incidence of SIDS in the community. The evidence presented in this Inquest strongly suggests that the elimination of the same risk factors would do likewise in relation to causes of infant death such as suffocation. Indeed, there is good reason to believe that the incidence of sudden unexpected deaths in infancy across the spectrum can be virtually eliminated altogether.

2. The evidence of Professor Roger Byard

2.1. Professor Byard was the only witness to give oral evidence in the course of this Inquest. Professor Byard holds the Chair of Pathology at the University of Adelaide. In addition he is a Senior Specialist Forensic Pathologist at Forensic Science South Australia. He has been with Forensic Science South Australia since 1999, prior to which he was a Senior Consultant Histopathologist at the Women's and Children's Hospital, with a position of Visiting Consultant Pathologist at the then Forensic Science Centre. Professor Byard is also a Consultant Paediatric Forensic Pathologist to the Child Protection Unit at the Women's and Children's Hospital. Professor Byard has many academic qualifications from various tertiary institutions in the world. He has a specific interest in sudden infant and childhood death and has published frequently in peer reviewed journals, many of which deal with natural, accidental and homicidal causes of sudden infant death. He has co-authored a text on sudden childhood death, the second edition of which has been referred to as the 'benchmark' in the field, and has co-edited a text on Sudden Infant Death Syndrome (SIDS) and the four volume Encyclopaedia of Forensic and Legal Medicine. Professor Byard is a member of the South Australian Child Death and Serious Injury Review Committee. According to the Chair's foreword to the Committee's latest

annual report, one of the Committee's functions is through its reviews of the deaths of children to make recommendations to the Minister for Families and Communities which may assist those who work with children and young persons and their families to assess risks and to provide better services to keep children safe. That report is Exhibit C66d.

2.2. Professor Byard has performed several hundred autopsies on children, infants and foetuses and has regularly appeared in Court, including this Court. Professor Byard himself performed the autopsies with respect to Callum Smith, Jake Hackett and Rachel Smith. The other autopsies were performed by Dr Allan Cala, also at the time a Forensic Pathologist at Forensic Science South Australia. Professor Byard provided to the Court what essentially amounts to an overview of the five deaths the subject of this Inquest and commented generally and specifically in relation to the sleeping environments of the five children insofar as they may have had an impact on their causes of death. That report became Exhibit C66. Annexed to that report and as part of the same exhibit was an article co-authored by Professor Byard and S M Beal MD, Paediatrician at the Women's and Children's Hospital. That article was promulgated in 1997. It deals specifically with V-shaped pillows and their impact on unsafe infant sleeping. For the purposes of these Findings I draw no distinction between V-shaped pillows and U-shaped pillows. They are essentially the same.

2.3. In his report and in his evidence, Professor Byard commented upon the particular circumstances of each individual death. Specifically, he dealt with the possible causes and mechanisms of death in relation to each of the five children. It will be noted here that each of the five post-mortem examination reports, save and except Dr Cala's in relation to Paige Clark in which he expresses the cause of death as Undetermined, different nomenclature is used to describe what is essentially the same thing. Dr Cala's expressed cause of death in relation to Zara Schupelius is 'consistent with smothering'. Professor Byard's expressed causes of death in relation to Callum Smith, Jake Hackett and Rachel Smith are 'attributed to suffocation', 'probable suffocation' and 'suffocation' respectively. At first blush the different ways in which these conclusions were expressed led me to consider that differing degrees of certainty were being expressed by the pathologists in relation to the causes of death being suffocation or smothering. Having heard Professor Byard's evidence, and having carefully considered the evidence surrounding the circumstances of each

individual death, it seems to me that there is no material difference in either the nature of the cause of death or the degree of certainty with which that cause of death has been expressed by the pathologist in each of those instances. However, as I say, in this Inquest the cause of death is a matter that has to be determined by me on all of the evidence. The standard of proof that I apply in relation to each death is the balance of probabilities. In the event, I have not been satisfied to the necessary degree that the cause of Callum Smith's death was suffocation. In my view the cause of his death remains Undetermined. The reasons for this conclusion are set out in detail below. Suffice it to say for the moment, those reasons arise from a lack of the necessary degree of evidentiary clarity in respect of the circumstances in which Callum Smith was located after he had died. In relation to the deaths of Zara Schupelius, Jake Hackett and Rachel Smith, it is my opinion the evidence establishes that it is more likely than not that each of those deaths was caused by suffocation. For the sake of consistency, the findings as to the cause of death in each of those three instances will be expressed in this report as suffocation.

2.4. I deal separately with the cause of death of Paige Clark. I do so because Dr Cala has suggested in his post mortem report that the cause of death in her case is Undetermined, although Dr Cala has alluded to the possibility that in the light of the position in which the child was found an 'asphyxiating process' had been at work. The oral evidence of Professor Byard did not really advance the matter of Paige's cause of death any further. The cause of Paige's death will, like Callum Smith's, remain Undetermined.

3. The circumstances of the deaths of the five infants

Infants	Date of Birth	Date of Death	Approx Age
Zara Marie **Schupelius**	28 February 2005	22 June 2005	4 months
Callum Daryl Walter **Smith**	11 February 2005	8 July 2005	5 months
Jake Vincent **Hackett**	22 May 2005	20 July 2005	2 months
Rachel Von **Smith**	1 March 2005	5 August 2005	5 months
Paige Louise **Clark**	24 November 2005	2 July 2006	7 months

3.1. The circumstances of the death of Zara Marie Schupelius

Zara was nearly 4 months old. She had an older sister who was 15 months old. Zara was put to bed at about 7pm after a feed. She was placed in a bassinet and according

to her mother she was wrapped tightly in a blanket the way she was shown at the hospital. Zara's mother states that she placed her on her back in the manner she had also been shown in the hospital and then placed another blanket over the top of the child and tucked the blanket in at the sides.

3.2. According to Zara's mother's statement, at about 9pm that evening Zara's mother went into the bedroom and when she looked at Zara in the bassinet she thought that she could see the back of her head. She took a closer look and discovered that Zara was not on her side. She picked up Zara, and the child was by that time clearly deceased.

3.3. There is no suggestion that Zara had suffered any serious illness.

3.4. Zara's mother describes the sleeping environment as follows:

> 'The bassinet has a cotton covered foam mattress, with a blanket folded up under the head end to help with Zara's reflux and colic, there is a cotton sheet over the mattress. The mattress is a soft one. I cannot give you the brand name of the bassinet or mattress as they are family hand me downs. I don't think there are any stains on the mattress.' [1]

3.5. It is evident that Zara's mother that night told a female friend that she had found Zara '*on her tummy*'[2].

3.6. Police attended the premises in which Zara had died. The following observations were made in relation to Zara's sleeping environment. A pink coloured blanket was bunched on top of the bassinet. On moving the blanket a soft toy was observed in the bassinet. The mattress had been propped at one end by placing a crocheted blanket underneath the mattress. The mattress was made of foam and was covered by a yellow sheet. The mattress was very soft and there was a distinct hollow consistent with where the child had been lying. Hand pressure onto the mattress revealed that it easily depressed further into the bassinet without much force. Under the mattress and blanket there was what appeared to be a pillow. The hollow in the mattress was such that it would have been easy for Zara to have rolled onto her front if she had not been placed directly into the centre of the mattress. The observation was made by police that once the child was on her front in the hollow, it would have been impossible for a baby of Zara's age to manoeuvre herself into a position where she could have

---

[1] Exhibit C5a, page 4
[2] Exhibit C6a, page 3

breathed freely[3]. I accept that evidence as an accurate description of Zara's sleeping environment. I also accept the observations and conclusions that the police have made and drawn as to the dangers presented by this environment.

3.7. Although Zara's mother's statement lacks complete clarity as to Zara's exact position when she was found, it is clear that she told investigating police that she had located Zara laying face down in her bassinet[4]. This description is not inconsistent with the statement that she made to her friend that she had found Zara on her stomach.

3.8. Dr Allan Cala performed the autopsy in respect of Zara's remains[5]. In Dr Cala's post mortem report summary, he describes his understanding of the sleeping environment as being that as previously described herein. Similarly, he has described the position in which the child was found as being face down within the trough of the mattress. Dr Cala surmises that in that situation the child may have been unable to clear her outer airway. Dr Cala found no significant abnormalities to account for death. The child appeared to be well hydrated, well nourished and devoid of any injury. A detailed brain examination showed Amyloid Precursor Protein (APP) immunostaining throughout the brain. This is a non-specific marker that can be seen in a variety of conditions including hypoxic ischaemic injury, an injury to the brain caused by the deprivation of oxygen. However, there were no features of any such abnormality at autopsy and Dr Cala opines that the APP observation is of unknown significance in this instance. I pause here to observe that, as foreshadowed earlier, the results of autopsy examinations of infants who have been found deceased in these kinds of circumstances are very frequently unrewarding.

3.9. In his post mortem report, Dr Cala expresses the cause of death as 'consistent with smothering'[6].

3.10. Although Professor Byard did not perform this autopsy, he was asked to comment upon Dr Cala's report and findings. Professor Byard commented that although babies can be mildly unwell, and that this will not be picked up at autopsy, there was no significant illness in respect of Zara Schupelius. Nor did Professor Byard see any evidence of significant infection at the time of her death. In short, there were no

---

[3] Exhibit C9a
[4] Exhibit C9a
[5] Exhibit C2a
[6] Exhibit C2a

diseases nor conditions found at autopsy that could have caused or contributed to death. In his report, Professor Byard suggested that this was a case where difficulty existed in establishing a precise diagnosis[7]. He suggested that the possibility of positional asphyxia/wedging/suffocation under the circumstances surrounding this death cannot be excluded. However, I did not understand Professor Byard to be saying that in this particular case, it was impossible to make a definitive diagnosis. Professor Byard regarded the sleeping environment of Zara Schupelius as a '*dangerous sleeping environment*'[8]. Babies can sink into soft mattresses. When examining the photographs Professor Byard could see a distinct trough in which a baby could easily roll into and smother.

3.11. I think it more likely than not that when the child's mother told the police that the child was found laying face down in her bassinet that this was a correct description of the position in which Zara was located. I find as a fact on the balance of probabilities that Zara was found face down in the hollow of a very soft mattress. To my mind the environment provided by this soft mattress, enabling as it did a dangerous trough to be formed, combined with the fact that Zara's mother found her face down in the mattress, leads to the conclusion that it is more likely than not that Zara did in fact smother, or to put it another way, that she suffocated. .

3.12. I find that the cause of the death of Zara Marie Schupelius was suffocation.

3.13. **The circumstances of the death of Callum Daryl Walter Smith**

Callum Smith was nearly 5 months old. He had a 6 year old female sibling. On the morning in question, his mother nursed him to sleep. She put him to bed at about 10:15am. His bed consisted of a cot. Callum's mother checked on him from time to time and found that he was sleeping on those occasions. About 45 minutes after she had put Callum down, she found him laying face down in the cot and unresponsive. Callum later died at the Lyell McEwin Hospital.

3.14. Callum's mother made two statements to the police. The first statement was provided on 8 July, the day of Callum's death. This statement was signed in the officer's notebook. It provides scant detail as to Callum's exact position when he was located by his mother. In a second statement taken on 14 February 2008, Callum's mother

[7] Exhibit C66d, page 7
[8] Transcript, page 59

describes that position in some detail. This position conflicts with what SAPOL and the investigating pathologist had originally believed it to be. I return to this dilemma in due course.

3.15. Something of Callum's medical history since birth is described in the mother's statement of February 2008[9]. This description includes reference to some breathing difficulties at birth associated with the fact that he had to be born by way of caesarean section. This had necessitated Callum being placed in a crib with increased oxygen levels. At one point in his short life it is said that Callum had to be revived. At another point he required a 'C-Pak' to assist him to breathe. Callum was hospitalised for some time and had been critically unwell at one particular medical centre. Callum's mother describes breastfeeding difficulties due to restrictions to Callum's airway. Callum's parents raised their concerns with staff at two different medical centres. At home, Callum had trouble sleeping. He also had difficulty breathing and was '*overly snuffly*'[10]. To begin with, Callum slept in a bassinet next to his parents' bed. In due course Callum's parents discovered that Callum would sleep quite satisfactorily when supported by a V-shaped pillow. They believed that he was comfortable in this position and that he was able to breathe without difficulty or restriction. Callum's mother secured the two arms of the V-shaped pillow together with safety pins in order to prevent the pillow from opening up and to stop Callum from slipping between the arms. Callum's back would lie on the indentation of the pillow, with his neck supported by the top of the pillow. This arrangement enabled Callum to sleep all night and into the morning. Callum would always wake up in the same position as the one in which he had been placed when he had gone to sleep.

3.16. At approximately 4½ months of age Callum went into a cot in his bedroom for daytime sleeps. However, for the majority of the time he continued to sleep in the bassinet. On the day Callum died, it was only the second time he had been placed in the cot.

3.17. On the day of his death, the bedding consisted of a bottom sheet placed in the cot with the V-shaped pillow on top of the sheet in the centre of the cot. The arms of the pillow had been pinned together as previously described. Callum's mother had placed him on his back supported by the indentation of the pillow where the two ends were

[9] Exhibit C16b
[10] Exhibit C16b, page 2

joined together. His head would have been at the top of the pillow. He was wearing a one-piece jumpsuit. Callum's mother had wrapped a bunny rug over him, tucking it in securely under the pillow so that he could not roll or move. A patchwork quilt was then placed loosely over the top.

3.18. According to her statement of February 2008, when Callum's mother discovered him he had:

> '… completely rolled off the pillow and was face down on the mattress to the side closest to the wall. He was between the pillow and side of the cot, with his nose pressed into the mattress. His face wasn't pressed against or on the pillow which is being suggested by others.'[11]

Callum's mother could not recall whether he was at that time still wrapped within the bunny rug. The reference in the quoted passage to what it was that had been *"suggested by others"* appears to be a reference to Professor Byard's observations in his post-mortem examination report[12] that the gap between the arms of a U-shaped pillow forms a natural concavity that infants can slip into and suffocate. The essential difference between that scenario and the position described by Callum's mother is that according to Callum's mother the infant was not located between the two arms of the pillow but had become disengaged entirely from the pillow and had been located face down on the mattress between the pillow and the side of the cot. However, in either scenario it is clear that Callum was found face down and, as described by his mother, had his nose pressed into the mattress.

3.19. Police attended the scene and examined Callum's sleeping environment. Observations were made that the mattress of the cot consisted of very firm foam covered by a cushioned sheet. There was a small white pillow at the head of the cot. At the foot of the inside of the cot were some toys. Callum's father pointed out to police the V-shaped pillow on which Callum had been put to sleep. Mr Smith maintained that the child had been put to sleep on the pillow to stop him from rolling. Some of the police material that was tendered to the Inquest suggests that Callum's mother had told them that the child had been found face down into the pillow itself[13]. However, this information was never reduced into a statement that was definitively adopted by the mother.

---

[11] Exhibit C16b, page 5
[12] Exhibit C13a
[13] Exhibits C17a and C17b

3.20. A photograph taken by the police of the V-shaped pillow reveals that the following warning was attached to the pillow in a prominent position[14]:

'WARNING
NOT SUITABLE FOR
INFANTS UNDER
2 YEARS
DO NOT LEAVE AN
UNATTENDED CHILD
WITH THE PILLOW
AT ANY TIME
DO NOT ALLOW
CHILDREN TO LIE FACE
DOWN ON PILLOW'

3.21. The post-mortem examination with respect to Callum was performed by Professor Roger Byard. Again, as is very common in these circumstances, no anatomical abnormalities were found at autopsy. Professor Byard states that the circumstances of Callum's death, as having been located face down on a soft U-shaped pillow as he had then believed, suggest that suffocation was the more likely cause of death. In his post mortem report, Professor Byard expresses Callum's cause of death in these terms, namely 'attributed to suffocation'[15].

3.22. In his report, Professor Byard assumed that the infant had been found face down and was still on the U-shaped pillow, whereas Callum's mother has asserted in her more recent statement that he was found between the pillow and the side of the cot with his nose pressed into the mattress. Prior to the commencement of this Inquest, I received correspondence from Callum's father. It was as a result of this correspondence that the more recent statement of February 2008 was taken from Callum's mother. Although Mr Smith's letter was not tendered in evidence, I have treated what he has said in that letter as a written submission, the contents of which I have taken into consideration. Callum's father reiterates that Callum was found by his mother in a position where he had in fact rolled off the pillow but refers to the position in which he was found as 'lying face down in his cot to the side of the pillow'.

3.23. Mr Smith also refers to Callum's medical history over the 5 months of his short life. The salient feature of the history was his difficulty in breathing and his hospitalisation

[14] Exhibit C18b, photograph 19
[15] Exhibit C13a

and treatment in relation thereto. In addition Callum, once home, had exhibited breathing problems that had caused difficulty in breastfeeding and in finding a comfortable sleeping position. Mr Smith has suggested that certain medical entities had been somewhat dismissive of their concerns in respect of Callum and further suggests that complacency, presumably on the part of those responsible for his treatment, had played a significant role in the passing of his son. The correspondence asserts that Callum's parents fully understand the potential hazard involved with U-shaped pillows, but that it constituted the only way in which Callum could be placed in a comfortable position, could breathe freely and was able to sleep. The pinning together of the arms of the pillow was explained to prevent Callum from sinking into the gap. I accept that Callum's parents provided this sleeping environment, constituted as it was with the U-shaped pillow, for what they believed to be very sound reasons and with Callum's comfort and wellbeing at the forefront of their thinking. Nevertheless, this does not detract in my view from observations that have been made not only in this Inquest but in other Inquests (Kenny, Inquest 25/98 and Edwards Inquest 32/06) and in literature that V-shaped and U-shaped pillows constitute an unsafe sleeping environment.

3.24. As to Callum's health concerns and the suggestion that at the time of his death he was still experiencing breathing difficulties and had been acutely suffering from a breathing episode or complication not connected with his sleeping environment, Professor Byard in evidence told me that none of his findings at autopsy suggested any abnormality relating to Callum's respiratory system. Other than a slight lymph node enlargement that might have been consistent with a mild virus infection, Professor Byard noted that Callum looked well nourished, well cared for and he did not find any evidence of infection in his lungs. There was nothing to suggest to Professor Byard that any viral infection contributed to, or was involved in, Callum's death. I accept that evidence but make the observation that if a child was experiencing breathing difficulties that were either chronic or were acutely the result of an illness such as a cold, this should reinforce the necessity to refrain from subjecting the child to an unsafe sleeping environment such as that created by a U-shaped pillow. I make no finding nor comment in relation to Mr Smith's assertions of complacency on the part of medical staff.

3.25. In his evidence, Professor Byard saw little practical distinction between the consequences of an infant being found face down in the gap between the arms of the U-shaped pillow and being found lying face down on the mattress between the pillow and the side of the cot with his nose pressed into the mattress. In either case, suffocation would be an explicable cause of his death. Professor Byard agreed with the possible scenario as suggested by counsel that Callum had rolled over one of the arms of the pillow and then became wedged between it and the side of the cot.

3.26. Professor Byard was asked by Counsel Assisting, Dr Gray:

> 'Q. And if I was to suggest to you that Callum was found lying down on the mattress between the pillow, face down on the mattress between the pillow and the wall would that suggest to you that suffocation could also be a cause of death.
>
> A. So he's positioned between the pillow and the cot with his face into the mattress?
>
> Q. Yes.
>
> A. I think again that's a dangerous situation that can lead to suffocation because the head is actually held by this large pillow in that position. So it's the size of the pillow and again the trough between the pillow and the cot side that's the problem.'[16]

Professor Byard also commented upon the original placement of Callum with his back lying between the arms of the pillow with his neck supported by the top of the pillow. Professor Byard commented upon that position as follows:

> 'I think that any use of these pillows is a problem because what can happen is babies can wriggle and turn and if they get their heads down into something soft it's very difficult sometimes for them to get out. Dr Susan Biel (sic) did a study on the overhead suspended rocking cradles and she had a couple of small babies who had slid sideways in these, all carefully monitored with the parents there, and the babies were in the sort of the trough caused by the side of the cot and the mattress, but the head was into the pillow within the mattress and they were trying to get the head up and they got exhausted very quickly. And as they got exhausted their head just flopped down into the mattress. So I think once babies get into a position where they're in a trough they can succumb quite quickly.'[17] (the correct spelling is Beal)

3.27. As to the mechanism that might give rise to suffocation in both scenarios, Professor Byard suggested that an infant could get into dangerous positions relative to the pillow by wriggling. Obstruction of the airway could occur in the trough between the two arms of the pillow and, as well, an accumulation of carbon dioxide in that

---

[16] Transcript, pages 61-62
[17] Transcript, page 62

location could also compromise respiration. The dangers were similar if an infant were to be lodged between one arm of the pillow and the side of the cot. If the child's face was straight down onto the mattress, and he was virtually wedged between the pillow and the side of the cot, the only way the infant could breathe would be to lift his or head up and perhaps turn it to the side. However, the difficulty with extracting the head in this manner is that sometimes an infant is not able to do this because they become more fatigued with every attempt and their face eventually descends into the soft mattress were smothering can occur. However, what Professor Byard had in mind there as far as Callum's bedding is concerned does not accord with the observations of the investigating police. According to the statement of one of the investigating officers, Detective Hayes, the mattress was in fact 'very firm foam covered by a cushioned sheet'[18].

3.28. Unfortunately, as seen, the original statement taken from Callum's mother did not precisely identify the position in which Callum's mother had found him. The only description recorded in her original statement taken on the morning in question was that Callum was 'laying face down in the cot'.

3.29. Professor Byard's original conclusions, as expressed in his post mortem report, were in some measure predicated on the basis that the child had been found lying face down in the trough between the two arms of the U-shaped pillow. One could well understand a diagnosis of suffocation if a child was located in such an environment, particularly if it was face down. However, if as it has been suggested the child came off the pillow completely and was lying face down on a relatively firm surface, I am not certain whether in those circumstances a conclusion of suffocation is as compelling. In all of the circumstances, I regard myself as unable to say with confidence that suffocation is a more likely cause of death than not. While this diagnosis remains a very strong possibility, the possibility is not elevated to probability. Because the distinct possibility remains that suffocation was the cause of death, a diagnosis of SIDS would not be appropriate.

3.30. In coming to my conclusion I have not overlooked the fact that according to the statement of Detective Hayes[19], dated 12 February 2008, Hayes states that Callum's mother had imparted to him a version of events that related to her having found

[18] Exhibit C17a
[19] Exhibit C17b

Callum face down in his cot with his face being positioned down into a U-shaped pillow. In addition, the SAPOL questionnaire relating to unexplained infant death that is routinely compiled in these circumstances, and in this case was compiled by Detective Hayes, recorded that the child was found face down in the U-shaped pillow. The original statement taken from the mother, and I add here that it was not taken by Detective Hayes or any other detective, did not contain any detail as to the precise position in which the infant was found relative to the pillow. It merely said that he was lying face down in the cot when found. That version of events as told to the constable was signed in the officer's notebook by Callum's mother. Callum's mother's statement dated 14 February 2008 describes the position of the child as having been between the pillow and the side of the cot with his nose pressed into the mattress[20]. The only evidence therefore of the child's position, other than through hearsay as told to Detective Hayes, is that Callum was found in the position described in the mother's statement dated 14 February 2008. Accordingly, it seems to me that I should act on that basis. This demonstrates very clearly that investigations into the circumstances of sudden infant death have to be conducted with absolute precision. This is because very little evidence is revealed as to the cause of death in an autopsy in respect of infants. That necessary degree of precision was absent in this particular case because of the insufficient level of detail in the mother's original signed notebook statement. I also endorse recommendations that have been made in the past that SUDI scenes should be examined by forensic pathologists and that police investigators should take their lead from the pathologists.

3.31. In coming to the conclusion that Callum Smith's cause of death is undetermined, I have also very carefully borne in mind the fact that a diagnosis of suffocation is very much dependent upon a proper, thorough and accurate analysis of the child's sleeping environment, given that there is little scientific evidence of suffocation at autopsy. In circumstances where there is doubt about either the precise nature of the sleeping environment or about the position in which the child is ultimately found relative to that environment, it seems to me that one of the essential ingredients of a diagnosis of suffocation is either unsound or lacking. Accordingly, while suffocation is a distinct possibility in this case, I am not persuaded to the necessary degree of satisfaction that suffocation was the cause of death, namely on the balance of probability.

---

[20] This statement is dated 14 February 2007 however this is incorrect and the actual date is 14 February 2008

3.32. I find that the cause of death of Callum Daryl Walter Smith is Undetermined.

3.33. **The circumstances of the death of Jake Vincent Hackett**

Jake Hackett was nearly two months old at the time of his death. He was his mother's first child. It is clear from his mother's statement that Jake's birth was normal and that he generally enjoyed good health[21]. However, just prior to his death he had been suffering from the flu or something similar and had been seen by the local doctor who had advised the mother to use a vaporiser.

3.34. It is evident from Jake's mother's statement that Jake habitually slept in the same bed as his mother. She said:

> 'I normally sleep in a bed with a quilt. I would have Jake in the bed with me and sleep with him and wake up to feed him when he needed to be fed.' [22]

3.35. On the night in question, Jake and his mother were staying in a house occupied by Jake's grandmother and other adult individuals. That night Jake's mother had a bad toothache so she took a tablet for the pain. Jake's mother's statement makes it clear that the particular painkiller had a tendency to make her sleep very deeply to the point where she was practically unrousable. Jake's grandmother assured her that she would listen out for Jake and attend to him if he cried during the night.

3.36. Jake's mother fed him at about 11:30pm after which she took the tablet. She and Jake slept on a futon that night. She placed Jake onto his back and turned the electric blanket onto what she believed to be the second level. She said it was very cold in her mother's house at that time. Jake's mother describes the sleeping arrangement in the following terms:

> 'The futon was fully laid down; I had pillows at the top of the futon and had a quilt covering us as I laid down next to Jake. He was on his back with his head up by the pillow and the quilt was up to his mouth. The last I saw Jake; he was still on his back next to me with his hand over his face asleep. He was laying a few centimetres away from me, as I always did. I had the vaporiser on as well.' [23]

3.37. Jake's mother was only to awake the next morning when her mother woke her up with her screaming.

---

[21] Exhibit C25a
[22] Exhibit C25a, page 2
[23] Exhibit C25a, page 3

3.38. What had happened in the interim is described in the statement of Jake's grandmother and that of, Jake's mother's uncle, another male resident of the premises. This man maintains in his statement that Jake's mother had been smoking some marijuana earlier in the night[24]. He also confirms the fact that Jake's mother took a tablet to help her with toothache. The following morning, he woke up at about 8am and walked into the room where Jake and his mother had been sleeping. When he entered the room it appeared that Jake and his mother were both still asleep. At that stage he could see Jake's hand 'poking out from under the blanket'. Jake was face down and his mother was also under the blanket facing Jake. He moved the bed clothing back thereby exposing the back of Jake's head. He examined Jake and the infant was unresponsive. His mother was still asleep. Jake's grandmother came into the room. Resuscitative efforts were made. The child was taken to a local medical clinic but unfortunately Jake had succumbed.

3.39. Police attended at the premises that day and made observations of what had been Jake's sleeping environment. Jake was also examined. He had been wearing a jumpsuit under which were a disposable nappy and a white singlet. The sleeping circumstances as observed by police consisted of what appeared to be a double bed base overlayed by a futon mattress. On the bed there were satin sheets. A quilt was seen to be bunched up at the foot of the bed. There were a number of pillows on the bed. An electric blanket was on and appeared to be set at the lowest level. A humidifier which was on was located on the floor at the foot of the bed. It smelt of eucalyptus. A police technical services officer measured the temperature under the quilt. It was approximately 26ºC. Photographs of the scene that were tendered during the course of the Inquest reveal that the sleeping environment for Jake and his mother was very soft and very cluttered, albeit undoubtedly comfortable. In these circumstances it is very easy to believe that the observations made by his mother's uncle that he had been found completely covered by bed clothing, except for his arm, is correct.

3.40. Jake's post-mortem examination was conducted by Professor Byard. Again, no anatomical abnormalities were identified at autopsy. Professor Byard was made

[24] Exhibit C23a

aware of the relevant sleeping environment and the fact that the temperature under the quilt was measured to have been approximately 26ºC. Professor Byard in his report observed:

> '… the finding of the infant face-down on a soft mattress under a heavy quilt in a co-sleeping situation raises the possibility of asphyxiation due to suffocation. As there are no definitive anatomical markers for this in infancy, this diagnosis must remain presumptive.' [25]

There was no evidence of injury and the infant appeared to be well nourished and well cared for with no underlying organic diseases that could have contributed to death.

3.41. In his post mortem report, Professor Byard expresses the cause of death to be 'probable suffocation'. In his evidence Professor Byard also made the observation that the temperature under the quilt under which Jake had been placed, namely 26ºC, was too hot. Overheating may be associated with infant death and has been said to be one of the risk factors for SIDS, particularly in relation to babies who are sleeping face down. Professor Byard thought that heat in this particular instance may have played a role in this death. However, the more important facet of this environment was the fact that the child was in a face down position on a soft mattress with a heavy quilt over the top. The shared sleeping arrangement was also undesirable. Professor Byard said this in relation to the sleeping environment:

> 'Again, this is an unsafe sleeping environment. There are pillows all the way around and I presume that the parents had put those there to make it safe so that he doesn't roll out of bed, so again it's an example of I think parents trying to make an environment that's okay but is actually dangerous. We have a mattress that Jake's face down into, it was described as soft; he's under a very heavy quilt; so there are a whole lot of factors that may occur here. There maybe suffocation, smothering but there may be the heat, there may be carbon dioxide re-breathing; this is not a safe sleeping place for a baby.' [26]

Professor Byard also referred to the difficulty of predicting how a particular infant might react to its sleeping surroundings. In this regard, whether a particular baby will be safe or unsafe in a specific environment cannot be foreseen and tested in advance. The difficulty is that in a sleeping environment that involves a baby sharing with an adult, and involves bedding such as a soft mattress, pillows, blankets and quilts, some babies will simply not survive. Professor Byard said:

---

[25] Exhibit C20a
[26] Transcript, pages 65-66

> 'You can't predict. I mean there are certain situations where no baby will survive. For example, if a drunk 140 kg father is sleeping on top of a baby, then that baby won't survive. But in situations like this, maybe some babies can survive it, others can't and because it's so - each situation is so different, it's very hard to - well, you can't say this baby is at risk; that baby is not; all you can say is that environment is dangerous.' [27]

3.42. Professor Byard is clearly of the view that suffocation was the probable cause of death in this instance. He has expressed the cause of death in those terms. For my part, given the description of the sleeping environment, and particularly the fact that the child was located under the quilt in a face down position, the conclusion that the child died of suffocation is inescapable.

3.43. I find that Jake Vincent Hackett died of suffocation.

3.44. **The circumstances of the death of Rachel Von Smith**

Rachel Smith was 5 months of age at the time of her death. According to Rachel's mother's statement, she believed that Rachel had suffered from asthma[28]. Three days prior to her death she had taken Rachel to the doctor because she had a cold. On that occasion the doctor had not prescribed any medication, but her mother gave her Panadol and Demazin in the recommended dosages. Rachel's mother also stated that Rachel would have difficulty keeping her formula down and would consistently vomit after feeds.

3.45. Rachel had been sleeping in a cot until approximately a week and a half before her death. There had been considerable difficulty in getting Rachel to consistently sleep in it. Rachel's mother made two statements to the police. Neither of Rachel's mother's statements elaborate to any great extent on the difficulty with the cot. On the occasions on which Rachel would not sleep in the cot, she would sleep in her parents' bed or on blankets on the floor beside their bed. About a week and a half prior to her death, Rachel's mother acquired an inflatable Winnie the Pooh air mattress that could be separately inflated in a number of different compartments including the base and the two sides. The air mattress was made of plastic. The outer dimensions of its base were 1040mm in width, 1420mm in length and 200mm in height. The inner dimensions of the base were 720mm in width, 1240mm in length and 140mm in height. The bed had a clip on headboard, the dimensions of which were 1040mm in width by 1200mm in height and had a thickness varying from

---

[27] Transcript, pages 67-68
[28] Exhibits C38a and C38b

120mm to 180mm. Although the air mattress itself did not bear any warnings about its use, the box in which it had been packaged described it as a 'Pooh's Honey Pot Bed' and depicted a child sleeping on the bed. Police located the box in the child's cot. The child depicted on the bed is apparently over 3 years of age. The box bears a warning concerning choking hazards and describes the product suitable for 'Ages 3+'. The assembly instructions also contain a warning as to choking hazards and states that children under 3 years of age should not be allowed to use the product.

3.46. In a statement that was apparently taken by the police on the morning of Rachel's death, Rachel's mother had stated that she had fully inflated the base but had not inflated the sides as much. This statement was ultimately verified by the mother's affidavit dated 6 February 2008 which was sworn shortly before the Inquest was held. However, in a further statement given on 7 February 2008 Rachel's mother stated that the mattress had been fully inflated including the side sections. I return to this discrepancy shortly.

3.47. In her first statement Rachel's mother described the usual sleeping position relative to the inflatable mattress. Rachel's mother said that she would put Rachel on her right-hand side and then put a blanket over her with her head on a pillow. There was also a toy rabbit in the bed on her right-hand side. Rachel's mother said that in the morning she would often find the blanket off Rachel as she would kick it off herself. In her second statement, Rachel's mother said that the toy rabbit was placed in front of Rachel's chest, presumably intending to convey that it was not placed in close proximity to her head. Rachel's mother also added in her second statement that she would quite often find Rachel lying face down in the morning, but that when she turned her over Rachel would be laughing. Also in the mother's second statement is reference to Rachel having hypothermia, low oxygen levels and asthma such that her chest and lips would turn a blue colour even in warm water. I am not certain as to what special relevance if any that particular observation has. Although not contained in any statement, it appears that Rachel's mother told police that at the time of her death Rachel was 'advanced' in her development and was able to lift her upper torso off the ground if she was lying face down. She told police that she had observed Rachel do this when she had been lying on the inflatable mattress[29]. Rachel's mother told police that Rachel was also:

[29] Exhibit C47a

> '… able to roll herself from over onto her stomach when she is lying on her back and from lying on her back onto her front.' [30]

3.48. Rachel's mother put her down at about 12:30am on the night in question. She was wearing a purple jumpsuit. She put Rachel in the middle of the bed with her head in the middle of the pillow. Rachel's mother went to bed at about 2am and did not hear Rachel all night. She woke up at about 10:15am at which time she went to check on Rachel for the first time since 2am. Rachel was lying face down on the bed and the toy rabbit was underneath her chest and stomach area. Rachel's head was between the pillow and the edge of the mattress, which in her first statement she said was not fully inflated. Rachel was on the edge of the bed closest to the door. Rachel's parents tried to revive her, and then an ambulance was called, but Rachel had succumbed.

3.49. Police attended the scene and made certain observations of Rachel's sleeping environment. The base of the inflatable bed was inflated and was firm to touch. The side walls of the bed were inflated separately from the base and were soft to touch. There was an adult size polyester filled pillow on the bed. A sheet that was being used as an underlay had been placed on top of the mattress and under the infant. A folded baby blanket was situated at the bottom of the bed underneath another 'mink' blanket that had been used to cover Rachel. Closer examination of the area revealed an approximately two inch area of red staining in the general area of the end of the bed nearest the pillow. There was also an area of red staining in the centre of the pillow case. Down the inner side of one edge of the inflatable base, at the point where the pillow was situated, were two areas of condensation, and in the well of the base and the edge at this point was a small trickle of red fluid.

3.50. In his statement, the investigating police officer, Detective Milich of the Whyalla Criminal Investigation Branch, poses a number of possible scenarios to account for Rachel's death. He postulates that Rachel rolled towards the side of the inflatable wall which was soft, that once in this position Rachel was not able to lift or otherwise free herself and that she then died from suffocation. There was also a household cat in the premises. Mr Milich observed cat hair on the mink blanket that had covered Rachel. There was also cat hair located on Rachel, but this could have been accounted for by the child's clothing having come into contact with the floor during

---

[30] Exhibit C47a, page 7

resuscitation efforts. Mr Milich however, postulates that the cat may have played some role in causing Rachel to roll over onto her front[31].

3.51. Photographs of the scene tendered to the Inquest depict the sleeping environment[32]. The observations made by the police that the sides of the inflatable bed were not completely inflated appear to be borne out by the photographs. As is common in these scenarios, Rachel's sleeping environment appears to have been somewhat cluttered by bed clothing and a large pillow and a toy. There is a very noticeable trough and crevice between the mattress base and the inflatable sides. One can readily understand how a baby could be wedged in that crevice were it to roll onto its side.

3.52. The central feature of the position in which Rachel was found was identified by her mother. Rachel's head was between the edge of the mattress and the pillow and she was lying face down. This description alone would suggest that the infant's airway could easily have been compromised by the infant's mouth being in close proximity to a soft plastic surface.

3.53. Professor Byard performed the post-mortem examination. As with the other deaths, no anatomical cause of death was found at autopsy and no organic diseases were present which could have caused or contributed to the death. There was no evidence of any significant trauma. Professor Byard refers to the investigating officer's theory, and to the possibility of Rachel having rolled towards the side of the inflatable wall such that her face was then placed against the plastic. Professor Byard also refers to the possibility that Rachel was not able to lift herself from that position. Accordingly, Professor Byard has expressed the cause of death in his opinion to be 'suffocation'[33]. He opines in his report:

> 'Death was attributed to suffocation given the circumstances described with the body of Rachel being found in a trough on the side of her inflatable plastic bed.' [34]

As to these sleeping arrangements generally, Professor Byard states this in his report:

> 'This type of sleeping arrangement for an infant is extremely dangerous as it is quite possible for an infant or small child to roll into the trough on the side of the bed, as

---

[31] Exhibit C47a, pages 10 and 11
[32] Exhibit C48b
[33] Exhibit C35a
[34] Exhibit C35a, page 2

> Rachel did, and not be able to extricate him or herself. In this circumstance the body could be positioned face down with the face against the plastic. This is quite analogous to the situation with water beds, which have been well-documented as causes of accidental suffocation in infancy.' 35

3.54. The only matter of controversy is whether or not the two side panels of the inflatable mattress had been fully inflated. I note that in her most recent statement dated 7 February 2008 Rachel's mother asserts that the mattress was fully inflated including the side sections. Rachel's mother concedes that this fact was not included in her original statement. What is contained in her original statement is as follows:

> 'I pumped the mattress section up fully but didn't pump up the sides as much.' [36]

The police who attended at the scene give a clear picture in their statements as to the state of the sides of the inflatable mattress. They were soft to touch, whereas the base of the bed was firm to touch[37]. Although it is possible that Rachel's mother may well have endeavoured to inflate the sides fully, I find that the sides were not fully inflated and that they were soft.

3.55. In his evidence Professor Byard said the following about this kind of sleeping environment:

> 'A. Inflatable plastic beds are - should not be used for babies and toddlers. The problem is that there is a trough on the side, if they're not inflated completely, they're easily compressible and if you think of it, it's really much of the same as a baby on a waterbed. If a baby rolls into that position with a face down or the face into the side of the plastic, the airways are blocked and they really can't breathe.
>
> Q. If the beds are inflated properly, fully, both the sides and the base of the bed are fully inflated, are there risks still associated in those circumstances.
>
> A. I think inflatable beds shouldn't be inflated, I think they should be burnt actually because I think - you know if you inflate them, you've still got a plastic bottom and if you have a trough, then the face is against a plastic surface. Babies faces should not be against plastic.' [38]

Professor Byard expressed the view that this sort of sleeping environment is not any the less unsafe by virtue of a cotton sheet having been placed over the plastic surfaces of the inflatable mattress. The intrinsic danger associated with an inflatable mattress is the possibility that the baby's head could become embedded in the trough between

---

[35] Exhibit C35a, page 2
[36] Exhibit C38a, page 2
[37] Exhibit C47a
[38] Transcript, pages 68-69

the side and the base such that the plastic could mould itself, as it were, around the mouth and nose of the child. On the other hand, a 3 year old child could probably extract his or her head from that position.

3.56. As to the suggestion that the household cat had some part to play in this death, Professor Byard mentioned in his evidence what to my mind is obvious and that is that it is undesirable for babies to share their sleeping environment with an animal. However, I am not satisfied that in this particular instance the cat had anything to do with the manner in which this child died.

3.57. I find that Rachel's head became wedged in the space created between the pillow and the side and base of the mattress and that Rachel's airway was blocked by contact most probably with the plastic of the side or base of the mattress. I find that Rachel Smith died of suffocation.

3.58. **The circumstances of the death of Paige Louise Clark**

Paige Clark was 7 months of age at the time of her death. Paige in fact was the oldest of the five infants with whom this Inquest is concerned. Paige's mother had two older children from a previous relationship. They were 6 and 3 years of age respectively. Paige's father had not actually lived in a relationship with her mother, but he had enjoyed periods of access to Paige. The father of the two older children had been separated from Paige's mother for some time but had remained on good terms with her. In fact Paige, Paige's mother and the elder two half-siblings were all staying with this man in the Riverland at the time of Paige's death. That state of affairs had existed for approximately two weeks. The three children, including Paige, had all been sleeping on a queen size mattress on the lounge room floor. The two adults had also been sleeping in the same room because the rest of the house was too cold to sleep in. There was a reverse cycle air-conditioner in that room. The father of the elder two siblings was sleeping on the floor and Paige's mother had been sleeping on a couch that was in very close proximity to the mattress on which the children all slept.

3.59. According to Paige's mother's statement, Paige had generally been a happy, smiling little girl whose only health problem had been infant asthma and bronchiolitis from

which she herself had suffered as had the elder two children[39]. This description of Paige's well-being perhaps understates the true position. In about March 2006, Paige's father had a period of access to Paige at his home. During the course of this access, Paige's father had to take her to the Renmark Hospital because she had been wheezing, having trouble drinking from her bottle and had a runny nose. It was on this occasion that Paige was diagnosed with bronchiolitis for which she was given antibiotics. On another occasion of access, Paige's father had to take her to the Christies Downs Hospital because of Paige's lack of interest in feeding and another episode of wheezing. Paige was transferred from the Christies Downs Hospital to the Flinders Medical Centre where she was admitted, again with a diagnosis of bronchiolitis. She remained in the Flinders Medical Centre for several days. Upon her release from Flinders, Paige was returned to the Riverland to her mother. All of this is revealed in her father's statement[40]. After Paige's father returned her to her mother, he saw her thereafter on two occasions, the second of which was on 29 June 2006, three days prior to her death. Paige's father had observed on that occasion that Paige was wheezing again and had a runny nose but otherwise looked well.

3.60. On the night in question Paige was put to bed at about 8pm. She was wearing a singlet, a long sleeved shirt, disposable nappy and socks. The reverse cycle airconditioner in the room was operating in heating mode. Paige's mother placed her on her left-hand side at the top of the queen size mattress. The mattress had a doona over it and Paige was placed on top of this. A baby's blanket that was folded in half was then placed over Paige and on top of that was a 'Winnie the Pooh' cot quilt. She had no pillow. The other two children went to bed on the mattress as well, but they were at the opposite end with their feet facing towards Paige's feet. The two elder children shared a quilt and a blanket but did not share any bed clothing with Paige.

3.61. Paige's mother went to sleep on the couch at about that time. The father of the elder two children stayed up in the same room and played on a computer until about 2am. At about that time he observed that Paige was restless so he put her dummy in her mouth. Paige's mother was asleep at the time. At about 3:30am Paige's crying woke her mother. Paige was fed some milk and was then returned to the bed in the same

[39] Exhibit C49a
[40] Exhibit C55a

situation as earlier described. Paige's mother's statement suggests that Paige was asleep again by 4am. Paige's mother went back to sleep on the couch.

3.62. At about 7:45am Paige's mother awoke. By that time one of the older children was watching cartoons on the television in the room. At first Paige's mother could not see Paige, but she then noticed her lying down on the floor between the couch and the mattress. She was on her left side facing the mattress and was uncovered. She was unresponsive and her lips were blue. She was immediately taken to the hospital but she was unable to be revived.

3.63. The police became involved in the matter. By the time they examined the premises, the mattress had been moved from its original position to a passageway. However, the father of the older two children was able to reconstruct the sleeping circumstances and he showed this to the police officers.

3.64. He told the police in his statement that he and Paige's mother both smoked in the house while the children were around but had the doors and the windows open[41]. He also admitted to smoking cannabis with a bong, but that he did not smoke it in the house. A number of ashtrays were located in the lounge room together with a bong used for the consumption of cannabis. However, he told police that he had smoked it in the lounge room only after Paige had died.

3.65. It can be seen in photographs taken by the police after the reconstruction of Paige's sleeping arrangement, in particular in photograph 14, that the edge of the mattress had been quite close to the edge of the couch, although there was clearly a gap between them that was wide enough to wedge an infant[42]. The bedding was reconstructed in roughly the manner in which I have earlier described. There does not appear to have been any form of restraint that might have prevented the infant from falling off the mattress from any of its sides, and in particular the side closest to the couch.

3.66. The post-mortem examination was conducted by Dr Allan Cala, a Forensic Pathologist. In his report Dr Cala recites the infant's sleeping circumstances as he understood them to be, namely that the child was found lying between the lounge and the mattress[43]. Dr Cala observed that Paige was a well nourished infant with no

---

[41] Exhibit C54a
[42] Exhibit C60b
[43] Exhibit C50a

injuries. There was a small amount of vomit in the airways, although this may have been influenced by resuscitation attempts. There was no evidence of any disease.

3.67. Dr Cala expresses the cause of death as Undetermined. He states the following:

> 'Despite autopsy examination and other investigations, no cause of death can be given. Circumstantial findings suggest the child may have become wedged between the mattress and lounge, or that there was an element of airway obstruction once she apparently fell from the mattress onto the floor. These findings raise the spectre of a possible asphyxiating process and therefore exclude the Sudden Infant Death Syndrome ('SIDS') as causing the death.' [44]

It will be remembered from my earlier observations that a diagnosis of SIDS is not available where other possible causes of death have not been entirely excluded. This is a case in point according to Dr Cala because asphyxiation due to airway obstruction as the cause of death has not in this case been excluded.

3.68. Although Professor Byard did not perform the autopsy in this case, I saw no reason why he should not be able to comment upon the possible cause or causes of death bearing in mind the underlying facts relating to Paige's sleeping environment and the circumstances in which she was found. Professor Byard referred to the fact that Paige had been located between the mattress and the couch on the floor. He also noted the neuropathological changes in the brain that might be suggestive of terminal hypotension. Professor Byard suggested that this could all be related to asphyxia because it is not a finding that they see in SIDS babies. The sleeping circumstances had a potential for suffocation. Professor Byard agreed with Dr Cala that it was quite possible that there had been asphyxiation in this particular case.

3.69. As far as the sleeping environment is concerned, Professor Byard observed that there had been a trough or a narrow space between a vinyl couch and the mattress such that a baby could get his or her face caught within the angles created by that. He regarded this as an unsafe position. This was especially so given the sleeping arrangements that had existed, namely the infant being on the same mattress as other young children. Professor Byard said:

> 'I think the trough makes me wonder about the possibility of asphyxia for the reasons we discussed before. With the sleeping arrangement, I don't know whether Paige could roll off the mattress or whether maybe she could be kicked by one of the kids during sleep.

---

[44] Exhibit C50a, pages 2-3

> That's a possibility, I'm not suggesting that's at all deliberate because they're moving in sleep, she could be shifted.' [45]

3.70. While some of the child's brain changes as observed at autopsy added weight to a possible diagnosis of suffocation, in Professor Byard's opinion they were not diagnostic of suffocation in themselves. Professor Byard stated that he probably would have offered the opinion that the cause of death was also undetermined, but with a reference to possible suffocation. In any event the cause of death was not SIDS. While there are indications that suffocation in this particular case is a distinct possibility, in my view the cause of death must remain undetermined. I am not satisfied on the balance of probabilities that suffocation necessarily occurred in this case. This of course does not detract from the observations of Professor Byard that this was a wholly unsafe sleeping environment for a child of that age and that the environment, particularly with the gap between the mattress and the couch and the presence of other children, was conducive to a child suffering from an asphyxial event.

3.71. I find that the cause of Paige Louise Clark's death is Undetermined.

4. General observations as to child sleeping safety

4.1. Professor Byard made some general observations about safe and unsafe sleeping practices in respect of infants. I do not need to repeat all of the evidence in that regard. It can be summarised. It is absolutely clear that sleeping environments in which wedging of a child's head can occur and where troughs can form in soft surfaces such as in mattresses that are not firm, are highly undesirable and very dangerous. In addition, surfaces such as plastic that might form a seal around the infant's nose and mouth should not be used as part of an infant's bedding, especially where there is an added risk factor of the child becoming wedged against such a surface, such as in the case of an inflatable mattress. As Professor Byard stated in his report:

> 'Infants are at increased risk of both accidental and inflicted asphyxia due to their small size, lack of strength and inability to extricate themselves from dangerous environments. Asphyxia may result from smothering due to the occlusion of the nose and mouth,

[45] Transcript, page 73

> choking due to inhalation of foreign material, hanging, or from a combination of mechanical asphyxia and suffocation due to wedging/entrapment.' [46]

4.2. Accordingly, sleeping environments for infants that involve adults or children in the same bed, heavy wrapping, the presence of animals and soft toys, soft mattresses, inflatable mattresses and U and V-shaped pillows are not only undesirable but are intrinsically dangerous. As to the inflatable bed upon which Rachel Smith had been put to sleep, this sleeping environment and its tragic consequence has formed the basis of a paper that Professor Byard compiled and published. This event, in so far as it involved bedding of this kind, appears to have been unprecedented. As already observed, the bed itself displayed no safety warning label. This is not to say that the manufacturers and/or distributors of the product had not acted conscientiously. The packaging and the written instructions both displayed warnings. That said, the warnings do not address any dangers other than choking which involves a different mechanism of asphyxiation. This is not the scenario that we are involved with here. Rather, the asphyxiation here was due to a covering of the mouth and / or nose of the child, more appropriately regarded as suffocation. It is plain from the product's packaging that the bed was not intended for infants. This is borne out by the apparent age of the child depicted on the box and by the fact that the warning specifically states that it is only suitable for children of the age of 3 years and over. In his post-mortem examination report in respect of this particular death, Professor Byard has made a recommendation that a formal product safety analysis be undertaken in relation to the inflatable bed. There is no evidence that the inflatable bed provides a dangerous sleeping environment for children of the age of 3 and above. Professor Byard certainly did not identify any such risks. It seems to me that risks that might adhere to the use of the inflatable bed by children under the age of 3 years, and in particular infants, can be addressed by a more pointedly worded warning that addresses the dangers of suffocation as well as choking. In my view, neither the manufacturers nor distributors of this product could sensibly object to promulgating a warning that advises of the inherent dangers that might relate to the use of the product by children under the age of 3, and in particular by infants. This is especially so given that their own warning suggests very strongly that children under the age of 3 should not use the product, although the specific dangers apart from choking are not spelt out. Notwithstanding all of that, I have taken the view that Professor Byard's

---

[46] Exhibit C66, page 12

recommendation that the mattress be subjected to a formal safety analysis should be acted upon. I think it is clear that there is an intrinsic desirability in ensuring that whenever a novel sleeping environment has been shown to have caused or contributed to an infant death, that the relevant product that has created that environment be thoroughly analysed.

4.3. As far as U-shaped and V-shaped pillows are concerned, I need only refer to Professor Byard's evidence about that and his opinion that they provide an unsafe sleeping environment. The dangers of asphyxia involving the use of such pillows has been highlighted in previous Inquests. I refer here to the Inquest into the death of Brandon James Kenny in 1998 and more recently Elizabeth Rose Edwards in 2007. The clear message is that U-shaped and V-shaped pillows should not in any circumstances be used as part of an infant's sleeping environment.

4.4. Finally, the issue as to what is the proper sleeping environment for an infant needs to be addressed. There have been a number of publications promulgated about this. The material within these publications addresses risks not only associated with possible suffocation but also risks of death by SIDS. One brochure that has been promulgated by the Paediatrics and Child Health Division of the Royal Australian College of Physicians advocates the use of a cot that sleeps the one infant[47]. The cot should contain a well-fitting mattress that does not create any gaps between the mattress and the cot wall and the mattress should be firm and clean. The amount of bedding should be kept to a minimum with the removal of pillows, cot bumpers, quilts, doonas, duvets and lambskins. Toys should also be removed from the environment. The child should be placed at the end of the cot so that the child's feet are at that end. The head of course should remain uncovered. In particular, although the issue is not free from debate, the child should be placed on its back from birth. Bed clothes should be tucked in securely so that the bedding is not loose.

4.5. It is said that healthy babies put to sleep on their backs are less likely to choke on vomit than infants that sleep on their stomachs. Professor Byard was certainly a strong advocate of the practice of putting infants to sleep on their backs. The written material that was tendered to me during the Inquest, which appears to have been endorsed by the relevant authoritative entities, unanimously suggests that a baby

[47] Exhibit C66a

should be placed on his or her back to sleep. Notwithstanding this almost universal recommendation, Professor Byard told me that this sleeping position has been resisted in certain quarters. In particular, evidence would suggest that a significant section of the midwifery community does not advocate sleeping infants on their backs. It has been said that some midwives take the view that if a baby is not placed face down they may asphyxiate when vomiting. Professor Byard told me that some members of the nursing profession actively discourage the placement infants on their backs. Fortunately, this view is not held by all of the profession. Professor Byard said:

> 'No risk is absolute, but there is a very strongly held opinion in parts of nursing that these messages are incorrect. Whereas all the scientific information shows that they're not only correct, they are actually saving lives.' [48]

An added difficulty with the issue is that the nursing profession are at the forefront of educational strategies when it comes to the manner in which newly born children should be managed. The evidence, however, would suggest very strongly that placing a child on his or her back is the much preferred position and the position that ought to be advocated by the nursing profession.

4.6. Parent fatigue and frustration

It will have been observed that the parents of the five children involved in this Inquest were clearly endeavouring to provide a comfortable sleeping environment for their children. In some instances the particular sleeping arrangement was adopted owing to the fact that the child was not sleeping in some other more conventional environment or was significantly less comfortable in such an environment. It goes without saying that when parents experience difficulties with their infant sleeping this is anything but conducive to satisfactory sleeping on the part of the parents themselves. The temptation to place a child in what appears to be a more comfortable sleeping arrangement, but one that is nevertheless dangerous, is in some circumstances difficult to resist.

4.7. As to this Professor Byard suggested that before parents start modifying the sleeping environment or changing things themselves, they should obtain proper medical advice. Professor Byard's impression was that most General Practitioners are familiar with the risks involved in unsafe infant sleeping environments. As well, Professor Byard pointed out the need for parents to be completely aware of the risks to which

[48] Transcript, page 49

they are subjecting their infants so that they are better able to make informed decisions about the circumstances in which they place their child at night or for sleeps during the day. He agreed with counsel's observation that the paramount message is '*don't place your child into these situations of peril in any circumstance*'[49]. Clearly this is the correct message.

4.8. Difficulties sometimes arise out of the socio-economic circumstances of the parent or parents. Professor Byard referred to the 'chaotic lifestyle' of some families and parents and specifically referred to some single mothers who might be unemployed, itinerant with no fixed address and be involved in drug abuse themselves or have an association with people abusing drugs[50]. In those circumstances it is not surprising that an infant might be placed in a sleeping environment that leaves something to be desired in terms of safety, not only as far as the nature of the bedding is concerned, but in respect of situations where the parents may be intoxicated, are affected by drugs and are creating smoky environments. As a consequence, extremely poor decisions about the sleeping environments of their children can be made. There is no question but that in each of the five instances with which this Inquest is concerned, all of the parents of the infants acted out of a desire to ensure that their infants slept in as comfortable an environment as possible. While some of these sleeping environments can be considered to have been unwise, there is certainly no evidence of neglect on the part of any parent. However, in unfavourable socio-economic circumstances of the kind described by Professor Byard, it has to be said that a safe sleeping environment for their infant is for some parents not necessarily a priority. This may result of course from a lack of information or a lack of understanding on the part of the parent or parents. This is obviously a matter that can and ought to be addressed in educational campaigns. In addition, many of these at risk families ought to be identifiable in advance in the neo natal setting.

4.9. <u>Co-sleeping</u>

The practice of sleeping babies with other children and adults is a highly undesirable one. The dangers are presented by a number of different characteristics of co-sleeping. The possibility of over-laying and smothering by another larger person is manifest, especially when the co-sleeper is intoxicated. Furthermore, co-sleeping

[49] Transcript, page 45
[50] Transcript, page 50

very frequently involves cluttered bedding that is also inherently dangerous to the infant. Co-sleeping with an infant is a practice that, as the evidence in this Inquest demonstrates, ought to be vigorously discouraged in any circumstances.

4.10. Educational campaigns

Professor Byard told me that campaigns to educate the public and to promote safe sleeping practices for infants have been extraordinarily effective. Professor Byard referred to the effectiveness of the 'SIDS and Kids' program to which he has attributed the saving of several thousand children who might otherwise have succumbed in the absence of any such campaign. Professor Byard firmly believes that the SIDS and Kids campaign to promote safe sleeping practices has resulted in more people observing safe practices and has produced a significant decline in the death rate from SIDS. This campaign advocated safe sleeping practices such as those I have already identified, and it condemned certain unsafe practices. It is no exaggeration to say that many if not all SUDI are preventable. The risk factors are very clear, and they can, and ought to be, readily eliminated from an infant's sleeping environment.

4.11. The SIDS and Kids campaign was and is aimed at mitigating the risk factors that had been identified over the years as those that relate to death by SIDS. Although there is a certain overlap between SIDS and other causes of infantile death, we are not concerned here in this Inquest with SIDS. Rather, we are concerned with factors that might cause death by suffocation and the need to identify and eliminate risks associated with death by that cause. Professor Byard was of the view that the community may still not be receiving a clear message as to what might constitute safe sleeping practices so as to eliminate the risk of suffocation. The events with which this Inquest are concerned would tend to bear that observation out in my view. In this regard, I have already referred to what Professor Byard believes is the erroneous thinking within the nursing profession regarding the desirability or otherwise of placing babies on their front and side and not on their backs, the latter practice being the more desirable. I have also referred to the observation that adverse socio-economic circumstances in families may have also given rise to infants sleeping in unsafe environments.

4.12. I have already alluded to the fact that Professor Byard has been a member of the Child Death and Serious Injury Review Committee of South Australia. The Committee reports annually to Parliament through the Minister for Families and Communities. The two most recent annual reports were tendered in evidence in the Inquest. They became Exhibit C66c, being the report for 2005-2006, and Exhibit C66d, being the report for 2006-2007. The report for 2005-2006 identified the deaths of five infants under 1 year of age as having been caused by suffocation or smothering[51]. The report makes the same observation that I have made in these Findings, namely that many of the unsafe sleep environment risk factors that have been identified as modifiable risk factors for SIDS are those which may also reduce the incidence of accidental asphyxia among infants. According to the report these risk factors include:

> '• prone or 'side' sleeping;
> • heavy wrapping of infants, in particular head covering (this may occur accidentally, especially if an infant 'doona' is used in the bed);
> • use of pillows; and
> • co-sleeping.' [52]

The report also observes that the five deceased children who are the subject of the report had lived in areas considered to be areas of relative socio-economic disadvantage. In this report, the Committee recommended that a public health campaign concerning safe infant sleeping be developed for young parents. They recommended that the campaign should involve the Government and non-Government agencies who deliver services to infants and their families in South Australia. The second recommendation was that a product safety analysis be undertaken as soon as possible if the death of a child has been attributed to a product such as a bed or cot. In this regard, I refer to and endorse Professor Byard's recommendation in his autopsy report relating to Rachel Smith that the inflatable bed be subjected to such an analysis.

4.13. The Committee's report for 2006-2007 also identified a number of infant deaths from accidental causes including accidental asphyxia in circumstances suggesting smothering due to unfavourable sleeping positions. On this occasion the Committee again made certain recommendations. The recommendations are as follows:

---

[51] Exhibit C66c, page 29
[52] Exhibit C66c page 29

'**Recommendation**

The Committee is concerned about the number of infants who died in unsafe sleeping environments in 2006. Parents or carers require access to information that will enable them to recognise the importance of a safe sleeping environment for infants. Some parents or carers may also require access to practical resources. Others may need support that ensures financial and family stability.

The Committee recommends:

- Every infant be provided with a safe sleeping environment.
- State-wide programs or campaigns be developed and resourced to build the knowledge and confidence of parents or carers so that they know how to provide safe sleeping arrangements for infants.
- State-wide support programs be developed and resourced to provide safe sleeping environments for infants in disadvantaged families, including if necessary the provision of appropriate cots or beds and ongoing support to ensure that safe sleeping arrangements be maintained.' [53]

4.14. It is to be observed that the Committee in both of its two most recent reports refers to risk factors as including prone or side sleeping. The Committee would clearly advocate infants being placed on their backs for all day and night time sleeping. Professor Byard is clearly of that view as well. In my opinion it is very difficult to argue against such a recommendation notwithstanding the fact that certain sections of the nursing profession might disagree.

4.15. As to educational programs generally, it would appear to be desirable that the wider community be made aware of what may constitute unsafe infant sleeping practices. These members may well become parents themselves in due course, or be in positions to advise new parents within their own families as to safe and unsafe practices. In this regard, the message would need to be accurate and consistent.

5. Conclusions

5.1. I do not need to repeat my findings in relation to the circumstances of each of the five deaths. To summarise, however, three of the infants in my view died of suffocation. The other two infants died of an undetermined cause, but the possibility that they also died from suffocation is a significant one in each case. In each of the five cases, there were identifiable elements of the sleeping environment that carried an intrinsic risk of death by suffocation.

---

[53] Exhibit C66d, page 38

5.2. Circumstances that can give rise to an unsafe sleeping environment, thereby subjecting the infant to the risk of death by suffocation, include the following:

- Prone or side sleeping;
- Heavy wrapping of infants with bed clothing, especially where the head is covered, or where there is a risk of the head becoming covered;
- The use of doonas;
- Sleeping situations that are too hot, either by the creation of an excessive room temperature or by excessive bed clothing or both;
- The use of pillows, especially U-shaped or V-shaped pillows;
- Sleeping infants in inflatable plastic beds;
- Co-sleeping either with adults or other children;
- Placing the infant in an open sleeping environment such as a large mattress without any side restrictions thereby enabling the infant to fall from the mattress into a dangerous position;
- Soft mattresses that can create dangerous depressions into which an infant can sink and suffocate;
- Other undesirable environments involve cots that are broken, the use of waterbeds (as well as inflatable beds), the presence of soft toys and cigarette smoke.

Desirable sleeping practices and environments have the following elements:

- Individual cots that comply with Australian Standards for each infant;
- Firm mattresses;
- Mattresses that do not create gaps between the sides of the mattress and the sides of the cot;
- Placing infants on their backs at the foot of the cot with the child's feet against the bottom end of the cot;
- An uncluttered and simple sleeping environment;
- Absence of toys or animals from the sleeping environment;
- Absence of pillows and cot bumpers from the sleeping environment.

6. Recommendations

6.1. Pursuant to section 25(2) of the Coroner's Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest. Counsel Assisting me in this Inquest, Dr Rachael Gray, in her final submission, described a number of recommendations that I might consider. I have considered those recommendations and I agree with them as being highly appropriate. I have also had occasion to examine the findings and recommendations of Coroner Olivia McTaggart of the Tasmanian Coroners Court, delivered June 2008, concerning four SIDS deaths that occurred in that State in 2005 and 2006. Many of her recommendations coincide in general terms with mine. As I say, there is a significant overlap between SIDS and deaths that are attributed to asphyxiation. I have drawn on some of Ms McTaggart's recommendations as they appeal to me as being also relevant to the South Australian position. I make the following recommendations:

1) That the Minister for Families and Communities and the Minister for Health act upon, and provide the funding for the implementation of, the recommendations of the Child Death and Serious Review Committee as contained within the Committee's annual reports for the years 2005-2006 and 2006-2007, namely;

   - The Committee recommends that a public health campaign for young parents be developed concerning safe sleeping. Careful consideration should be given to the ways in which this campaign is delivered both in terms of the material that is developed and the ways it is disseminated. The campaign should involve Government and non- Government agencies who deliver services to infants and their families in South Australia.
   - The Committee strongly recommends that a product safety analysis be undertaken as soon as possible if the death of a child has been attributed to a product such as a bed or cot. This recommendation should apply to any deaths of infants attributed to a particular product.

   - Every infant be provided with a safe sleeping environment.
   - State-wide programs or campaigns be developed and resourced to build the knowledge and confidence of parents or carers so that they know how to provide safe sleeping arrangements for infants.
   - State-wide support programs be developed and resourced to provide safe sleeping environments for infants in disadvantaged families, including if necessary the

provision of appropriate cots or beds and ongoing support to ensure that safe sleeping arrangements be maintained.

2) That the Minister for Families and Communities and the Minister for Health cause to be developed a single set of consistent guidelines that define the appropriate strategies to be implemented by parents, carers and health professionals for the reduction of risk factors in sudden unexpected death in infancy (SUDI).

3) That the Minister for Health and the Minister for Families and Communities cause to be developed strategies for the education of the wider community as to safe and unsafe infant sleeping practices. That such strategies should be designed to enable members of the wider community to identify, and assist in the elimination of, unsafe infant sleeping practices that they may encounter.

4) That the Minister for Families and Communities and the Minister for Health cause educational programs to be directed to the nursing profession, carers and other health professionals concerning safe sleeping practices for infants so as to enable members of the nursing profession, carers and other health professionals to properly, accurately and consistently impart to parents and families the essentials of safe sleeping practices for infants.

5) That the Minister for Families and Communities and the Minister for Health undertake the necessary measures to direct the nursing profession, carers and other health professionals, who provide advice on how to get infants to sleep, to ensure that the safe sleeping message imparted to parents and families is consistent and in accordance with the recommendations of SIDS and Kids, Kidsafe and the Women's and Children's Hospital, and in particular to disseminate advice (a) that infants should be slept on their backs from birth, and (b) that parents should only deviate from what is considered to be a safe sleeping practice upon advice from a medical practitioner.

6) That the Minister for Families and Communities and the Minister for Health develop strategies to identify new parents who are, or might be, at particular risk of their infant being subjected to an unsafe sleeping environment, that this risk assessment be conducted prior to the mother's discharge from hospital and that appropriate and accurate information is provided to parents who are identified as at risk in order to minimise that risk.

Key Words: Infant Deaths; Safe Sleeping Practices; Asphyxia/Suffocation

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 25th day of June, 2008.

Deputy State Coroner

Inquest Number 6/2008 (1908/2005, 2061/2005, 2152/2005, 2299/2005, 0953/2006)