QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Nixon Martin Tonkin**
TITLE OF COURT:	Coroners Court
JURISDICTION:	Brisbane
FILE NO(s):	2014/1999
DELIVERED ON:	28 June 2017
DELIVERED AT:	Brisbane
HEARING DATE(s):	9 December 2016, 20-22 March 2017
FINDINGS OF:	John Lock, Deputy State Coroner
CATCHWORDS:	Coroners: inquest, health care related death, obstetrics, CTG interpretation, obstructed labour, delay in diagnosis, caesarean section, impacted fetal head, head injuries due to method of delivery

REPRESENTATION:

Counsel Assisting:	Ms M Jarvis
Family:	Mr M Steele i/b Maurice Blackburn Lawyers
Metro North H&HS and some employees:	Mr J Allen QC i/b MNHHS
Dr L Minuzzo & Dr J Laporte:	Mr A Luchich i/b Ashurst Lawyers
Dr B:	Ms J Rosengren i/b Moray & Agnew Lawyers
RN A	Ms S Robb i/b Roberts and Kane Lawyers

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Glossary and abbreviations

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.

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. They are as follows:

The RANZCOG guideline notes as a good practice for women receiving continuous electronic fetal monitoring, 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 that the CTG has been reviewed.

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: · Baseline rate 110 – 160 · Baseline variability of 5 – 25 bpm · Accelerations 15bpm for 15 seconds · 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: · Baseline rate 100 – 109 · Absence of accelerations · Early decelerations · 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:

- Fetal tachycardia.
- Reduced baseline variability.
- Complicated variable decelerations.
- Late decelerations
- Prolonged decelerations

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

- Prolonged bradycardia (<100 bpm for > 5 minutes)
- Absent baseline variability
- Sinusoidal pattern
- Complicated variable decelerations with reduced baseline variability

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 (e.g., 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.

Induction of Labour - IOL

Lower Segment Caesarean Section - LSCS

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.

Introduction

1. Nixon Tonkin died shortly after his birth on 6 June 2014 at 38 weeks gestation. He was the infant son of Simone Lai and Martin Tonkin.

2. Labour had been induced. An obstructed labour was belatedly noted and a decision to proceed to a caesarean section was made.

3. During the caesarean section considerable difficulty was encountered by the obstetric registrar who was undertaking the caesarean section in disimpacting the baby's head out of the maternal pelvis. A midwife was requested to assist and did so by exerting upward pressure with two fingers on the baby's head through the vagina. Nixon was eventually delivered at around 13:09 hours on 6 June 2014.

4. At birth, Nixon was not breathing and resuscitation efforts were immediately commenced and continued for some time. Nixon showed no signs of recovery and was declared deceased at 1340. Nixon's unexpected death was appropriately reported by the hospital to the coroner.

5. An autopsy was performed, during which it was identified that Nixon had suffered significant head injuries including skull fractures, haemorrhages and brain swelling. The forensic pathologist stated that the fractures most likely occurred when the two fingers were pushing the head via the vagina in an attempt to disimpact the head from the pelvis.

6. An investigation commenced and statements were obtained from the nurses and doctors involved in the birth. An expert report was commissioned by the coroner from Dr Andrew Bisits. The Royal Brisbane and Women's Hospital (RBWH) also conducted a HEAPS analysis and a Root Cause Analysis. Other experts have also since provided opinions.

7. Nixon's parents, Simone and Martin, have understandably raised many questions about Nixon's birth and whether the clinical management of Simone's labour and delivery was appropriate. Whilst they have had some opportunity to raise their concerns with the hospital, Simone and Martin say they still feel there are many areas where the hospital let them down. They have asked that an inquest be held not only to address their own personal questions about Nixon's death, but also to help ensure the safety of other babies in the future.

8. In response to this request, and having regard to the existence of another obstetrics-related death of an infant, Archer Langley, at the same hospital within two months of Nixon's death, a decision was made to hold inquests into both Nixon's and Archer's death.

9. Whilst the inquests were not joined, it was proposed that they be held close in time such that any preventative recommendations can be made in a more holistic way, taking into account learnings from each death.

10. Given many of these learnings have already potentially been identified through the hospital's own Root Cause Analysis, the intention of the inquest was to hear from those staff involved in Nixon's case, in an effort to determine if there is anything more that we can learn from his death that may not have been revealed through the Root Cause Analysis process.

11. I have made a non-publication order prohibiting the identification of two witnesses, being the midwife and obstetric registrar directly involved in the attempt to deliver Nixon during the caesarean section.

List of issues and witnesses

12. A pre-hearing conference was held on 9 December 2016. The following issues were determined:

    i. 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.
    ii. Whether key staff involved in the clinical management of Nixon's mother's pregnancy, induction, labour and caesarean section delivery can offer any further insight in relation to the deficiencies identified within the Root Cause Analysis Report commissioned by the RBWH, and factors that contributed to those deficiencies.
    iii. Whether there are any matters about which preventative recommendations might be made pursuant to section 46 of the *Coroners Act 2003*, having regard to the changes that have already been implemented at the RBWH since Nixon's death.

13. The following witnesses were called to give evidence:

    - Ms Chloe SIMPSON, RN and midwife, RBWH
    - Ms Louise STEPHENSON, RN and midwife, RBWH
    - Dr Kirstin MILLARD, Obstetric Registrar, RBWH
    - Ms Jennifer HOPMAN, RN and midwife, RBWH
    - Ms A, RN and midwife, RBWH (referred to in a de-identified way as 'RN A' consistent with the non-publication order)
    - Ms Binny GEORGE, Theatre Nurse, RBWH
    - Dr Christoph Lehner, Obstetric and Gynaecological Registrar
    - Dr Christopher Arthur, Obstetric Registrar, RBWH
    - Dr B, Obstetric Registrar, RBWH (referred to in a de-identified way as 'Dr B' consistent with the non-publication order)
    - Dr Johanna Leporte, Obstetric Consultant, RBWH
    - Dr Lee Minuzzo, Obstetric Consultant, RBWH
    - Dr Andrew Bisits - independent specialist obstetrician who provided a report
    - Dr Robert Lyneham - independent specialist obstetrician who provided a report

Summary of events leading up to birth

14. During the antenatal period, Simone was appropriately monitored and managed for gestational diabetes. On 3 June 2014, at almost 38 weeks gestation, Simone presented to the RBWH with a history of headaches over the previous two days. She was admitted overnight for observation with regards to her hypertension. During the course of the next two days, Simone was assessed and then administered treatments for induction of labour. Labour

commenced on 5 June 2014 and proceeded overnight and into the morning of 6 June 2014.

15. By around 0730 on 6 June 2014, Simone was assessed as being fully dilated but with the baby's head not yet on view. At around 0830 Simone was given medication to help increase the strength of her contractions. Active pushing commenced at around 0855.

16. After a period of active pushing, Simone was reviewed by a registrar, Dr B who noted that Simone's cervix was now 9cm dilated rather than fully dilated at 10cm as previously observed. The baby's head was still not on view. The consultant obstetrician, Dr Lee Minuzzo was subsequently asked to review Simone and confirmed these findings. Obstructed labour was diagnosed and a decision to deliver via a 'category two' caesarean section (that is, where there is maternal or fetal compromise but not immediately life threatening) was made.

17. Arrangements were then made to prepare a theatre for the procedure. During this time, Dr B and Dr Minuzzo discussed whether it was necessary for the consultant to attend the procedure, with a decision made that the registrar could perform the procedure without consultant supervision.

18. Simone's caesarean section delivery commenced at around 1243, a little over two hours after the decision that a category two caesarean was needed.

19. From the outset, there was considerable difficulty when attempts were made by the registrar, Dr B to disimpact the baby's head out of the pelvis. Because of this difficulty, midwife RN A, who was there ready to receive the baby, assisted by exerting upward pressure with two fingers on the baby's head through the vagina. This was still not successful in delivering the baby.

20. Other medical staff responded to a call to attend the theatre urgently to help with the delivery. Nixon was eventually delivered with the assistance of these staff at around 1309.

21. At birth, Nixon was not breathing and resuscitation efforts were immediately commenced and continued for some time. There were two gasping respirations. Nixon showed no signs of recovery and was declared deceased at 1340.

Autopsy results

22. An autopsy was performed by Dr Nathan Milne, forensic pathologist. Dr Milne identified that Nixon had suffered significant head injuries including skull fractures, subdural and subarachnoid haemorrhages and brain swelling.

23. The forensic pathologist stated that the fractures most likely occurred when the two fingers were pushing on the head via the vagina in an attempt to disimpact the head from the pelvis. The pressure from two fingers is relatively focused and more likely to cause fracture than a broader area of application of force.

24. The forensic pathologist concluded that obstructed labour was the underlying cause of Nixon's head injuries, and that this in turn was caused by the baby being large (fetal macrosomia – weighing more than the 90th percentile for gestational age), which was likely associated with Simone's gestational diabetes.

Summary of report of Dr Andrew Bisits

25. Dr Andrew Bisits is a senior staff specialist in obstetrics and gynaecology at the Royal Hospital for Women in Sydney. Dr Bisits was asked a series of questions by the Coroner to assist in identifying clinical issues that may have contributed to the tragic outcome.

26. Dr Bisits agreed it was very likely Nixon's death was caused by skull fractures arising from excessively focussed pressure in attempting to disimpact the head using two fingers in the vagina to press upwards on the baby's skull. Dr Bisits acknowledged there was some speculation involved in this statement but in the scheme of things he is confident it increases the risks.

27. Dr Bisits expressed the opinion this was not done from any careless or negligent attitude, and was an understandable response to an emergency situation.

28. Dr Bisits also made observations in relation to whether an elective caesarean should have been offered to Simone earlier in her pregnancy; whether her induction was appropriate; whether Simone's labour was managed appropriately; and whether appropriate supervision was provided by the consultation obstetrician in relation to labour and delivery. Overall in relation to these issues, Dr Bisits concluded the standard of care for Simone and Nixon was consistent with what most obstetricians would consider acceptable.

29. Dr Bisits was of the opinion Dr Minuzzo provided an adequate standard of care and supervision of Dr B. The decision made by Dr Minuzzo to proceed to a caesarean section was a reasonable one. She also recognised and anticipated a difficult delivery and discussed this with Dr B and they agreed the head did not feel too jammed into the pelvis and a caesarean section was unlikely to be difficult.

Summary of Root Cause Analysis findings

30. The RBWH commissioned its own Root Cause Analysis (RCA) review of Nixon's death. The RCA identified issues including an excessive length of the second stage of labour, a delayed diagnosis of obstruction of labour, and an avoidable delay in commencement of a caesarean section.

31. The RCA team noted that no delay by itself was significant, but the overall effect of each delay became significant. The RCA team felt there was no sense of urgency to deliver despite this being a category two procedure. However, the RCA concluded that none of these factors were directly attributable to the outcome, noting that whilst an impacted or obstructed head is always a possibility in this situation, the outcome could not have been reasonably anticipated based on the prior events.

32. The RCA team noted that it is not possible to make a direct connection between the events and the outcome. No root cause was therefore identified.

33. Nevertheless the RCA made a number of recommendations for addressing lessons learnt in Nixon's case, including in relation to lack of documentation around discussions during pregnancy as to a patient's plan of care and delivery; timely progression through second stage of labour; timeliness of proceeding to

caesarean section once this mode of delivery is decided upon; and use of medications to relax the uterus during a suspected difficult caesarean delivery.

34. Dr Amanda Dines, Executive Director of RBWH stated in a letter to the coroner that particularly the second stage was unnecessarily prolonged and steps should have been taken to expedite delivery. Dr Dines also stated she reviewed the RCA report and the autopsy findings in the role of commissioning authority and concluded that the sum of the delays in the care were the root cause of the outcome. Dr Dines stated that the RCA team had applied a strict interpretation of the RCA State guidelines where their approach was that root causes should only be found in those cases where they are 100% certain the contributing factor caused the incident. Dr Dines felt that this approach was likely to lead to missed opportunities to identify root causes and remedy them to prevent further adverse outcomes. Dr Dines was arranging a review of the RCA approach and update of training in relation to this particular issue. She agreed with the recommendations and lessons learnt.

35. The recommendations made were as follows:
    - **RCA Rec #1:** WNS to develop a Procedure or Guideline for Cat 2 LSCS that identifies acceptable timeframe from decision to delivery (WNS to audit compliance with the procedure/guideline)
    - **RCA Rec #2:** Any changes to the patients' plan of care or issues identified must be documented by medical staff in the Medical and Obstetric Issues Management Plan in the Pregnancy Health Record (charts to be randomly audited to measure compliance
    - **RCA Lesson Learnt #1:** The team must work collaboratively to ensure timely progression through the second stage of labour. Pro-active decision making will minimise delays and ensure that any clinical changes are identified and the care plan is updated at the earliest point (random audits of total time in second stage labour to measure compliance)
    - **RCA Lessons Learnt #2:** WNS should consider the use of Tocolytic agents to relax the uterus during a suspected difficult delivery at LSCS (to be communicated to staff and use of Tocolytic agents monitored)

36. As well RBWH conducted a HEAPS analysis and a Mortality and Morbidity Meeting where the case was discussed and recommendations made for improvements.

Evidence relating to the issues

Evidence of staff relating to the management of labour

Antenatal Care

37. Simone's pregnancy had been complicated by gestational diabetes and gestational hypertension, which were managed through diet and medication. Ultrasound scans revealed no abnormalities but confirmed the fetus was large for gestational age.

38. Simone had been concerned during her pregnancy that Nixon might be a large baby and difficult to deliver naturally. Simone says she raised this concern about her large baby with doctors on a number of occasions and asked about

the possibility of an elective caesarean section. The medical records documenting Simone's antenatal consultations include notations that this was discussed, but it appears a decision was never made as to whether Simone should be scheduled for an elective caesarean (prior to her admission on 3 June 2014 for hypertension at almost 38 weeks gestation).

39. The RCA team identified two occasions during the antenatal period where it was documented in the medical chart that there were discussions regarding an elective LSCS:

    i. *'07/05/14 34+4/40 Midwifery entry: Concerned re size of baby, enquiring re. pros and cons of elective LSCS etc. Registrar entry- Discussed with patient too early to counsel regarding mode of delivery. Patient considering elective LSCS. Instructed patient that we should repeat USS @ 38/40 & advise re conservative v's IOL v's LSCS. Highlighted increased morbidity with LSCS'*

    ii. *'28/05/14 37/40 Consultant entry: Mode of delivery discussed. May decide on IOL or elective C/S. Will need to be rediscussed when timing of delivery has to be decided (i.e. ? PET)'*

40. The consultant who spoke to Simone on 28 May 2014 was Dr Joanna Laporte. In her statement Dr Laporte says she does not recall everything that was said but she had a long discussion with Simone, during which she would have explained the risks and benefits of caesarean, IOL and vaginal delivery. She did recall Simone was concerned about the size of her baby and wanted to discuss her options in depth. Dr Laporte stated *we encourage mothers (and particularly first time mothers) to try to avoid a caesarean section if possible*. However, Dr Laporte further states that she would have concluded the discussion *by reassuring Simone that, ultimately, this was her decision and that no one could make her have a vaginal delivery if she did not want one. I made sure Simone understood that she could request an elective caesarean section if this was what she wanted*.

41. Dr Laporte, who was the last consultant to see Simone prior to her admission on 3 June, says she planned to review Simone again in a week, at which time they would finalise her delivery plan. (A note dated 30/5/14 by a midwife confirms '*obs (obstetrician) next Wednesday 4/6/14*'). Dr Laporte explains she did not then get the opportunity to have this further discussion with Simone.

42. There was no documentation relating to further discussions being required with Simone regarding mode of delivery on the *Medical and Obstetric Issues Management Plan.* The RCA team identified that this would have been the most appropriate place to document this as Simone was seen by various clinicians. The RCA team concluded that the patient was not offered a final discussion regarding mode of delivery.

43. Regarding whether a caesarean section was indicated and should have been performed earlier, particularly given Simone's claims that she requested a caesarean section on a number of occasions, Dr Bisits advised there were no absolute indications for a caesarean section. Dr Bisits stated there was an

increasing tendency, where the baby was bigger than 4kg and there is gestational diabetes, to offer women this mode of delivery if they have requested it and considered all the information. Dr Bisits noted the increased possibility of significant shoulder dystocia (difficulty delivering the shoulders and body of the baby), which can cause significant hypoxaemia and neurological injury to the baby, as well as significant perineal trauma for the mother. Dr Bisits also noted the possibility of a deeply engaged head in the pelvis and a difficult disimpaction at time of caesarean section as something that 'is rarely quoted as a concern'. Dr Bisits cited a number of reasons to attempt avoiding a caesarean in Simone's circumstances, including that the baby's estimated weight can be inaccurate, the baby was being delivered just after 38 weeks and therefore at a time that is most likely to be beneficial in minimising the problems of a bigger baby at birth, and that the ability to manage shoulder dystocia has improved significantly in the last 20 years.

44. In summary, Dr Bisits stated there are varying practices. The minimum requirement is that the risk factors for a difficult birth be recognised and discussed with the woman. A caesarean section is not mandatory. If the woman requests a caesarean section her concerns do need to be addressed and either a caesarean section is performed as an elective procedure or every precaution is taken to proceed safely with induction and ensure that there is ready recourse to caesarean section should there be a non-progressive labour. In addition every reassurance needs to be given that the problem of shoulder dystocia, if it arises, can be dealt with efficiently and safely.

45. Regarding whether an elective caesarean section should have been scheduled based on medical or obstetric indications, Dr Lyneham noted that the clinical concerns antenatally included likely fetal macrosomia, gestational diabetes (controlled) and mild to moderate hypertension. Dr Lyneham noted that vaginal delivery of a big baby carries a risk of shoulder dystocia, which can lead to hypoxemic brain damage or damage to the brachial plexus resulting in Erb's palsy. However, Dr Lyneham also noted that *caesarean sections are associated with potential risks, and there are no evidence-based guidelines that recommend in the presence of an infant weighing about 4.2kg…and gestational diabetes controlled by diet, elective caesarean section should be performed*.

46. Regarding whether an elective caesarean should have been scheduled in light of Simone's request to deliver via this mode, Dr Lyneham stated as follows: *It is clear from the records that on a number of occasions Simone did attempt to explain to those caring for that she either wished to have an elective caesarean section, or she wished to discuss in detail the advantages, disadvantages and risks of a caesarean section compared to a vaginal delivery*. There are at least two references to hospital staff planning to discuss this with Simone in the future, but on my analysis of the records this never effectively occurred.

47. Dr Lyneham expressed the following opinion: *Patient autonomy is extremely important, no less in obstetric cases, and it is entirely reasonable for women who are pregnant to have real and understandable anxieties about certain complications that can be avoided by elective caesarean section… If a woman raises these concerns, there is a requirement on the nursing and medical staff caring for that woman to respect her wishes to discuss the matters, and indeed*

to undertake those appropriate discussions. Only then can the woman make a well-informed decision about her birthing choices. I do acknowledge that this is substantially easier to do in the private sector where there is generally one obstetrician caring for the woman, and it is more difficult in the public sector where there is inevitably substantial fragmentation of the care provided to the woman, and greater difficulty for the woman to be seen in consultation by more senior staff members who have the ability to discuss these issues.

48. Pursuant to the RANZCOG Statement that was current at the time Dr Lyneham concluded that *if Simone had received evidence-based information about the advantages, disadvantages and risks of caesarean section versus induction of labour, and despite an awareness of the risks, had then expressed a wish to have an elective caesarean section, in my view an elective caesarean section should then have been scheduled for Simone.*

Admission to Hospital and first stage of labour

49. On Tuesday 3 June 2014 at almost 38 weeks gestation, Simone presented to the RBWH with a history of headaches over the previous two days. A Senior House Officer discussed her presentation on the telephone with Dr Christopher Arthur. Dr Arthur then spoke to the consultant Dr Bagchi and a decision was made for Simone to be admitted overnight for observation with regards to her hypertension with a view to inducing Simone once a birth suite became available. The medical notes record that Simone was suitable for Induction of labour (IOL). It is evident from the medical notes neither Dr Arthur nor the consultant actually discussed this plan with Simone or personally reviewed her.

50. Dr Petrina Duncan as the registrar on the ward gave evidence she had a discussion with Simone regarding the mode of delivery. Simone was concerned about the baby's size and asked about the options including a caesarean section but Dr Duncan said Simone did not indicate a preference and said Simone was happy to proceed with an IOL. As a first time mother with a large baby Simone was nervous and Dr Duncan advised that it was difficult to assess if a baby is going to fit through the pelvis

51. Dr Laporte was spoken to on 4 June 2014 by Dr Duncan. Dr Laporte agreed an IOL was clinically appropriate. Dr Laporte states she did not realise this was the same patient who she spoke to a week prior about the possibility of an elective caesarean section. Dr Laporte says Dr Duncan did not say anything to her about the patient requesting a caesarean section.

52. Unfortunately the notes of the attendance by Dr Duncan were written by the resident medical officer and did not record the discussion with Simone. Dr Duncan agrees in retrospect it should have been. What the notes do record is that there had been a discussion with the consultant and it was agreed an IOL was appropriate, the mother was informed, an information pack was provided and the mother was *happy to progress with nil concerns.*

53. Simone disputes there was any discussion and she was simply told she was having an IOL. Dr Duncan believed she would have had a discussion but conceded it was possible Simone said she wanted to discuss with Dr Laporte her preference for a caesarean section but Dr Duncan said she does not recall this. Dr Duncan also referred to her usual practice and said she would always

explore with a mother the reasons why they may want a caesarean section and if they want one, then it would be booked.

54. The RCA Team agreed that where babies have an estimated fetal weight above 4.25kg with gestational diabetes, a Lower Segment Caesarean Section (LSCS) should be offered or considered. The RCA team concluded that in this instance, the baby weighed less than this and an IOL was an appropriate decision.

55. However, the RCA team could find no documentation to support that a conversation had occurred with the patient about her options regarding mode of delivery at the time the decision was made for IOL, which would have supported informed consent. The RCA Team supported that there was no clinical indication for the patient to have a LSCS and IOL was an appropriate decision based on the clinical presentation. The RCA Team noted from the various entries in the medical chart that the patient had fragmented care with a number of clinicians from the multidisciplinary team involved in her care. The RCA Team concluded that improved use of the *Medical and Obstetric Issues Management Plan* would provide a more efficient and effective communication of plan of care or issues between the team.

56. Regarding the decision to induce Simone following her admission, Dr Bisits considered this was appropriate, noting it was now accepted practice (based on a large trial in Holland) that it is better overall to induce women in Simone's situation (gestational hypertension treated with labetalol) rather than wait. Dr Bisits also noted the combination of gestational diabetes and accelerated fetal growth as another possible indication for induction.

57. Simone's contemporaneous notes record that during the evening of 5 June both she and her partner, Martin spoke to midwife Chloe Simpson to ask for a caesarean. Progress Notes include an entry by Chloe Simpson that Simone was very teary and *over it* and *wants a caesarean.* Also an entry later on 5/6/14 @ 2325 (by another midwife) that Simone *appeared tired and teary --> reported she was fed up with induction process & wanted it all to be over…d/w Simone and partner Marty that usually we would try more Prostin gel doses before deciding whether induction was successful. Simone not wanting more Prostin gel tonight --> wanting to discuss options with doctor.*

58. MW Simpson says in her statement that Simone's request for a caesarean did not seem to require further discussion as it was 2200, Simone's pain had settled, she was calm, she was not requesting a caesarean once her pain had subsided, and she had agreed to the plan to return to the ward and continue induction of labour in the morning. In her evidence MW Simpson said that women say lots of things while they are in pain during labour and her priority was to ensure Simone did not remain distressed. It was reported in the media that MW Simpson had somehow made a decision to refuse Simone the option of a caesarean section. I do not accept that this is how her evidence should be characterised and in fact her evidence on this issue was later mirrored by Dr Lyneham. Essentially the evidence of Dr Lyneham was a distinction should be drawn as to the approach taken towards decisions before labour as to mode of delivery and the situation where labour was then occurring. He said the midwife had an important role in calming and reassuring the patient, which is largely what MW Simpson did. MW Simpson was unaware that Simone had queried

about her options in the antenatal clinic and in retrospect she stated if she had known Simone wanted a caesarean section the whole time she would have contacted a doctor to speak to Simone.

59. Dr Kirstin Millard also addresses the issue of Simone's request for a caesarean in detail in her statement where she states she did not discuss directly with Simone given her waters had then broken, however if Simone had raised the request with her, she would have advised that a caesarean was not clinically indicated. Dr Millard says Simone *did not voice any objection* to her plan to move forward with induction.

60. Midwife Louise Stephenson who cared for Simone overnight in the birth suite (0030-0655) says at no time during her shift did Simone request a caesarean. However, at handover at the beginning of her shift, MW Stephenson was advised that Simone had disclosed to both the afternoon and night shift midwife that she was tired of the induction process and wanted a caesarean. It appears MW Stephenson did not initiate any discussions with Simone about this and said it was not in her scope of practice to do this, rather she would ask if the mother wanted to speak to a doctor.

Second Stage of labour

61. By around 0730 that morning Simone was assessed as being fully dilated but with the baby's head not yet on view. At around 0830 Simone was given syntocinon (medication to help increase the strength of her contractions), and active pushing was commenced at around 0855 under the care of MW A and MW Hopman.

62. The RCA Team found no documentation to indicate that the medical staff considered that the rate of infusion of Syntocinon used (in order to stimulate adequate contractions in the second stage) could be due to an impending obstructed labour. This should have been considered with a known large for gestational age fetus. The RCA Team concluded that it was a reasonable decision to commence Syntocinon to progress labour, however the rate of infusion may have contributed to the outcome by increasing the contraction strength in an obstructed labour.

63. The RCA Team noted that there were delays in reviews or processes that when added up contributed to a significant delay in the final delivery of the baby, and therefore potentially exacerbated the potential for an impacted fetal head. No delay by itself was significant, but the overall effect of each delay became significant. The RCA Team noted that there was no review after one hour of active pushing as requested in the medical notes by the consultant.

64. The first review by a registrar was delayed by 30 minutes. Active pushing was noted in the RCA as being for two hours and 24 minutes, 24 minutes more than recommended for pushing with no progress in the *Queensland Maternity & Neonatal Clinical Guideline Normal Birth*. There is some confusion in the records relating to that time frame and it may be the time frame is closer to two hours although the records also indicate syntocinon may have not been ceased for a period up to 20 minutes.

65. Regarding whether the management of Simone's labour was appropriate, Dr Bisits considered it was. Dr Bisits stated that Simone was monitored appropriately in this period, as was the baby's heart rate. With regards to the second stage of labour, Dr Bisits stated: *The practice of the midwives to allow one and a half hours of passive descent is acceptable in a woman with an epidural (particularly a first time mother). The important point to note is that the registrar Dr B, in line with accepted practice, reviewed Simone after one and a half hours of active pushing.*

66. Regarding whether management of Simone's labour was reasonable and appropriate, Dr Lyneham expressed the view that it was. Explaining his reasons for this view, Dr Lyneham stated: *Once the Prostin vaginal gel was inserted, Simone made very good progress with full dilation being reached within a very reasonable time. The decision to allow an hour or so of passive descent was reasonable and although not well medically documented, the administration of the oxytocin was reasonable, assuming that the recording of Simone's contraction frequency being only 2 in 10 minutes was accurate. I should add that careful fetal monitoring was maintained throughout Simone's labour and there was at no time any evidence of fetal compromise. This was confirmed by the cord blood samples showing no evidence of fetal acidaemia: it would be reasonable to conclude the infant was in good condition prior to the caesarean section commencing.*

Decision for a Caesarean Section

67. After a period of active pushing, Simone was reviewed by the registrar Dr B who noted that Simone's cervix was now 9cm dilated rather than fully dilated at 10cm as previously observed. The baby's head was still not on view. The consultant obstetrician in Birth Suite at the time was Dr Minuzzo. She was asked to review Simone and Dr Minuzzo attended and confirmed these findings. Obstructed labour was diagnosed and a decision to deliver via a 'category two' caesarean section (that is, where there is maternal or foetal compromise but not immediately life threatening) was made.

68. The reason for the discrepancy in finding the cervix was not now fully dilated when it had seen to be earlier is not able to be reconciled with any certainty. Dr Bisits stated *the difference in examination findings can also happen because of interobserver variations (limited reproducibility of examination findings).* Dr B stated it was also possible labour had regressed. The RCA Team considered that it was possible that the patient was not fully dilated prior to commencing pushing; however this may never be determined.

69. The RCA Team were in agreement there was evidence consistent with obstructed labour. The review occurred at 1105 and the Syntocinon was ceased at 1120. The patient's contractions declined quickly after the Syntocinon was ceased. The RCA team noted the registrar did not document the time that the category 2 LSCS was called and there is a discrepancy with the theatre booking form, which on investigation appeared to be an error in the operating theatre records. The RCA Team agreed that it was appropriate for this procedure to be category 2 and not at category 1. It was agreed that the Syntocinon infusion should have been ceased immediately when obstructed

labour was diagnosed and a decision to deliver via a caesarean section was made.

70. Regarding whether a caesarean should have been performed earlier given lack of progression, Dr Lyneham advised *There was no indication, in my view, to perform a caesarean section during the first stage of labour as the progress of the labour was well within normal range. Delay in the second stage can only be diagnosed once the delay had occurred, and the usual time to allow pushing in the second stage is two hours. In my opinion there was no indication to perform a caesarean section earlier in the second stage than when the decision was made.*

71. Arrangements were then made to prepare a theatre for the procedure. During this time, the registrar Dr B and the birth suite consultant Dr Minuzzo discussed whether it was necessary for the consultant to attend the procedure. There was some contention with respect to the nature of this conversation. Dr B stated she thought the delivery may be difficult and wanted the consultant to repeat the examination. After it was decided a caesarean section should proceed because of failure to progress Dr Minuzzo asked if Dr B wanted her in the operating theatre and before Dr B could respond Dr Minuzzo stated she did not think it would be hard to get the baby out. Dr Minuzzo said it was her view it was in the form of a joint conversation between her and Dr B. Once Dr B was told by Dr Minuzzo she did not think it would be too hard to get the baby out Dr B was reassured and did not question the decision. Dr B stated she did not have a .good working relationship with Dr Minuzzo. Dr Minuzzo stated Dr B was a capable doctor and Dr B may have perceived this was the case but it was not the fact. Neither Dr B nor Dr Minuzzo were able to recall the conversation in specific detail, other than Dr B recalls to words it would not be too hard to get the baby out. Dr B then discussed the procedure and risks with Simone and her husband and obtained consent to proceed.

72. Simone's caesarean section delivery commenced at around 1243, a little over two hours after the decision that a category two caesarean was needed. There had been a delay due to Dr B being called to perform a vacuum delivery of another baby because there was an abnormal CTG. Dr Minuzzo spoke to Dr B as Dr Minuzzo was preparing to handover to another consultant doctor at the end of her shift and wanted to know if Dr B wanted her (Dr Minuzzo) to attend. Dr B said she did not need assistance on the basis of their earlier conversation.

73. The RCA Team felt there was no sense of urgency to deliver despite this being a category 2 procedure. The RCA Team also noted that there was no Procedure or Work Unit Guideline for Category 2 LSCS. The baby was monitored in the Induction room in theatre, and there were no concerns noted regarding fetal well-being throughout the whole labour process. The theatre was available and the patient was ready for the procedure within an acceptable time.

74. The RCA Team agreed that better utilisation of the Obstetric team would have reduced the delay in starting the delivery by allowing the registrar to perform the caesarean and another doctor to attend to birth suite situations. Category 2 caesarean sections should be completed without undue delay.

75. Dr Bisits noted *it is not uncommon in busy tertiary hospitals for there to be delays in accessing theatre time for caesarean section. While there are guidelines for the urgency and timeliness of caesarean sections there is little good evidence to support these guidelines. Where there are competing demands for operating theatre space or skilled staff, judgements have to be made about the actual urgency that is warranted for a case.*

76. Regarding the lapse of time between the decision to proceed to a category 2 caesarean and the commencement of the procedure, Dr Bisits stated: *In the case of an obstructed labour it is desirable that the caesarean be performed within the hour after the request. However if there are delays due to factors such as mentioned above [competing demands for operating theatre space or skilled staff] then most obstetricians would accept that the caesarean take place within two hours.*

77. Dr Lyneham was asked whether the time elapsed between classifying Simone as requiring a category 2 caesarean section and the commencement of the procedure (stated in the letter of instruction from the legal representatives for the family to him as one hour 38 minutes) was reasonable and appropriate: *In the absence of any evidence of fetal compromise, and understanding the unexpected developments that can occur in a large obstetric teaching hospital, I would not be critical of the delay of 1 hour 38 minutes. In general, one would aim for 60 – 75 minutes so under the circumstances, 1 hour 38 minutes was not unreasonable, particularly in the absence of any CTG abnormalities. I should add that in my opinion there was probably no effect on the infant from any delay: the oxytocin was turned off so Simone's contractions probably lessened, and certainly active pushing stopped from that time, so it is unlikely that there was any significantly increased impaction of the fetal head during that time.*

78. Dr Dines, the Executive Director of RBWH responded to the above statements of Dr Bisits in a letter to the Coroner by saying Simone's labour, particularly the second stage was unnecessarily prolonged and steps should have been taken sooner to expedite delivery. Dr Dines agreed with Dr Bisits that large teaching hospitals can be very busy but, as the Executive Director of RBWH, she remained committed to minimising the risk of delay that has an adverse clinical impact.

Delivery

79. From the outset, there was considerable difficulty when attempts were made by Dr B to disimpact the baby's head out of the pelvis. Dr B requested the assistance of the consultant Dr Laporte, who was at the time receiving a handover from Dr Minuzzo, as well as the gynaecology registrar on-call. The message requiring consultant assistance was not received by either consultant.

80. In the meantime, because of the difficulty in disimpacting the fetal head, a midwife, RN A, who was there ready to receive the baby at birth, was requested to assist by Dr B with disimpaction by pushing up on the baby's head vaginally. RN A says she assisted by exerting upward pressure with two fingers on the baby's head through the vagina. She avoided the caput and fontanel. RN A says she received no specific direction or instruction from Dr B and had never

received training herself in the method to be adopted. Despite this assistance Dr B was still not successful in delivering the baby.

81. Other senior medical staff were called to attend the theatre urgently to help with the delivery. Dr Lehner was sitting outside an adjacent operating theatre and was requested to assist and he took over from Dr B. Dr Arthur had received a page to attend immediately and he came from another area of the hospital and ran past Dr Laporte and Dr Minuzzo, who were in conversation near the theatre. Dr Laporte asked Dr Arthur why he was there and he said he did not know but was responding to an urgent call. Dr Lehner was already present when Dr Arthur entered and was endeavouring to deliver the baby. Dr Arthur provided assistance by inserting his hand in the vagina with fingers splayed and palm supinated. He felt the fetal head was very soft, something he had not felt before. Dr Lehner also stated the fetal head was abnormal similar to crushed eggshell. They were able to effect delivery quickly.

82. Dr Laporte had at this stage entered the theatre. She had told Dr Minuzzo to leave the case to her on the basis it was now her shift. Dr Laporte assisted Dr B in finishing the procedure by checking for any potential damage to the uterus of which there was none. Dr B later was very distressed and Dr Laporte arranged for cover for Dr B for the rest of the shift.

83. The RCA team noted an urgent request for a call to be made to the consultant for immediate help was relayed to theatre staff. Attempts were made to call for further assistance by theatre staff via switch for emergency medical staff assistance. The consultants did not receive a call or page. Two additional registrars attended, one from the emergency call via switch and one who was in an adjacent theatre. The RCA Team discussed system failures in contacting staff for assistance and reviewed the telephone records of all staff including the system failures of the consultant phones. The RCA team discussed that by chance the registrar passed the consultant who followed the registrar into theatre. The RCA team concluded that despite the system failures, there was no significant delay in the consultant arriving and assisting which would have contributed to the outcome; however more robust systems need to be in place to contact staff when required. The RCA Team acknowledge that as a result of local review of this incident a DECT phone system is now in place for contacting Birth Suite Consultants.

84. The RCA Team acknowledged that when a fetal head is deeply impacted and moulded into the pelvis there can be difficulties in releasing the head due to a vacuum between fetal and maternal tissues, the downward force exerted by uterine contractions, and an inability to move the surgeon's hand between the pelvis and the fetal head. It is often necessary to displace the fetal head anteriorly by having a second person pushing on the head via the vagina.

85. The RCA Team noted that there was no administration of a tocolytic agent to relax the uterus during the procedure, such as GTN, or terbutaline which may have reduced the downward force on the fetal head to allow an easier delivery. The RCA team concluded that this would need to be the decision of the accoucheur at delivery. In this case Dr B considered the mother’s uterine tone was not contributing to impaction and the evidence was such the use of a tocolytic agent may not have been useful.

86. The RCA Team noted that the registrar was proactive and made a correct and timely decision in performing a T incision on the uterus to assist in delivery when difficulties extracting the fetal head were encountered.

87. The RCA found that prior to the transfer of the patient to theatre the registrar Dr B and the consultant Dr Minuzzo discussed the potential for fetal head impaction at delivery. Both agreed that the fetal head did not appear to be deeply impacted at their most recent examination and delivery should not pose any significant challenges to the registrar. The RCA Team agreed that the registrar (5th year) was adequately experienced and qualified to undertake the procedure without immediate consultant supervision and to also be able to determine if further assistance was likely to be necessary.

88. Dr Bisits made the following comments regarding the steps taken to deliver baby Nixon: *The caesarean was done by a registrar of adequate experience and one who normally can deal with even more difficult caesarean section procedures. The registrar recognised there was difficulty in extracting the baby's head from the pelvis. It is clear the head was more deeply engaged than expected. It was appropriate to ask the midwife to help with disimpaction of the baby's head by exerting pressure with her right hand in the vagina. It is not clear however whether specific instructions were given to ensure that the pressure on the baby's head was distributed in an even fashion with a cupped hand rather than two fingers exerting a more focussed pressure, which 'probably' involves 'an increased chance of some injury to the baby's skull bones and brain tissue'. The registrar appropriately cut a T incision in the uterus once the extent of the difficulty became clear, and appropriately called for help*.

89. Dr Bisits stated all of the measures taken to deliver Nixon were appropriate steps, however it is not clear whether a cupped hand or direct digital pressure was used to press on the baby's head. *This distinction is important because injuries using direct digital pressure have been noted previously.*

90. Dr Lyneham was asked whether the methods used to disimpact Nixon's head from Simone's pelvis was reasonable and appropriate. Dr Lyneham noted Dr Milne's opinion that focussed pressure that results when two fingers are used to push the impacted head up via the vagina in an attempt to disimpact the head from the pelvis is *more likely to cause fracture than a broader area of application of force*. Dr Lyneham then stated: *The midwife who initially performed the manipulation stated in her report that she did use two fingers to push the fetal head up, and in my opinion there can be little doubt that that method was neither reasonable nor appropriate. That having been said, it was probably something that the midwife had not performed before, certainly not on a regular basis, and about which she may not have received any training. I would agree with Dr Bisits that the technique used by the midwife would not have been done 'from any careless or negligent attitude' and it was 'an understandable response to an emergency situation'. The attempts at disimpaction should combine an attempt at flexion of the baby's head through the uterine incision by the operating surgeon, and upward pressure on the fetal head from below using a cupped hand rather than two fingers.*

91. Dr Bisits suggested the following approach in the situation of a deeply impacted head at the time of caesarean section:

- *Awareness of when the situation might arise.*
- *Careful assessment of the woman immediately prior to caesarean section to see whether a safe assisted vaginal birth can be performed.*
- *All maternity care staff need to be aware of the appropriate measures to correct this situation, including midwifery staff who will be attending the caesarean section as well as anaesthetists.*
- *The first step in disimpaction should be flexion of the baby's head through the uterine incision by the primary operator.*
- *The second step should be upward pressure on the head from the vagina using a cupped hand, not two fingers, to flex the head upwards.*
- *The third step should be reverse breech extraction using the same principles that are required for the birth of a breech at caesarean or in a vaginal delivery.*
- *The fourth step should be a T incision or similar such extension of the uterine incision.*
- *Other possibilities include:*
    - *The use of a newer device called the fetal pillow*
    - *The use of Tooltips to minimise downward pressure on the fetal head.*
    - *Steps to achieve disimpaction of the deeply engaged head at caesarean section needs to be part of any obstetric emergency training program for both obstetricians and midwives, and should include anaesthetists as well.*

92. Dr Lyneham stated in response to the question whether Nixon would have been able to have been delivered without incident if the caesarean section had been performed earlier: *on my interpretation of the autopsy report, the underlying problem was obstructed labour but the direct cause of the infant's death was the trauma that was probably associated with the attempts to disimpact the fetal head by applying pressure from below, through the vagina. If a caesarean section had been performed earlier, the head would not have been impacted so firmly in the pelvis, and therefore the pressure that was required to disimpact the head would not have been necessary. That having been said, I have indicated that in my view there was no indication for a caesarean section earlier in labour, based on obstetric grounds.*

93. At birth, Nixon was not breathing and resuscitation efforts were immediately commenced and continued for some time, however Nixon showed no signs of recovery and was declared deceased at 1340.

94. The RCA Team noted that at delivery, the cord gases taken were normal indicating that there was no chronic hypoxia. The RCA team had no concerns with the resuscitation process and the decision made to stop resuscitation. Dr Bisits commented that from his limited obstetric perspective, the resuscitation attempts made following Nixon's birth were appropriate.

Consultant involvement

95. With regards to Dr Minuzzo's review, assessment, monitoring and management of Simone's condition and progress, Dr Bisits noted as follows:

    a. Dr Minuzzo became aware of Simone's presence in the labour ward at the handover at 0800 on 6 June 2014. This is standard practice and represents the first step in a consultant familiarising themselves with women who will birth their babies on the delivery suite.

    b. Dr Minuzzo personally reviewed Simone after 0900. Dr Minuzzo states that at no time was she informed Simone had made a request *earlier during the antenatal period* for a caesarean. She says Simone made no request for a caesarean at the time of her review at 0915, and Dr Minuzzo said there appeared no clinical need to consider a caesarean section at this time.

    c. The registrar Dr B reassured Simone that the progress of labour would be carefully observed. Dr Bisits stated this reflects a good standard of consultant care within a public hospital. Dr Minuzzo was made aware of Simone's progress in labour then personally examined her to verify the registrar's findings that at 1030 Simone was not fully dilated. Dr Bisits said this also represents an adequate standard of care. The decision to proceed to a category two caesarean section at the time was reasonable and would be supported by most obstetricians.

96. Regarding whether Dr Minuzzo should have recognised and anticipated a difficult delivery and obstetric morbidity surrounding prolonged second stage labour and obstructed labour, Dr Bisits advised: *Dr Minuzzo did recognise that there was an obstructed labour and the possibilities of a difficult delivery along with obstetric morbidity. It was for this reason that she made the very appropriate decision to do a caesarean section within the requested timeframe. She also discussed with Dr B potential issues around the caesarean section. Both she and Dr B agreed that the head did not feel too jammed into the pelvis and therefore a caesarean section was unlikely to be too difficult.*

97. Regarding the level of instruction, support and supervision provided by Dr Minuzzo to Dr B for performing the caesarean section, Dr Bisits advised: *Dr Minuzzo was particular about performing the vaginal examination prior to the decision about the caesarean section and therefore could make a considered judgement about the likely difficulty of the caesarean section. As well she discussed this in some detail with Dr B. It was reasonable to think that Dr B at her level of training should be able to manage a caesarean section such as this one. In a tertiary hospital such as the RBWH there will always be access to help should the need arise. The level of supervision therefore was adequate*.

98. Regarding the actions taken (or not taken) by Dr Minuzzo at the end of her shift to ensure the ongoing safety and care of Simone and Nixon, Dr Bisits stated: *Dr Minuzzo offered to assist with the caesarean but Dr B said she would be able to do the procedure. This reflects an adequate level of attention to the situation. Dr Minuzzo handed over to another consultant, Dr Laporte, at 1300. It was clear that there was a formal handover. Not long after the handover Dr Laporte was called to attend theatre urgently in order to help with the delivery*

of the baby. At the end of her shift Dr Minuzzo demonstrated an adequate level of care to ensure the ongoing safety of Simone and her baby.

The changes that have already been implemented at the RBWH since Nixon and Archer's death.

99. The deaths of Archer Langley, Nixon Tonkin and an earlier death of a baby Mia Davies (also the subject of an inquest) as well as concerns expressed internally has resulted in many significant changes to systems and processes employed by the RBWH obstetric department.

100. Over the past few years the RBWH has been updating my office of the changes as they have been made. By way of summary, the Executive Director Dr Amanda Dines states the changes were to ensure proper consultant led care, safe effective handovers and prompt escalation of concerns. The most recent update came from a letter of Dr Dines dated 22 March 2017 with a USB file of a large amount of information.

101. It is evident that Queensland Health commissioned a Part 9 Health Service Investigation into the quality and safety of clinical care and the repeated failure of the RBWH O&G Department to achieve ongoing accreditation as a training facility by RANZCOG. RANZCOG had in 2014 made a number of recommendations and this was followed up by a further visit and report in August 2015. This resulted in external and internal reviews and a *Roadmap for excellence: supporting change at the RBWH O & G Department 2015* was developed and signed off in September 2015. External consultants have been assisting implementation.

102. RANZCOG has now granted provisional accreditation in 2016 for four years subject to a satisfactory progress report in August 2018.

103. The Roadmap sets out to deliver a redesigned O&G Service to improve patient care and outcomes. This includes :

- introduction of a new single Clinical Director (previously there were two Clinical Directors);
- structural change to the leadership team and establishment of multidisciplinary clinical teams;
- a new clinical roster system

104. Staff were regularly informed about the changes including through newsletters and other means as resourcing, staff and rostering issues were developed and implemented.

105. An audit schedule was developed to monitor:

- Registrar & Consultant reviews of high risk patients
- Midwife antenatal practices including completion of growth charts and obstetric management plans in the pregnancy health record.

106. RBWH have also employed additional staff including:

- four advanced trainees
- additional Principle House Officers

- Senior Medical Office (SMO) Conjoint position with the University of Queensland
- Clinical Director Obstetrics and Gynaecology

107. As well there has been an emphasis on ensuring staff including Registrars and Consultants are provided with training. The O&G Department holds meetings with Registrars and Consultants on a monthly basis, to provide a forum to discuss changes in procedures and offer all medical staff the opportunity to provide improvement suggestions.

108. RBWH also developed two additional procedures. The first related to the *Impacted Fetal Head at Caesarean Delivery.* In summary this provides:

- obstetric consultant should be present if impaction of the fetal head is anticipated, including caesarean sections:
    - at full dilation
    - following trial of instrumental delivery or failed instrumental delivery
    - after prolonged periods of obstruction
    - following prolonged periods of pushing in the 2nd stage
    - where presenting part is at or below the ischial spines on vaginal examination
    - where the clinicians are suspicious for impaction of the fetal head
- where proceeding with a second stage caesarean section, the process should involve a senior obstetric clinician (consultant or senior registrar credentialed for complex emergency caesarean sections) and senior midwife
- procedure for elevating the fetal head: manually by trained staff, using cupped hand with fingers spread over the skull to spread force and decrease risk of trauma, and applying gentle steady pressure – or alternatively by using a fetal pillow placed in the vagina and under the fetal head and then inflated
- consider use of a tocolytic (e.g. GTN) where indicated (refer to GTN procedure document)
- other techniques including reverse breech extraction should be used as a last resort or by an experienced clinician

109. The inquest heard consistent evidence from staff that the O&G Department is now more consultant driven with a greater presence of consultants at the handovers and ward rounds, consultants involved in any emergency cases and more staff to cover leave and absences and improvements to morale and communication. A consultant is now physically present on every shift. Staff also spoke of increased mandatory training in such topics as identifying obstructed labour, simulated emergencies, CTG, RANZCOG workshops etc. High risk patients would now be reviewed by a consultant.

110. The apparent difficulties with mobile reception in some areas and pagers has been resolved with the provision of DECT phones (a form of digital cordless phone).

111. The staff were also aware of the new obstructed labour procedure/policy and how they can escalate concerns. One staff member said a lot of work has been done on the escalation process. In suitable cases fetal pillows are used. *The Impacted Fetal Head, Caesarean Delivery in the setting of* procedure states that an obstetric consultant should be present if impaction of the fetal head is anticipated. The procedure gives a description of the techniques to be adopted, in keeping with the evidence of Dr Bisits and Dr Lyneham.

112. As well the procedure states clinical staff need to be trained and are confident in the use of the procedure and steps involved. On the basis of the evidence of staff at the inquest and the evidence of training provided by RBWH, this aspect has been addressed.

RANZCOG C-Obs 37 Delivery of the Fetus at Caesarean section

113. As Dr Bisits opined, and I accept, Nixon's death was most likely caused by skull fractures arising from excessively focussed pressure in attempting to disimpact the head using two fingers in the vagina to press upwards on the baby's skull. Dr Bisits noted that whilst upward pressure on a baby's head in this manner does not usually cause such catastrophic injuries, such cases have been reported. [1]

114. The findings in the *Inquest of Benjamin Glasgow* were forwarded to RANZCOG in 2009. RANZCOG developed C-Obs 37 in July 2010. Whilst this guideline included guidance on the performance of a Caesarean section with the fetal head deep in the pelvis it does not provide any information as to the technique to be applied to the fetal head when attempting to disimpact it from the maternal pelvis.

115. Dr Bisits advised the professional consensus is that all efforts must be directed at avoiding the focussed pressure of two fingers pushing on the head in this manner, and outlined suggestions for different approaches including using a cupped hand, a reverse breech extraction, an extension of the uterine incision and other strategies.

116. Dr Lyneham in his report advised the attempts at disimpaction should combine an attempt at flexion of the baby's head through the uterine incision by the operating surgeon, and upward pressure on the fetal head from below using a cupped hand rather than two fingers.

117. Dr Lyneham in evidence stated that the midwife did not know the correct technique and as Dr B was not trained for this situation it was understandable she could not tell the midwife. Dr Bisits was also not critical of Dr B in not giving a direction to the midwife. Dr B was only aware of descriptions of the technique through text books during her studies.

118. Dr Lyneham stated that the college statement could be improved by setting out the technique to be adopted. Dr Bisits agreed with this conclusion. There was

[1] *Inquest into the death of Benjamin Glasgow* delivered 20/3/2009 involved the same injuries and causation

consensus that having more senior staff available earlier could have provided assistance and avoided any wrong technique.

119. Both Dr Lyneham and Dr Bisits agreed with the suggestion that a suitable recommendation from the Coroner would be to request RANZCOG to reconsider the policy statement by including more information about the techniques to be adopted. Dr Bisits stated this was a very rare and unexpected event and techniques to deal with this safely are not taught enough or practised enough.

Conclusions

120. In reaching my conclusions it should be kept in mind that 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 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.

121. If, from information obtained at an inquest or during the investigation, a coroner reasonably believes that the information may cause a disciplinary body for a person's profession or trade to inquire into or take steps in relation to the person's conduct, then the coroner may give that information to that body.

122. In matters involving health care, when determining the significance and interpretation of the evidence the impact of hindsight bias and affected bias must also be considered, where after an event has occurred, particularly where the outcome is serious, there is an inclination to see the event as predictable, despite there being few objective facts to support its prediction.

123. In my experience, where there are negative medical outcomes, there is often evidence of poor communication that contributes, and usually not just one event but a number of such events. As a result, critical information is lost, not communicated, or falls between the cracks and is therefore not considered. It is evident this case demonstrated examples of poor communication and a degree of fragmentation in care resulted in decisions being made and delays occurring in the context of systems issues.

124. With the benefit of hindsight, it is apparent that had a caesarean section been performed as an elective procedure, then subject to the risks of the procedure, this would have occurred prior to labour and active pushing commencing and there would be little to no likelihood of an impacted fetal head complicating the delivery.

125. It is evident Simone was not given an opportunity to finalise the decision on her birth plan or mode of delivery. There had been a plan to discuss this at her next antenatal clinic on 4 June but she was admitted earlier than expected on 3 June. The consensus of the medical evidence is there was no clear medical indication for a caesarean section, but the options for each mode of delivery should have been discussed and Simone could then make an informed decision. Simone had been seen by different clinicians and the medical records were somewhat fragmented. The RCA Team found that any discussion that had been held should be recorded in the *Medical and Obstetric Issues*

Management Plan, and improved use of this document would provide a more efficient and effective communication of plan of care or issues between the team.

126. The overwhelming clinical opinion was a caesarean section was not medically indicated and there are a number of factors to be considered with the advantages, disadvantages and risks associated with both modes of delivery to be discussed with the parents. With that information the parents may have made an informed decision to proceed with a vaginal delivery. Equally, they may have made a decision for a caesarean section. Whatever the decision made, the consensus of the medical evidence was that given the importance of patient autonomy, the mother's decision would have been respected and followed.

127. I reject there is evidence to support an assertion that RBWH, as a major public hospital, had a policy of preferring vaginal births to caesarean section for costs or resource reasons and that such a policy impacted on clinical decisions.

128. I find the evidence is such that the medical and nursing staff caring for Simone during labour made assumptions that the birthing plan and mode of delivery had been discussed and determined. Once the IOL was in place then this was always leading towards a vaginal birth. I accept that in the antenatal period and during labour Simone wanted to keep open a dialogue as to her preference for a caesarean. One can well imagine Simone was placed in a difficult position once labour was underway. No doubt a patient in that position has to trust that the decisions made and care provided were for her benefit. Essentially the decision for IOL was made early in the admission on 3 June without the degree of consultation that was required. No-one was aware that there still had to be had a discussion as to mode of delivery. I do not accept that the medical and midwifery staff then proceeded in a manner, which was overbearing towards Simone, but any later discussions about mode of delivery were always coloured by an assumption that a decision about mode of delivery had been made in conjunction with Simone, when in fact it had not.

129. Further, I accept the submissions of Counsel Assisting that, once in labour, Simone was in a substantially different position with regards to her ability to then exercise her choice for an elective caesarean section. Confined now to the maternity ward and birth suite, Simone was reliant on those medical staff available to her, which did not include her admitting consultant Dr Laporte. Simone was at times in pain and distressed, which would have impacted on her ability to communicate clearly and effectively with others. Viewed as a patient who had chosen an IOL and who was experiencing some emotional distress, and with limited access to more senior staff with whom she could discuss an elective caesarean section as an option, and hampered in her ability to communicate with staff who were present due to her pain and distress, it is understandable that Simone now found it very difficult to explore an elective caesarean section as an option for delivery. This is most clearly illustrated by the evidence of MW Simpson and the reasons she provided for not raising Simone's request for a caesarean with a doctor.

130. Dr Lyneham made the comment during his evidence that it can be *extremely difficult* for a mother to communicate her decision about how she wishes to birth

her baby within this setting. Dr Lyneham stated that almost everyone asks for a caesarean in the second stage of labour, and that in fact midwives then have a very important role for reassuring the mother. Dr Lyneham even went so far as to say that, for this reason, his comments about patient autonomy would not apply to a woman in the second stage of labour. This appears to have been the approach taken by MW Simpson that evening. However, I accept that it remained in Simone's mind at that time that she wished to discuss an elective caesarean section as an option for delivery and that her request at that time was not purely a response to her experience of pain. This is further supported by evidence of Simone having raised the issue of an elective caesarean section on multiple occasions prior to this time, both in the antenatal period and after her admission to hospital.

131. As well, and subject to the rider that there needed to be a discussion with Simone on the mode of delivery, the consensus of the medical opinion is the decision to induce labour was clinically appropriate, and as a result there was no reason for medical and nursing staff to think they should reconsider the decision to proceed with an IOL.

132. Once labour was under way, the decisions made by medical and nursing staff were considered by the experts to be generally appropriate. There was no one individual or a particular decision that was causal to what occurred. The RCA found that there were delays in reviews or processes that when added up contributed to a significant delay in the final delivery of the baby, and therefore **exacerbated the potential** for an impacted fetal head. No delay by itself was significant, but the overall effect of each delay became significant. Dr Dines accepts on behalf of RBWH that the delay was the root cause.

133. The delays have been described in the decision and on the findings of the RCA essentially related to an excessive length of the second stage of labour, a delayed diagnosis of obstruction of labour, and an avoidable delay in commencement of a caesarean section.

134. The submissions made on behalf of a number of individual clinicians is that the expert evidence heard during the inquest does not support those conclusions made by Dr Dines.

135. With a degree of hindsight, if the non-elective caesarean section had occurred at a time prior to Nixon's head becoming deeply impacted in his mother's pelvis, then it is much more likely Nixon would have been born without difficulty. What is not certain is when the time of deep impact occurred and if this could have been predicted. The uncontroverted fact is Nixon's head was deeply impacted and as a matter of logic it makes sense to say, as Dr Dines accepts that some earlier action may have prevented such deep impact, but there were no individuals or individual decisions which brought about this state of affairs.

136. Leaving aside the elective procedure and focusing on the events during labour, there was no evidence during labour of fetal distress and the consensus of the expert evidence is, that subject to what happened during delivery, Nixon should have been born without any trauma.

137. The other significant factor was the lack of direct engagement of senior staff including consultants at critical times and in particular at the operating table. Accepting the consensus of medical evidence is it is difficult to know the degree of impaction of a fetal head from a vaginal examination alone, the impression I had after hearing the evidence is that the discussion that occurred between Dr B and Dr Minuzzo was likely reflective of the difficult working relationship that at least Dr B perceived she had with Dr Minuzzo, resulting in Dr B not asserting the extent of any concerns she may have had. Dr B stated she was shocked and scared when she saw how deeply impacted the head was. This then left a registrar who had no specific training in difficult disimpaction of the fetal head, asking for assistance from consultants which was not immediately forthcoming, and as a result and in that emergency situation requesting assistance from a midwife who had no understanding of the proper technique that was to be used to assist in the disimpaction. Neither the registrar nor the midwife should have been placed in that position.

138. If a similar presentation occurred today and provided the *Medical and Obstetric Issues Management Plan* had been accurately recorded, it is more likely that it would have been noted that a discussion about mode of delivery was still to take place and this discussion would have occurred. I accept the evidence that in the event Simone made an informed decision for an elective caesarean section that would have occurred.

139. Assuming that the parents had received advice and made a decision to proceed with an induction of labour there would be a number of other consequences. Firstly, there would have been earlier consultant involvement with the consultant being present at the bedside handover.

140. Secondly, as the labour proceeded and to the extent any delays were occurring, it is more likely there would have been an escalation of concerns, which may have seen a decision for a caesarean section made earlier. I accept, based on the expert evidence, that there were few objective clinical signs that should have indicated to staff that decisions needed to be escalated urgently and therefor individual decisions could not predict what was occurring, but the fact is by the time of the caesarean section operation there was a deeply impacted head.

141. Thirdly, and most importantly, a consultant or senior staff trained in the correct techniques to be utilised in the event there was a fetal head impaction would have been present. An impacted fetal head does not mean death or serious injury is inevitable, and with trained staff the position can be recovered.

Findings required by s. 45

Identity of the deceased – Nixon Martin Tonkin

How he died – Nixon died from head injuries caused during a caesarean section, when the obstetric registrar performing the procedure unexpectedly came across a deeply impacted fetal head. The correct technique to disimpact the fetal head is

to attempt at flexion of the baby's head through the uterine incision by the operating surgeon, and apply upward pressure on the fetal head from below using a cupped hand. The registrar requested the assistance of a consultant or senior obstetric staff. When that was not immediately forthcoming she requested the assistance of a midwife to apply upward pressure from beneath through the vagina. The midwife was not trained in the correct technique and utilised two fingers pushing against the fetal head rather than a cupped hand, increasing the risk of skull fractures. The obstetric registrar did not provide any instruction to the midwife. The registrar had not received practical training in the technique to be used and it is unclear if there were any other pressures on the fetal head at delivery that may also have contributed. The cause of the deeply impacted fetal head was potentially due to a combination of delays during labour as well as delay in the availability of senior medical staff to assist in the delivery at a crucial time. There were a number of systems issues which contributed to the delays, rather than individual decisions and actions. Significant reforms have been implemented at RBWH such that in future, earlier involvement of a consultant obstetrician during the labour but particularly at the time of delivery, may have resulted in a better outcome.

Place of death – Royal Brisbane Hospital HERSTON QLD 4006 AUSTRALIA

Date of death– 6 June 2014

Cause of death –

1(a) Main condition in neonate; Head injuries (birth trauma)
1(b) Other conditions in neonate; Foetal macrosomia
1(c) Main condition in mother; Obstructed labour
1(d) Other conditions in mother; Gestational diabetes mellitus; gestational hypertension
2 Underlying cause of death: Maternal gestational diabetes mellitus

Comments and recommendations

I have summarised the changes that have been made by RBWH over a number of years and having regard to the substance of those changes, the evidence of implementation and the acceptance of these by staff, I do not intend to make any further recommendations other than as below.

The RCA made a recommendation that any changes to the patients' plan of care or issues identified must be documented by medical staff in the *Medical and Obstetric Issues Management Plan in the Pregnancy Health Record* and the charts were to be randomly audited to measure compliance. The family has concerns regarding whether the decisions recorded in the *Medical and Obstetric Issues Management Plan* are considered as there was some evidence it is not always looked at. I note this evidence and comment that the recommendation made in the RCA does need to be reinforced with staff and audits should continue.

I recommend that RANZCOG reconsider the policy statement C-Obs 37 *Delivery of Fetus at Caesarean Section* as to whether C-Obs 37 should include more information about the techniques to be adopted in the event of a presentation of a deeply impacted fetal head, consistent with the evidence of Dr Bisits and Dr Lyneham.

In conjunction with the above recommendation, and consistent with the evidence of the experts that this is an area where not enough is taught or practised, it is incumbent on those involved in national training programs of obstetricians and midwifes, as well as within teaching hospitals such as RBWH, to ensure there is ongoing training in simulated emergencies such as this event. I note staff spoke about receiving increased mandatory training in such topics as identifying obstructed labour, the use of Fetal Pillows, simulated emergencies, CTG interpretation and RANZCOG workshops, and this training needs to continue. I accept there may be some resistance to mandating that midwives receive such training but ultimately this would be limited to midwives who are likely to be involved in emergency situations in theatre, rather than midwives generally.

I note the family expressed a view that policies should be developed so that mothers have the benefit of one primary care giver. This introduces the subject of continuity of care, a subject long debated in health circles, to reduce fragmentation of care. This is a subject outside the scope for recommendations at an inquest. What can be said, is that within a large public health system, this will remain a constant balancing issue, best resolved by ensuring hospital systems continue to evolve with best practice in documentation, handover, communication, involvement of senior staff and escalation of concerns processes. Ultimately it is about communication and exchange of information.

I have determined that no referral of specific medical or nursing staff should be made under section 48(4) of the *Coroners Act 2003.* The death of Nixon Tonkin and Archer Langley were the subject of concurrent investigations by my office and the Office of Health Ombudsman, during which our respective offices

shared information. A copy of this decision will be forwarded to OHO for its further consideration.

I close the inquest.

John Lock
Deputy State Coroner
Brisbane
28 June 2017