Midwifery Service

Midwife, RM B

Midwife, RM C

A Report by the

Health and Disability Commissioner

(Case 15HDC00892)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. In 2014, Ms A was pregnant with her first child. Ms A's lead maternity carer (LMC) was registered midwife (RM) RM B. RM B is employed by a midwifery service. During her pregnancy, Ms A was also seen by other midwives who provided cover for RM B, including RM C.

2. At 35+5 weeks' gestation, Ms A was seen by RM D, a midwife at the midwifery service. RM D documented Ms A's fundal height as measuring only 30cm — 4cm less than the previous week — and plotted this on the GROW chart. RM D noted that Ms A was small for dates and referred her for a growth scan.

3. At 36+4 weeks' gestation, Ms A was seen by RM B, who noted that Ms A had undergone her growth scan earlier that morning and documented: "[A]s far as we are aware things are good …" RM B documented Ms A's fundal height as measuring 34cm and plotted this on the GROW chart.

4. At 37+5 weeks' gestation, Ms A was seen by RM B, who noted: "Active baby. Reviewed scan [from 36+4 weeks' gestation] — shows well grown baby at this stage." RM B did not measure Ms A's fundal height or plot anything on the GROW chart.

5. At 38+5 weeks' gestation, Ms A was again assessed by RM B. RM B documented Ms A's fundal height as measuring 35cm and plotted this on the GROW chart. RM B told HDC that she was reassured by her findings at this assessment.

6. At 39+5 weeks' gestation, Ms A was seen by RM C, who performed an abdominal palpation, documented Ms A's fundal height as measuring 35cm (the same as the previous week), and plotted this on the GROW chart. RM C noted that she measures fundal height lower than her colleagues, and was therefore not concerned that her measurement of fundal height was the same as RM B's the previous week.

7. At 40+5 weeks' gestation, Ms A saw RM B, who documented: "5 days post dates now. Lots of movements discussed [induction of labour] [44+4 weeks' gestation] — will book it in." RM B did not document a fundal height measurement at this assessment.

8. At 41+3 weeks' gestation, Ms A was seen by RM C for a stretch and sweep, as Ms A had been experiencing contractions every 10 to 15 minutes over the last two nights. RM C documented that she listened to the fetal heart rate, and discussed whether to perform a CTG. However, as the baby was moving well, it was decided not to. RM C did not measure the fundal height.

9. Ms A presented to the public hospital the following afternoon. She went into established labour that evening. Ms A was in the birthing pool between 8.35pm and 11.17pm. RM B monitored the fetal heart rate every 20 minutes during that time, and undertook a CTG when Ms A got out of the pool. RM B stated that she "instantly recognised that this was a very abnormal CTG and would require urgent consultation with an obstetrician".

10. RM B consulted the obstetric registrar, and it was arranged for Ms A to have a Caesarean section. This commenced at 12.54am and, at 1.07am, Baby A was born in poor condition.

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Baby A required resuscitation, and was transferred to the neonatal unit. Baby A weighed 2710g and was noted to be intrauterine growth restricted. Baby A was transferred to Hospital 2 for three days before returning to the public hospital for ongoing care, and was discharged a few days later.

11. RM B provided three weeks of postnatal care to Ms A before Ms A decided to transfer her care to another midwife.

Findings

12. RM B did not measure Ms A's fundal height at 40+5 weeks' gestation, and failed to appreciate signs indicative of a potentially growth restricted baby at her assessments at 38+5 and 39+5 weeks' gestation. In the Commissioner's view, this contributed to Baby A being treated as low risk for the remainder of Ms A's pregnancy, as well as during labour and birth. Accordingly, RM B failed to provide services to Ms A with reasonable care and skill, in breach of Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[1] Adverse comment is also made about the intrapartum and postnatal care that RM B provided to Ms A.

13. RM C failed to measure Ms A's fundal height at 41+3 weeks' gestation, and the Commissioner considered it suboptimal that RM C failed to appreciate signs indicative of a potentially growth restricted baby at her assessments at 39+5 weeks' gestation and at 41+3 weeks' gestation. The Commissioner considered that this failure contributed to Baby A being treated as low risk during the remainder of Ms A's pregnancy, as well as during labour and birth. Accordingly, RM C failed to provide services to Ms A with reasonable care and skill, in breach of Right 4(1) of the Code.

14. By failing to have in place any policies to support its staff, particularly in relation to the measurement of fundal height during pregnancy, the midwifery service did not provide services to Ms A with reasonable care and skill, and breached Right 4(1) of the Code.

15. Criticism is made of the DHB regarding the confusion around Ms A's transfer to theatre, and that Ms A's placenta was not sent for examination.

Recommendations

16. It is recommended that RM B and RM C provide a written apology to Ms A.

17. It is recommended that the midwifery service develop policies regarding measurement of fundal height during pregnancy.

18. In the provisional opinion, it was recommended that the midwifery service report back to HDC on the outcome of its intention to arrange training for its staff on the use of GROW charts. The midwifery service arranged this training for its staff, including RM B and RM C. This recommendation has now been met.

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

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Complaint and investigation

19. The Commissioner received a complaint from Ms A about the services provided to her during her pregnancy, labour, and the birth of her child, Baby A. In particular, Ms A complained about the care provided by registered midwives RM B and RM C. The following issues were identified for investigation:

- *Whether RM B provided Ms A with an appropriate standard of care in 2014.*
- *Whether RM C provided Ms A with an appropriate standard of care in 2014.*
- *Whether the midwifery service provided Ms A with an appropriate standard of care in 2014.*

20. The parties directly involved in the investigation were:

Ms A	Consumer/complainant
RM B	Registered midwife and LMC
RM C	Registered midwife and practice manager of the midwifery service
Midwifery service	Provider

Also mentioned in this report:

RM E	Midwife
RM F	Midwife
RM G	Midwife
Dr H	Obstetric registrar
RM I	Midwife
Dr K	Paediatric registrar
Dr L	Obstetrician

21. Information was also reviewed from:

RM D	Registered midwife and back-up LMC
District health board	Provider
Accident Compensation Corporation (ACC)	
The Midwifery Council of New Zealand	

22. Independent expert advice was obtained from a registered midwife, Bridget Kerkin (**Appendix A**), and a specialist obstetrician and gynaecologist, Dr Anne Sissons (**Appendix B**).

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Information gathered during investigation

23. In 2014, Ms A, 28 years old at the time of events, was pregnant with her first child. Ms A's lead maternity carer (LMC) was RM B.[2] RM B is employed by the midwifery service. The midwifery service employed six midwives at that time to provide LMC care and back-up for each other. During her pregnancy, Ms A was also seen by other midwives (also employed by the midwifery service) who provided cover for RM B, including RM C.[3]

Antenatal care

24. Ms A's pregnancy proceeded normally during her first and second trimesters. During her second trimester Ms A was seen by midwives at the midwifery service on six occasions. During her third trimester, Ms A was seen on 12 occasions (approximately once a week), as outlined below.

25. At 29+2 weeks' gestation, Ms A was seen by RM B. RM B assessed Ms A and recorded the fundal height measurement for the first time as 28cm, and plotted this on the customised antenatal growth chart[4] (the GROW chart). RM B documented: "[G]iven form to start thinking about birth plan."

26. At 31+5 weeks' gestation, Ms A was seen by RM B, who noted that Ms A was looking well, and her baby was active. RM B recorded the fundal height measurement as 30cm, and plotted this on the GROW chart.

27. At 33+5 weeks' gestation, Ms A underwent a scan to check the location of her placenta, which was reassuring.[5] Ms A also saw RM B, who documented Ms A's fundal height as measuring 32cm, and plotted this on the GROW chart.

28. At 34+4 weeks' gestation, Ms A contacted RM E (as RM B was on annual leave), as Ms A had been experiencing irregular tightenings for around 24 hours. RM E documented: "[T]hese [tightenings] have [caused] her uterus to tighten then release much like labour." RM E asked Ms A to come into the clinic for an assessment. RM E noted: "[B]aby has been moving well and no [spontaneous rupture of membranes (SRM)] noted just increase in PV[6] discharge." RM E assessed Ms A and took her vital signs. RM E documented Ms A's fundal height as measuring 34cm, and plotted this on the GROW chart. RM E queried threatened pre-term labour[7] and arranged for Ms A to be admitted to hospital for review. Subsequently Ms A was admitted to the public hospital, where she was given two

[2] At the time of events, RM B had been practising as a midwife for over eight years.
[3] RM C is also a director and the practice manager of the midwifery service.
[4] Customised antenatal growth charts delineate the Gestation Related Optimal Weight (GROW) for each baby, by adjusting for characteristics such as maternal height, weight, parity and ethnic origin, predicting the growth potential by excluding pathological factors such as smoking and diabetes.
[5] RM C requested the scan during a consultation on 28 April. She recorded at that consultation: "They have had their anatomy scan and we have reviewed the report. The placenta is low lying so we have requested another scan to be done around 32 weeks." It was noted in the scan report that the placenta was seen "posteriorly" (on the back wall of the uterus) and was clear of the cervix. This is considered normal and a safe location for the placenta.
[6] "Per vagina", meaning "from" the vagina.
[7] Pre-term labour is the onset of labour between 24 and 37 weeks.

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intramuscular steroid injections in case the baby was born prematurely.[8] She was kept in hospital overnight for observation. Two CTGs[9] were performed during Ms A's time in hospital, and the results were reassuring. Ms A was discharged with no ongoing concerns and no comments regarding the size of the baby.

29. At 34+6 weeks' gestation, Ms A was seen by RM F,[10] as Ms A had experienced reduced fetal movements overnight. RM F documented:

> "Reports feeling flushed and has been having headaches during last 2 nights, sees stars at times but reports has happened since start of pregnancy. Given no high BP or [proteinuria] PET[11] bloods not done but advised if anymore PET symptoms to call."

30. RM F undertook a CTG, which was reassuring, and noted that Ms A felt her baby moving during the assessment. The fundal height was not measured.

31. On 36+4 weeks' gestation at 35+5 weeks' gestation, Ms A was seen by another midwife, RM D.[12] RM D documented Ms A's fundal height as measuring only 30cm — 4cm less than recorded by RM E one week earlier — and plotted this on the GROW chart. RM D noted that Ms A was small for dates, and referred her for a growth scan.[13] Ms A told HDC that this was the first time a midwife had mentioned to her that she appeared small for dates. Ms A was booked in for a growth scan.

32. At 36+4 weeks' gestation, Ms A was seen by RM B, who noted that Ms A had undergone her growth scan earlier that morning, and documented: "[A]s far as we are aware things are good …"[14] RM B documented Ms A's fundal height as measuring 34cm, and plotted this on the GROW chart. RM B was reassured by the scan and her findings at this assessment. She stated that she "could see reasonable growth, especially considering the fetal head had started to engage in the pelvis". She noted that she had reviewed the birth plan with Ms A, and that Ms A was "hoping to keep things natural and stress free". The birth plan states:[15]

> "*Expectations, anxieties, cultural needs:*
> — Water birth
> — Minimal intervention
> — Clear communication regarding all stages and/or changes
> …
> — Wish to keep placenta
> …

[8] Steroids are given to improve lung capacity of premature babies in order to reduce breathing difficulties after birth.
[9] Cardiotocography (CTG) is a technical means of recording the fetal heartbeat and the uterine contractions during pregnancy.
[10] RM F was employed by the midwifery service, and provided cover for RM B.
[11] Pre-eclamptic toxaemia (PET) is a syndrome that can develop after week 20 of pregnancy. PET is characterised by persistent high blood pressure, oedema (swelling) of the feet and ankles, and proteinuria (the presence of protein in the urine). A complication of PET is eclampsia, which can cause convulsions and fits owing to a lack of oxygen to the brain.
[12] RM D is also a director of the midwifery service.
[13] Referral emailed the following day.
[14] The results of the scan were not available at that time.
[15] Dated 36+4 weeks' gestation.

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Fetal heart monitoring and vaginal exams:
— Vaginal exams fine
— External fetal heart monitoring fine
— Internal fetal heart monitoring only if necessary
…

Pain relief: Gas as preference. Only if necessary have epidural. Really want to avoid pethidine[16] unless medical emergency."

33. At 37+5 weeks' gestation, Ms A was seen by RM B. RM B noted: "Active baby. Reviewed scan [from 36+4 weeks' gestation] — shows well grown baby at this stage." RM B did not measure Ms A's fundal height, and nothing is plotted on the GROW chart at 37+5 weeks' gestation.

34. At 38+5 weeks' gestation, Ms A was again assessed by RM B. RM B documented Ms A's fundal height as measuring 35cm, and plotted this on the GROW chart. RM B told HDC that her measurements taken at this consultation were consistent with the result of the scan from 36+4 weeks' gestation, and that she was reassured by her findings at this assessment, including fetal movements reported by Ms A.

35. At 39+5 weeks' gestation, Ms A was seen by RM C, who performed an abdominal palpation, documented Ms A's fundal height as measuring 35cm (the same as the previous week), and plotted this on the GROW chart. RM C told HDC that, while it is not documented, she recalls checking the scan reports and seeing that it was reported that there was appropriate growth between the two scans at 33+5 and 36+4 weeks' gestation. She stated that she was "reassured" that Ms A's baby was growing appropriately. RM C noted that measurement of fundal height is subjective, and is "best done by the same person". She further stated:

> "When I see someone in a back-up situation I take a one off measurement [and] make an estimate of whether it is an appropriate height for the woman's gestation. For a woman who has a normal BMI[17] a fundal height of 35cm at term reassures me."

36. RM C also noted that she measures fundal height lower than her colleagues.[18] She stated: "I was therefore not concerned that my measurement of fundal height was the same as [RM B's] the week before … to me this meant the baby had grown." RM C noted that Ms A also told her that the baby was moving well.

37. At 40+5 weeks' gestation, Ms A saw RM B, who documented: "5 days post dates now. Lots of movements discussed [induction of labour] [44+4 weeks' gestation] — will book it in." RM B did not measure Ms A's fundal height, although she recorded that the calculated maturity was equal to 40+5 weeks' gestation, and the clinical maturity was equal to 40 weeks' gestation. In this respect, RM B said: "It is my usual practice to continue with

[16] A synthetic opioid used for pain relief.
[17] Body mass index (BMI) is a useful tool to estimate whether a person is underweight, overweight, or at a healthy weight in relation to height. BMI is calculated by dividing weight, in kilograms, by height, in metres squared.
[18] RM B also told HDC that RM C measures fundal height lower than her colleagues.

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fundal measurements each week so I am unsure why I have not recorded this." She further stated: "There appeared no indication for any further investigations at this stage."

38. At 41 weeks' gestation, Ms A contacted RM C, as Ms A had been experiencing episodes of lower back pain radiating into her knees overnight. RM C documented: "[S]he doesn't think it is labour. Baby is moving as normal. It is very painful when it happens. I advised her that I don't think there is anything we can do about it."

39. Att 41+1 weeks' gestation, Ms A contacted RM C again. RM C documented that Ms A thought that her waters had broken, as she had wet through her underwear while in bed. RM C advised Ms A that she didn't think it sounded like spontaneous rupture of membranes, as she would expect fluid to keep draining, but that it "usually means that labour is imminent". RM C told Ms A that she would call her back later in the day.

40. At 4.30pm RM C contacted Ms A and noted that she was experiencing irregular contractions that were quite far apart. RM C noted: "Baby has been moving lots … I don't think that her waters have broken at this stage. I might see her later tonight." At 41+3 weeks' gestation at 41+3 weeks' gestation, Ms A was seen by RM C for a stretch and sweep,[19] as Ms A had been experiencing contractions every 10 to 15 minutes over the last two nights. In response to the provisional opinion, RM C stated that she recommended a CTG. RM C documented: "[Fetal heart rate] heard, we discussed doing a monitor strip [CTG] but baby is very active so we have decided not to." RM C told HDC that she performed an abdominal palpation in order to locate the fetal heart, but she did not document this. RM C did not measure the fundal height.

Intrapartum care

41. At 2pm, at 41+4 weeks' gestation, Ms A presented to the public hospital with her partner, Mr A. Ms A was having regular contractions (approximately four every 10 minutes), but her cervix was not fully effaced[20] and she was only 2–3cm dilated. RM B documented the fetal heart rate (FHR) as 130 beats per minute (bpm) and Ms A's blood pressure (BP) as 131/92mmHg. At approximately 2.50pm, RM B arrived at the hospital to meet Ms A. RM B stated that Ms A had experienced a long latent phase of labour (over the past few days) and that generally this is managed at home. RM B stated: "The clinical picture was that of a low risk primigravida[21] on the verge of establishing into labour and my decision making was based on this clinical picture." She said that it is impossible to predict how long it can take before labour will become established, and that outcomes are better if women stay at home. RM B told HDC that she gave Ms A two options — she could stay in hospital and have pain relief (pethidine) or she could continue to labour at home. RM B documented:

> "[FHR] 140s before during + after contraction. [Ms A] keen for Entonox[22] — [Discussed] that it's really too early @ this stage — encouraged to go home or could stay and have pethidine. Will give them some time to think about options."

[19] Refers to the process of stretching the cervix so that it opens a little, and separating the membranes from where they adhere around the cervix in the lower portion of the uterus. A stretch and sweep releases hormones that prepare the cervix for birth, and sometimes initiates labour.
[20] The cervix thins or stretches in preparation for the birth of the baby.
[21] A woman who is pregnant with her first child.
[22] Nitrous oxide, used for pain relief during labour.

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42. Ms A chose to stay in the hospital and was administered pethidine for pain relief and Maxolon for nausea. RM B documented: "Not wanting to go home @ the stage. Keen to try some pethidine. 100mg pethidine + 10mg maxolon IM administered [Ms A] having 3–4 contractions in 10 minutes. BP114/72. P68." RM B told HDC that she did not commence a CTG initially because "at this stage [Ms A] was a low risk woman …". RM B documented the FHR as "132–140 following a contraction", before taking a break in anticipation of a long night ahead, leaving Ms A in the care of hospital midwife RM G. According to RM B, she left the hospital at around 4pm.

43. While RM B was on her break, RM G documented that Ms A slept until around 6.50pm, at which time her contractions were stronger. RM G contacted RM B to suggest she return to the hospital.

44. At 7.30pm RM B arrived back at the hospital and assessed Ms A, noting that she was in well-established labour, 5cm dilated, and keen to use a birthing pool. RM B noted that Ms A consented to a student midwife being present. RM B recorded the FHR as "130s", and Ms A's observations as BP 128/83mmHg,[23] pulse 69bpm, and temperature 37°C.[24]

45. At 8.15pm RM B documented the FHR as 140bpm following a contraction. Ms A entered the birthing pool at 8.35pm. RM B did not document the water temperature of the birthing pool or the maternal temperature at any time. RM B stated that generally during the first stage of labour the water temperature in the birthing pool is kept at "a level that is comfortable for the woman with the water temperature being kept as close to 37 degrees as possible, as the birth becomes closer … My usual practice is to fill the pool with luke warm water and allow the woman to add hot water as she sees fit."

46. RM B stated that she listened to the baby's heart rate every 20 minutes, and each time she submerged her arm into the pool. She stated: "I would have noticed if the water temperature was particularly hot or particularly cold."

47. RM B documented the following regarding the FHR: at 9.10pm, "150–160 following contraction" Entonox was provided to Ms A; at 9.48pm, "140 following a contraction"; at 10.14pm, "150s–160s following a contraction. Knows she will need to get out of the bath for the birth due to pethidine"; at 10.32pm, "150s following a contraction"; at 11pm, "160s following contraction"; and at 11.17pm, "165, planning on move out of bath". RM B told HDC that because Ms A had been given pethidine, and because of the high FHR, the decision was made for her to get out of the birthing pool.

48. Once Ms A was out of the birthing pool, RM B commenced a CTG,[25] which showed a baseline rate of 170bpm with reduced variability and decelerations to 80bpm. RM B stated that she "instantly recognised that this was a very abnormal CTG and would require urgent consultation with an obstetrician". RM B pressed the call bell for assistance from the core midwifery team, and performed a vaginal examination[26] (noting that Ms A was 7–8cm

[23] This is on the high end of normal.
[24] This is normal.
[25] The CTG was commenced at some point between 11.17pm and 11.35pm. (At 11.17pm notes state, "planning to move out of bath", and 11.35pm RM B documented retrospectively that a CTG had been placed.)
[26] At 11.35pm RM B documented retrospectively: "Onto CTG baseline 170s, with the decelerations to 80, reduced variability — call bell pressed. [RM G] into room [vaginal examination] [with] consent, 7–8cm ARM, thick [meconium] liquor draining …"

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dilated) and artificial rupture of membranes (ARM), with Ms A's consent, which was followed by thick meconium-stained liquor.

Arranging emergency Caesarean section[27]

49. RM B telephoned obstetric registrar Dr H and provided Ms A's clinical details. Dr H decided that Ms A needed to be brought to theatre for an emergency Caesarean section. As Dr H was currently unavailable, on-call obstetrician Dr L was called in to assist until Dr H could attend.[28] In her retrospective note at 11.35pm, RM B recorded: "[Phone call] to [Dr H] for [emergency Caesarean section]. Staff in to help …"

50. RM B did not document anything further regarding the intended plan of care for Ms A, including whether a category 1 or 2 emergency Caesarean section was called for. [29] In this respect, Dr H stated:

> "… During the conversation [RM B] expressed that in her opinion the CTG indicated a need for delivery. I agreed and asked her to make arrangements and I would meet them at the operating theatre to save time."

51. According to RM B, she told Dr H during her telephone call with him that Ms A's baby "needed to be born by caesarean section as soon as possible …". She further stated:

> "I was of the understanding that [Dr H] was coming to assess [Ms A] [before heading to theatre] as this had been my experience every other time I had called for assistance. [Dr H] did not communicate anything about meeting him in theatre."

52. At 11.40pm, core midwife RM I recorded: "In room to assist, awaiting [Dr H] to review in person. Prepped for OT as precautionary measure to ↑ speed of transfer to OT if required. NNU informed of potential." RM I later documented that she had understood from a conversation with RM B that they were preparing for a category 2 Caesarean.

53. At around midnight, Dr H arrived at the hospital and went straight to theatre. At 12.05am it is documented that Dr H was in theatre awaiting an orderly to transfer Ms A. At 12.24am Ms A was transferred by an orderly to a pre-operating bed, and a portable CTG was attached. Also at 12.24am, RM I called the on-call obstetrician, Dr L. It is documented: "In theatre, Pre op being consented. [Dr L] phoned. On his way in."

54. Dr L stated that he received at least two telephone calls. The first was from the switchboard asking him to attend urgently. The second was from a midwife (RM I), who updated him with some details and checked that he had been contacted. At the time of the second call, Dr L was on his way to the hospital. On arrival at the hospital he proceeded directly to the operating theatre. Dr L reviewed the CTG and saw no significant deterioration in the tracing

[27] Matters relating to the management of the emergency Caesarean section by DHB staff have been dealt with separately.
[28] According to the DHB's Event Analysis Report timeline, Dr J was called at 12.05am.
[29] The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) classifies category 1 and 2 emergency Caesarean sections as follows: Category 1: "Urgent threat to life or the health of a woman or fetus." Category 2: "Maternal or fetal compromise but not imminently life threatening." RANZCOG recommends that there be no specific time interval attached to the various categories of urgency of Caesarean section (of which there are four), and each case should be managed according to clinical evidence of urgency.

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from the time of calling for the Caesarean section. Accordingly, he was happy to proceed with a controlled Caesarean section under spinal anaesthetic.

55. RM B and the student midwife attended theatre with Ms A and her partner. RM B stated that once Ms A's care was transferred to the secondary team (obstetrics), her role became one of support for Ms A.

Caesarean section

56. At 12.49am a spinal anaesthetic was inserted, and the Caesarean section commenced at 12.54am. At 1.07am, Baby A was born in poor condition and required resuscitation and transfer to the neonatal unit (NNU). Baby A was covered in meconium and had a loop of his umbilical cord around the neck. Baby A weighed 2710g and was noted to be intrauterine growth restricted[30] (IUGR).

Postnatal care

57. Ms A told HDC that she was left in the recovery ward by herself as her husband had gone with Baby A, and RM B left the hospital. RM B told HDC that following Baby A's delivery she made the decision to follow the NNU staff and Baby A out of theatre so that the student midwife could then leave the hospital, as the student midwife was distressed. RM B said that she went to NNU to enquire after Baby A, and then decided to leave the hospital herself. RM B told HDC that her decision to leave at this point was incorrect, and she regrets that Ms A felt unsupported during her time of recovery.

58. Baby A was transferred to the NNU in another region (Hospital 2) for ongoing management of meconium aspiration and perinatal asphyxia.[31] Ms A did not hear from RM B while Baby A was in Hospital 2. In this respect, RM B stated:

> "The reason I did not contact [Ms A] frequently when [she was] in [Hospital 2] was because I am well aware of the amount of concerned family and friends wanting information in these circumstances and in my experience, relaying the same information over and over can add stress to an already stressful situation. I was seeking information and updates from the paediatric team at [Hospital 1] and I was aware of what was happening for [Baby A]. I had provided [Ms A] with my personal cell phone number and I encouraged [her] to use it if [she] needed anything or wanted to talk. It can be difficult to know exactly what the right thing is to do. I feel disheartened that [Ms A] experienced my care as heartless."

59. Baby A was transferred back to NNU at the public hospital for ongoing treatment, before being discharged home. Ms A expressed concern that, following Baby A's discharge home, RM B did not provide her with an opportunity to debrief regarding her birth experience. With regard to the care provided to Ms A and Baby A following Baby A's return home, RM B told HDC:

> "I provided three weeks of postnatal care to [Ms A] and [Baby A]. In that time I was open and honest in talking about events. We spent several hours debriefing and discussing the events of the birth … I did fail to provide [Ms A] a copy of her notes in a

[30] Poor growth of a fetus during pregnancy.
[31] A lack of oxygen during labour and/or birth.

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> timely manner. This is unusual in my practice as I would usually copy the notes and give one to the woman when we transfer to the postnatal ward. Considering the circumstances of the birth and the subsequent transfer of [Baby A] to [Hospital 2] my usual process failed. I had a copy to give the family in my notes, but I had a week of annual leave and on my return [Ms A] had transferred care. I should have used them as a tool when I was discussing and debriefing the birth."

60. RM B acknowledged that upon hearing that Ms A had chosen to transfer her care, it would have been "the right thing to do for [Ms A]" for RM B to have contacted Ms A. RM B stated: "[I]f nothing else, I could have given [Ms A] further opportunity to provide feedback."

61. Ms A told HDC that Baby A has responded well to the care provided following birth.

Placenta

62. Ms A told HDC that following Baby A's birth, the placenta was placed on a shelf in her room in the maternity ward, so she asked her mother-in-law to take it home and it was stored in her freezer. Ms A stated that later she found out that the DHB believed that the placenta had been destroyed, as there was no paper trail regarding what had happened to it. Six weeks after the events, the placenta was sent for pathology testing.

Further information

RM B

63. With regard to the water temperature of the birthing pool, RM B stated:

> "I am confident that the degree of distress [Baby A] showed cannot be attributed to the temperature of the water … On reflection, I do recognise that documented water temperatures may have alleviated this aspect of worry for [Ms A and Mr A] …"

64. RM B stated that she has started recording water temperature during the first stage of labour, and that she has always taken and recorded water temperature as the second stage approaches and during the second stage.

65. With regard to her recording of Baby A's FHR, RM B stated:

> "I acknowledge that initially my FHR recordings were not as frequent as recommended. I do however recognise that as [Ms A's] labour started to become more intense the frequency of these recordings increase. I have reflected on how I record my fetal wellbeing assessments in labour and now I consistently record more detail regarding how long I listen and also at what point in relation to the contraction. I understand that this is important information for somebody who may be reading my documentation …"

66. RM B also stated: "On reflection I should have made the decision to stay with [Ms A] in recovery and I apologise … for this."

67. In February 2016, the Midwifery Council of New Zealand undertook a competence review with regard to RM B. The reviewers found that there was a lack of understanding by RM B regarding how to use the GROW chart to measure and monitor fetal growth. The reviewers

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concluded that RM B and her colleagues in the region would benefit from up-to-date education regarding implementation of standardised, evidence-based protocols related to assessment of fetal growth and the use of the GROW tool. Currently the Council is in the process of approving an online education package for midwives on the use of GROW charts.

RM C

68. RM C told HDC:

> "Until this case I did not realise (and nor did my colleagues) that the centile charts of fetal weight that the Sonographers and Radiologists use are different from those of the GROW chart [used by midwives] … We now fax a GROW chart with any growth scans that we request."

69. Since these events, RM C has reviewed the GROW chart and learnings from the case, and on many occasions has discussed the case with colleagues at weekly team meetings.

The midwifery service

70. The midwifery service told HDC that it does not have any policies in place regarding midwifery care. It stated:

> "The LMC midwives practice autonomously and are responsible for the care they provide and the midwifery decisions they make. LMC's provide primary care using the Midwifery standards of Practice, code of ethics and Section 88 guidelines[32] and the care is planned with the woman in a partnership model. [The midwifery service] provide[s] education and information to assist their practice."

71. The midwifery service has made a number of changes since these events, including the following:

- This case has been discussed at length at the midwifery service weekly meetings, including the learning that "fundal height and or estimated fetal weight, crossing two centile lines, or no increase in the fundal height over a two week period requires a growth scan".
- Staff are aware of the requirement to document fundal height measurements every two weeks when women are being seen weekly.
- The midwifery service now sends a copy of the growth chart with requests for a growth scan where indicated.
- Care plans have been introduced into all women's notes. Relevant medical issues and clinical risk factors are noted on these at booking so that the woman's relevant medical and obstetric history is brought to the attention of the attending midwife at each point of care.
- The midwifery service has made arrangements with the hospital midwife managers to have a clear pathway for arranging urgent scans and follow-up for a woman when there

[32] Ministry of Health. 2012. *Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines).* Wellington: Ministry of Health.

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are concerns about the growth of a baby. The midwifery service now consults the on-call obstetrician, and the obstetric service arranges a scan and a plan for follow-up.

- The midwifery service stated that the local ultrasound department is now aware of the GROW charts and how they differ from the Australasian Society for Ultrasound in Medicine (ASUM) charts used by the ultrasound department (eg, the scan report may show adequate growth on the AUSM chart, but inadequate growth on the GROW chart).
- The midwifery service has encouraged staff to undertake further reading on IUGR, and resources on this are available at the midwifery service.[33]
- Currently the midwifery service is in the process of arranging training for its staff in the use of GROW charts.

72. The midwifery service stated:

> "[W]e have all learned a lot from the reviews of [Ms A's] care. It was not the outcome that anyone would have wanted and we believe that we better understand how to interpret the information from the GROW charts to assist us to make good clinical decisions and that we have made changes to our practice that will help to prevent this happening again."

The DHB

73. Regarding the level of Caesarean section called, the DHB stated:

> "There appeared to be some confusion as to whether this was a Level 1 or Level 2 C.S. The LMC, after discussion with the core midwife, assessed the need for a Level 1. The Obstetric Registrar [Dr H] requested a photo of the CTG but then on hearing the LMC's concern for urgency, asked for the patient to be sent to theatre. An assumption was made that [Dr H] would notify theatre and obstetrician. However, neonatal unit staff nurse responded to a phone call from the labour ward for a level 1 C.S. and arrived in theatre to be told it had been downgraded to a level 2. Labour ward staff thought it must be a level 2 as it appeared to be some time before the theatre orderly arrived."[34]

74. The DHB undertook an internal analysis of the events surrounding Baby A's birth. the DHB has made a number of changes as a result of the internal analysis, including the following:

- All maternity staff have been updated around the process for calling a Level 2 Caesarean, and this now forms part of the orientation for all new medical staff joining the obstetrics team.
- DHB staff have been reminded to take leadership once the patient transfers to secondary care.
- DHB staff have been reminded that clinicians may enter theatre without changing into scrubs when attending an emergency.

[33] Namely, the "New Zealand Maternal Fetal Medicine Network Guideline for the Management of Suspected Small for Gestational Age Singleton Pregnancies after 34 weeks Gestation" guideline and "Algorithm and Risk Assessment Tool for NZ — Screening and surveillance of fetal growth in singleton pregnancies".
[34] Paediatrics advanced trainee Dr K documented in retrospect: "Informed of planned delivery of [Baby A] at 11.42pm on [date] (planned crash section delivery was then down graded to a level 2 delivery at 12.17am).

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- DHB staff have been reminded that all placentas are to be sent to pathology where indicated.
- Unless there are extenuating circumstances, the SMO on call should assess women in maternity prior to transfer to theatre.
- An update of the Level 1 and Level 2 Caesarean section protocol has been initiated.

DHB policies
First Stage of Labour Protocol[35]

> "Procedure
>
> …
>
> - If no indication for continuous fetal heart rate monitoring then intermittent auscultation should be employed.
>
> …
>
> Maternal and Fetal Assessments and points of care:
>
> - Auscultate and Document Fetal heart rate immediately after a contraction for 60secs every 15–30 minutes …"

Electronic Fetal Monitoring Protocol[36]

> "FHR monitoring is fundamental in labour care. An informed choice between Intermittent auscultation (IA) and electronic fetal monitoring (EFM) will be made once the initial assessment of risk factors has been completed. There is insufficient evidence to recommend routine admission EFM for low-risk women.
>
> …
>
> **Intra Partum**
> The the DHB Maternity Services Department does not support routine intra partum CTG monitoring **unless** the woman has identified risk factors or on discussion with the on-call obstetrician, or when an intrapartum risk factor develops. Women identified as having risk factors or who develop risk factors should have continuous EFM monitoring …"

Water Immersion during Labour and Birth Protocol[37]

> "The water immersion during labour and birth policy is to assist all Midwifery practitioners in the provision of safe care to women who are of low obstetric risk choosing to labour and/or birth in the facility birthing pool …
>
> …
>
> **Temperature of the Pool**
>
> a. During labour the water temperature should be set to ensure the woman's physical comfort and prevent hypothermia or hyperthermia. A range between 34–37 degrees

[35] Issued February 2012.
[36] Issued January 2012.
[37] Issued August 2014.

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Celsius during the first stage of labour is recommended. The water temperature should be checked hourly and recorded in the [notes].

b. During the second stage of labour, the water temperature should be set 37–37.5 degrees Celsius. The temperature should be checked every 15 minutes and recorded in the notes.

…

Observations

a. Observe and assess maternal wellbeing throughout the time in the pool.
b. Record maternal temperature and pulse prior to entering the pool to ascertain a baseline. Following this hourly temperature should be taken and recorded in the notes. Hourly pulse and 4 hourly BP should also be recorded. If a temperature rise of >1°C is detected; the woman should be encouraged to leave the pool. Women should be encouraged to drink oral fluids (at least 1 litre per hour) whilst in the Birthing Pool.

…

Fetal heart surveillance

a. For women with low obstetric factors, intermittent fetal heart rate monitoring should be implemented. If at any time there is a deviation from satisfactory fetal heart rate then the woman should be advised to leave the pool to have continuous CTG monitoring undertaken as per the **RANZCOG Intrapartum Fetal Surveillance Guidelines**.
b. During the 1st stage of labour, the fetal heart should be auscultated for 60 seconds, immediately following a contraction, and recorded in the clinical notes and partogram as per **LW Protocol 'Labour 1st Stage'** …"

Responses to provisional opinion

75. Responses to the provisional opinion were received from RM B, RM C, the midwifery service and the DHB. A response to the "information gathered" section of the provisional opinion was received from Ms A and Mr A. Where appropriate, information has been incorporated into the report above.

76. RM B advised that she accepts the provisional opinion. RM B provided evidence that she has carried out the following further education in relation to growth assessment:

- Perinatal Institute growth assessment protocol workshop (11 October 2017)
- Perinatal Institute growth assessment protocol e-learning training (21 July 2017)

77. RM C advised that she is in general agreement with the provisional opinion and accepts the recommendations.

78. The midwifery service advised that it is in general agreement with the provisional opinion and accepts the recommendations. It told HDC that the midwifery service team all attended the Perinatal Institute growth assessment protocol workshop, and have either completed or are in the process of completing the online course.

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79. The DHB advised that it accepts the provisional opinion. It also told HDC that it has initiated a protocol that states how the placenta should be managed following an adverse outcome in the birth of a baby.

80. Ms A and Mr A reiterated that one of their main concerns was a lack of feedback and communication from RM B regarding what had happened during Baby A's antenatal/birth care. They stated that it is untrue that RM B spent several hours debriefing with Ms A. Ms A stated that she asked RM B directly to shed some light on what had happened, and subsequently was told that "she was unsure and that these things just happen sometimes".

81. Ms A and Mr A also explained that they did not receive feedback or acknowledgement from the midwifery service regarding changes made as a result of this case.

82. Ms A and Mr A compared their experience with RM B and the midwifery service to the process they went through with the DHB. Ms A and Mr A met with the DHB within six weeks, and stated: "This process was a very healthy process for us to go through in dealing with the trauma of [Baby A's] birth and the fact that [Baby A's] care could have been handled much better."

Opinion: RM B — breach

Antenatal care — breach

83. I note the advice of my expert advisor, Registered Midwife Bridget Kerkin, that RM B and her colleagues appear to have provided generally responsive antenatal care to Ms A. They saw her regularly in the antenatal period and had several "non-routine" assessments when clinical circumstances indicated they were appropriate. However, it appears that the potential concerns with Ms A's fundal height measurements towards the end of her pregnancy were not identified. Growth restricted fetuses are known to be at risk for poor outcomes. Not identifying this limited the degree of fetal assessment that occurred after this time, and contributed to Baby A being treated as low risk during the remainder of the pregnancy and the labour and birth.

Measurement of fundal height

84. The midwifery service midwives measured and documented Ms A's fundal height on the GROW chart on eight occasions between 29+2 weeks' and 39+5 weeks' gestation. At 35+5 weeks' gestation Ms A was referred for a growth scan due to a concern that the baby was small for dates. The growth scan was carried out at 36+4 weeks' gestation and was reassuring. However, at 38+5 weeks' and 39+5 weeks' gestation Ms A's fundal height again measured below the expected range, and my expert advisor, RM Bridget Kerkin, advised me that these recordings were indicative of Ms A's baby's growth having reached a plateau or slowed down. Ms A's fundal height was not measured again after 39+5 weeks' gestation.

85. RM B carried out assessments of Ms A's pregnancy at 38+5 and 40+5 weeks' gestation.

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86. At 38+5 weeks' gestation, RM B measured Ms A's fundal height as 35cm, only one centimetre more than two weeks previously at 36+4 weeks' gestation. RM B stated that her measurements taken at this consultation were consistent with the result of the scan from 36+4 weeks' gestation, and that she was reassured by her findings at this assessment. However, RM Kerkin advised me that, in her view, there were clear indicators that warranted further investigation of the baby's growth at this time.

87. At 40+5 weeks' gestation, RM B did not measure Ms A's fundal height at all, despite the fact that a week earlier at 39+5 weeks' gestation RM C had documented Ms A's fundal height growth as static at 35cm.

88. The New Zealand College of Midwives Consensus Statement (22 February 2012) *Assessment of fetal wellbeing during pregnancy* (the Consensus Statement) states:

> "From 24 weeks gestation it is recommended that the fundal-symphysis height should be measured and recorded in centimetres at each antenatal appointment, preferably by the same person …"

89. RM B told HDC: "It is my usual practice to continue with fundal measurements each week so I am unsure why I have not recorded this." She further stated: "There appeared no indication for any further investigations at this stage."

90. RM Kerkin advised that given that the fundal height measurement was 35cm at the previous two antenatal visits, formal growth assessment was particularly important, and clearly indicated, at this visit. She considered that RM B's lack of response to potential concerns about fetal growth was a moderate departure from the accepted standard of care.

91. I am critical that at 40+5 weeks' gestation, RM B failed to measure Ms A's fundal height, and it was suboptimal that RM B failed to appreciate signs indicative of a potentially growth restricted baby at her assessments at 38+5 and 40+5 weeks' gestation. In my view, this failure contributed to Baby A being treated as low risk during the remainder of Ms A's pregnancy, as well as during labour and birth. Accordingly, RM B failed to provide services to Ms A with reasonable care and skill, in breach of Right 4(1) of the Code.

Intrapartum care — adverse comment

Monitoring of baby after admission to hospital

92. Following Ms A's admission to hospital, RM B arranged pain relief for Ms A and left her to sleep. At 7.30pm RM B began intermittent observations of Ms A, documenting her temperature and blood pressure as well as the FHR at that time. RM B then documented the FHR at 7.30pm, 8.15pm, 9.10pm, 9.48pm, 10.14pm, 10.32pm, 11pm, and 11.17pm before commencing a continuous CTG once Ms A was out of the birthing pool.

93. RM Kerkin stated that more frequent auscultation of the fetal heart rate was indicated between the hours of 7.30pm and 9.48pm, and that "[i]deally [RM B] would also have consistently documented when she listened to the foetal heart, and for how long".

94. RM B told HDC that after Ms A entered the pool at 8.35pm, she listened to the baby's heart rate every 20 minutes, which I accept. However, she did not always document this. With regard to Ms A's presentation on admission to hospital, RM B stated: "The clinical picture

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was that of a low risk primigravida[38] on the verge of establishing into labour and my decision making was based on this clinical picture."

95. As noted above, I am critical that RM B failed to appreciate signs of a potentially growth restricted baby antenatally and, in my view, that contributed to Baby A being treated as low risk during labour and birth. However, my assessment of the care provided by RM B to Ms A following admission to hospital must be based on the clinical picture as RM B understood it at that time.

96. In this respect, RM Kerkin advised that had RM B identified the potential growth issue of Ms A's baby, continuous monitoring of the fetal heart would have been the appropriate surveillance method. However, given that this was not identified and RM B understood Ms A's pregnancy to be low risk, RM Kerkin advised that intermittent auscultation was a reasonable approach during Ms A's labour.

97. I agree with RM Kerkin's advice and note that in this respect the DHB's "First Stage of Labour Protocol" states: "If no indication for continuous fetal heart rate monitoring then intermittent auscultation should be employed." I accept that based on the clinical picture as RM B understood it, it was reasonable for her to undertake intermittent monitoring of the FHR after Ms A was admitted to hospital. However, I am concerned that RM B did not record all the 20-minute FHR assessments she undertook.

Monitoring temperature of bath water

98. Ms A remained in the birthing pool between 8.35pm and 11.17pm. RM B did not document the pool temperature or check Ms A's temperature at any time while Ms A was in the pool. RM B stated that generally during the first stage of labour the water temperature in the birthing pool is kept at "a level that is comfortable for the woman with the water temperature being kept as close to 37 degrees as possible, as the birth becomes closer …". She said: "My usual practice is to fill the pool with luke warm water and allow the woman to add hot water as she sees fit."

99. RM B stated that she listened to the baby's heart rate every 20 minutes, and each time she submerged her arm into the pool. She said: "I would have noticed if the water temperature was particularly hot or particularly cold."

100. The DHB's "Water Immersion during Labour and Birth Protocol" (the Water Immersion Protocol) states:

> "During labour the water temperature should be set to ensure the woman's physical comfort and prevent hypothermia or hyperthermia. A range between 34–37 degrees Celsius during the first stage of labour is recommended. The water temperature should be checked hourly and recorded in the [notes].
>
> During the second stage of labour, the water temperature should be set 37–37.5 degrees Celsius. The temperature should be checked every 15 minutes and recorded in the notes."

[38] A woman who is pregnant with her first child.

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101. The protocol also requires the maternal temperature to be recorded prior to entering the pool, and to be taken hourly thereafter.

102. RM Kerkin advised that evidence suggests that a woman can monitor the temperature herself and communicate her preferences to her midwife, which I accept. However, in my view, policies and protocols are in place in order to support providers to provide safe care to consumers. The Water Immersion Protocol required RM B to check the temperature of the water and the maternal temperature hourly during the first stage of labour, and to document the temperatures in the notes. I am concerned that RM B did not follow the DHB protocol in respect of monitoring and documenting the maternal temperature and the water temperature of the birthing pool.

Management subsequent to recording of FHR of 165bpm[39]

103. Once Ms A was out of the birthing pool, RM B commenced a CTG,[40] which showed a baseline FHR of 170bpm with reduced variability and decelerations to 80bpm. RM B stated that she "instantly recognised that this was a very abnormal CTG and would require urgent consultation with an obstetrician". RM B pressed the call bell for assistance from the core midwifery team, before contacting Dr H. In her retrospective note at 11.35pm, RM B documented: "[Phone call] to [Dr H] for [emergency Caesarean section]. Staff in to help …"

104. RM Kerkin advised that RM B was appropriately responsive to the FHR changes.

Documentation of discussion with Dr H

105. RM B did not document anything further regarding the intended plan of care for Ms A, including the level of urgency of the Caesarean,[41] when Ms A should be transferred to theatre, and whether Dr H would assess Ms A prior to her transfer to theatre. In this respect, Dr H stated that he told RM B that he would meet her in the operating theatre. However, RM B stated that she expected Dr H to assess Ms A first, and that Dr H did not tell her that he would meet her in theatre. At 12.05am it is documented that Dr H was in theatre awaiting Ms A's arrival. Ms A was transferred to theatre at 12.24am. The DHB told HDC that there appears to have been some confusion amongst the providers caring for Ms A, as to whether a Level 1 or Level 2 Caesarean had been called. Documentation by staff involved in Ms A's care reflects this confusion.

106. RM Kerkin advised that RM B made timely contact with Dr H following her identification that Ms A's baby had become distressed. At this time, clinical responsibility for Ms A's care transferred to the obstetric team, and DHB staff are required to take leadership once the patient transfers to secondary care. However, RM Kerkin advised that the content of

[39] As stated above, matters relating to the management of the emergency Caesarean section by the DHB have been dealt with separately.

[40] The CTG was commenced at some point between 11.17pm and 11.35pm (at 11.17pm the notes state, "planning to move out of bath", and at 11.35pm RM B documented retrospectively that a CTG had been placed).

[41] The Royal Australia and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) classifies Category 1 and 2 emergency Caesarean sections as follows: Category 1: "Urgent threat to life or the health of a woman or fetus". Category 2: "Maternal or fetal compromise but not imminently life threatening." RANZCOG recommends that there be no specific time interval attached to the various categories of urgency of Caesarean section (of which there are four), and that each case should be managed according to clinical evidence of urgency.

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significant conversations between a midwife and a woman, her whānau, and other health professionals should be documented by the midwife, including any clinical decisions and the rationale for them. RM Kerkin stated:

> "A comprehensive plan of care should be documented, in order to communicate clearly with other health professionals, provide a record of events for the family and form a legal record which demonstrates the midwife's decision-making and collaborative conversations."

107. I am unable to determine the intended plan of care for Ms A, in particular the urgency with which the Caesarean was communicated and whether Dr H was to assess Ms A initially, or meet her in theatre. I note that it was the responsibility of the DHB staff to co-ordinate the care from this point, but, in my view, the lack of detailed documentation by RM B of the plan for Ms A's care following her conversation with Dr H contributed to the confusion amongst providers caring for Ms A as to the urgency of the Caesarean.

Postnatal care — adverse comment

108. Following Baby A's birth, RM B left the hospital while Ms A was in recovery. RM B told HDC that her decision to leave at this point was incorrect and she regrets that Ms A felt unsupported during her time of recovery.

109. In this respect, RM Kerkin advised: "[RM B] was not required to stay with [Ms A] once clinical responsibility for her care transferred to the obstetric team." I agree with RM Kerkin's statement, but also acknowledge RM B's statement that her decision to leave the hospital at this point was "incorrect", as doing so left Ms A feeling unsupported.

110. Baby A was transferred to Hospital 2. Ms A did not hear from RM B while Baby A was in Hospital 2. RM B told HDC that she was "aware of what was happening for [Baby A]" and had provided Ms A with her contact details, and had "encouraged" Ms A to contact her if she needed anything.

111. Following Baby A's discharge home, RM B provided three weeks of postnatal care to Ms A and Baby A, before Ms A chose to transfer to another provider. RM B told HDC that during the postnatal care she provided she was "open and honest" in talking about the events of Baby A's birth with Ms A. However, RM B acknowledged that she failed to provide Ms A with copies of her clinical notes. RM B also acknowledged that once Ms A chose to transfer care she should have contacted Ms A in order to give her an "opportunity to provide feedback". In response to the "information gathered" during investigation, Ms A reiterated that one of her main concerns was a lack of feedback and communication from RM B regarding what had happened during Baby A's antenatal/birth care.

112. RM Kerkin advised:

> "It is important that all women have the opportunity to thoroughly debrief their birth experiences, but this is particularly important when there has been a difficult event surrounding the labour and birth. [RM B] identifies … that she provided these opportunities for [Ms A] and her partner. Having a copy of the labour and birth notes facilitates this process for the woman.

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> [RM B] suspected that the relationship between herself and [Ms A] had begun to break down in the postnatal period. She would have been prudent to address this directly at the time, and has reflected on this … Additionally she should have provided [Ms A] the opportunity to provide feedback … once [Ms A] chose to change midwives. It may have been difficult for [RM B] to phone [Ms A] at this time, as she may have worried that this would be confronting for [Ms A]."

113. In my view, the debriefing process is an important part of the postnatal care that a midwife is required to provide to a woman, particularly following a difficult birth. As the provider, the onus must be on the midwife to initiate that process with the woman. I acknowledge that RM B provided opportunities for Ms A to debrief. However, I also appreciate RM B's acknowledgment that she could have done better in this process, in particular by providing Ms A with copies of her clinical notes.

Opinion: RM C — breach

114. I note the advice of my expert advisor, RM Bridget Kerkin, that RM C and her colleagues appear to have provided generally responsive antenatal care to Ms A. They saw her regularly in the antenatal period and had several "non-routine" assessments when clinical circumstances indicated they were appropriate. However, it appears that the potential concerns with Ms A's fundal height measurements towards the end of her pregnancy were not identified. A growth restricted fetus is known to be at risk of a poor outcome. Not identifying this limited the degree of fetal assessment that occurred after this time, and contributed to Baby A being treated as low risk during the remainder of the pregnancy and the labour and birth.

Measurement of fundal height — breach

115. Midwives measured and documented Ms A's fundal height on the GROW chart on eight occasions between 29+2 weeks' and 39+5 weeks' gestation. At 35+5 weeks' gestation Ms A was referred for a growth scan due to a concern that the baby was small for dates. The growth scan was carried out at 36+4 weeks' gestation and was reassuring. However, at 38+5 weeks' and 39+5 weeks' gestation Ms A's fundal height was measured below the expected range, and RM Kerkin advised that these recordings were indicative of Ms A's baby's growth having reached a plateau or slowed down. Ms A's fundal height was not measured again after 39+5 weeks' gestation.

116. RM C carried out assessments of Ms A's pregnancy at 39+5 and 41+3 weeks' gestation.

117. At 39+5 weeks' gestation, RM C measured Ms A's fundal height as 35cm — the same as the previous week and only one centimetre more than almost three weeks previously, at 36+4 weeks' gestation. RM C told HDC that she measures fundal height lower than her colleagues. She said: "I was therefore not concerned that my measurement of fundal height was the same as [RM B's] the week before … to me this meant the baby had grown." In addition, RM C recalled checking the scan reports and seeing that there was appropriate growth between the two scans on 33+5 weeks' gestation and 36+4 weeks' gestation, and this reassured her that Ms A's baby was growing appropriately.

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118. RM Kerkin stated: "I agree that different practitioners may obtain different results when assessing the fundal height of the same woman. This should cause practitioners to be more alert to changes or inconsistencies in fundal height measurement." RM Kerkin advised that at 39+5 weeks' gestation, Ms A's fundal height measurement was below the expected range for gestation. RM Kerkin stated:

> "In the presence of indicators of concern about foetal well-being, immediate assessment should be made, regardless of the gestation of the baby. There are clear documented indicators that warranted further investigation of the growth of [Ms A's] baby [at 39+5 weeks' gestation]."

119. I acknowledge RM C's evidence that she measures fundal height lower than her colleagues and was reassured by the growth scan. However, in my view, this does not excuse RM C's apparent failure to appreciate indicators that Ms A's baby's growth was slowing down, including that Ms A's fundal height had measured only 34cm three weeks earlier.

120. Furthermore, at 41+3 weeks' gestation, RM C did not measure Ms A's fundal height at all. The New Zealand College of Midwives Consensus Statement (22 February 2012) *Assessment of fetal wellbeing during pregnancy* (the Consensus Statement) states:

> "From 24 weeks gestation it is recommended that the fundal-symphysis height should be measured and recorded in centimetres at each antenatal appointment, preferably by the same person …"

121. In this respect, RM Kerkin advised that given that the fundal height measurement was 35cm at two previous assessments, and not recorded at the most recent assessment, formal growth assessment was particularly important, and clearly indicated, at this visit.

122. I am critical that at 41+3 weeks' gestation, RM C failed to measure Ms A's fundal height, and it is suboptimal that RM C failed to appreciate signs indicative of a potentially growth restricted baby at her assessments at 39+5 weeks' gestation and at 41+3 weeks' gestation. In my view, this failure contributed to Baby A being treated as low risk during the remainder of Ms A's pregnancy, as well as during labour and birth. Accordingly, RM C failed to provide services to Ms A with reasonable care and skill, in breach of Right 4(1) of the Code.

Opinion: Midwifery service — breach

123. RM B and RM C are employees of the midwifery service. Accordingly, the midwifery service is a healthcare provider and an employing authority for the purposes of the Health and Disability Commissioner Act 1994. As such, the midwifery service may be held directly liable for the care provided to Ms A, and it may be held vicariously liable for any actions or omissions of its employees and/or members.

124. The midwifery service had a responsibility for ensuring that Ms A received an appropriate standard of care. It needed to have adequate systems and procedures in place to support staff, in order to facilitate consumers receiving an appropriate standard of care.

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125. The midwifery service told HDC that it does not have any policies in place regarding midwifery care. It stated:

> "The LMC midwives practice autonomously and are responsible for the care they provide and the midwifery decisions they make. LMC's provide primary care using the Midwifery standards of Practice, code of ethics and Section 88 guidelines and the care is planned with the woman in a partnership model. [The midwifery service provides] education and information to assist their practice."

126. I am critical that both RM B and RM C failed to appreciate signs indicative of a potentially growth restricted baby, including on one occasion each failing to record Ms A's fundal height at all. In my view, by failing to have any policies in place to support its staff, particularly in relation to the measurement of fundal height during pregnancy, the midwifery service did not provide services to Ms A with reasonable care and skill, and breached Right 4(1) of the Code.

Opinion: DHB — adverse comment

Transfer to theatre

127. RM B contacted Dr H sometime between Ms A exiting the birthing pool at 11.17pm, and RM B's retrospective documentation of her conversation at 11.35pm. Dr H arrived in theatre around midnight, followed by Dr L sometime before the spinal anaesthetic was inserted at 12.49am.

128. With regard to the time it took for obstetrics staff to attend, my expert advisor, Specialist Obstetrician and Gynaecologist Dr Sissons, advised:

> "If the staff are on call from home (and probably in bed at that hour) then this is relatively quick … The CTG at the time before the transfer to theatre had not deteriorated from the initial call, and if anything, there were less sinister features as there were less contractions between 2400 hours and 00.20 …"

129. Dr Sissons further advised:

> "In an ideal world the obstetrician would have reviewed the patient before making the decision [to proceed to Caesarean]. However in these circumstances this may have delayed the process … I do not think the obstetricians could have attended any quicker."

130. Regarding the level of Caesarean section called, the DHB stated: "There appeared to be some confusion as to whether this was a Level 1 or Level 2 C.S." According to the DHB, RM B assessed the need for a Level 1 and, in response to RM B's urgency, Dr H asked for the patient to be sent to theatre. Furthermore, a neonatal unit staff nurse responded to a telephone call from the labour ward for a Level 1 Caesarean but arrived in theatre to be told that it had been downgraded to a Level 2. It appears that labour ward staff thought that it must be a Level 2, as it was some time before the theatre orderly arrived.

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131. Dr Sissons advised that a Level 2 Caesarean section was appropriate, and that the decision to proceed with a Caesarean under spinal anaesthesia was appropriate in these circumstances.

132. Unfortunately, owing to a lack of documentation regarding RM B's conversation with Dr H, I am unable to determine the intended plan of care following that conversation, in particular the urgency with which the Caesarean was communicated,[42] and whether Dr H was expected to assess Ms A initially, or to meet her in theatre. I accept my expert's advice that the obstetricians attended as quickly as possible. However, I note that it was the responsibility of DHB staff to take leadership and co-ordinate the care at this time, and it is concerning that there was confusion surrounding the intended plan for care.

Placenta

133. Ms A told HDC that following Baby A's birth, the placenta was placed on a shelf in her room in the maternity ward, so she asked her mother-in-law to take it home, and it was stored in her freezer. Ms A stated that later she found out that the DHB believed that the placenta had been destroyed, as there was no paper trail regarding what had happened to it. The placenta was sent for pathology testing six weeks later.

134. In this respect, Dr Sissons advised: "[I]t is usual to recommend histological examination of the placenta after a pregnancy with an adverse outcome." Unfortunately, from the records it is unclear why, in this case, the placenta was not sent for examination. However, it is clear that the DHB failed to keep track of the placenta. In my view, that is unacceptable. I note that the DHB has reminded staff that all placentas are to be sent to pathology where indicated.

Recommendations

135. I recommend that RM B and RM C each provide a written apology to Ms A, to be sent to HDC within three weeks of this report, for forwarding.

136. I recommend that the midwifery service develop policies regarding measurement of fundal height during pregnancy, and report back to HDC within three months of the date of this report.

137. In the provisional opinion, I recommended that the midwifery service report back to HDC regarding the outcome of its intention to arrange training for its staff on the use of GROW charts. The midwifery service has arranged this training and this recommendation has now been met.

138. In the provisional opinion, I recommended that RM B and RM C undertake education on the use of GROW charts, to be arranged by the midwifery service. This recommendation has now been met.

[42] In this respect, I note that there are no specific time intervals attached to the various categories of urgency of Caesarean sections.

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Follow-up actions

139. A copy of this report with details identifying the parties removed, except the experts who advised on this case, will be sent to the Midwifery Council of New Zealand, and it will be advised of RM B's and RM C's names in covering correspondence.

140. A copy of this report with details identifying the parties removed, except the experts who advised on this case, will be sent to the New Zealand College of Midwives and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

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Appendix A: Independent midwifery advice to the Commissioner

The following expert advice was obtained from RM Bridget Kerkin, dated 10 December 2015:

> "My name is Bridget Kerkin and I have been asked by the Health and Disability Commissioner […] to provide advice regarding the above complaint. I have read, and agree to follow, the Commissioner's Guidelines for Independent Advisors.
>
> I registered as a midwife in 1998 and have worked primarily as a Lead Maternity Carer since then, with a focus on primary care in the community. I have provided care for women birthing at home and in primary and secondary care facilities. I have worked in rural, remote rural and urban environments. I am currently employed as a Midwifery Lecturer at Otago Polytechnic while maintaining a small Lead Maternity Care practice. I am an active member of the New Zealand College of Midwives, having previously worked as a Midwifery Standards reviewer, represented the Wellington Region as the Midwifery Resolutions Committee Midwife Representative for three years and held a position on the core group of the Wellington region College of Midwives. I have a BSc in psychology, a BHSc in midwifery and a postgraduate certificate in midwifery.
>
> I have reviewed the documents provided to me which include:
>
> — [Ms A's] complaint to HDC
> — Midwifery Council of New Zealand's referral of ACC notification of risk of harm of 12 August 2015
> — [The DHB's] response to HDC dated 16 July 2015
> — Clinical notes from [the DHB]
> — Correspondence from the New Zealand College of Midwives dated 11 August 2015
> — Comment from Midwife [RM D]
> — [Ms A's] maternity notes
> — [RM B's] response to HDC dated 11 August 2015
> — Correspondence provided by [Ms A] on 11 August 2015
> — [RM B's] ACC report
>
> Additionally I have requested, and received, [the DHB's] policies titled 'First Stage of Labour', 'Midwives Prescribing Guidelines', 'Emergency Caesarean Directive', 'Water Immersion During Labour and Birth' and 'Electronic Fetal Monitoring'.
>
> As an addendum I have been provided a copy of [RM C's] response to the complaint, dated 2 December 2015.
>
> **Summary of events:**
>
> [Ms A] booked with [RM B] of [the midwifery service] for midwifery care in [her first pregnancy].
>
> Her pregnancy progressed normally until uterine tightenings led to [Ms A] being admitted overnight to [the DHB] for assessment with threatened pre-term labour [at 34

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weeks and 4 days gestation]. She received intramuscular steroids and all test results were normal. [Ms A was discharged home].

[Ms A] arrived into [the DHB] Delivery Suite at 1400 hrs on [date], in labour at 41 weeks and 3 days gestation. She was met by [a staff midwife] and her admission observations were normal.

[RM B] assessed [Ms A] at 1450hrs. At this time contractions were occurring 3–4 times in 10 minutes. [Ms A's] cervix was 2–3 cms dilated at this time. She was offered the option of discharge home to await more advanced labour or Pethidine for pain relief.

Pethidine 100mg was administered intramuscularly with 10mg of Maxolon at 1530hrs. [RM B] left [Ms A] in the care of staff midwife [RM G] at this time.

At 1930hrs [RM B] returned and [Ms A's] cervix was 5cm dilated. The time of onset of established labour is recorded as 1830hrs.

[Ms A] entered the bath at 2035 and commenced Entonox for pain relief at 2120.

Concern about the foetal heartrate was identified at 2317 and [Ms A] moved out of the bath. Cardiotocograph (CTG) monitoring was commenced at 2327hrs. The CTG showed concerning features: increased baseline, decreased variability and variable decelerations. [RM B] requested staff midwife assistance. A vaginal examination was performed by [RM B] and [Ms A's] cervix was found to be 7–8cms dilated. The membranes were ruptured at this time. Thick meconium liquor was draining. The obstetric registrar was informed by phone and emergency caesarean was planned.

Midwifery pre-operative preparation was completed at 2355hrs.

[Ms A] was transferred to theatre, arriving at 0024hrs.

[Baby A] was born at 0107hrs on [date] by emergency caesarean. Apgars were 2, 2 and 6 (at one, five and ten minutes respectively). Birthweight was 2710gms. Blood gas results taken from the cord and from [Baby A] directly were abnormal, providing evidence of foetal hypoxia.

The placental pathology report (dated [the day following the birth]) details signs of ascending infection indicative of foetal infection prior to birth.

Instructions from the Commissioner and advice requested

I would be grateful if you would review the documents and provide your opinion on the following issues:

1. The appropriateness of the midwifery assessment and treatment [at 34+6 weeks' gestation], given that [Ms A] reported reduced foetal movements overnight. Should any further assessments, interventions or referrals have been made at this time?

2. The adequacy of the midwifery assessment and treatment [at 35+6 weeks' gestation], given the finding of reduced foetal growth on the growth chart and [Ms A's] reports of

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persistently feeling 'off' at the time. Should any further assessments, interventions or referrals particularly in relation to foetal growth have been made?

3. Should a CTG, ultrasound, and/or full biophysical profile have been performed at 41 weeks gestation?

4. The appropriateness of the advice given to [Ms A] during her phone consultations at 9am and 4.30pm [at 41+1 weeks' gestation].

5. Should a CTG and or any other intervention have been undertaken following the consultation with [RM C] at [41+3 weeks' gestation]?

6. The adequacy of the monitoring of the foetus after admission to hospital. Was there an indication for formal CTG monitoring to be undertaken?

7. The appropriateness of the monitoring and recording of the temperature of the bath water.

8. The appropriateness of the midwifery management subsequent to the recording of a foetal heart rate of 165bpm.

9. The appropriateness of [RM B's] decision to rupture the membranes.

10. The timeliness of the request for Obstetric attendance and transfer to the operating theatre considering the thick meconium liquor and the features of the CTG tracing.

11. The appropriateness of the actions taken by the midwives regarding the priority given to the Caesarean section and the associated documentation.

12. Communication around arranging transfer of [Ms A] to the operating theatre.

13. The remedial actions taken by [RM B] and [RM C] following this event.

For each question, it would be helpful if you would advise:

a) What is the standard of care/accepted practice?

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

c) How would it be viewed by your peers?

Commentary:

Before I commence my discussion of the circumstances surrounding the birth of [Ms A's baby], I would like to acknowledge the significant stress a family faces when there is unexpected concern about their baby's well-being during labour and birth and extend my sympathy to [Ms A's] family for the health problems [Baby A] has experienced.

In addition, I would like to be clear that there is some significant complexity in the assessment of [Ms A's] midwifery care and the events surrounding [Baby A's] birth. I will address these complexities as I discuss the details of the case.

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The appropriateness of the midwifery assessment and treatment at [34+6 weeks' gestation]

[Ms A] was assessed by [RM F] ([RM B's] practice partner) 'in clinic' at 34 weeks and 6 days gestation following her report of decreased movements overnight. [RM F] undertook urinalysis, assessment of blood pressure and CTG monitoring.

a) What is the standard of care/accepted practice?

Maternal assessment of foetal movement in the third trimester provides a primary measure of foetal well-being, along with midwifery assessment of foetal growth. When a woman makes contact with a midwife with concerns about her baby's movements, midwifery assessment should occur in a timely fashion (Grigg, 2010). The antenatal visit documentation of [RM F's] assessment of [Ms A] does not provide detail about when [Ms A] made contact to discuss her concerns. However, assuming that they met within a reasonable period of time after [Ms A] made contact with [RM F], the assessment of [Ms A] appears to have been generally appropriate. [RM F] did not find any cause for concern in the parameters of maternal and foetal well-being she assessed, the CTG was reassuring and [Ms A's] baby was moving well during the assessment.

Ideally [RM F] would have documented the parameters of the abdominal palpation she performed and her assessment of foetal growth. However a scan had been performed 8 days prior which indicated reassuring foetal growth and this is, therefore, a minor omission. [RM F] might also have checked [Ms A's] temperature given that she reported feeling flushed. However, in the absence of other symptoms of infection this is, again, not a critical omission.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

n/a

c) How would it be viewed by your peers?

[RM F's] assessment of [Ms A] would be seen to be an appropriate response to the concerns [Ms A] raised.

The adequacy of the midwifery assessment and treatment [at 35+6 weeks' gestation]
(I am assuming this refers to the midwifery assessment undertaken [at 35+5 weeks' gestation] as I do not have record of a visit with [Ms A] [at 35+6 weeks' gestation].)

[RM D] saw [Ms A] for a standard, scheduled antenatal visit [at 36+4 weeks' gestation] and at this stage identified concern about [Ms A's] fundal height. [RM D] felt [Ms A] appeared 'small for dates both clinically and grow chart'. She offered [Ms A] a scan which [Ms A] accepted.

a) What is the standard of care/accepted practice?

As previously stated, midwifery assessment of foetal growth constitutes an important aspect of antenatal monitoring of foetal well-being. Measurement of fundal height is offered to pregnant women at each antenatal visit from approximately 26 weeks gestation. Fundal height measurements (in centimetres), from this time, should

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approximate the woman's gestation in weeks, with the usual allowance of 2 cms either side. In other words, at 28 weeks gestation, it is expected the fundal height measurement will be between 26 and 30 cms. Customised growth charts allow for individual variation in size and midwives can plot the fundal height on the growth chart, along with any estimated foetal weights from ultrasound assessment (NZCOM, 2012).

When a midwife identifies a concern about foetal growth, discussion with the pregnant woman about options for further assessment are warranted (NZCOM, 2012). [RM D] responded appropriately to her concern about [Ms A's] fundal height and offered [Ms A] an ultrasound scan to assess foetal well-being. Unfortunately, the degree of urgency with which [RM D] recommended that this should be undertaken was not documented. The scan took place [at 36+4 weeks' gestation] — 6 days following the antenatal appointment. Given the recent ultrasound scan which indicated reassuring foetal growth parameters, and [Ms A's] report of good foetal movements, this delay was unlikely to be a significant concern.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

n/a

c) How would it be viewed by your peers?

[RM D's] management of her concern about of [Ms A's] clinical circumstances would be seen to be an appropriate response to the situation.

Should a CTG, ultrasound, and/or full biophysical profile have been performed at 41 weeks gestation?

a) What is the standard of care/accepted practice?

Pregnancies which are considered low-risk, and show no parameters of concern for mother or baby, may continue until 42 weeks gestation and still be considered 'normal' and 'term'. The approach of individual midwives to management of pregnancies between 41 and 42 weeks gestation differs. There is no evidence that women with low-risk pregnancies should be offered increased monitoring of their pregnancies before 41 completed weeks gestation. After 42 weeks gestation, there is evidence to suggest that foetal outcomes are compromised. Current guidelines recommend offering women induction of labour after 41 weeks gestation and increased monitoring of foetal well-being after 42 weeks gestation (National Institute for Health and Care Excellence [NICE], 2008). However, accepted midwifery practice includes discussion of the options for increased foetal surveillance after term and a clear plan of action for the remainder of the woman's pregnancy.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

I am going to answer this query in two parts:

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In the absence of concern about foetal well-being, in a pregnancy which is considered to be low-risk, foetal surveillance after the due date should be discussed with the woman in detail once she has reached, or passed, her due date and a clear plan for on-going care in the pregnancy should be documented. These midwifery actions have been alluded to in [Ms A's] notes, but a clear summary of the discussion and plan of action was not documented. [At 40+5 weeks' gestation] [RM B] has written 'discussed IOL [induction of labour] … ? next wed — will book it in … given IOL information'. No further plan for monitoring or induction of labour is documented in [Ms A's] notes. This represents a minor departure from accepted practice.

In the presence of indicators of concern about foetal well-being, immediate assessment should be made, regardless of the gestation of the baby. There are clear, documented indicators that warranted further investigation of the growth of [Ms A's] baby in the visits [on 38+5 weeks' gestation] ([Ms A] saw [RM B] at 38 weeks and 5 days) and [39+5 weeks' gestation] ([Ms A] saw [RM C] at 39 weeks and 5 days). At these visits, [Ms A's] fundal height measurement was below the expected range for gestation. The assessment by [RM B] [at 38+5 weeks' gestation] showed a fundal height measurement of 35cms at 38 weeks and 5 days gestation. This is slightly lower than expected. I imagine [RM B] would have been reassured by the growth scan undertaken [at 36+4 weeks' gestation]. However, this measurement showed an increase of 1cm in a 2 week period. Static or fundal height measurement that is less than expected at one antenatal visit is indication for a discussion with the woman about options for investigation of foetal well-being (NZCOM, 2012). No fundal height measurements were documented in [Ms A's] antenatal record after the visit [at 39+5 weeks' gestation] although [RM B] has documented that clinical maturity = 40 (meaning 40 weeks gestation) [at 40+5 weeks' gestation]. The significance of this, in the absence of a fundal height measurement, is uncertain. The lack of identification of, or response to, the reduced/static growth of [Ms A's] baby represents a moderate departure from accepted practice.

c) How would it be viewed by your peers?

In the absence of concern about foetal well-being, the lack of clarity of a documented plan for post-dates monitoring and induction of labour would be viewed as restricting [RM B's] ability to demonstrate the thoroughness of her information-sharing with [Ms A] about her options.

The lack of response to the reduced/static growth of [Ms A's] baby by [RM B] and [RM C] and the absence of fundal height measurement for the remainder of [Ms A's] pregnancy would be considered by our peers to represent an omission in care which may have placed [Ms A's] baby at risk of further complications and meant that [Baby A] was not identified as being at risk during labour. There is no way to know whether this would have impacted the outcome for [Baby A]. However, current research clearly identifies that growth restricted babies are one of the most at risk foetal/neonatal populations (Grigg, 2010).

The appropriateness of the advice given to [Ms A] during her phone consultations at 9am and 4.30pm [at 41+1 weeks' gestation].

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[RM C] documented her phone conversation with [Ms A] at 0900hrs [at 41+1 weeks' gestation]. [Ms A] was 41 weeks gestation and reported a single gush of clear fluid passed vaginally, good foetal movements and no vaginal blood loss. [RM C] made a plan to speak with [Ms A] again, later in the day. They spoke at 1630hrs and there had been no further fluid leakage. There were no parameters of concern documented at this time.

a) What is the standard of care/accepted practice?

When a woman contacts a midwife with a potential history of ruptured membranes, the midwife will assess aspects of foetal well-being as well as signs of labour. Foetal well-being will be assessed by questions about movements identified by the mother and the colour of the amniotic fluid being passed. [RM C] addressed these assessments and also made a plan to follow up with [Ms A] later in the day. The discussion documented by [RM C] would indicate there was no reason to suspect [Ms A's] membranes had ruptured and this conversation represents adequate assessment in a circumstance where the mother is not expressing concern. Maternal vaginal discharge can be significantly increased at term and it is not unusual for women to query whether their membranes might have ruptured.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

n/a

c) How would it be viewed by your peers?

The questions asked by [RM C], and the follow up conversation she initiated with [Ms A] would be seen to be reasonable midwifery assessment under the circumstances.

Should a CTG and or any other intervention have been undertaken following the consultation with [RM C] at 41+3 weeks' gestation?

[RM C] performed a stretch and sweep for [Ms A] [at 41+3 weeks'gestation]. This procedure is undertaken as it has been shown to shorten the period of time until onset of labour in women past their due dates (Yildrim et. al, 2010). [Ms A] had apparently requested advice on how to encourage the commencement of labour. At this visit, [RM C] checked [Ms A's] blood pressure and undertook urinalysis. She performed the stretch and sweep (during which the midwife stretches the cervix and sweeps the membranes away from the cervix) but has not documented a palpation or assessment of foetal growth.

a) What is the standard of care/accepted practice?

Before undertaking a vaginal examination, it is considered standard midwifery practice to perform an abdominal palpation. This informs the midwife's understanding of the likely position of the baby and also allows her to correlate her findings of the descent of the foetal head from abdominal palpation with her assessment on vaginal examination (Johnson and & Taylor, 2011). Palpation also allows for assessment of foetal growth and provides further information about foetal well-being.

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It would appear, from [RM C's] documentation, that the decision not to undertake further monitoring of the foetal heart was made in conjunction with [Ms A], as foetal movements were reassuring. [RM C] confirms this in her response letter dated 2 December 2015. Under circumstances where there are no foetal concerns, this is an acceptable approach to practice and a CTG would not be indicated in this clinical scenario. [RM C] does not seem to have assessed foetal growth at this visit and was not previously concerned about the growth of [Ms A's] baby. Therefore, she responded to [Ms A's] situation from the perspective that all was well.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

If the assumption is made that [Ms A] presented as a low-risk woman, then it is my opinion that the omission of performing an abdominal palpation in this circumstance represents a minor departure from accepted practice.

c) How would it be viewed by your peers?

In the absence of other concerns about foetal well-being, the lack of abdominal palpation at this assessment would be considered a minimally concerning omission.

The adequacy of the monitoring of the foetus after admission to hospital. Was there an indication for formal CTG monitoring to be undertaken?

a) What is the standard of care/accepted practice?

Midwifery assessment of foetal well-being during labour includes thorough monitoring of the foetal heart. Intermittent auscultation of the foetal heart, during established labour, is accepted as reasonable practice for midwives providing care for women with pregnancies which are considered low risk, and where there is no concern about foetal well-being (RANZCOG, 2014). If [RM B] had identified the potential growth issue of [Ms A's] baby, then continuous monitoring of the foetal heart would have been the appropriate surveillance method. Given that this was not identified, and [RM B] was assuming [Ms A's] pregnancy was low risk, intermittent auscultation was a reasonable approach during [Ms A's] labour.

Intermittent auscultation should take place every 15–30 minutes in established labour (RANZCOG, 2014). The foetal heart rates recorded by [RM B] are as follows:

Time	Heartrate (as recorded)	Notes
1400	130bpm	[Staff midwife]
1450	140s	[RM B] [Ms A's] cervix 2-3cms dilated
1530	132-140	[RM B]
1930	130s	[RM B] (upon return [Ms A's] cervix 5cms dilated Labour estimated to have established

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		at 1830hrs
2015	140	
2110	150-160	In bath
2148	140s	
2214	150s-160s	
2232	150s	
2300	160s	
2317	165	Out of bath

More frequent auscultation of the foetal heart rate was indicated between the hours of 1930 and 2148. Ideally [RM B] would also have consistently documented when she listened to the foetal heart, and for how long.

When [RM B] noted the foetal heart rate was 165bpm she acted appropriately by commencing further monitoring.

Another assessment of foetal well-being which can be discussed and recorded during labour is the woman's experience of foetal movements. [RM B] has not documented any assessment of foetal movement during [Ms A's] labour.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

My opinion here is, again, based upon the assumption of a low-risk pregnancy with no concerns about foetal well-being. Under these circumstances, the period of infrequent intermittent auscultation and the omission of assessment of foetal movements represent a minor departure from accepted practice.

c) How would it be viewed by your peers?

This reduced monitoring would be viewed as diminishing [RM B's] ability to consistently demonstrate the well-being of [Ms A's] baby. Therefore the opportunity to respond to changes in foetal heart rate and foetal well-being was reduced.

The appropriateness of the monitoring and recording of the temperature of the bath water.

Practice varies around Aotearoa/New Zealand in relation to the monitoring of water temperature when a woman labours in water. Maude and Caplice (2010) provide a thorough discussion of the considerations relating to the monitoring of water temperature. There is evidence that suggests a woman can monitor the temperature herself and communicate her preferences to her midwife. [the DHB] does provide a policy which recommends monitoring of the water temperature and maintenance of this between 34–37 degrees celsius during the first stage of labour.

a) What is the standard of care/accepted practice?

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Midwives work on their own professional responsibility to provide optimal care for women during pregnancy, labour and birth and the postnatal period (NZCOM, 2008). A midwife can discuss the recommendations provided by the local DHB policies with the woman and her whānau and discuss the pros and cons of adhering strictly to these. If a midwife chooses not to adhere to the local DHB policy she should document clearly her rationale for doing so.

The clinical record for [Ms A] does not clearly indicate whether options for monitoring and maintaining water temperature were discussed with her antenatally or during labour. The rationale for the departure from [the DHB] policy is not documented in the contemporaneous notes. [RM B] addresses this in her response letter dated 11 August 2015 and states she has made changes to her practice since [Ms A's] labour.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

The lack of documentation of the rationale for departing from the unit policy represents a minor departure from accepted practice.

c) How would it be viewed by your peers?

This would be seen to restrict [RM B's] ability to demonstrate her decision-making process in relation to the use of water during [Ms A's] labour.

The appropriateness of the midwifery management subsequent to the recording of a foetal heart rate of 165bpm.

a) What is the standard of care/accepted practice?

Once an elevated foetal heart rate has been identified, immediate continuous monitoring should be initiated. [Ms A] moved from the bath to the bed within a reasonable period of time following the identification of a foetal heart rate concern and continuous foetal monitoring was commenced.

Other aspects of the midwifery care subsequent to the identification of the elevated foetal heart rate are detailed in the remainder of my discussion below.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

n/a

c) How would it be viewed by your peers?

[RM B] would be seen to have been responsive to the foetal heart rate change she had identified. Her commencement of continuous monitoring would be seen to be an appropriate response.

The appropriateness of [RM B's] decision to rupture the membranes.

a) What is the standard of care/accepted practice?

Membranes may be ruptured for a variety of reasons. These include an attempt to speed the progress of labour and a desire to visualise the liquor, as meconium stained liquor

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may provide further evidence of foetal compromise (Thorpe & Anderson, 2010). The justification for the rupture of [Ms A's] membranes was not contemporaneously documented and therefore I can only conclude the purpose of this action from [RM B's] response letter dated 11 August 2015. She states that rupture of the membranes is a 'well accepted step during the situation of an abnormal CTG as the presence of meconium stained liquor provides further evidence to inform decision making'.

There was significant evidence of foetal compromise on the CTG and membrane rupture to establish that there was meconium stained liquor was not going to improve the outcome, nor was it going to change the plan for [Ms A's] on-going care. Membrane rupture was also not going to speed up labour significantly enough that it would facilitate a spontaneous birth of the baby. It is my opinion that membrane rupture in this circumstance did not serve a useful purpose. However, it was not contraindicated, and I believe it is unlikely to have compromised [Baby A's] well-being.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

n/a

c) How would it be viewed by your peers?

The choice to rupture [Ms A's] membranes might be viewed as unnecessary, but not contraindicated, in this situation.

The timeliness of the request for Obstetric attendance and transfer to the operating theatre considering the thick meconium liquor and the features of the CTG tracing

and

The appropriateness of the actions taken by the midwives regarding the priority given to the Caesarean section and the associated documentation

(I am going to address these aspects of the requested advice together as they are inter-related.)

The midwifery scope of practice is clearly defined by the Midwifery Council of New Zealand (2010). Once a woman's clinical circumstances have become complicated, a midwife is responsible for recommending that consultation with an obstetric team is warranted (Ministry of Health, 2012). [RM B] made timely contact with [Dr H] following her identification that [Baby A] had become distressed. This phone call took place at 2337. As a result of their discussion, a plan was made for [Ms A] to have an emergency caesarean. [Dr H] confirms this in his undated response letter. However, after this decision was made, there seems to have been considerable confusion about the urgency of the need for caesarean section, when [Ms A] should be transferred to theatre and whether [Dr H] was coming to assess [Ms A] in the birthing suite prior to transfer.

It is my opinion that the CTG which [RM B] commenced at 2327 indicated [Ms A's] baby was potentially significantly compromised. According to the RANZCOG

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Intrapartum Fetal Surveillance Guideline (2014), variable decelerations, accompanied by foetal tachycardia and reducing variability 'increase the likelihood of foetal hypoxia' (p62) and are 'likely to be associated with significant foetal compromise and require immediate management which may include urgent delivery' (p30). Dr H retrospectively detailed his interpretation of the CTG on the theatre operation notes and described the trace as 'pathological'. This indicates his level of concern about the presentation of the CTG.

The contemporaneous documentation does not clarify the degree of urgency which [RM B] conveyed to Dr H about [Ms A's] clinical circumstances or [RM B's] understanding of other aspects of the plan made with Dr H, including whether he would attend the birthing suite to assess [Ms A]. [RM B's] explanation to the hospital midwives, about the situation and the plan for on-going care, cannot be determined from her documentation. However, RM I's contemporaneous and retrospective notes (documented at 0510 on [the day of the birth]) indicate she was not clear about a plan for [Ms A's] obstetric assessment and transfer to theatre. RM I documented retrospectively that she expected that Dr H was coming to make an assessment of [Ms A] prior to transfer to theatre. [RM G] also identified this confusion in her retrospective notes 'there was then some confusion re if we were waiting at ward or going to theatre as no orderly had arrived'.

At the time that the obstetric medical officer determines a caesarean is necessary, clinical responsibility for the care of the woman transfers to the obstetric team. However, the lack of clear communication and documentation of the intended plan for [Ms A] may have meant that the hospital midwives involved were not aware that clinical responsibility for [Ms A's] care had transferred to the obstetric team and this may have contributed to the delay in transferring her to theatre.

I cannot conclude, from the clinical record, what level of caesarean section was called for. There is a clear pathway for management of level one caesarean section provided by [the DHB], once the level has been decided. However, this pathway does not clarify who has responsibility for this decision. In my experience the on-call obstetric consultant or registrar has responsibility for classifying the urgency of the caesarean section. This has certainly been the case in the DHBs in which I have been employed, and where I have held an access agreement. Ideally the Obstetric medical officer will make this decision having assessed the woman her or himself. [The DHB]) confirms that it is usual practice for the obstetric medical officer to assess the woman prior to transfer to theatre, in her letter to [Mr A] and [Ms A] dated 18 February 2015.

When clinical responsibility for the woman's care transfers to the obstetric team the LMC can, theoretically, cease to be involved in provision of the woman's care. [RM B] continued to work with the hospital midwives to prepare [Ms A] for theatre. This midwifery preparation was completed in a timely manner. Within 20 minutes of [RM I] arriving to support [RM B], [Ms A] was ready to be transferred to theatre. This is not an unreasonable period of time. However, there was then a delay waiting for a theatre orderly to transfer [Ms A], as mentioned earlier and discussed below.

[Ms A] arrived in 'pre-op' at 0024hrs. I am unclear as to the reason for the delay to [Baby A's] birth following [Ms A's] arrival in theatre. However, obstetric assessment

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had occurred at this time and it is clear [RM B] was no longer responsible for [Ms A's] clinical care.

a) What is the standard of care/accepted practice?

Standard 6 of the Standards of Midwifery Practice (NZCOM, 2008) states 'Midwifery actions are prioritised and implemented appropriately with no midwifery action or omission placing the woman at risk.' When a midwife recognises an abnormality in the labour process or her assessment of mother or baby (and with permission of the woman), she consults appropriately with an obstetric colleague and communicates the outcome of this consultation and the plan for ongoing care to the mother and her support people, and to other health professionals involved in the woman's care.

Competency Two of the 'Competencies for Entry to the Register of Midwives' (Midwifery Council of New Zealand, N.D.) and Standards Three and Four of the Standards of Midwifery Practice (NZCOM, 2008) specifically address the responsibility of the midwife to document thorough and meaningful clinical notes at each and every contact with the woman.

Content of significant conversations with the woman and her whānau and other health professionals should be documented by the midwife along with each assessment of mother and baby. Any clinical decisions made should be clearly recorded, along with the rationale for them. A comprehensive plan of care should be documented, in order to communicate clearly with other health professionals, provide a record of events for the family and form a legal record which demonstrates the midwife's decision-making and collaborative conversations.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

The lack of detailed documentation by [RM B] of the plan for [Ms A's] care following her conversation with [Dr H] represents a moderate departure from accepted practice.

c) How would it be viewed by your peers?

The deficiency in documentation would be seen by the midwifery community to restrict [RM B's] ability to demonstrate her clear communication of the plan for [Ms A's] care and, therefore, where clinical responsibility for the on-going care and decision-making lay.

Communication around arranging transfer of [Ms A] to the operating theatre.

a) What is the standard of care/accepted practice?

Practice varies in different DHBs, but there is usually a clear pathway within each maternity unit, when an emergency caesarean is identified as the appropriate course of action, for notification of theatre and neonatal staff. It was this pathway of communication which unfortunately seems to have broken down when [Ms A] was being prepared for theatre. The confusion seems to stem from whether [Dr H] was attending the maternity unit to assess [Ms A] and what level caesarean section was appropriate. If the caesarean section was a level one then [the DHB's] Emergency Caesarean Directive states [staff] should call 777 which results in transfer via the

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switchboard to the theatre staff to notify them of the up-coming caesarean section. If it was a level two caesarean section then the Emergency Caesarean Directive states 'The on call Obstetrician will activate level two call out. Ward staff will inform Ward […] and Neo Natal Unit.'

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

Although, ideally, [RM B] would have clearly communicated and documented her understanding of the plan for transfer of [Ms A] to theatre (as discussed above), I cannot determine who holds responsibility for the lack of clarity about this issue. Once [Dr H] agreed to the need for a caesarean section clinical responsibility for [Ms A's] care transferred to the obstetric team. It would not be usual for an LMC midwife to arrange theatre and contact neonatal staff. If this was a level one caesarean section (and the hospital midwives were aware of this) then the Emergency Caesarean Directive seems to indicate the hospital midwives were responsible for activating a 777. If it was a level two caesarean section then the Emergency Caesarean Directive indicates [Dr H] was the appropriate person to activate the level two call out. Because of the lack of clarity about the agreed level of the caesarean section I am unable to conclude whether there has been a departure from the accepted standard of care in this instance.

The remedial actions taken by [RM B] and [RM C] following this event.

I am not aware of any contact between [RM C] and [Ms A] since the events, except that it seems [Ms A] contacted [RM C] to notify her intention to change midwife in the postnatal period. I am not sure whether the letter [Ms A] wrote, through her midwifery resolutions process, was presented to [RM C].

Following [Baby A's] birth [Baby A] was transferred immediately to the neonatal unit and [Ms A's] partner accompanied [Baby A] there. At this stage [RM B] left to support the student midwife who had been involved in [Baby A's] birth and she then visited [Ms A] the following morning.

[Baby A] deteriorated further and was transferred [to Hospital 2]. [Ms A] joined [Baby A] there when her own transfer was possible. [RM B] saw [Ms A] twice before [Ms A] went to [Hospital 2]. [Ms A] expresses her concern that she was not provided the opportunity to discuss the birth with [RM B]. Additionally [Ms A] did not receive a copy of her labour and birth notes from [RM B].

After [Ms A] returned home with [Baby A], [RM B] visited several times until [Baby A] was 3 weeks old. A neonatal nurse was also providing care for [Baby A] at this time. [RM B] went on leave and [Ms A] had a visit with a midwife from outside [RM B's] practice. At this time [Ms A] chose to change midwifery caregivers for the remainder of her postnatal care. It seems [Ms A] notified [RM C] of this intention. [RM B] did not make contact with [Ms A] again after this time.

a) What is the standard of care/accepted practice?

The midwifery Code of Ethics (NZCOM, 2008) provides an ethical reference for midwives in their practice in Aotearoa/New Zealand. In particular the Code of Ethics

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states ‘Midwives work in partnership with women’ and ‘Midwives are accountable to women for their midwifery practice’.

Midwives collect feedback from their clients routinely upon discharge from midwifery care. I am unclear whether [RM B] undertook this process with [Ms A]. However, [Ms A] utilised the midwifery resolutions process to provide feedback to [RM B] and request explanation for some aspects of the care she received. [RM B] took 6 weeks to respond to this letter. She provided explanation for this delay, but would ideally have notified [Ms A] that she had received the letter and what the time frame for her response was likely to be. [RM B’s] response to [Ms A] was detailed and [RM B] identified areas of change in her practice as a result of [Ms A’s] experience.

[RM B] was not required to stay with [Ms A] once clinical responsibility for her care transferred to the obstetric team. [RM B] chose to accompany her to theatre, but has reflected in her response to [Ms A] via the midwifery resolutions process, that she should also have decided to stay with [Ms A] in recovery room once [Baby A] had been transferred to neonates.

It is important that all women have the opportunity to thoroughly debrief their birth experiences, but this is particularly important when there has been a difficult event surrounding the labour and birth. Ideally [RM B] would have provided [Ms A] this opportunity on multiple occasions following her traumatic birth and early postnatal experience. Having a copy of the labour and birth notes facilitates this process for the woman.

[RM B] suspected that the relationship between herself and [Ms A] had begun to break down in the postnatal period. She would have been prudent to address this directly at the time, and has reflected on this in her response to [Ms A] via the midwifery resolutions process. Additionally she should have provided [Ms A] the opportunity to provide feedback, either by email or the Midwifery Standards Review client evaluation process, once [Ms A] chose to change midwives. It may have been difficult for [RM B] to phone [Ms A] at this time, as she may have worried that this would be confronting for [Ms A].

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

[RM B] had an ethical obligation to [Ms A] to provide her with opportunities to debrief her birth experience. She should also have created an opportunity for [Ms A] to provide feedback once it became obvious there were issues of concern in their relationship. These factors represent a minor departure from expected practice.

c) How would it be viewed by your peers?

The lack of birth debrief and opportunity for [Ms A] to provide feedback to [RM B] would be seen, by the midwifery community to potentially compromise [Ms A’s] ability to recover from her traumatic birth experience.

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Summary of opinion:

[RM B] and her practice partners appear to have provided generally responsive antenatal care to [Ms A]. She was seen regularly in the antenatal period and had several 'non-routine' assessments when clinical circumstances indicated they were appropriate. Unfortunately it appears that neither [RM B] nor [RM C] identified the potential concern associated with [Ms A's] fundal height measurements on the visits [on 38+5 weeks' gestation] and [39+5 weeks' gestation]. Additionally, they did not document assessment of fundal height measurements for the remainder of [Ms A's] pregnancy. This limited the degree of foetal assessment which occurred after this time and contributed to [Baby A] being treated as low risk during the remainder of the pregnancy and the labour and birth. Growth restricted foetuses and infants are known to be at risk for poor outcomes.

Water immersion during labour is unlikely to have contributed to the foetal heartrate tachycardia as this would be a usual response to the infection which was identified in the pathology examination of the placenta.

My ability to provide opinion is impacted by the fact that [Ms A's] pregnancy was treated as low risk. The midwifery actions and assessments were generally appropriate through the late pregnancy, with the exceptions I have described in my discussion above, if one assumes a low-risk woman and baby.

With this caveat in mind, [RM B's] care of [Ms A] in labour seems to have been clinically appropriate. Slightly more frequent foetal heart rate auscultation during labour and clear documentation of the choice to diverge from [the DHB] 'Water immersion during labour and birth' policy would have been prudent. These factors represent minor departures from accepted practice.

The lack of response to potential concerns about foetal growth by [RM B] and [RM C] represents a moderate departure from the accepted standard of care. In addition, the absence of abdominal palpation and assessment by [RM C] at the visit [at 41+3 weeks' gestation] represents a minor departure from the accepted standard of care.

Ideally [RM B] would have provided a clear, documented plan for ongoing assessment of [Ms A's] pregnancy once she passed her due date. This omission represents a minor departure from the accepted standard of care.

[RM B's] lack of detailed documentation around the time of preparation for [Ms A's] transfer to theatre represents a moderate departure from the accepted standard of care. The omission of opportunities for [Ms A] to debrief her birth experience and provide feedback to [RM B] represents a minor departure from accepted practice.

I am happy to provide further clarification of any aspect of this advice if it should be deemed necessary.

Bridget Kerkin (RM: 15-11978)

10/12/2015

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The following further advice was obtained from Ms Kerkin, dated 8 February 2016:

"[Ms Kerkin's qualifications, as outlined in her initial advice report, redacted for brevity.]

I have reviewed the additional documents provided to me which include:

[RM C's] 18 January 2016 response to my initial advice, dated 10 December 2015

[RM B's] 25 January 2016 response to my initial advice, dated 10 December 2015

I declare that I have no conflict of interest.

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[Summary of events from Ms Kerkin's initial report redacted for breivity.]

Commentary:
[RM B] and [RM C] have provided further information in response to my initial advice report which clarifies some aspects of the care provided to [Ms A]. In light of this information, I offer some additional/adjusted commentary below and have altered my opinion accordingly.

Additional commentary: Assessment of foetal growth
[RM C] and [RM B] have both reflected, in their respective responses, about the complexities associated with the monitoring of foetal growth, particularly when multiple practitioners are involved in a woman's care. I agree that different practitioners may obtain different results when assessing the fundal height of the same woman. This should cause practitioners to be more alert to changes or inconsistencies in fundal height measurement.

As stated in my initial report (dated 10 December 2015):

'There are clear, documented indicators that warranted further investigation of the growth of [Ms A's] baby in the visits [at 38+5 weeks' gestation] ([Ms A] saw [RM B] at 38 weeks and 5 days) and [39+5 weeks' gestation] ([Ms A] saw [RM C] at 39 weeks and 5 days). At these *visits, [Ms A's] fundal height measurement was below the expected range for gestation.'*

At [Ms A's] antenatal visit [at 40 weeks and 5 days gestation (she saw RM B)], [RM B] has not recorded a formal fundal height measurement. Given that the fundal height measurement was 35cms at the previous two antenatal visits, formal growth assessment was particularly important, and clearly indicated, at this visit. This is also true of the visit [at 41+3 weeks' gestation] ([Ms A] was assessed by [RM C] at 41 weeks and 3 days gestation).

[RM B] and [RM C] have provided explanation of the issues midwives in [the region] have trying to access appropriate ultrasound assessments of women. I would like to acknowledge how concerning it is when lack of resource impacts on the ability of midwives to offer women, and their whānau, adequate assessment of the wellbeing of mother and baby. However, in their antenatal care of [Ms A], neither [RM B] nor [RM C] responded to indicators of potential concern about foetal growth. They did not discuss options for further monitoring of [Baby A's] growth with [Ms A] and did not attempt to access ultrasound assessment of [Baby A's] wellbeing. They do not provide evidence that they monitored the growth of [Ms A's] baby, in the latter stages of her pregnancy, to the expected standard.

My opinion in respect to this aspect of the care provided to [Ms A] is, therefore, unchanged.

Amended commentary and advice: Should a CTG and or any other intervention have been undertaken following the consultation with [RM C] [at 41+3 weeks' gestation]?
[RM C] has clarified the assessment she made of [Ms A] [at 41+3 weeks' gestation] in her 18 January 2016 response to my initial report. Taking her clarification into account,

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I have amended my opinion below. *(I have included the detail of my original opinion here, with amendments identified in bold text.)*

a) What is the standard of care/accepted practice?

Before undertaking a vaginal examination, it is considered standard midwifery practice to perform an abdominal palpation. This informs the midwife's understanding of the likely position of the baby and also allows her to correlate her findings of the descent of the foetal head from abdominal palpation with her assessment on vaginal examination (Johnson and & Taylor, 2011). Palpation also allows for assessment of foetal growth and provides further information about foetal well-being. **[RM C] has confirmed (response dated 18 January 2016) that she did perform an abdominal palpation on this date, but did not undertake foetal growth assessment at this time.**

It would appear, from [RM C's] documentation, that the decision not to undertake further monitoring of the foetal heart was made in conjunction with [Ms A], as foetal movements were reassuring. [RM C] confirms this in her response letters dated 2 December 2015 and 18 January 2016. Under circumstances where there are no foetal concerns, this is an acceptable approach to practice and a CTG would not be indicated in this clinical scenario. [RM C] did not formally assess foetal growth at this visit and was not previously concerned about the growth of [Ms A's] baby. Therefore, she responded to [Ms A's] situation from the perspective that all was well.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

If the assumption is made that [Ms A] presented as a low-risk woman, then it is my opinion that the **omission of performing foetal growth assessment and lack of documentation of the abdominal palpation in this circumstance represents a minor departure from accepted practice.**

c) How would it be viewed by your peers?

In the absence of other concerns about foetal well-being, **the lack of foetal growth assessment at this visit** would be considered a minimally concerning omission.

Additional commentary and amended advice: The timeliness of the request for Obstetric attendance and transfer to the operating theatre considering the thick meconium liquor and the features of the CTG tracing

and

The appropriateness of the actions taken by the midwives regarding the priority given to the Caesarean section and the associated documentation
(I have addressed these aspects of the requested advice together as they are inter-related.)

As stated in my initial advice report (dated 10 December 2015):

'The midwifery scope of practice is clearly defined by the Midwifery Council of New Zealand (2010). Once a woman's clinical circumstances have become complicated, a midwife is responsible *for recommending that consultation with an obstetric team is warranted (Ministry of Health, 2012). [RM B] made timely contact with [Dr H]*

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following her identification that [Baby A] had become distressed. This phone call took place at 2337. As a result of their discussion, a plan was made for [Ms A] to have an emergency caesarean. [Dr H] confirms this in his undated response letter.'

At this time, clinical responsibility for [Ms A's] care transferred to the obstetric team. It appears, from the retrospectively documented notes and [RM B's] response to my initial advice report (dated 25 January 2016) that the theatre team and paediatric staff were then notified appropriately. However, there does seem to have been considerable confusion about the urgency of the need for caesarean section. It is difficult to determine, from the contemporaneous documentation what plan of action was conveyed by [RM B] and what was understood by the staff midwives involved in [Ms A's] care.

It appears that the delay in an orderly arriving to collect [Ms A], and [Dr H's] attendance at theatre rather than the birthing unit, represent significan[t] systems errors in [the DHB] process. The recommendations from the review of [Ms A's] care undertaken within [the DHB] would support this conclusion (see [the DHB's] letter to ACC dated 27 February 2015 for the summary of recommendations).

A variety of practitioners were involved in the preparation of [Ms A] for theatre and her subsequent transfer and preparation for caesarean section. Any of these practitioners might have taken the opportunity to clarify the reason for the delay in her transfer. This includes [RM B], although the clinical responsibility for [Ms A's] care had transferred to the obstetric team when the decision was made for a caesarean section. I am unable to determine the extent to which responsibility for this delay lay with the staff midwives involved in [Ms A's] care as the events contributing to the aforementioned systems errors are unclear. Responsibility might equally lie with theatre or obstetric staff.

In recognition of the additional explanation offered by [RM B] in her response letter dated 25 January 2016, I would like to amend my advice on this aspect of [Ms A's] care. *(I have included the detail of my original opinion here, with amendments identified in bold text.)*

a) What is the standard of care/accepted practice?

Standard 6 of the Standards of Midwifery Practice (NZCOM, 2008) states 'Midwifery actions are prioritised and implemented appropriately with no midwifery action or omission placing the woman at risk.' When a midwife recognises an abnormality in the labour process or her assessment of mother or baby (and with permission of the woman), she consults appropriately with an obstetric colleague and communicates the outcome of this consultation and the plan for ongoing care to the mother and her support people, and to other health professionals involved in the woman's care. **The midwife relies upon thorough and clear DHB processes to support the effective and safe provision of care to the woman and her baby.**

[RM B] consulted appropriately with [Dr H] and it appears she clearly communicated the intended plan for care of [Ms A] to at least some of the staff midwives providing clinical support at the time. [RM B] recognises that her

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contemporaneous **documentation was brief and that she would have been prudent to document more detail retrospectively.**

Competency Two of the 'Competencies for Entry to the Register of Midwives' (Midwifery Council of New Zealand, N.D.) and Standards Three and Four of the Standards of Midwifery Practice (NZCOM, 2008) specifically address the responsibility of the midwife to document thorough and meaningful clinical notes at each and every contact with the woman.

Content of significant conversations with the woman and her whānau and other health professionals should be documented by the midwife along with each assessment of mother and baby. Any clinical decisions made should be clearly recorded, along with the rationale for them. A comprehensive plan of care should be documented, in order to communicate clearly with other health professionals, provide a record of events for the family and form a legal record which demonstrates the midwife's decision-making and collaborative conversations.

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

The lack of detailed documentation by [RM B] of the plan for [Ms A's] care following her conversation with [Dr H] represents a **minor** departure from accepted practice.

c) How would it be viewed by your peers?

The brevity of [RM B's] documentation would be seen by the midwifery community to compromise her ability to demonstrate her clear communication of the plan for [Ms A's] care.

Additional commentary and amended advice: The remedial actions taken by [RM B] and [RM C] following this event.
[RM B] has provided additional information in her response letter, dated 25 January 2016, which elucidates her postnatal care of [Ms A] and the provision of opportunities for [Ms A] to debrief her birth experience. [RM B] has also acknowledged that she should have ensured [Ms A] had a copy of her birth notes to assist her understanding of the events surrounding [Baby A's] birth. This would have contributed to the debriefing process. In light of the clarification offered by [RM B] I have amended my opinion about this aspect of [Ms A's] care. *(I have included the detail of my original opinion here, with amendments identified in bold text.)*

a) What is the standard of care/accepted practice?

The midwifery Code of Ethics (NZCOM, 2008) provides an ethical reference for midwives in their practice in Aotearoa/New Zealand. In particular the Code of Ethics states 'Midwives work in partnership with women' and 'Midwives are accountable to women for their midwifery practice'.

Midwives collect feedback from their clients routinely upon discharge from midwifery care. I am unclear whether [RM B] undertook this process with [Ms A]. However, [Ms A] utilised the midwifery resolutions process to provide feedback to [RM B] and request explanation for some aspects of the care she received. [RM B] took 6 weeks to

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respond to this letter. She provided explanation for this delay, but would ideally have notified [Ms A] that she had received the letter and what the time frame for her response was likely to be. [RM B's] response to [Ms A] was detailed and [RM B] identified areas of change in her practice as a result of [Ms A's] experience.

[RM B] was not required to stay with [Ms A] once clinical responsibility for her care transferred to the obstetric team. [RM B] chose to accompany her to theatre but has reflected, in her response to [Ms A] via the midwifery resolutions process, that she should also have decided to stay with [Ms A] in the recovery room once [Baby A] had been transferred to neonates.

It is important that all women have the opportunity to thoroughly debrief their birth experiences, but this is particularly important when there has been a difficult event surrounding the labour and birth. **[RM B] identifies, in her response letter dated 25 January 2016, that she provided these opportunities for [Ms A] and her partner.** Having a copy of the labour and birth notes facilitates this process for the woman.

[RM B] suspected that the relationship between herself and [Ms A] had begun to break down in the postnatal period. She would have been prudent to address this directly at the time, and has reflected on this in her response to [Ms A] via the midwifery resolutions process. Additionally she should have provided [Ms A] the opportunity to provide feedback, either by email or the Midwifery Standards Review client evaluation process, once [Ms A] chose to change midwives. It may have been difficult for [RM B] to phone [Ms A] at this time, as she may have worried that this would be confronting for [Ms A].

b) If there has been a departure from the standard of care or accepted practice, how significant a departure do you consider it is?

[RM B] should have created an opportunity for [Ms A] to feedback on her experience of her midwifery care and should have provided her a copy of her maternity notes following the birth. These factors represent a minor departure from expected practice.

c) How would it be viewed by your peers?

The midwifery community would conclude that [RM B] had opportunity to demonstrate accountability for her practice, by ensuring [Ms A] had access to her maternity notes and opportunity to provide feedback about her experience of her midwifery care.

Summary of opinion:
(I have included the detail of my original summary of opinion here, with amendments identified in bold text).

[RM B] and her practice partners appear to have provided generally responsive antenatal care to [Ms A]. She was seen regularly in the antenatal period and had several 'non-routine' assessments when clinical circumstances indicated they were appropriate. Unfortunately it appears that neither [RM B] nor [RM C] identified the potential concern associated with [Ms A's] fundal height measurements on the visits [on 38+5 weeks' gestation and 39+5 weeks' gestation]. Additionally, they did not document

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assessment of fundal height measurements for the remainder of [Ms A's] pregnancy. This limited the degree of foetal assessment which occurred after this time and contributed to [Baby A] being treated as low risk during the remainder of the pregnancy and the labour and birth. Growth restricted foetuses and infants are known to be at risk for poor outcomes.

Water immersion during labour is unlikely to have contributed to the foetal heartrate tachycardia as this would be a usual response to the infection which was identified in the pathology examination of the placenta.

My ability to provide opinion is impacted by the fact that [Ms A's] pregnancy was treated as low risk. The midwifery actions and assessments were generally appropriate through the late pregnancy, with the exceptions I have described in my discussion above, if one assumes a low-risk woman and baby.

With this caveat in mind, [RM B's] care of [Ms A] in labour seems to have been clinically appropriate. Slightly more frequent foetal heart rate auscultation during labour and clear documentation of the choice to diverge from [the DHB's] 'Water immersion during labour and birth' policy would have been prudent. These factors represent minor departures from accepted practice.

The lack of response to potential concerns about foetal growth by [RM B] and [RM C] represents a moderate departure from the accepted standard of care. In addition, the absence of **foetal growth** assessment by [RM C] at the visit [at 41+3 weeks' gestation], **and her omissions in documentation**, represent a minor departure from the accepted standard of care.

Ideally [RM B] would have provided a clear, documented plan for ongoing assessment of [Ms A's] pregnancy once she passed her due date. This omission represents a minor departure from the accepted standard of care.

[RM B's] lack of detailed documentation around the time of preparation for [Ms A's] transfer to theatre represents a minor departure from the accepted standard of care. The omission **of provision of a copy of [Ms A's] maternity notes and opportunity for [Ms A] to** provide feedback to [RM B] also represents a minor departure from accepted practice.

I am happy to provide further clarification of any aspect of this advice if it should be deemed necessary.

Bridget Kerkin"

On 8 November 2016, Ms Kerkin provided the following further advice:

"I have reviewed the documents provided to me which include:
— Response from [RM B], 14 September 2016
— Response from [RM C], 2 September 2016
— Response from [the midwifery service], undated, received by HDC 14 September 2016
— Response from [the DHB], 1 September 2016 and all enclosures

[Summary of events from Ms Kerkin's initial advice redacted for brevity.]

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Commentary:

[RM C] and [RM B] have provided reflective responses to the advice I initially provided on this matter. They have acknowledged areas of their practice which they have developed as a result of their experience of providing care for [Ms A]. The majority of their commentary refers to actions taken since, and as a result of, the complaint process and does not, therefore cause me to add to or amend my original advice.

Likewise, the response from [the midwifery service] outlines the actions of the midwifery practice and improvements in process and education as a result of the events surrounding [Ms A's] pregnancy and birth and does not cause me to add to or amend my original advice.

[The DHB] [has] provided further information and documents in response to a request from the office of the Health and Disability Commissioner and this information does not specifically clarify any aspect of the midwifery care provided to [Ms A]. Therefore, this does not cause me to add to or amend my original advice.

Bridget Kerkin"

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Appendix B: Independent obstetric and gynaecology advice to the Commissioner

The following advice was obtained from a specialist obstetrician and gynaecologist, Dr Anne Sissons:

"1. My name is Anne Sissons. I have been asked by the HDC to review the documents and give my opinion on the obstetric care provided to [Ms A].

2. My qualifications are MB.ChB. 1982 (University of Manchester), Dip. Obst. 1985 (University of Otago), MRNZCOG 1991 and I have been a Fellow of RANZCOG since 1993. I have been continuously registered as a Specialist Obstetrician and Gynaecologist with NZMC since January 1994.

3. My current practice is a combination of private gynaecology in Christchurch and the provision of acute specialist obstetric call, as a locum, to various DHBs.

4. Potential conflict. I have previously provided weekend locum cover for [the DHB], but not since 2010.

5. I have received and reviewed the following documents.

- Complaint from [Ms A]
- [The DHB's] response to [Ms A] (18 Feb 2015)
- ACC's request for information from [the DHB] (2 Feb 2015)
- [The DHB's] response to ACC (27 Feb 2015)
- [The DHB's] letter to HDC (16 July 2015) including [the DHB's] placental histology protocol
- [The DHB's] Event Analysis Report (distributed 17 Feb 2015)
- [The DHB's] debrief meeting notes ([date])
- Emergency Caesarean Directive (presumably of [the DHB])
- [Ms A's] clinical notes regarding intrapartum and post partum care
- [Baby A's] clinical notes
- [The DHB's] response to HDC (29 Oct 2015) including hospital's protocol for administration of pethidine to antenatal patients, protocol for management of first stage of labour and protocol for electronic fetal monitoring
- unsigned document named 'ACC report [Ms A] and [Baby A's] dated […] (presumably from LMC)
- Letter from [Dr K], paediatric registrar [the DHB] ([date])
- Letter from [Dr L], Obstetrician [the DHB] ([date]))
- Letter from [Dr H], Medical officer [the DHB] (undated)
- Letter from [RM B], LMC midwife (11 Aug 2015)

6. I have been asked to comment on

- The overall obstetric care provided to [Ms A]
- The appropriateness of calling a level 1 Caesarean Section
- The process regarding changing the priority level of Caesarean Section called and the
- communication around this
- The communication around [Ms A's] transfer to theatre

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- The process regarding calling for paediatric support
- The decision to refuse a clinician entry to theatre because she was not wearing scrubs
- The standard of documentation
- The delay in sending the placenta to pathology
- Recommendations arising from the Event Analysis Report.

SUMMARY OF NOTES

7. [Ms A] was under the care of a midwife LMC. She was admitted at 14.00 hours in spontaneous labour [at 41 weeks and 3 days] (EDD […] according to LMP and scan at 12 wk 2 day).

8. There is no documentation of any obstetric involvement in the pregnancy prior to admission. According to documents from LMC, [RM B], (11/8/2015) there were 3 factors complicating this pregnancy

- [Ms A] was admitted with threatened preterm labour at 34.4 weeks. An obstetric consultation should have occurred at that time.
- She had also had a growth scan at 36 weeks and 4 days because of reduced fundal height.
- The fetus was on the 30th centile for weight (2628gm) with normal interval growth from a previous scan at 33 weeks and 5 days. No subsequent scans were performed. There is no record of an obstetric opinion.
- Prolonged gestation of 41 weeks and 3 days. There is no record of an obstetric consultation or management plan for this.

9. From [Ms A's] hospital notes.
There is no partogram provided.
[Date] 1400 hours FH 130
1450 hours VE cervix 2–3 cm dilated. FH 140's before, during and after contraction
1520 hours. Options discussed. [Ms A] does not want to go home. Wants pethidine. 1530 hours Pethidine 100 mg and maxolon 10 mg IM. No record of FH or CTG monitoring. 1540 hours. [Ms A] happy for me to have a break. FH 132–140 following a contraction.
All the subsequently recorded fetal heart rates, VEs and drug administration.
1930 hours. VE 5 cm dilated. FH 130
2010 hours. Paracetamol! gm
2015 hours. FH 140 following contraction.
2035 hours. UTf (?what does this mean) into bath 2110 hours 150–160
2120 hours using entonox 2148 hours FH 140
2214 hours FH 150–160s 2232 hours FH lSO's 2300 hours FH 160s 2317 hours FH 165.

The first note of a request for obstetric assistance is:

- 23.35. 'Retrospect. Onto CTG baseline 170 with decelerations to 80, reduced variability.
  Call button pressed. [RM G] into room. VE with consent. 7–8 cm. ARM thick mec liquor draining. Pie to [Dr H] for emerg c.s. Staff into help.'

Subsequent notes to this:

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- 23.40. Awaiting [Dr H] to review in person. Prepped for OT as precautionary measure to inc speed of transfer to OT
- 23.45. 1000 ml of saline commenced … after IV cannulation … bloods sent to lab. N ranitidine 50 mg given.
- 23.50 CTG decreased variability baseline FH 170 deep variable deceln. to 80 IDC
- (indwelling catheter) inserted.
- 23.55 [Ms A] transferred to pre-op bed.
- 00.05 Blood results 141, platelets 154.
- [Dr H] in theatre awaiting orderly to transfer [Ms A] to theatre
- 00.24 In theatre.

10. From [Dr H's] letter. (obstetric registrar)
[Dr H] states 'At 23.37 I was called whilst driving home from the hospital about [Ms A]. I was informed she was low risk, her labour was progressing well and there were no fetal heart concerns until she had an ARM at 7–8 cm that showed meconium stained liquor. The CTG was then applied which showed decelerations. I requested a photograph of the CTG … and informed the midwife I would return to the hospital. During the conversation the midwife expressed that in her opinion the CTG indicated a need for delivery. I agreed and asked her to make arrangements and I would meet them at the operating theatre to save time.'

He also asked for the midwifery staff to call [Dr L] (consultant).

11. From [Dr L's] (obstetric consultant)
[Dr L] states he received at least 2 phone calls. The first was from the switchboard asking him to attend urgently. The second was on his cell phone from a midwife ([RM I]) who updated him with some details and to check he had been called. This second call was timed at 00.24 in [Ms A's] clinical notes. At the time of the second call [Dr L] was on his way into the hospital. He proceeded to the operating theatre. He reviewed the CTG and saw no significant deterioration in the tracing from the time of calling the caesarean section. He was happy to proceed with a controlled caesarean section under spinal anaesthetic.

12. From the anaesthetic record and operation note.
The first anaesthetic recording was made at 00.35. A spinal anaesthetic inserted at? 00.49 (hard to read). There was knife to skin at 00.59 and the baby born at 00.05 (anaesthetic note) 00.07 theatre notes. A vaginal assessment was performed on the operating table (uncertain whether before or after spinal).

An uncomplicated caesarean section was performed but the baby was born in poor condition with Agars of 2 (1 min), 2 (5 min) 6 (10 min). Cord gases showed an acidosis with a very high lactate and a high base deficit. The arterial sample was pH 7.15, base excess –12, lactate 12 and the venous sample pH7.04, base excess –12, lactate 14.

13. CTG.
The copies of CTGs provided are from 3 dates.
[34+4 weeks' gestation and 34+5 weeks' gestation.] Normal CTGs (presumably taken at the time of threatened preterm labour).
[41+4 weeks' gestation]. Time 23.28–00.55. This CTG covers the time during labour when the obstetric team were called until delivery. It is abnormal. It shows a baseline of

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175 with minimal beat to beat variation, deep variable and late decelerations to 70 bpm with very slow recovery. There is no significant change during the recording.

14. The overall obstetric care provided to [Ms A].

Summary of notes.

1. [Dr H] states that the medical staff are on call from home outside of the hours 8am–4pm Mon–Fri.
2. [Dr H] was called at about 23.37 pm when he was out of the hospital driving home. The exact timing of the call is unclear. The midwife retrospectively documents that at 23.35 she did a VE followed by an ARM followed by calling [Dr H]. [Dr H] states he was called at 23.37.
3. [Dr H] states that he was advised that [Ms A] was low risk, and there had been no fetal heart concerns until the recent ARM. This is consistent with the midwifery records stating that the fetal heart was normal until the CTG was placed at approximately 23.28.
4. The midwife described the CTG to him and he decided that [Ms A] needed an emergency caesarean section and he would return to the hospital. He asked the midwife to make the arrangements. The degree of urgency was not documented. The time of the decision is not documented but probably about 23.40. It is not clear how far [Dr H] was from the hospital but he did ask for his consultant ([Dr L]) also to be called as he would be closer (5–6 minutes away).
5. It is not stated in the notes whether the other staff needed (anaesthetist, theatre staff) were in the hospital or on call from home.
6. [Ms A] was prepared for caesarean section. She required IV cannulation, blood tests for FBC and group and hold, urinary catheterisation. She also needed IV ranitidine. These procedures would normally take about 10 minutes to perform.
7. At 23.55 [Ms A] was transferred to the pre-op bed awaiting theatre orderly. The CTG is annotated 'To Theatre' at approximately 00.20.
8. [Dr H] stated that at 23.50 he arrived at the theatre. The anaesthetist and the theatre staff were waiting for the patient. (I am not sure if this time is accurate as it was only 10 minutes after the call was first made which is a very short time interval if the staff are at home.)
9. 00.05 the midwifery staff were waiting for the theatre orderly.
10. Between 00.05 and 00.24 there were no notes.
11. The patient arrived at Pre-op at 00.24.
12. According to [Dr H], [Dr L] arrived to theatre before the patient. According to [Dr L] the patient arrived first.
13. [Dr H] and [Dr L] assessed the situation, including doing a vaginal examination. [Dr L] records that there was no significant deterioration since the decision to perform the caesarean section and it was appropriate for the patient to have a spinal anaesthetic followed by a controlled normal caesarean section.

Opinion.

1. The CTG showed features of chronic hypoxia with a tachycardia, poor variability and late decelerations. The cord gases showed metabolic acidosis with a very high lactate and a high base deficit. As the cord arterial and venous samples were similar, this supports placental insufficiency as the cause, rather than an acute cord

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compression. In placental dysfunction where hypoxia is due to reduced placental transfer, umbilical artery and vein values will both be abnormal and similar; whereas in acute cord compression or fetal bradycardia, the hypoxia and acidosis will be predominantly in the umbilical artery, leading to a large arteriovenous difference.[1]

2. Therefore the likely cause of this outcome was chronic placental insufficiency. This baby was growth restricted. This was further complicated by post maturity, the pregnancy being 11 days past term by accurate dates which had been confirmed by an early scan. Furthermore the fetus had been exposed to a maternal dose of pethidine. This fetus was already severely compromised before the obstetricians had been called.
3. After receiving the first call from the midwife [Dr H] made a quick decision to perform a caesarean section. In the ideal world the obstetrician should have reviewed the patient before making the decision. However in these circumstances this may have delayed the process as the key staff are non resident and it is stated that the operating theatre is a long way from the maternity unit. [Dr H] also asked for his consultant to attend. [Dr L] was on his way into hospital after being called by the switchboard (without any clinical information). I do not think the obstetricians could have attended any quicker.
4. [Dr H] documented he asked the staff to organise the procedure. This would involve making phone calls to the other staff involved (theatre, anaesthetic, paediatric). As he was driving into the hospital this was an appropriate decision. However it may have resulted in the confusion about the urgency of the caesarean section.
5. After assessing [Ms A] the obstetric decision was that there was time to have a spinal anaesthetic, which is safer for the mother and is less likely to cause fetal sedation. The surgical technique was standard for a caesarean section. I would agree that this was the appropriate decision.
6. The accepted practice in this situation is to deliver the baby as soon as possible while providing safe care to the mother. I believe the care provided by the obstetricians, in the circumstances, was following accepted practice. The only departure from accepted practice was the request to transfer the mother to the operating theatre before assessing her. This appears to have been done to expediate delivery.

15. <u>The appropriateness of calling a level 1 Caesarean Section. The process regarding changing the priority level of the caesarean section called and the communication around this.</u>

1. There was confusion about the level of urgency of the caesarean section.
2. The notes regarding the phone call with [Dr H] written after 23.55 do not document the level of urgency. Neither does [Dr H's] letter state the urgency. I suspect that this was not addressed in the phone call.
3. The note written by [a core staff midwife] as a retrospective note at 05.10 states that when she came in to assist at 23.40 she thought that they were awaiting an obstetric review from [Dr H]. She was assuming that [Ms A] would require a caesarean section (because of the clinical situation) and was preparing her for this. It was at 23.55 (15 minutes later) that she was advised that the decision had already been made. She assumed it to be a category 2 caesarean section.

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4. The paediatric SHO documents that she was initially called for a crash (level 1) caesarean section at 11.40 but this was downgraded to a level 2 at midnight.

Opinion.

1. A level 1 caesarean section is defined as a situation where there is immediate threat to life of the mother or baby eg cord prolapse, massive haemorrhage. This is sometimes known as a crash caesarean section. A level 2 caesarean section is defined as maternal or fetal compromise but not immediately life threatening. This caesarean section should have been categorised as level 2.
2. These categories are an audit tool to assess the performance of obstetric units. RANZCOG recommends there be no specific time interval attached to the various categories of urgency of caesarean section. Each case should be managed according to the clinical evidence of urgency, with every single case being considered on its merits.[2]
3. It is not clear who called the paediatric team in for the level 1 caesarean section. It appears that the obstetric/midwifery staff regarded it as level 2 and it therefore was not downgraded.

16. The Communication around [Ms A's] transfer to theatre

1. It is not clear who took responsibility for calling in the staff. I have been provided a copy of the hospital's emergency caesarean section directive for level 1 caesarean sections. In this flowchart, switchboard is notified that there is a level 1 caesarean and then calls in the staff in the following order.
   - Theatre
   - Obstetric team (consultant and registrar)
   - Anaesthetic team (consultant and registrar)
   - Paediatrician
   - Neo Natal unit
2. There is a directive to ward [number] staff (? maternity unit) not to proceed to theatre until the orderly arrives as the theatre is locked until the staff attend.
3. I have not been provided with the flow chart for level 2 caesarean sections.

Opinion.

1. It is possible this level 1 flowchart was followed as [Dr L] was initially called by switchboard and the consultant paediatrician called as a 'crash' caesarean section. Even for level 1 caesarean sections the hospital protocol is that the midwifery staff wait until the orderly arrives before transferring the patient. This makes sense as it is safer for the patient to be on the maternity unit than outside a locked theatre.
2. It is hard to assess if there was any preventable delay in the transfer. The caesarean section was called at or after 23.40 hours. The orderly possibly transferred the patient at 00.05. This is at most 25 minutes from the first call for caesarean section. If the staff are on call from home (and probably in bed at that hour) then this is relatively quick. The caesarean section was considered a level 2 by the core midwifery staff involved in her care. The CTG at the time before the transfer to theatre had not deteriorated from the initial call, and if anything, there were less sinister features as there were less contractions between 2400 hours and

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00.20.

3. I do not feel that any confusion around the transfer to the operating theatre affected the eventual outcome.

17. The process regarding calling for paediatric support. The decision to refuse a clinician entry to theatre because she was not wearing scrubs.

1. The senior paediatrician ([Dr K]) records being called at 11.42pm for a crash caesarean section. She then records [that] the level of caesarean section was downgraded to level 2 at 12.17am.
2. The neonatal team of SHO on call and neonatal nurse were happy to attend without senior support.
3. [Dr H] records in his letter that he advised the paediatric resident that this baby may need resuscitation and to get a senior person in if she felt this necessary. This is not documented elsewhere.
4. The baby was born at 0l.07am and resuscitated by the SHO. The baby was unresponsive, bradycardic and apnoeic. The SHO intubated the baby at 5 minutes of age (?0l.12hrs) and records the baby improved at 10 minutes of age (?01.17hrs) and was extubated at 12 minutes of age (?01.19hrs).
5. The paediatric SHO states that the baby continued to improve and was taken to mum.
6. The SHO states [Dr K] arrived at 20 minutes of age (01.27hrs).
7. [Dr K] says she was called from home at 01.11. On arrival at the theatre she was asked to change into scrubs despite the emergency. On arrival in the theatre the baby was having a brief cuddle with mum.

Opinion.

1. The transfer of information to the paediatric team was confusing. The initial call was possibly via switchboard as per the level 1 directive. However there was time for the core midwifery staff to directly inform the paediatric and neonatal team of the situation after the initial call went out. The obstetric registrar states in his later report that he did advise the SHO that the baby would likely need resuscitation. This was not documented at the time.
2. I cannot comment on the resuscitation as this is outside my area of expertise.
3. When the senior paediatrician arrived it is documented that the baby had been resuscitated and was with mum. I presume the theatre staff decided the emergency was over and standard theatre protocol of changing into scrubs was appropriate.

18. The standard of documentation

1. [Ms A] was admitted by the core in labour [at 14.00 hours].
2. Her LMC commenced care at 14.50 when it is recorded that she was contracting 3–4 (times) in 10 (minutes), her cervix was 2–3 cm dilated with a bloody show evident. [Ms A] was requesting analgesia.
3. The fetal heart was recorded as 140s before, during and after contraction at 14.50. The next documented fetal heart rate was at 15.40 (132–140)
4. The third documented fetal heart rate was at 20.15
5. At 15.30 [Ms A] was given 100mg pethidine and 10 mg maxolon by intramuscular injection. At 15.40 midwife took a break. The LMC returned at 19.30. During these 4 hours there is no record of any care or observations being performed.

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6. The first documented CTG commenced at about 23.27 and the decision for a caesarean section made via a phone call at approximately 23.37.
7. The documentation around the various decisions made regarding level of caesarean section, who called the staff in and what they were told etc is unclear, and often written retrospectively. Accounts from differing personnel vary. It is therefore difficult to get an accurate timeline.

Opinion.

1. The [DHB's] protocol for 'the first stage of labour' states that the maternal and fetal history should be reviewed and documented in the notes. An abdominal examination including uterine size in cm should be documented. The fetal heart should be auscultated and documented every 15–30 minutes after a contraction. A partogram should be commenced when active labour established. This is consistent with the RANZCOG fetal surveillance guideline[3]. [Ms A] was in labour by definition and this protocol was not followed as there was no documented record of fetal heart rate every 15–30 minutes, and no apparent partogram.
2. The [DHB's] protocol for 'pethidine use for antenatal patients' states that prior to the administration of a narcotic to a pregnant woman, a baseline CTG must be satisfactory. Post administration a CTG must be done for a minimum of 30 minutes. Post pethidine administration the (maternal) sedation levels and respiratory rate of the mother should be observed and recorded. It is not documented that the protocol was followed, and the CTGs and observations are not documented in [Ms A's] notes.
3. The [DHB's] protocol for electronic fetal monitoring states all women having an antenatal risk factor which may increase the risk of fetal compromise in labour are expected to have a CTG performed at the time of their initial assessment/admission. [Ms A] was beyond 41 weeks gestation and this is a recognised risk factor. It is not documented that this CTG occurred and neither was a copy of this CTG provided.
4. The electronic fetal monitoring protocol also states that 'any event that may affect the fetal heart rate should be noted on the CTG'. This should have included the VE and ARM. This did not happen. The time of calling the obstetric staff, administration of drugs and IV fluids etc could have been clarified if these events had been recorded on the CTG.
5. The absence of documentation of the first stage of labour suggests that recommended observations including CTG, which are designed to identify fetuses at high risk of fetal compromise during labour, did not happen. If they had been performed it is probable that it would have been recognised this fetus was at risk and would have been delivered sooner. The outcome may have been improved.
6. I do not think the lack of documentation about the time of calling and the level of caesarean section did make a difference to the outcome as it appears that all the necessary staff responded promptly and delivered the baby as soon as they safely could.

19 **The delay in sending the placenta to pathology**

1. It is usual to recommend histological examination of the placenta after a

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pregnancy with an adverse outcome. It is completely unclear from the records why this was missed at the time. I note that the [DHB] has reviewed their protocol for this following this adverse event. I do not know if the delay altered the ability for the pathologist to assess the placenta.

20 Recommendations arising from the Event Analysis Report.

1. This reported on what happened, why it happened and what could be done on improving the systems and processes in place within the [DHB's] responsibility only. It concentrates on the processes of calling a caesarean section, communication regarding the level of the caesarean section and the documentation. All the recommendations are valid.
2. The report does not address [DHB] processes aimed at identifying a fetus at high risk for intrapartum compromise before labour. Most DHBs have a policy about assessment of post-dates pregnancy. It is usual to recommend obstetric review with a biophysical assessment by ultrasound and CTG at approximately 41 weeks.
3. The report does not address ensuring all the LMCs, using the hospital for birthing women, understand and follow the hospital's protocols.

- **Conclusion.**

1. The obstetricians acted appropriately when consulted about [Ms A]. They delivered the baby as quickly, and as safely, as they could in the circumstances. I believe my peers would agree.
2. As the obstetricians were not on site, they did not take the leadership role in co-ordinating the caesarean section. It appears that this role was given to the LMC during the phone call with [Dr H]. The process was not clear to all the involved staff, but I do not believe any deficiencies in the process altered the outcome. [The DHB] has reviewed their processes around urgent caesarean section and made appropriate change, including education of all staff, and that DHB staff take leadership.
3. It may be appropriate for [the DHB] to review its post-dates protocol; and also to ensure all LMCs know, and follow, [DHB] protocols; or document accurately why they are not, if they choose not to.[4]

Notes

1. Causes and consequences of fetal acidosis. Catherine S Bobrow, Peter W Soothill Arch. Dis. Child. Fetal & Neonatal Ed. 1999;80:F246–F249

2. RANZCOG college statement. Categorisation of urgency for caesarean section (C-Obs 14) Review July 2015

3. RANZCOG Intrapartum Fetal Surveillance Clinical Guideline — Third Edition 2014

4. National Women's Hospital. Induction of Labour Post-dates pregnancy protocol."

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