Obstetric Registrar, Dr B

Lakes District Health Board

A Report by the

Health and Disability Commissioner

(Case 13HDC00843)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. In 2012 Ms A became pregnant with her third child. Ms A engaged a community-based midwife, Ms C, as her Lead Maternity Carer (LMC).

2. Ms A experienced a number of complications during her pregnancy, including two episodes of vaginal bleeding for which she had two short admissions to hospital for management. A subamniotic bleed was also identified by ultrasound scan. As a result, Ms A was monitored regularly in the antenatal obstetric clinic at the public hospital, then was discharged back to Ms C's care.

3. Ms A was scheduled for an Induction of Labour (IOL), as she was post-dates. This was booked for 10 days after Ms A's due date.

4. The IOL was deferred because the delivery suite was full. The IOL was rescheduled for the following day.

5. The following day, Ms A presented to the hospital for her IOL. Monitoring was commenced by Ms C. At 8.50am a registrar, Dr B, reviewed Ms A and noted mild uterine activity. Dr B then performed an artificial rupture of membranes (ARM), noting that the baby was in a face presentation.

6. Dr B reviewed Ms A again at 11.05am and, at 11.30am, Syntocinon augmentation was commenced.

7. At 12.20pm, Ms C called Dr B because she was unable to locate a fetal heartbeat. The Syntocinon was turned off.

8. Dr B arrived at 12.22pm and noted fetal heart rate (FHR) decelerations, and that the baby had moved into an undeliverable brow presentation. Dr B decided to perform a Caesarean section.

9. Prior to transfer to theatre, the hospital midwives assisting in preparing Ms A again had difficulty detecting and recording the FHR.

10. Ms A arrived in theatre at 1.10pm. The anaesthetist inserted a spinal block, which was completed at 1.19pm. During this time the FHR was not monitored.

11. Ms C was then unable to locate the fetal heartbeat by auscultation with a hand-held Doppler. Dr B ordered a portable ultrasound scanner, which arrived in theatre at 1.30pm. This confirmed that no fetal heartbeat was present.

12. After discussion with the parents, Dr B made the decision to perform a Caesarean section. Sadly, on delivery at 1.50pm, the baby was stillborn.

Decision

13. For failing to provide Ms A with information about the option of performing a Caesarean section following her 8.50am and 11.05am assessments and the risks of

Syntocinon before it was commenced, Dr B breached Right 6(1)(b) of the Code of Health and Disability Services Consumers' Rights (the Code).[1]

14. By not consulting with the on-call consultant after her 11am review, and by making the decision to commence Syntocinon, which was clinically inappropriate and also contrary to hospital policy in the circumstances, Dr B failed to provide Ms A with services with reasonable care and skill and breached Right 4(1) of the Code.[2]

15. By failing to reassess Ms A's uterine activity adequately and to ensure monitoring of the FHR in the perioperative area Dr B did not identify the deteriorating fetal condition and, as a result, failed to provide Ms A with services with reasonable care and skill, and breached Right 4(1) of the Code.

16. The Commissioner was critical of Dr B's failure to proceed with a crash Caesarean section when no fetal heartbeat was detected initially, but did not consider that this failure warranted a finding that she breached the Code.

17. It was held that Lakes District Health Board (LDHB) failed to have a system in place that ensured policies and procedures were followed. The Commissioner found that staff failed to think critically, and important information was not communicated effectively. Furthermore, the Commissioner found that LDHB must take some responsibility for Dr B's decision-making in this case. The Commissioner concluded that LDHB failed to provide services to Ms A with reasonable care and skill and, accordingly, breached Right 4(1) of the Code.

18. The Commissioner was critical of Ms C's recommendation to commence Syntocinon. However, the Commissioner accepted that this was ultimately an obstetric decision, and concluded that Ms C's involvement in the decision did not warrant a finding that she breached the Code.

Complaint and investigation

19. The Commissioner received a complaint from Ms A and Mr A about the services provided to Ms A by Dr B and Lakes District Health Board. The following issues were identified for investigation:

- *The appropriateness of the care provided to Ms A by Dr B in 2012.*
- *The appropriateness of the care provided to Ms A by Lakes District Health Board in 2012.*

[1] Right 6(1)(b) states: "Every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including — an explanation of the options available, including an assessment of the expected risks, side effects, benefits, and costs of each option …"

[2] Right 4(1) states: "Every consumer has the right to have services provided with reasonable care and skill."

20. An investigation was commenced on 21 January 2014.

21. The parties involved in the investigation were:

Ms A	Complainant/consumer
Mr A	Complainant/consumer's partner
Dr B	Provider/obstetric registrar
Lakes District Health Board	Provider
Ms C	Provider/midwife

Also mentioned in this report:

Dr D	Obstetrician
Ms E	Hospital midwife
Ms F	Hospital midwife
Dr G	Consultant
Dr H	Obstetrician
Dr I	Head of Department, O&G

22. Independent expert advice was obtained from obstetrician Dr Jenny Westgate (**Appendix A**) and midwife Billie Bradford (**Appendix B**).

Information gathered during investigation

Background

23. In 2012, Ms A, who was aged 25 years at the time of these events, became pregnant with her third child. She had had two previous vaginal deliveries with a history of a retained placenta after her first pregnancy and intrauterine growth restriction (IUGR)[3] with both. Ms A also had a bicornuate uterus.[4]

24. Ms A smoked seven cigarettes per day prior to her third pregnancy, but decreased her smoking to two per day when she found out she was pregnant, and was trying to cease smoking.

25. Ms A engaged a self-employed and community-based midwife, Ms C, as her Lead Maternity Carer (LMC).[5]

Antenatal history

26. Ms A experienced two episodes of vaginal bleeding, for which she was admitted to hospital for management. On both occasions the bleeding stopped and Ms A was discharged back to the care of Ms C.

[3] A condition in which the fetus grows at a slower than normal rate.
[4] A uterine malformation where the fundus of the uterus is separated into two horns.
[5] Ms C has been a registered midwife for nearly two decades.

27. At 22+3 weeks' gestation, Ms A had a routine anatomy scan, which reported a subamniotic bleed[6] at the fundal edge[7] of the posterior placenta. Ms C referred Ms A for obstetric review at the public hospital. Ms A was reviewed by obstetrician Dr D, who recommended a repeat scan and further obstetric review in four weeks' time.

28. Ms A continued to be seen regularly in the obstetric antenatal clinic.

29. Dr D saw Ms A in the antenatal clinic for a routine follow-up appointment. Dr D noted the results of a scan dated three days previously, which reported normal fetal growth and the presence of polyhydramnios.[8] In a clinic letter to Ms C, Dr D stated: "I am not too concerned about the polyhydramnios and am very happy with the baby's growth." Dr D discharged Ms A back to Ms C's care.

30. Ms A continued to be reviewed regularly by Ms C.

31. At 40+3 weeks gestation, a repeat scan was carried out, which revealed normal fetal growth and polyhydramnios. The size of the fetus was estimated on a customised growth chart to be on the 80th centile.

32. At 40+4 weeks' gestation, the decision was made to schedule Ms A for an induction of labour (IOL), as she was post-dates. Ms C told HDC that she made the decision to contact the obstetrics team and discuss an IOL earlier than the normal 41 weeks' gestation in light of the previous day's scan results. Ms C spoke to obstetric registrar Dr B, who agreed with the plan to proceed with an IOL. Dr B told HDC that when she was contacted by Ms C she was told that Ms A was a multiparous patient with a normally grown baby and unexplained mild polyhydramnios. Based on the information provided to her, Dr B told HDC that "there was no obvious clinical reason to object to the requested booking nor any obvious clinical reason to suggest an immediate induction was warranted". Ms C subsequently scheduled the IOL for five days' time.

Dr B

33. Dr B was employed by LDHB as an obstetrics and gynaecology registrar. At the time of these events, Dr B was in her final year of training towards Fellowship of the Royal Australian and New Zealand College of Obstetrics and Gynaecologists (RANZCOG) and had just started her employment at LDHB.

Fetal presentation

34. The most common fetal position during labour is a vertex presentation where the fetal head is flexed and the back of the fetal head (the occiput) leads the way. The position of the fetal head varies, and is classified according to the position of the occiput (back of the head).

[6] These are small haematomas on the placental surface.
[7] The fundus is the top of the uterus.
[8] Excess amniotic fluid.

35. If the fetal head and neck are hyper-extended, the face becomes the leading part, and this is known as a face presentation. Face presentations are classified according to the position of the chin (mentum).

36. A brow presentation is where the fetal brow (the largest part of the fetal head) is the leading part. This occurs when the fetal head and neck are slightly less extended than in a face presentation.

IOL

37. When she was 10 days overdue, Ms A presented to the Delivery Unit at the public hospital for the planned IOL.

38. Ms C met Ms A at the hospital and carried out an assessment. Ms C noted that on palpation Ms A had a "very sensitive fundus, tightens to touch". A vaginal assessment revealed that the cervix was fully effaced[9] and could be stretched to 5cm. Ms C found that the fetus was positioned in a right occipito-lateral/right occipito-posterior position with the presenting part "just entering brim", meaning that the head was just entering the pelvis. Cardiotocograph (CTG) monitoring[10] was carried out, and a fetal heart rate (FHR) of 145bpm was noted.[11]

39. Because the delivery unit was full with other higher priority inductions, Ms A was sent home with the plan to await labour or return the following day for a planned IOL.

40. The following day, Ms A again met Ms C at the delivery unit as planned.

41. Ms C noted that Ms A reported that the baby had been "very quiet" since assessment the previous day. A CTG was commenced, which Ms C noted showed "poor variability"[12] with a baseline of 145bpm.

42. At 8.20am, Ms C noted that the CTG had improved, with "movements noted, variability normal". She also observed that irregular uterine activity was still present, but "less than yesterday". The CTG was then stopped.

8.50am assessment

43. At 8.50am Dr B reviewed Ms A as part of a routine obstetric review. Dr B told HDC:

> "Generally, at Lakes DHB, the on-coming specialist attends the morning handover and is apprised of the background to any inductions commencing that day. Individual specialists will decide if they wish to assess or meet the patient themselves or delegate to the on-call registrar. [Ms A's] case was considered at the morning handover. Her case was deemed to be of low-risk at handover and her assessment was delegated to me."

[9] Effacement refers to the thinning of the cervix in labour.
[10] Continuous measurement of the fetal heart rate and the woman's contractions.
[11] Normal baseline FHR at this stage of labour is between 110–160bpm.
[12] Variability refers to the variation of the FHR from one beat to the next. Normal variability is between 6–25bpm.

44. On assessment, Dr B noted Ms A's history and that she had been experiencing mild irregular uterine activity. Dr B noted that Ms A's observations were normal (blood pressure 98/60mmHg, heart rate 84bpm, temperature 36°C). Dr B recorded that on abdominal palpation the fetus was noted to be cephalic and that four-fifths of the fetal head was palpable abdominally, meaning that it had only just entered the pelvis and was not engaged. Dr B carried out a vaginal examination, noting that the cervix was 6cm dilated and fully effaced with bulging membranes. Dr B then performed an artificial rupture of membranes (ARM), noting the presence of thin meconium.[13] Dr B found that the fetus was in a "[f]ace presentation" with the chin in a posterior position.[14] Dr B noted that Ms A's pelvis appeared large enough for the baby to pass through. Dr B requested continuous CTG monitoring and reassessment in two hours' time.

45. Dr B told HDC that at that time she told Ms A that her baby was in a difficult position which might prove difficult to deliver. Dr B said that Ms A "did not raise any concern or queries with me at this time".

46. Ms A told HDC that following this assessment, Dr B told her that the baby was in a difficult position but that it would probably move. Ms A said that at that time Dr B did not discuss with her any options such as a Caesarean section.

9–11am

47. At 9am a CTG was recommenced.

48. Ms C noted that Ms A's uterine activity had increased and that contractions were 1–2 in 10 minutes and "mild". The FHR was 140bpm with accelerations present.[15] Ms C noted that it was "difficult to keep decent contact" with the fetal heart.

49. At 10.10am a deceleration was noted, which had a quick recovery. Ms C noted that Ms A's contractions were "beginning to bite now".

50. At 10.30am, Ms C documented that there had been a loss of contact on the CTG; that the baby was "turning somersaults"; quick decelerations were observed with fetal movements; and that there was a baseline FHR of 135bpm. Ms C also noted "[c]opious meconium stained liquor".

51. At 11am, Ms C performed a vaginal examination, noting that the fetus remained in a face presentation and that the cervix was "thicker than earlier" and 5–6cm dilated. Ms C noted: "Planning Syntocinon[16] for management of placenta birth, prev — [history] Retained placenta + ×2 APH's [antepartum haemorrhages] this pregnancy."

52. In a statement to HDC, Ms C advised:

[13] Meconium is the first stools of a newborn baby. Thin meconium in the liquor is sometimes seen in post-term labour, and may relate to the maturity of the fetal gut.
[14] When the fetus is in a face presentation, generally vaginal delivery is possible only if it is in a mento-anterior position (with the chin pointing to either the right or left of the mother's pelvis).
[15] Accelerations are an increase in the FHR, and are often a normal sign of fetal well-being.
[16] A synthetic form of the hormone oxytocin, which is used to stimulate uterine contractions.

> "At this VE [vaginal examination] I noted that dilation was unchanged and the cervix felt thicker than at the earlier assessment despite frequent but mild contractions."

53. Ms C told HDC that in light of this assessment she considered that Syntocinon was indicated. Ms C stated:

> "Syntocinon would increase the strength of contractions which would then increase the pressure applied to the cervix allowing thinning and dilation to occur. Having had two reasonably quick vaginal births before I believed a small amount of syntocinon augmentation would aid the efficiency of labour and result in the cervix becoming fully dilated in a short period of time."

54. Ms C also stated: "I always follow protocol regarding syntocinon augmentation and observations."

55. Ms C called Dr B, who agreed to come to review Ms A for consideration of Syntocinon augmentation.

Syntocinon Infusion Guideline

56. The LDHB Syntocinon Infusion Guideline states under "Indication for use" that intrapartum Syntocinon is used for induction of labour and augmentation of labour when there is labour dystocia.[17] Under "Management", the contraindications for the use of Syntocinon include "hypertonic uterine action"[18] and "malpresentation".[19]

57. Under "Procedure … Infusion and Rate", the Guideline states the required concentration of Syntocinon, and that the rate of infusion "will depend on individual need and is directed by uterine activity and fetal well being. … The minimum effective dose should be used. This should be titrated against uterine contractions aiming for a maximum of 3–4 contractions, with a minimum duration of 45 seconds, every 10 minutes."

11am assessment

58. Dr B reviewed Ms A at 11.05am. At that time Dr B noted Ms C's assessment that Ms A was experiencing "mild" contractions at a rate of four every ten minutes that lasted less than 45 seconds, and that the FHR was "currently hypervariable", the baseline was difficult to establish, but that this was "previously normal". Dr B did not carry out a VE at that stage as she "felt confident in relying upon the accuracy of examination/assessment undertaken by [Ms C]" and did not consider that a further examination would change the clinical decision-making. In addition, Dr B said that she "had to take account of the proven increased risk of infection caused by repeated vaginal examinations whilst in labour". Following her review, Dr B advised HDC that she considered that Ms A was not in established labour, and she agreed to the commencement of Syntocinon augmentation and requested continuous monitoring of the FHR.

[17] Abnormally slow progress in labour.
[18] Uterine contractions are too frequent and there is a high resting tone in the uterus.
[19] Any position other than vertex.

59. Dr B told HDC that "[a]dequate uterine activity has to be present to establish whether any presentation will convert to a more favourable one". She said that, in her view, there was still a possibility that the fetus could move into a more favourable position for vaginal delivery. At the time of her assessment, she did not consider that a Caesarean section was indicated.

60. Dr B stated that her assessment and management plan took into account Ms A's pelvic diameter, the fact that the baby was assessed as being around the 80th centile on a customised growth chart, and that the CTG was not suggestive of any fetal compromise. Furthermore, she stated:

> "Given that labour had not clinically established, and knowing that the majority of face Mento-Posterior presentations convert to Mento-Anterior during labour, I felt that vaginal delivery was realistic."

61. Dr B commented that Ms A had been admitted for a post-dates induction, and had not established in labour following an ARM. Dr B said that Syntocinon was commenced in order to see whether a vaginal delivery was possible as she did not consider that there was sufficient uterine activity to effect fetal rotation and cervical change. In a statement to the LDHB Root Cause Analysis (RCA) team, Dr B said: "I and the LMC clinically assessed the uterine activity after there was no clinical change two hours after ARM, and found that it was weak to palpation." Dr B further stated:

> "I am aware of the dangers of hyper-stimulation, particularly in a multiparous patient, and would not have considered augmentation if I had considered this to be already clinically present at 11:00 at my review."

62. Ms A said that at that time she was very concerned about the baby and asked for a Caesarean section, but Dr B told her that it would be "OK". Ms A also said that she and her partner were not included in any decision-making, and "certainly not listened to".

63. In contrast, Dr B said that following her assessment she "suggested Syntocinon augmentation with Ms A in a three-way discussion together with her LMC. I obtained verbal consent from Ms A to proceed after routine explanation of the procedure and the associated risks, requiring careful and continuous monitoring as documented." Dr B said that she did not discuss this option of Caesarean section at that stage because she "did not anticipate that this would be required". Dr B stated that she was not aware of Ms A having requested a Caesarean section.

Syntocinon augmentation

64. Syntocinon was commenced at 11.30am. Ms C noted that the CTG showed a "reassuring trace" at that time.

65. At 11.45am, Ms C noted that Ms A was "feeling firmer pressure in pelvis", and that the FHR was "stable".

66. At 12pm, Ms A requested Entonox,[20] as the contractions were becoming more painful. The Syntocinon infusion was increased.

67. Ms C said that she then left the room to organise the Entonox. When she returned, she was unable to locate the FHR. Ms C said that at this time Ms A was becoming more distressed.

68. At 12.20pm, Ms C called for assistance. Ms C told HDC that she called for assistance "[w]hen [she] had trouble to calm [Ms A] and maintain contact with FH …". Hospital midwife Ms E attended. Ms E then asked another hospital midwife, Ms F, to call Dr B to attend.

12.22pm assessment

69. At 12.22pm, the Syntocinon was turned off, and Dr B arrived.

70. Dr B noted that Ms A was experiencing seven contractions every ten minutes with no relaxation of the uterus, and that Ms A had an involuntary urge to push. Dr B stated to HDC: "By this stage, it appeared that the low dose Syntocinon had caused uterine hyper stimulation[21] (known to occur in up to 5% of inductions with Syntocinon use), with 7 in 10 now painful contractions."

71. Ms A told HDC that the pain she was experiencing was significant. She said that she knew that something was wrong as the pain she was feeling was much worse than her previous two labours.

72. Dr B performed a vaginal examination to assess whether vaginal delivery was still an option, noting that the cervix was 7cm dilated, that the presenting part was at station –1, and that the face presentation had converted to a brow presentation.

73. Dr B noted that the FHR baseline was 140bpm, and that there were "deep" decelerations with contractions which were recovering to the baseline "with [Syntocinon] off".

74. Dr B stated that at that stage she had diagnosed the "dual pathology of hyper stimulation with foetal heart rate changes and an undeliverable brow presentation".

75. Dr B said that the rapid half-life[22] of Syntocinon meant that the force and frequency of the uterine contractions were expected to decrease within a few minutes. Dr B's plan was for Ms A to try to stop pushing, and to discuss the management of the brow presentation with the consultant on call, Dr G. Dr B stated that, in light of the change in presentation, "it became evident that delivery by Caesarean section was the only option".

[20] A mixture of nitrous oxide and oxygen used for analgesia.
[21] Defined as either a series of single contractions lasting two minutes or more within 60 seconds of each other, or a contraction frequency of more than five active labour contractions in ten minutes in the presence of fetal heart rate abnormalities.
[22] Half-life is the period of time required for the concentration or amount of a drug in the body to be reduced by one-half.

76. Dr B subsequently contacted Dr G and discussed the situation. Dr B told HDC that Dr G agreed with her plan to perform a Caesarean section, but suggested that she reassess Ms A in theatre in case further presentation change had occurred, in which case assisted vaginal delivery might still be achievable.

77. Dr B said that at that time she could "hear the foetal heart baseline consistently, with decelerations returning to baseline within one minute, indicating adequate foetal compensation at the time to the stress of contractions".

Preparation for theatre

78. The decision was made to transfer Ms A to theatre for an emergency Caesarean section. Ms C, Ms F and Ms E began preparing Ms A for transfer while Dr B left the room to arrange for the Caesarean section, including contacting the theatre coordinator, acute anaesthetist, neonatal staff, and assisting house officer.

79. Dr B said that she was not present in the room for much of the time during which Ms A was being prepared for surgery.

80. In a retrospective record, written at 4.35pm that day, Ms C noted that they were having trouble locating the FHR with the CTG monitor. She documented that they were "[u]nable to be precise with FH, last reasonable listen @ 140bpm @ 1237".

81. Ms C stated to HDC:

> "I always thought we were picking up a heartbeat of around 140bpm, decelerations were noted and recorded on the CTG with contractions but no bradycardias. I never thought for a second that we had lost baby's heartbeat. We were heading to theatre for an obstructed labour (brow presentation had been confirmed), not fetal distress."

82. In a retrospective record written four days later, Ms C noted that when Ms A was being prepared for theatre:

> "CTG had not been continuous for the previous 20 mins or so, just intermittent hearing of baby, and we always felt we heard a FH ↑120 when located.
>
> Whenever we tapped into the FH it was always heard at about 140 and I didn't try to relisten prior to leaving the room to head to theatre."

83. Ms F advised HDC that she was asked to assist in the preparation of Ms A by holding the CTG transducer in place because they were having difficulty recording the FHR while Ms A was being prepared for theatre, coupled with the fact that Ms A was experiencing a lot of pain during contractions.

84. Ms F said that she was unable to hear the FHR clearly. She stated:

> "In [Ms A's] room I expressed to [Dr B] that I was not confident that I could hear the FH clearly. The LMC was present."

85. Ms E advised HDC that while Ms A was being prepared for theatre, she was "in and out of the room", assisting with the relevant paperwork for transfer to theatre and drawing up and administering the preoperative medications. Ms E stated: "I was not involved with any other clinical decision making and do not recall any other discussions or concerns at the time."

86. Dr B said that she arrived in the room just as Ms A was being wheeled down to theatre. Dr B agrees that Ms F informed her just prior to their leaving for theatre that "there had been some difficulty hearing the foetal heart in preparation for the Caesarean Section". In response to the provisional opinion, Dr B said that Ms F had attributed the loss of contact with the FHR to the process of preparing for theatre. Dr B stated: "I therefore understood this to mean that there was a technical difficulty with monitoring rather than foetal compromise."

87. Furthermore, Dr B stated that at that time:

> "I inspected the CTG. This did not indicate any prolonged [fetal] bradycardia (with recorded FHR range mainly between 120–140 bpm) although it was, as reported, technically sub-optimal due to frequent loss of contact."

88. In response to the provisional opinion, Dr B also advised that between 12.30pm and 12.37pm she considered that the uterine activity had returned to the "earlier pre-syntocinon rate of 5 in 10 contractions".

89. Dr B said that, given the physical distance to the theatre she decided to continue to theatre, "as no intervention was possible on the Delivery Suite, if the foetal heart indicated expedited delivery [was] necessary". Dr B stated that in light of the acceptable features of the CTG prior to the decision being made to perform a Caesarean section, there was no way of predicting that there would be an acute fetal demise. Dr B said that she did not consider that the application of a fetal scalp electrode was indicated, as doing so would only have slowed down the transfer to theatre, and no delay in performing the Caesarean section was anticipated.

Arrival in theatre

90. Ms A arrived in the perioperative waiting bay at 1pm. The anaesthetist inserted a spinal block, which was completed at 1.19pm.

91. The FHR was not monitored during that time. In response to the provisional opinion, Dr B explained that because there is insufficient room in the lift to theatre she took the stairs, and arrived in theatre before Ms A. Dr B said that before entering theatre all staff are required to change into theatre attire, and she proceeded to do that. When she arrived in theatre she expected Ms A to be there already, and was "surprised to find she was still in the anaesthetic pre-operative area". Dr B said that theatre staff then asked to "check operating requirements" with her. During this time she was reliant on the midwives continuing to monitor the FHR.

92. Dr B stated that "this was an extremely challenging situation", as she had recently come from a large tertiary unit which had immediate access to theatre from the labour

ward, and continuous fetal monitoring while preparing for an acute Caesarean section. Dr B said:

> "Unfortunately neither the Core nor Lead Maternity Carer midwives advised me of the unavailability of continuous foetal monitoring in theatre (unless specifically requested by the obstetrician), which I was unaware of, and was not in line with best practice guidelines."

93. Furthermore, Dr B stated: "I understand that auscultation of the foetal heart is not routine [Hospital] practice at any stage in this process which I was unaware of." Dr B told HDC that she had not been advised of this in her orientation the previous week.

94. The RCA report states that it is "common practice" for CTG monitoring to cease once the woman leaves the delivery unit on transfer to theatre for a Caesarean section, and "from that point foetal monitoring is undertaken by intermittent auscultation using a hand-held Doppler".

95. LDHB stated to HDC:

> "[Dr B] had ample opportunity to insist on continuous fetal monitoring in the peri-operative area whilst awaiting the spinal — it is not unusual for a CTG machine to be taken to the theatre complex when there are pre-existing concerns. A Doppler sonicaid is also kept permanently in the operating theatre complex."

96. Dr B stated that, "in retrospect, had [she] been aware that the midwifery staff were unsure as to whether the foetal heart rate whilst in the birthing unit was reassuring, as opposed to merely a technically poor recorded trace, this would have allowed [her] to personally supervise the monitoring during this period and expedite the anaesthetic discussion".

FHR

97. After the spinal block was inserted, Dr B said she became aware that there had been no on-going monitoring of the FHR since leaving the delivery suite, and she requested that Ms C listen to the FHR. Ms C attempted to do so using a hand-held Doppler but was unable to detect a fetal heartbeat. Dr B then urgently requested a portable ultrasound scan.

98. In her retrospective record, Dr B documented that while she was awaiting the arrival of the portable ultrasound scanner, she conducted a vaginal examination and noted that the cervix was 9cm dilated and the fetus remained in a brow position.

99. The portable ultrasound scanner arrived in theatre at 1.30pm. Dr B then conducted an ultrasound and noted no fetal heartbeat.

Decision to proceed with Caesarean section

100. Dr B stated to HDC:

> "When I was faced with a completely unexpected finding of an absent foetal heartbeat just after insertion of the spinal, I was faced with the decision of whether to proceed with a crash caesarean section immediately which would mean not waiting the requisite few minutes for the spinal to take effect (and thus proceed with [Ms A] feeling all the initial stages). Alternatives included requesting a general anaesthetic (without the best practice safety requirement of the pregnant woman of giving oxygen for 3 minutes first), waiting for the spinal to take effect and proceed with the section at that stage, or trust my scan observations of foetal demise (which, as general obstetricians, few of us are certified to do) and attempt to perform a challenging rotation of the baby into a breech position to deliver vaginally with maternal effort."

101. Dr B then contacted Dr G and advised him of her findings. Dr G recommended an urgent radiology review to confirm fetal demise.

102. Dr B stated:

> "This instruction, reinforcing my previous training that it was unacceptable practice to perform a Caesarean section for a known demised baby, while missing the point of the extra complicating factors in this case, probably did make me more undecided regarding the most expedient course of action."

103. Dr B said that had she detected a "pre-terminal slow foetal heart beat with even a slim chance of resuscitation", she would have proceeded with a crash Caesarean section. However, in light of the fact that no FHR was detected, Dr B said: "I had to adopt the plan that presented least risk to [Ms A]."

104. Dr B then informed Ms A and Mr A of the findings and discussed the options available, including proceeding with a Caesarean section with the likelihood that the baby was stillborn, or awaiting formal radiology review.

105. Dr B documented that Ms A requested that they proceed with a Caesarean section, which was subsequently performed.

106. At 1.50pm, Baby A was delivered. Sadly, he was stillborn with thick meconium present and the umbilical cord tightly wrapped around his body.

Investigation findings

107. Placental histology revealed chorioamnionitis, maternal response stage 3 and fetal inflammatory response stage 1, meaning that the infection was in the late stages in Ms A, but still in a very early stage in the fetus.[23]

Root Cause Analysis

108. A Root Cause Analysis was undertaken by LDHB, which noted:

[23] Chorioamnionitis is inflammation of the fetal membranes caused by a bacterial infection. The stage refers to the inflammatory response, with stage 1 indicating a mild/early response and stage 3 being a severe response.

- The decision for IOL was appropriate.
- It was not a requirement for the on-call obstetrician to be informed when a face presentation was identified.
- There was no protocol in place relating to the management of face/brow presentations or the induction of labour.
- There were no signs of fetal distress on the CTG, so staff were reassured and confident about proceeding with the care plan.
- The LMC midwife had monitored the labour adequately, and had consulted the obstetrician appropriately when labour failed to progress.
- It is contentious whether a Caesarean section should have been performed when the face presentation was first identified.
- There were no significant delays in getting Ms A to theatre.
- It is common, once the patient leaves the delivery suite, for CTG monitoring to cease, and from that point monitoring should be carried out using a hand-held Doppler.

109. LDHB has subsequently made the following changes:

- Reviewed its policy for IOL to include the mandatory requirement for the consultant to be informed when a malpresentation is present and an IOL is planned.
- Required that continuous CTG monitoring occur in theatre for all women who have been induced and proceed to Caesarean section or have an emergency or acute Caesarean section.
- Reviewed the guidelines for Caesarean sections.
- Introduced emergency day training for midwives and the multidisciplinary team, which promotes the three-way conversation and speaking up if there are any concerns.

110. In addition, LDHB obtained an independent review from obstetrician Dr H. Dr H advised the following:

- An IOL around term would have been reasonable.
- Dr B should have reassessed the position of the baby, as it was "unwise to start syntocinon in a multiparous woman with regular uterine activity (arguably with a hyperstimulated pattern) with a baby still in … an undeliverable position".
- Dr B should have consulted a senior medical officer in relation to her decision to commence Syntocinon.
- The CTG had become uninterpretable and the increased uterine tone seemed worse at 12.40pm (20 minutes after stopping the Syntocinon). There should have

been some sense of urgency, as the baby was not likely to cope with the poor uterine relaxation for too long.

- Dr B should have considered taking a CTG machine to theatre.
- When no fetal heart was heard after the insertion of the spinal anaesthetic, Dr B could have proceeded to a crash Caesarean section, "as this was probably the only possibility to potentially resuscitate the baby … as the baby was in an undeliverable position with an increased uterine tone and the associated risk of uterine rupture".
- A diagnosis of chorioamnionitis was not obvious, but may be why the patient reported reduced fetal movement before IOL. Dr H stated: "In hindsight I feel that this was an already compromised baby that had not much reserve to cope with the hyperstimulated uterus."

111. Dr H recommended the requirement that all face/brow presentations should have consultant review.

Further comment from LDHB

112. LDHB advised that all new registrars, as part of their orientation, are made aware of the DHB's policies and procedures, and that these are accessible in a folder on the delivery suite, as well as being available electronically. LDHB advised that as part of the orientation programme, registrars are also informed about the expectation that they consult a specialist in situations regarding "any uncertainties or clinical problems".

113. The RCA report states:

> "At the case review meeting the [obstetrics and gynaecology] Consultant felt that it was not a requirement for him to be informed as [Dr B] was a senior registrar capable of managing a face presentation."

114. In relation to the initial assessment of the face presentation, LDHB advised that it was its expectation that Dr B would have consulted the on-call consultant at the time of starting Syntocinon "in a high risk case such as this where there was an abnormal presentation".

115. LDHB advised that Dr B came to LDHB as a senior registrar, and that her training had been recorded as "satisfactory" and handover from her previous clinical supervisor was that Dr B was a "safe and very reliable pair of hands".

116. LDHB advised that, following this incident, Dr B was provided with increased support and supervision, and had regular three-monthly trainee assessments in line with the RANZCOG recommended training requirements.

Dr B

117. Dr B said that she was informed by the Head of Department at orientation that the department expectation was that she would practise in preparation for becoming a

consultant within the year, and they would assume she could manage acute obstetric and gynaecological scenarios independently. Dr B advised that "the specialists have reinforced this view before and after this particular incident".

118. Dr B advised that since this incident she now involves senior clinicians earlier in "clinical presentations that are unusual and potentially contentious to manage, even if I feel at the time it is within my capabilities".

119. Dr B advised that she continues to engage in training and collegial support, and is undertaking "further voluntary supervised Fellowship Training (for a minimum of three years) in Maternal-Foetal Medicine". In response to the provisional opinion, Dr B advised that as part of this programme she practises under direct supervision of specialists in Maternal Fetal Medicine, which involves daily discussion of her clinical cases and management in the acute and non-acute setting, and managing high-risk obstetric patients. In addition, she has formal three-monthly assessments by her supervisor, which are assessed by the RANZCOG.

120. Dr B has also attended the Medical Protection Society workshop "Mastering Adverse Outcomes", and consulted a clinical psychologist to assist her in analysing and overcoming barriers to effective communication in stressful situations and to find strategies to facilitate this. Dr B advised that as part of her training in Maternal Fetal Medicine her role involves counselling patients regarding pregnancy complications and observing trained counsellors in the management of these cases. Dr B said: "I have found this to be helpful in developing effective communication skills when faced with stressful situations."

121. Dr B stated:

> "… I take this opportunity to once again express my sincere sympathy to [Ms A] and [her partner], for the loss of their precious son."

Response to Provisional Opinion

Dr B

122. In addition to the responses to the provisional decision incorporated above, Dr B reiterated that she is aware of the dangers of hyper-stimulation, and would not have considered augmentation if she had considered this to be already clinically present at 11am.

123. In relation to why she did not consult with the on-call specialist after her 11am assessment, Dr B reiterated that when she started work at LDHB she had been told that she could manage patients independently, "and consult with Consultants only if [she] considered a second opinion was warranted". Dr B said that she did not consider a second opinion was warranted at 11am. She stated:

> "At this stage I was not of the view that a Caesarean Section was inevitable or indicated given that labour had not clinically established. In the knowledge that the majority of face Mento-Posterior presentations convert to Mento-Anterior during labour, I felt that vaginal delivery was a realistic probability. Allied to this was my assessment at the time that the CTG reading was not suggestive of any current foetal distress and there were no features of obstruction."

124. In relation to whether Dr B reassessed the uterine activity after the Syntocinon had been turned off, Dr B submitted that her entry into the clinical records, which states that the deep decelerations were recovering "with [Syntocinon] off", indicate that she did assess both uterine activity and the possibility of deterioration of the fetal condition. Furthermore, Dr B stated that between 12.30pm and 12.37pm "the uterine activity returned to the earlier pre-Syntocinon rate of 5 in 10 contractions and the baseline clearly present at 140 bpm with good variability and shorter variable decelerations. I therefore documented my reassessment and was satisfied, with three other members of the clinical team remaining in the room, that I could leave the Birthing Room to arrange the Caesarean."

125. In relation to the responsibility for FHR monitoring, Dr B stated that it is the responsibility of the midwifery staff to ensure the FHR is being monitored adequately for the clinical situation and to report to the obstetrician if they detect suspected fetal compromise, which did not occur.

126. In relation to her decision not to proceed with a crash Caesarean section as soon as no FHR was detected by Doppler, Dr B reiterated her previous submission that in such situations "the onus of obstetric care is to prioritise the health of the mother where possible". Dr B said that "since the on call consultant advised an even less expedient course of action [she] would respectfully suggest that many senior clinicians would follow the same process as [she] did". Furthermore, Dr B stated:

> "The expert opinion by Dr Westgate has assumed that, since I have in retrospect acknowledged that human nature of my shock when the foetal heart was not found, that my response was therefore not clear headed and professional. In fact, those present have subsequently indicated that I did act in a clear headed and professional way, and that I made a compassionate but logical decision not to compromise the safety of [Ms A] when it could no longer benefit her son."

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127. LDHB stated that it encouraged a culture that supported Dr B. LDHB submitted that feedback provided by RANZCOG is that the results of its questionnaire completed by registrars undergoing its training programme (the questionnaire was phased out in 2013) showed no negative comments about the support provided by senior consultants. LDHB provided a copy of its most recent accreditation report from RANZCOG, dated [2010], which provides feedback in accordance with a number of standards required for a hospital to be an accredited training hospital for RANZCOG trainees. The report identified that trainees felt well supported by the supervisor, and that there was good consultant support of the training programme and of the registrars.

Ms C

128. Ms C did not wish to make any further comment.

Ms A

129. Ms A's comments have been incorporated in the "information gathered" section where appropriate.

Opinion: Dr B

Induction of labour — Adverse comment

130. Dr B first became involved in Ms A's care when she was contacted by LMC Ms C when Ms A was 40+4 weeks' gestation, in relation to booking Ms A for an IOL.

131. Dr B told HDC that when she was contacted by Ms C she was told that Ms A was a multiparous patient with a normally grown baby and unexplained mild polyhydramnios. Based on the information provided to her, Dr B told HDC that "there was no obvious clinical reason to object to the requested booking nor any obvious clinical reason to suggest an immediate induction was warranted".

132. Dr B agreed to an IOL, which was booked for when Ms A was 41+3 weeks' gestation, but deferred until the following day owing to the delivery suite being full. I note that the LDHB RCA considered that the decision for an IOL was reasonable, but that the independent review completed by obstetrician Dr H considered that induction around term would have been reasonable. This view is shared by my obstetrics expert, Dr Jennifer Westgate, who considered that in light of Ms A's obstetric history and recurrent episodes of bleeding, Ms A should have been induced at term (around 40 weeks' gestation).

133. I accept Dr Westgate's advice that an IOL should have been considered earlier. Accordingly, I consider that the decision to wait until Ms A was over one week past term was suboptimal. I acknowledge that Dr B was not the only person involved in this decision, as she became involved only when Ms A was 40+4 weeks' gestation, and I note Dr B's submission that the information she was provided in order to make this decision did not indicate that immediate delivery was warranted. Accordingly, I do not consider that Dr B's decision warrants a finding that she breached the Code for not recommending an immediate IOL.

Initial review at 8.50am — No breach

134. Ms A again presented to the delivery suite for the planned IOL. Ms C assessed Ms A, noting that she reported that the baby had been "very quiet" since the assessment the previous day. A CTG was commenced, which Ms C initially noted showed "poor variability" with a baseline of 145bpm. However, by 8.20am, Ms C noted that the variability recorded on the CTG was normal.

135. Dr B was the on-call obstetrics registrar. Dr B advised HDC that at morning handover Ms A was described as low risk and, as such, the consultant obstetrician delegated management of Ms A's IOL to her.

136. Dr B reviewed Ms A at approximately 8.50am. At that time Dr B noted Ms A's history, that her observations were normal, and that the fetus was in a cephalic position with four-fifths of the fetal head palpable abdominally, meaning that it had not descended far into the pelvis. Dr B performed a vaginal examination and ARM and noted that the fetus was in a face presentation with the chin in a posterior position.

137. According to Dr Westgate, face presentation in labour is rare and, when the chin of the baby is in a posterior position, it cannot be delivered vaginally unless the baby is very small. Dr Westgate advised that with effective uterine contractions the baby's head may rotate so that the chin is facing anteriorly, thus allowing vaginal delivery. However, Dr Westgate advised that it is also "well recognised" that the head may flex slightly, resulting in a brow presentation, in which case vaginal delivery would not be achievable. Dr Westgate said that a face presentation may occur in situations where there is a generous amount of liquor, thus allowing the baby's head to extend, rather than flex. It may also be caused by the baby's head being too large for the pelvis.

138. Dr B told HDC that, in her opinion, there was sufficient room in Ms A's pelvis for the fetus to pass through and, therefore, she made the decision to continue CTG monitoring with the plan to reassess Ms A after two hours, to see if the baby had moved into a more favourable position. Dr B said that her assessment and management plan took into account the pelvic diameter, the fact that the baby was assessed as being around the 80th centile on a customised growth chart, and that the CTG was not suggestive of any fetal compromise. Furthermore, she stated:

> "Given that labour had not clinically established, and knowing that the majority of face Mento-Posterior [face in a posterior direction] presentations convert to Mento-Anterior [face in an anterior direction] during labour, I felt that vaginal delivery was realistic."

139. Dr Westgate advised that, in her opinion, because a face presentation is rare and Dr B had only recently started working at LDHB, "a discussion with the on-call specialist about Ms A would have been the best option". However, Dr Westgate advised that "[o]n balance [she] would not regard failure to notify the specialist at this stage as below an acceptable level of practice given [Dr B's] senior level of training".

140. I accept Dr Westgate's advice and do not consider that Dr B breached the Code in continuing with the induction at this time without consultation.

Failure to consult and decision to commence Syntocinon — Breach

141. Dr B reviewed Ms A again at around 11am. Dr B noted that Ms A was experiencing "mild" contractions at a rate of four every ten minutes, there was hypervariability in the FHR, and that the FHR baseline was difficult to establish, but was "previously normal". Dr B said that it was her assessment that Ms A was not in established labour,

the contractions were lasting less than 45 seconds, and the uterine activity was insufficient to effect fetal rotation and cervical change.

142. Dr B stated:

> "Adequate uterine activity has to be present to establish whether any presentation will convert to a more favourable one. … I am aware of the dangers of hyper-stimulation, particularly in a multiparous patient, and would not have considered augmentation if I had considered this to be already clinically present at 11:00 at my review."

143. Dr B said that, in her view, there was still a possibility at this time that the fetus could move into a more favourable position for vaginal delivery. In light of this, Dr B agreed with Ms C's request to commence Syntocinon.

144. "Hypertonic uterine action" and "Malpresentation" are included in the LDHB Syntocinon Infusion Guideline under "Management" as contraindications for the use of Syntocinon. The Guideline also states that the aim of augmentation is for a maximum of "3–4 contractions, with a minimum duration of 45 seconds, every 10 minutes". I note Dr H's opinion that it was "unwise to start syntocinon in a multiparous woman with regular uterine activity (arguably with a hyperstimulated pattern) with a baby still in … an undeliverable position".

145. This view is shared by Dr Westgate, who advised that, in her view, by 11am Ms A was experiencing hyperstimulated uterine activity at a rate of five to six contractions every ten minutes. Dr Westgate notes that "[t]here is absolutely no mention of using the estimated strength of the contraction on palpation as an indication for Syntocinon administration or titration of the dose administered" in the LDHB Syntocinon Infusion Guidelines. In Dr Westgate's opinion, "[t]he decision to commence Syntocinon augmentation in the presence of a malpresentation and with already frequent uterine activity" was a severe departure from an acceptable standard of care. In response to my provisional opinion, Dr B advised that Syntocinon in the context of induction of labour is a standard intervention and that it was the clinical opinion of both herself and the LMC that "the irritable uterine activity at 11am, as recorded on the CTG, did not reflect coordinate contractions".

146. Dr Westgate said that, in her view, Dr B failed to assess the whole clinical picture, taking into account all the risk factors present, including the size of the baby,[24] the fact that the head was still high, and that the baby was still in a Mento-Posterior face presentation despite an additional two hours of labour.

147. Dr B stated that she did consider the size of the baby, noting that it was estimated to be in the 80th centile on a customised growth chart, which is not considered large, that there were no immediate concerns about the pelvic diameters being insufficient for the size of the baby, and that the CTG was not suggestive of fetal distress. Dr B said

[24] Dr Westgate noted that the estimated fetal weight was 4084g at 40 weeks, whereas Ms A's previous largest baby had been 2810g.

that following her 11am review she "did not consider that a Caesarean Section was inevitable or indicated".

148. However, according to Dr Westgate, at 11am "the situation had actually become more complicated, not less complicated in the ensuing two hours". Dr Westgate stated: "What I hoped to see in [Dr B's] review of [Ms A] at 11.00 was evidence of a 'helicopter view' of the labour and current situation — documentary evidence that the risks had been reviewed and carefully considered …"

149. Dr Westgate considered that, given all the circumstances, Dr B should not have proceeded with the Syntocinon augmentation and should have consulted the on-call consultant following the 11am review to discuss the option of Caesarean section at that stage. I agree.

150. I accept Dr Westgate's advice, and consider that by not consulting with the on-call consultant after her 11am review, and by making the decision to commence Syntocinon, which in this case was clinically inappropriate and also contrary to LDHB policy, Dr B failed to provide Ms A with services with reasonable care and skill, and breached Right 4(1) of the Code.

Information provided to Ms A — Breach

151. Dr Westgate advised that when Dr B first identified that she was dealing with a difficult face presentation, during her 8.50am assessment, the option of a Caesarean section should have been considered and, "ideally", the pros and cons of each option discussed with Ms A then.

152. Dr Westgate advised that many of her colleagues would have considered an elective Caesarean section preferable to an induction, and that this would have been her preference also. However, Dr Westgate considered that if Ms A had wanted to continue with the induction, then a short trial was acceptable. There is no evidence that Ms A was involved in Dr B's decision-making, and I note that Ms A told HDC that Dr B did not discuss her findings and management plan with her at that time.

153. While I accept Dr Westgate's advice that it may have been reasonable to take a conservative approach over the next few hours if that was Ms A's preference, the situation and the options should have been discussed clearly with Ms A.

154. In addition, when Dr B next reviewed Ms A at around 11am and made the decision to commence Syntocinon, Dr B should have discussed her assessment findings, in particular Ms A's failure to progress, the risks of Syntocinon, and the option of a Caesarean section at that time. I note that in response to the provisional opinion Dr B submitted that she discussed the proposed commencement of Syntocinon with Ms A. However, again there is no evidence that this occurred.

155. In my opinion, Dr B failed to provide Ms A with information that a reasonable consumer would expect to receive in her situation, that is, adequate information about the proposed management plan, including all the options available, and the risks, side effects and benefits of those options. In my view, at both the 8.50am and the 11.05am

review, Ms A should have been advised specifically of the option of a Caesarean section, and should have been advised of the risks of Syntocinon before it was commenced. For failing to do so, Dr B breached Right 6(1)(b) of the Code.

Failure to reassess uterine activity and monitor FHR — Breach

156. Dr B was called to review Ms A at 12.20pm, as Ms C was having difficulty calming Ms A, and was unable to determine the FHR.

157. Dr B arrived at 12.22pm and, on assessment, noted that Ms A was experiencing seven contractions every ten minutes, with no relaxation between the contractions, and that Ms A had an involuntary urge to push. Dr B stated to HDC: "By this stage, it appeared that the low dose Syntocinon had caused uterine hyper stimulation (known to occur in up to 5% of inductions with Syntocinon use), with 7 in 10 now painful contractions."

158. Dr B performed a vaginal examination to assess whether vaginal delivery was still an option, and found that the baby had moved into a brow position. Dr B noted that the baseline FHR was 140bpm, with "deep" decelerations during contractions, which were recovering to the baseline.

159. Dr B stated that she had diagnosed the "dual pathology of hyper stimulation with foetal heart rate changes and an undeliverable brow presentation", and subsequently made the decision to proceed with an emergency Caesarean section.

160. Dr B said that at that time she could hear the FHR decelerations consistently returning to the baseline within one minute, "indicating adequate foetal compensation at the time to the stress of contractions". Dr B said that she left the room while midwifery staff prepared Ms A for theatre. When she returned, just as Ms A was being wheeled to theatre, she was advised that there had been some difficulty hearing the FHR during preparation for the Caesarean section.

161. It was Dr B's understanding that the difficulty determining the FHR was owing to technical issues, rather than a non-reassuring trace. Dr B said that at that stage she decided to proceed to theatre because no intervention was possible in the delivery suite. Dr B believed that the force and frequency of the uterine contractions would decrease within a few minutes of stopping the Syntocinon. In my view, while Dr B noted the deep decelerations had improved after stopping the Syntocinon, she did not take sufficient steps to assess the uterine activity at that stage.

162. Ms A arrived in the perioperative area at 1.10pm, and the anaesthetist inserted a spinal block at 1.19pm. The FHR was not monitored during that time. Dr B told HDC that she waited for Ms A in theatre, and was not present in the perioperative area while the spinal block was being inserted. Dr B was unaware that FHR monitoring had not been carried out during this time. Furthermore, Dr B said that she was unaware that LDHB did not have a CTG machine available in theatre and, in retrospect, had she understood that the midwifery staff were unsure whether the FHR was reassuring, she would have been able to take steps to "personally supervise the monitoring during this period".

163. According to LDHB, it is not unusual for a CTG machine to be taken to theatre with the patient, and Dr B had "ample opportunity to insist on continuous fetal monitoring in the peri-operative area whilst awaiting the spinal". LDHB also stated that a hand-held Doppler was available. The RCA report also states that it is "common practice" for CTG monitoring to cease once the woman leaves the delivery unit on transfer to theatre for a Caesarean section, and "from that point foetal monitoring is undertaken by intermittent auscultation using a hand-held Doppler". I note that Dr Westgate agrees that it is not unusual to take a CTG machine to theatre with a patient.

164. I accept the advice of my expert that, in the circumstances, it was reasonable to proceed to theatre. However, the FHR should have been monitored upon arrival in the perioperative area. In my view, while there was no policy in place at the time of these events that mandated this, the responsibility to ensure this occurred was shared. I agree with my expert midwife advisor, Billie Bradford, that the failure to ensure that this occurred was in part the result of a systems failure, which I discuss further below.

165. However, notwithstanding this, there is no dispute that Dr B was aware that there had been difficulty in hearing the FHR prior to Ms A's transfer to theatre. Furthermore, I note Dr H's view that the CTG trace indicated that the uterine hyperactivity appeared to have worsened at 12.40pm, 20 minutes after stopping the Syntocinon, and that "the baby was not likely to cope with poor uterine relaxation for too long".

166. It was Dr B's belief that the uterine contractions would decrease within a few minutes of stopping the Syntocinon, and Dr B advised that in her view "the uterine activity returned to the earlier pre-syntocinon rate of 5 in 10 contractions between 12.30pm and12.37pm". However, while she may have been reassured when she noted that the FHR appeared to be returning to the baseline after stopping the Syntocinon and the uterine activity reducing, she failed to think critically, and failed to reassess the uterine activity adequately at that stage. As noted by Dr Westgate, it appears that Dr B's focus was on the malpresentation, and the possibility of a deterioration in fetal condition was not considered.

167. I consider that when the baby was identified to have moved into a brow presentation, Dr B appropriately made the decision to proceed with a Caesarean section. Despite the fetal heartbeat being difficult to locate, I accept that it was reasonable for Dr B to proceed to theatre. However, Dr B should have reassessed Ms A adequately at that stage to ensure that the uterine contractions had decreased as expected, and that an adequate FHR recording was being obtained. Had she done so, she would have become aware that neither had occurred. While I discuss the shared responsibility of FHR monitoring below, I consider that Dr B had an individual responsibility to reassess Ms A's uterine activity adequately and ensure that appropriate FHR monitoring was being carried out in the perioperative area.

168. By failing to reassess Ms A's uterine activity adequately, and to ensure monitoring of the FHR in the perioperative area, Dr B did not identify the deteriorating fetal condition and, as a result, failed to provide Ms A with services with reasonable care and skill. Accordingly, Dr B breached Right 4(1) of the Code.

Decision to proceed with Caesarean section — Adverse comment

169. After the spinal block was inserted, Dr B became aware that the FHR had not been monitored since leaving the ward, and asked Ms C to listen to the FHR. Ms C attempted to do so using a hand-held Doppler, but was unable to detect a fetal heartbeat. Dr B requested a portable ultrasound scanner, which arrived in theatre at 1.30pm. Dr B then performed an ultrasound scan and confirmed that no fetal heartbeat could be detected.

170. Dr B told HDC that she was faced with the decision of either proceeding with a crash Caesarean section and requesting a general anaesthetic without the best practice safety requirement in pregnant women of giving oxygen for three minutes first, or waiting for the spinal block to take effect. The alternative was to trust her scan observation of fetal demise and perform a challenging vaginal delivery.

171. Dr B said that she contacted Dr G, who recommended an urgent radiology review to confirm fetal compromise. Dr B then informed Ms A and Mr A of her findings, and discussed the options available to them, including a Caesarean section or waiting for radiology review. The decision was made to proceed with a Caesarean section.

172. Dr Westgate advised that, given the position of the baby, a Caesarean section was the only option available for delivering the baby. Furthermore, Dr Westgate advised that given the time it would take to prepare Ms A for a crash Caesarean section, the anaesthetic would have taken effect by the time surgery began. Dr Westgate advised that, if necessary, short-acting pain relief could have been administered to get Ms A through the initial stages of the procedure. In Dr Westgate's opinion, given the position of the baby mandating Caesarean section, Dr B should have proceeded with a crash Caesarean section immediately when no FHR was detected by Doppler, rather than performing an ultrasound scan.

173. Dr Westgate acknowledges the difficult, and unexpected, situation Dr B suddenly found herself in, but stated that "the bottom line is that [Ms A] and her family should have been able to expect a clear headed professional response to the situation from [Dr B] but she was unable to provide this".

174. I note Dr B's submission in response to the provisional opinion that she did act in a clear-headed professional manner. While I accept Dr Westgate's advice that it would have been appropriate for Dr B to perform an urgent Caesarean section, I appreciate that she was presented with a very difficult situation. I also note that Dr B contacted Dr G, who advised her to confirm the fetal demise by radiology review. Accordingly, while I am critical of Dr B's decision, I do not consider that Dr B's failure to proceed with a crash Caesarean section in the circumstances warrants a finding that she breached the Code in this respect.

Opinion: Lakes District Health Board — Breach

Supervision

175. LDHB has an organisational duty of care to ensure that it has in place structures to ensure that all its patients are provided with an appropriate standard of care. This includes ensuring that its staff are adequately supported and guided in their decision-making.

176. At the time of these events, Dr B was in her final year of the RANZCOG trainee programme. While she had been working at LDHB for a very short time, there had been no concerns about her clinical performance from her previous position. LDHB advised that all new registrars, as part of their orientation, are made aware of the relevant policies and procedures, and are informed of the expectation that they consult a specialist in situations regarding "any uncertainties or clinical problems".

177. In contrast, Dr B told HDC that she was informed by the Head of Department at orientation that the department expectation was that she would practise in preparation for becoming a consultant within the year, and they would assume she could manage acute obstetric and gynaecological scenarios independently. Dr B advised that "the specialists have reinforced this view before and after this particular incident".

178. This view is supported by the RCA report, which states: "At the case review meeting the [obstetrics and gynaecology] Consultant felt that it was not a requirement for him to be informed as [Dr B] was a senior registrar capable of managing a face presentation." I therefore accept that there was an expectation that Dr B could manage complicated clinical presentations independently.

179. However, in my view, when this difficult case began to evolve into a very complicated situation, Dr B should have consulted the on-call consultant. I accept that Dr B was an experienced registrar, and I note Dr Westgate's view that it was reasonable for LDHB to have expected Dr B to show better judgement in managing Ms A's case, and that there should have been no requirement for close supervision. However, Dr B should have consulted the on-call consultant to discuss the management of the induction and the option of a Caesarean section following the 11am review, but she did not do so.

180. While accepting that Dr B had an individual professional responsibility to assess when she needed to consult, I am also mindful that Dr B told HDC that when she began working at LDHB she was informed that she would practise in preparation for becoming a consultant within the year, and LDHB would assume she could manage acute obstetric and gynaecological scenarios independently.

181. Although Dr B was a senior registrar, she was still practising as a registrar and under the supervision of a consultant. In addition, she had been working at LDHB for a very short time, so the systems and staff were unfamiliar to her. In my opinion, LDHB had a responsibility to ensure that Dr B was adequately guided in her decision-making. I accept that registrars are encouraged to consult a specialist in situations regarding "uncertainties or clinical problems", and that support was available to Dr B. However,

I also accept that essentially Dr B was placed in a position of responsibility, and there was an expectation that she would be able to manage complex clinical cases to the level of a consultant. Consequently, LDHB must accept some responsibility for Dr B's decision-making in this case.

Policies and procedures

182. At the time of these events, LDHB's policy for Syntocinon infusion had clear guidance with regard to "hypertonic uterine action" and "malpresentation" being contraindications for the use of Syntocinon during labour. Despite that, Dr Westgate noted that the decision was made by Dr B to commence Syntocinon augmentation in the presence of a malpresentation and with already frequent uterine activity, and that decision was supported by Ms C.

183. As noted above, as part of Dr B's orientation to LDHB she was made aware of the operating policies in place at LDHB. Similarly, Ms C stated to HDC: "I always follow protocol regarding syntocinon augmentation and observations." I note that the policies are accessible to staff on the birthing unit, and are available electronically.

184. Policies and procedures are of little use unless they are both accessible to staff and followed consistently. I am satisfied that the policies were available to staff. However, despite this I am concerned that the policies were not followed by both Dr B and Ms C.

185. Additionally, I am concerned that no one took any steps to monitor the FHR in the perioperative area. LDHB did not have a policy with regard to CTG monitoring in theatre, but I note that the RCA report states that it is "common practice" for CTG monitoring to cease once the woman leaves the delivery unit on transfer to theatre for a Caesarean section, and that "from that point foetal monitoring is undertaken by intermittent auscultation using a hand-held Doppler". LDHB also advised HDC that it was not unusual for a CTG machine to be taken to theatre with the patient, and that a hand-held Doppler was available at all times. I note Dr Westgate's advice that this was acceptable practice. I therefore accept that it was standard practice at the time for CTG monitoring to cease in the delivery unit, and for FHR monitoring to continue in theatre using a hand-held Doppler.

186. As noted by Dr Westgate, "[b]oth [Dr B] and the LMC seemed […] to be oblivious to the deteriorating fetal condition given their focus on the brow presentation and the preparation for [Caesarean section]". While staff were aware of the problems recording the FHR prior to departure, there was an assumption that these issues were technical, and the focus was on transporting Ms A to theatre. Dr Westgate commented on the fact that Ms F came in as an outsider and was in a good position to recognise that there was a problem, which she did. She also told those responsible. However, no one acted upon this information. This again demonstrates the importance of team dynamics and professionals acting when important information is raised.

187. As advised by Ms Bradford, in light of Ms A's risk factors, monitoring should have resumed upon arrival in the perioperative area. I acknowledge that there was no written protocol at the time. However, I have accepted that it was the standard

practice for FHR monitoring to continue in the perioperative area using a hand-held Doppler.

188. While I consider that Dr B, as the lead clinician, had an individual responsibility to ensure that FHR monitoring occurred, the midwifery staff were also aware of Ms A's uterine hyperstimulation and the difficulties in obtaining the FHR prior to transfer to theatre. As noted above, Ms F communicated her concerns about the FHR recording to Dr B, but no one appears to have considered it important and followed it up upon arrival in theatre. In my view, the failure of any one staff member to initiate FHR monitoring upon arrival in the perioperative area is another example of staff failing to follow procedure. This failure had a significant impact on identification of the fetal demise and, consequently, the timeliness of the subsequent Caesarean section.

Conclusion

189. Despite the knowledge of uterine hyperstimulation and that an FHR had not been obtained prior to transfer to theatre, over 20 minutes elapsed before a health professional checked the FHR. That is seriously suboptimal and a lost opportunity to identify the problem and act more quickly. There was a lack of coordination of care, critical thinking and communication with the LDHB staff.

190. I have significant concerns about the individual and team failings in this case. Every healthcare consumer has the right to receive services with reasonable care and skill. LDHB has a responsibility to have in place structures to ensure that all its patients are provided with an appropriate standard of care. LDHB failed to ensure that it had a system in place that ensured policies and procedures were followed. Staff did not think critically and important information was not communicated effectively. Furthermore, it must accept some responsibility for Dr B's decision-making in this case.

191. I conclude that LDHB failed to provide services to Ms A with reasonable care and skill and, accordingly, breached Right 4(1) of the Code.

Opinion: Ms C — Adverse comment

192. Ms C met Ms A at the delivery unit for the planned IOL.

193. Dr B reviewed Ms A at 8.50am and performed an ARM, noting the presence of thin meconium. Dr B identified that the fetus was in a face presentation, and recommended continuous CTG monitoring with the plan to review Ms A in two hours' time.

194. At 11am, Ms C performed a vaginal examination, noting that the cervix was "thicker than earlier" and 5–6cm dilated. Ms C observed that Ms A was experiencing contractions at a rate of six contractions every ten minutes, which were "beginning to bite".

195. Ms C considered that commencing Syntocinon at this stage was appropriate, and asked Dr B to review Ms A for consideration of commencing Syntocinon augmentation.

196. Ms C told HDC that at that stage she considered Syntocinon was indicated. Ms C stated:

> "Syntocinon would increase the strength of contractions which would then increase the pressure applied to the cervix allowing thinning and dilation to occur. Having had two reasonably quick vaginal births before I believed a small amount of syntocinon augmentation would aid the efficiency of labour and result in the cervix becoming fully dilated in a short period of time."

197. As noted previously, "hypertonic uterine action" and "malpresentation" are listed in the LDHB Syntocinon Infusion Guideline as contraindications for the use of Syntocinon. The guideline also states that the aim of Syntocinon augmentation is to achieve a maximum of "3–4 contractions, with a minimum duration of 45 seconds, every 10 minutes". On her review of the CTG recording, Ms Bradford considered that Ms A had already been contracting 5 to 6 times in 10 minutes for 20 minutes at that point.

198. Furthermore, I note Ms Bradford's comments that given that Ms A was a multiparous woman with a history of quick labours, and therefore at greater risk of hyperstimulation, "[Ms C's] decision to commence Syntocinon at this time was a poor one …"

199. Both Ms Bradford and Dr Westgate agree that the decision to start Syntocinon at this time was inappropriate. It is therefore concerning that the decision was made, particularly given that it was clearly contrary to LDHB policy.

200. In light of this information, I am critical that Ms C recommended commencing Syntocinon. However, I am mindful of the fact that the decision to start Syntocinon is, ultimately, an obstetric one. While Ms C clearly played a role in the decision-making, when considering Ms C's involvement in the decision I am required to assess Ms C's actions against those of her peers. That is, whether her actions were consistent with a reasonable community-based midwife at the time and in the given circumstances.

201. In Dr Westgate's opinion, there "can be no justification for the LMC suggesting … to start Syntocinon in [Ms A's] case". However, Ms Bradford, while critical of Ms C's involvement in the decision, considered the departure to be "mild" when taking into account that Ms C "was working with an unusual situation, had consulted appropriately and was guided in this decision by a senior practitioner".

202. I am also critical of Ms C's failure to ensure that the FHR was monitored in theatre before it was requested by Dr B. I acknowledge that Ms C had handed over care to the DHB staff and was involved in supporting family members at this time. I further note Ms Bradford's advice that FHR monitoring could have been initiated by any one of

the staff members involved and, as discussed in the previous section, I consider that this failure was largely the result of a systems failure at LDHB.

203. While I am of the view that the decision to commence Syntocinon in the circumstances was unacceptable, I am mindful of the fact that the circumstances were unfamiliar to Ms C and that she was reliant on the input of Dr B in guiding the decision. Furthermore, I accept that the use of Syntocinon is an obstetric decision and, therefore, ultimately the responsibility of the obstetric team. I also accept that Ms C's failure to ensure that the FHR was monitored in theatre was a reflection of a systems failure at LDHB to ensure compliance with policies and procedures. As such, I do not consider that Ms C's involvement in these decisions warrants a finding that she breached the Code. However, I recommend that Ms C familiarise herself with the LDHB policy for Syntocinon infusion and, in future, exercise caution in recommending its use.

Recommendations

204. In accordance with the recommendations of my provisional opinion, Dr B has agreed to provide a written apology to Ms A, to be sent to HDC within three weeks of this opinion, for forwarding to Ms A.

205. Dr B has provided a report on the changes she has made to her practice with regard to communication in stressful situations (outlined above).

206. In accordance with the recommendations of my provisional opinion, LDHB has agreed to:

a) Carry out an audit of all malpresentation deliveries, assessing compliance with the new policy for mandatory consultant involvement.
b) Carry out an audit of all Caesarean sections performed on women who have been induced and proceed to Caesarean section, or have an emergency or acute Caesarean section, assessing compliance with the new policy for mandatory CTG monitoring in theatre.

207. LDHB should report back to this Office on these recommendations within three months of the date of this opinion.

208. I also recommend that LDHB:

c) Develop and implement training for staff communication when a senior person does not appreciate clinical concerns. LDHB should report back to this Office, within one year of the date of this report, on the steps taken pursuant to this recommendation.

Follow-up actions

209. • A copy of this report with details identifying the parties removed, except LDHB and the experts who advised on this case, will be sent to the Medical Council of New Zealand and RANZCOG, and they will be advised of Dr B's name.

• A copy of this report with details identifying the parties removed, except LDHB and the experts who advised on this case, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A — Independent obstetric advice to the Commissioner

The following expert advice was obtained from consultant obstetrician Dr Jenny Westgate:

"Thank you for asking for my opinion on this case. I have read the correspondence and notes you provided and also requested and received a copy of the placental histology report.

I will not summarise the clinical events in full as this has already been done. However, I will summarise the key features of the case and give my analysis of events and the cause of the sad in utero demise of [Baby A]. Finally, I will respond to each of the questions which have been provided to me.

A. Key Clinical Features.

[Ms A's] case is complicated and contains a number of unusual features and events which have all played a role in the tragic outcome. [When] [Ms A] presented for induction of labour, [Dr B] was faced with the following issues.

1. [Ms A] has a poor obstetric history; two previous growth restricted babies, a bicornuate uterus (which is associated with growth restriction), two significant APHs in the current pregnancy.

2. Yet despite this history here she was at 41 weeks plus 4 days of gestation in a post dates pregnancy. (I will argue later that with these risk factors [Ms A] should have been offered an induction at term.) In addition [Ms A] reported reduced fetal movements since the previous day.

Problem 1. There was a high risk that [Ms A's] placental function would not be adequate to meet the extra oxygen demand required during labour, therefore there was an increased risk of fetal distress occurring during labour.

3. [Ms A's] baby had grown well on scans, in fact the estimated fetal weight on a scan at 40 and ½ weeks was 4084 grams, which was around the 80th centile on a customised growth chart. This is substantially larger than her previous babies — the heaviest being 2810 grams. [Ms A] was also a small woman — her early pregnancy weight was only 50 Kg.

4. [Ms A's] baby was in a face presentation, with the chin posterior and the head of the baby was only just entering the pelvis. The face presentation probably occurred because of the generous liquor volume which allowed the baby room to extend its neck rather than flex it. Another contributing factor could have been that the baby's head was too large to fit onto the pelvis. As has already been noted by Lakes DHB, [Dr B] and [Dr H], face presentation in labour is rare. If the chin remains posterior the baby will not be able to deliver vaginally (unless it is very small) as the baby has to deliver by flexing its head forward onto its chest and the symphysis pubis bone prevents this from happening. However, with effective uterine contractions a mento posterior face presentation may rotate to mento-

anterior and thus delivery vaginally. It is also well recognised that the head of a baby with a face presentation may flex slightly as labour continues and a brow presentation will result. Babies with brow presentations do not deliver vaginally unless they are very small with respect to the pelvis. In all other cases a brow presentation in labour results in an obstructed labour and delivery by CS is required.

Problem 2. The baby was very large for [Ms A], the head high and the mento posterior face presentation at that stage was unfavourable for a successful vaginal delivery.

[Dr B] decided to go ahead with the induction and then three other critical problems developed.

5. [Ms A] developed hyperstimulated uterine activity. [Ms A's] cervix was already 6cm dilated when she arrived on the 18th. I presume that she had not gone into labour due to a combination of a large volume of liquor, a face presentation and possibly a large baby which did not fit onto the pelvis well. Artificial rupture of the membranes (ARM) was followed by very frequent uterine activity which became 5 to 6 in 10 minutes by 11.00. Occasionally multiparous women respond to prostaglandins released by ARM with an irritable uterus type pattern but mostly, in my experience, contractions will settle down after an hour or two. However, it is true that some women continue to contract frequently through their whole labour. Whatever the cause, frequent uterine activity adds extra hypoxic stress to labour. During contractions the maternal blood vessels which carry oxygen into the placenta are occluded as they pass through the uterine wall. Thus a baby in labour only receives fresh oxygenated blood to the placenta in between contractions. Thus if contractions occur very frequently there is only a small window of time in which maternal blood flow to the placenta is possible. Over time this inevitably results in progressive fetal hypoxia. The rate at which this occurs depends on pre-existing fetal oxygen reserves, placental function and contraction frequency.

In retrospect the frequent uterine activity may have been due to the presence of uterine infection. The placental histology has reported a significant chorioamnionitis which could well have produced an irritable uterus. Another relevant possible cause for very frequent uterine activity in a woman who has had vaginal deliveries before is obstructed labour as the uterus tries to overcome the obstruction.

Problem 3. Hyperstimulated uterine activity occurred following the ARM and significantly added to the hypoxic stress this labour posed to the baby who already had an increased risk of hypoxia due to possible poor placental function.

6. [Dr B] and the LMC made the decision to commence syntocinon augmentation at 1105 as the LMC advised that there had been no change in [Ms A's] vaginal examination findings and reported that the contractions were brief and not very strong. This further increased the frequency of uterine contractions to 1:6 to 7.

Problem 4. Hyperstimulated uterine activity became worse following the start of a low dose of syntocinon and the dangers of this for the mother and baby were not appreciated by either [Dr B] or the LMC.

7. Fetal heart rate changes consistent with progressive fetal hypoxia began to develop at 1040 when fetal heart rate (FHR) variability increased, as has been noted by [Dr B]. There were no decelerations of the FHR at that time but there were also no clear accelerations, as should be expected if the increased variability occurs in the context of a healthy well oxygenated fetus. Increased FHR variability is the first response of a fetus to progressive hypoxia. Unfortunately, this has not been taught well in CTG education, although I have stressed it in my teaching for more than 20 years. [Dr B] interpreted the increased variability as a sign of fetal health.

8. As the fetus became progressively more and more hypoxic the FHR pattern began to deteriorate from 1215 with the presence of variable decelerations. The syntocinon was turned off and [Dr B] called at 1222. Unfortunately, between 1225 and 1236 the FHR was only recorded for about 6 minutes in total with frequent loss of contact. From 1236 to 1250 there was virtually no record of the FHR to interpret. I believe that during this time the FHR deteriorated rapidly as the baby became progressively more and more hypoxic. Unfortunately, because the FHR could not be auscultated this information was not obtained and the rapid deterioration in fetal condition was not appreciated. The appropriate response would have been to apply a fetal scalp electrode. I can only assume that because a decision had already been made to deliver by CS this was not done.

Problem 5. Poor quality recording of the FHR meant that the progressive and then dramatic FHR changes that were the result of progressively severe hypoxia went undetected.

B. Overall conclusion.

In summary, [Baby A] succumbed to progressive hypoxia secondary to hyperstimulated uterine activity which went unrecognised due to poor quality FHR recording and failure to understand the risks of hyperstimulation.

Factors which contributed to the hyperstimulation were:

1. likely uterine infection irritating the uterus
2. release of prostaglandins following ARM
3. possibly obstructed labour (presenting part too large to fit into the pelvis)
4. Syntocinon augmentation.

Factors which may have caused [Baby A] to have an increased susceptibility to hypoxia were:

1. Placental function may not have been adequate to provide the oxygen he required to survive the labour. [Ms A's] past obstetric history suggested poor

placental function occurred in her previous pregnancies. The history of APH and post dates in the current pregnancy are also risk factors for poor placental function. The histology report did not show any changes in villous architecture which accompany poor placentation but I am not sure if this excludes all possibility of a late fall off in gas exchange function.

2. Fetal infection causing increased oxygen demands. The histology of the cord suggested fetal infection was only at an early stage. Fetal tachycardia and reduced FHR variability are the most usual FHR patterns which accompany fetal infection and these were not present in this case. In the absence of a post mortem it is impossible to ascertain whether there was significant fetal infection causing increased oxygen demand or not.

3. Cord twice around the neck. Cord round the neck can cause obstruction in blood flow from the placenta to the baby during contractions, especially as the head begins to descend into the pelvis and if there is traction on the cord. Variable FHR decelerations are the invariable result of the intermittent hypoxia which occurs. They usually occur early and get progressively larger with other secondary FHR changes. In this case the first FHR evidence of hypoxia was increased FHR variability, the decelerations came later. However I cannot exclude additional (additional to the hyperstimulation) hypoxic stress due to reduction of blood flow in the cord during contractions.

C. Response to specific questions.

1. Overall care provide to [Ms A].
Generally the antenatal management of [Ms A's] two APHs was satisfactory as was the monitoring of fetal growth with serial scans. Contraception was discussed and agreed in advance of delivery and a Jadelle was inserted before discharge. Post delivery discussions about the loss of her baby occurred, family meeting and initiation of a Root Cause Analysis were done in a timely fashion. However, the timing of induction and intrapartum care provided to [Ms A] fell below an acceptable standard as shall be discussed below.

2. The decision not to induce labour earlier.
I believe that [Ms A] should have been offered an induction by her due date and not later. Her past history of two growth restricted babies, a bicornuate uterus, smoking and two APHs in the current pregnancy indicated that she had a risk of poor placental function. Serial growth scans showed better than average growth so I would have been happy to let her go to term but not beyond. The finding of a well grown baby at 40 and ½ weeks does not guarantee the placenta will continue to function normally for another week. I view the decision not to induce labour by term as below an acceptable standard of practice. The departure is moderate.

3. Should the registrar have taken over care earlier.
In my reading of the events the registrar was appropriately involved in the management of [Ms A's] induction and labour so I do not believe that a formal transfer of care would have altered the course of events.

4. The decision not to consult the on call specialist when the face presentation was diagnosed.

[Dr B] had just begun her final year as a registrar, in fact a 'Senior Registrar' and perhaps felt she was expected to be able to manage more complicated labours. However, she had just begun working at [the hospital] and would not yet have developed a confident working relationship with the local specialists and midwives. A face presentation was an unusual occurrence. I believe that a discussion with the on call specialist about [Ms A] would have been the best option as she found her feet in the new environment. I wonder whether or when the on call specialist at [the hospital] does ward rounds when they are on call and what level of supervision they offer new registrars? There will be differences in opinion as to management of [Ms A] at this stage. I think many of my colleagues would think that an elective caesarean section (CS) may have been preferable to an induction. Ideally, the pros and cons would have been discussed with [Ms A] and if she preferred to continue with the induction I believe a short trial was acceptable. I would not regard failure to telephone the specialist if they were not present at this stage as below an acceptable level of practice given [Dr B's] senior level of training. Her plan to wait to see what happened in the next couple of hours was acceptable but only if she followed that up with a thorough reassessment of the situation. Unfortunately, she did not.

What I hoped to see in [Dr B's] review of [Ms A] at 11.00 was evidence of a 'helicopter view' of the labour and current situation — documentary evidence that the risks had been reviewed and carefully considered; the big baby, the too frequent uterine activity, the head still high, the presentation still a mento posterior face (or was it? — she did not check herself). In short, the situation had actually become more complicated, not less complicated in the ensuing two hours. In my opinion [Dr B] should have consulted with the on call specialist at this time and discussed the option of a CS. Starting syntocinon in a small woman with a large baby, with a mento posterior face presentation is high risk management. I view the failure to consult at this time as a severe departure from an acceptable standard of practice.

5. Absence of a protocol to manage face and brow presentations.

Abnormal presentations clearly fall into the area of abnormal obstetrics and require specialist input. The actual management depends on multiple variables and I am not sure that a specific protocol would be useful, other than to say that obstetric specialist team involvement is required.

6. Absence of a protocol for induction of labour.

I would expect every Birthing Unit which carries out inductions to have an agreed protocol to guide practice. My own reading of the Root Cause Analysis (RCA) document and its statements about induction is that the existing induction guideline does not contain reference to malpresentations rather than there is no protocol for induction. The following statement copied from the Lakes RCA document suggests this.

"There are no current Induction of Labour Guidelines with an appendix for management of malpresentations for O&G Medical staff or Midwives to refer to."

7. The presence of meconium at ARM.
This was described as thin and old and in the presence of a good volume of liquor is not an adverse finding. Such meconium stained liquor at this gestation is most likely related to maturity of the fetal gut.

8. The decision to start syntocinon.
The aspect of induction which is the issue here is the decision to commence syntocinon despite the fact that [Ms A] had regular and frequent uterine activity. In the absence of a copy of Lakes DHB Guidelines I will refer to the National Women's Protocol on Oxytocin for Induction and Augmentation of Labour (2013), which states that the goal of syntocinon administration is to achieve a contraction frequency of 4:10. It also cautions that hyperstimulation should be avoided. Hyperstimulation is defined as more than 4 contractions in 10 minutes or contractions which last 2 minutes or more or when the time between contractions is less than 60 to 90 seconds. By this definition [Ms A] was experiencing hyperstimulated uterine activity by 1100. Therefore there not only was there no justification to commence syntocinon, but concerns at the frequent uterine activity should have been raised.

The guidelines relating to syntocinon use are long established and the dangers of hyperstimulation well described. I find it difficult to believe that any maternity practitioner, midwife or obstetrician would actually consider commencing syntocinon when uterine activity was already 5 to 6:10. The departure from accepted practice is severe.

9. The timeliness of the decision to deliver by CS.
When [Dr B] was called at 1225 she attended promptly, examined [Ms A] herself, identified the brow presentation and made the correct decision that delivery by CS was required. There was no delay in making this decision at this point in time.

10. Was it reasonable to stop the CTG while preparing for surgery?
My understanding of events is that the CTG remained in place while preparations were made on the ward for the CS. The problem was that the quality of the FHR recording deteriorated due to loss of contact and the midwives were unable to adjust the transducer to auscultate the FHR for the last 14 minutes before [Ms A] was transferred to theatre. As a result the FHR changes present were not detected.

Once in theatre external monitoring of the FHR is often discontinued during insertion of a spinal anaesthetic as the mother is sitting upright and leaning forward making access to the lower abdomen difficult. This is reasonable if the preceding FHR has been totally normal. If there is concern about the FHR then a scalp electrode should be applied so fetal condition can be monitored during the procedure.

According to the DHB RCA document, failure to record the FHR was communicated to [Dr B] before she left for theatre, but as the possibility of fetal distress was not in her mind she was not alarmed and the midwife who reported the problems took no further action. In my view the midwife was responsible for following up on her own concerns by advising the senior midwife on duty, by taking the CTG machine to theatre and insisting that the FHR was auscultated prior to commencement of the spinal. A loud announcement that the FHR has not been able to be heard for the last 20 minutes on arrival in theatre would very likely have resulted in some action on that front.

A situation where the lead team member fails to register or respond appropriately to an observation by another team member is a feature of many disasters, not just in medicine but in many other fields, for example aviation disasters. I recently attended a Workshop on Mastering Profession Interactions provided by the Medical Protection Society where just such a scenario was reviewed. Poor inter-professional teamwork is a recognised risk to patient safety. There are different tools available to standardise such communications but currently they are not in widespread use. At that workshop we discussed strategies for dealing with situations when a medical colleague did not appreciate clinical concerns about a patient. As health professionals midwives will also have to consider their strategies to respond to similar problems when dealing with medical staff, especially registrars.

I view the failure to establish a good quality recording of the FHR on the delivery suite and the failure to follow this up once in theatre as below an acceptable level of practice and the departure is severe.

11. The decision to perform an ultrasound rather than a crash section when no FHR could be heard.

In retrospect this was not a sensible decision as the baby was in a brow presentation and safe vaginal delivery was impossible. In a Lakes DHB internal memorandum dated [2013], [Dr B] admitted that her thought processes at this time were compromised by both the shock of the unexpected turn of events and by a previous traumatic experience. In the last paragraph she suggests that failure to auscultate the FHR indicated to her that the baby was already dead and thus beyond hope. The time at that stage was probably 1320+. I estimate that the terminal fall in FHR probably occurred at around 1300. So [Dr B] was probably right that at that stage resuscitation after delivery in a further 5 minutes would either be unsuccessful or be associated with severe neonatal brain damage. However, given the brow presentation CS delivery was required but this thought obviously escaped her given the stress of the situation. She could have also taken 30 seconds to telephone the on call specialist for advice while [Ms A] was being prepared for the operation but I suspect that panic had set in and with no wise head in theatre to advise her she chose to wait for the scan machine to arrive. I do not think this decision affected the outcome for [Baby A] but would have added immense stress for the parents and perhaps left them believing that this further delay removed any hope of their baby son being saved.

12. The decision not to resuscitate.
The baby was born at 1349 with no signs of life. The portable scan performed by [Dr B] at 1330 had shown no fetal heart activity and before that the FHR could not be auscultated in theatre at 1220 or so. I completely support the decision not to resuscitate this baby given the information available to the paediatricians that no fetal heart had been present for at least 30 minutes prior to delivery.

13. Did [Ms A] have any symptoms to suggest she had chorioamnionitis?
The placental histology reported the presence of necrotising chorioamnionitis which is at the severe end of the spectrum but the fetal infection was very early based on histology of the umbilical cord.

The only 3 clinical suggestions that I can find in retrospect that chorioamnionitis may have been present are:

a. [On the day before induction], a midwife noted that [Ms A's] uterus seemed irritable to touch. These signs were not reported the following day.

b. On [the day of induction] [Ms A] reported reduced fetal movements.

c. Uterine activity after the ARM became very frequent and would be consistent with an irritable uterus secondary to chorioamnionitis.

However none of these observations is diagnostic of chorioamnionitis. Conversely, there are many other clinical observations that do not support a diagnosis of chorioamnionitis. [Ms A] was afebrile [on arrival], the liquor was not offensive, there was no sustained fetal tachycardia, there was no record of offensive liquor, placenta or membranes at CS and [Ms A] remained afebrile after her CS with no evidence of post natal uterine infection.

14. The appropriateness of the DHB recommendations.
The group which undertook the Root Cause Analysis (RCA) made the following recommendations.

Recommendation 1 is that CTG monitoring in theatre should occur for all women who have CS following IOL and for all women who require an emergency CS for any reason. I fully support this recommendation.

Recommendation 2 is that the Induction guidelines are updated with an appendix on the management of women being induced in whom a malpresentation is present. I support the recommendation.

Recommendation 3 was that although the placental histology suggests there was an infection in the placenta there were no other steps that could have been taken to clinically identify this. I agree.

Recommendations based on other findings thought not to have contributed to the outcome were firstly to develop a guideline on CS urgency categories as advised by RANZCOG. Secondly, in response to [Ms A's] complaint that her concerns

about the labour and her requests for a CS went unheeded, staff have been reminded of their responsibilities to ensure a documented three-way discussion about care, transfer of care and diagnosis and treatment takes place.

In addition the SBARR communication tool has been adopted into practice. I agree with both recommendations.

The RCA group recommended that families be advised that in the absence of a post mortem an exact cause of death may not be established and this advice needs to be documented. This seems appropriate.

Finally, they also requested an external review of the case which has been completed by [Dr H] but I have not been provided with any documents which show that they have revisited their conclusions and recommendations in the light of the contents of her report.

15. Recommendations for remedial action.
The RCA group came to the following conclusions about the cause of [Baby A's] death:

1. He may have succumbed to a severe cord accident during the birthing process which went undetected because there was no FHR monitoring in theatre.

2. There were no Guidelines about induction in the presence of abnormal presentations.

3. There was undiagnosed sepsis in the placenta which may have led to sepsis causing death of the baby prior to delivery.

My conclusions (Section B) are somewhat different to those reached by the RCA but are consistent with the comments made by their chosen reviewer, [Dr H]. I deliberately formed my conclusions before I read her full report.

As a result of my conclusion as to the cause of [Baby A's] death, I believe that the two key areas which need addressing are CTG monitoring and management of syntocinon augmentation. Specifically, staff must be aware that failure to adequately record the FHR with an ultrasound transducer must be corrected as a matter of priority by either obtaining assistance to improve the position of the transducer or by applying a fetal scalp electrode. The protocol for syntocinon augmentation should be reviewed to ensure it is clear that syntocinon must not be administered if uterine activity is already 4:10, even if the contractions do not palpate as being strong. Criteria for diagnosing hyperstimulated uterine activity must be listed and management options given. Staff should understand the physiological reasons why hyperstimulated uterine activity is dangerous for both the fetus and the mother.

A third area to address is that of interprofessional teamwork and communication, particularly when there is a difference of opinion on the significance of clinical findings. As I read the RCA report, the SBARR tool has been introduced primarily

in response to [Ms A's] comments that her concerns were not listened to. This is obviously important. I would also like to see some attempt to address the issues I raised in answering question 10.

Finally, [Ms A] asked the Commissioner for assistance in finding out what happened and why. I hope that my report has provided more detail which will help them in this respect. One further question which I think might be helpful to address is where did the infection in [Ms A's] uterus come from? There are really only two possibilities. One is a blood borne infection from [Ms A] which spread to the uterus. As [Ms A] herself was not unwell and had no evidence of systemic infection I think this is unlikely. I suspect that bacteria spread up from the vagina into the uterus. It may have been that [Ms A's] cervix was partly open for some days or longer before delivery. (She was already 5 to 6 cm dilated on [the day of induction].) Cervical mucous is present when the cervix is closed and is known to have a protective action against bacteria which are present in the vagina. Loss of the mucous when the cervix opened may have allowed bacteria to gain access to the uterus and eventually an infection took hold.

D. Closing Comments.

I am very aware that I have the benefit of hindsight in reviewing this case. But I also believe it is important to learn as much as possible from tragedies such as occurred for [Ms A], [Mr A] and [their son]. This is not only to provide information to the family but also to inform better clinical care in the future. In order to achieve this, a review of events in the cold light of day is required. My assessment of events has highlighted several areas where I believe [Dr B] fell short of delivering an acceptable level of practice from a doctor at her level of training. However, I have also deliberately indicated where other members of the team of professionals providing care to [Ms A] have contributed to the chain of events for which [Dr B] appears to be held ultimately responsible. Had any one of these team members fulfilled their professional responsibilities at a higher level of care the tragedy may have been averted. This case was an example of the swiss cheese effect. No one error by one person was the cause but rather different errors by different people all contributed to the eventual sad outcome.

I hope that [Ms A] and [Mr A] will be helped by the Commissioner's review of their concerns. I also hope that [Dr B] will receive the professional support she needs to get through this difficult time and learn lessons which will enable her to become a better practitioner."

Further advice

The following additional advice was obtained from Dr Westgate:

"Thank you for asking for my updated opinion on this case in response to comments on my initial opinion on the case. I have read the letters you provided and will now discuss the specific issues you require comment about.

1. Timeliness of Induction of Labour.
I previously expressed the view that [Ms A] should have been induced around term given her poor obstetric history and the recurrent antepartum haemorrhages in this pregnancy. [Dr H] also commented that a case could be made for induction of labour at term. [Drs I and B] did not agree given that the baby's growth was carefully monitored by serial scans and was above average.

However, as I noted previously, the finding of a well grown baby at 40 and ½ weeks does not guarantee the placenta will continue to function normally for another week. [Dr H] concluded that 'this was an already compromised baby that had not much reserve to cope with the hyperstimulated uterus'. This opinion is consistent with my concerns. There was no evidence of hypermaturity or abruption on placental histology but this information was obviously not available at the time decisions about the timing of induction were made. It would be my practice (and I suspect [Dr H's]) to have offered [Ms A] an induction at term. However, I agree that this decision was not one of the key factors which determined outcome in this case.

2. The appropriateness of [Dr B's] decision to continue with [the induction] and
3. Failure to consult the specialist on call when the face presentation was discovered.
[Dr B] has explained that in the morning at 0800 a handover ward round was done with the specialist on call present. [Ms A's] management was delegated to [Dr B] as at that time there did not seem to be any particular issues which required the specialist to review her himself. However, once the face presentation was discovered the situation became more complicated. A face presentation is an unusual occurrence. I believe that a discussion with the on call specialist about [Ms A] would have been the best option as she found her feet in the new environment. [Dr I] has made it clear he believes [Dr B] should have notified the specialist on call about such a complication. [Dr B] believes that she was encouraged to perform at a Senior Registrar level and manage complicated cases by herself. On balance I would not regard failure to notify the specialist at this stage as below an acceptable level of practice given [Dr B's] senior level of training. Her plan to wait to see what happened in the next couple of hours was acceptable but only if she followed that up with a thorough reassessment of the situation. Unfortunately, she did not.

4. Should a caesarean section (CS) have been considered earlier?
Yes, I believe so. The first opportunity to consider whether a CS would be the best option for [Ms A] and her baby was when the face presentation was detected. There will be differences in opinion as to the management of [Ms A] at this stage. I think many of my colleagues would think that an elective caesarean section (CS) may have been preferable to an induction. That would have been my preference too. Ideally, the pros and cons would have been discussed with [Ms A] and if she preferred to continue with the induction I believe a short trial was acceptable. It is not clear to me as to whether this discussion took place as it is not documented in the notes.

The second time a CS should have been considered was at 1100 when it appeared that [Ms A] had not progressed in labour. What I hoped to see in [Dr B's] review of [Ms A] at 1100 was evidence of a 'helicopter view' of the labour and current situation — documentary evidence that the risks had been reviewed and carefully considered; the big baby, the too frequent uterine activity, the head still high, the presentation still a mento-posterior face (or was it? — she did not check herself). In short, the situation had actually become more complicated, not less complicated in the ensuing two hours. In my opinion [Dr B] should have checked the vaginal findings herself, discussed the situation with [Ms A] and consulted with the on call specialist to discuss the option of a CS.

5. [Dr B's] response to being advised that there were problems monitoring the fetal heart rate (FHR).

[Dr B] stated that she was only made aware of the problems in recording the FHR as [Ms A] was being wheeled out of the room to go to theatre, implying perhaps that she had no opportunity to take any action at that time.

Midwife [Ms F] was called into the Labour Ward room to help prepare [Ms A] for theatre and was tasked with repositioning the transducer to record the FHR. She advised [Dr B] that she was not confident that she could hear the FHR and acknowledged that this conversation occurred as [Ms A] was being taken to theatre.

[Ms F] commented that [Dr B] was not concerned about this as she had no previous concerns about the FHR. Yet in her response to my initial comments on this case, [Dr B] says she was aware there were FHR decelerations which took one minute to recover while she was speaking to [Ms A].

It appears to me that [Dr B] was so focused on the face presentation aspect of [Ms A's] labour that the possibility of deteriorating fetal condition never entered her mind.

6. Should [Dr B] and or the entire team have taken steps to ensure the FHR was monitored in transit and on arrival in the peri-operative area?

Monitoring the FHR in transit would have been impossible as CTG machines do not usually have battery backup. However, the FHR should definitely have been monitored on arrival in the perioperative area. [Dr I] states that it was not unusual to take the CTG machine to theatre in cases where there were concerns about the FHR. In fact this is the practice in hospitals where I have worked. Lakes DHB have now made a policy that a CTG machine must accompany every woman having an acute CS to theatre following this case. [Dr B] perhaps suggests that she anticipated being able to check the FHR with a CTG on arrival in theatre but of course was not able to do so as there was no CTG machine present. She could however have asked for Doppler auscultation of the FHR at that point. If the FHR was abnormal (as it almost certainly was) she could have advised the anaesthetist that a crash CS was required immediately perhaps allowing delivery by 1310 to 1315. [Dr B] suggests that her failure to ensure the FHR was monitored was because she assumed it would be and was not aware that this was not the practice

at Lakes DHB. I do not believe that this is an acceptable excuse. [Dr I] commented that she had ample time to arrange for a CTG machine to be brought to the theatre had she wanted to monitor the FHR and I agree. In my view, [Dr B's] failure to ensure the FHR was monitored in theatre suggests to me that she had not realised at all that the fetus was in danger.

[Dr B] was out of the room making arrangements for the CS when the FHR could no longer be auscultated. Although the three midwives present were distracted preparing and caring for [Ms A], [Ms F] at least seems to have realised there could be a problem. [Ms F] passed on the information to the lead clinicians so both [Dr B] and LMC [Ms C] and the third midwife in the room, [Ms E] were aware of the problems recording the FHR. [Ms F] stated that she thought that [Dr B] would arrange to listen to the FHR with a Doppler once [Ms A] reached theatre. Unfortunately this did not occur and the LMC did not follow up [Ms F's] concerns once she reached theatre. It was not for another 30 minutes that anyone listened for the FHR again which is clearly inadequate monitoring practice.

7. [Dr B's] management when advised that the FHR could not be heard on Doppler.

The brow presentation of the baby mandated a CS delivery so the most appropriate management on hearing the news that the FHR was not detected would have been to expedite delivery and ensure that the paediatric staff were aware that the baby might be very unwell on delivery. In a Lakes DHB internal memorandum dated [2013], [Dr B] admitted that her thought processes at this time were compromised by both the shock of the unexpected turn of events and by a previous traumatic experience.

[Dr B] states that one important reason that she did not proceed immediately to CS was because the spinal had only just been inserted and required a few more minutes to take effect. These few minutes would easily have passed during the time taken to apply the skin preparation and the drapes and arrange the equipment for the CS. If necessary the anaesthetist could have administered some short acting pain relief to help [Ms A] while the baby was delivered. So I do not accept this as a major reason not to proceed to perform the CS as soon as possible.

[Dr B's] panicked reaction to the news that no FHR could be heard and her subsequent delayed delivery of [Baby A] was very regrettable. I do not think it affected the outcome for [Baby A]. Her actions are however understandable given the unexpected and serious nature of the information and a previous traumatic experience in a similar situation. We are human beings, not robots and it is well recognised that terror and recalled fear impair our ability to make rational decisions. A cool head in a time of crisis come to some by nature, to others by experience and to some not at all. [Dr B] is too early in her career to have achieved the experience which may have enabled her to have dealt with this crisis more rationally. I have acknowledged the distractors to [Dr B's] management at this stage but the bottom line is that [Ms A] and her family should have been able to expect a clear headed professional response to the situation from [Dr B] but she was unable to provide this.

8. Other Comments:

a. Syntocinon administration.

I believe that this was the first critical error that led to the rapid decompensation and death of [Baby A]. [Dr I] has provided a copy of the Lakes DHB Syntocinon Guideline which clearly states the contraindications are malpresentation and hypertonic uterine action, both of which were present in [Ms A's] case. The maximum frequency of contractions recommended with syntocinon augmentation is clearly stated as 3 to 4 in 10 minutes. There is absolutely no mention of using the estimated strength of the contraction on palpation as an indication for syntocinon administration or titration of the dose administered. There can be no justification for the LMC suggesting and [Dr B] agreement to starting syntocinon in [Ms A's] case.

b. Care provided by other Lakes DHB staff.

Two areas warrant consideration. The first relates to the supervision and support offered to [Dr B] in the first week or so of her post at Lakes DHB. [Dr I] has noted that [Dr B] was a registered 6th and final year RANZCOG trainee who had completed all her training requirements satisfactorily to that time and was regarded as having 'safe and very reliable pair of hands' by her previous Training Supervisor from her time at a tertiary level hospital. Lakes DHB had provided an orientation program for [Dr B] and advised on their expectations of her level of practice. The specialist on call that day had attended the morning ward round and was readily available in a near by Clinic. I believe that it was reasonable of Lakes DHB to expect [Dr B] to have had far better judgement in managing [Ms A's] case and there should have been no requirement for her to be closely supervised.

The second area relates to the actions of two Lakes DHB midwives ([Ms F] and [Ms E]) who were aware that the FHR could not be heard on auscultation from 1236 to 1250. Both [Dr B] and the LMC seemed to me to be oblivious to the deteriorating fetal condition given their focus on the brow presentation and the preparation for CS. What should these midwives have done? In particular [Ms F] came in as an outsider and being somewhat removed from events was the best placed to realise that there was a problem, which she did. She also clearly told those responsible and they failed to act on her information as they were not expecting a problem with the FHR. In my previous report on this case I discussed this not uncommon scenario in more detail. Given [Ms F's] explanation of her brief involvement in [Ms A's] care and the fact that neither [Ms F] nor [Ms E] accompanied [Ms A] to theatre (which was some distance away) I believe that they fulfilled their obligations of care. Had they taken the initiative to take a CTG machine to theatre they would have demonstrated an exemplary level of care.

Conclusion.

In conclusion, it is my opinion the care offered to [Ms A] by her LMC [Ms C] and by [Dr B] fell below an acceptable standard of care.

The decision to commence syntocinon augmentation in the presence of a malpresentation and with already frequent uterine activity and the failure to

adequately monitor the FHR were both severe departures from an acceptable standard of care.

[Dr B's] failure to examine [Ms A] herself at 1100 and failure to discuss the situation with the specialist on call was a severe departure from an acceptable standard of care.

[Dr B's] response to the news that the FHR could not be heard at 1320 was affected by a number of distractors and is unlikely to have affected the outcome for [Baby A]. Nevertheless her actions fell below an acceptable level of care. I would view the departure at the mild end of the scale given the fact that the FHR was already absent.

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Jenny Westgate DM FRANZCOG

Honorary Associate Professor in Obstetrics and Gynaecology"

Appendix B — Independent midwifery advice to the Commissioner

The following preliminary expert advice was obtained from midwife Billie Bradford:

"Thank you for your request for advice on the midwifery care provided to [Ms A] for the birth of her son [Baby A] in 2012. I am a midwife of 16 years' experience working across primary, secondary and tertiary care settings. I have worked for 10 years as a midwife educator and have seven years' experience reviewing cases of perinatal death. I have familiarised myself with the patient records and associated documents provided and feel able to comment on the standard of midwifery care provided to [Ms A].

Firstly, I will acknowledge that [Ms A's] care was provided by a team including consultant, registrar and midwives. I am able to comment solely on midwifery care provided as part of this team, and make the following comments:

1. Timing of induction of labour
   [Ms A] had a number of risk factors for placental insufficiency warranting closer monitoring of fetal wellbeing at the end of pregnancy and in labour, including a previous small baby, smoking, antepartum haemorrhage and decreased fetal movements. For these reasons earlier induction of labour had been considered. However, any concerns for the functioning of the placenta were mitigated by reassuring assessments of fetal growth and wellbeing in late pregnancy, reduced smoking on [Ms A's] part and excellent fetal growth which was estimated at a scan prior to birth to be on the 80th centile customised.

   The lead maternity care midwife [Ms C] discussed early induction with the consultant, as per the documented plan. The decision to delay induction until 41+3 was made by the consultant and was reasonable given that [Ms A's] progress gave no indication for urgency at that time. A further delay of one day was required due to busyness in the delivery unit and following a reassuring assessment of [Ms A's] pregnancy. The decisions around timing of induction were appropriate and in my view did not contribute to the outcome.

2. Appropriateness of commencing syntocinon augmentation:
   When [Ms A] presented for induction of labour her waters were broken and she was found to have meconium liquor and a face presentation. Face presentation may result in safe vaginal delivery but is also associated with cephalopelvic disproportion and fetal distress. This presentation is normally diagnosed once labour has commenced and quoted rates of successful vaginal delivery could arguably be considered to apply in that circumstance. The position was mento-posterior which some sources suggest is an indication for primary caesarean section unless the baby is very small or preterm[i]. In this situation there was no spontaneous labour and the baby was known to be well-grown.

Decisions for induction of labour and management approaches to induction are the preserve of obstetrics. Midwives specialise in providing primary care on their own responsibility to low risk women or where the care is complex in consultation with obstetricians who have specialised knowledge regarding complications in childbirth. In this case the woman was assessed by an obstetric registrar who determined that induction could proceed. The midwife would have been aware from her training that the presenting diameters of a face presentation do not preclude vaginal delivery but would be expected to have limited experience of face presentation given that it is rare. It is understandable therefore that she deferred to a senior registrar in the management decisions for this case. Induction of labour normally involves a series of procedures conducted in order until labour establishes or there is an indication that continuing is unwise. The next step following rupture of membranes is syntocinon augmentation.

At 1100 the cervix had not dilated any further and was described as 'thicker than before' indicating poor progress. At 1105 [Ms A] was assessed by the registrar who documented 'suggest cautious augmentation'. The decision for augmentation appeared to rest on the lack of progress at vaginal examination and the determination that contractions were weak to palpate. However [Ms A] had been contracting six in 10 for 20 minutes according to the CTG tracing at that time. She had also been described as 'kneeling on floor over bed edge' with 'contractions beginning to bite now'. [Ms C] had checked the baby resuscitation equipment and turned on the heater, which a midwife would normally do once a woman is in labour in anticipation of tending to the newborn. The description of [Ms A's] response to her contractions suggests active labour, which would be corroborated by the CTG recording.

[Ms C's] decision to commence syntocinon at this time was a poor one especially given that [Ms A] was a multiparous woman with a history of quick labours and therefore at greater risk of hyperstimulation. Further, syntocinon augmentation was contra-indicated in malpresentation by hospital policy at the time.

3. Regarding [Ms C's] interpretation of the CTG trace:
Having viewed the CTG tracing and associated progress notes I am satisfied that [Ms C] has correctly interpreted the CTG trace and communicated with the registrar in a timely and appropriate fashion. [Ms C] contacted the registrar at 1222 following 30 minutes of fetal heart decelerations recorded on the CTG during which time she took appropriate steps to improve the tracing including changing the mother's position and stopping the syntocinon. The CTG at this time was not normal but neither could it be considered ominous or diagnostic of fetal distress, therefore [Ms C's] responses to this were appropriate.

The baby was described as moving excessively in labour by his mother and as 'turning summersaults' by the midwife. Excessive fetal movements in utero have been documented in intra-uterine fetal deaths, but this is not necessarily well known. The fetal heart-rate was normal but there was hyper-variability,

this and the excessive movements in retrospect may have been signs of hypoxic stress. However these are uncommon signs and it is understandable that they were missed at the time.

4. Regarding adequacy of fetal heart monitoring following the decision for caesarean section:
[Ms C] had documented on a number of occasions that maintaining contact with the fetal heart signal via the abdominal transducer was difficult. Despite this an acceptable tracing was made throughout the major part of the labour. Whenever contact with the fetal heart was lost it was quickly found again and documented to be normal. When maintaining a CTG recording by abdominal transducer becomes difficult the recommendation is normally to attach a fetal scalp electrode. This involves screwing a small coil of wire into the baby's scalp to maintain constant contact. Face presentation is a relative contraindication to scalp electrode use as there is a risk of damage to the eyes and in any case was not indicated prior to the time when the decision for caesarean was made.

Just prior to leaving the delivery room the midwives were not able to hear the fetal heart continuously and could only record it for brief intervals. It was reasonable for them to assume this difficulty was technical as had previously been the case and to prioritise transporting [Ms A] promptly to theatre which was now understood to be the only place she could deliver safely. [Baby A's] heart was last heard at a normal rate (albeit briefly) at 1250, [Ms A] is documented to have arrived in theatre at 1310 and the spinal was placed by 1316. Arguably if the fetal heart had been listened for on arrival at operating theatre an opportunity for a Category 1 or 'crash' caesarean would have existed.

[Ms A] had numerous risk factors for fetal compromise both antepartum and arising intrapartum which indicated that electronic monitoring should continue with minimal interruption until delivery. Monitoring therefore should have resumed on arrival at theatre. Resumption of monitoring could have been arranged by any party; the registrar, the LMC or the hospital midwives. Failure to do so appeared to be a systems failure where continuation of electronic fetal monitoring in theatre was not part of the normal practice culture for acute caesareans at the hospital other than where there is a definite diagnosis of fetal distress, which was not the case here.

In Summary
In my view the midwifery care provided to [Ms A] was for the most part of a high standard. The antenatal care was responsive and the consultation and timing around commencement of induction was appropriate. [Ms C] also consulted appropriately and in a timely fashion about concerns in labour as they arose. There were however two failures in relation to the provision of midwifery care; the first being commencement of syntocinon for augmentation. [Ms A] was a multiparous woman, with a history of quick labours, who was contracting frequently with an abnormal presentation. Risk of hyperstimulation was high in this circumstance and

the decision was contraindicated by hospital policy at the time. However this departure on [Ms C's] part can only be considered 'mild' given that she was working with an unusual situation, had consulted appropriately and was guided in this decision by a senior practitioner.

The second failure was to ensure ongoing electronic fetal monitoring on arrival at operating theatre. This failure can be attributed largely to systems at the hospital at the time, which have been highlighted in a root cause analysis and the hospital is taking steps to address.

Finally, [Ms A] and [Mr A] have suffered an immense loss in the death of their son in labour. Chorioamnionitits was identified on histology of [Baby A's] placenta and this infection was likely to have contributed to his rapid deterioration over the course of transfer to theatre. However, [Baby A] was evidently in good condition at commencement of induction and it must be considered that his death was potentially avoidable had a different clinical management course been followed.

[i]Schwartz Z, Dgani R, Lancet M, Kessler I. Face Presentation. Aust N Z J Obstet Gynaecol 1986;26: 172."