IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: 1927 / 2005

FINDING INTO DEATH WITH INQUEST

Form 37 Rule 60(1)

*Section 67 of the **Coroners Act 2008***

Inquest into the Death of:

Sebastian HEWITT also known as Sebastian SHIELDS

Delivered On:	8 June, 2012
Delivered At:	Level 11, 222 Exhibition Street Melbourne, Victoria 3000
Hearing Dates:	10, 11, 12 October 2007; 7 December, 2007; 11 March, 2008
Findings of:	Coroner Paresa Antoniadis SPANOS
Representation:	Mr J. GOETZ of Counsel, instructed by Middletons, appeared on behalf of Sebastian's parents.
	Mr S. CASH of Counsel, instructed by Avant Law, appeared on behalf of Dr David FRIEDIN.
	Ms A. MAGEE of Counsel, instructed by Minter Ellison, appeared on behalf of Masada Private Hospital.
	Ms F. ELLIS of Counsel, instructed by Tress Cox Lawyers, appeared on behalf of Dr Joe MEL.
	Mr M. WILSON of Counsel, instructed by John W. Ball & Sons, appeared on behalf of Melbourne Pathology.
Coroner's Assistant:	Senior Constable Therese FITZGERALD

I, PARESA ANTONIADIS SPANOS, Coroner,
having investigated the death of SEBASTIAN HEWITT
and having held an inquest in relation to this death on 10, 11, 12 October and 7 December, 2007 and 11 March, 2008
at the Coroners Court, Southbank,
find that the identity of the deceased was SEBASTIAN HEWITT
also known as SEBASTIAN SHIELDS, born on 1 June, 2005
and that the death occurred on 3 June, 2005
at Mercy Hospital for Women, 163 Studley Road, Heidelberg, Victoria 3084
from:

1 (a) PERINATAL ASPHYXIA LEADING TO CEREBRAL ANOXIA AND SUBSEQUENT MULTI-ORGAN FAILURE

in the following circumstances:

INTRODUCTION[1]

1. Baby Sebastian Hewitt was the first born child of Ms Julie Shields and Mr Justin Hewitt. Apart from some bleeding at around 20 weeks and 23 weeks gestation, and early concerns about a low lying placenta which self-corrected by 31 weeks gestation, Ms Shields antenatal course had been uneventful, with every indication that Sebastian was developing normally.

2. On 31 May 2005, at approximately 36 weeks gestation, Ms Shields suffered a large painless ante-partum haemorrhage at home. She presented to Masada Hospital shortly before midnight, was admitted and a cardiotocograph (CTG)[2] was commenced. When the CTG showed abnormal traces, namely spontaneous decelerations suggesting foetal distress and/or hypoxia, Obstetrician Dr David Friedin was paged, attended within ten minutes and made arrangements for an urgent Caesarean section. During the procedure, Dr Friedin noted heavily blood-stained liquor and confirmed the placenta was right posterolateral in position, with no evidence of placenta previa or retroplacental clot (abruption).[3]

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[1] This is a summary including matters of personal history and background which were not contentious. Contentious matters will be addressed in more detail below.

[2] A monitor which displays a "trace" of the foetal heart rate, often used during labour.

[3] These are the most common causes of antepartum haemorrhage (APH) and were thus excluded. The source was therefore not identified during the procedure for the "large" APH.

3. Sebastian was born at 0119 hours on 1 June 2005. Dr Joe Mel was the attending Paediatrician who accepted Sebastian into his care immediately after birth. Sebastian weighed 2690 (50th to 90th percentile) and was morphologically normal. He was given Apgar[4] scores of 7 at one minute and 7 at five minutes, apparently due to his pallor and relative inactivity. According to the medical records, Sebastian took his first breath at less than 30 seconds, and required no resuscitation proper, as he had good respiratory effort and good cardiac output.[5]

4. After birth, Dr Mel arranged for Sebastian's admission to the Special Care Nursery (SCN) for ongoing monitoring and management. He was initially nursed in an isolette with 31% oxygen and a temperature set (initially) at 34° C. Sebastian's initial set of observations recorded at 0152 hours indicate that he was hypothermic (35.9° C), had a heart rate of 159 and a respiratory rate of 60 (both at the high end of the normal range), with respiratory effort indicated by a "grunt", was pale/dusky in colour and flaccid.

5. As will be discussed in more detail below, Sebastian's clinical course whilst in the SCN waxed and waned over the ensuing hours. Suffice, for present purposes, to say that his oxygen saturations whilst he was on oxygen, were generally good with a period on room air or equivalent from about 0700 to 1300; that significant hypoglycaemia was noted from at least 0830 to 1200; that Sebastian could only maintain an acceptable body temperature in a significantly warmed isolette; that his cardio-respiratory function was concerning from 1600 onwards; and that, apart from being described as pale/pink in observations between 1330 and 1600, Sebastian was consistently described as pale by nursing staff.

6. The first time Dr Mel saw bruising on Sebastian's back and legs was when he attended the SCN at approximately 1900. It was during this attendance that Dr Mel stated he also became aware, for the first time of the results of arterial blood gases (ABG) taken by him at 1300.[6] He

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[4] A system developed by American Anaesthesiologist Virginia Apgar M.D, for evaluating an infant's physical condition, usually performed one minute and again five minutes after birth, based on a rating of five factors that reflect the infant's ability to adjust to life. The infant's heart rate, respiratory effort, muscle tone, reflex irritability, and colour are scored from a low value of 0 to a normal value of 2. The five scores are combined, and the totals at one minute and five minutes are noted. The system aims at rapid identification of infants requiring immediate intervention or transfer to an intensive care nursery. Mosby's Medical, Nursing, & Allied Health Dictionary 4th edition, page 111.

[5] But see transcript at pages 281 and following regarding what "no resuscitation" means in the circumstances.

[6] Cord blood gases taken at birth (0120) showed a pH of 7.02 (range of 7.33-7.49), pCO_2 of 80mmHg (range 27-40), pO_2 of 44mmHg (range 85-105), bicarbonate 20mmol/L (range 17-24) and base excess of -11.1 mmol/L (range -10.0 to - 2.0). See discussion at paragraph 31 and following below where Dr Mel's maintains that a pH level above 7.0 was acceptable to him given the circumstances of Sebastian's birth, namely his prematurity and delivery via emergency caesarean under general anaesthetic. These "second" blood gases were taken at 1300 or thereabouts when Dr Mel came in to review Sebastian and, inter alia, inserted an IV line for a dextrose bolus and infusion to correct Sebastian's

considered that these results showed a persistent metabolic acidosis, and indicated to him that Sebastian required management beyond the resources of a Level 2 accredited nursery, as was the case with the SCN at Masada.[7] He accordingly contacted the Newborn Emergency Transport Service (NETS), and a NETS retrieval team was in attendance by 2050 hours.

7. Sebastian was assessed by the NETS team, stabilised for transportation and taken to the Mercy Hospital for Women (MHW) in Heidelberg where he was admitted to the Intensive Care Unit at 0005 hours on 2 June 2005. His initial diagnosis was hypovolaemic shock.[8] In a discharge summary outlining his clinical course at MWH, medical staff noted that Sebastian's metabolic acidosis persisted, that he required aggressive volume expansion, inotropes and assisted ventilation. His clinical course was characteristic of severe encephalopathy with severe seizure activity, respiratory impairment, cardiomyopathy, renal impairment and coagulopathy. A number of clinical indicators supported the clinical impression of perinatal hypoxic-ischaemic insult, and suggested acute blood loss as having played a significant role in perinatal events.[9]

8. Ultimately, Sebastian's poor neurological condition and poor prognosis were discussed between medical staff and his parents who agreed to the cessation of intensive care/life support. Sebastian died 15 minutes after the withdrawal of intensive care, at 1456 hours on 3 June 2005. His death was reported to the coroner by medical staff at MWH, and his parents wrote to the coroner expressing a number of concerns about the obstetric management of Ms Shields by Dr Friedin, and the paediatric management of Sebastian by Dr Mel.[10]

THE EVIDENCE

9. This finding is based on the totality of the material the product of the coronial investigation of Baby Sebastian's death, that is the coronial brief compiled by my assistant Senior Constable Therese Fitzgerald from the Police Coronial Support Unit (PCSU); the statements/reports and testimony of those witnesses who testified at inquest and any documents tendered through them; and the final submissions of Counsel. All this material, together with the inquest

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hypoglycaemia. They showed a pH of 7.02 (range of 7.33-7.49), pCO_2 of 48mmHg (range 27-40), $pO_2$of 68mmHg (range 85-105), bicarbonate 12mmol/L (range 17-24) and base excess of -17.9mmol/L (range -10.0 to -2.0).

[7] Exhibit J – Dr Joe Mel's statement dated 31 August 2006.

[8] Exhibit I – Dr Simon Fraser's report dated 15 April 2007. Note that according to the medical deposition provided by to the coroner, the admission diagnosis was anaemia and hypotension.

[9] Most accessible at Exhibit I page 5 of 12.

[10] Exhibit U – the balance of the inquest brief.

transcript, will remain on the coronial file.[11] In writing this finding, I do not purport to summarise all the material/evidence, but will refer to it only in such detail as appears to me to be warranted by its forensic significance the interests of narrative clarity.

THE PURPOSE OF A CORONIAL INVESTIGATION

10. The primary purpose of a coronial investigation of a reportable death[12] is to ascertain, if possible, the identity of the deceased, how death occurred, the cause of death and the particulars needed to register the death – effectively, the date and place where the death occurred.[13] In order to distinguish *how* death occurred from the *cause* of death, the practice is to refer to the latter as the *medical* cause of death, incorporating where appropriate the *mode* or *mechanism* of death, and the former as the context, or background and surrounding circumstances in which death occurred. These circumstances must be sufficiently proximate and causally relevant to the death, and not merely circumstances which might form part of a narrative culminating in the death.[14]

11. A secondary purpose of the coronial investigation, arises from the coroner's power to report to the Attorney-General on a death; to comment on any matter connected with the death being investigated, including public health or safety or the administration of justice; and to make recommendations to any Minister or public statutory authority on any matter connected with the death, including public health or safety or the administration of justice.[15] Whilst the *Coroners Act 1985* which governs this investigation does not explicitly refer to the purpose of such reports, comments or recommendations made by a coroner, the implicit and generally accepted purpose is the prevention of similar deaths in the future.[16]

12. Finally, it is important to note that a coroner is not empowered to determine civil or criminal liability or to apportion blame, and is specifically prohibited from including in a finding or

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[11] From 1 November 2009, access to the coronial file is governed by section 115 of the Coroners Act 2008.

[12] Apart from a jurisdictional nexus with Victoria, the relevant definition of "reportable death" is in section 3 of the Coroners Act 1985 ("the Act") and includes a death that appears to have been unexpected, unnatural or violent or to have resulted, directly or indirectly, from accident or injury.

[13] Section 19(1) of the Act.

[14] Paraphrasing and at risk of over-simplifying the effect of the authorities – Harmsworth v *The State Coroner [1989] V.R. 989; Clancy v West (Unreported decision of Harper, J. in the Supreme Court of Victoria 18/08/1994); cf Thales Australia Ltd v The Coroners Court of Victoria & Ors [2011] VSC 133.*

[15] Sections 21(1), 19(2) and 21(2) of the Act related to such reports, comments and recommendations respectively.

[16] This is to be contrasted with the *Coroners Act 2008* which came in to operation on 1 November 2009 (and applies to inquests commencing after that date) and in its Preamble and Purposes (section 1(c)) explicitly refers to the coroner's role in contributing to the reduction of preventable deaths through findings and the making of recommendations.

comment, any statement that a person or institution is or may be guilty of an offence. Therefore, whether or not it encompasses an inquest, a coronial investigation is best seen, not as a trial or contest between opposing parties, but as an investigation or inquiry into facts so as to determine how the death occurred and how similar deaths may be prevented in the future.[17]

THE MEDICAL CAUSE OF DEATH

13. An autopsy was performed by Senior Consultant Pathologist Dr Peter Ellis Campbell from the Victorian Institute of Forensic Medicine (VIFM) whose particular area of specialty is neonatal/paediatric pathology. Dr Campbell provided a detailed written report and was not required to testify at inquest.[18] He described Sebastian as a morphologically normal male infant and summarised his main anatomical findings as cerebral oedema and softening, and haemorrhage in kidneys and spleen.[19] He noted that the brain was extremely soft and partly liquid and quoted from the neuropathology report which showed –

"...widespread chromatolysis of neurons and softening of the cerebral cortex in all lobes, chromatolysis of neurons in the thalamus and basal ganglia with widespread apoptosis of neurons in the pontine nuclei consistent with profound recent ischaemic/anoxic insult [emphasis added]. There was no morphological evidence of Leigh's Syndrome or specific abnormality to suggest mitochondrial cytopathy. No antenatal cerebral injury was seen."[20]

14. Dr Campbell formulated the medical cause of Sebastian's death as *perinatal asphyxia leading to cerebral anoxia and subsequent multi-organ failure.* None of the parties took issue with the cause of death as formulated by Dr Campbell, including the inference that death resulted

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[17] Several authorities grapple with the nature of a coronial investigation – for example *Harmsworth v The State Coroner of Victoria [1989] VR 989; Militano v The State Coroner (Unreported decision of Heyne, J. in the Supreme Court of Victoria 18/12/1991)* and, notably, *R v South London Coroner, ex parte Thompson [1982] 126 SJ 625* per Lane, LCJ – *"An inquest is a fact-finding investigation and not a method of apportioning guilt ... the procedure and rules of evidence which are suitable for one are unsuitable for the other. In an inquest, it should never be forgotten that there are no parties, there is no indictment, there is no prosecution, there is no defence, there is no trial – simply an attempt to establish facts."*

[18] Dr Campbell's nine page autopsy report which includes his formal qualifications and experience is Exhibit A.

[19] Aside from the brain, Dr Campbell made the following more detailed comments about his anatomical findings – "The lungs were congested. The kidneys showed cortical and medullary necrosis and haemorrhage. There were microthrombi in the lung vessels and small areas of necrosis in heart and liver. The thymus showed involution." Exhibit A page 8.

[20] Dr Campbell also referred to metabolic testing for possible mitochondrial abnormality, which returned negative results. Exhibit A page 9.

from an insult occurring in the perinatal period.[21] As will be discussed in more detail below, the only causative or contributory clinical event identified during the course of this investigation was the ante-partum haemorrhage, and the concerning CTG traces which accompanied it, which necessitated Sebastian's delivery by emergency caesarean section.

15. It should be reiterated, in this context, that Ms Shields' antenatal course was largely uncomplicated, that every indication was that Sebastian was developing normally in utero, and that his clinical course at the Mercy Hospital for Women was consistent with the cause of death as formulated by Dr Campbell.[22]

HOW DEATH OCCURRED – UNCONTENTIOUS MATTERS

16. A number of the matters I am required to ascertain, if possible, were uncontentious, as were aspects of the circumstances or "how the death occurred". I find, as a matter of formality, that Sebastian Shields also known as Sebastian Hewitt, born on 1 June 2005 at Masada Hospital, East St Kilda, the child of Ms Simone Shields and Mr Justin Hewitt, died on 3 June 2005 at the Mercy Hospital for Women, Heidelberg, as a result of *perinatal asphyxia leading to cerebral anoxia and subsequent multi-organ failure.*

HOW DEATH OCCURRED - CONTENTIOUS MATTERS

17. The focus of the coronial investigation, including the inquest, was on the adequacy of clinical management and care, provided firstly to Ms Shields during her antenatal course and, then in the immediate period after birth, to Sebastian. In their letters and statements,[23] Mr Hewitt and Ms Shields raised a made a number of criticisms of Dr Friedin and Dr Mel, and to some extent the nursing staff in the SCN at Masada. In this finding, I address those criticisms which bear a causal or potentially causal connection with Sebastian's death, as to go beyond this would exceed the reasonable scope of a coronial investigation. For example, I will not address issues of poor communication, unresponsiveness or poor rapport. That said, no assessment of the merit of such criticisms is intended, nor to be inferred.

18. Similarly, Counsel representing the parents, invited me to endorse the clinical management and care provided to Sebastian at the Mercy Hospital for Women. Since this was not a matter

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[21] Defined in Dorland's Medical Dictionary, 31st edition as "pertaining to or occurring in the period shortly before and after birth; variously defined as beginning with the completion of the twentieth to twenty-eighth week of gestation and ending 7 to 28 days after birth."

[22] See paragraph 13.

[23] These appear in Exhibit "U" – the balance of the inquest brief.

scrutinised during the inquest, it would be entirely inappropriate for me to do so. Suffice to say that the parents made no criticism of the clinical management and care provided at the MHW, and the issue appeared to warrant no investigation in connection with Sebastian's death.

OBSTETRIC MANAGEMENT & CARE

19. The fundamental criticisms of Dr Friedin's clinical management were inter-related - that he should have managed Ms Shields more assiduously because she had placenta previa, that he should have anticipated the ante-partum haemorrhage which precipitated Sebastian's delivery, and at delivery or shortly thereafter, should have investigated the possibility of a foetal-maternal haemorrhage by a Kleihauer test.

20. It was the parents' understanding, that Ms Shields had placenta previa,[24] and that this was a known complication of her pregnancy since its detection during an ultrasound performed at about 19 weeks gestation. In his evidence, Dr Friedin drew a distinction between a low-lying placenta, which he accepted Ms Shields had at an early stage of her pregnancy, and placenta previa, which he maintained she did not.

21. Included in the batch of documents tendered through him, were the reports of ultrasounds performed at approximately 15, 19 and 31 weeks.[25] According to the first ultrasound report, the position of the placenta was "posterior". At 19 weeks the position had changed – "Placenta right lateral to internal os now. The placenta is almost wholly in lower right quadrant. Review at 34 weeks is suggested." It was from this report that concern about a low-lying placenta or placenta previa arose. In the 31 week ultrasound report the position of the placenta had improved and was reported as "Placenta upper right posterior!"

22. Dr Friedin's evidence was that the distinction between a low-lying placenta and placenta previa, was not merely semantic. He testified that in early pregnancy, there is an upper segment of the uterus which is stretching up, but no lower segment, which does not form until around 27-28 weeks gestation. He further testified that in 95% of pregnancies where the placenta is low-lying in early pregnancy, it migrates or moves away from the os as the uterus

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[24] Defined in Mosby's at pages 1225-1226 (see footnote 20) as "a condition in pregnancy in which the placenta is implanted abnormally in the uterus so that it impinges on or covers the internal os of the uterine cervix. It is the most common cause of painless bleeding in the third trimester of pregnancy. Its cause is unknown ... If severe haemorrhage occurs, immediate caesarean section is usually required to stop the bleeding and to save the mother's life; it is performed regardless of the stage of fetal maturity."

[25] Exhibit H included the ultrasound reports of Dr Jacqueline Oldham/Womens Ultrasound Malvern dated 10/01/2005, 10/02/2005 and 2/05/2005.

continues to stretch upwards, justifying conservative management, and review closer to term. He maintained that the diagnosis of placenta previa, could not properly be made at 20 weeks gestation.[26]

23. It was this phenomenon of the early low-lying and self-correcting placenta which, effectively, provided the rationale for Dr Friedin's management of Ms Shields, including conservative management of two episodes of early bleeding at about 20 and 23 weeks.[27] According to Dr Friedin's clinical notes and evidence, Ms Shields had no ongoing bleeding after 23 weeks and no other complications to justify admission to hospital for confinement late in the pregnancy.[28] In response to the suggestion, that he should have anticipated the ante-partum haemorrhage which precipitated Sebastian's delivery, Dr Friedin maintained that the history of a low-lying placenta in early pregnancy with no ongoing bleeding after 23 weeks, did not provide a basis for anticipating the ante-partum haemorrhage. Nor were there any other clinical indicia that Ms Shields was at any increased risk of significant ante-partum haemorrhage of unknown cause.[29]

24. There was no suggestion that Dr Friedin's response to Ms Shields' presentation at Masada Hospital with a large ante-partum haemorrhage was other than timely. Nor was there any suggestion of any alternative to an emergency caesarean section in the face of the haemorrhage and the abnormal CTG traces. The criticism around delivery, was the failure to ascertain the source of the ante-partum haemorrhage and/or to exclude the occurrence of a foetal-maternal haemorrhage by Kleihauer test.[30]

25. According to Dr Friedin, the presence of bloodstained liquor at delivery is not an uncommon finding with a large ante-partum haemorrhage.[31] While placental abruption and placenta

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[26] Transcript pages 110, 120-122.

[27] Transcript pages 122 and following.

[28] Transcript pages 137-139.

[29] "[ante-partum haemorrhage is] the greatest thing that we fear as practicing obstetricians. You can't predict – anybody who gets pregnant potentially can have an ante-partum haemorrhage...those patients are not at increased risk of bleeding, even though their placenta has been low lying earlier in the pregnancy...So you can't predict, of those women who've had a low lying placenta, which of them will then possibly be at increased risk of having an ante-partum haemorrhage of undiagnosed cause, which is what this one was." Transcript pages 138-139, also pages 126-127, 135.

[30] This was a criticism jointly levelled at Dr Friedin as Ms Shields' Obsetrician and Dr Mel as Sebastian's Paediatrician.

[31] During the course of the inquest (and to some extent in the medical records), the ante-partum haemorrhage was variously described as large, significant, moderate. The distinction was without practical effect, as far as I could glean. See for example transcript pages 113-114.

previa were excluded as causes,[32] the cause of the ante-partum haemorrhage was not determined. However, the amount of blood was such that Dr Friedin concluded that it was maternal and not foetal blood, or the baby would have exsanguinated.[33] While acknowledging the possibility of foetal-maternal haemorrhage in the abstract, and the existence of a diagnostic test to determine its occurrence, he did not consider it necessary to investigate (after delivery) whether there had also been a foetal-maternal haemorrhage as between Sebastian and his mother prior to birth. Dr Friedin's evidence was that this was a matter relevant to the ongoing clinical management and care of Sebastian, which had been handed over to Dr Mel, quite literally, when he was handed Sebastian after delivery.[34] In any event, given the ante-partum haemorrhage and delivery via emergency caesarean under general anaesthetic, Dr Friedin considered that Sebastian's condition at birth was satisfactory, and belied the need for investigation of the possibility of a foetal-maternal haemorrhage. Dr Mel's evidence was in accordance with this view of Sebastian's condition at birth.[35]

26. The only evidence that Dr Friedin bore any responsibility for investigating the possibility of foetal-maternal haemorrhage, came from Dr Simon Fraser,[36] a Neonatal Paediatrician, nominated by the Royal Australasian College of Physicians to provide an independent expert assessment of Sebastian's clinical care and management. In the context of questioning about the finding of blood-stained liquor, he described the responsibility for investigating the possibility of a foetal source, as resting with both the paediatrician and the obstetrician – "Both, I think it's probably a team effort..."[37]

27. The standard of proof for coronial findings of fact is the civil standard of proof on the balance of probabilities with the *Briginshaw* gloss or explication.[38] The effect of the authorities is

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[32] Dr Friedin's statement, part of Exhibit "H".

[33] Transcript pages 114, 117, 120.

[34] Transcript pages 107, 116, 132.

[35] Transcript pages 185 and following.

[36] Exhibit "I" was Dr Fraser's statement which includes his formal qualifications and experience and will be discussed in more detail below.

[37] Transcript page 152. Although not formally tendered into evidence, the Mercy Women's Hospital records were provided, and include a notation by Neonatologist Dr Andrew Watkins @ 3 June 2005 that a positive Kleihauer test subsequently confirmed the occurrence of a foetal-maternal haemorrhage.

[38] *Briginshaw v Briginshaw (1938) 60 C.L.R. 336 esp at 362-363 - "The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding, are considerations which must affect the answer to the question whether the issues had been proved to the reasonable satisfaction of the tribunal. In such matters "reasonable satisfaction" should not be produced by inexact proofs, indefinite testimony, or indirect inferences..."*

that Coroners should not make adverse findings against or comments about individuals or institutions involved in the clinical management or care of the deceased, unless the evidence provides a comfortable level of satisfaction that their negligence and/or departure from the generally accepted standards of their profession caused or contributed to the death.[39]

28. Even assuming, for present purposes, a causal connection with Sebastian's death, the weight of the evidence available to me, does not support an adverse finding or comment against Dr Friedin on the basis that he should have anticipated and/or prevented the ante-partum haemorrhage which precipitated Sebastian's birth, whether arising from a low-lying placenta, placenta previa or otherwise. Nor does the weight of the evidence support an adverse finding or comment against Dr Friedin, on the basis that he should have investigated the possibility of foetal-maternal haemorrhage by maternal Kleihauer test or otherwise.

PAEDIATRIC MANAGEMENT & CARE OF SEBASTIAN

28. The primary focus of the coronial investigation and inquest was on Sebastian's clinical management and care during the period immediately following his birth at 0119, until the arrival of the NETS team at about 2050, that is during the first twenty hours or so of life. In the private hospital setting, Dr Mel was primarily responsible for all medical/clinical management during this period, and the SCN nurses at Masada Hospital were responsible for ongoing nursing care, subject to Dr Mel's orders, and for keeping him appraised of developments with Sebastian's clinical course and seeking his further input as appropriate.

29. The parents' criticisms were comprehensively outlined in Mr Goetz's final submissions, and submissions in response. Similarly comprehensive were Ms Ellis' submissions on behalf of Dr Mel. At the risk of not doing justice to either submission, the criticisms of Dr Mel's clinical management amounted to an assertion that his clinical management was inadequate overall, in that he failed to investigate those concerning features of Sebastian's clinical presentation, and failed to address them adequately in a timely manner. In response, Ms Ellis submitted that Dr Mel's assessment that Sebastian's clinical course and management was appropriate and mindful of his gestational age and the circumstances of his birth, and that any criticisms were flawed by hindsight bias and, in any event, even if made out, could not be causally connected with Sebastian's death.

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[39] *Anderson v Blashki [1993] 2 VR 89 at 95; Secretary to the Department of Health & Community Service v Gurvich [1995] 2 VR 69 at 73-74; Re State Coroner; ex parte Minister for Health (2009) 261 ALR 152 at [21]*

30. Some more detailed examination of Sebastian's clinical course is required to provide context. As noted above, Sebastian's Apgar scores were 7 at one minute and 7 at five minutes. Although the rationale for these scores was not documented, it seems tolerably clear that the concerns at five minutes were around the babe's pallor, flaccidity and/or possibly hypothermia.[40] Certainly the decision to admit Sebastian to the SCN was justifiable and uncontentious. Dr Mel's initial order included observations, oxygen if required with nurse to report if the babe's oxygen requirements exceeded 35%; blood sugar levels to be taken at two hours of age with nurses to report if less than 2.5mmol and feeds to commence thereafter.[41]

31. The nurse receiving Sebastian into the SCN was RN Wendy Coles. In the course of her shift, RN Coles documented eleven sets of observations at roughly half-hourly intervals on average, from his admission at 0152 until 0712, shortly before the end of her shift. Initially hypothermic at 35.9°C, Sebastian's temperature improved but not without a significantly heated isolette. His heart rate and respiratory rate were within a normal range, although at times at the upper end of the range and, not without some level of respiratory effort noted on first three observations. His oxygen saturations were generally good (between 95-100%) with oxygen therapy commencing at 31-32% and reducing to 20% over RN Coles' shift. The clinical parameter which did not improve appreciably was "colour" which was documented as "pale/dusky" initially and remained "pale" throughout RN Coles' shift.[42]

32. Consistent with these observations, RN Coles' evidence, both in her statement and at inquest, was that she remained concerned about Sebastian's colour, temperature and flaccidity and therefore asked the nursing co-ordinator to telephone Dr Mel to convey these concerns.[43] This occurred at 0250 when the nursing co-ordinator telephoned Dr Mel to advise the blood gas results from the cord blood sample taken immediately after Sebastian's birth, and also conveyed the nursing staff's concerns about his colour, temperature and flaccidity. These "first" blood gas results showed pH 7.02L (range 7.33-7.49), CO2 80H (range 27-40), O2 44L (range 85-105), bicarb 20 (range 17-24) and base excess -11.1L (-10.0-2.0). Although, at inquest Dr Mel testified that he could not recall this telephone call, he accepted that it "may"

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[40] See for example Dr Fraser's appraisal of the Apgars at transcript pages 159-159 and Dr Mels' evidence at transcript page 176, 184-185, 207.

[41] Dr Mel's note dated 1 June in the Progress Notes (part of the Masada Medical Records – Exhibit "D") as regards feeding is "B/F if possible. If not then 20x4x6. Gavage if necessary."

[42] Observation Chart (part of the Masada Medical Records – Exhibit "D") and transcript page 22 for RN Coles' evidence.

[43] Exhibit "B" page 2 and transcript pages 10-11, 20-21, 23-24.

have occurred. Ultimately, Ms Ellis made the concession on Dr Mel's behalf, that this information was conveyed to him at 0250.[44]

33. The concession did not, strictly speaking, encompass the note made by the nursing co-ordinator in the medical records of Dr Mel's response to the information conveyed to him at 0250, that as regards the blood gas results he was 'happy that the pH was above 7 and not worried about the CO2 and O2 levels, and as regards the nurses' concerns about the babe's colour, flaccid state and temperature he wanted to see how he was 'after some food and some time' and was happy to be contacted in the event of any deterioration.[45] However, Dr Mel did not resile from these orders, which were consistent with his assessment that Sebastian's state was unexceptional for a babe of his gestational age and the circumstances pertaining to his birth. Moreover, they were also consistent with the view he maintained at inquest, that the cord blood gas results were a reflection of foetal condition in utero and not the baby's condition after birth, and were not concerning, particularly in light of Sebastian's ongoing clinical improvement, as he saw it.[46]

34. At 0310, before his first feed, Sebastian's blood sugar level was documented by RN Coles as 2.6mmol/L, which was at the bottom of the range of acceptable levels. The first feed at 0420 was 20mls of expressed breast milk and formula, given via a feeding tube placed next to a finger with Sebastian demonstrating a good suck. At 0500, RN Coles documented a large vomit on the observation chart. At 0600, Sebastian was considered stable enough for skin to skin contact with his mother. [47] By the end of RN Cole's shift, Sebastian was in room air (~21% oxygen), equivalent to room air, signifying an improvement in his condition.[48]

35. The morning shift nurse who took over from RN Coles was RN Sarah Jane Di Dio, an agency nurse/midwife who had worked at Masada Hospital before, but could not say how many

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[44] Dr Mel's evidence on this issues was not entirely clear/consistent – see Exhibit "J" paragraph 5, transcript pages 178, 192, 208. However, the concession was made by Ms Ellis on his behalf during the inquest, consistent with her submissions @ 2.6 page 2 – "At 0250 hours Dr Mel was telephoned at home and whilst he has no recall of the conversation accepts that he was informed of the results of the CBG sample, printed at 0246 hours that morning. Dr Mel accepts that he was further informed by RN Coles that staff were concerned in relation to Sebastian's colour, flaccid state and temperature."

[45] See note at 0250 in the Progress Notes (part of the Masada Medical Records – Exhibit "D")

[46] Transcript pages 178, 193-4

[47] Exhibit "D" – the notation is actually "+++" under "Vomit/Fluid Ouput". Transcript page 16, 26 for RN Coles evidence respectively re vomit and removal from isolette for skin to skin contact with mother.

[48] Observation Chart in Exhibit "D" and transcript page 26-27.

times.[49] RN Di Dio's evidence was that the verbal handover from RN Coles did not convey any great concerns about the babe.[50] RN Di Dio took her first set of observations of Sebastian at 0800 noting that he was in an isolette with temperature set at 36.5°C, had a heart rate of 143, respiratory rate of 30 with no apparent effort, was pale in colour, asleep and had oxygen saturations of 100% on 20% oxygen. RN Di Dio noted a large bowel motion and cleaned up a medium size vomit.

36. It appears that RN Di Dio's concerns for Sebastian first arose at 0830, when she ascertained that his blood sugar level ("BSL") was 1.3mmol/L, before feeding him 40mls formula via gavage tube feed.[51] Sebastian vomited during the gavage tube feed, and when his BSL were re-tested half an hour later at 0900, they showed a slight improvement at 1.6mmol/L, rising again to 1.7mmol/L at 0930, but at all material times remaining below the threshold of 2.5mmol required by Dr Mel. Mindful of this, and out of concern that Sebastian was not tolerating feeds and had a low BSL, RN Di Dio had Dr Mel paged. When he contacted the SCN shortly after 0930,she advised him of Sebastian's observations, vomiting and BSLs. Dr Mel's clinical response was to order ongoing observation and a feed three hours after the previous feed, in an effort to help address any feed intolerance and hypoglycaemia.[52]

37. Dr Mel testified that when he came in to review Sebastian at about 1030, he would have examined him, looked at the observation chart, spoken to the nurse caring for him, and would then have spoken to the parents.[53] His orders to nursing staff were to decrease the volume, and further increase the frequency of feeds, to 8mls hourly via gavage tube, with a BSL to be taken again in two hours. Dr Mel maintained at inquest that this clinical response was reasonable and based on his assessment that Sebastian's clinical course was consistent with his gestational age and circumstances of birth, and was improving overall. He specifically referred to improvements in body temperature, the resolution of early respiratory distress,

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[49] Exhibit "G" was RN Di Dio's statement which outlines her qualifications in Midwifery from Staffordshire University (1997), her experience in Royal Shrewsbury Hospital, UK thereafter and experience working as an agency nurse since her arrival in Australia in October 2001. Transcript pages 80-83.

[50] Transcript pages 89 and following.

[51] Exhibit "G" – In her statement, RN Di Dio states that she offered Sebastian the bottle, he was crying, did not suck, so she gavaged the feed.

[52] Dr Mel appears to have been paged twice, at about 0900 and at about 0937 – Exhibit "E". This is consistent with Progress Note entries at 0900 and 0930 in the Masada Medical Records, and RN Di Dio's statement – Exhibit "G". Transcript pages 90-91, 196 and following.

[53] Transcript page 209

improvement in respiratory rate from being at the higher end of normal down to the 30s and his pulses/heart rate well within the range of normal at 140/150 beats per minute.

38. In seeing an overall improvement in Sebastian's clinical course, Dr Mel clearly preferenced his own observations that he was pink and active when handled by him, to the nurses' documented observations that he had been consistently pale since birth, generally inactive and hypoglycaemic since at least 0830. He also appears to have attached little weight to the fact that Sebastian's normal temperature was not attained without significant warming of his isolette, and that from a total of 40mls feed ingested until about 0900, Sebastian had two large and one moderate vomit.[54]

39. Pursuant to Dr Mel's new orders, RN Di Dio fed Sebastian 8mls at 1100 and 8mls at 1200 via gavage tube feed and checked his BSL at 1230 with the machine giving a reading of "low" indicating that his BSL was too low to measure accurately. Furthermore, at about 1245, Sebastian had a large projectile vomit of undigested milk estimated at about 10mls, associated with a drop in his respiratory rate to 20. In response, nursing staff noted an episode of back arching and cyanosis and administered oxygen via bag and mask with good response. Dr Mel responded to a page,[55] was advised of the episode of back arching and cyanosis, and asked nursing staff to prepare Sebastian for insertion of an intravenous line. When he attended the SCN at about 1315, Sebastian was waiting in the treatment room where, assisted by a nurse other the RN Di Dio, Dr Mel inserted an intravenous line, gave a bolus of dextrose, commenced fluid therapy with saline and dextrose and penicillin for suspected infection. Dr Mel also took arterial blood for blood gas analysis, blood cultures to investigate the possibility of infection, ordered chest and abdominal x-rays and a repeat BSL at 1600.[56]

40. At inquest, Dr Mel explained his rationale for escalating treatment at this time. He felt that intravenous therapy had been trialled with a slight increase in BSL, but that the episode of cyanosis, back arching and drop in oxygen saturations from 100% to 72% raised concerns

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[54] Exhibit "J" paras 8-9, transcript pages 208-212, cf Observation Chart in Exhibit "D".

[55] Exhibit "E" indicates two pages from Masada – the first to call the SCN at 1230 and at second to call Doreen at 1251. See also Exhibit "R" the statement of RN Doreen Leber, Perinatal Services Manager/Nurse Unit Manager of the Maternity Ward at Masada Private Hospital as at 1 June 2005 and her evidence at transcript page 341 and following where she testified that the entry appearing at 1200 "Dr Mel informed increase [indicated by an arrow pointing up] NG feeds to 10ml" was written by her on 2 June 2005, transcribed from a contemporaneous note kept on a running sheet by the phone.

[56] RN Di Dio's Progress Note at 1315 has Dr Mel arriving at 1315 not 1300. Transcript page 100 and Exhibit "D". Dr Mel's statement is consistent with this timeframe, as is his evidence at transcript page 211. Cf Ms Ellis' submissions page 3 para 2.12. See Observation Chart and Dr Mel's entry in the Progress Notes @ 1400.

about a significant episode of hypoglycaemia, secondary to feed intolerance. He also entertained the possibility of a metabolic cause, based more on the clinical presentation at 1315 and the history given to him at that time, than by way of follow-up of the cord blood gas results conveyed at 0250. He took blood cultures and commenced antibiotic therapy to address the possibility of sepsis ahead of any blood culture results which may take up to 48 hours, and ordered x-rays to investigate the possibility of a bowel obstruction.[57] Dr Mel was reassured about the babe's condition after handling him, as he was pink, crying and active and had minimal oxygen requirements.[58]

41. Following his return to the SCN from the treatment room with intravenous line in situ, Sebastian remained "stable" during the balance of RN Di Dio's shift, albeit at a different plateau in terms of his clinical course. His heart rate remained between 130-121, respiratory rate between 34-65, no apparent respiratory effort, pale pink in colour, asleep, in 28-31% oxygen via isolette, and with oxygen saturations between at 96-100%.[59] The situation was largely unchanged when RN Kim Valentine commenced caring for Sebastian during the afternoon/evening shift and made her first set of observations at 1600, except that oxygen therapy via isolette had been weaned and Sebastian was maintaining oxygen saturations at 100% on room air. However, his BSL was elevated at 11.3mmol/L.

42. The next significant change in Sebastian's clinical course is reflected in RN Valentine's observations as documented at 1630 – heart rate 119, respiratory rate 34, respiratory effort indicated by a grunt (and shortly after rib retraction), pale colour (compared with pale/pink at 1600), and oxygen saturations at 87% on room air (compared with 100% at 1600). According to the Observation Chart that appears to have been written contemporaneously with the events noted,[60] as opposed to the Progress Notes which may be written by nurse after the event and/or towards the end of a shift, RN Valentine informed Dr Mel of Sebastian's increasing oxygen needs, at some time between 1630 and 1700. Dr Mel's orders were to re-commence Sebastian on oxygen therapy up to 35%.[61]

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[57] Transcript pages 212-216.

[58] Exhibit "J" para 10. RN Leber's evidence at transcript page 344 is consistent with Dr Mel's in this regard. I note also that an (aberrant) BSL of 17.1 was noted whilst Sebastian was in the treatment room. See RN Di Dio's evidence at transcript page 99 and Observation Chart @ 1340 and Progress Notes @ 1315 in Exhibit "D".

[59] Observations Chart in Exhibit "D" and RN Di Dio's evidence at transcript pages 100-101

[60] See RN Valentine's evidence in this regard at transcript pages 523, 55-56.

[61] Observation Chart and Progress Note @ 1630 in Exhibit "D", RN Valentine's evidence at transcript page and Dr Mel's evidence at transcript pages 218-219 where he maintains that Sebastian was 'still in a stable condition overall,

43. Between re-commencement of oxygen therapy at some time before 1700 and Dr Mel's attendance to review Sebastian at about 1900, there was little appreciable improvement in his clinical condition. His oxygen saturations improved (from 87%) to 94% but only in response to the recommencement of oxygen at 33%, and further improved to 100% saturations with oxygen at 38%. He had ongoing hypothermia despite warming of his isolette to 37°C, bubble wrap and a hat. His colour was consistently noted as pale, and his level of activity went from "awake" between 1640 and 1830 to "quiet" from 1900 (and asleep thereafter). Sebastian continued to show signs of respiratory effort/distress with "rib retraction" documented until 1720 and an ongoing grunt from 1800. While his BSL was unchanged at 11.3mmol/L at 1800, it was still unacceptably high.[62]

44. What was contentious at inquest was not so much how Sebastian appeared clinically during this period, but what was conveyed to Dr Mel about Sebastian's clinical condition before he returned to the SCN at about 1900, and his response. Both RN Valentine and Dr Mel were questioned at some length about what information was conveyed and when, with both witnesses shifting ground to some extent.

45. Based on the evidence before me, including the evidence of several witnesses that the general, indeed universally accepted, practice is for nurses to read out the detail or numeric values of blood test/blood test results out to doctors, rather than purport to interpret them or to summarise their effect, I find it probable that between 1600 and 1630, RN Valentine advised Dr Mel of the blood sugar levels taken by her at 1600, namely 11.3mmol/L, and of Sebastian's increasing developing respiratory distress. In response, Dr Mel ordered recommencement of oxygen therapy. The evidence does not allow me to whether this occurred over the course of one or two telephone calls. I accept the RN Valentine was unaware of that blood gas results were pending, that she was further unaware that blood gas results had been "received" at Masada Private Hospital at about 1621, and entirely reject the suggestion that she said anything at all to Dr Mel about blood gas results as such. There was a lost opportunity here for Dr Mel to perhaps enquire about blood gas results specifically, and thereby prompt enquiry by RN Valentine.

46. I cannot understand how, but accept Dr Mel's sworn evidence that he was left with the impression that "blood tests were normal" or something to that effect, which he understood to

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may have had a small mucous plug causing his oxygen saturations to drop, so giving him some oxygen and some time would not be unreasonable'.

[62] Observation Chart in Exhibit "D". Transcript page 48.

be a reference to the pending blood gas results. Similarly, I accept Dr Mel's sworn evidence that it was not until about 1745 that he indicated to nursing staff that he would be in shortly to review Sebastian, but that at this time he had already committed to assist at another emergency caesarean at Cabrini Private Hospital.

EXPERT EVIDENCE

47. In accordance with established practice in this jurisdiction, the Royal Australasian College of Physicians was requested to nominate an independent expert to evaluate the clinical management and care provided to Sebastian at Masada Private Hospital, effectively under the care of Dr Mel. The college identified Dr Simon Fraser, a Neonatal Paediatrician, as an appropriate person to provide such an evaluation for the purposes of a coronial inquiry, he was provided with the relevant documents, and duly provided a twelve page report dated 15 April 2007 which was provided to the parties well ahead of the commencement of the inquest.[63] I note that no other expert evidence was called, nor was any other expert witness proffered by any party.

48. On behalf of Masada Private Hospital, Ms Magee challenged Dr Fraser's suitability as a court appointed expert on the basis that he was not non-partisan and indifferent to the results of the coronial investigation.[64] Ms Magee asserted that Dr Fraser's evidence was problematical on three bases – his employment by NETS and the Mercy Hospital for Women; his involvement as part of a team of surveyors in an Australian Council on Healthcare Standards accreditation review of Masada, the outcome of which was a delay in accreditation; and, his involvement in medical administration since 2005, and limited direct clinical practice.[65] The third point goes to weight, at best, and will be discussed in paragraph 49 below, but to the extent that bias or perceived bias, are said to arise from the first two points, I do not agree. At inquest, and during lengthy cross-examination by experienced counsel, Dr Fraser testified in a dispassionate and measured way, with no suggestion of actual bias. As to apprehended or perceived bias, I find no basis to conclude that an independent observer, armed with all relevant knowledge of the circumstances, would be concerned about Dr Fraser's ability to

[63] Exhibit "I" was Dr Fraser's report which includes details of his formal qualifications and experience.

[64] Citing *Newark Pty Ltd v Civil and Civic Pty Ltd (1987) 75 ALR 350 at 351* as authority, in her submissions.

[65] Final submissions paragraphs 8-12.

provide a non-partisan and indifferent evaluation of clinical management and care under scrutiny.[66]

49. Ms Ellis questioned Dr Fraser's suitability as an independent expert to evaluate Dr Mel's clinical management on the basis of his limited clinical practice in 2005 (about 5%), his significant involvement in medical administration form 2004-2005, and the limitations of his practice largely to neonatology in a tertiary hospital setting. These criticisms also go to weight, at best. On my assessment of his evidence, Dr Fraser was mindful of differences between the setting in which he practiced, and that which pertained to Dr Mel's clinical management of Sebastian in a Level 2 nursery such as the SCN at Masada Private Hospital, and made concessions accordingly. The argument that his own clinical practice was limited from about 2004, takes an unduly myopic view of the currency and value of a professional witness's experience. I am satisfied that Dr Fraser's formal qualifications, work experience since 1982 and specialisation in neonatology, amply qualify him to provide the court with an independent expert evaluation of Sebastian's clinical management and care during the first twenty hours or so of life.

50. Dr Fraser's criticisms the clinical management and care of Sebastian, are inter-related to some extent, but can conveniently be dealt with under four headings, the first three addressed to Dr Mel and the fourth also potentially involving the nursing staff of Masada Private Hospital and Melbourne Pathology–

    (a) failure to investigate Sebastian's "pallor"

    (b) inadequate management of Sebastian's "hypoglycaemia"

    (c) clinical response to "first" or "cord" blood gas analysis, and

    (d) delay between collection of the arterial blood gas sample at 1315 and the results being available to Dr Mel at about 1900.

PALLOR

51. Apart from requesting blood gas analysis of a sample of cord blood taken at birth, Dr Fraser was critical that there was no further investigation of Sebastian's pallor, which was evident at birth, persisted, and was a significantly abnormal sign which warranted (a repeat blood gas analysis and) a full blood examination to exclude anaemia. While Dr Fraser conceded that it

[66] Transcript pages 140-151, 262-266.

is not unusual for a neonate to be pale immediately following delivery, due to vasoconstriction secondary to acidosis, in his experience pallor improves rapidly within half to one hour, provided the acidosis has resolved.[67] There was no request for haemoglobin levels or a full blood examination, which would have included haemoglobin levels.[68] If haemoglobin levels were found to be low, there should have been consideration of cause, including the possibility of a foetal-maternal haemorrhage, and further management including blood transfusion and referral to NETS. Although heart rate and respiratory rates were documented and were generally within range, blood pressure was a parameter of cardiac output/circulating volume of relevance to the investigation of pallor, which was never measured.[69]

HYPOGLYCAEMIA

52. Dr Fraser considered Dr Mel's initial orders to feed Sebastian early were reasonable. However, he was critical of the continuation of oral feeds following the low BSL of 1.3mmol/L at 0830, which did not really improve with BSL of 1.6mmol/L and 1.7mmol/L and "low" at 0900, 0930 and 1200 respectively, and led to a likely hypoglycaemic seizure at about 1245. Dr Fraser expressed the opinion that it would have been preferable to have insert an intravenous line and commence with a dextrose (glucose) bolus and constant infusion in response to the first low BSL documented, rather than to persevere with oral feeds. He maintained that this was an assessment based on good clinical practice and not hindsight.[70]

RESPONSE TO CORD BLOOD GAS RESULTS

53. A significant focus of the inquest, was on Dr Mel's response to the "first" or cord blood gas results. As discussed above, he maintained that the cord blood gas results reflected the condition of the foetus in utero and not the baby after birth, that a pH or 7.02 was not concerning in light of Sebastian's clinical presentation at the time, presumably meaning at the time the results were communicated to him and for some time thereafter. Dr Fraser maintained that a pH of 7.02 was significantly low by any published or accepted standards,

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[67] Exhibit "I" at page 7. At inquest, Dr Fraser's evidence was that an Apgar score of 7 in and of itself would raise concerns that the baby may be acidotic. Transcript page 159.

[68] Exhibit "D" - the only documented (but not requested) haemoglobin level was an estimate provided with the second blood gas results. There was no request for a full blood examination in the Masada medical records – Exhibit "D".

[69] Transcript pages 164 and following, esp 165, 169 and 295. The nurse evidence was that it was not routine to take blood pressure in the SCN, that they would have done so if Dr Mel had ordered BP monitoring, but that the most convenient tool for taking foetal blood pressures was not available in the SCN at that time. This deficiency has since been remedied – see paragraph 64 below.

[70] Transcript page 170-1, 296-7.

even in respect of cord blood, which he accepted had a slightly lower normal range than arterial blood. [71] He noted that although it is not unusual for a newborn baby's acid base status to rapidly return to normal following delivery, provided cardio-respiratory function and circulating blood volume is normal, accepted practice requires a repeat blood gas in say one half to one hour following delivery, to ensure that this was so. If the second blood gas results were normal, that is pH >7.20, then conservative management would be acceptable. If not normal, then a NETS referral and transfer to a Level 3 nursery would have been prudent.[72]

THE SECOND BLOOD GAS RESULTS

54. As discussed above, it is clear that Dr Mel took arterial blood for blood gas analysis at about 1315, not by way of follow-up of the results communicated to him at 0250, but as part of a series of investigations of Sebastian's clinical deterioration. He documented his treatment plan,[73] including the request for arterial blood gases in the Progress Notes. However, the evidence before me supports a finding that despite this notation, RN Di Dio and RN Valentine who were caring for Sebastian at the relevant times, were unaware that blood gas results were pending.[74] It follows that they either did not see Dr Mel's notation, that the verbal handover from the treatment room nurse to RN Di Didio was deficient in this regard, that they expected to be alerted to any abnormal results by Melbourne Pathology staff in the event of abnormal results, or that some combination of these deficiencies was in play. I note that Dr Mel also gave evidence of such an expectation. [75]

55. There were two other unexplained occurrences within Masada which pertain to the second blood gas results. The first is the inordinate delay in contacting Melbourne Pathology to collect the second blood gas sample, of the order of 49 minutes, compared with ten minutes at the outside which RN Leber said was the usual time frame.[76] The practice during normal business hours, was for the doctor or nurse taking the sample to contact the in-house

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[71] Transcript 167 and following, 278 and following esp 280. See also Dr Ken Sikaris' evidence at page 389-390 a where he gives a Chemical Pathologist's "gloss" on the blood gas results due to logistical constraints but agrees that they were still abnormal results.

[72] Exhibit "I" pages 7-8. Transcript pages 166 and following, 292 and following.

[73] Exhibit "D" at 1400 in the Progress Notes "Hypoglycaemia secondary to vomiting and RDS [?] ... ABG/B.cult [ticked] Repeat d'stix at 1600 (Report if <3mmol/L). The analogous entry in the Observations Chart @ 1340 is a little ambiguous. "Bloods" has been crossed out and "Blood cultures" ticked.

[74] Transcript pages 44, 64, 71, 93-94, 97-98. See also Ms Carter's evidence at transcript 428-429.

[75] Transcript 64-66, 77, 98-99, 200-201, 298, 347, 424.

[76] Transcript page 346 and following for the procedures for collection of pathology samples in general.

pathology nurse who would then collect the sample and contact a courier to collect it and take it to one of two off-site facilities. There was no witness identified at inquest who could explain this delay, or indeed who could identify the person making the call.

56. The second, perhaps more concerning delay, is the delay between Melbourne Pathology faxing the results to Masada, and the results finding their way to the treating team/Sebastian's medical record. This was a delay of the order of two and a half hours, and it remains unexplained. RN Leber testified that either the ward receptionist or the nurse caring for the babe could collect the faxed results from the fax machine located outside the SCN. However, she did not expect that the receptionist would simply file the results without bringing them to the attention of a member of the treating team.

57. Although Masada Private Hospital and Melbourne Pathology had no formal service agreement between them at the relevant time, there were arrangements in place for doctors who chose to use Melbourne Pathology.[77] Dr Kenneth Sikaris, Executive Director of Quality, Head of Chemical Pathology, Melbourne Pathology, gave evidence about the collection of pathology specimens from Masada, their processing at Melbourne Pathology sites, and the communication of results. He also assisted at the inquest by attempting to interpret all available records to explain what happened to the second blood gas sample. Whether in response to the first call (at 1349) or the second call (at 1424), or whether by a routine or urgent courier, I am satisfied that the sample arrived in the laboratory within one hour of the earliest request.[78] After arrival all samples are "triaged" in order to sort urgent samples like blood gases from routine samples. Urgent samples are placed in red bags to identify them as such, and are given priority through "specimen reception". According to the records of Melbourne Pathology, the second blood gas sample was processed through specimen reception at 1520, and thereafter progressed through analysing and date entry processes until 1618 when the results were faxed to Masada Private Hospital. According to Melbourne pathology records, the fax was received at 1621.[79]

58. In addition to faxing the results, Melbourne Pathology staff made several attempts to contact the ward at Masada[80] to alert nursing staff to the fact that the blood gas results were abnormal.

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[77] See Ms Carter's evidence at transcript page

[78] Transcript page 371.

[79] Transcript pages 368-370 and Appendix 7 to Dr Sikaris' statement Exhibit "S".

[80] Transcript pages 373-374.

The practice was to attempt to contact the relevant clinical unit in the case of an admitted patient, and not necessarily the doctor who requested the pathology service, in the expectation that clinical unit would ensure a response to the results. In the absence of a formal service agreement, Dr Sikaris maintained that this contact was by way of a courtesy call.[81]

CONCLUSIONS

59. Having considered the totality of the evidence before me, in light of the relevant standard of proof and the authorities cited above,[82] I find that Dr Mel's clinical management and care was inadequate, in that he failed to investigate Sebastian's pallor, failed to adequately manage hypoglycaemia, and responded inadequately to the first/cord blood gas results.

60. It follows that I am satisfied that the deficiencies in his clinical management and care were causally connected to Sebastian's death. Whilst the ischaemic/anoxic insult evident at autopsy could not be quantified and may have led to Sebastian's death regardless of clinical management and care, the evidence before me supports a finding that deficiencies in clinical management and care probably compounded the in utero insult, and contributed to death.[83]

61. Even with optimal clinical management and care, some patients will die. It is also trite that there is a place for conservative management, and situations where minimal, non-invasive therapies are appropriate. However, Sebastian was not such a patient. He was a premature baby born after a large ante-partum haemorrhage suffered by his mother (the source of which was not ascertained) and abnormal CTG traces indicating foetal distress/hypoxia and, potentially, a hypoxic insult. Although perhaps in better condition at birth than might have been expected by the clinicians present, his Apgar score of 7 at five minutes warranted admission to the Special Care Nursery for observation, investigation and treatment, as occurred. However, his pallor, flaccidity and hypothermia as documented by nursing staff, and the cord blood gas results available at 0250 were concerning clinical signs which were there to be seen. They were neither subtle, nor dependant on hindsight for appreciation of their significance.

62. Whilst I accept that Dr Mel may have been heartened in his approach by universal good outcomes in his practise before Sebastian's death, his assessment of Sebastian was unduly optimistic. The considerations which led me to question his assessment and clinical approach

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[81] Transcript page 398 and following.

[82] See paragraph 27 and footnote 38 above.

[83] Evidence of Dr Fraser esp at transcript pages 171-173, 309 and following.

at inquest,[84] have been reinforced by a re-consideration of the totality of the evidence before me, in order to write this finding. His clinical management and care might have been adequate for many patients, but in Sebastian's case, more was required than a wait and see approach which, effectively, amounted to allowing the babe to exhaust his reserves and show gross signs of clinical deterioration before providing him with appropriate clinical management and care, but all too late.

63. The delay which occurred at Masada Private Hospital between receipt by fax of the second blood gas results at 1621, and their availability to the treating team until about 1900 when Dr Mel first became aware of them, speaks to a systems failure. To the extent that this delay of some two and a half hours, compromised Sebastian's clinical management and care, adverse comment is appropriate.

64. It is also appropriate to recognise the internal review/root cause analysis conducted by Masada Private Hospital and the significant remedial action taken which should minimise the risk of such a delay occurring again. At inquest, I was advised of a number of subsequent improvements at Masada,[85] including relevantly, further education around the availability of NETS and development of a NETS Transfer Pack,[86] purchase of a cardiac monitor with capacity for four limb blood pressure measurement and additional functions,[87] installation of a new dedicated fax line in the SCN for receipt of pathology results, and the purchase of an iStat machine enabling blood gas results to be obtained within 15 minutes.[88]

65. I do not consider that any adverse comment against Melbourne Pathology is warranted in all the circumstances. I do note, however, that experience in this jurisdiction suggests, that since these events, the practice of taking additional steps to ensure that clinicians are aware of aberrant pathology results has firmed into a more general, arguably universal practice. This is an additional safety net which I endorse as carrying the potential for improved patient safety.

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[84] Transcript at pages 232 and following.

[85] Exhibit "M" Root Cause Analysis Template.

[86] Exhibit "O".

[87] Transcript pages 243-244.

[88] Transcript page 256.

I direct that a copy of this finding be provided to the following:

Sebastian's parents Ms Julie Shields and Mr Justin Hewitt

Dr David Friedin

Dr Joe Mel

Masada Hospital

Melbourne Pathology

Mercy Hospital for Women

Dr Simon Fraser

Signature:

PARESA ANTONIADIS SPANOS
CORONER
Date: **22 June 2012**