QUEENSLAND COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Preston Paudel**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Toowoomba and Brisbane
FILE NO(s):	2009/2437
DELIVERED ON:	25 October 2012
DELIVERED AT:	Brisbane
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FINDINGS OF:	John Lock, Brisbane Coroner
CATCHWORDS:	Coroners: Inquest, Childbirth, CTG Tracing Interpretation, whether Caesarean section should have been escalated

REPRESENTATION:

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Meena Paudel:	Ms J Crawford i/b South Queensland Law
Toowoomba Base Hospital:	Mr C Fitzpatrick i/b Corrs Chambers Westgarth
Dr Graubard:	Ms D Callaghan i/b Cooper Grace & Ward
Dr Jabbour:	Ms P Feeney i/b Moray & Agnew
EN White:	Mr G Rebetzke i/b Roberts & Kane

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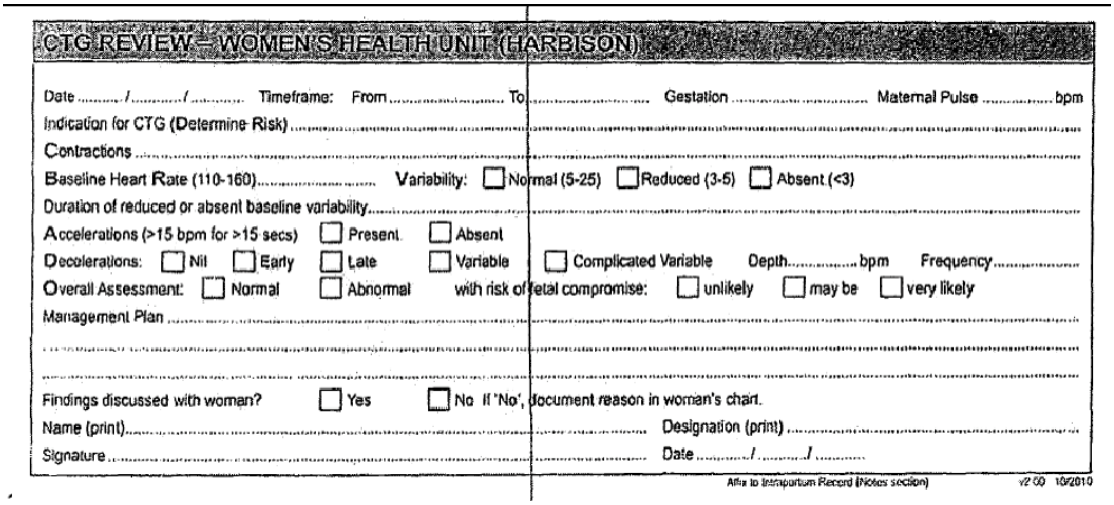
Glossary of Terms

Cardiotocography (CTG Tracing)

CTG tracing is a device which is attached to the mother as a screening tool for the purpose of intrapartum fetal monitoring. It records the fetal heartbeat and uterine contractions. CTG tracing is an important tool to assist in clinical decision making about fetal condition. The purpose of such monitoring is to prevent fetal morbidity due to reduced oxygen levels to the fetus (hypoxia). It is not required for low risk pregnancies.

There are five elements, which need to be assessed in the course of interpreting CTG tracing including the baseline, accelerations, variability, decelerations and the duration and frequency of contractions.

CTG Sticker now adopted by Toowoomba Hospital



CTG REVIEW – WOMEN'S HEALTH UNIT (HARBISON)

Date ...../...../..... Timeframe: From ..... To ..... Gestation ..... Maternal Pulse ..... bpm

Indication for CTG (Determine Risk) .....

Contractions .....

Baseline Heart Rate (110-160) ..... Variability: ☐ Normal (5-25) ☐ Reduced (3-5) ☐ Absent (<3)

Duration of reduced or absent baseline variability .....

Accelerations (>15 bpm for >15 secs) ☐ Present ☐ Absent

Decelerations: ☐ Nil ☐ Early ☐ Late ☐ Variable ☐ Complicated Variable Depth ..... bpm Frequency .....

Overall Assessment: ☐ Normal ☐ Abnormal with risk of fetal compromise: ☐ unlikely ☐ may be ☐ very likely

Management Plan .....

Findings discussed with woman? ☐ Yes ☐ No If 'No', document reason in woman's chart.

Name (print) ..... Designation (print) .....

Signature ..... Date ...../...../.....

Affix to Intrapartum Record (Notes section) v2.00 10/2010

This sticker is attached to the CTG trace at the time of each review.

RANZCOG Guidelines for Fetal Monitoring and Cardiotocography (CTG Tracing)

This section has been reproduced from the comprehensive submissions of Counsel Assisting, Ms Martens.

The RANZCOG guideline notes as a good practice for women receiving continuous electronic fetal monitoring, that the CTG should be reviewed at least every 15 – 30 minutes. It should be regularly recorded, either by written or electronic entry in the medical record also that the CTG has been reviewed.

Definitions in relation to fetal monitoring of the fetal heart rate ("FHR") are contained in Appendix E of the Royal and New Zealand College of Obstetrics and Gynaecology (RANZCOG) guidelines[1]. They are as follows:

[1] Exhibit E1

Term	Definition
Baseline fetal heart rate: Normal Baseline Bradycardia: Tachycardia:	The mean level of the FHR when this is stable, excluding accelerations and decelerations. it is determined over a time period of 5 or 10 minutes and expressed in bpm. Preterm fetuses tend to have values towards the upper end of this range. A trend to a progressive rise in the baseline is important as well as the absolute values. 1.FHR 110 160 bpm 2.<110 bpm 3.>160 bpm
Baseline variability : Normal baseline variability: Reduced baseline variability: Absent baseline variability Increased baseline variability **Sinusoidal:**	The minor fluctuations in the baseline FHR. It is assessed by estimating the difference in beats per minute between the highest peak and lowest trough of fluctuation in one minute segments of the trace. 25. 5 – 25 bpm between contractions 26. 3 – 5 bpm 27. < 3 bpm 28. > 25 bpm A regular oscillation of the baseline FHR resembling a sine wave. This smooth, undulating pattern is persistent, has a relatively fixed period of 2 -5 cycles per minute and an amplitude of 5 -15 bpm above and below the baseline. Baseline variability is absent and there are no accelerations.
Accelerations:	Transient increases in FHR of 15 bpm or more above the baseline and lasting 15 seconds. Accelerations in the preterm fetus may be of lesser amplitude and shorter duration. The significance of no accelerations on an otherwise normal CTG is unclear.

Decelerations:	Transient episodes of decrease of FHR below the baseline of more than 15 bpm lasting at least 15 seconds, conforming to one of the patterns below:
Early decelerations:	Uniform, repetitive decrease of FHR with slow onset early in the contraction and slow return to baseline by the end of the contraction.
Variable decelerations:	Repetitive or intermittent decreasing of FHR with rapid onset and recovery. Time relationships with contraction cycle may be variable but most commonly occur simultaneously with contractions.
Complicated variable decelerations:	The following additional features increase the likelihood of fetal hypoxia: 1. Rising baseline rate or fetal tachycardia. 2. Reducing baseline variability. 3. Slow return to baseline FHR after the end of the contraction. 4. Large amplitude (by 60bpm or to 60 bpm) and/or long duration (60 secs). 5. Loss of pre and post deceleration shouldering (abrupt brief increases in FHR baseline). 6. Presence of post deceleration smooth overshoots (temporary increase in FHR above baseline).
Prolonged decelerations:	Decrease of FHR below the baseline of more than 15 bpm for longer than 90 seconds but less than 5 minutes.
Late decelerations:	Uniform, repetitive decreasing of FHR with, usually, slow onset mid to end of the contraction and nadir more than 20 seconds after the peak of the contraction and ending after the contraction. In the presence of a non-accelerative trace with baseline variability <5, the definition would include decelerations <15 bpm

The RANZCOG guideline contains the following good practice note for assessing CTG's:

The normal CTG is associated with a low probability of fetal compromise and has the following features:

1. Baseline rate 110 – 160
2. Baseline variability of 5 – 25 bpm
3. Accelerations 15bpm for 15 seconds
4. No decelerations

All other CTG's are by this definition abnormal and require further evaluation taking into account the full clinical picture

The following features are unlikely to be associated with significant fetal compromise when occurring in isolation:

1. Baseline rate 100 – 109
2. Absence of accelerations
3. Early decelerations
4. Variable decelerations without complicating features

The following features may be associated with significant fetal compromise and require further action, **such as described in Guideline 10:**

1. Fetal tachycardia.
2. Reduced baseline variability.
3. Complicated variable decelerations.
4. Late decelerations
5. Prolonged decelerations

The following features are very likely to be associated with significant fetal compromise and require immediate management , **which may include urgent delivery:**

41. Prolonged bradycardia (<100 bpm for > 5 minutes)
42. Absent baseline variability
43. Sinusoidal pattern
44. Complicated variable decelerations with reduced baseline variability

See Appendix E for definitions

A deceleration is not automatically a cause for alarm and it happens particularly in labour when the baby is being squeezed by the uterus.

The RANZCOG guideline number 11 notes that in clinical situations where the FHR is considered abnormal, immediate management includes: identification of any reversible cause of the abnormality and initiation of appropriate action (eg., correction of maternal hypotension, cessation of oxytocin) and initiation or maintenance of continuous electronic fetal monitoring. Consideration of further fetal evaluation or delivery should occur if a significant abnormality persists.

The RANZCOG guideline also recommends using fetal blood sampling ("FBS") to reduce the rates of increased intervention associated with electronic fetal monitoring.

Fetal Blood Sampling

Fetal Blood Sampling is a procedure used during labour to confirm whether fetal oxygenation is sufficient. It is performed by creating a shallow cut to the scalp and taking a blood sample. Two constituents that are commonly tested by this procedure are pH and lactate. A low pH and high level of lactate indicate there is acidosis, which is associated with hypoxia. The testing is relatively easy to perform but there must be access to the baby's scalp.

Meconium Liquor

When meconium (the earliest stools of an infant) is expelled into the amniotic fluid the fluid becomes stained. The presence of meconium liquor is recognised by medical staff as a sign of potential fetal distress.

Syntocinon

Syntocinon is a synthetic form of oxytocin, a natural hormone released in large amounts during labor, facilitating birth. The synthetic version is used for labour induction or augmentation.

CORONER'S FINDINGS AND DECISION

Issues for the Inquest

Preston Paudel was born in a flat and severely compromised condition after a vaginal delivery on 11 October 2009 at the Toowoomba Base Hospital. He was resuscitated after 20 minutes and later transferred to the Mater Children's Hospital in Brisbane where he died two days later on 13 October 2009.

There was considerable uncertainty concerning the circumstances leading up to Preston's death, and particularly whether there were earlier clinical signs of compromise to Preston which should have alerted medical and midwifery staff to undertake further reviews and to escalate the birth. Accordingly, I decided to hold an inquest into his death. The issues identified at the pre-inquest conference to be explored at the inquest were:

- The findings required by section 45(2) of the *Coroners Act 2003*, namely the identity of the deceased, when, where and how he died and what caused his death.

- The adequacy of the care provided to Preston's mother Ms Paudel, and to Preston, by the staff at Toowoomba Base Hospital during labour, including the interpretation of the Ms Paudel's CTG tracing.

- Whether there were any indications during Ms Paudel's labour that a caesarean section or escalation of the birth should have been performed.

These findings seek to explain how the death occurred and consider whether any changes to policies or practices could reduce the likelihood of deaths occurring in similar circumstances in the future.

The scope of the Coroner's inquiry and findings

An inquest is not a trial between opposing parties but an inquiry into the death. The scope of an inquest goes beyond merely establishing the medical cause of death.

The focus is on discovering what happened, not on ascribing guilt, attributing blame or apportioning liability. The purpose is to inform the family and the public of how the death occurred with a view to reducing the likelihood of similar deaths.

As a result, a coroner can make preventive recommendations concerning public health or safety, the administration of justice or ways to prevent deaths from happening in similar circumstances in future. However, a coroner must not include in the findings or any comments or recommendations, statements that a person is or maybe guilty of an offence or is or maybe civilly liable for something.

The Admissibility of Evidence and the Standard of Proof

Proceedings in a coroner's court are not bound by the rules of evidence but that does not mean that any and every piece of information however unreliable will be admitted into evidence and acted upon. However, it does give a coroner greater scope to receive information that may not be admissible in other proceedings and to have regard to its origin or source when determining what weight should be given to the information.

A coroner should apply the civil standard of proof, namely the balance of probabilities. However the more significant the issue to be determined, the more serious an allegation or the more inherently unlikely an occurrence, then the clearer and more persuasive the evidence needs to be for a coroner to be sufficiently satisfied it has been proven to the civil standard.

The Evidence

Introduction

Ms Paudel, Preston's mother, was at the time of the birth a 28 year old Nepalese student who has been in Australia since 2007. Preston's biological father was in Nepal and was not present for the majority of Ms Paudel's pregnancy or at all during Preston's birth. Ms Paudel had a number of support persons present during labour.

Ms Paudel received antenatal care from her general practitioner, Dr Chapman and the Toowoomba Base Hospital (the Hospital).

Ms Paudel attended numerous antenatal appointments at the Hospital and it was generally agreed by all the medical practitioners that Ms Paudel's antenatal history was unremarkable and the management of her pregnancy, was appropriate and normal. Her routine blood tests were normal, she had a negative screen for gestational diabetes, and an ultrasound of Preston at 21 weeks indicated his gestation was normal.

At approximately 8.45am on 10 October 2009 labour commenced when Ms Paudel discovered she was leaking fluid. Ms Paudel was at this stage at 37 weeks 4 days gestation. She went to the Hospital and remained there for the duration of her labour.

Preston was born at 12.50pm on 11 October 2009. His Apgar scores at birth were one at one minute, one at five minutes, and one at 10 minutes. Resuscitation was commenced by nursing and then medical staff.

Despite the resuscitation efforts of the staff, Preston began to suffer seizures and he was placed on ventilatory support. The management of the resuscitation was reviewed by Dr Griffin of the Clinical Forensic Medicine Unit and he had no concerns with respect to the resuscitation management and this is not considered an issue for the inquest.

Preston was transferred to the Mater Children's Hospital for further management.

Preston remained on ventilatory support for two days at the Mater. His condition did not improve and no brain activity was detected. Clinically, Preston was comatose, unresponsive and hypotonic with fixed and dilated pupils with crossed deep tendon reflexes. A decision was appropriately made to withdraw life support and Preston passed away at 2.30pm on 13 October 2009.

The Investigation

Preston's death was reported to the Office of the State Coroner and an investigation commenced. An autopsy was conducted. Requests were made for statements from relevant staff (22 in total) involved in Ms Paudel's care as well as production of the medical records and relevant Hospital policies and procedures.

Material was received from Ms Paudel and her representatives.

Dr Griffin of the Clinical Forensic Medicine Unit gave an opinion on the adequacy of the resuscitation efforts immediately after birth.

Dr Gardner, a specialist in Foetal Maternal Medicine at the Mater Mothers' Hospital provided a report to the Hospital concerning the CTG as well as the Root Cause Analysis. This report assisted in narrowing the issues for further investigation at the inquest.

The Office of the State Coroner requested an expert report from Dr Lingard, and Professor Weaver provided a report to the legal representatives for Dr Graubard.

Autopsy findings

A full internal autopsy was ordered and was performed on 15 October 2009 by Dr Janelle Davies, with a neuropathology examination performed by Dr Kathryn Urankar.

The autopsy report noted there was no evidence to suggest Preston suffered from a congenital condition that caused or contributed to his death. Dr Davies noted there was an incomplete rotation of Preston's gastrointestinal tract, with the appendix and caecum located between the right upper quadrant and the midline in the upper abdomen. This is not unusual and did not cause his death.

The placental examination showed focal infarction and previous intraparenchymal haemorrhage which Dr Davies considered were in keeping with changes typically seen in a term gestation but not thought to be pathologically significant.

Established deposition of meconium with macrophages in the placental membranes was observed. Dr Davies was of the opinion this was in keeping with the expected findings following the clinical scenario of 'meconium liquor'. Dr Davies did not observe any inflammatory changes to indicate the

development of a secondary infection due to meconium. Dr Davies was of the view the presence of meconium with macrophages suggests meconium had been present in the amniotic fluid for at least three hours.

Dr Davies also noted the placenta showed non-specific changes with no vascular abnormality to account for reduced blood flow to the infant in utero.

Dr Davies indicated toxicological testing on a sample of blood taken at the time of post mortem revealed the presence of medications used during the birth and on resuscitation, at levels consistent with therapy. Dr Davies was of the opinion these medications would not have contributed to Preston's death.

Dr Davies was of the opinion there was no evidence that infection, morphological abnormality, metabolic disorder or narcotic toxicity contributed to the cause of Preston's death.

The neuropathology report prepared by Dr Urankar concluded as the diagnosis:

Global ischaemic encephalopathy;
Choroid plexus haemorrhage;
Minor subarachnoid haemorrhage (possibly birth related).

Dr Davies noted the brain showed focal subarachnoid haemorrhage and minor swelling and when examined by Dr Urankar was noted to demonstrate changes of an ischaemic encephalopathy – that is, widespread damage to the neurons of the brain due to reduced blood supply and/or oxygenation of the blood.

Dr Davies was of the opinion the cause of Preston's death was global hypoxic-ischaemic encephalopathy. Dr Davies listed as other diseases or conditions in Preston: incomplete rotation of the gastrointestinal tract, and small for gestational age. In relation to the latter she stated Preston was only slightly smaller but such babies can be more vulnerable to stress in labour or delivery.

Dr Davies stated in her report that the neuropathology suggests the hypoxia occurred acutely and is likely to have occurred at or within four hours prior to Preston's delivery. In her evidence Dr Davies stated she wished to amend that part of her report by stating the reference to four hours should be removed and left more open. Dr Davies indicated that once irreversible injury occurred, recovery is not possible even with maximum resuscitation, as was provided in this case.

Dr Davies and Dr Urankar were not able to determine the cause of Preston's hypoxic-ischaemic brain injury but opined it was likely to have occurred during labour and typically during second stage and prior to delivery. Dr Urankar stated such acute changes occur usually in adults over a six to eight hour period and with children a little earlier at say four hours. Although this cannot be stated accurately she opined the acute changes did not occur within a one

hour or half hour period. Given the compromised clinical picture at delivery it was unlikely the damage occurred post delivery and the damage occurred in utero. The pattern of injury was such that it had not occurred at some earlier stage in gestation.

Communication difficulties and adverse outcomes in health care and management

I identified recently in my decision in the Inquest into the death of Mia Davies[2] that common with my experiences in many health care related deaths, a number of factors contributed to Preston's death, and not just one individual or one critical decision was responsible.

Negative features often associated with adverse outcomes in health care include communication problems between clinicians and/or the failure to convey accurate information at handovers, on the ward or in the medical records.

It is understood there is clearly a place for junior staff to rely on the opinions of more senior and experienced staff. What is evident is that adverse outcomes sometimes occur when there is evidence of a failure to communicate, to communicate accurately and fully, or to speak up and question. Sometimes personality tensions are evident but often issues are evident of culture and power within the various medical and nursing professions, or in the organisation itself. Historically there have been some tensions in the relationship between midwives and doctors. It is evident those tensions still exist. A reference to 'Graded Assertiveness' in subsequent internal reviews is often the alert that there may have been such issues present in a particular case.

Such features of communication difficulties were evident in this case. They contributed to the clinical decisions that were made and resulted in a failure to adequately manage the labour, which resulted in Preston's death. This inquest examined how this occurred and what can be done to help prevent it happening in the future.

The evidence supports a clear finding that Preston's birth was managed in a fashion that was clinically unacceptable at many levels and this resulted directly in his death. There were a number of opportunities missed where other decisions could and should have been made, which would likely have resulted in Preston's birth being escalated much earlier, and Preston being delivered in a healthy and viable condition.

To the credit of Toowoomba Hospital it conducted and published a Root Cause Analysis (RCA) within six months, which recognised a number of root causes and made recommendations in an endeavour to prevent this happening again. The RCA will be addressed later in this finding.

[2] Inquest into the death of Mia Davies, Office of State Coroner website, delivered 28/9/2012

As will become evident, many of the personnel involved in this very sad case have also recognised where their part in the events contributed to the outcome and the lessons they have learnt. Dr Jabbour accepts there were a number of missed opportunities and he should have been much more involved.

Registered Midwife (RM) Schmid was distressed about her role in the outcome and has taken a number of steps to rectify her knowledge and training.

The same cannot be said for the Consultant, Dr Graubard whose evidence was replete with self serving statements of aggrandisement and broad generalised attacks on the competency of nursing and medical staff attached to the Obstetrics & Gynaecology (O & G) Department at the Hospital. He was reluctant to accept responsibility as the consultant for his part in what occurred, even in the face of overwhelming evidence, which he should have conceded was problematic for him. He reprehensively sought to direct much of the blame to others.

There were a number of areas where there is conflict in Dr Graubard's evidence with others, which needed to be reconciled and these will be dealt with in the course of this decision.

The Events of 10/11 October 2009

Ms Martens prepared a detailed chronology to assist the Court and the legal representatives who were granted leave to appear. This accurately sets out in full the different versions of events of the witnesses as contained in their statements about the events that occurred on 10 and 11 October 2009. This chronology and her detailed written submissions accurately sets out the evidence.

I have also benefited from the written submissions of the other legal representatives. Although they naturally took some issue with some of the conclusions of Ms Martens, the factual issues she detailed were not disputed. It is not intended to repeat all that is contained in those documents and I will only deal with the facts sufficiently to provide some context to my findings and to deal with those areas where there may be some contention.

Events of 10 October 2009

Ms Paudel was admitted to the maternity general ward on 10 October 2009 after she presented believing her waters had broken.

At 1400, Ms Paudel's pad was observed to be heavily soaked with light meconium liquor. Intrapartum Cardiotocography (CTG tracing) was commenced and arrangements were made for Ms Paudel to be transferred to the birthing suites.

These were appropriate decisions made in a timely manner.

At 1700, Dr Jabbour reviewed Ms Paudel and the option of augmented labour with syntocinon was discussed, to which Ms Paudel agreed. Dr Jabbour stated that as a 'first year Registrar' (a phrase he repeated throughout his evidence) he would have referred a decision to augment labour to the Consultant.

Dr Jabbour says he telephoned and advised Dr Graubard, the treating Consultant and Acting Director of Obstetrics and Gynaecology before he commenced syntocinon.

Dr Graubard denies this call was made. Dr Graubard stated he would have expected to have been informed as he would not usually allow an induction late in the afternoon unless required. Dr Graubard also said he had not been informed of Ms Paudel's admission to the ward.

Dr Graubard had much to say about Dr Jabbour having 'major deficiencies' concerning communication and conflicts with midwives, registrars and consultants. As the evidence supports, Dr Jabbour did have such conflicts, it is significant there is no suggestion Dr Graubard questioned this particular communication failure to report to him, with Dr Jabbour at the time, or subsequently when the outcome was known.

I accept Dr Jabbour made this telephone call and provided the information he stated.

In any event, syntocinon was commenced at 1730 and Ms Paudel had constant CTG monitoring.

Dr Jabbour next reviewed Ms Paudel at 1945 because her blood pressure had increased and he arranged for a number of tests to be conducted to exclude a possibility that Ms Paudel was pre-eclamptic. The CTG was noted to be reactive.

At 2100, Registered Midwife (RM) Fry who was caring for Ms Paudel on this shift, requested Dr Jabbour review the CTG trace.

The review took place at 2130 with both Dr Jabbour and Dr Graubard present. By this time Ms Paudel had been receiving syntocinon for four hours with little progress and no dilation of the cervix. This was not an unusual or surprising development in a first delivery and was not in itself a cause for concern, given that all agree the CTG at 2130 was in fact reassuring.

Dr Jabbour performed a vaginal examination which was difficult to conduct because Ms Paudel's pelvic muscles were extremely tense. The plan was to continue with syntocinon and to review her during the night as to progress.

At 2200, Dr Jabbour handed over care of Ms Paudel to Dr Safa. The handover information provided appears to be relatively uncontroversial.

Up to this stage there are no concerns with respect to the decisions being made.

Sometime around 2300 there was a handover from RM Fry to those on the incoming shift, RM White and RM Mead. RM Fry gave the general history of events but also advised she had some reservations about the CTG trace but that on an earlier ward round with Dr Jabbour and Dr Graubard, they both considered the trace to be normal.

There is some confusion as to whether there was any discussion regarding conducting a caesarean after 0200 if there was little or no progress.

Dr Jabbour does not believe he mentioned a caesarean. RM Fry does not recall saying this either.

RM Mead believed at the handover with RM Fry there was mention of the possibility a caesarean may be performed. Certainly the prospect of a caesarean after 0200 was the recollection of Ms Paudel and her support persons Ms Kaur and Ms Madigan.

RM Mead must have thought a caesarean after 0200 was a reasonable plan because she arranged for the paperwork to be completed and removed nail polish from Ms Paudel.

Given this evidence I have no difficulty in finding there had been some discussion amongst the hospital staff about a caesarean section after 0200 if there was no progress.

This is relevant because the independent experts Drs Weaver and Lingard, both agreed they would have performed a caesarean section at 0200, given both the length of time Ms Paudel had been on syntocinon with little progress, but also given the CTG trace had become less reassuring.

The problem was that no medical review was performed at 0200 or shortly after. This may have been one of the opportunities missed where an alternative management plan could have been considered.

Events of 11 October

At 0215, RM Mead performed a vaginal examination to assess progress but experienced a similar difficulty to Dr Jabbour. She also noted Ms Paudel had a prominent arch, which may have contributed to the slow progress.

Following the examination, RM Mead reported her findings to Dr Safa. RM Mead says she said ‘so are we going for a caesarean for Meena?’ She states Dr Safa replied with words to the effect ‘No. Not at this stage. Just continue and we’ll assess Meena in three to four hours’.

Dr Safa recalls the substance of the information provided by RM Mead but did not recall a discussion about a caesarean at this time. Her decision was to review at 0600.

Given RM Mead had gone to the extent of preparing the paperwork in the context of the earlier conversations about a caesarean, I find it probable RM Mead said something about a caesarean to Dr Safa.

The importance of this is that the mention of a caesarean should have encouraged Dr Safa to in fact conduct a physical review of Ms Paudel including the CTG Trace.

I accept no information was given to Dr Safa at that time which expressed any concern specifically about the CTG trace. RM Mead said in evidence the CTG trace was reasonably complex but that overall it was reassuring to around 0400. She thought, as things were at 0200, it was not unreasonable for Dr Safa to decide to give her a few more hours.

In retrospect RM Mead believed the CTG trace was in some parts reassuring but in now looking at it, it is difficult to say whether this was the case.

By 0415 RM Mead was sufficiently concerned to ask EM White to review the CTG trace. As a result EM White said the trace should be reviewed by Dr Safa. Neither of them felt at this stage the CTG was reassuring, although it was difficult to interpret. Syntocinon was reduced and Dr Safa was asked to review.

Dr Safa says she reviewed Ms Paudel at 0500. Dr Safa says in her statement (unfortunately she did not make an entry in the medical notes regarding this review) she checked the entire CTG trace from the start. She believed the trace at about 0450 appeared to be suspicious.

Dr Safa's view was that a fetal scalp blood test (FBS) should be performed to check on the condition of the baby.

RM Mead noted in the medical records that at 0500 Dr Safa reviewed the CTG trace and was 'happy with same'. Although it is now apparent, perhaps in hindsight, that Dr Safa was not 'happy with the same', I accept if Dr Safa in fact had suspicions about the CTG trace they were not communicated to RM Mead and should have been. RM Mead stated at this stage Dr Safa had not communicated any specific plan other than to return at 0600 for a vaginal examination.

RM Mead decided to turn the syntocinon down as Ms Paudel appeared to be distressed and was tired. At 0600 RM Mead thought there would be a complete change of management. She does not recall stating her point of view to Dr Safa. RM Mead considered Dr Safa was a senior doctor who would not be concerned about what she thought.

It was another missed opportunity to consider a change to the plan due to limited communication between the midwife and registrar.

Dr Safa performed a vaginal examination around 0550 as planned. Accepting Ms Paudel needed to go to the toilet at this time, it is still a little unclear why Dr Safa waited almost an hour to perform the vaginal examination given her alleged concerns about the suspicious CTG trace and her view that FBS was indicated. Dr Weaver was of the view that a 50 min delay between the overview of the CTG and the vaginal examination was a bit long and it should have been expedited.

It was a difficult examination as had been the previous examinations. Ms Paudel was now three - four centimetres dilated with bulging forewaters. Dr Safa performed an artificial rupture of membranes which was meconium stained.

Dr Safa says she mentioned to Ms Paudel that she was starting to lean towards recommending the baby be delivered by a caesarean. This was due to the 12 hours of syntocinon, meconium liquor and the portions of the CTG trace that appeared suspicious. Dr Safa's expectation was that a caesarean would be performed and if not it was important the well-being of the baby be first established by undertaking a FBS. To do this an epidural needed to be put in place and Ms Paudel now accepted the recommendation for an epidural, having earlier refused one for pain relief.

RM Mead does not recall anything being said about the CTG being suspicious or a caesarean being suggested at this review. If those discussions took place between Dr Safa and Ms Paudel, RM Mead says she may have been doing other things. She does recall Dr Safa noting that an epidural would be placed and for the syntocinon to be turned off and they may be doing FBS.

Dr Safa then had a telephone discussion with Dr Graubard, which she noted in the medical chart took place at 0615.

Dr Safa says she outlined to Dr Graubard Ms Paudel's history, including that there was a show of meconium and 12 hours of syntocinon with little progress.

Dr Safa stated she had identified some parts of Ms Paudel's CTG which were suspicious. She also made reference to wanting to perform FBS and says she discussed the prospect of a caesarean with Dr Graubard, although she cannot recall the exact words she used. She stated she would not have mentioned the need for FBS if there were no concerns with respect to the CTG trace. Her expectation was that Dr Graubard would order a caesarean.

Dr Graubard says in his statement he was given the history of recent events but denied Dr Safa raised any issue about the CTG not being reassuring or the need for FBS. He agreed if a doctor raised the issue of FBS then clearly the doctor had concerns about fetal well being.

Dr Safa says Dr Graubard instructed the syntocinon infusion be stopped for two hours to give Ms Paudel's uterus a rest and then restart. Dr Graubard instructed Dr Safa to proceed with an epidural once consent was obtained. Dr Graubard did not mention or recommend a caesarean or FBS.

Dr Safa agreed her impression was that they needed to make a plan to bring on labour and she would have performed a caesarean. However she also considered Dr Graubard's plan was not a wrong one, and although she had another preference she felt she needed to comply with the consultant's instructions. She said if she had known FBS was ultimately not going to be done she would have pushed through with delivery.

Dr Safa mentions FBS in her notes in the medical records at 0615 where she records that 'potential for fetal blood sampling if labour is allowed to continue'. For this reason I prefer the evidence of Dr Safa on this issue and find she did raise some concerns about the CTG trace and the need for FBS with Dr Graubard. I am less certain as to whether a caesarean was mentioned given her evidence was unclear as to what she said and there is no reference to this in her notes.

Dr Graubard made no contemporaneous notes at all.

Dr Safa says she did not engage in a discussion or a debate with Dr Graubard about the proposed management, as based on past experiences with Dr Graubard, she was not sure it would have made a difference. Dr Safa explained there was a hierarchy and the registrar has to abide by the consultant's opinion.

Dr Graubard disagreed with this view, and he said he would have respected Dr Safa's opinion because she was a senior registrar.

One significant difficulty for Dr Graubard is that he says he read the chart, including the entries at 0615 and 0813. I am not convinced he did, but if he did read them he was unable to offer a convincing explanation as to why the contents of those notes did not at least escalate his concerns about fetal well being.

This again was a missed opportunity, perhaps based on a culture of junior doctors not providing assertive communication to consultants. I accept Dr Safa did not raise her concerns assertively. However, given Dr Graubard's performance in the witness box, I can well appreciate why junior doctors felt they had a limited opportunity to engage usefully with him.

At 0700 RM Fry and Schmid commenced their shifts and the care of Ms Paudel was allocated to RM Schmid.

There was a handover between EMs White, Fry and Schmid. The handover information RM Fry says they were given appears to be uncontroversial but given the difficulties in communication between doctors and midwives the information would not have been complete. For instance, RM Schmid was not aware there had been persistent decelerations in the CTG trace or there had been a discussion about FBS.

At 0755, Dr Safa reviewed the CTG trace. In her notes at 0813 she noted that the CTG normal baseline 140, variability 5 –10, queried late decelerations down to 90 beats per minute. She noted her plan was to recommend FBS before commencing syntocinon.

RM Schmid says Dr Safa told her there had been decelerations overnight and FBS should be done.

Events from 0800

After Dr Safa left the room at 0755, RM Schmid says she watched the CTG trace for some time noting that although the decelerations continued, they had improved to shallow/variable with good variability. RM Schmid went to collect the FBS kit and took it to Ms Paudel's room.

At 0800, Dr Safa provided a handover to Dr Jabbour. Dr Safa advised the CTG trace was not reassuring and had shown decelerations. Dr Safa said she had phoned Dr Graubard at approximately 0615 informing him that the CTG trace which had been continuing all night was poor.

Further Dr Safa said Dr Graubard had instructed her to stop the syntocinon for two hours, to get consent for an epidural and then restart the syntocinon. Dr Safa explained to Dr Jabbour that because of the CTG abnormalities, she recommended FBS should be performed before the syntocinon was recommenced.

RM Schmid says she went to report the improvement in the CTG trace and Dr Safa and Dr Jabbour were in discussion in the staff office. She recalls Dr Jabbour and Dr Safa discussing not performing the FBS and recommencing the syntocinon infusion given there had been some improvement. RM Schmid asked whether to proceed to FBS, but a decision was not made.

RM Fry says she interrupted the handover and asked when the FBS test would be done. She says Dr Jabbour said he did not want to perform one now as this would mean he would be required to do one every half hour according to the guidelines. Instead Dr Jabbour said to Dr Safa that he would review the CTG trace.

Dr Safa then made her entry in the medical notes at 0813.

RM Fry says she accompanied Dr Jabbour to Ms Paudel's room and RM Schmid was already present. Both agree Dr Jabbour told Ms Paudel the CTG trace had improved and he did not think it was necessary to do FBS sampling.

Given he was a first year registrar Dr Jabbour stated he wanted to discuss the patient management with the consultant, including the question of whether FBS should be undertaken. Dr Weaver agreed it was appropriate for the consultant to be involved in a complete review.

Dr Jabbour says he did not review the CTG trace. Dr Jabbour states he only reviewed the medical records and the patient at 0915 in the presence of Dr Graubard and Dr Graubard reviewed the CTG trace then.

The difficulty with Dr Jabbour's version is that the only contemporaneous note made is one recorded by RM Schmid at 0905. This notes that at 0845, syntocinon was recommenced and that post epidural, the CTG trace had deceleration down to 90 with slow recovery and variability was reduced. She indicated the fetal heart rate improved with shallow decelerations and variability improved after Ms Paudel had been repositioned. The medical notes indicate Dr Jabbour reviewed the CTG.

Although I have no doubt Dr Jabbour and Dr Graubard reviewed Ms Paudel at sometime around 0915, I find Dr Jabbour also reviewed the CTG trace shortly after the handover. This accords with the evidence of RM Fry and RM Schmid and is noted in the records. Given his evidence it is uncertain as to what Dr Jabbour made of the CTG trace at that time.

Dr Jabbour then conducted a ward round with Dr Graubard, and Ms Paudel was seen at 0915. Neither of the doctors made any note in the medical record of this review or what was to be the future management plan. Dr Weaver considered a clear plan for management should have been documented in the patient's notes. There should have been documented discussions with the patient about the plan and different treatment options.

RM Schmid says Dr Graubard unfolded the CTG trace out one arm's length and looked at it. Dr Graubard asked when the syntocinon infusion had recommenced and RM Schmid said about 30 minutes prior to his arrival. Dr Graubard instructed RM Schmid to perform a vaginal examination in three hours in order to determine how much progress Ms Paudel had made. He simply left saying 'let's have this baby'. There was no mention of a caesarean or FBS.

Dr Jabbour says Dr Graubard reviewed the CTG trace. Dr Jabbour stated that Dr Graubard was a man of few words and he simply said 'everything looks fine, carry on'.

Dr Jabbour found it difficult to communicate with Dr Graubard. Dr Jabbour's understanding of 'carry on' was that Dr Graubard was happy with the progress and he wanted Ms Paudel to achieve a vaginal delivery.

Dr Jabbour says he spoke to Dr Graubard outside the room about performing FBS and mentioned the suggestion of a caesarean section. Dr Graubard did not have any instructions for Dr Jabbour and he did not get an opportunity to tell him what his management plan would have been.

Dr Jabbour says he did not agree with this plan as he thought a caesarean should have been performed at the time but he did not feel he was in a position to question the consultant.

Dr Graubard has a different version. Indeed a number of different versions.

In his first statement he says he reviewed the CTG trace from the two previous hours (i.e., 0700 to 0900). The CTG trace for this period was reassuring and looked normal. He now agrees in retrospect that it wasn't.

Dr Graubard says in his first statement he instructed Dr Jabbour that the plan was for a short trial of labour, no more than four hours and if she did not progress, a caesarean section would be performed. He says Ms Paudel was agreeable to this plan.

In evidence, Dr Graubard indicated he wished to amend his statement to include that he instructed Dr Jabbour as part of the management plan to undertake FBS. Dr Graubard did not include this important information in his first or his second statement.

Dr Graubard also said he was aware of Dr Safa's entry from 0813 and aware of her comments to perform FBS. He acknowledged this indicated Dr Safa had some concerns about the wellbeing of the baby. He was also aware one of the midwives had been sent to obtain the FBS kit.

Dr Graubard was asked why he instructed Dr Jabbour to undertake FBS when he was of the view the CTG was normal. Dr Graubard stated this was because Ms Paudel had been on syntocinon for 12 hours, she had not progressed well, there was light meconium and it would be prudent to perform FBS. Dr Graubard says there was no doubt in his mind that Dr Jabbour was going to perform FBS.

Dr Jabbour says if he had been told to perform FBS then he would have done so. Dr Jabbour rejected the allegation he had been reluctant to undertake FBS because he was prepared to follow the consultant's instructions.

Dr Graubard disagreed with Dr Jabbour's description of the conversation at the door. He disagreed that Ms Paudel was told FBS was not required. Dr Graubard did not have any discussion with Ms Paudel about FBS because it had 'nothing to do with her, it was between him, Dr Jabbour and the midwife'.

The difficulty for both Dr Jabbour and Dr Graubard is that neither of them made any contemporaneous note in the medical records about this review and there is nothing in writing which sets out a plan of management for the delivery.

I prefer the evidence of Dr Jabbour and RM Schmid as to what the plan was to be, to that of Dr Graubard. There was certainly no mention of a caesarean section or FBS to either of them by Dr Graubard.

Dr Graubard told the Court he thought RM Fry was not experienced and RM Schmid was not qualified. He thought Dr Jabbour had major difficulties communicating with staff. Dr Graubard explained that whilst he had no doubt

about Dr Jabbour's professional capabilities, he was concerned about the midwives but he could not do anything about that.

Dr Graubard rejected the assertion he should have remained at the Hospital in those circumstances.

Given what he had to say about the staff present that day, and if he had that genuine belief in their deficiencies, it is curious he would consider it appropriate to leave the ward. After hearing his evidence, it is difficult to know what he did believe.

In any event, RM Schmid was largely left to deal with the deteriorating situation on her own. It has to be said, partly in her defence, that at this stage she simply had instructions to continue with syntocinon and conduct a vaginal examination in a number of hours.

RM Schmid was present when she saw the CTG trace being reviewed, firstly by Dr Jabbour and then by Dr Graubard. They said nothing to her about the CTG being of concern, as both thought the trace was reassuring. RM Schmid was entitled to rely on the assessment of the consultant.

After 0900 the CTG tracing deteriorated and then later became pathological. RM Schmid did not make any recording of the CTG tracing over the next few hours in the CTG chart. This was completed the next day in the presence of the nurse manager and RM Fry. Accordingly it was completed, in retrospect, no doubt with the benefit of some hindsight as to the outcome and she was assisted in completing the record by other staff members. She said she would never do that again. I accept that will be the case.

RM Schmid stated she was watching the trace but thought it had improved when Ms Paudel was repositioned. She now realises it did not improve and by 1040 the decelerations were deep and action should have been taken then.

She has subsequently done lots of reading, completed the K2 online training and attended RANZCOG training courses. She acknowledged she should have asked for assistance much earlier from RM Fry or the medical staff. She remains deeply affected by the outcome and the part she played in it.

RM Schmid performed a vaginal examination at 1020 and accidentally hit the emergency buzzer. RM Fry and Dr Jabbour entered almost immediately as Dr Jabbour says he was by the door. RM Schmid informed RM Fry and Dr Jabbour of her findings from the vaginal examination, particularly that Ms Paudel was fully dilated. Dr Jabbour instructed RM Schmid to allow one hour for head descent.

Dr Jabbour says he was also informed that Ms Paudel's CTG trace remained reactive. He did not review the CTG. He was not told by RM Schmid there were any concerns about the CTG and assumed RM Fry had reviewed it. Yet again, an opportunity was missed, based on a lack of communication between the midwives and doctors.

Dr Graubard says he was telephoned by Dr Jabbour at around 10 – 1030. Dr Jabbour advised Ms Paudel was fully dilated and second stage had commenced. Dr Graubard says he was reassured and expected the baby to be delivered shortly. It is accepted that, with this information, Dr Graubard could have been entitled to be reassured. However, given what Dr Graubard now says was his instruction for FBS, it is noteworthy he did not ask what were the results.

A trial of active pushing commenced from 1050 but there was little head descent and the fetal heart rate increased to 160 and there was reduced variability and decelerations. RM Schmid says she briefly spoke with RM Fry about the above and says RM Fry told her to reposition Ms Paudel to allow for passive descent, which she did.

At 1115 Dr Jabbour and RM Schmid discussed Ms Paudel's progress in the office. RM Schmid says she advised Dr Jabbour of the reduced variability, increased heart rate and deep decelerations shown on the CTG during the trial of active pushing. Dr Jabbour instructed RM Schmid to recommence active pushing, which she did. There is no controversy about this version of events.

What is controversial is that in his first statement signed 22 July 2010, Dr Jabbour noted that RM Schmid advised him the CTG trace had some reduced variability but she was not concerned. He stated that at 1125 he assessed the CTG and observed variable decelerations.

In his second statement signed two years later on 17 May 2012, he says he now had no memory of reviewing the CTG at this time and suggests stated aspects of the first statement were not accurate, particularly as to whether he reviewed the CTG trace at 1120.

The significance of this time is both Drs Weaver and Lingard agree that at 1100 the CTG trace was pathological and birth should have been brought on then, at the very latest, but preferably hours earlier.

The difficulty for Dr Jabbour is that after the delivery at 1430 he made a retrospective note in the medical records saying he assessed the CTG at 1120 and it had variable decelerations. He does not record it was pathological.

RM Schmid says Dr Jabbour did look at the trace at 1125 and she noted this on the CTG trace by writing '*R/v by O & G Reg'.* Accordingly there are two reasonably contemporaneous notes in the records, being Dr Jabbour and RM Schmid, as well as the first sworn statement.

Dr Jabbour's explanation for why I should prefer the version produced in his second statement and in court, to the contemporaneous version noted a few hours after the event, is curious and I consider implausible. He says he was in

shock and was not in a good state of mind and just wrote things down without thinking.

It may be his genuine memory now that he does not recall reviewing the CTG at 1120. The conclusion I come to, at its best for him, is he skimmed over it or he reviewed it and he did not understand its significance. Either way, this was not optimal care and another missed opportunity.

RM Schmid still considered that the CTG had not improved so she went out to see RM Fry to advise that she wanted Dr Jabbour to review Ms Paudel's CTG. RM Schmid did not tell RM Fry she was concerned or it was urgent.

RM Schmid was an experienced midwife of some four years. RM Fry was the team leader that day but it was not a direct supervisory role. RM Fry did not review and was not asked to review the CTG trace that day. I accept if she had been told there were concerns she would have reviewed the CTG herself or had someone else review it. No doubt this was also a potential opportunity that was missed. There have been changes to the team leader role since the RCA recommendations, which will be discussed later and which address these concerns.

Dr Jabbour then reviewed Ms Paudel at 1210. Preston's head was on view and Dr Jabbour wrote HOV (head on view) on the CTG trace. Dr Jabbour and RM Schmid encouraged Ms Paudel to push.

Dr Jabbour says he thought delivery appeared imminent, within two minutes. Dr Jabbour asked RM Schmid if she was happy with how things were going and she replied 'yes'.

Dr Jabbour left as he said he was very busy with other patients but he contacted the paediatric registrar to advise the baby's delivery was imminent.

Dr Jabbour has since reflected on his actions and agreed he should have remained and performed an episiotomy. He stated it was possible he was overwhelmed by what was happening in the labour ward at that time.

RM Schmid says that after Dr Jabbour departed she felt a little more reassured following Dr Jabbour's review.

There was then a conversation between RM Fry and Dr Jabbour sometime after Dr Jabbour left. Dr Jabbour says he wanted to check the baby had been born but RM Fry said he did not need to do because she and RM Schmid were happy and RM Schmid would call if he was required. Dr Jabbour says he accepted this position and returned to his other patients.

RM Fry says Dr Jabbour said in a cheerful tone he was going to see what RM Schmid was up to. RM Fry said with a smile on her face 'I wouldn't, Angela [RM Schmid] will let you know if she has a problem'. RM Fry said it was her intention to reassure Dr Jabbour that RM Schmid was a competent midwife

and would refer any problems to him. She says it was not her intention to advise him not to go into Ms Paudel's room.

The context for all this related to a discussion RM Fry had with Dr Jabbour on an earlier shift about professionalism and how he treated staff. It would seem that later this conversation was being interpreted as some form of attempt to block Dr Jabbour's entry into the room.

I accept this was not the case, but Dr Jabbour was certainly not encouraged to render further assistance by RM Fry. RM Fry of course did not know how dire the situation really was, because RM Schmid had not escalated her concerns to her.

There were a series of unfortunate events with a mix of poor communication, personality conflicts, hierarchy and culture which culminated at a critical time.

The Birth

At between 1235 and 1240, RM Fry walked into the room to see if assistance was needed and asked how long the baby's head had been crowning and RM Schmid said 'a little while'.

RM Fry suggested an episiotomy. RM Schmid agreed and said she had been about to get RM Fry to review. RM Schmid needed guidance on an episiotomy as she had not cut one before.

Whilst RM Fry was giving RM Schmid instructions as to the episiotomy, RM Fry held the external CTG transducer in place to monitor the fetal heart rate but could not hear the fetal heart beat on the monitor. RM Fry relayed this information to RM Schmid who indicated the fetal heart beat had been fine during contractions.

Both wanted to deliver Preston quickly at this point. RM Fry noticed meconium and asked RM Schmid if she wanted paediatrics present at the delivery. RM Schmid replied no, it was only light meconium. Even at this very late point RM Schmid was still not aware how dire the situation had become.

However immediately after delivery occurred, it was clear there was a problem. Preston was born at 1250 but was floppy, pale and with no respiratory effort. Preston's pH was 6.9. This low pH would indicate a low likelihood of survival.

Following Preston's birth

A Code Blue was called. Given that the review of the resuscitation by Dr Griffin indicated no concerns, it is not intended to detail what occurred during this period.

Dr Coghlan, the paediatric consultant, was of the opinion Preston remained in a severe encephalopathic state. He discussed the exceedingly grim outlook and high risk of death with Ms Paudel before Preston was transferred to the Mater Mothers' Hospital.

Whilst at the Mater Mother's Hospital, Preston remained on ventilatory support for two days. His condition did not improve and no brain activity was detected. A decision was made to withdraw life support and Preston passed away at 2.30pm on 13 October 2009

Expert Opinions about the issues

Report of Dr Gardener about the CTG trace

The interpretation and use of these monitoring devices is certainly not straightforward, and as this case indicates, prone to misinterpretation.

On Monday 12 October 2009, Dr Graubard forwarded a covering letter and the CTG trace to Dr Glenn Gardener at the Mater Mother's Hospital requesting him to comment on the CTG trace from Saturday night until Sunday 1020. Dr Gardener provided his report to the Hospital on 6 January 2010.

Dr Graubard says he sent the letter to Dr Gardener as he wanted transparency and a good solid opinion. He said he had not reviewed the CTG himself until he received it from his lawyers for the purposes of the inquest. He said he was not interviewed as part of the Root Cause Analysis.

The covering letter provided Dr Gardener with some brief information regarding the labour. Dr Graubard noted *'*suggestion of foetal scalp blood for PH was mentioned twice to validate non reassuring CTG however it was not done due to technical problems and reluctance of the on call Registrar who felt that the monitor improved between 0900 – 1000 hrs*'.*

Dr Graubard stated in evidence the technical issues he referred to related to complaints from registrars of blunt fetal scalp blood sampling kits. The evidence from a number of witnesses suggested there were old kits which had that problem but they had been replaced and this was not an issue at the time. Dr Jabbour denied he was reluctant to proceed to FBS and had suggested it to Dr Graubard.

This could be considered another example of Dr Graubard's attempts to reflect badly on the actions of others without acknowledging his own contribution to the outcome.

In his report Dr Gardener was of the opinion the CTG trace up until 0200 on 11 October 2009 was characterised by variable decelerations with baseline fetal heart rate within normal limits and normal short term variability.

Dr Gardener indicated that from 0210 the variable decelerations increased in amplitude and short term variability was reduced. From this point on until the time of birth he had concerns about the CTG and that further investigation of fetal well being, for example FBS or delivery was indicated.

Between 0230 and 0640, the short term variability was within normal limits however the variable decelerations become broader. From 0719 the decelerations can be classified as late/type 2 in relation to the timing of the contractions.

Between 0820 and 1020, the CTG tracing demonstrated variable decelerations with short term variability maintained within normal limits. Between 1020 and 1250, Dr Gardener was of the opinion there were frequent deep variable decelerations with reduced short term variability.

Evidence of Dr Lingard and Dr Weaver

The Office of the State Coroner requested an expert review from Dr Lingard, an obstetrician in private practice at the Mater Mother's Hospital and a consultant since 1993. Dr Lingard was provided with the CTG tracings, medical records and statements from the midwives and doctors.

Associate Professor Edward Weaver also provided an expert report on behalf of the lawyers representing Dr Graubard. Associate Professor (A/P) Weaver has over 30 years experience as an obstetrician, is on the expert witness register of RANZCOG and is the immediate past president of RANZCOG. Dr Weaver had also assisted in the development of the RANZCOG fetal surveillance guidelines.

In general they agreed on most aspects of each others' evidence.

There is no issue that it was appropriate management for Ms Paudel to be monitored continuously with CTG and for syntocinon infusion to be administered to induce labour. Dr Lingard reported that Ms Paudel was appropriately monitored and reviewed regularly in the first stage of labour however it is the interpretation of her CTG during those reviews which did not result in a more timely decision to deliver Preston.

Dr Lingard was of the opinion the CTG trace up until 0130, apart from an occasional variable deceleration was normal. He was of the opinion that from 0130 there were frequent variable decelerations and from 0200, frequent late decelerations. Both he and Dr Weaver would have performed a caesarean at 0200 given at that time the CTG was not reassuring.

Dr Lingard disagreed with the opinion of Dr Weaver that between 0200 and 0500 there were some normal parts of the CTG. Dr Lingard thought that at 0500 in the morning the CTG was terrible and if the cervix had been dilated he would have tried for a vaginal birth or a caesarean then.

Dr Lingard opined that with this CTG pattern, a FBS to measure fetal ph or lactate would have enabled the treating team to determine if there was fetal distress requiring delivery. If normal, then labour could continue, but with repeat blood sampling if the CTG abnormalities persisted. The earliest time the FBS could have occurred was at 0550 but Dr Lingard considered given the circumstances and the inability to perform fetal blood sample to reassure

the baby was healthy, many obstetricians would have chosen to deliver via caesarean earlier.

Dr Weaver agreed the CTG trace had become concerning by 0500 and it was appropriate for the midwives to call in Dr Safa.

Dr Weaver agreed it was not unreasonable for Dr Safa to consider a caesarean was appropriate at that time. If, Dr Graubard was told only about the length of time of the syntocinon and there was no mention of an abnormal CTG then he might have agreed that to give it another two hours was appropriate if the CTG was okay. However in this case Dr Weaver said 'it drifted on and on'.

Dr Lingard agreed it was acceptable management to give it another two hours, if the CTG trace was normal. However in this case there was still decelerations after the syntocinon was ceased and certainly after the epidural.

Dr Weaver was asked to specifically comment on the appearance of the trace at the time Dr Graubard saw Ms Paudel at around 0900 and in the few hours beforehand. He opined that the trace at the time of the review looked normal.

Interestingly, in hindsight Dr Graubard did not necessarily agree with the opinion of Dr Weaver that the CTG trace at the time of his review at 0900 was normal.

Dr Lingard's opinion was here at variance with Dr Weaver as Dr Lingard said that at 0900 if Dr Graubard looked at the trace back to at least 0700 he should have seen late decelerations and more shallow variable decelerations and some broad decelerations thrown in. Whatever way you looked Dr Lingard said it was not a normal CTG

Dr Lingard stated that restarting syntocinon without first assessing the fetal wellbeing with a FBS is not what most obstetricians would have done. Given the clinical situation and the CTG tracing, Dr Lingard opined most obstetricians would have proceeded by delivery via a caesarean section then.

Dr Weaver agreed it was not reasonable to omit a FBS prior to recommencing the syntocinon infusion around 0800. Dr Weaver said by the time the delivery had got to the second stage and particularly after 1110 it would have been better to deliver the baby and not consider scalp testing.

He considered the baby should have been delivered at 1100 at the very latest and should have been delivered hours earlier. The trace looked concerning at 1110 and much more concerning at 1130. The trace was virtually uninterpretable from about 1205 until the birth of the baby.

Dr Lingard noted Ms Paudel's second stage of labour for two and a half hours with active pushing for one hour and 50 minutes would be within acceptable limits for a first labour however, given the abnormal CTG trace, delivery

should have been assisted with forceps or vacuum, as soon as Ms Paudel's cervix was fully dilated.

Dr Lingard considered an episiotomy should have been performed earlier, but would have been unlikely to assist until 1210 however it may have shortened the second stage of labour by 30 minutes.

Dr Weaver said when the CTG trace became abnormal, her care seems to have been escalated, with the midwives caring for her notifying the obstetrics registrar, who should have reviewed the patient. However after his last review, the registrar does not seem to have been notified of any concerns the staff had about the trace and it is not clear from the notes how often the fetal heart was ausculated after 1205 when the trace became uninterpretable.

Root Cause Analysis

The Root Cause Analysis was completed on the 23 March 2010. There appears to be some uncertainty as to whether all of the key personnel were involved in interviews for the RCA. RMs Fry and Schmid participated but Drs Graubard, Jabbour and Safa were not interviewed. It is apparent Dr Graubard did not receive a copy of the final report notwithstanding he was still the acting director of the unit at that time. It is noted the personnel responsible for implementing recommendations were the Director of Nursing and Midwifery Services and the Director of Medical Services.

I have on a number of occasions in recent inquests commented on the failure to engage with key personnel in the course of completing RCAs.

On 5 July 2012, in the matter of the inquest in relation to Patient A[3], I commented that *wherever possible, Root Cause Analysis processes should be conducted such that relevant members of a treating team, if they wish to participate, are provided an opportunity to be interviewed and are provided with feedback as to the outcome of the RCA.*

I made a similar comment in the Inquest of Mia Davies[4]. This remains an ongoing issue for the Office of State Coroner.

Notwithstanding this concern with process, it is accepted the RCA was conducted in a timely manner and resulted in appropriate findings as to the root causes and made a number of recommendations.

Unsurprisingly the RCA noted that a contributory factor to Preston's death was that *'*CTG interpretation skills did not meet clinical requirements, CTG tracing was not interpreted appropriately and a plan of care was determined using incorrect and insufficient information. This led to the delivery not being performed in a timely manner and this may have contributed to the unexpected death of a neonate*.'*

[3] Inquest into the death of patient A, Office of State Coroner website, 5 July 2012
[4] Inquest into the death of Mia Davies, Office of State Coroner website, 28 September 2012

As a result a recommendation was made to increase CTG training for all doctors and midwives. This included ensuring staff completed the K2 training annually by 100% of staff, and that workshops were facilitated by RANZCOG with 80% of staff attending within 12 months. The evidence supports that this recommendation has been largely implemented.

There was a further recommendation that the CTG interpretation be conducted as a formal/structured multi-disciplinary session with a designated coordinator and other recommendations for recording their attendance and competency of all staff was to be introduced. It would also appear this has been largely implemented.

A further important recommendation was to replace the current CTG assessment form with a CTG assessment sticker that can be attached to the CTG itself.[5] The evidence suggested that midwifery staff completed the CTG assessment chart but generally this was not considered by other medical staff, most of whom were not even aware of its existence. It does not appear in the report as a recommendation but the evidence indicates that a process has been put in place such that the CTG trace is reviewed hourly by the midwife and reviewed each alternate hour by the team leader appointed for the birthing suite and/or the registrar or other medical staff.

The RCA also noted that as the roles of model care between (and within) nursing, medical staff and the patient are not clearly delineated there is a communication breakdown between (and within) nursing, medical staff and the patient. This led to a plan of care being determined on incorrect and insufficient information. It was recommended that the unit develop a multidisciplinary agreed practice statement that will clarify the philosophy of the unit, clarify roles within the unit and define the model care used within the unit so the patient is at the centre of care.

One of the outcomes was that 80% of clinical staff had attended HEAPS training including graded assertiveness training. However it does not appear, in general, that training has been completed by as many of the staff as was indicated by the recommendation. Certainly that needs to be followed up by the hospital.

Handover processes were also considered and it was noted that as the handover processes were unstructured and lacked detail, a plan of care was determined on incorrect and insufficient information. A recommendation was made for there to be developed and implemented a formal process team handover which should, as a minimum, be at the bedside, patient focused, involving nursing staff, medical staff and any other relevant clinician. The patient should be encouraged to participate in handover whether cases are perceived as normal complex. Handover should include the patient notes and a review of the CTG from the whole of the previous shift should be undertaken. The outcome was that 100% of handovers would meet the criteria within three months.

[5] A copy of the sticker is provided in the Glossary of Terms at page 2

The evidence of Dr Lingard and Dr Weaver was to the effect that the implementation of the various recommendations would provide significant improvements.

Dr Lingard considered the Root Cause Analysis conducted by the Hospital addressed the issues of the need for additional and continual training in the interpretation of CTG monitoring and the appropriate subsequent management of abnormality. The RCA also addressed the need for better communication between nursing and medical staff, more regular rounds and a more formal handover of patients.

Conclusions on the Issues

Up until 0200 hours appropriate decisions were being made about Ms Paudel's labour. It is evident there had been a discussion amongst some staff and the patient that a caesarean section may be considered at 0200. That discussion was not documented in the medical records and does not appear to form part of any communicated plan between the midwives and medical staff. It is possible that if Dr Safa had reviewed Ms Paudel at 0200, alternative plans may have been considered.

It is the opinion of Drs Lingard and Weaver that they would have proceeded to delivery by caesarean section at 0200 because of the lack of progress and the fact the CTG trace was not reassuring. FBS could not be conducted as the cervix was not dilated enough and therefore fetal well being could not be assessed.

It is accepted even if Dr Safa had reviewed Ms Paudel at 0200 a decision to proceed to a caesarean may not have been made and that would not necessarily have been a wrong decision, but there may have been more monitoring of Ms Paudel by her.

Ms Paudel was monitored appropriately over the next few hours by RM Mead with assistance from EM White. When they thought there may be some difficulty in interpreting the CTG they initiated a review by Dr Safa.

Dr Safa considered the trace was not reassuring and then waited almost an hour before conducting a vaginal examination. When this was completed she formed the view a caesarean should be performed or at least FBS to verify fetal well being. I accept she informed Dr Graubard of her concerns with the CTG and her view about FBS.

It is also accepted Dr Safa discussed as part of the handover with Dr Jabbour her concerns about the CTG and her thoughts about FBS being necessary.

Dr Safa did not initiate FBS on her own accord prior to leaving her shift although it is noted the epidural had only just been inserted.

There then appeared to be some hesitancy on the part of Dr Jabbour to proceed with FBS himself. Accepting it was reasonable to wait for his

consultant to review he should have taken a more assertive role in what followed.

Neither Dr Jabbour nor Dr Graubard gave to the midwives or noted in the records any appropriate plan of management. Dr Graubard's style of communication was by no means optimal. I do not accept he gave an instruction to Dr Jabbour to complete FBS.

Given the plan as it was, it was reasonable for RM Schmid to proceed as she did for the next few hours, however by 1100 it is evident beyond any doubt the birth should have been escalated by her at that time. Dr Jabbour conducted a number of reviews in the next period and also seems to have missed entirely the significance of the pathological CTG and clinical signs which should have escalated the birth. The fact those reviews were conducted, may have provided comfort to EM Schmid. This gives some explanation as to why she did not take further action of her own accord.

RM Schmid did not communicate any concerns to RM Fry. If she had it is possible RM Fry may have taken some escalating action. By the time RM Fry arrived it was well and truly too late.

There were many opportunities over the eight hour period from 0500 to 1250 where Dr Safa, Dr Jabbour, Dr Graubard and RM Schmid could have escalated concerns about the CTG, conducted FBS and determined an alternative course of management which escalated the birth well before Preston's condition was compromised. These opportunities were all missed because of misinterpretations of the CTG by Dr Graubard at 0900, RM Schmid over the hours from then until birth and by Dr Jabbour; failures to assertively communicate by Dr Safa and Dr Jabbour; and failures by Dr Graubard and Dr Jabbour to develop a plan of management and communicate this to the midwives.

RM Schmid and Dr Jabbour have considered their role in the events that followed and accepted responsibility and learnt from their mistakes. As the consultant who had ultimate responsibility for Ms Paudel, Dr Graubard sought to direct most of the blame to others and accepted only in retrospect his interpretation of the CTG at 0900 was wrong.

Findings required by s45

Identity of the deceased – Preston Paudel

How he died – Preston died as a result of being deprived of oxygen at some point during his mother's labour, most likely during the second stage of labour. There were numerous opportunities for Preston's well-being to have been ascertained however this did not occur and he was born with a poor prognosis for survival.

Place of death – Mater Mothers Hospital SOUTH BRISBANE QLD 4101 AUSTRALIA

Date of death– 13 October 2009

Cause of death – 1(a). Main disease or condition in foetus or neonate: Global hypoxic-ischaemic encephalopathy.

1(b). Other diseases or conditions in foetus or neonate: Incomplete rotation of the gastrointestinal tract: Small for gestational age.

1(c). Main maternal disease or condition affecting foetus or neonate: Nil.

1(d). Other maternal diseases affecting foetus or neonate: Nil.

Other significant conditions

2. Nil.

Underlying cause of death: Hypoxic - ischaemic encephalopathy.

Comments and recommendations

Section 46 of the Act provides that a coroner may comment on anything connected with a death that relates to:

- public health and safety,
- the administration of justice, or
- ways to prevent deaths from happening in similar circumstances in the future.

Despite what I consider to be concerns about the RCA process, the RCA did identify areas for improvement and adopted changes that were necessary and appropriate. The recommendations were supported by the independent experts. It is recommended the Hospital continues to implement and monitor the success of the recommendations of the RCA, particularly the K2MS training and the completion of the CTG sticker.

There was some conflicting evidence at the inquest about who is to conduct the hourly reviews of the CTG. Given this, the Hospital should clarify this position with all staff.

There was evidence that it is sometimes difficult for the hourly review of the CTG sticker to be completed. It would be appropriate for the Hospital to continue to audit this process to ensure the procedure is complied with.

The CTG assessment sticker adopted by Toowoomba Hospital appears to be a comprehensive tool to provide an interpretation of the CTG. Given the issue of CTG interpretation has arisen in other inquests I agree with Ms Marten's submission and:

1. **I make a recommendation that Queensland Health consider the implementation of this sticker at all hospitals throughout the State**.

There was also evidence that some staff had not completed graded assertiveness training. The Hospital should continue to review this aspect to ensure all staff receive or attend the appropriate training.

2. **It is further recommended the Hospital implements a policy that the four hourly reviews of high risk patients be conducted by the registrars or consultants.**

There was evidence that the volume of documentation is difficult to complete. By way of comment it is suggested the Hospital consider ways to ensure midwives have an opportunity to complete the required documentation contemporaneously.

There was some evidence that team leaders, whilst now carrying a lighter patient load, still have some difficulty completing their duties. It is suggested the Hospital consider conducting an audit of the team leader's activities on shift to ensure they have adequate time to supervise staff and complete the CTG sticker reviews.

3. **I repeat my recommendation made at previous inquests that *wherever possible, Root Cause Analysis processes should be conducted such that relevant members of a treating team, if they wish to participate, are provided an opportunity to be interviewed and are provided with feedback as to the outcome of the RCA.* This should include, where possible, staff no longer at the Hospital.**

Exercise of discretion of the Coroner to refer any party in accordance with section 48(4)

Section 48(4) of the Act gives the coroner discretion to give information about a person's conduct in a profession or trade to a disciplinary body for the person's profession or trade if the coroner reasonable believes the information might cause the body to inquire into, or take steps in relation to the conduct.

Section 193 of the *Health Practitioner Regulation National Law 2009* requires a National Board to refer a matter about a registered health practitioner if the Board reasonably believes the practitioner has behaved in a way that constitutes professional misconduct.

Section 5 defines professional misconduct as unprofessional conduct by the practitioner that amounts to conduct that is substantially below the standard reasonably expected of a health practitioner of an equivalent level of training or experience.

The failure of RM Schmid to identify the ominous nature of the CTG trace and seek assistance, at the latest, from 1110 onwards arguably fell below the

standard reasonably expected of a registered midwife. Up to that point in time RM Schmid would have taken some comfort from there having been a number of earlier reviews of the Ms Paudel and the CTG by medical staff, and no concerns were communicated to her.

The failure of Dr Jabbour to monitor the CTG trace and/or take further action when he had an opportunity to do so on a number of reviews of Ms Paudel arguably fell below the standard reasonably expected of a first year registrar (with three years experience in obstetrics as a resident medical officer). Again Dr Jabbour would have taken some comfort from the fact the management plan, such as it was, had been formulated by his consultant and there had been no escalation or communication about any concerns by the midwives.

RM Schmid and Dr Jabbour made sensible and reasonable concessions regarding some deficiencies in the care and treatment they provided (or did not provide) to Ms Paudel. They have both learnt extensively from their involvement in this matter. RM Schmid has undertaken further training and self education. Dr Jabbour has continued on the RANZCOG training program and would have developed his skills further as a result of that program.

Ms Martens submitted that in accordance with the principles as set out by the State Coroner in his decision in the *Inquest of Stephen James Broe*, neither of them or any other midwife or doctor should be referred to the Australian Health Practitioners Regulation Agency (APHRA) for disciplinary action. I agree with this submission.

I have been critical of the evidence of Dr Graubard. Dr Graubard should have monitored Preston's fetal well being by ensuring FBS was performed when this was suggested by Dr Safa after 0615.

As Dr Weaver opined, Dr Graubard's review of Ms Paudel at 0915 and his failure to set out in the record and communicate to the midwives and registrar a clear management plan was far from optimal. However there is some differing opinion by the experts as to the CTG trace at that time, with Dr Weaver considering it to be normal. After this time, Dr Graubard was not involved in the labour, other than a telephone call after 1000 with Dr Jabbour, where no information was given which should have escalated a review.

Given those factors a referral to APHRA of Dr Graubard is not indicated.

The RANZCOG accreditation guidelines for the supervision of trainee registrars notes that first year trainees must always be rostered on with either a senior trainee or a consultant who is dedicated to the birthing suite except where the in-house credentialing process has identified the trainee as proficient enough not to require such supervision.

It became clear during the inquest that Dr Graubard was not an optimal supervisor and limited the extent to which he engaged with his registrars to provide them with training or supervision. Dr Safa felt she could not engage in

a debate with him about a different management plan. Dr Jabbour made similar comments.

I was unimpressed with Dr Graubard's evidence generally and in his supervision and training of staff. The evidence raises very significant concerns about Dr Graubard's effectiveness as a supervisor of registrars under the RANZCOG program. On that basis I intend to provide a copy of these findings to RANZCOG for their consideration of that issue.

I close the inquest.

John Lock
Brisbane Coroner
BRISBANE
25 October 2012