Waikato District Health Board

Registered Midwife, RM B

A Report by the

Health and Disability Commissioner

(Case 17HDC01030)

Health and Disability Commissioner

Te Toihau Hauora, Hauātanga

Contents

Executive summary

1. In 2016, when Mrs A was at 29 weeks' gestation, she experienced premature rupture of membranes and was admitted to the Women's Assessment Unit at a public hospital. Regular fetal monitoring was undertaken, and Mrs A's and her baby's condition remained stable.

2. On Day 4,[1] Mrs A was transferred to the antenatal ward. While cardiotocograph (CTG) monitoring was reassuring, Mrs A had rising inflammatory markers and ongoing liquor discharge. On the morning of Day 6, Mrs A's liquor was noted to have changed in colour from pink and slightly blood-stained to "yellowish".

3. The evening shift began at 3pm. Registered Midwife (RM) B was working alongside RM C and a student midwife on the antenatal ward. RM B was in the Midwifery First Year of Practice Programme and had worked only four shifts on the antenatal ward. Mrs A was allocated as her patient. A registrar was allocated to the ward, a consultant was on site, and a further consultant was on call. The ward acuity was high, with nine high-risk patients, and it was a very busy shift.

4. At 5pm Mrs A was seen by the registrar, who signed off the CTG trace and documented: "Patient aware if any concerns re [fetal movements]/abdo pain/discharge, to alert staff. For Reg[istrar] review if any concerns."

5. At 6.30pm, RM B documented, "query lightly meconium stained", in relation to Mrs A's liquor. RM B did not advise RM C or the registrar of this finding. At 8.54pm, the student midwife commenced a further CTG but was unable to obtain a good trace. RM B reviewed the trace multiple times over the following hour and noted that a clear trace could not be obtained. While it is not documented, RM B acknowledged that Mrs A reported reduced fetal movements to her. RM B stopped the CTG at 10.15pm.

6. RM B consulted RM C about her concerns about the CTG at around 10.20pm. RM B and RM C have different accounts of what information and advice was exchanged between them, particularly regarding escalating the CTG to the obstetric team.

7. RM B showed the CTG to a night staff midwife, RM G, at 11pm. RM G was very concerned by the trace and attended Mrs A's room to reattach the CTG. RM G was unable to obtain a trace, and could detect only a fleeting heartbeat. She pushed the emergency call bell, and Mrs A was taken to theatre for an emergency Caesarean section.

8. Baby A was born at 12.06am in very poor condition. Baby A suffered from stage 3 hypoxic ischaemic encephalopathy and continues to require a high level of care at home.

Findings

9. It was found that Waikato DHB did not have in place adequate systems to ensure that staff were supervised and supported in their decision-making, and that its culture supported

[1] Relevant dates are referred to as Days 1–7 to protect privacy.

staff to report concerns and ask for assistance. The care provided was considered to be seriously suboptimal and, accordingly, the Commissioner found that Waikato DHB breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[2]

10. The Commissioner was very concerned that RM B failed to recognise the deteriorating situation adequately, and failed to escalate this in a timely manner, and was critical that RM C did not recognise that the CTG was significantly abnormal.

11. The Commissioner acknowledged that since 2016 Waikato DHB has made a significant number of changes to its Women's Health Service. He commented that the changes are appropriate and necessary, and show a strong commitment by Waikato DHB to improve the quality of its service.

Recommendations

12. The Commissioner recommended that Waikato DHB (a) provide details of how it is ensuring that midwives in their first year of practice have unimpeded access to senior support; (b) develop a protocol for how staff should access obstetric care when rostered staff are unavailable; (c) facilitate interviews with remaining midwifery staff who were working at the DHB in 2016 to determine whether the changes made have improved the level of support they now experience; and (d) review adverse events involving a midwife in the first year of practice, to assess whether inadequate staffing or supervision was a contributing factor.

13. The Commissioner recommended that Waikato DHB and RM B provide written apologies to Mrs A. He also recommended that the Midwifery Council of New Zealand undertake a competency review of RM B's practice, and of RM C's practice should she apply for a practising certificate.

Complaint and investigation

Complaint

14. The Health and Disability Commissioner (HDC) received a complaint from Mr and Mrs A about the services provided to Mrs A by RM B and Waikato District Health Board (Waikato DHB) during the birth of their daughter, Baby A.

15. Mr and Mrs A also raised concerns regarding the care provided to Baby A following her birth, while she was still in NICU.[3] However, these issues have been addressed separately from this investigation.

[2] Right 4(1) of the Code states that every consumer has the right to have services provided with reasonable care and skill.
[3] Newborn Intensive Care Unit.

Scope of investigation

16. The following issues were identified for investigation:

- *Whether RM B provided Mrs A with an appropriate standard of care in 2016.*
- *Whether Waikato DHB provided Mrs A with an appropriate standard of care in 2016.*

Information considered

17. The parties directly involved in the investigation were:

Mrs A	Patient
RM B	Provider/registered midwife
Waikato DHB	Provider/District Health Board

18. Information was also considered from:

RM C	Registered midwife
Dr D	Consultant obstetrician
Dr E	Registrar
Accident Compensation Corporation (ACC)	

19. Also mentioned in this report:

Dr F	Registrar
RM G	Midwife
Ms H	Student midwife
Dr I	Obstetrician

20. In-house expert advice was obtained from RM Nicky Emerson (Appendix A). Independent expert advice was also obtained from obstetrician Dr Ian Page (Appendix B).

Information gathered during investigation

Introduction

21. This report concerns the in-patient hospital care provided to Mrs A by Waikato DHB following admission for a premature rupture of membranes at 29 weeks' gestation.

22. Mrs A's complaint primarily concerns the care she received while on the antenatal ward (the ward). Mrs A stated that the care was inconsistent, and staff did not listen and respond to her concerns, particularly relating to reduced fetal movements. She said that the response to concerns about the CTG trace was inadequate, and resulted in Baby A being born in a very poor condition.

Background

23. In 2016, Mrs A (30 years old) was pregnant with her first child.

24. Mrs A's antenatal care was managed under a Lead Maternity Carer (LMC) midwife in the community. Initially, her pregnancy was uneventful.

Antepartum haemorrhage

25. At 28 weeks' gestation, Mrs A experienced a small antepartum haemorrhage[4] and was admitted to the Women's Assessment Unit (WAU) at Waikato DHB for assessment.

26. Mrs A remained on the WAU for two days. She was then discharged back to the care of her LMC, as her bleeding had settled.

Premature rupture of membranes

27. At 29 weeks' gestation, Mrs A experienced a premature rupture of membranes (PROM) and was admitted to WAU.

28. Mrs A was assessed by the obstetric team and spontaneous rupture of membranes confirmed. On examination, she was noted to be draining clear liquor ++, and her cervix was 2cm, posterior and os[5] closed, indicating that she was not in labour. An ultrasound scan showed that the baby was in a transverse lie. The cord was visualised and was not presenting. There was a low liquor volume. Routine bloods and a vaginal swab were taken to check for infection. These were normal. A cardiotocograph (CTG)[6] was normal with good fetal movements. In a statement to HDC, the on-call obstetric consultant, Dr D, said that the primary concerns relating to Mrs A's presentation at that time included, but were not limited to, cord prolapse,[7] chorioamnionitis,[8] and placental abruption.[9] Dr D said that these risks, and the need for a Caesarean section in the event that Mrs A went into labour, were discussed with Mr and Mrs A.

29. A plan was made for Mrs A to remain on WAU overnight and to commence oral antibiotics. She was to have twice daily CTGs, to notify staff if she experienced any uterine tightenings, and to be reviewed further by the neonatal team in the morning.

Day 2–Day 3

30. Mrs A remained on WAU over the next few days. She was seen regularly and close fetal monitoring was undertaken. Her temperature and liquor were also monitored, antibiotics were continued, and her situation was discussed further with the neonatal team. Mrs A

[4] Antepartum haemorrhage (APH) is defined as bleeding from or into the genital tract, occurring after 24 weeks' gestation.
[5] The opening of the cervix.
[6] Cardiotocography (CTG) monitoring is the combined monitoring of the baby's heartbeat in utero and the mother's uterine contractions, if any. This allows for an interpretation of the fetal heart rate either alone or in relation to the contractions, and may be used to assist with the identification of fetal well-being and/or distress.
[7] When the umbilical cord comes out of the uterus before the presenting part.
[8] Inflammation of the fetal membranes due to bacterial infection.
[9] When the placenta separates from the uterus before delivery.

was also advised to limit her mobility in order to reduce liquor loss. Both the fetus and Mrs A remained stable. Dr D stated:

> "For several days before the delivery, the patient and fetus were stable based on her composite picture, including evaluation for fundal tenderness, fetal and/or maternal tachycardia, CTG appropriateness for her gestational age (GA), malodorous vaginal discharge, significant WBC [white blood cell] elevation (considering the WBC can be elevated in pregnancy and labor regardless), and other signs of maternal compromise or sepsis."

Day 4–Day 5 — transfer to the ward

31. On Day 4, Mrs A was transferred to the antenatal ward at 3.30pm.

32. Later that day, Mrs A's CRP was noted to have increased from 26 (on Day 3) to 62.7.[10] Mrs A was seen by the obstetric registrar, who advised to continue antibiotics, take a complete blood count (CBC)[11] and CRP daily, take four-hourly observations and twice daily CTGs, and to inform the registrar if Mrs A's pulse increased to over 110bpm or her temperature increased to above 38°C, or if the liquor colour changed and Mrs A experienced any pain. A growth scan was also requested for the following week, with a customised growth chart to be started.

33. Over the next day, Mrs A continued to experience intermittent cramping and to drain liquor. Her vital signs were normal, and the baby remained active. Twice daily CTGs continued to be reassuring.

34. In her complaint, Mrs A said that although she had been told to limit her mobility while on WAU, once she had been transferred to the ward, she was expected to take her sanitary pads to the sluice room at the other end of the ward every time she went to the toilet. She stated: "Every trip resulted in a large amount of fluid discharge which I kept the staff informed about."

35. In a statement to HDC, Waikato DHB said that the change in the level of monitoring and advice regarding Mrs A's mobility were made according to changes in her clinical picture. Waikato DHB noted, however, that the changes did not appear to have been clearly communicated to Mrs A. Waikato DHB stated:

> "Overall, although the de-escalation in monitoring and recommendations appeared clinically reasonable, as the clinical situation was changing and improving, it seems the obstetric team on call and in the ward may not have explained the plans and rationale behind this to [Mrs A] clearly."

[10] CRP is an inflammatory marker that indicates infection.
[11] A measure of the different cells in the blood, which may also indicate infection.

36. On the afternoon of Day 5, Mrs A experienced a slight increase in vaginal loss, which settled. Her bloods showed a further increase in CRP to 84.8, and her WBC[12] increased to 15.6. The Senior House Officer (SHO) was informed.

37. At 6.40pm, the registrar reviewed Mrs A and requested that she remain nil by mouth following her dinner in preparation for a Caesarean section, owing to the rising levels of inflammatory markers. The plan was for four-hourly monitoring, a CTG to be performed prior to Mrs A going to sleep, another one to be taken during the night, and a further one to be taken at 6 o'clock in the morning. Mrs A was to be reviewed again during the next ward round.

38. At 8.50pm, Mrs A was transferred from a shared room to a single room.

39. Mrs A continued to have mucousy, blood-stained discharge. The CTG trace continued to be reassuring.

Day 6

40. On the morning of Day 6, Mrs A's case was reviewed by the obstetric team, and a decision was made not to proceed with a Caesarean section, as there were no clear signs of chorioamnionitis, although she was noted to still be at high risk.

41. At 11.25am, the registrar, Dr F, reviewed Mrs A. Dr F noted that the CRP and WBC showed a "rising but stable" increase from the previous day. All other observations were normal. At 2.45pm, Mrs A's liquor was noted to have changed in colour from pink and slightly blood-stained to "yellowish".

42. In her complaint, Mrs A said:

> "[Throughout the day] I mentioned to the midwifery staff on many occasions, which I had never done before, that I had concerns around our daughter's reduced movements. ... Despite my concerns for my daughter's wellbeing, the infection concerns and blood tests being taken I did not see a doctor until late in the afternoon."

43. At 3pm, RM B came on duty for the evening shift.

RM B

44. At the time of these events, RM B was employed as a core midwife. RM B graduated with a Bachelor of Midwifery in 2015, and was registered as a midwife in 2016. Prior to these events, RM B had worked four shifts on the antenatal ward having completed orientation ten days previously, and was in the Midwifery First Year of Practice (MFYP) Programme.[13]

[12] White blood cell count.

[13] This is a government-funded mandatory programme to support the transition of new graduate midwives. Each new graduate receives some funded release time for continuing education, and chooses a mentor, who provides support through regular planned reflective discussions. At the end of the year, the graduate reflects

45. During her orientation, RM B had completed the online K2MS Perinatal Training Programme.[14] She had also had training in CTG interpretation in her final year of midwifery study.

Deterioration — PM Shift (3–11pm)

46. RM B was working the evening shift together with RM C,[15] and a student midwife, Ms H, was also working with RM C. No other midwives were rostered on to the ward during that shift. According to the Waikato DHB significant event review report, this was normal staff rostering at the time. A registrar was allocated to the antenatal ward area, and a consultant was on site, with an additional consultant on call.

47. Each midwife was allocated five patients according to their acuity (nine patients were on the ward, and another woman was expected during the shift). All of the patients were high risk and required frequent assessment and care. Waikato DHB advised that Mrs A was the lowest risk of the five patients allocated to RM B.

48. RM C said that the shift "was a very patient heavy, time consuming" shift.

49. At the time of these events, the ward was a mixed ward with antenatal and gynaecology patients. According to the significant event review report, antenatal patients "are often complex and high risk with pregnancy complications requiring close observation and expert management".

50. The significant event review report also states that "[n]ewly graduated midwives need a large level of clinical support but are expected to take on a full workload", which it notes is "not an ideal situation in an area where there are complex and high needs patients". In addition, the report states:

> "Midwifery staffing is experiencing significant shortage and the staffing matrix on the antenatal ward has been reduced to two midwives per shift and lately there has been no charge midwife on this ward due to extended leave."

51. In relation to staff rostering on Day 6, Waikato DHB stated:

> "[The Clinical Midwife Director] comments that at the time of this incident, overall staffing levels were low and we had many midwifery vacancies. Assigning complex women to a new graduate in her first year of practice is not ideal, however in the context of a tertiary facility there will be few women as antenatal inpatients who are straightforward or low-risk.
>
> …

on her or his practice and identifies a professional development plan with midwifery peers and consumers of midwifery services through the New Zealand College of Midwives Midwifery Standards Review process.

[14] This is an online training tool that covers a number of topics, including CTG interpretation.

[15] RM C graduated with a bachelor of midwifery in November 2010.

> In addition the entire unit was very busy and no other staff were able to come and assist [the ward]."

52. However, in relation to the level of supervision and support provided to RM B, Waikato DHB acknowledged:

> "[RM B] was a new graduate and she was given a high acuity caseload of patients, and … it was a particularly busy night in the maternity service. The only other Midwife on duty — [RM C] — was also under extreme pressure with her own high acuity caseload, and was therefore not able to provide the level of support a new graduate could fairly expect or require."

53. The Waikato DHB guideline "New Graduate Midwife Guidelines Supporting Safe Practice", which was in place at the time of these events, stated:

> "In the first 1 month of their placement (after the initial one month orientation period) they will be given the clients that are of the lowest possible complexity.
>
> …
>
> All CTGs will be checked and co-signed by the CMM[16] or a CTG credentialed midwife, until they have completed either K2 or the RANZCOG[17] program and have a 70% pass mark or more …."

Handover— 3pm

54. RM B said that handover for Mrs A was "simple". She was informed that Mrs A's vaginal discharge had changed in colour that morning, and that otherwise Mrs A was "relatively stable".

3.10pm

55. In retrospective clinical records documented at 4.50pm, RM B documented that at 3.10pm Mrs A reported that she had not felt the baby move for a while. RM B advised Mrs A to drink icy water and to talk to the baby, and said that she would return in 30 minutes.

56. RM B told HDC:

> "The suggestion of drinking a glass of cold water was made based on my limited experience as a new graduate. I went back to the office to read the notes after giving that advice. Ten minutes later, I went back to the room to commence the CTG as well as to check fetal movements again."

57. At 3.20pm, RM B carried out an assessment, noting that on abdominal palpation the baby was in a transverse lie. RM B then commenced a CTG, which showed two variable decelerations lasting 15 seconds that recovered well. RM B interpreted the CTG as

[16] Charge Midwife Manager.
[17] The Royal Australian and New Zealand College of Obstetricians and Gynaecologists.

reassuring, and it was stopped at 4.20pm. Vital sign observations at that time were normal.

58. RM B said that she informed Mrs A of the decelerations, and said that these might be caused by "cord clamping". Mrs A then requested a wheelchair so that she could go outside for some fresh air. RM B told Mrs A that a wheelchair was not available at that time, but that she could mobilise outside without a wheelchair but was not to go too far. This discussion is not documented. RM B said that she was not aware that Mrs A had been advised to restrict her mobility.

59. RM B said that she then contacted the NICU coordinator by telephone to arrange a tour of NICU for Mrs A. RM B said that she was told to call back the following morning because the unit was very busy.

60. At 5pm, registrar Dr F reviewed the CTG trace and signed it off, but advised to repeat it again that evening owing to the decelerations. She documented: "[Mrs A] feels that the PV discharge has changed slightly — now yellowy [not] foul smelling. [No] pv bleeding." Dr F noted that the 4.10pm CTG showed an "active trace, [baseline] 140, variability>5bpm, accelerations, ?1 × [deceleration]". Dr F recorded her impression that Mrs A was "clinically stable at present", and noted: "Patient aware if any concerns re [fetal movements]/abdo pain/discharge, to alert staff. For Reg review if any concerns."

61. In her complaint, Mrs A said that during this assessment, Dr F "told [her] multiple times not to be concerned about the reduced movement and that they were happy with the blood results".

62. In her retrospective clinical records documented at 6pm, RM B recorded that at 5.20pm she checked Mrs A's pads, and noted that Mrs A had changed her pad at 12.30pm and 2.45pm and that the liquor was creamy yellow, with one bloody spot on the 2.45pm pad.

63. RM B noted that she gave Mrs A her prescribed antibiotic at 6pm. At 6.30pm, RM B checked Mrs A's pad again, and documented that Mrs A had changed it at 4.45pm, and noted "query lightly meconium stained", and that there was very little liquor seen. RM B did not advise RM C or Dr F that there may have been meconium in the liquor.

64. At 7.30pm, RM B checked Mrs A again, and also checked her pad, noting creamy yellow discharge and a small spot of blood.

CTG

65. At 8.54pm, student midwife Ms H was asked to commence a CTG on Mrs A because RM B was busy with another patient. Ms H was unable to obtain a good reading, and sought assistance. In her statement, RM C recalled that "at approximately 9.30pm" Ms H reported to her that she was unable to get a good reading on the CTG. RM C said: "Due to myself sorting many things and I was just about to perform a vaginal exam, I asked her to get my colleague to go to [the] room to ascertain the situation."

66. There are limited clinical records of the events that followed. Details have been taken from the retrospective accounts of the staff involved. RM B advised HDC that she recorded a retrospective account of the events but that these were not documented in the clinical records. RM B stated:

> "[T]he clinical notes … were written by me in retrospect three days after the event. I was not at the hospital for 3 days after the event and upon my return was advised by a staff member it was too late to place on the clinical records. I kept the retrospect notes as my own record since it was too late to file it."

67. RM B said that she returned to Mrs A's room at 9.15pm and re-commenced a CTG trace. She noted that the heartbeat could be heard around 160bpm[18] but was unsure whether this was the baseline or an acceleration. She did not note any decelerations. The CTG was left on in an attempt to obtain a better trace.

68. RM B also checked Mrs A's vital signs at that time, which were noted to be within the normal range. RM B stated: "[Mrs A's] vital signs were checked when the CTG was started and all the findings were within normal range. Hence, I did not consider the potentiality of chorioamnionitis based on the findings." RM B said that she then left the room.

69. In her complaint, Mrs A said that she felt that RM B did not look at the trace thoroughly, and that RM B told her that she was dehydrated and to drink more water, despite the fact that she had already drunk about 4 litres on RM B's instruction.

70. At 9.30pm, RM B returned to Mrs A's room and noted that a clear trace could still not be obtained. RM B turned Mrs A onto her left side in an attempt to obtain a better reading.

71. RM B said that over the next 30 minutes she was in and out of Mrs A's room. She told HDC that during that time, the readable CTG illustrated that the FHR remained between 160bpm and 180bpm. During this time, Mr A was assisting by holding the transducer. RM B said that Mrs A reported still being able to feel the baby move, but that the movements had decreased. RM B said that she then moved Mrs A onto her back.

72. At 10pm, RM B documented in the clinical records: "Into see [Mrs A]. FHR is not picked up properly changed position to lie flat and continue CTG."

73. At 10.15pm, RM B returned to see Mrs A again. RM B documented in the clinical records: "CTG stopped. Trace is not clearly showed on the paper. Stopped CTG to let [Mrs A] have a rest. Informed [Mrs A] that night shift RM will commence another CTG." In her retrospective account, RM B said that the CTG trace continued to be intermittent, and the FHR remained around 160bpm, but that she could not identify whether this was the baseline. On the CTG interpretation sticker, RM B ticked that the fetal movements were normal. Mrs A said that she repeatedly told RM B that she had concerns about feeling reduced fetal movements. RM B said that she is unsure why she recorded that the fetal

[18] Normal FHR is between 120–160 beats per minute (bpm).

movements were normal, and acknowledged that Mrs A did report reduced fetal movements.

74. RM B told Mrs A to get up and walk around and to drink some water. RM B then left Mrs A alone. RM B told HDC:

> "It also was a challenge for me to identify the baseline with intermittent loss of contact and interpret it correctly based on limited practical experience at 22.20, even though baseline in the afternoon had been 140. I considered that the fetal heart rate which showed up on the trace could be either acceleration or baseline at that point."

75. RM B said that at 10.20pm she consulted RM C and reported her concerns about the CTG. This interaction is not documented in the clinical notes. RM B stated:

> "[I] [s]howed the CTG to the senior midwife in the office and reported my concerns regarding tachycardic trace or acceleration. I asked if I needed to inform the on-duty Registrar. The senior midwife advised that she had just called the Registrar for one of her patients in labour, who was preterm. The Registrar said that they were busy in theatre with an emergency CS [Caesarean Section] … I thought the consultant would be with the Registrar, so did not escalate my concerns to the Registrar or the consultant. I was not guided to call the DS [Delivery Suite] coordinator either. I then discussed with the senior midwife my plan to have the CTG repeated by the night-shift midwife after handover. The senior midwife agreed."

76. RM C's account of this interaction differs slightly from RM B's. In her statement, RM C said that at 10.30pm she was shown the CTG trace and told that the trace had been stopped so that Mrs A could go to the toilet. RM C stated:

> "[I considered that the trace was] [n]on reassuring but there was also no baseline to assess and LOC [Loss of Contact] +++ the variability was non reassuring also and [Mrs A] would need to be put back on when she came back from the toilet and in addition the CTG would need a review by obstetric registrar, however, the obstetric team were in handover from 2200–2245."[19]

77. RM C said that she told RM B that she would need to organise an obstetric review of the CTG, and that the CTG needed to be recommenced. RM C stated that at that time she was going to the handover, but that prior to going she showed the CTG to one of the night staff midwives, RM G, who agreed with the proposed course of action. RM C said that she also outlined the course of action at the handover.

78. In response to the provisional opinion, RM C stated that escalating an obstetric review is not outside a new graduate's ability. RM C said that she considers that her instructions to RM B were clear — "To contact the obstetric team for immediate review of the non

[19] Independent clinical advisors who reviewed the CTG noted that from 20.54–21.40 onwards the CTG was grossly abnormal, with a markedly elevated baseline rate, and from 21.40–22.10 the fetal heart rate (FHR) was 180bpm with reduced variability and decelerations.

reassuring CTG, and until the obstetric review was completed, the CTG was to be continued immediately when [Mrs A] got out of the toilet." RM C said that she understood that concerns with the CTG were being escalated to the obstetric team by RM B while the handover was occurring, and that the CTG was being continued during the handover. RM C clarified that this is what she passed on to RM G ahead of handover.

79. In her statement, RM C said that she had attempted to contact the registrar at 8pm, 9pm, and 9.30pm to discuss one of her patients, but each time she was advised that the registrar was busy. RM C also said that she felt very unsupported. She stated: "I felt that the support for [RM B] and myself on that shift was not available and that we had to battle on through all the issues that occurred that night ourselves."

80. RM B said that she did not feel encouraged to contact the registrar again, and knowing that the consultant would also be in theatre she contacted neither. RM B stated:

> "As a result, it became very challenging to me to persevere to facilitate review of the CTG without any guidance in that situation because it was the fourth evening shift and the second week after orientation.
>
> Also, I was not aware that I could call the Delivery Suite Coordinator for the second opinion at that time and was not guided to do so either. Apart from that, I believe it would not have been safe to take the CTG to Delivery Suite (DS) or Women's Assessment Unit (WAU) in a high acuity work place because the other midwife would have had to look after 9 women, including [Mrs A] if I went down to DS or WAU."

81. RM B said that her plan was to have the CTG repeated by the night shift midwife after handover. She stated that she discussed this plan with RM C, who agreed. However, this conversation was not documented by RM B, and RM C's account does not support this version of events.

82. Waikato DHB told HDC that the obstetric staffing at the time of these events was "standard in [Waikato DHB's] service", but noted that the unit was "extremely busy" and the obstetric staffing levels "did not fully support midwifery staff". Waikato DHB stated: "[I]t does not appear that [RM C] and [RM B] were able to effectively escalate the unsafe staffing on the ward at the time of the incident."

Handover — 11pm

83. At 11pm, during handover, RM B said that she showed the CTG trace to the night midwife, RM G, and said that she was concerned about it and that a CTG should be recommenced after handover.

84. RM G said that she was very concerned by the trace and questioned whether RM B or RM C had noted the abnormalities. She was told that because of the patchiness of the recording it could not be interpreted. RM G said that she then compared the recent CTG trace with the CTG trace that had been carried out at 6am that morning and noted the significant change.

85. At 11.15pm, RM G went immediately to Mrs A's room and commenced another CTG. In the clinical records she recorded that she had noted a fleeting heartbeat at 120bpm and then 168bpm, but was unable to obtain a trace. She then pushed the emergency bell for assistance.

86. In their accounts to HDC, both the obstetric registrar, Dr E, and the consultant, Dr D, who were rostered on for the night shift, said that during handover, which occurred at 10.20pm, they were not made aware of any concerns relating to Mrs A.

Emergency Caesarean

87. Once the emergency bell had been rung, all ward staff attended. At 11.30pm, Dr E was asked to bring the ultrasound machine, and arrived within 4–5 minutes. Dr E attempted to locate the FHR, and identified it briefly at 140bpm but then lost it again. At 11.45pm, Dr D was called and an ultrasound scan was undertaken, which showed that the FHR was slower than previously. Dr D then advised Mrs A of the situation and asked whether she wanted to proceed with an emergency Caesarean section. Dr D said that she told Mrs A: "[W]e may be too late to save the baby without severe compromise." Dr D said that Mrs A became extremely distressed and elected to have a Caesarean section.

88. Baby A was born at 12.06am with no signs of life. The neonatal team were in attendance, and full resuscitation took place. Apgar scores were 0 at 1 minute, 0 at 5 minutes, and 1 at 10 minutes.

89. Baby A was then transferred to NICU and placed on full ventilation in a very poor condition and requiring a high level of care.

Ongoing care

90. Baby A suffered stage 3 hypoxic ischaemic encephalopathy. She remained in hospital for several months, and continues to require a high level of care at home.

Further comment from RM B/further education

91. RM B advised HDC that since these events she has undertaken the following training and education:

- She participated in a structured reflection with the Professional Development Department. RM B stated: "The purpose was to enable me to reflect in depth on issues affecting practice in order to develop a high level of clinical expertise."
- She completed the Fetal Surveillance Education Programme.
- She completed the K2MS Perinatal Training Programme in 2016 and 2017.
- She attended a documentation workshop.

92. In addition, she said that she attends a regular CTG training workshop run by Waikato DHB.

93. Furthermore, RM B told HDC:

> "Since this event I have learned to assess and consider a woman's concerns based on a holistic picture, including women's statement regarding symptoms, vital signs, physical exam, laboratory results and CTG trace. I also feel more confident to escalate my concerns in a timely manner now by getting familiar with the algorithm of escalating concerns. If there are any concerns with the CTG trace I now keep the woman on the CTG until she is reviewed by the obstetric team."

94. RM B told HDC that she always tries to ensure that the woman is fully informed of the care plan, and she also now uses proper language and the SBARR[20] tool to communicate with the registrar/consultant when escalating concerns.

95. In addition, RM B advised that she now ensures that she documents her clinical records contemporaneously, and when this is not possible she will write detailed retrospective notes.

96. RM B said: "I feel my clinical experience and midwifery knowledge has significantly grown in the past two years."

97. Further to this, RM B stated: "I continue to offer my deepest sympathy to the family for the part I played which resulted in a poor outcome for their baby."

Significant event review and service changes at Waikato DHB

98. A serious event review was undertaken following Baby A's birth. The root cause was identified as a "deteriorating condition of a high risk antenatal patient [which] was missed by the multidisciplinary team along with a failure to follow the informal escalation process for non-reassuring CTGs".

99. Key issues identified from the review included:

- A lack of continuity of care, with the patient seen by multiple clinicians;
- Reports of decreased fetal movements were considered in relation to clinical guidelines, rather than what was normal for Mrs A;
- CTGs were not compared to earlier traces; and
- Changes were considered in isolation, including changes in the colour and volume of liquor; changes in the movement of the baby, and the rising CRP and WBC.

100. A number of contributory factors were identified, including:

> "• Lack of formalised escalation process for non-reassuring CTGs. …
> • Supervision of new graduate midwife allocated to high risk patients was inadequate due to other work commitments for the senior midwife.

[20] Situation, Background, Assessment, Recommendation.

- Response from Delivery Suite to staff in [the ward] escalating concerns was frequently dismissive and has over time created reticence in contacting Delivery Suite staff for assistance or advice."

101. Waikato DHB advised that a number of changes have been made to the Women's Health service since this incident, including:

- The midwifery staffing matrix on the delivery ward and WAU has been increased by 16 full-time employees.
- The guideline on pre-labour rupture of membranes has been updated.
- An information leaflet has been developed for patients affected by pre-labour rupture of membranes.
- A "very comprehensive guideline on electronic fetal monitoring" has been developed, which "aims to aid the interpretation of the CTGs, as well as the definition of the appropriate actions and escalation process to senior team members". The changes include strengthening the wording around non-interpretable traces, and detailing the time frames for escalation for non-reassuring traces. Waikato DHB advised that continuous education for staff members on this guideline is a service priority.
- A more robust system for communication and documentation of the management plan based on the use of SBBAR stickers attached to the clinical records after admission in the ward and before the weekend has been implemented.
- A "Reduced Fetal Movements Pathway Over 28 Weeks' Gestation" has been introduced, which details steps to take in the event that reduced fetal movements are reported.
- A pathway for inadequate staffing/bed levels has been introduced, which details management options and decision-making around inadequate staffing and bed levels.
- The number of consultants has been increased from one to two, in order to "support the registrars in acute duties. This facilitates the supervision and support of the RMO/SHO[21] working in WAU. At the same time, the Day Assessment Unit has opened and is helping to significantly decrease the acuity on WAU during week days."
- Weekly multidisciplinary team CTG teaching sessions have been established.
- Waikato DHB has regained RANZCOG accreditation for the training and education of RMOs, meaning that there are more RMOs and, accordingly, more registrars available to review patients.
- A new leadership structure has been implemented, and the culture in Women's Health has changed significantly, as evidenced by staff feedback, fewer resignations, and fewer vacancies.
- An Associate Clinical Midwifery Manager has been appointed to the maternity ward to increase day-to-day midwifery leadership.

[21] Resident Medical Officer/Senior House Officer.

102. In the letter updating HDC on the changes made at Waikato DHB since these events, Waikato DHB stated:

> "Needless to say that we are very conscious that the sad and serious events that preceded the birth of [Baby A] had a life-lasting impact on the family and the trust they put on us. We are truly sorry for this event and we will do our best to learn from what happened to prevent similar incidents."

Key policies in place at Waikato DHB

103. At the time of these events, Waikato DHB had in place a guideline ("New Graduate Midwife Guidelines which support Safe Practice" dated 1 June 2013) that details the expectations and support required during antenatal ward placement. The expectations for a midwife working on the antenatal ward include:

> "In the first 1 month of their placement (after the initial one month orientation period) they will be given the clients that are of the lowest possible complexity.
>
> All CTGs will be checked and co-signed by the CMM or a CTG credentialed midwife, until they have completed either K2 or the RANZCOG program and have a 70% pass mark or more …
>
> Once the graduate is getting confidence the following will apply:
>
> The new graduate may be allocated pregnant women less than 20/40 pregnant admitted for pregnancy related complications if supported and supervised by an experienced midwife on the ward.
>
> Ante-natal clients can be of more complexity only if support is available on the ward by an experienced midwife …"

104. The Waikato DHB "Electronic Fetal Monitoring" protocol at the time of these events stated: "A non-reassuring CTG trace must be discussed with the On-Call obstetrician." Interpretation of the CTG is in line with the RANZCOG Intrapartum Fetal Surveillance Guideline. The protocol stated: "All practitioners should consult with more experienced staff if there is any uncertainty or cause for concern."

Further reviews

105. The Midwifery Council, as the relevant registration authority, has also considered the actions of RM B. The Council decided to take no further action, pending the outcome of this investigation.

106. In a letter to Waikato DHB dated 28 August 2018, the Council noted the "unacceptable situation" RM B was placed in as a graduate midwife, and sought reassurance from Waikato DHB that a repeat of the situation would not happen again.

107. Clinical advice was provided to ACC by consultant obstetrician Dr I. Dr I stated that on Day 6, the CTG that commenced at 8.54pm initially showed:

> "a FHR baseline of 170bpm with probable large variable decelerations. There was lots of loss of contact but at 21.40 the recording quality improved and it was clearly obvious that the baseline heart rate was 180bpm with scant variability and big variable decelerations."

108. Dr I also stated that had the CTG been recognised as abnormal and the baby delivered between 9.40 and 10.10pm (2 to 2 hours 25 minutes earlier than actually occurred):

> "The baby would still have been alive at this time but given her earlier gestation plus the hypoxic changes on the CTG it is likely that she would have had some degree of compromise at birth."

Further comment from Mr and Mrs A

109. In their complaint, Mr and Mrs A said that they wanted to ensure that this incident has been taken seriously, that Waikato DHB has undertaken all the changes it outlined in the significant event review, and that it has done everything it can to prevent a similar incident happening again.

Responses to provisional opinion

110. Waikato DHB, RM B, RM C, and Mr and Mrs A were given an opportunity to respond to relevant sections of the provisional opinion. Where appropriate, changes have been incorporated into the report.

111. Waikato DHB stated that it had no comments regarding my provisional findings, and that it accepted my provisional recommendations. One amendment was made to a provisional recommendation at Waikato DHB's request.

112. RM B advised that she accepted my provisional opinion and had no further comments.

113. Mr and Mrs A stated:

> "We are very saddened and disappointed at the extensive breakdowns in communication and management from multiple individuals and teams at Waikato DHB, which led to [Baby A's] outcome. It is heartbreaking to consider a child's life is permanently altered before processes and procedures are reviewed and amended."

Opinion: Introduction

114. This case involves the failure to interpret a CTG correctly. I note that the RANZCOG Guidelines state:

> "[I]t is now widely appreciated that the visual interpretation of continuously generated signals from the fetal heart, however derived, is subject to shortcomings in

> interpretation. Review of cases with poor outcomes repeatedly demonstrate that abnormal CTGs were misinterpreted and the resulting management inappropriate."

115. In this case, a significant cause of the failure to interpret the CTG correctly as abnormal, and to escalate care to the obstetric team, was the extremely overstretched system in which clinical staff were working, which placed a newly qualified midwife in a position of high responsibility with inadequate support and supervision.

Opinion: RM B — adverse comment

Introduction

116. Mrs A was being monitored closely following a premature rupture of membranes. Over the days preceding Day 6, Mrs A had continued to drain liquor with occasional bleeding. The baby was in a transverse lie, which increased the risk of cord prolapse. Mrs A had been experiencing intermittent cramping, and her inflammatory markers had been increasing slowly.

117. I note the advice of my in-house midwifery advisor, RM Nicky Emerson, that the midwifery care up until 3pm on Day 6 was consistent with accepted practice.

118. On Day 6, RM B was rostered on the PM shift (3pm–11pm) on the ward. RM B was allocated five women, one of whom was Mrs A.

119. In this section, I consider the adequacy and appropriateness of the midwifery care provided by RM B to Mrs A between 3pm and 11pm on Day 6. Overall, I am critical of the care provided by RM B. However, I consider that ultimately she was let down by the system. The basis for my decision is set out below.

Initial care provided

120. At 3pm on Day 6, RM B took over midwifery care of Mrs A. RM B described the handover for Mrs A as "simple", noting that Mrs A's vaginal discharge had changed that morning, but that she was otherwise "relatively stable".

121. At 3.10pm, Mrs A reported to RM B that she had not felt the baby move for a while. RM B suggested that Mrs A drink icy water and to talk to the baby. RM B then went to read Mrs A's clinical records. At 3.20pm, RM B returned to Mrs A and commenced a CTG.

122. In relation to her advice to drink icy water, RM B told HDC:

> "The suggestion of drinking a glass of cold water was made based on my limited experience as a new graduate. I went back to the office to read the notes after giving that advice. Ten minutes later, I went back to the room to commence the CTG as well as to check the fetal movements again."

123. RM Emerson advised that although RM B's initial advice to drink icy water was not based on any current evidence, RM B immediately went to review Mrs A's notes and returned to perform a CTG 10 minutes later, which was appropriate care in the circumstances. I accept RM Emerson's advice. I note that RM B has since reflected on the advice she gave Mrs A to drink icy water, and advised that she now knows that this was not appropriate advice in the circumstances.

Failure to escalate

124. At 3.20pm, RM B commenced a CTG and noted two decelerations that recovered quickly. RM B checked Mrs A's observations, which remained within normal limits.

125. At 5pm, the obstetric registrar, Dr F, reviewed the CTG and signed it off. Dr F's impression was that Mrs A was "clinically stable at present". Dr F noted: "Patient aware if any concerns re fetal movements/abdo pain/discharge, to alert staff. For Reg review if any concerns."

126. Between 5pm and 9.30pm, RM B checked Mrs A's sanitary pads on two occasions, noting changes in liquor volume and a query of meconium and blood spots. RM B did not discuss these changes with anyone, in particular the new observation of meconium.

127. At approximately 9.30pm, the student midwife, Ms H, attempted to obtain a CTG reading but was unable to obtain a clear trace. RM B then attempted to obtain a CTG trace but again was unable to obtain a good trace. She was able to hear the FHR at around 160bpm, but was unsure whether this was the baseline or an acceleration. She checked Mrs A's observations, which were normal, and stopped the CTG trace so that Mrs A could go to the toilet.

128. RM B then discussed the CTG trace with RM C. While the recollections of RM B and RM C differ slightly at this point, and I am unable to determine exactly what happened owing to the lack of documentation, both agree that they had concerns about the CTG. However, because the obstetric team was busy, either in theatre or in handover, and RM C was also busy, this concern was not escalated at the time, and RM B understood that the decision was to request the night midwife to repeat the CTG, which is what occurred subsequently.

129. As stated above, the registrar noted at 5pm: "Patient aware if any concerns re fetal movements/abdo pain/discharge, to alert staff. For Reg review if any concerns."

130. Waikato DHB's Electronic Fetal Monitoring policy in place at the time stated: "A non-reassuring CTG trace must be discussed with the On-Call obstetrician." Interpretation of the CTG was noted to be in line with the RANZCOG guidelines. In addition, the policy stated: "All practitioners should consult with more experienced staff if there is any uncertainty or cause for concern."

131. RM Emerson advised that the failure to escalate the non-reassuring CTG in this situation of a high acuity pregnancy was a severe departure from accepted midwifery practice. There is no doubt that when RM B was unable to obtain a reassuring CTG trace at 10pm she should

have escalated her concerns immediately. In accordance with Waikato DHB policy, she should not have discontinued the CTG trace without confirmation (either her own or from someone else suitably qualified) that it was reassuring.

132. However, RM Emerson noted that a number of mitigating factors contributed to the situation. RM B was on her fourth shift as a new graduate midwife, and she had attempted to raise her concerns about the CTG with RM C, who was busy. RM B did not feel encouraged to escalate her concerns further, as she knew that the obstetric team was also busy. RM Emerson stated:

> "Due to the extreme acuity of the unit on that night and the shortage of staff, [RM B] was left in the untenable situation of attempting to escalate her concerns but having no known avenue to do so. [RM B] found herself in a position where there was a systemic failure to support her ability as a new graduate midwife to escalate her concern."

133. In my view, RM B was placed in an unacceptable situation as a result of a system that was unable to support her adequately. I discuss this further below in relation to Waikato DHB.

Conclusion

134. I am very concerned that RM B failed to recognise the deteriorating situation adequately — in particular the new finding of meconium and the non-reassuring CTG — and failed to escalate the matter in a timely manner. However, I consider that there were mitigating factors, namely that RM B, a very inexperienced midwife, was placed in a high acuity situation with little support or oversight. Accountability for this scenario appropriately lies with Waikato DHB, and this is discussed later in the report. Accordingly, for the reasons set out above, I do not consider that RM B's actions warrant a finding that she breached the Code of Health and Disability Services Consumers' Rights.

135. I note that RM B has engaged in a structured reflection programme. She has identified the failures in the care she provided to Mrs A, and has taken steps to address these shortcomings through further education and changes in her practice. However, I consider it appropriate for the Midwifery Council of New Zealand to undertake a competency review of RM B's practice.

Opinion: RM C — adverse comment

136. RM C was the senior midwife rostered on the ward on the evening of Day 6.

137. As discussed in the previous section, when RM B was unable to obtain a reassuring CTG trace, she showed the trace to RM C. However, although RM C recognised that the trace was "non-reassuring", she was also extremely busy and was unable to provide RM B with adequate support, and did not assist her to escalate her concerns further. In response to the provisional opinion, RM C stated that escalating an obstetric review is not above a new

graduate's ability. She said that she understood that concerns with the CTG were being escalated to the obstetric team by RM B while the handover was occurring, and that the CTG was being continued during the handover. While RM C said that she clearly instructed RM B to continue the CTG until the obstetric review was completed, RM B's account of events does not support this.

138. The CTG was not just "non-reassuring", it was grossly abnormal. Dr Ian Page, my obstetric advisor, noted that the CTG from 8.54–9.40pm onwards was grossly abnormal, with a markedly elevated baseline rate, and from 9.40–10.10pm the FHR was 180bpm with reduced variability and decelerations. Dr I advised ACC that at 8.54pm the baseline was 170bpm with probable large variable decelerations. Dr I noted that although there was considerable loss of contact, at 9.40pm the recording quality improved, and "it was clearly obvious that the baseline heart rate was 180bpm with scant variability and big variable decelerations".

139. I am critical that RM C, as the senior midwife, did not recognise at any point that the CTG was significantly abnormal. I am also concerned that after recognising that it was "non-reassuring" she did not do more to confirm that RM B was carrying out her intended instructions of escalating Mrs A's care to the obstetric team and continuing the CTG.

140. However, I consider that there were mitigating factors — in particular, RM C was working in a very high acuity situation with a student midwife and a newly qualified midwife, with insufficient support. I note RM C's comments: "I felt that the support for [RM B] and myself on that shift was not available and that we had to battle on through all the issues that occurred that night ourselves." As noted above, Waikato DHB has acknowledged that RM C was "under extreme pressure with her own high acuity caseload, and was therefore not able to provide the level of support a new graduate could fairly expect or require".

141. I note that RM C no longer holds a practising certificate. I will recommend that should she apply for a practising certificate in the future, the Midwifery Council of New Zealand undertake a review of her competency to practise, taking into account the information in this report.

Opinion: Waikato DHB — breach

Introduction

142. Waikato DHB was responsible for ensuring that Mrs A was provided with services that complied with the Code, and to have in place adequate systems to ensure that the care delivered to Mrs A was safe, appropriate, and timely. In my view, a number of failures in the care provided to Mrs A arose from systemic issues at Waikato DHB, and these issues meant that the care provided to Mrs A and her baby fell well below acceptable standards.

Staffing and senior support

143. As this Office has stated previously, DHBs are responsible for providing adequate supervision and support to staff. In my view, for the reasons set out below, Waikato DHB failed to have in place adequate systems to ensure that staff received adequate supervision and support on Day 6.

144. At the time of these events, Waikato DHB had in place a guideline ("New Graduate Midwife Guidelines", June 2013) that detailed the expectations and support required during antenatal ward placement. The expectations for a midwife working on the antenatal ward (the ward) included:

> "In the first 1 month of their placement (after the initial one month orientation period) they will be given the clients that are of the lowest possible complexity.
>
> All CTGs will be checked and co-signed by the CMM or a CTG credentialed midwife, until they have completed either K2 or the RANZCOG program and have a 70% pass mark or more …
>
> Once the graduate is getting confidence the following will apply:
>
> The new graduate may be allocated pregnant women less than 20/40 pregnant admitted for pregnancy related complications if supported and supervised by an experienced midwife on the ward.
>
> Ante-natal clients can be of more complexity only if support is available on the ward by an experienced midwife …"

145. The Ministry of Health's vision is that through the MFYP programme, "graduate midwives will receive a high standard of clinical support and mentoring, and are orientated to safe and confident autonomous practice".

146. At the time of these events, the ward was a mixed ward with antenatal and gynaecology patients. According to the significant event review report, antenatal patients "are often complex and high risk with pregnancy complications requiring close observation and expert management".

147. The significant event review report also states: "Newly graduated midwives need a large level of clinical support but are expected to take on a full workload," which is "not an ideal situation in an area where there are complex and high needs patients".

148. On Day 6, RM B was working her fourth shift of the MFYP and following orientation. She was allocated a high complexity workload requiring frequent assessment and care. The senior midwife on duty, RM C, was supervising a student midwife as well as managing a high caseload, so was unable to provide RM B with adequate support.

149. RM B said that she did not feel encouraged to escalate her concerns to the obstetrics team. She stated: "[I]t became very challenging to me to persevere to facilitate review of

the CTG without any guidance in that situation because it was the fourth evening shift and the second week after orientation."

150. When RM B was unable to obtain a reassuring CTG trace, she showed the trace to RM C. However, although RM C recognised the trace as "non-reassuring", she was also extremely busy so was unable to provide RM B with adequate support, and did not assist RM B to escalate her concerns further. RM C said that she felt very unsupported. She stated: "I felt that the support for [RM B] and myself on that shift was not available and that we had to battle on through all the issues that occurred that night ourselves."

151. As noted above, RM Emerson advised:

> "Due to the extreme acuity of the unit on that night and the shortage of staff, [RM B] was left in the untenable situation of attempting to escalate her concerns but having no known avenue to do so. [RM B] found herself in a position where there was a systemic failure to support her ability as a new graduate midwife to escalate her concern."

152. This view was echoed by the Midwifery Council in its letter to Waikato DHB dated 28 August 2018, in which the Council considered that the situation RM B was placed in was "unacceptable". I agree.

153. I note that this is not disputed by Waikato DHB. Waikato DHB stated:

> "We concur with the expert opinion of Mrs Nicky Emerson that [RM B] was a new graduate and she was given a high acuity caseload of patients, and that it was a particularly busy night in the maternity service. The only other Midwife on duty — [RM C] was also under extreme pressure with her own high acuity caseload, and was therefore not able to provide the level of support a new graduate could fairly expect or require."

154. It appears that the culture of the unit contributed to the failure of RM B to pursue her concerns regarding the CTG, and for RM C to recommend escalating her concerns further. I note that this was identified as a contributory factor in the significant event review report, which stated:

> "Response from Delivery Suite to staff in [the ward] escalating concerns was frequently dismissive and has over time created reticence in contacting Delivery Suite staff for assistance or advice."

155. Waikato DHB acknowledged: "[I]t does not appear that [RM C] and [RM B] were able to effectively escalate the unsafe staffing on the ward at the time of the incident." Furthermore, during the events in question there was no formal procedure for escalating CTG concerns.

156. RM B should not have been placed in such a high demand environment without ensuring that adequate senior support was available at all times. Furthermore, Waikato DHB had a

responsibility to ensure that its culture supported staff to report concerns and ask for assistance. Waikato DHB should also have had in place adequate policies to support RM B in her decision-making. It is likely that these failings were significant contributing factors in the poor outcome for Baby A. RM Emerson advised that in her opinion, the systemic failure of Waikato DHB to support a new graduate constitutes a severe departure from accepted practice.

157. It is particularly concerning that these issues had been ongoing for some time. The significant event review report stated:

> "Midwifery staffing is experiencing significant shortage and the staffing matrix on the antenatal ward has been reduced to two midwives per shift and lately there has been no charge midwife on this ward due to extended leave."

Conclusion

158. In my opinion, by failing to have in place systems to ensure that staff were supervised and supported adequately in their decision-making, and for failing to ensure that the culture supported staff to report concerns and ask for assistance, Waikato DHB failed to provide services of an appropriate standard. The provision of care in this case was seriously suboptimal, and Waikato DHB failed to provide Mrs A and her baby services with reasonable care and skill. Accordingly, I find that Waikato DHB breached Right 4(1) of the Code.

159. I note that following these events in 2016, Waikato DHB made a significant number of changes to its Women's Health Service, and developed a comprehensive guideline on electronic fetal monitoring, which includes timeframes for escalation of non-reassuring CTG traces. Waikato DHB advised HDC that continuing education on this topic is a service priority. In addition, Waikato DHB has increased the number of consultants working on the Women's Assessment Unit, increased the midwifery staffing matrix on the Women's Assessment Unit and the Delivery Suite by 16 full-time employees, and has implemented a pathway for management options and decision-making in the circumstances of inadequate staffing levels or bed levels. Waikato DHB has also reported a positive change in its staff culture. I consider that these changes are appropriate and necessary, and show a strong commitment by Waikato DHB to improve the quality of its Women's Health Service.

Recommendations

Waikato DHB

160. I recommend that Waikato DHB:

a) Provide details of how it is ensuring, or plans to ensure, that MFYP midwives always have unimpeded access to senior support, particularly in high acuity situations. Waikato DHB should provide this information to HDC within three months of the date of this report.

b) Develop a protocol for how staff should access obstetric care when rostered staff are unavailable. Waikato DHB should provide this information to HDC within three months of the date of this report.

c) Facilitate semi-structured interviews with remaining midwifery staff who were working at the hospital in 2016 to determine whether the changes that have been made since that time have had a significant impact on the level of support they now experience. Waikato DHB should report back to HDC with details of the findings and an outline of the further steps it is taking to address any concerns identified, within three months of the date of this report.

d) Undertake a review of adverse events within the antenatal wards and the Women's Assessment Unit (within a reasonable timeframe to ensure that useful data is obtained) involving a midwife in the MFYP, and assess whether inadequate staffing or supervision was a contributing factor. Waikato DHB should report back to HDC with details of the findings of the review and an outline of the further steps it is taking to address any concerns identified, within three months of the date of this report.

e) Provide a written apology to Mr and Mrs A. The apology should be sent to HDC, for forwarding to Mr and Mrs A, within three weeks of the date of this report.

RM B

161. In the provisional opinion, I recommended that RM B provide a written apology to Mrs A. RM B has met this recommendation, and the apology has been forwarded to Mrs A.

Midwifery Council of New Zealand

162. I recommend that the Midwifery Council of New Zealand undertake a competency review of RM B's practice, and of RM C's practice should she apply for a practising certificate.

Follow-up actions

163. A copy of this report with details identifying the parties removed, except Waikato DHB and 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 name in covering correspondence.

164. A copy of this report with details identifying the parties removed, except the experts who advised on this case and Waikato DHB, will be sent to the Ministry of Health, so that it can take into account the findings from this investigation in any future reviews of the Midwifery First Year of Practice Programme.

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

Appendix A: Independent advice to the Commissioner

The following expert advice was obtained from in-house midwifery advisor Nicky Emerson:

"Thank you for the request that I provide clinical advice in relation to the complaint from [Mrs A] regarding the care provided by Waikato DHB Midwives 2016. In preparing the advice on this case to the best of my knowledge I have no personal or professional conflict of interest. I agree to follow the Commissioner's Guidelines for Independent Advisors.

I have reviewed the following documentation on file: complaint from [Mr and Mrs A]; statement from [RM C] [Day 6]; Waikato Serious Incident Review Report [2016]; statement from [RM B]; statement from [Dr D]; Update on changes at WDHB, Summary of actions from [Director of Midwifery]; Waikato DHB clinical notes for [Mrs A] including all CTGs [to Day 6].

I have been asked to advise on the midwifery care provided to [Mrs A] on [Days 5–6] and in particular have been asked to comment on the supports in place for the midwives to seek clinical review from hospital staff.

In summary, Midwifery care was provided by WDHB to [Mrs A] intermittently initially, following an antepartum haemorrhage (APH) [at 28 weeks] and subsequently as an inpatient following a preterm premature rupture of membranes (PPROM) at 29 weeks on [Day 1].

[Mrs A] remained an inpatient with a confirmed preterm premature rupture of membranes and she continued to drain liquor with occasional bleeding. The baby was lying in a transverse position (which increased the risk of cord prolapse). There had been intermittent cramping and the inflammatory markers were increasing. Steroids were completed. Her vital signs remained normal and the baby remained active. Twice daily CTGs were reassuring. The plan 4.40pm on [Day 5] was to 'continue with 4 hourly monitoring, CTG pre sleep and overnight. Nil by mouth after dinner'.

Midwifery care provided on [Days 5–6].

On review of the clinical notes provided by WDHB, Midwifery care on [Days 5–6] was in keeping with accepted practice until hand over to [RM B] at 1500 on [Day 6].

- A plan (clinical notes) from the Registrar [(Dr F]) had been completed at 11.35am on [Day 6]. Rising inflammatory markers were noted however vital signs were stated to be stable. Review of the CTG notes an 'active baby +++, variability greater than 5 beats per minute and accelerations present. No obvious decelerations. Watch and wait for now. Request registrar review if <u>any</u> change'.
- 3:10pm [Day 6] [RM B] took over care for [Mrs A] who reported that she had not felt any fetal movements for a while. [Mrs A] was asked to drink icy water and talk to the baby.

- 3:20pm [RM B] returned and commenced a CTG, checked maternal vital signs and organised an obstetric review (registrar [Dr F]). The summary of the review was for [Mrs A] to 'alert staff if any concerns. For Registrar review if any concerns'.
- Medications and pad observations were documented through the course of the shift and a CTG was commenced at 8:54pm. Maternal vital signs were taken at 9:15pm. Clinical notes state that 'CTG is not picked up properly' and there is an attempt to change maternal position. At 10:15 the CTG is stopped to 'let [Mrs A] have a rest. Night shift to recommence CTG'. I note that the CTG sticker states that 'not able to obtain trace properly due to active baby'.

[RM B] states in her response that she attempted to have the CTG reviewed by senior midwife [RM C] at 9.30pm and again at 10:20pm. She was told by [RM C] that she was too busy, that the registrar was in theatre and unavailable. In addition, because there was no clear base line, the CTG was not reviewable. This version of events is corroborated by [RM C] in her statement and supported by WDHB SAC report ([2016]). However, [RM B's] documentation does not record her attempts to have the CTG reviewed by Senior midwife [RM C].

In my opinion if it is accepted that [RM B's] attempts to escalate the abnormal CTG were unsuccessful and she felt unable to find a clinician to review and discuss her concerns, then not persevering to facilitate review of the CTG is a severe departure from accepted practice for the following reasons:

- This was a high risk pregnancy of a preterm baby who would require comprehensive neonatal support following delivery. The pregnancy was a very high risk for chorioamnionitis (infection) (Clinical notes [Day 5]) as the membranes had previously ruptured and in addition the inflammatory markers were now increasing. The baby was lying in a transverse position thus increasing the risk for a cord prolapse (obstetric emergency requiring immediate delivery). The transverse position of the baby was indication for a caesarean section at the time of delivery (ideally a planned caesarean, as opposed to 'in an emergency'). Registrar review earlier on [Day 6] (clinical notes) had requested review with 'any' changes (underlining by clinician of 'any' in clinical notes). Changes were now occurring with the report of reduced fetal movements by [Mrs A] earlier in the shift and a CTG that was difficult to interpret. The reassuring CTGs in the preceding days were not considered, compared or reviewed by [RM B] during the course of her shift ([Day 6]).
- The loss of contact on the CTG at 10:15pm (CTG sticker, clinical notes) is attributed to an active baby and in addition, normal movements are noted on a previous CTG sticker at 3:20pm. [Mrs A] had reported a reduction in fetal movements twice in the shift, a change from her previously noted 'active baby' earlier in the day.
- Clinical notes earlier in the shift had requested Registrar review with any concerns.

- The CTG trace was stopped without reassurance (either personally or external to [RM B's] opinion) and not recommenced after [Mrs A] got up to go to the toilet (clinical notes [Day 6]).

In my opinion there are mitigating factors in this case as outlined in WDHB SAC report ([2016]) and supported by statements from [RM B] and [RM C]; they are as follows:

- [RM B] was a new graduate midwife and this was only her fourth shift following completion of her orientation to WDHB.

- It was a particularly busy night and [RM B] was given a High Acuity caseload that she did not have the experience to prioritise. She relied on the earlier handover that [Mrs A] was stable but did not apply [Mrs A's] history or the deteriorating clinical picture to changes that were occurring. I agree with the (WDHB SAC report page 14) that states that [RM B] saw the clinical picture changes in isolation. She had completed her K2 CTG training so knew that the CTG was abnormal, but in seeking support she was told by the senior midwife that she did not have time, the registrar was busy in theatre and that the CTG could not be reviewed as there was no clear baseline. WDHB Sac report states that the usual avenue for a non reassuring CTG is a Registrar review. Essentially, on the night of [Day 6] there was no avenue of support available to [RM B] to escalate her concerns despite her reporting repeated attempts in her complaint response.

- [RM B] was not aware that she could take the CTG to DS (Delivery Suite) or Women's Assessment Unit for review and she was not informed of this by [RM C].
- Workloads across [the ward], Delivery Suite and WAU were extremely heavy over the day of [Day 6] (WDHB SAC page 5).
- Handover was delayed on the night of [Day 6], further delaying review of the CTG (WDHB SAC report). (Handover commenced at 10.30pm not the usual 10pm.)
- WDHB SAC report (page 4) states that there was/is a midwifery shortage, with no Charge Midwife Manager in the unit.
- In my opinion the acuity of the caseload and support given [to RM B] was inadequate; it fell outside of the WDHB service specs (page 5, SAC report WDHB) 'Once the graduate is gaining confidence — Antenatal clients can be of more complexity only if support is available on the ward by an experienced midwife'.

In this case, the only other midwife on the ward was under extreme pressure with her own high acuity case load and therefore not able to provide the level of support a new graduate midwife could fairly expect or require.

It is worth noting here that I have had access to [RM C's] statement (HDC file supplied). Her statement regarding the shift on [Day 6], lack of support for both herself and [RM B], is corroborated by the WDHB Sac report. Further investigation may benefit from obtaining Midwife [RM C's] clinical note for [Day 6] to verify

attempts to contact the Registrar and to speak to the Delivery Unit coordinator regarding requests to gain clinical support.

WDHB Support for a newly graduated Midwife

In my opinion, for the reasons above, the failure of WDHB to support a New Graduate Midwife as specified in the service specs constitutes a severe departure from accepted practice. **I note that the WDHB has addressed and undertaken remedial actions to address concerns that were raised in their report (page 15, 16 SAC report)**. Of particular relevance are points 3 and 4:

> 3: Integrate a multidisciplinary approach to CTG learning onto standardised handover, case reviews and ward rounds.
>
> 4: Review of electronic fetal monitoring protocol to include the documented standard for escalation of concerns when there is a deviation from normal parameters, especially with regards to CTG and requires clarity around:
>
> - Responsibilities of primary and secondary checkers of CTG
> - Algorithm with time frames to guide escalation process.

HDC notes I have reviewed include correspondence from [the] (Clinical Director Obstetrics). This letter outlines changes implemented at WDHB following the agreed recommendations. The changes include:

- Multidisciplinary CTG teaching sessions led by medical and midwifery staff alternatively.
- Development of a guideline on electronic fetal monitoring. This aims to aid in the interpretation of the CTGs, as well as the definition of the appropriate actions and escalation process to senior team members. It also involves continuous education on this subject.

HDC notes include new WDHB protocol and credentialing algorithm supplied by [the] (Associate Director of Midwifery dated 06/07/2017).

In my opinion, the above steps have highlighted and addressed the previous lack of direction for seeking clinical review when not immediately available. Furthermore, the demonstration of the steps required when seeking review formalise a shared expectation and process for all staff (Multidisciplinary) to adhere to and undertake.

The multidisciplinary CTG teaching sessions led by medical and midwifery staff alternately support collegial relationships and appreciation for each other's roles. I note that the lack of midwifery staff has not been addressed. I would be interested to know what plans WDHB have in place for addressing and responding to their midwife shortage. E.g. recruiting, retaining plans. The shortage of Midwifery staff will have an impact on the ability to attend the education sessions mentioned above.

Remedial actions and learning undertaken by [RM B] (statement June 2017) include:

Engagement in a structured reflection with the WDHB Professional Development Department (four sessions completed at the time of writing)

Learning outcomes

- 'I have learnt to compare the current CTG trace with previous ones to identify changes if there are any concerns reported by the patient'
- 'If there are any concerns about the trace, keep the patient on the CTG until the patient can be reviewed by the obstetric team'
- 'Inform the patient what I have done so that she can be aware of what is happening'
- 'As soon as possible, write up and document the event in detail'
- 'Know the process of escalating concerns. Make note that the CTG trace can be taken to the DS to gain second opinion if Registrar not available during the evening shift'
- 'Have ongoing CTG interpretation training every year. I passed K2 in 2017 and have enrolled in a Fetal Surveillance Education Programme workshop that will be given in November 2017'

(Assuming K2 completed in 2016 as noted elsewhere and the above is a typo)

Summary

In summary of the file I have been asked to provide advice on whether, in my opinion, the midwifery care provided to [Mrs A] by WDHB was within accepted practice [following] handover to [RM B] on [Day 6] 3pm.

[RM B] recognised a deviation in the CTG on the night of [Day 6]. She attempted to escalate her concerns with no success. (Note that she had successfully requested a Registrar review following her concerns earlier in her shift.)

Support was not available to [RM B] as the Department was experiencing an extremely busy night and her midwifery colleague also was under immense pressure, as was the Registrar. There was systemic failure to escalate concern regarding the abnormal CTG and this resulted in a delay to respond to the clinical situation.

The SAC report from WDHB has addressed a number of issues and responded with remedial actions. [RM B] has also undertaken remedial actions and learnings.

There are a couple of issues of note that I would like to highlight:

- [Mrs A] was offered cold water when she reported reduced movements initially. This practice was endorsed by WDHB as normal practice for primary patients. I am critical of this advice as [Mrs A] was a High Risk patient (not a primary patient) who required close monitoring. To suggest a glass of cold water in the context of a

high risk pregnancy is not appropriate. However I do note that [RM B] returned within 10 minutes and completed a CTG and successfully requested a registrar review.

There is no evidence to support the practice of 'giving cold water to women who have reduced movements' (RCOG 2015) Royal College of Obstetricians.

- The issue of conflicting advice regarding whether [Mrs A] should mobilise has been raised; this has been addressed and the conflict has been acknowledged. I have no further comment.

- I am assuming that the corroborated statement from [RM C] explains her inability to support [RM B] on the night of [Day 6]. As mentioned earlier it may be beneficial to request her notes to verify attempts to gain help or to support her statements.

- I have been asked to comment on whether seeking advice from obstetrician and/or neonatal nurse would be appropriate. I believe this would be beneficial. As comment falls outside of my scope, I have refrained from commenting on the Obstetric staffing levels, lack of consistency in case management or the steps taken by WDHB to address the Obstetric factors on the night of [Day 6].

Lastly, I extend my heartfelt condolences to [Mr and Mrs A]. I wish them well for the future in the care of their daughter [Baby A]. I hope this report has been of help to the Commissioner and will be happy to elaborate as required."

The following further advice was received from RM Emerson:

"1. Thank you for the request that I review my clinical advice in relation to the complaint from [Mrs A] regarding the care provided by Waikato DHB Midwives 2016. In preparing the advice on this case to the best of my knowledge I have no personal or professional conflict of interest. I agree to follow the Commissioner's Guidelines for Independent Advisors.

2. I have reviewed the following documentation on file: complaint from [Mr and Mrs A]; statement from [RM C] [Day 6]; Waikato Serious Incident Review Report [2016]; statement from [RM B]; statement from [Dr D]; Update on changes at WDHB, Summary of actions from [Director of Midwifery]; Waikato DHB clinical notes for [Mrs A] including all CTGs [to Day 6].

3. In addition to the above, I have reviewed the following responses in relation to the care provided to [Mrs A]: A report for the HDC prepared by [the] Director of Women's and Children's Health WDHB; Letter to New Zealand College of Midwives, Waikato DHB and [HDC], from Midwifery Council [CEO]; Response to Expert opinion from [RM B]; Letter from [the] Interim Chief Operating Officer — WDHB; WDHB position description, Job title — Midwife.

4. I have been asked to review the above responses to my original report (26 March 2018) and consider if they change my advice with regards to the severity of the breaches. I have been requested to outline the reasons for upholding/changing my advice.

5. In summary, Midwifery care was provided by WDHB to [Mrs A] intermittingly initially, following an antepartum haemorrhage (APH) [at 28 weeks], and subsequently as an inpatient following a preterm premature rupture of membranes (PPROM) [at 29 weeks].

6. [Mrs A] remained an inpatient with a confirmed preterm premature rupture of membranes and she continued to drain liquor with occasional bleeding. The baby was lying in a transverse position (which increased the risk of cord prolapse). There had been intermittent cramping and the inflammatory markers were increasing. Steroids were completed. Her vital signs remained normal and the baby remained active. Twice daily CTGs were reassuring. The plan 4.40pm on [Day 5] was to 'continue with 4 hourly monitoring, CTG pre sleep and overnight. Nil by mouth after dinner'.

7. On review of the clinical notes provided by WDHB, Midwifery care on [Day 5–6] was in keeping with accepted practice until hand over to [RM B] at 1500 on [Day 6].

8. In my original report dated 26 March 2018, my opinion was that [RM B] had severely departed from accepted practice in not persevering to facilitate review of [Mrs A's] abnormal CTG on [Day 6]. My reasons included

    a. A failure to recognise the acuity of the pregnancy
    b. Incorrect/inadequate documentation regarding fetal movements, CTG interpretation
    c. Removing the CTG without reassurance (either personally or externally)

9. In my original opinion 26 March, there were mitigating factors in this case as outlined in WDHB SAC report ([2016]). These factors were supported by statements from [RM B] and [RM C]. These factors included

    a. [RM B] was a new graduate midwife on her fourth shift following orientation to WDHB
    b. The shift was particularly busy across the service and [RM B] did not have the experience to prioritise her High Acuity workload
    c. [RM B's] attempts to escalate her concerns regarding the CTG were unsuccessful for the following reasons: The registrar and senior midwives were all busy with their high acuity women, [RM B] was not aware that there were alternative avenues to have the CTG reviewed (and she was not made aware), there was a midwifery shortage with no Charge Midwife Manager on the unit, the caseload assigned to [RM B] fell outside WDHB service spec's) *'Once the graduate is gaining confidence — Antenatal clients can be of more complexity only if support is available on the ward by an experienced midwife'*.

d. In this case, the only other midwife on the ward was under extreme pressure with her own high acuity case load and therefore not able to provide the level of support a new graduate midwife could fairly expect or require.

10. In reconsidering my original opinion I have taken into account the responses to my report. These responses include: A report for the HDC prepared by [the] Director of Women's and Children's Health WDHB; Letter to New Zealand College of Midwives, Waikato DHB and [HDC], from [Midwifery Council CEO]; Response to Expert opinion from [RM B]; Letter from [the] Interim Chief Operating Officer — WDHB; WDHB position description, Job title — Midwife.

    a. [The] report includes a tabular summary of the acuity on the Unit on [Day 6]; in addition the report outlines (numeric timeline) the attempts by [RM C] to request support. The report concurs with my opinion (26 March) that [RM B] was not adequately supported in her position as a new graduate. *The lack of midwifery support has been addressed by Waikato DHB in that approval was given in December 2017 to increase midwifery staffing by a total of 16 FTE.*
    b. In addition [the] report acknowledges that at the time of the incident*, it does not appear that Midwives [RM C] or [RM B] were able to effectively escalate the unsafe staffing on the ward.* The report further acknowledges *the level of staffing described above did not fully support midwifery staff as per Midwife [RM C's] statement — referring to unanswered calls from the obstetric team.*
    c. [RM B] has responded (19 June 2018) to my report with the following: She acknowledges the incorrect documentation regarding reduced fetal movements and in addition acknowledges that at the time, she did not consider previous CTGs. Furthermore she outlines the inability to escalate her concerns and in hindsight felt that she was not encouraged to do so. [RM B] states that, had she been aware that she could have taken her CTG to the delivery unit or Women's assessment unit she does not believe that she could have safely done so without compromising the care of her other patients (and further increasing the workload of her colleague).
    d. [RM B] discusses her learning outcomes which include:
        I. When assessing a CTG consider CTGs from previous days when applicable,
        II. Assessment of a woman's concerns based on a holistic picture, including woman's statement regarding symptoms, vital signs, physical exam, lab results and CTG trace.
        III. [RM B] now feels more confident to escalate concerns (using algorithm), keeping the woman on the CTG until reviewed by obstetric team.
        IV. She uses the SBARR tool to escalate concerns and writes in notes at time if possible.
        V. Further education has included Fetal Surveillance Education programme. K2MS perinatal training programme, enrolment in documentation workshop (Sept 2018)
        VI. Engagement in a structured reflection with the WDHB professional development team (four completed sessions to date)

e. Midwifery Council letter sent to [Chief Executive WDHB] expresses its concern about the distressing situation in which [RM B] was placed and the almost complete lack of support for her in the circumstances.
f. *Given the multiple systems failures on the night in question, the unacceptable situation [RM B] was placed in as a very new practitioner and the remedial education and learning [RM B] has undertaken since that time, I can advise that the Council will take no further action on the notification at this time and will await the outcome of the HDC investigation.*

In summary and in consideration of the above factors my opinion is that the non escalation of the abnormal CTG in a High Acuity pregnancy remains a severe departure from accepted midwifery practice; however in my opinion the situation [RM B] found herself in should not be viewed out of context and as laid out below. In consideration of the mitigating circumstances in this case I have changed my opinion to a moderate departure from accepted practice.

Due to the mitigating factors in this particular case, it is my opinion that my midwifery colleagues would agree that [RM B] did attempt to escalate her concerns regarding the CTG. Due to the extreme acuity of the unit on that night and the shortage of staff, she was left in the untenable situation of attempting to escalate her concerns but having no known avenue to do so. [RM B] found herself in a position where there was a systemic failure to support her ability as a new graduate midwife to escalate her concern.

[RM B] had earlier in the shift successfully arranged review of a CTG for [Mrs A] so she was able to identify the need to have a CTG reviewed. She had discussed the later CTG with the other midwife on the ward and was discouraged from seeking advice due to the registrar being unavailable. She was left without support to balance a high caseload of complex women [four days] following her orientation as a new graduate.

Subsequent to this outcome [RM B] has fully engaged in a structured reflection programme. She has identified her learning from the situation and has addressed the issues with appropriate education and changes to her practice. I note that [RM B] continues to offer her deepest sympathy and apologies to the family.

1. In my original report 26 March 2018, my opinion was that WDHB had severely departed from accepted practice in their failure to support a New Graduate Midwife as specified in the WDHB service specs. My opinion remains that the systemic failure of WDHB to support a new graduate constitutes a severe departure from accepted practice. My opinion is based on the following reasons:

    i. Waikato DHB Serious Incident Review Report (SAC Report date) states that The MFYP (Midwifery First Year of Practice — [RM B]) caring for [Mrs A] prior to the baby's birth was four days out of orientation on her first placement. Her workload was complex, the ward so busy that the senior midwife was

unable to provide adequate support and advice or sign off for CTGs as detailed. The SAC report further identifies

ii. **Process** — Lack of formalised escalation process for non-reassuring CTGs. Communication factors where the new midwife was not confident enough to escalate her concerns to the delivery suite or the consultant on call

iii. **Staffing** — Supervision of a new graduate midwife allocated to high risk patients was inadequate due to other work commitments for the senior midwife

iv. **Culture within the unit** — Response from the delivery Suite to staff in [the ward] escalating concerns was frequently dismissive and over time created reticence in contacting Delivery Suite staff for assistance/advice.

2. The report prepared for the HDC by WDHB outlines the following:

   i. Agreement with the statement in my original report 26 March. *The only other midwife on duty at the time of the incident was also under extreme pressure with her own high acuity caseload, and therefore not able to provide the level of support a new graduate could fairly expect or require (page 5 of 14).* Approval for a total of a 16 FTE midwifery staff has been approved subsequently December 2017.

   ii. *It does not appear that [RM C] or [RM B] were able to effectively escalate the unsafe staffing on the ward at the time of the incident (page 6 of 14). An escalation plan has since been implemented to address this with our staff.*

The above report outlines changes implemented since this event by Waikato DHB include: (page 11 &12)

i. Electronic fetal guideline and the requirement of continuous education for staff members are recognised as a service priority
ii. Departmental CTG multidisciplinary sessions are in place.
iii. SBBAR communication and documentation
iv. Midwifery staffing levels have increased and improved triage system of women presenting acutely has been introduced.
v. Staffing matrix for Midwifery has been increased
vi. Updated CTG machines have been purchased
vii. Education sessions have been scheduled in regards to fetal movements using a new guideline and flowchart.
viii. Appointment of Charge Midwife Manager to maternity ward has increased day to day leadership.

In Summary it is my opinion that [RM B's] inability to persevere in the request to review [Mrs A's] CTG was a result of a systemic failure to support her as a very new graduate midwife. I have therefore revised my opinion to a moderate departure from accepted practice.

At the time of the incident, it is my opinion that WDHB systemically failed to support a new graduate midwife in her ability to successfully escalate her concerns. For this reason my opinion is that this is a severe departure from accepted practice.

I note that both WDHB and [RM B] acknowledge the circumstances at the time of the incident and continue to engage in remedial actions and education to address these circumstances."

Appendix B: Independent advice to the Commissioner

The following expert advice was obtained from obstetrician Dr Ian Page:

> "Thank you for your letter of 4 July 2019 and the enclosed documents, requesting expert advice to the Commissioner on the obstetric care provided to [Mrs A] by Waikato DHB. I have read and agree to follow the Commissioner's Guidelines for Independent Advisors.
>
> I am a practising Obstetrician & Gynaecologist and have been a consultant for 30 years. I obtained my MRCOG in 1985, my FRCOG in 1998 and my FRANZCOG in 2002. I have been employed for the past 19 years by Northland DHB. I have been a member of the RANZCOG Expert Witness register since 2012.
>
> *Background*
>
> [Mrs A] […] attended [the public hospital] as her membranes had ruptured. She was admitted to hospital, given antibiotics and monitored for signs of infection. Her inflammatory markers gradually increased, but there were no overt signs of chorioamnionitis. On [Day 6] [Mrs A] reported a reduction in her baby's movements. During the evening the CTG became abnormal. Her baby was delivered by emergency caesarean section on [Day 7] and was profoundly acidotic requiring full resuscitation. She has survived but requires a high level of care.
>
> *Advice Requested*
>
> You asked me to review the documents and advise whether the care provided to [Mrs A] by Waikato DHB and its obstetric staff was reasonable in the circumstances and why. You also asked me to comment specifically on:
>
> 1. Whether the obstetric management of [Mrs A] was appropriate during her admission beginning [Day 1], and in particular on [Day 6].
> 2. Whether there was any indication for the obstetric team to perform any additional assessment or intervention in [Mrs A's] case.
> 3. My interpretation of the CTGs on [Day 6] — i.e. what did the traces show.
> 4. The adequacy of the staffing levels and availability of obstetric oversight on the WAU and antenatal ward on [Day 6].
> 5. Whether I had any further comments on this case that warrant comment.
>
> *Sources of Information*
>
> In assessing this case I have read:
>
> - Letter of complaint from [Mr and Mrs A]
> - Response from Waikato DHB and all enclosures referred to in that letter with the exception of [Baby A's] clinical records.
> - Statement from [Dr D].
> - Statement from [Dr E].

- Response from Waikato DHB and all enclosures referred to in that letter.
- Statement from [RM B] (noting that some of it was redacted).
- Response from Waikato DHB and all enclosures referred to in that letter.

Summary of the Case

[…] [Mrs A] reported brown PV loss to her LMC at 20 weeks and an episode of post-coital spotting. [At] 28 weeks' gestation she reported a further episode of post-coital bleeding of approximately 2tsp.

[Mrs A] attended the Women's Assessment Unit (WAU) at Waikato [DHB]. She was assessed and then discharged home as the bleeding had settled. The following day [Mrs A] experienced further bleeding and was again seen in the WAU. She was given steroids and placed under observation. A scan the following day showed the baby was normally grown, with a normal liquor volume and a closed cervix 2.2cm long. She was discharged [two days later].

On [Day 1] [Mrs A] had a spontaneous rupture of membranes at 11.20pm. She attended WAU where it was confirmed that her membranes had ruptured and the baby was in a transverse lie. She was given oral Erythromycin and admitted to hospital.

Over the following days [Mrs A] drained copious pink liquor and at times passed small red clots. Multiple CTGs were undertaken. Her white blood cell count and C-reactive protein were monitored and there was evidence of these markers increasing.

On the afternoon of [Day 6] [Mrs A] reported that she had felt her baby move less that day. A CTG was undertaken, and variable decelerations were noted. A registrar reviewed [Mrs A] and the CTG at 5pm, noting [Mrs A's] vaginal discharge had changed slightly in nature to be 'yellowy'. The registrar's impression was that [Mrs A] was clinically stable, and advised she was for registrar review if there were further concerns.

At 8.45pm a midwife had difficulty in recording the fetal heart on the CTG (although apparently she could hear it adequately) and there was loss of contact. The shift handed over at 11.00pm and the midwife requested the night midwife review the CTG. The night midwife repeated a CTG at 11.25pm and noted the fetal heart rate fluctuated between 120 and 180 beats per minute. The emergency bell was pressed and a registrar attended.

The registrar was able to locate the baby's heart beat with difficulty using an ultrasound scanner, and the rhythm was described as 'agonal'. The consultant obstetrician was called and [Mrs A] was offered an emergency caesarean section, noting it may be too late to save the baby.

The Caesarean section was completed and [Baby A] was born at 12.06am on [Day 7]. Her cord pH was 6.5, and she required full resuscitation. [Baby A] was not initially

expected to survive but has done so. She continues to require a high level of care including oxygen, regular suctioning and tube feeding.

My Assessment

You asked me to review the documents and advise whether the care provided to [Mrs A] by Waikato DHB and its obstetric staff was reasonable in the circumstances and why. You also asked me to comment specifically on:

1. Whether the obstetric management of [Mrs A] was appropriate during her admission beginning [Day 1], and in particular on [Day 6].

The management of [Mrs A] was quite appropriate. Striking a balance between the risks of premature birth (at 29 weeks' gestation) and conservative management with ruptured membranes (and its associated risk of infection) is difficult and never an exact science. I think all obstetricians in New Zealand would have followed the same management plan — steroids for fetal lung maturation, antibiotics to delay the onset of labour, and frequent observations of maternal and fetal well-being.

Her management was also appropriate on [Day 6] until the point at which the CTG became abnormal. There is no consensus as to how to use inflammatory markers (CRP and white cell count) to determine the need for delivery. Their increase was noted, and it was recognised that it led to an increased likelihood of chorioamnionitis and fetal infection. In the absence of more definite signs that this had actually occurred it was appropriate to continue to watch and wait. It is usual practice in maternity care for the immediate review of CTGs to be undertaken by the midwifery staff, with later review by the obstetric staff. Should abnormalities be detected the midwifery staff would usually contact the obstetric team to let them know that earlier review/action was required.

Once the CTG was recognised as abnormal the obstetric team was called and reacted appropriately.

2. Whether there was any indication for the obstetric team to perform any additional assessment or intervention in [Mrs A's] case.

As noted above the obstetric team undertook the usual and appropriate monitoring of [Mrs A] and her baby. I do not think there was any indication for any additional assessments or interventions until the CTG became abnormal at around 9pm. Even at that point the obstetric team would not be aware of the problem until the midwifery staff had recognised the abnormal CTG and called them.

3. My interpretation of the CTGs on [Day 6] — i.e. what did the traces show.

The CTG is usually assessed by observing four parameters, and then concluding normality or otherwise. It is primarily a test to look for fetal hypoxia but may also indicate fetal infection. I have set out my assessment in the table that follows, using the parameters from RANZCOG as referenced in the Waikato DHB Serious Incident Review Report.

Time	Baseline rate	Variability	Accelerations	Decelerations	Comments recorded	My assessment
0110–0140	125	>5	Present	Absent	FM present	Normal
0610–0630	135	>5	Present	Absent		Normal
1012–1040	135	>5	Present	Absent	FM present	Normal
1520–1610	145	>5	Present	2 transient	FM present	Normal
2054–2140	180	Not interpretable				Abnormal
2140–2210	180	Reduced	Absent	Present		Abnormal

The transient decelerations noted at around 1600 are hard to interpret, and may simply have been due to a loss of contact. It was reasonable for them to have been called variable, but as the rest of that CTG was completely normal no action was required.

From 2054 onwards the CTG was grossly abnormal, with a markedly elevated baseline rate. Even though the trace was not adequate (until 2140) for complete assessment the change of the baseline heart rate warranted a response.

The midwife involved in [Mrs A's] care at that point has documented her reasons for discontinuing the CTG, and why it wasn't brought to the attention of the obstetric team. It would appear to have been, at least in part, a function of the workload in the unit.

4. The adequacy of the staffing levels and availability of obstetric oversight on the WAU and antenatal ward on [Day 6].

At that time there were clearly insufficient midwifery staff for the workload they were expected to manage. The obstetric staff were also under significant pressure.

5. Whether I had any further comments on this case that warrant comment.

Whilst not relevant to obstetric care per se I note that someone (possibly the LMC) had performed acupuncture at point BL67 at 4.20pm on [Day 4]. The stated aim was to hopefully turn the baby into a longitudinal position. As far as I am aware the use of acupuncture in this way has usually been described between 32 and 35 weeks' gestation, in babies presenting by the breech with intact membranes. Its use in this situation would therefore not appear to be evidence-based.

The practice of offering a cold drink to a woman with reduced fetal movements was described in [the report] as outdated — an observation with which I agree. I am pleased to see a new guideline has been implemented. Given that the midwife concerned with this was a new graduate it might be worth your midwifery advisor assessing the syllabus from her midwifery school in this regard. This could also apply to the teaching regarding CTGs, as the midwife had not apparently been taught of the value of looking at preceding CTGs when assessing the current one.

Waikato DHB has clearly worked hard to understand why the situation occurred, with a view to preventing it happening to anyone else. However there is a national shortage of midwives, so it is quite possible that it could recur. The increase of midwifery FTE will fail to be effective if the posts cannot be filled.

The subsequent recruitment of SMOs to the budgeted numbers and an increase in the availability of registrars will also mean when midwifery staff are under pressure they will find it easier to obtain assistance.

It should, of course, be noted that most staffing regimes (both midwifery and obstetric) are based on average levels of acuity, and when the workload becomes excessive there is always going to be a problem. It is not possible to close a maternity unit to admissions, so the staff have to do their best under extreme pressure. This is a function of how a publicly-funded acute service is expected to work, and will sometimes lead to poor outcomes.

Waikato DHB (and other DHBs around the country) will need to continue to plan for an increase in midwifery and obstetric FTE to provide optimum care for the increasing complexity and co-morbidities of the pregnant population.

I do not have any personal or professional conflict of interest to declare with regard to this case. If you require any further comment or clarification please let me know.

Yours sincerely,

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