Midwife, Ms A

A Report by the

Health and Disability Commissioner

(Case 12HDC00999)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. In 2012, Ms B was pregnant with her first child. Ms B engaged midwife Ms A as her Lead Maternity Carer (LMC).

2. Ms B first saw Ms A when she was approximately 25 weeks' gestation. Ms A continued to see Ms B regularly throughout her pregnancy.

3. Ms A recorded Ms B's height and weight during her first booking appointment. Although Ms A did not calculate Ms B's Body Mass Index,[1] she assessed Ms B to be obese but considered it appropriate for Ms B to give birth at the maternity unit, which is a primary care maternity unit run by midwives.

4. Ms A carried out a urinalysis only twice during Ms B's pregnancy, at 29 weeks' gestation and 35 weeks' gestation.

5. Ms A referred Ms B for an obstetric review. Ms B was seen by an obstetrician a week later, at 40+6 weeks' gestation. The obstetrician had no concerns and gave Ms B a further obstetric review appointment for the following week if not delivered by then.

6. Ms B went into spontaneous labour later that day and went to the maternity unit, arriving at 12.25am. A core midwife took Ms B's blood pressure, which was 135/95mmHg.[2]

7. Ms A arrived at the maternity unit at 1am and assessed Ms B, including repeating her blood pressure measurement and recording the fetal heart rate. A vaginal examination showed that Ms B's cervix was 8cm dilated. Ms B then went outside and did not return until 2.30am. During this time no monitoring was carried out.

8. Ms A performed an artificial rupture of membranes at 3.20am, noting thin meconium[3] and blood.

9. Ms A performed a further vaginal examination at 4.35am, noting that Ms B's labour had not progressed.

10. A further vaginal examination at 5.30am again showed no progress of labour. Ms A was considering transfer to a public hospital when, at approximately 5.45am, the fetal heart rate was noted to be 100 beats per minute. Ms A consulted with the hospital's secondary care team and arranged for transfer.

11. Ms B was transferred to hospital, arriving at 6.45am.

12. An emergency Caesarean section was performed, commencing at 7.05am. The baby was delivered at 7.10am with no signs of life. Sadly, resuscitation was unsuccessful.

[1] Body Mass Index is a measurement of the body fat content based on height and weight.
[2] Normal blood pressure range is 90/60–140/90mmHg.
[3] The first stool passed by a baby.

Decision

13. Aspects of the intrapartum care Ms A provided to Ms B were suboptimal.

14. Ms A failed to assess Ms B's blood pressure and pulse adequately throughout labour. Ms A also failed to assess the fetal heart rate adequately for approximately an hour and a half between 1am and 2.30am.

15. In my view, by failing to monitor Ms B's blood pressure and pulse appropriately during labour, and failing to monitor the fetal heart rate between 1am and 2.30am, Ms A did not provide services to Ms B with reasonable care and skill. Accordingly, Ms A breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights.[4]

16. Adverse comment is made that the presence of thin meconium-stained liquor, coupled with the slow progress noted at 4.35am, should have prompted increased fetal heart rate monitoring and discussion with Ms B and her family about the appropriateness of delivering at the maternity unit.

17. Adverse comment is also made about some aspects of Ms A's antenatal assessment processes and a lack of detail in some of her documentation.

Complaint and investigation

18. The Commissioner received a complaint from Ms B about the care provided to her during her pregnancy and labour in 2012. The following issue was identified for investigation:

- *Whether Ms A provided an appropriate standard of midwifery care to Ms B.*

19. An investigation was commenced on 26 July 2013.

20. The parties directly involved in the investigation were:

Ms A	Provider, Lead Maternity Carer midwife
Ms B	Consumer/complainant

Also mentioned in this report:

Dr C	Obstetrician

21. Information from the DHB was also reviewed.

22. Independent expert advice was obtained from midwife Stephanie Vague (**Appendix A**).

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

Information gathered during investigation

Background

23. In 2012, Ms B, aged 23 years at the time of these events, was pregnant with her first child. Ms B's pregnancy was confirmed by a doctor at a medical centre. Ms B was given the name of a midwife, Ms A, to contact to provide Lead Maternity Carer (LMC) services. Ms B subsequently contacted Ms A and engaged her as her LMC.

Ms A

24. At the time of these events, Ms A had been a practising midwife for 17 years. Ms A was working as a self-employed community-based midwife working in a group midwifery practice. Ms A was contracted to provide LMC services out of the medical centre.[5]

25. Ms A provided only primary care midwifery services, and had access agreements[6] with two maternity units in the area. Ms A did not have an access agreement with the public hospital.

Antenatal care

26. Ms B had an ultrasound scan that confirmed the gestational age as 24 weeks and 6 days.

27. Ms B first saw Ms A when Ms B was 25+3 weeks' gestation. During this appointment, Ms A noted that Ms B had a family history of hypertension, diabetes, tuberculosis, and asthma, and referred Ms B for an ultrasound scan.

28. Ms A gave Ms B information about her service, including an information brochure that states that, as part of the midwifery practice, she provides primary care midwifery services and does not deliver at hospital.

29. In response to the provisional opinion, Ms B agreed that she was provided with information about the midwifery service Ms A provides, but said that Ms A did not go through the information with her. Ms B also told HDC that she was not aware that Ms A did not deliver at hospital.

Body Mass Index (BMI) and smoking history

30. Four days later, Ms B saw Ms A again. The Maternity Registration form documented during this consultation records Ms B's height as 169cm and her weight as 101.9kg. Ms B was also noted to smoke over 10 cigarettes per day.

31. Ms A advised HDC that, although she did not specifically calculate Ms B's BMI, her visual assessment of Ms B categorised her as "obese".

32. Ms A advised that she discussed the smoking quit line and offered Ms B information on the smoking cessation programme. This is documented on the care plan checklist.

[5] The medical centre is a primary healthcare clinic offering a number of health services including services of general practitioners and nurses.
[6] An access agreement provides the LMC with access to a facility's maternity and birthing facilities.

Ms A also advised that she discussed the risks to the baby, including sudden unexpected death in infancy. However, there is no record of this discussion.

33. In response to my provisional opinion, Ms B denied ever discussing sudden unexpected death in infancy.

Maternal assessment during pregnancy

34. When Ms B was 29+3 weeks' and 35+3 weeks' gestation, Ms A performed a mid-stream urinalysis on Ms B, testing for protein in the urine. The results were normal. Ms A said that this level of testing was consistent with her standard practice at the time of these events.

35. There is no record of a urinalysis being performed at other visits. However, Ms B's blood pressure (BP) was taken at each visit and was within normal limits.

36. In her statement to HDC, Ms A presented evidence questioning the value of urinalysis in pregnancy and the fact that performing mid-stream urine testing at the time of booking is not routine practice.

37. However, Ms A "accept[s] that in New Zealand it is customary practice for midwives to carry out a dipstick [mid-stream urine] test at each antenatal visit".

38. Ms B underwent a polycose test,[7] the results of which showed an elevated blood glucose of 8.7mol/ml. Ms A subsequently referred Ms B for a glucose tolerance test (GTT).[8] This was normal.

Post-dates referral

39. Ms A said that when Ms B was 39+3 weeks' gestation, she discussed the possibility of Ms B having an induction of labour should her pregnancy go past her due date, and referred her for an appointment with an obstetrician for assessment and discussion in relation to this. Ms A said that one of the reasons she made this referral at that time, rather than at 41 weeks' gestation as was her normal practice, was because Ms B was obese.

40. In her complaint to HDC, Ms B said that Ms A told her that she would be referring her to an obstetrician, but gave no explanation of why the referral was required.

41. In contrast, Ms A stated that she advised Ms B about the reason for referral. There is no documentation about exactly what was discussed. However, the antenatal record states: "[Dr C] next week — post dates."

42. Ms B said that during the appointment at 39+3 weeks' gestation she told Ms A that she was experiencing some pain and bleeding. Ms B recalls Ms A saying that this indicated that "things were happening".

43. Ms A advised that she left a message with the LMC services at the public hospital that day, requesting an appointment in obstetrician Dr C's clinic for the following week.

[7] A screening test for gestational diabetes mellitus.
[8] A test for gestational diabetes mellitus.

Ms A asked the LMC services to contact Ms B directly with an appointment time. An appointment with Dr C was subsequently arranged for 10 days later.

44. Ms A also completed a written referral form. This is dated 40+3 weeks' gestation and requests assessment for "post-dates", requesting that a "stretch and sweep"[9] be offered, noting that Ms B wanted to deliver at the maternity unit. The referral form does not mention Ms B's weight or request advice on whether birthing at the maternity unit would be appropriate in view of Ms B's weight.

45. Ms A said that she placed the referral in the "fax" tray at the medical centre. She said that the normal process was that administration staff would fax any referrals placed in the tray that day. However, Dr C did not receive the referral form and, as a result, was reliant on the telephone message Ms A had left. Ms A stated that she is unsure why the form was not faxed on that occasion.

40+6 weeks' gestation

Consultation with Dr C

46. Ms B, at 40+6 weeks' gestation, was seen by Dr C. Ms B said that when she saw Dr C he said he was unsure why the referral had been made.

47. The records supplied by Dr C document that the consultation was for "post dates" (IUGR[10] is crossed out). Dr C documented that Ms B reported that she had good fetal movements and no abdominal pain, and her ultrasound was reassuring. Dr C's plan was to review Ms B in a week's time to arrange an induction of labour if she had not gone into labour.

Onset of labour

48. Following her consultation with Dr C, Ms B began experiencing irregular contractions.

49. At 9pm, Ms B's aunt called Ms A to advise that Ms B was experiencing regular contractions. Ms A advised Ms B to take some Panadol and to call her back when she was no longer able to cope with the contractions.

50. Ms B advised that at 11.55pm her aunt called Ms A again to advise that they were on their way to the maternity unit. Ms A agreed to meet them there.

Arrival at the maternity unit

51. Ms B arrived at the maternity unit at 12.15am. She was accompanied by a number of family members, including her aunt and father. According to Ms B, when she and her family arrived at the maternity unit they rang the front bell and it took a long time for anyone to respond. She recalls that staff were not aware of her impending arrival.

52. The staff midwife carried out an assessment of Ms B, noting that at 12.25am her BP was 135/95mmHg, her pulse was 88 beats per minute (bpm),[11] and her temperature

[9] When a finger is "swept" over the membrane to separate it from the cervix in an attempt to help induce labour.
[10] Intra-uterine growth restriction.
[11] A normal resting pulse for an adult is 60–100bpm.

was 36.9°C.[12] The fetal heart rate (FHR), listened to on a hand-held Doppler,[13] was 144bpm.[14] Ms B recalls that the midwife told her that her BP was elevated and would need to be monitored throughout her labour.

53. The records state:

> "History of regular contractions since 9pm. Increasing in frequency & strength since then. Now 1:3 moderate. Lasting 50–60 seconds. LMC aware of admission & on way. Coping well with contractions at present."

Arrival of Ms A

54. Ms A arrived at the maternity unit at approximately 1am. It is documented in the patient records that, at 1am, Ms A carried out a vaginal examination on Ms B, noting that her cervix was 8cm dilated and fully effaced, with the baby at station –2,[15] indicating that Ms B was in advanced labour. Ms A documented that the FHR was 120–130bpm and that Ms B's BP was 130/90mmHg, which Ms A told HDC was "acceptable" (given that Ms B was in advanced labour).

Ms B leaves for a cigarette

55. At 1.10am, Ms A noted that Ms B had gone outside for a cigarette. In her complaint, Ms B said that she was finding the room she was in claustrophobic, and that she went outside for a walk.

56. At 2am, Ms A documented: "[Ms B] still outside."

57. At 2.20am, Ms A documented: "Still outside."

58. Ms A said that she did not make any attempt to contact Ms B between 1.10am and 2.30am.[16]

59. At 2.30am, Ms B returned because the pain of her contractions was worsening.

60. In a statement to HDC, Ms A said:

> "I was not aware that [Ms B] and her family would stay outside smoking for such an extended period of time between 0100 and 0230. In previous cases where my women have gone outside to smoke they have returned in a reasonable period of time, certainly within ½ an hour. [The maternity unit] is situat[ed] in a high crime area, it is a midwifery only run Unit with no permanent security guards on duty. In previous occasions staff cars have been broken into and police have been alerted to the premises for various instances. I don't believe it is safe for staff to be outside the Unit at night and felt unable to compromise my own safety by

[12] A normal average temperature is 37°C.
[13] A tool to listen to the FHR.
[14] Normal FHR is 110–160bpm.
[15] Station describes the position of the baby's head in relation to the ischial spines of the pelvis. Station –2 means that the head is 2cm above the ischial spines.
[16] Ms A had access to the mobile telephone numbers of both Ms B and her aunt, in Ms B's antenatal records.

> searching the grounds and looking for [Ms B] when it was her choice to be outside."

61. Further to this, Ms A advised that it is her usual practice to monitor the FHR every 15–30 minutes during the first stage of established labour, but was unable to do so because Ms B was outside. Ms A stated:

> "I was a little concerned at not being able to monitor during [Ms B's] absence but felt it was her choice."

2.30am–3am

62. At 2.30am, Ms A documented that Ms B was experiencing strong contractions, which were at a frequency of three contractions every ten minutes, and that the FHR was 140bpm and reactive.[17]

63. At 2.35am, Ms A noted that Ms B tried Entonox[18] during one contraction but did not like it. Ms A noted that Ms B was "coping well".

64. At 3am, Ms A noted that Ms B was unable to pass urine, and that the FHR was 120–130bpm. In response to my provisional opinion, Ms B advised that she recalls that Ms A had difficulty finding the FHR at that time.

Artificial rupture of membranes

65. At 3.20am, Ms A carried out a vaginal examination and noted that the anterior rim of the cervix was felt. Ms A then carried out an artificial rupture of the membranes (ARM), and noted thin meconium and a "show".[19]

66. In her complaint, Ms B said that after her membranes were ruptured her aunt asked what colour the liquor[20] was and Ms A advised that she thought that it was clear. When questioned about what she meant by that, Ms A said that she was unsure because there was so much blood. Ms B said that Ms A then gathered up the sheet and left the room.

67. Ms A confirmed that she left the room to assess the liquor. She said that she did this because the light in the room was dim, and she went out into better light in order to assess the colour adequately. Ms A advised that it is her usual practice to communicate the findings to the patient, and believes she did so in this case. No discussion is documented in the clinical record, although the finding of thin meconium is noted.

68. In relation to her assessment, Ms A stated:

[17] The presence of normal FHR accelerations.
[18] An anaesthetic gas comprised of a mixture of nitrous oxide and air.
[19] A "show" is a brown, pink, or red blood-stained mucous discharge from the thinning and dilating cervix.
[20] Amniotic fluid.

> "I wasn't concerned with the presence of thin meconium as it appeared only very slight and was actually more blood stained in appearance due to [Ms B] having a show."

69. The FHR was noted to be 120–130bpm at this time.

Ongoing assessments

70. At 3.40am, Ms A noted that Ms B was starting to feel "pushy".

71. At 3.50am, the FHR was noted to be 120bpm and reactive.

72. At 4.10am, Ms A noted that Ms B was now feeling "stronger urges to push" and again noted thin meconium and "pinky" coloured liquor. The FHR was 115–125bpm. Ms A noted that Ms B was continuing to experience urges to push and was "encouraged to push if needing".

73. Ms B told HDC that at that stage she was becoming concerned and asked Ms A a number of times to be transferred to hospital

74. Ms A told HDC that she recalls that Ms B did ask on one occasion to be transferred to hospital but that her family encouraged her to stay at the maternity unit. Ms A said that she does not recall Ms B asking to be transferred again but that, upon reflection, she should have discussed this further with Ms B at the time. However, Ms A stated that it is unlikely that the hospital would have accepted Ms B for transfer at that stage without clinical indication of complication.

75. At 4.35am, the FHR was 120bpm. Ms A carried out a vaginal examination, which showed little progress since the previous vaginal assessment. Ms A documented that a "thin band of cervix" still remained.

76. At 5am, the FHR was noted to be 115–125bpm. At 5.10am, Ms A documented that Ms B was "pushing with contraction". She was also noted to have vomited twice.

77. In response to my provisional opinion, Ms B advised that she believes that the FHR documented in the records is incorrect. She recalls that at 5am the FHR was 93bpm and that her aunt then assisted her to turn onto her left side. Ms B recalls that the FHR increased to 99bpm after she turned onto her side. There is no record of such a low FHR at this time. Ms B also advised that she recalls that her entire body was shaking at that point.

Fetal bradycardia

78. At 5.30am, Ms A conducted a further vaginal examination, noting a band of cervix still present. She noted that Ms B's contractions had decreased in frequency to two to three every ten minutes. Ms A subsequently inserted an IV luer into Ms B's hand and commenced IV saline. Ms A said that at this stage her plan was to commence IV fluids and then consult with the secondary care team. Following insertion of the IV luer, Ms A noted that the FHR was 100bpm.

79. At 5.55am, Ms A commenced a cardiotocograph (CTG)[21] and noted that the FHR was 100bpm with reduced variability. There is no record that the maternal pulse was checked at this time.

80. Ms A contacted the on-call obstetrics consultant at hospital and it was agreed that Ms B would be transferred to hospital. An ambulance was subsequently called as a priority 1.[22] Ms A documented that she had informed the charge midwife of the planned transfer.

81. Ms A stated that she did not consider that earlier consultation with a specialist was warranted. She stated:

> "I had been listening to the fetal heart regularly throughout her labour (apart from the initial instance when she was outside smoking) and there had been no evidence of fetal distress. I was not convinced of meconium in the liquor … it appears more pink or blood stained due to a show. [The district health board's] guidelines for progress in labour recommend 1cm per hour for a multip,[23] and 1cm for 2 hours for a primip.[24] … [Ms B's] progress was slow but never the less she was making progress."

82. Ms A further stated that when failure to progress is observed it is standard practice to perform an ARM and commence IV fluids prior to consultation or transfer. Ms A advised that in Ms B's case it was her plan to commence IV fluids and then consult. However, following commencement of the IV fluids, bradycardia was noted so she therefore initiated immediate consultation and transfer.

83. At 6.15am a maternity unit midwife documented that she had listened to the FHR using a hand-held Doppler because the CTG was not providing a good reading. The FHR was 90–100bpm. Ms B's BP was noted to be 130/90mmHg and her temperature 35.6°C. There is no record that the maternal pulse was checked to ensure that the Doppler was recording the FHR.

Transfer to hospital

84. At 6.25am Ms A documented that Ms B was en route to hospital via ambulance. Ms A accompanied Ms B in the ambulance. The FHR was noted to be 100bpm.

Arrival at hospital

85. At 6.45am, Ms A documented that Ms B had arrived at hospital and was met by the obstetrics registrar. Ms B recalls that when they arrived, the staff who met them did not appear to be aware of her impending arrival.

86. Shortly after Ms B arrived at hospital, the registrar carried out a vaginal examination and noted that an anterior rim of cervix was still present, and that the baby's head was level with the ischial spines, meaning the head had descended further. A fetal scalp electrode was attached, which recorded that the FHR was 50–60bpm.

[21] Records the fetal heart rate.
[22] Lights and sirens.
[23] Multiple pregnancies.
[24] First pregnancy.

87. Ms B was then reviewed by a second registrar and a consultant. A bedside ultrasound scan was conducted, which showed some fetal heart activity, probably less than 50bpm. The decision was made to perform a "crash" Caesarean section[25] under general anaesthetic.

88. Ms B was transported to theatre immediately, and surgery was commenced at 7.05am. At 7.10am, the baby, weighing 4160g, was delivered. The operation note records "thick meconium, floppy, apnoeic". The baby was handed immediately to paediatric staff, who commenced resuscitation.

89. Sadly, despite vigorous attempts at resuscitation, the baby never breathed, and resuscitation attempts were discontinued at 7.26am.

Changes made by Ms A

90. Ms A advised that since this incident she now uses Customised Growth Charts and BMI calculations for all her clients.

91. Ms A said that when a woman wishes to go outside during labour she now advises her to return within 15 minutes.

92. Ms A advised that she now ensures that she maintains more comprehensive documentation in relation to discussions with her patients. She also ensures that she documents findings on a partogram[26] for all women in labour.

Response to provisional opinion

Ms B

93. Ms B's responses to the "information gathered" section of the provisional opinion have been incorporated above as appropriate.

Ms A

94. Ms A did not provide any response to the provisional opinion.

Relevant standards

95. The New Zealand College of Midwives *Midwives Handbook for Practice* states:

> "Standard Three:
> The midwife collates and documents comprehensive assessments of the woman and/or baby's health and wellbeing.

[25] A Caesarian section performed in an obstetric emergency.
[26] A record of key data (maternal and fetal) during labour, including measurements such as cervical dilation, FHR, and maternal vital signs.

Standard Four:
The midwife maintains purposeful, ongoing, updated records and makes them available to the woman and other relevant persons.

Standard Five:
Midwifery care is planned with the woman."

Opinion: Ms A

Antenatal care

Antenatal information — No breach

96. I accept that Ms B was provided with information about the fact that Ms A provided only primary midwifery care and did not deliver at hospital. Furthermore, I accept that Ms A did discuss smoking in pregnancy with Ms B and offered her information on the smoking cessation programme. I therefore conclude that Ms B was provided with sufficient information in relation to the risks of smoking and of giving birth in a primary care unit.

Urinalysis — Adverse comment

97. Ms A performed a urinalysis on Ms B only twice during her pregnancy, when she was 29+3 weeks' gestation and 35+3 weeks' gestation. Ms A advised that this was consistent with her normal practice at the time of these events.

98. According to my independent expert, midwife Stephanie Vague, urinalysis "is an established part of a midwife's assessment for the presence of protein or glucose".

99. While in her statement to HDC Ms A presented evidence that questioned the value of urinalysis in pregnancy, she "accept[s] that in New Zealand it is customary practice for midwives to carry out a dipstick test at each antenatal visit".

100. Ms Vague advised that although urinalysis provides only a crude measurement, it is a useful tool in alerting the midwife to the presence of protein or glucose, thus allowing for further, more specific testing to be considered. I note that Ms A has since reviewed her practice and has incorporated a dipstick test into her standard practice for each antenatal visit. I acknowledge that there is a variation of practice in relation to the frequency of urinalysis, but I accept my expert's advice that it is current practice to carry out such a test at every antenatal visit. On that basis, it would have been prudent for Ms A to have carried out regular dipstick tests. However, I do not consider that Ms A's decision not to do so in these circumstances breached the Code.

Assessment of maternal weight — Adverse comment

101. Ms A measured Ms B's height and weight during the initial booking visit, when Ms B was over 25 weeks pregnant, and documented the results on the Maternity Registration form. Ms A noted that Ms B's height was 169cm and her weight 101.9kg. Ms A also noted that Ms B smoked over 10 cigarettes per day.

102. The updated Ministry of Health 2012 Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines), which were published in February 2012 (after Ms B's initial booking visit), now recommend consultation with an obstetrician if a woman's BMI is >35. Transfer of care to an obstetrician is required if a woman is morbidly obese with a BMI >40. However, the DHB guideline "Registering and Birthing at [the DHB] Primary Birthing Unit" considers a woman with a BMI >35, "if well grown fetus and IV access possible", to be suitable for birthing in a primary birthing unit. With a BMI >35, the guideline recommends that discussion should occur about the place of birth when fetal growth is difficult to ascertain. It notes that this should be assessed individually.

103. Ms A advised that although she did not specifically calculate Ms B's BMI, she assessed her visually as being in the "obese" range.

104. Ms Vague advised me that the calculation of BMI, as well as the use of a Customised Growth Chart, is now recommended by the New Zealand College of Midwives. She said that these tools help to identify babies whose growth is outside the normal parameters.

105. Ms A said that while people classified as being obese "by normal standards" are not suitable for birthing in a primary care facility, there is a greater tolerance in this region. Ms A also considered that had there been any significant concern, Dr C would have recommended that Ms B birth at hospital.

106. I note Ms Vague's agreement with that view, which is consistent with the DHB policy for birthing at a primary birthing unit, and also that there is a greater tolerance in relation to a patient's BMI and the appropriateness to birth at a primacy care facility in the DHB catchment area.

107. I remain concerned that there is no evidence that Ms A took any steps to establish Ms B's pre-pregnancy weight, and therefore did not know Ms B's pre-pregnancy BMI or total weight gain during pregnancy. However, guided by Ms Vague's advice, I am satisfied that in the circumstances it was not unreasonable for Ms A to arrange for Ms B to give birth at a primary maternity unit, and I note Ms A's advice that she now uses Customised Growth Charts and BMI calculations for all her clients.

Intrapartum care

Maternal monitoring — Breach

108. A midwife at the maternity unit measured Ms B's temperature, pulse and BP when she first arrived at the facility at 12.25am, noting that Ms B's pulse rate was 88 and her temperature was 36.9°C. Her BP was elevated at 135/95mmHg. Ms A measured Ms B's BP again at 1am and noted that it was 130/90mmHg. Ms A advised that, given that Ms B was in advanced labour, in her view that was acceptable.

109. Ms B's BP and temperature were not measured again until 6.15am, when they were recorded by a maternity unit midwife while Ms B was being prepared for transfer to hospital.

110. Ms Vague advised me that it is standard practice to measure maternal temperature and BP four-hourly in a straightforward labour but, because Ms B had elevated BP upon arrival at the maternity unit, more regular monitoring, at least hourly, was indicated.

111. Ms A did not record Ms B's pulse rate at any time during her labour, despite the FHR being later recorded as being as low as 100bpm. I note Ms Vague's advice that it is accepted practice that the maternal pulse should be measured 1–2 hourly throughout labour. I further note that the New Zealand College of Midwives Consensus statement "Foetal Monitoring in Labour" (2005) provides that "[p]rior to any form of foetal monitoring, the maternal pulse should be palpated simultaneously with FHR auscultation in order to differentiate between maternal and foetal heart rates".

112. I also note Ms Vague's advice that there is no clear documentation of Ms B's oral intake, or how often she passed urine. In addition, there is infrequent documentation regarding the quality and frequency of Ms B's contractions.

113. It is concerning that Ms A did not record and document Ms B's BP between 1am and 6.15am. Ms A said that it is her "usual" practice to measure a woman's BP four-hourly, but she did not do so in this case. This failure is particularly concerning given that hourly monitoring was indicated because of the initial elevated BP recording.

114. In my view, Ms A did not monitor Ms B adequately throughout her labour, in particular her BP, temperature and pulse, as well as her fluid input and output and frequency of contractions. I accept Ms Vague's advice that Ms A's failure to monitor Ms B's BP and pulse adequately was a moderate departure from accepted standards.

Fetal monitoring — 1am–2.30am — Breach

115. Ms A measured the FHR at 1am when Ms B first arrived. After this, Ms B went outside with her family. She stayed outside until 2.30am, during which time no observations were performed.

116. Ms A told HDC that she was not aware that Ms B would stay outside for such a long period of time. Ms A said that because it was the middle of the night and the maternity unit is situated in a high crime area, it was not appropriate for her to go outside in search of Ms B when she did not return within a reasonable time.

117. Ms Vague advised that it is accepted practice to measure the FHR at least every 30 minutes during the first stage of labour. She stated:

> "I find it incomprehensible that a woman in advanced labour would be left unassessed for such an extended period of time."

118. I agree. While I accept that it may not have been appropriate for Ms A to have searched outside for Ms B, she should have advised Ms B of the need to monitor the FHR regularly, and arranged a time for the next review before Ms B went outside. I also note that there is no evidence that Ms A took any steps to try to locate Ms B when she did not return, such as calling her, or one of her family members, on their mobile telephones, even though she had contact numbers available.

119. I accept Ms Vague's advice that Ms A's failure to monitor the FHR during this hour and a half period was a moderate departure from accepted standards.

Communication and further FHR monitoring — Adverse comment

120. Ms A carried out an ARM at 3.20am. This revealed the presence of thin meconium and some blood staining, which according to Ms A was indicative of a show. This is documented in the patient records.

121. I note Ms B's comment that following the ARM Ms A told the family that she thought that the liquor was clear, but said that it was too hard to tell because of the amount of blood. Ms B said that Ms A then left the room with the sheet, saying that she was going to have a better look. Ms A agrees that she did take the sheet out of the room in order to assess the liquor under better light.

122. I accept that it was Ms A's assessment that the liquor revealed the presence of thin meconium and blood. This is supported by the clinical records.

123. Ms Vague advised that thin meconium is frequently seen in post-term labours, and is not necessarily a cause for undue concern. However, Ms Vague advised that, when coupled with Ms B's slow progress, this warranted a discussion with Ms B, particularly in relation to consideration of transfer to hospital.

124. Ms Vague advised that, in the absence of any other signs of fetal distress, it was reasonable to allow a little more time for progress. However, Ms Vague stated that following the observation of meconium, more frequent surveillance of the FHR was warranted, "ideally every 15 minutes". I am concerned that the frequency of recordings was not increased after 3.20am, and that no recording of the FHR is documented between 5.00am and 5.45am.

125. Guided by Ms Vague's advice, I accept that it was reasonable for Ms A to continue to monitor Ms B's labour at the maternity unit at this time. However, I consider that discussion with Ms B about her findings and the possibility of transfer was warranted, and that the FHR should have been monitored more frequently than occurred after 3.20am.

Documentation — Adverse comment

126. According to Ms Vague, overall the standard of Ms A's documentation was good. However, I note Ms Vague's advice that there is a lack of detail in relation to Ms A's discussions with Ms B about her management and progress, both antenatally and during labour. There is also a lack of detail in relation to the quality and frequency of contractions.

127. Ms Vague's view is that these failures represent a mild departure from expected standards. Good documentation of the services provided is important to ensure quality and continuity of services. Ms A has acknowledged these deficiencies and advised that she now ensures more full and detailed documentation.

Conclusions

128. I have said previously that "patient safety begins with getting the basics right".[27] In my view, Ms A failed to carry out basic and fundamental midwifery assessments during Ms B's labour.

129. Ms A did not assess Ms B's BP adequately between 1am and 6.15am, and did not measure her pulse at any time. The BP was particularly important given Ms B's high BP upon arrival at the maternity unit.

130. Furthermore, Ms A failed to assess the FHR adequately between 1am and 2.30am when Ms B went outside with her family.

131. Ms Vague advised that these failures represent a moderate departure from accepted standards.

132. In my view, by failing to monitor Ms B's BP and pulse appropriately during labour, and failing to monitor the FHR between 1am and 2.30am, Ms A did not provide services to Ms B with reasonable care and skill, and breached Right 4(1) of the Code.

133. I am also critical of some aspects of Ms A's antenatal assessment processes and the lack of detail in some of her documentation, and also that in light of the thin meconium-stained liquor and slow progress noted at 4.35am, she did not discuss with Ms B and her family the option of transfer, or increase fetal surveillance at that time.

Recommendations

134. I recommend that the Midwifery Council of New Zealand consider whether a competency review of Ms A's practice is warranted.

135. I recommend that Ms A apologise to Ms B for her breach of the Code. The apology should be sent to HDC within three weeks of the date of this report, for forwarding to Ms B.

136. I recommend that Ms A:

- Undertake further training on maternal and fetal monitoring during labour.
- Undertake further training on communication with clients.
- Undertake further training on documentation.
- Organise for an independent audit of her clinical records, focusing on the documentation of maternal and fetal observations in accordance with the standard midwifery requirements, during both the antenatal and intrapartum periods.

Ms A should provide a report to this Office, within three months of the date of this report, confirming her compliance with the above recommendations, including confirmation of her enrolment in, or attendance at, the relevant courses or workshops.

[27] "Systems, Patients, and Recurring Themes", *NZ Doctor*, 9 March 2011.

Follow-up actions

137. • A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Midwifery Council of New Zealand, the New Zealand College of Midwives, and the DHB, and they will be advised of Ms A's name.

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

Appendix A — Independent midwifery advice to the Commissioner

The following expert advice was obtained from Stephanie Vague:

"My name is Stephanie Vague. My qualifications are Registered Midwife, 1979; Registered General and Obstetric Nurse, 1974 and Master of Health Science (Midwifery) (Hons) (Auckland University of Technology), 2004. I have worked as an employed midwife in secondary and tertiary hospitals, as a Senior Lecturer in the undergraduate midwifery programme at Auckland University of Technology (AUT) and as Lead Maternity Carer. I am currently employed as a midwife working casual shifts at Auckland Hospital.

I am a member of the New Zealand College of Midwives (NZCOM). I have been a Midwifery Standards Reviewer and am nominated as an expert midwifery advisor by NZCOM. I also work for the New Zealand Midwifery Council as a competence assessor and reviewer from time to time.

I have been asked to provide an opinion to you on case number C12HDC00999. I have read and agree to follow the Commissioner's Guidelines for Independent Advisors.

I have been asked to comment on a number of issues as listed below:

i. In reference to the NICE clinical guideline 62: Antenatal care (2010), were [Ms A's] practices with respect to undertaking urinalysis and determining (and acting upon) client BMI measurement consistent with expected practice?
ii. Any other antenatal care issues raised in the complaint, and whether these have been adequately addressed in [Ms A's] response.
iii. The overall standard of [Ms B's] antenatal care including clinical documentation and frequency of assessments. Should [Ms A] have assessed [Ms B] prior to the assessment by [Dr C] given the ten day gap between her previous assessment and the appointment with [Dr C]?
iv. The standard of intrapartum maternal monitoring.
v. The standard of intrapartum fetal monitoring. Was it reasonable to delay fetal assessment for 90 minutes between 0100hrs and 0230hrs? Should there have been more frequent assessment following observation of meconium and blood-stained liquor on ARM at 0320hrs? Was EFM commenced in a timely and appropriate manner following observation of fetal bradycardia at 0530hrs, with no documentation to suggest the fetal heart had recovered at this time?
vi. Were the vaginal examinations documented in a manner consistent with expected standards (absence of reference to fetal station or position)?
vii. Was there any indication for immediate specialist consultation to be undertaken at any of the following points: 0320hrs when blood and meconium stained liquor was noted; 0410hrs when thin meconium liquor was noted, 0435hrs when an anterior cervical rim was persisting (relatively unchanged since 0320hrs); 0530hrs when (presumably

persisting) fetal bradycardia was noted; 0530hrs when an anterior cervical rim was persisting (relatively unchanged since 0320hrs).

viii. Any additional comments on the documented management of [Ms B] by [Ms A] at 0530hrs when fetal bradycardia was noted.

ix. The management of [Ms B] by [Ms A] from 0555hrs when CTG was undertaken and noted to be abnormal.

x. Any other comments on [Ms A's] care which I think are relevant and note, if any deficiencies have been identified in the care provided by [Ms A] or related to the systems she uses, whether these deficiencies are mild, moderate or severe departures from expected standards. If deficiencies have been identified, please advise appropriate remedial measures.

Sources of Information

- [Ms B's] original complaint
- [Ms B's] clinical notes from [Dr C]
- [Ms B's] clinical notes from [the DHB]
- [Ms A's] responses to [Ms B's] complaint.

Summary of Events

[Ms B], aged 23, booked with [Ms A] at 25 weeks' gestation in her first pregnancy. She had no medical history of note, although a family history of hypertension, diabetes, tuberculosis and asthma were noted. Her height and weight at booking were documented but no Body Mass Index (BMI) was calculated. She smoked over 10 cigarettes per day.

The pregnancy was uneventful, save for mild iron deficiency anaemia treated with iron supplements. [Ms B's] Glucose Tolerance Test was normal and she had gained 5kgs between booking and 38 weeks.

[At 39 weeks and 3 days], [Ms A] saw [Ms B]. The assessments were all normal and she referred [Ms B] for an appointment with an obstetrician, [Dr C], the following week for a 'post dates' assessment. [Ms A] states in her response that she made this appointment by telephone and left a written referral for faxing by the staff at [the medical centre]. It seems that the referral wasn't forwarded.

In the clinical notes I have reviewed there is no copy of this referral. There is a copy of an Obstetric Consultant Secondary Referral Form dated [40+3 weeks' gestation] by [Ms A] requesting a post dates assessment. [Ms B] was 40 weeks and 3 days by now. She asked if [Dr C] could offer [Ms B] a stretch and sweep — a vaginal examination when the cervix is manipulated in an effort to stimulate labour. [Ms A] stated that [Ms B] was very keen to birth at [the maternity unit].

[Ms B] was contacted about the appointment and seen 10 days after her last antenatal visit with the midwife. She had no clinical notes with her and, without a referral form, [Dr C] was unsure of the reason for the visit. He performed an ultrasound to do a biophysical profile on the baby which scored 8/8,

demonstrating that the baby's condition, and the amount of liquor surrounding her, appeared normal. [Dr C] noted that he would see [Ms B] in a week's time and then book an induction of labour a day or two later. There is no evidence that any observations such as blood pressure were done at this visit, which was very brief according to [Ms B].

[Ms B] had mild contractions throughout this day and, just before midnight, informed [Ms A] that she felt ready to go to the maternity unit. The staff midwife was apparently not expecting anyone and took a while to answer the door. She ticked a box marked 'self referred' on the acute assessment form in which she recorded her initial findings, so I assume [Ms A] had not phoned to advise the staff at the maternity unit of the impending arrival.

The record stated that the baby was lying with her head well down in the pelvis and the heart rate was normal and listened to for a full minute with a handheld Doppler. [Ms B's] temperature and pulse were normal, but her blood pressure was elevated at 135/95 and the midwife commented that this would need monitoring through labour.

The blood pressure reading was done at 00.25hrs and [Ms A's] clinical notes begin at 01.00hrs, so it appears that [Ms B] is mistaken in her recollection of her midwife's arrival being 75 minutes later. [Ms A's] notes also record that she rechecked the blood pressure — 130/90. A vaginal examination showed that [Ms B's] labour was quite advanced, at 8cms dilated and her membranes were left intact. The baby's heart rate was recorded as 120–130bpm.

For over an hour, [Ms B] was outside the unit to have a cigarette. When she returned, she was contracting strongly, every 3 minutes and coping well. Baby's heart rate was in the normal range.

0320hrs. Another vaginal examination was done. An anterior rim of cervix was felt (9cms), the baby's head had descended a little further into the pelvis and was in the same transverse position (ie looking towards her mother's right side). The membranes were ruptured and thin meconium stained liquor seen. Baby's heart rate was 120bpm.

Shortly after this, [Ms B] began to feel like pushing with contractions. The baby's heart rate was recorded every 20–30 minutes till 0410hrs and thin meconium and pinky liquor was observed.

0435hrs. Pushing with some contractions now. Vaginal examination showed 'thin band of cervix remaining'. Used strategies to avoid pushing despite urge to do so at times.

0500hrs. Baby's heart rate 115–125bpm.

0530hrs. Had vomited twice. Pushing with contractions. Vaginal examination, no change in cervix. Contractions slowing.

0545hrs. Intravenous fluids started. Baby's heart rate 100bpm.

0555hrs. Cardiotocograph (CTG) commenced to monitor baby's heart rate and its response to contractions. Baby's heart rate 100bpm with reduced variability. The normal range is 110–160bpm and reduced variability can be a sign of fetal distress, particularly in the presence of meconium stained liquor. On call obstetrician and charge midwife at [the hospital] informed of impending transfer and urgent request for ambulance made. Difficult to obtain clear trace of baby's heart rate on machine due to loss of contact — noted as 90–100bpm.

0615hrs. Entry in documentation by staff midwife who listened to baby for 1 minute with handheld Doppler due to difficulty with CTG trace. Rate 125bpm. BP 130/90. Temperature 35.6.

0625hrs. Ambulance en route to [hospital]. Baby's heart rate 100bpm.

0645hrs. At [the hospital]. Registrar found [Ms B] fully dilated with the head further down in pelvis at the level of the ischial spines.

0650hrs. Now an anterior rim of cervix felt and fetal scalp electrode applied — rate 50bpm.

0655hrs. Obstetrician present and scanning baby's heart beat — 50bpm. Immediate decision for urgent Caesarean section under general anaesthetic.

0705hrs. Operation commenced

0710hrs. Baby born. Thick meconium noted and no sign of life. Resuscitation unsuccessful.

Response to Advice Requested

i. *In reference to the NICE clinical guideline 62: Antenatal care (2010), were [Ms A's] practices with respect to undertaking urinalysis and determining (and acting upon) client BMI measurement consistent with expected practice?*

The British NICE guidelines are regarded by many in the midwifery profession as a useful and robust set of evidence based guidelines to help inform best practice. Generally, NZCOM Consensus Statements, Ministry of Health guidelines or recommendations from PMMRC reports would echo their advice. There may, however, be instances when the New Zealand context, or a midwife's clinical judgment, mean that it is reasonable to practise in a way that differs from the guidelines.

That said, I believe that routine urinalysis at each antenatal visit is an established part of a midwife's assessment for the presence of protein or glucose. Proteinuria is not a normal finding, save a dipstick reading of a 'trace' of protein. The dipstick

testing is a blunt instrument in quantifying accurately the amount of protein present, but at least alerts the midwife to its existence. This allows for further decision making as to a possible cause and the chance to order more specific tests.

It would be generally agreed that the presence of glucose is not useful as a screening method for diabetes and may be present simply due to the physiological changes in the renal system during pregnancy. However, the dipsticks in common use usually measure both glucose and protein, so it would be accepted practice for both substances to be tested for, and documented.

I note that [Ms A] has acknowledged in her response that this practice would be considered customary practice and that she intends to change her practice accordingly.

Section 88 of the Public Health and Disability Act 2000 requires LMCs to record a woman's height and weight at booking (Ministry of Health, 2007). I believe most midwives calculate the BMI from this information in order to provide women with appropriate advice. There is evidence that a high BMI correlates with an increased risk of hypertension, diabetes, preterm birth and stillbirth (Stacey, 2011). Furthermore, the calculation of BMI and use of Customised Growth Charts is becoming part of many midwives' practices in an effort to identify babies whose growth is outside normal parameters earlier in pregnancy. When the growth chart is being generated, the BMI is automatically calculated by the computer programme.

The Referral Guidelines under Section 88 define obesity as BMI >35 and recommend an obstetric consultation (Ministry of Health, 2012). I can find no evidence that a consultation was recommended by [Ms A]. I am, however, aware that there is a higher tolerance of raised BMI in pregnancy in the DHB district. It may be that there is a tendency to normalise a BMI of 36 to 37, for instance, because it lies close to the cut-off classification of normal BMI range. I attribute this attitude to the fact that a significant proportion of this district's birthing population do not meet the classification of normal BMI and this has tremendous implications for the provision of services for women who would require an obstetric consultation. [A report on a review of maternity care in the DHB district] states that between 2007 and 2009, only 35% of [the women who delivered at one of the DHB's facilities] had a normal BMI. 38% were obese, and of those, 69% were Maori women.

It is recommended that pregnant women should be given an indication of an ideal weight gain in pregnancy and this is particularly important in obese or morbidly obese women (PPMRC, 2013). I note that [Ms B] gained just 4kgs between booking at 25 weeks and her last recorded weight at 38 weeks. This is in line with a maximum recommended weight gain of 5kgs in a woman with a BMI >35 (Tse & Dixon, 2013).

ii. Any other antenatal care issues raised in the complaint, and whether these have been adequately addressed in [Ms A's] response.

Many of the issues specifically raised by [Ms B] have been adequately answered in [Ms A's] response, so I will comment on those which require more explanation in my view.

[Ms B] raised a concern about the process of informed consent involved in the choice of a place to birth. It is clear from the written information, a copy of which was included with [Ms A's] response, that the midwives in her practice group do not deliver women at [the hospital]. I believe it was incumbent on [Ms B] to find another midwife if she wished to birth at the hospital and that [Ms A] has made the scope of her practice, in this regard, very clear from the outset.

When [Ms B] attended the appointment with [Dr C], the referral form from [Ms A] had not arrived and he was therefore unaware of the reason for the consultation. [Ms B] stated that she had no documentation with her and I assume therefore that she did not carry her own notes. Section 88 states 'at the start of the second trimester or at the time of registration … [the LMC must] … arrange for the woman to hold a copy of her care plan and her clinical notes' (Ministry of Health, p.1065, 2007). NZCOM's Booking Guideline also states 'women hold their notes throughout the pregnancy and they are maintained by the midwife to provide a contemporaneous record of the maternity care'. Also, 'these notes … contain all of the information (including test results, clinical assessments, information offered, decisions made, and care plan) required to inform the woman's care' (p.2, 2008). If [Ms B] had had hand held notes to take to the appointment, even in the absence of the written referral, the pertinent information would have been available to [Dr C].

iii. The overall standard of [Ms B's] antenatal care including clinical documentation and frequency of assessments. Should [Ms A] have assessed [Ms B] prior to the assessment by [Dr C] given the ten day gap between her previous assessment and the appointment with [Dr C]?

I believe the antenatal care provided to [Ms B] was of a reasonable standard. She was seen at appropriate intervals until her last visit at 39 weeks and 3 days. Aside from the urinalysis not being done, and the BMI not being calculated, the care appears to be adequate. However, I believe that ten days is too long a gap between assessments at the end of pregnancy, particularly in a woman with risk factors such as a high BMI and smoking more than 10 cigarettes a day. I believe [Ms A] should have made arrangements with [Ms B] to ensure she was told when the doctor's appointment would be, in order to book any further antenatal appointments accordingly. The copy of the referral form in the notes is dated by [Ms A] [at 40+3 weeks' gestation], which is exactly one week after the last antenatal visit for [Ms B]. It is not clear to me why this referral couldn't have been written after an antenatal assessment at [39 weeks and 3 days].

The clinical documentation is adequate in recording the assessments made during [Ms B's] pregnancy and the care plan depicts some of the areas covered by discussion and/or written information. However, the layout of the antenatal page,

allowing one line per visit, does not lend itself to a fuller account of discussions which might take place, or decision making during the pregnancy.

iv. The standard of intrapartum maternal monitoring.

I believe the standard of intrapartum monitoring of [Ms B] fell below an acceptable level. Generally temperature and blood pressure would be recorded four hourly in a straight forward labour situation. However, [Ms B's] blood pressure was elevated on her admission to the maternity unit at 135/95 and this required regular monitoring throughout the rest of labour as a result, in my opinion. The blood pressure was rechecked on [Ms A's] arrival and had settled a little to 130/90. It was not rechecked for over 5 hours, and then it was by the staff midwife who was present to help with the deteriorating situation. I believe the blood pressure should have been checked at least hourly during the labour.

The pulse was not documented as being counted at all throughout the labour. I believe it is accepted practice that a pulse would be measured 1–2 hourly during labour. It is quick and unobtrusive to count and provides useful information on a woman's wellbeing.

It is difficult from the notes to know how much [Ms B's] oral intake was during labour or how often she passed urine. The frequency of the contractions were not commented on very often and there is little documented evidence of the discussions and decision making which occurred over these hours.

v. The standard of intrapartum fetal monitoring. Was it reasonable to delay fetal assessment for 90 minutes between 0100hrs and 0230hrs? Should there have been more frequent assessment following observation of meconium and blood-stained liquor on ARM at 0320hrs? Was EFM commenced in a timely and appropriate manner following observation of fetal bradycardia at 0530hrs, with no documentation to suggest the fetal heart had recovered at this time?

The standard of fetal monitoring in labour also fell below an acceptable level in my opinion. I find it incomprehensible that a woman in advanced labour would be left unassessed for such an extended period of time. At the very least, if [Ms B] was insistent on having a cigarette, she should have been advised to return as soon as possible for a check of the baby. [Ms B] mentioned feeling claustrophobic in the room shortly after admission, so efforts could have been made to encourage her to take short walks outside or within the facility if necessary.

As a general rule, most midwives would auscultate the baby's heart at least every 30 minutes during the first stage of labour. [Ms A] has documented the heart rate approximately every 30 minutes from 0230hrs till 0500hrs. There was a delay of 45 minutes until the rate was heard at 100bpm. This follows the insertion of an intravenous cannula at 0545 and a CTG was commenced within 10 minutes. There is no record of the CTG in the clinical notes to determine the exact time it was commenced, but there does not appear to have been undue delay from my review of the documentation.

With the appearance of thin meconium stained liquor on ARM at 0320hrs, [Ms A] may have taken into account that the baby was 41 weeks' gestation and that the presence of thin meconium is frequently seen in post term labours and not necessarily a cause for undue concern. [The DHB's] guideline for birthing at a primary unit states that in the presence of light meconium stained liquor, with no fetal distress, a primary unit is suitable as a place of birth ([the DHB], 2011). However, this particular situation was more of a cause for concern, I believe. The progress had been slow since admission and the addition of meconium stained liquor should have resulted in a discussion of the findings with [Ms B] and whanau regarding options for the place of birth. There is no documentation to suggest that this occurred.

It would be considered reasonable practice to increase the surveillance following the discovery of meconium stained liquor. This could involve listening to the fetal heart more frequently, ideally every 15 minutes. If there were no indications of fetal heart rate abnormalities, this degree of monitoring would be sufficient. If a CTG was available, a midwife might choose to offer this method of monitoring the baby's welfare. Some women who are active in labour might prefer not to have the constraints of belts around their abdomen and a limit on their ability to walk around.

When [Ms A] recorded the FHR at 5.30am, noting that it was 100bpm, there is no record of the maternal pulse at this time. Please advise what is the accepted standard in relation to monitoring the maternal pulse when a low FHR is detected. What should have occurred at this time?

The NZ College of Midwives' consensus statement on 'Fetal monitoring in labour' recommends that 'prior to any form of fetal monitoring, the maternal pulse should be palpated simultaneously with FHR auscultation in order to differentiate between maternal and fetal heart rates' (NZCOM, 2005).

I believe that most midwives would have checked the maternal pulse when a low fetal heart rate was detected. It is common practice to document the maternal pulse rate on the beginning of a CTG recording.

If there was a clear discrepancy between the mother and baby's heart rates, the midwife is reassured that the fetal heart rate is being monitored accurately. On the other hand, if the two rates are very similar or identical, this serves to alert the midwife to the need to search further for the baby's heart rate or possibly to attach an electrode directly to the baby's scalp in order to be more certain of the actual fetal heart rate.

vi. Were the vaginal examinations documented in a manner consistent with expected standards (absence of reference to fetal station or position)?

There is a copy of a partogram in the clinical notes. The front side, on which recordings of blood pressure, baby's heart rate and contraction frequency are usually plotted, contains only the graph of the vaginal findings plus the detail of the birth. This appears to have been filled in by a staff midwife at [the hospital]

after transfer. The reverse side of the partogram usually records the vaginal examinations in detail. The first 2 vaginal examinations, at 0100hrs and 0320hrs have been documented and signed by [Ms A], so I assume these were completed during the labour. It appears that she did not use the other side of the form to record vital signs.

The documentation of the vaginal examinations mentioned were fully and correctly filled in. The last 2 vaginal examinations prior to transfer were only briefly documented in the clinical notes. Whilst it would be considered best practice to fill in all vaginal examinations on the partogram, I don't believe this is a significant departure from acceptable practice given that there was essentially no change from previous examinations.

vii. Was there any indication for immediate specialist consultation to be undertaken at any of the following points: 0320hrs when blood and meconium stained liquor was noted; 0410hrs when thin meconium liquor was noted, 0435hrs when an anterior cervical rim was persisting (relatively unchanged since 0320hrs); 0530hrs when (presumably persisting) fetal bradycardia was noted; 0530hrs when an anterior cervical rim was persisting (relatively unchanged since 0320hrs).

As previously discussed, I think the discovery of meconium stained liquor at 0320hrs, with a show, could have been an indication for immediate consultation with a specialist. This was on account of the whole context of the progress of labour, rather than just the detection of meconium, though. However, I believe it was reasonable to allow a little more time for progress in the absence of any other sign of fetal distress.

I don't think that when more of the same coloured liquor was commented on, probably at a change of pad at 0410hrs, there was any need to change that plan.

At 0435hrs, it had been 3.5 hours since admission at 8cms and 1.25 hours with the cervix unchanged. This represented slow progress and could have been a point at which an immediate consultation was sought. The MOH referral guidelines (2012) require consultation when 'progress is <2cm in 4 hours for nullipara and primipara'. They also state that practitioners should take into consideration descent and rotation of the fetal head and changes in strength, duration and frequency of contractions. The detail, within the clinical notes, of the VE findings did not indicate the degree of descent of the baby's head from one examination to the next. Neither did the documentation comment on the position of head or the nature of the contractions. This makes it difficult to gain an overall impression of the labour's progress.

It is possible that the contractions were not of sufficient strength and/or frequency to effectively dilate the cervix. The slow progress could have also been related to the baby's head being in a suboptimal position. Although the 4 hour time frame mentioned in the referral guidelines had not been exceeded, I believe other factors could have been considered in the decision making. The presence of the meconium stained liquor in addition to [Ms B's] raised BMI and smoking history

were additional risk factors associated with this labour and the planned birth in a primary unit.

In my opinion, a discussion of the findings with [Ms B] and whanau regarding options for the place of birth should have occurred at this point.

By 0530hrs, there was still no change in the cervix. There was comment that the contractions were slowing and the time frame now demanded an obstetric consultation. Within 10 minutes, the consultation had occurred and an urgent transfer was being organised.

viii. Any additional comments on the documented management of [Ms B] by [Ms A] at 0530hrs when fetal bradycardia was noted.

I believe the bradycardia was detected following the siting of the luer at 0545hrs. Intravenous fluids had just commenced, presumably with dehydration in mind. I would expect that they would have been running in quite quickly to replace fluid and this is also a measure which might be employed in a situation where the baby appears compromised. It is clear that many things were happening at once with a CTG to be started, the hospital personnel to communicate with, the ambulance to summon and [Ms B] and her whanau to explain the situation to. I think it is reasonable to expect documentation to be brief under the circumstances. I note that [Ms A] does not appear to have written a fuller account of the latter stages of her care in retrospect.

ix. The management of [Ms B] by [Ms A] from 0555hrs when CTG was undertaken and noted to be abnormal.

I believe the management of [Ms B] from the time that the CTG was commenced, was reasonable. [Ms A] took the appropriate steps to assess the situation, consult with the on call obstetrician and arrange for an urgent transfer to [hospital].

x. Any other comments on [Ms B's] care which I think are relevant and note, if any deficiencies have been identified in the care provided by [Ms A] or related to the systems she uses, whether these deficiencies are mild, moderate or severe departures from expected standards. If deficiencies have been identified, please advise appropriate remedial measures.

I believe that [Ms A's] initial assessment of [Ms B's] risk factors with regard to birthing at a primary unit could be questioned. She acknowledges that her visual assessment of [Ms B] was that she was obese. Her BMI, if it had been calculated, would have confirmed this observation. As previously discussed, a raised BMI is a significant risk factor for pregnancy complications such as pre-eclampsia and gestational diabetes. A raised BMI also highlights the need for early discussion about healthy eating, optimal weight gain and the place of birth. In addition, [Ms B's] ethnicity and smoking history were further risk factors.

A recent report points out that the population of pregnant women in [the DHB] area, and Maori and Pacific women in particular, 'carry a higher burden' of the

main risk factors associated with perinatal mortality than other New Zealand women (Paterson et al, 2012). The analysis found that it was the increased odds of exposure to risk factors such as smoking and obesity that account for their higher representation in the statistics. However, I note that the guideline regarding suitability to birth in a primary unit in [the DHB], lists a BMI >35 if the baby is well grown and IV access is possible as meeting the criteria ([the DHB], 2011). I have canvassed opinion from both an employed and a self-employed midwife in [a DHB] primary unit and they confirm that a woman with a BMI of 37 who smoked would not be regarded as unsuitable for birthing in such a facility. This additional information adds to my understanding of [Ms A's] context for decision making with women and their whanau.

[Ms B] could have been offered a Glucose Tolerance Test (GTT) at her first antenatal appointment in view of her risk factors for diabetes — obesity, ethnicity, family history of diabetes. Early GTT is recommended at 24–28 weeks if there are risk factors. In the event, [Ms B's] glucose tolerance was normal, but a possible diagnosis of gestational diabetes or unrecognized Type II diabetes is best obtained as early as possible for optimal management.

Incidentally, I note that on the information sheet provided to women by [Ms A], in a list of events which need to be reported promptly to a midwife, is 'less than 10 movements within 12 hours'. This is out of date information now regarding decreased fetal movements. The advice given to a woman asks her to report any change in her baby's normal level of activity or change in the quality of movements that is concerning to her, particularly a reduction in their activity. I suggest that a change in wording would better reflect current evidence-based advice for women in such circumstances. The current cycle of Technical Skills Days, which all midwives are required to attend in a three year period as part of their recertification requirements, has focused on assessment of fetal wellbeing in pregnancy. There is evidence to support the calculation of a BMI at booking, the use of a Customised Growth Chart for all women, and changed advice regarding fetal movement monitoring for women in the College's consensus statement on the assessment of fetal wellbeing (NZCOM, 2012).

Conclusion

Antenatal processes

I believe that routine urinalysis in pregnancy is an expected part of midwifery practice and I note that [Ms A] has already acknowledged this and intends to incorporate it into her practice. The routine calculation of BMI is also part of appropriate antenatal care, not only to prompt a discussion about diet, exercise and optimal weight gain, but to inform the risk assessment which should be part of the booking visit.

The suitability of birthing at a primary birthing unit for a woman with several identified risk factors needs to be seen in the context of [the DHB's] complex population and the DHB's guidelines for practitioners.

The issue of ensuring that women hold their own notes is a contractual requirement as an LMC and I would suggest that [Ms A] initiate discussions with her midwifery practice partners, who may use similar notes, to make sure that she complies with her obligations.

It is important that advice for women is up to date. The change in advice regarding fetal movements has been 'out there' for several years now and disseminated through NZCOM journals and consensus statements. The subject has formed part of the content taught to all midwives nationally through the Technical Skills study days during the present cycle which finishes in March 2014. There have been study days about fetal assessment in pregnancy conducted in hospitals in the region and NZ Action on Pre-eclampsia (APEC) runs several days a year throughout the country, in addition to their quarterly newsletter, which concentrate on practice issues pertinent to this topic. [Ms A] may be still to attend her compulsory education on this topic through the Technical Skills days. If she has completed them, I would suggest she seek out another forum which addresses this topic to update her knowledge.

In my view, all of the areas discussed above represent a mild departure from the expected standard of midwifery care.

Documentation
Generally, the standard of [Ms A's] documentation is good. The writing is legible with the entries dated and signed appropriately. The pertinent information regarding assessments antenatally has been recorded, but the content of discussions and more detail about advice and/or information given is lacking. In labour, detail about the quality and frequency of contractions was sporadic. Discussions regarding progress and an ongoing plan of care are not captured. [Ms B] does not feature as a presence very often. This information is useful to someone reviewing clinical notes because it helps them to appreciate the thought processes of those involved and the dynamics involved. [Ms A] may benefit from attending a documentation study day run by the College of Midwives, 'Dotting the Is and Crossing the Ts'.

In my view, the standard of [Ms A's] documentation represents a mild departure from the expected standard of midwifery care.

Labour Care
There were three areas of labour care about which I have concern — monitoring of the baby, monitoring of [Ms B] and decision making regarding progress.

The lack of monitoring of the baby for the hour and a half that [Ms B] was outside the maternity unit is unacceptable practice, in my opinion. [Ms B] was in advanced labour, at 41 weeks' gestation, and [Ms A] made no attempt to listen to the baby during this time. I believe that this practice represents a moderate departure from the expected standard of midwifery care.

[Ms B] presented in labour with an elevated blood pressure. It was rechecked by [Ms A] on her arrival and it had decreased a little, but was still elevated. The blood pressure was not checked again for over 5 hours and this was done by a staff midwife just before transfer to [hospital]. [Ms B's] pulse was never recorded during her entire labour at [the maternity unit]. The lack of appropriate monitoring of [Ms B's] blood pressure and pulse represents a moderate departure from the expected standard of midwifery care.

I have concerns about [Ms A's] management following her vaginal examination at 0435hrs. Progress had been slow for some hours, and the presence of meconium stained liquor plus other risk factors, in a primary setting, should have been considered. Either the contractions were not of sufficient strength to dilate the cervix or the baby's head was in an unsuitable position for further progress. In my opinion, a discussion of the findings with [Ms B] and whanau regarding options for the place of birth should have occurred at this point.

[Ms A] will no doubt have reflected on this tragic outcome and may benefit from presenting her learning from this incident and possible professional development she has identified as a result, at a special Midwifery Standards Review.

[Ms A's] management of this labour represents a moderate departure from the expected standard of midwifery care, in my opinion.

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