Midwife, Ms E

Midwife, Ms F

A Report by the

Health and Disability Commissioner

(Case 08HDC10923)

Parties involved

Mrs A	Consumer
Baby A	Baby (deceased)
Mr A	Consumer's husband
Mrs B	Consumer's sister
Mrs C	Consumer's mother
Mrs D	Consumer's aunt
Ms E	Provider/independent midwife
Ms F	Provider/independent midwife
Ms G	Hospital midwife

Commissioner's initiative

A public health physician, reported her concerns about the care provided to Mrs A by independent midwife Ms E, and her broader concerns about maternity services, to the Ministry of Health, the Health and Disability Commissioner (HDC), and other agencies. This led to the "Review of the Quality, Safety and Management of Maternity Services in the Wellington Area", commissioned by the Ministry of Health.[1]

I decided to commence an inquiry, on my own initiative,[2] into the quality of care provided to Mrs A by midwives Ms E and Ms F. The terms of reference for my inquiry are:

The adequacy of the treatment and care independent midwife Ms E provided to Mrs A in relation to her pregnancy in 2007–08.

The adequacy of the information Ms E provided to Mrs A in relation to her pregnancy in 2007–08.

The adequacy of the treatment and care independent midwife Ms F provided to Mrs A in relation to her pregnancy in 2007–08, in particular, during her labour and delivery in mid 2008.

The inquiry was commenced on 7 July 2008.

[1] Crawford B, Lilo S, Stone P, and Yates A. 2008. Review of the Quality, Safety and Management of Maternity Services in the Wellington Area: Ministry of Health. The full report is available at: http://www.moh.govt.nz/moh.nsf/indexmh/wgtn-maternity-services-review-oct08.
[2] Pursuant to section 40(3) of the Health and Disability Commissioner Act 1994.

Information reviewed

Information was provided by:

- Mr and Mrs A
- Mrs B
- Ms E
- Ms F
- Ms G

Mrs A's clinical records were obtained and reviewed. Capital and Coast District Health Board (CCDHB) provided relevant policies and procedures, and reports. Independent expert advice was obtained from independent midwife Chris Stanbridge, and is attached as **Appendix A**. The New Zealand College of Midwives also submitted a midwifery expert opinion from Maggie Banks.

Overview

Mrs A was in the 26th week of her second pregnancy when she contacted independent midwife Ms E to ask her to be her Lead Maternity Carer (LMC). The pregnancy progressed normally and Ms E booked Mrs A to deliver at CCDHB's Kenepuru Maternity Unit.

At 11.30pm, just over a week past her due date, Mrs A was admitted to Kenepuru Maternity Unit in labour, accompanied by her family. At 12.30am, Ms E performed a vaginal examination to assess the progress of Mrs A's labour. Ms E could feel small bumps to one side of Mrs A's cervix and was not sure what they were. Ms E contacted her mentor and colleague, senior independent midwife Ms F, to discuss her findings. During their discussion, Ms E asked Ms F to come to the unit. When Ms F arrived at the unit at 2am, Mrs A was in the bath in a room adjacent to the delivery room.

At 2am, Ms E attempted to perform a vaginal examination, but because of Mrs A's position, she could still feel the bumps but could not easily feel her cervix. Ms E asked Mrs A whether Ms F could examine her vagina. However, Ms F declined to examine Mrs A. She told Ms E that she was "doing fine", and suggested that they reposition Mrs A so that Ms E could perform the vaginal examination.

At 2.15am Ms E examined Mrs A's vagina and found that her cervix was fully dilated, and the bumps were still evident. Ms E also found skin folds and what she thought was the baby's caput (the top of his head). At 2.37am, Mrs A pushed with a contraction. The baby's buttocks and one of his feet became visible, and it was apparent that the baby was in the breech position.

Mrs A was still in the bath. Ms F informed the hospital midwife that they were about to deliver a baby in an undiagnosed breech position, and asked for the portable oxygen. Ms F assisted Ms E with the delivery. The baby's first leg was delivered by Ms E at 2.43am and at 2.55am the baby was delivered to the shoulders. Ms E had difficulty bringing the baby's arms down, so Ms F took over. She delivered the baby's left arm and head at 2.59am. Mr and Mrs A's baby, Baby A, was unresponsive at delivery.

The emergency bell was activated. Ms F and Ms E started to resuscitate the baby on the floor of the bathroom before transferring him to the resuscitaire in the delivery room. The hospital midwife called for back-up at 3.03am. The Kenepuru Hospital medical registrar arrived to assist at 3.10am. Two ambulance crews arrived at 3.18am and 3.25am and the Wellington Hospital Neonatal Team arrived to take over the resuscitation at 4.09am. Baby A was pronounced dead at 4.35am.

Information gathered during investigation

2003
In February 2003, Mrs A delivered her first baby, a girl weighing 3860gms (8lb), at Wellington Hospital Maternity Unit. She was overdue and her labour was induced because the uterine membranes had ruptured, and the draining liquor was meconium-stained. The delivery was complicated by shoulder dystocia[3] and the baby showed signs of distress. She was eventually delivered by Ventouse extraction with an episiotomy.

2007/2008 pregnancy
In November 2007, an ultrasound examination revealed that Mrs A was seven weeks and five days pregnancy, and the scan report estimated the date of delivery. Early in 2008, Mrs A telephoned Ms E to discuss the details of Lead Maternity Carer registration and to arrange a scan and an antenatal appointment.

Midwife Ms E
Ms E is a self-employed midwife and a partner in a midwifery practice group. She graduated with a Bachelor of Midwifery in 2007. During her training she attended approximately 50 deliveries. She had conducted nine deliveries as an LMC by the time of Baby A's birth. In her final year of training, Ms E focussed specifically on complications and emergency situations, and her final practical skills test in October 2007 was on breech birth and neonatal resuscitation.

Ms E is a member of the Midwifery First Year of Practice programme. This programme provides newly graduated midwives with the opportunity to have a supportive environment to assist them through mentoring, education and professional

[3] Obstruction or constriction of the birth passage.

support, to develop the specific skills and knowledge to progress from a competent graduate midwife to a confident practising midwife. A senior midwife, Ms F, is her programme mentor.

Midwife Ms F
Ms F is a self-employed midwife and a partner in the same midwifery practice group as Ms E. She registered as a general and obstetric nurse in Wellington in 1980, and qualified as a midwife overseas in 1990. Ms F worked overseas as a secondary midwife in the hospital system. In 1995 she returned to New Zealand. Ms F worked at a large public hospital as a delivery suite co-ordinator and a postnatal ward team leader. She has been a self employed midwife since 2000. Over the four years prior to the birth of Baby A, Ms F has provided LMC care for 165 women.

Antenatal care
Mrs A is a registered nurse and, at the time of her 2007/08 pregnancy, was involved in nursing education. Mrs A asked Ms E to meet her at work for the antenatal appointments. Ms E stated that she usually had to telephone Mrs A in her office to remind her about the appointments. On five occasions, Mrs A did not keep the appointments, despite reminder messages.

At the first antenatal appointment, when Mrs A's pregnancy was at 26 weeks 6 days, Ms E noted that Mrs A's ultrasound scan, performed recently, described the baby's development as normal and gave the estimated date of delivery. Ms E also noted that Mrs A had a bicornuate uterus.[4] This malformation had been identified in the scan ordered by Mrs A's medical practitioner in November 2007. Mrs A said Ms E talked to her about her bicornuate uterus and asked whether it had caused any problems during her first pregnancy and delivery in 2003. Mrs A told Ms E that this malformation did not cause any complications during her pregnancy but she had to be induced and her baby was delivered by Ventouse extraction at Wellington Hospital. The placenta was delivered normally and she experienced normal blood loss. Ms E talked to Mrs A about the risks associated with this condition and explained that she would refer her to an obstetrician if there was a problem with the position of the placenta.

Ms E examined Mrs A and obtained the details of her previous labour and delivery. They discussed the facilities available at Kenepuru Maternity Unit. Kenepuru Maternity Unit is a "Level O" maternity facility suitable for low-risk women when there are no known factors that would preclude a spontaneous, uncomplicated vaginal birth and safe puerperium.[5]

Ms E was aware that a woman with a bicornuate uterus, who has had a previous normal pregnancy, requires "Level 1" referral under the Referral Guidelines.[6] She

[4] The bicornuate or double uterus is a rare malformation due to developmental error.
[5] Period after childbirth.
[6] Appendix 1 of the Section 88 Maternity Notice 2002 (the Referral Guidelines), made pursuant to section 88 of the New Zealand Public Health and Disability Act 2000, sets out clear guidelines for primary practitioners referring patients to obstetric services. The Guidelines define three levels of

discussed the significance of Mrs A's bicornuate uterus with her colleagues and her mentor, Ms F. They advised her that a referral did not seem to be necessary in this case and that Mrs A could birth at Kenepuru. Ms E did not document these discussions in Mrs A's midwifery and maternity provider organisation record (MMPO).

Ms E subsequently advised the Sentinel Event Review team[7] that throughout the antenatal period, Mrs A expressed a wish to give birth at Kenepuru Maternity Unit, and to try for a natural birth. Ms E recorded this in the notes. She discussed the available pain relief options in detail, and informed Mrs A that epidural anaesthesia would not be available at Kenepuru Maternity Unit. Ms E advised Mrs A that she believed she could cope with a natural birth and told her that Syntocinon, which is used to induce labour, produces painful contractions. Ms E stated that she made it clear to Mrs A that the choice for her delivery was hers, but if she wanted an epidural they would need to be based at Wellington Hospital. Mrs A told her that she wanted to plan for a delivery at Kenepuru Maternity Unit, but she wanted the option of transferring to Wellington Hospital if the pain became too much.

Four weeks before her due date, Ms E visited Mrs A and completed the booking form for Kenepuru Maternity Unit. She also gave Mrs A forms for a scan and a Doppler examination to establish the location of the placenta. Ms E recorded this appointment on a separate piece of paper because Mrs A had forgotten to bring her maternity record book to the appointment. This separate sheet was later attached to the MMPO.

The following week, Mrs A had an ultrasound scan which estimated the date of delivery. The baby's weight was estimated to be 3764gms, which was in the 98th percentile for weight. The scan showed that the baby was in a cephalic position (head down) with its spine to the right side. The placenta was in a normal anterior position.

The next time Ms E saw Mrs A was four days later. Ms E recorded that she discussed again with Mrs A the venue for the delivery, noting, "Kenepuru as long as everything is going well and normal. Discussed pain relief in labour. Happy with options available." Ms E noted that the baby was in the right occipital lateral position.[8]

When Ms E met Mrs A on the following week, she recorded the details of this assessment on a separate sheet of paper because Mrs A had forgotten her maternity record. (This record was later attached to the MMPO.) Ms E noted that Mrs A had had "acupuncture for prebirth" and some recent numbness in her left upper leg, which was thought to be the baby pressing on a nerve. Ms E advised Mrs A to inform her if this happened again.

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referral and consequential action for practitioners to follow. The Guidelines list a bicornuate uterus as a condition necessitating "Level 1" referral. In cases of Level 1 referral, "The LMC *may recommend* to the woman that a consultation with a specialist is warranted." The specialist does not automatically assume responsibility for the woman's ongoing care.

[7] In October 2008, CCDHB arranged for a Sentinel Event Review of the circumstances of Mrs A's labour and delivery. The details of the review are outlined on page 13 and Appendix D of this report.

[8] Head down, back against the mother's right hip bone.

At the next appointment, a few days after her due date, Ms E talked to Mrs A about her labour and birth plan. Ms E noted, "[Mrs A] would like to be induced if baby does not come this week. I will phone delivery suite to discuss this." Ms E recalls telling Mrs A that she was happy to wait until 42 weeks, but she would see her again four days later. By then, Mrs A would be one week over her estimated due date, and they could go to Kenepuru Maternity Unit for a cardiotocograph (CTG)[9] to check the baby's well-being.

When she got home, Ms E telephoned Wellington Hospital to make an appointment for Mrs A for the following Tuesday. She was told that this day was fully booked so Ms E booked Mrs A for the next available day, Wednesday. Ms E also left a message for the obstetric consultant, asking her to call her to discuss Mrs A's induction.

Mrs A stated that when she asked if she could have her labour induced at Wellington Hospital, Ms E told her that if she had not delivered by eight days after her due date, she would be induced the following Wednesday (13 days after her due date), which was the first available day. Mrs A recalls that she was anxious about being overdue, so telephoned Wellington Hospital Delivery Suite to check on induction bookings and was told that she could be induced earlier, and was cautioned by the hospital midwife not to tell Ms E that she had been given this information.

Labour

On the following evening, Mrs A telephoned Ms E to tell her that she was having mild contractions. Ms E checked on the baby's well-being and asked her to call again when the contractions became stronger and closer together. Ms E contacted Mrs A the following day when she had not heard from her, and was told that the contractions had stopped. At 5am two days later, Mrs A telephoned Ms E to tell her that she was contracting every ten minutes and her contractions were now stronger. Ms E contacted Mrs A again at 9am and was told that the contractions had eased. However, at midday, when Ms E telephoned again, Mrs A reported that she had "had a show", the baby was moving well and she was coping. Mrs A said there was no need for Ms E to visit, because her mother, Mrs C, was a retired midwife and was helping her with her contractions.

At 10.30pm, Mrs A called Ms E on her pager asking her to contact her by telephone. Mrs A told Ms E that she was contracting every five minutes and wanted to go the Kenepuru Maternity Unit. Ms E telephoned the maternity unit to advise the duty hospital midwife to expect Mrs A, and then went there herself.

Mrs A and her family arrived at the unit at 11.30pm. Her membranes ruptured spontaneously as she entered the delivery room. Ms E recorded that the draining liquor was clear and recalls that it was slightly straw coloured. However, Mrs A stated

[9] Electronic monitoring of the fetal heart rate. A CTG can indicate any abnormalities in the fetal heart rhythm, which might indicate fetal distress.

that her mother and aunt (who is also an experienced midwife) noted that the draining liquor was meconium stained.[10]

Ms E examined Mrs A and found what she thought was the baby's head well down in the pelvis. The baby's spine was lying to Mrs A's left side. Ms E listened to the baby's heart rate with a hand-held sonicaid and found it to be normal and located in a position consistent with a cephalic presentation.

At 12.30am, Ms E performed a vaginal examination to assess the progress of the labour. She assessed the baby's head to be a station –2[11] and the cervix to be 7–8cms dilated. Ms E said, "I felt little bumps on one edge of the cervix and wasn't sure what they could be." She left the room and telephoned her mentor, senior midwife Ms F. Ms E described her unusual findings to Ms F, who thought the bumps might be scarring or the remains of hymen. Ms E said that she thought something was not quite right and she wanted some reassurance. She stated, "I rang specifically to discuss my findings on VE particularly the little lumps and bumps and said that I had never done a VE that felt so weird. I felt reassured by what [Ms F] thought they might be, but still asked for her to come and support me."

Mrs A recalls that Ms E was in and out of the delivery room a lot. She said that her husband, mother and aunt were supporting her and helping her to use the Entonox gas for pain relief.

When Ms E returned from talking to Ms F, she advised Mrs A that Ms F would be arriving in an hour and asked permission for her to be the assisting midwife. Mrs A agreed and then said that she would like to use the bath in the other room.[12]

When Ms F arrived at Kenepuru Maternity Unit at 2am, she made herself known to the hospital midwife on duty in the unit, Ms G. Ms F went to the bathroom and saw that Mrs A was labouring in the bath. Ms F did not want to intrude so she brought a chair into the room and positioned herself by the door. She took over the clinical recording.

Mrs A's sister, Mrs B, arrived at Kenepuru Maternity Unit at about this time and was shown to the bathroom where her sister was labouring.

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[10] This is the presence of fetal faecal material in the uterine liquor. Except in cases of breech presentations, the presence of meconium should be considered a serious sign. Slight green staining may be due to previous distress from which the baby has recovered. Thick fresh meconium denotes distress that needs urgent attention.

[11] "Station" refers to the relationship of the presenting part of the fetus to the level of the ischial spines (outlet) of the mother's pelvis. When the presenting part is at the level of the ischial spines, it is at an 0 station (synonymous with engagement). If the presenting part is above the spines, the distance is measured and described as minus stations, which range from –1cm to –4cms. If the presenting part is below the ischial spines, the distance is stated as plus stations (+1cm to +4cm). At a +3 or +4 station the presenting part is synonymous with crowning.

[12] The CCDHB Water Bath Policy is attached as **Appendix B**.

Ms E recalls that Mrs A was enjoying the comfort of the bath. When she started to feel the urge to push with her contractions at about 2am, Mrs D asked if she was fully dilated and suggested that Ms E conduct another vaginal examination to assess progress. Ms E attempted to perform a vaginal examination, but Mrs A was leaning out of the water on the side of the bath. While she was in that position, Ms E had difficulty reaching the cervix to assess the dilatation.

Ms E describes what took place between 2am and 2.15am as follows:

> "I did still feel what I thought was the head, and some little bumps to one side. [Mrs A's] mother and aunty kept asking me whether she was fully dilated. I said to [Mrs A] that I couldn't feel too well and asked if she minded if I asked [Ms F] to carry out a VE [vaginal examination]. [Mrs A] consented, however, [Ms F] expressed the view that I was 'doing fine' and suggested 'it might be easier if [Mrs A] moves to a reclining position'. She had great difficulty moving herself into this position and expressed considerable effort and discomfort while doing so. At 2.15am I carried out another VE. I felt what I thought was a lot of skin folds or caput and the little bumps to one side; still believing these to be scarring, or the remains of a hymen as previously discussed with [Ms F]. … I felt no cervix and told [Mrs A] she was fully dilated."

Ms F and Ms E accept that there was an "unfortunate misunderstanding" at this time. Ms E was concerned about the "unusual finding" but Ms F believed that Ms E was asking for assistance because she was having difficulty in assessing cervical dilatation. Ms F considered that she was being supportive when she declined to check Ms E's finding and encouraged her to have confidence in assessing dilatation.

Mrs A pushed with contractions for a few minutes after Ms E's vaginal examination at 2.15am, but she was feeling tired. Mrs B remembers Mrs D saying that Mrs A's pushing was "not good".

Ms F suggested that Mrs A move out of the bath, which might help to progress the labour. However, Mrs A declined to move out of the bath and indicated that any movement was very difficult.

Preparation for delivery

Mrs B pushed a chair to the side of the bath so that her mother could sit while supporting Mrs A's left foot. Mr A sat at his wife's head. Mrs B recalls that the family encouraged Mrs A, who was saying that she could not push any more and thought that she would die. Mrs B recalls that her mother said something to Ms E, a medical term, questioning whether the presenting part was the baby's forehead because it was so pale.

At 2.37am, Mrs A pushed with another contraction and Ms E saw what she thought was a hand squashed alongside the baby's head. She then realised it was the baby's

bottom and one of his feet. Mrs B saw the toes of one foot appear and Ms F also recognised that the baby was in the breech position.

Ms F immediately informed Ms G that they had an undiagnosed breech presentation and imminent delivery in the bathroom, asking where she could find the portable oxygen cylinder. Ms G fetched the cylinder from the store room, and Ms F wheeled it to the bathroom. Ms E said that she assumed that the ambulance had been called and that emergency back-up was on the way. Ms F said that, although she had not asked her to do so, she had expected that Ms G would make these calls.

Ms G explained that although she had not previously met Ms E, she knew who Ms F was and felt comfortable that she was there. Ms F looked calm and did not communicate any sense of urgency. Ms G stated that Ms F is a highly skilled and well regarded midwife. Ms F did not behave as if there was an emergency when she told Ms G that Ms E's patient was an undiagnosed breech, and her calm manner led Ms G to believe that the birth was being managed. Ms F did not say whether the oxygen was required as a precaution for emergency resuscitation and did not ask Ms G to call for back-up assistance.

Shortly after she assisted Ms F, Ms G answered a telephone call from the duty nurse manager, who was checking on the status of the unit. Ms G told her that she had five mothers and babies in the unit and that there was an undiagnosed breech baby with two midwives in attendance.

Ms G decided to prepare for an emergency and checked the resuscitation table (resuscitaire) in the delivery room to ensure that it was functioning. She turned on the heater and checked the oxygen and suction.

Ms G stated:

> "According to CCDHB policy regarding imminent breech delivery[13] the LMC must call for emergency support and prepare for neonatal resuscitation. My initial response was to prepare for the resuscitation of the baby by first checking the emergency equipment. I had intended to inform the Wellington Obstetric Registrar and offer my support to the LMCs after the equipment check. I did not get the opportunity because I was interrupted by the activation of the emergency bell in delivery room one."

Ms G stated that she was not privy to what was happening in the bathroom. She said that if a less experienced midwife than Ms F had told her that there was an undiagnosed breech, she would have immediately arranged an ambulance. She did not invite herself into the bathroom without a request to assist because Ms F was there, but when she heard the emergency bell, she responded.

[13] The CCDHB Breach Presentation Policy is attached as **Appendix C**.

Delivery
Ms F said that she considered the risks associated with the delivery and thought about the best position for Mrs A to be in, and decided that it was best to keep her where she was, reclining in the bath. She advised the Sentinel Event Review Team that she had good access and view. Ms F stated:

> "I had to bear in mind that [Mrs A] was a large woman who was having great difficulty in moving and with the baby already partly born, it would be risky to both mum and baby to try to move [Mrs A's] frame out of the bath and onto the cold floor. The water was currently holding up the baby's body and was warm. I considered whether the plug should be pulled and again concluded the water was better present, as, if [Mrs A] while on her back delivered on the floor of the bath without water, the baby would not have a 'drop'."

The baby's first leg was delivered at 2.43am and the second leg a minute later. Ms F felt the cord for a pulse, which was normal. Ms E guided the baby down with her hands on his sacrum, with Ms F standing beside her. Ms E encouraged Mrs A to push and the baby slowly moved down.

At 2.55am the baby was birthed to his shoulders. Ms F felt for the cord pulse again and assessed the pulse rate at 150 beats per minute. Ms E recalls that the baby was a good colour.

Mrs A stated:

> "I pushed out the bottom half of baby's body. The bottom half of my baby's body was hanging outside my womb for a while. My family and I saw my baby's feet tapping strongly outside the womb in the water then the baby's kicking became weaker then eventually stopped. This went on for about 20 minutes. [Ms F] assured [Ms E] to keep doing what she was doing and that she was doing well. [Ms F] assured us that everything was OK."

Ms E tried to sweep the baby's arms forward but was unable to. Ms F took over, and the right arm birthed spontaneously. Ms F swept the baby's left arm down and delivered his head at 2.59am.

Mr and Mrs A's baby, Baby A, was unresponsive when delivered. Ms F placed him on his mother's chest. Ms E rubbed him vigorously with a towel to try to stimulate respiratory effort. She recalls that Ms F clamped and cut the cord.

Mrs A stated:

> "Our baby was floppy and not moving and quiet. [Ms F] handed baby to me and put him on my chest. I noted that my baby was white in colour and very floppy. His eyes were not open. I was still in the water tub. [My husband] was asked to cut the cord. Our baby was still not crying and not moving or breathing. … There did not appear to be any sense of urgent concerns on the midwives' part regarding the floppy state of our baby at delivery. Even when

> our baby was delivered, [Ms F] assured me and my family that everything was fine."

Mrs B recalls that Mr A cut the cord. She said, "I am not sure who was directing him." She stated:

> "At this time [Ms F] asked me to bring the oxygen bottle inside the room, so I ran out and rolled it in. When I came in with the bottle, [Ms E] was holding the baby, and then [Ms F] got out a towel from the rail on the wall to put baby on. [Ms E] put the baby on the towel, both of them tried to put the oxygen mask on the baby while [Ms F] was holding the baby. … [Ms E] started to push the baby's chest with, I think, two fingers. I think [Ms F] was finding it hard to hold baby and also hold the mask on him at the same time, so she said something like, 'OK let's put baby on the floor'."

Resuscitation

Ms E and Ms F placed the baby on the floor on warm towels and started resuscitation. After 20 seconds and no response, Ms F said that they needed to get him to the resuscitaire in the delivery room. Ms E carried the baby to the delivery room, which is about 15 metres along the corridor from the bathroom. Ms F pressed the emergency bell when they entered the delivery room.

Ms F and Ms E continued chest compressions and ventilated the baby via an ambubag on the resuscitaire. Ms E listened to the baby's heartbeat and assessed it to be 40 beats per minute.

At 3.03am, Ms G entered the room and was asked to ring for emergency back-up. Ms G recalls that she dialled the emergency number, 777, gave her location and was transferred to the ambulance despatch operator. She stressed the urgency of the situation and then paged the paediatric registrar from a different phone and advised that a newborn required active resuscitation.

Mrs B recalls that Ms G tried to explain to the ambulance dispatcher why Ms F wanted the ambulance, and kept coming and asking more questions.

Ms G decided that Ms F was the best person to answer the dispatcher's questions, as this would save time, as she had not been present during the delivery and was relaying information indirectly. Ms G passed the telephone to Ms F to explain the details to the registrar.

At 3.10am, the Kenepuru Hospital medical registrar, a registered nurse, and the duty manager arrived in the delivery room in response to the 777 call. Mrs B heard Ms F ask the doctor if he had any experience in situations like this. He said "No".

The registrar, who was interviewed in October 2008 by the Sentinel Event Review Team, stated:

> "During the early hours of [that morning] I was emergency paged to attend to a baby that was not breathing. I arrived at approximately 1–2 minutes later in the Delivery Suite to find two midwives (I did not know their names) performing resuscitation on a neonate on a resuscitaire. I was told the baby was born a few minutes earlier, was blue and hadn't taken a breath yet. I confirmed respiratory arrest and took over responsibility for bagging and masking the baby and attempted to dry and stimulate the baby further. I then requested to know what the baby's heart rate was and was informed it was approximately 40bpm. I confirmed this myself and continued to bag and mask while requesting one of the midwives to continue with chest compression."

The nurse took over the clinical recording. She noted that the 777 call was placed at 3.09am and the registrar took over the ambubag at 3.12am. The baby made a slight response to the resuscitation efforts at 3.15am, but at 3.17am the heart rate was still 40 beats per minute. At 3.18am the first ambulance team arrived to assist. At 3.25am the second ambulance team arrived. The staff continued with chest compressions and ventilation resuscitation until the Wellington Neonatal Retrieval team arrived at 4.09am.[14] Resuscitation efforts ceased and Baby A was pronounced dead at 4.45am.

Care of Mrs A following Baby A's birth

When the registrar arrived to assist with the resuscitation, Ms E returned to the bathroom to assist Mrs A, who had been left in the care of her mother and aunt. Mrs A recalls that the water was cold and that her mother was worried about the delay in the delivery of the placenta. Mrs C was holding the umbilical cord, and handed it to Ms E so she could deliver the placenta. Mrs C and Mrs D then assisted Mrs A from the pool to have a shower and dress.

Mrs A recalls that Ms E came into the bathroom a number of times to tell her what was happening with Baby A, that a specialist was on the way and that they were trying to get him to the Neonatal Unit. Mrs A remembers that the neonatal specialist came into the room and told them that Baby A had died. Ms E and Ms F were crying.

[14] That day, Wellington Hospital Neonatal Intensive Care Unit (NICU) Retrieval Team was involved in a retrieval in another region. The Wellington Hospital Delivery Suite, which is resourced for 30 infants, was very busy with 36 infants. Two transport incubators were already in use when the call was made for the team's attendance at Kenepuru Maternity Unit at 3.10am. When the call was received for Baby A, the on-call consultant was called in from home by the NICU staff. One of the senior NICU nurses and the on-call consultant were in contact with Kenepuru Maternity Unit by phone until an ambulance and a second retrieval team could be prepared and dispatched at 3.35am.

The family
Mr and Mrs A stated:

> "We hope that the tragic and untimely death of our son will be a learning experience for health professionals and health providers. We want a review of the maternity services and the competencies and training and supervision of midwives."

Subsequent reviews

Sentinel Event Review
Appendix D contains information about CCDHB's Sentinel Event Review examining the events relating to the delivery and death of Baby A.

Review of the Quality, Safety and Management of Maternity Services in the Wellington Area
A public health physician, reported her concerns about Baby A's death and about the quality of maternity services in the Wellington area to the Ministry of Health, HDC, and other agencies. This prompted the "Review of the Quality, Safety and Management of Maternity Services in the Wellington Area" (the Review), commissioned by the Ministry of Health. The aim of the Review was to consider any systems issues across the range of maternity services in the Wellington area, without duplicating investigations by HDC and the Coroner. The Review report was released in October 2008.

Opinion: Breach — Ms F

Mentoring and oversight of Mrs A's labour
At the time of Baby A's birth, Ms E was participating in the Midwifery First Year of Practice (MFYP) programme, and Ms F was her mentor.

Mentoring is a key component of the MFYP programme. According to the Clinical Training Agency's "Specification for the Midwifery First Year of Practice (Pilot) Programme":[15]

> "The mentor is not expected to attend births with nor physically supervise the practice of the graduate midwife. While the mentor may provide advice in relation to clinical decision making, at all times the graduate midwife will remain responsible and accountable for the decisions she makes and the care that she provides."

[15] 20 October 2006.

In the majority of situations, mentoring will occur at a distance from the patient. However, in this case Ms F physically attended, and assisted at the birth. In these circumstances, Ms F owed Mrs A a duty of care in her role of mentoring and oversight.

In response to the provisional opinion, Ms F noted that the mentoring relationship, as it relates to the MFYP programme, "is based on mutual regard and common values and, at its core, the process is shared, encouraging and supportive. For mentored people, knowing someone is there, willing to give them support and encouragement, enables them to come to terms with their role".[16] Mentoring is different from clinical supervision, which has been described as "a designated interaction between two or more practitioners within a safe/supportive environment, which enables a continuum of reflective, critical analysis of care to ensure quality patient services".[17]

The New Zealand College of Midwives (NZCOM) acknowledged in a 1996 consensus statement on mentoring that midwives moving into self-employed practice, whether new graduates or experienced hospital midwives, may need support. The consensus statement described the nature of the relationship between the two registered midwives as "one of partnership where the mentor will listen, challenge, support and guide the mentored midwife. It also clearly stated that the mentored midwife remains responsible for her own practice."[18] However, that is not to say that the mentor midwife is absolved of all responsibility. In my opinion the mentor midwife owes the consumer a duty of reasonable care and skill in her role of mentoring and oversight. In this sense, the mentor midwife acts as a safety net, and is not simply a bystander.

Ms E managed Mrs A's labour from her arrival at Kenepuru Maternity Unit at 11.30pm. At 12.30am, Ms E performed a vaginal examination and felt a number of "bumps" on one side of Mrs A's cervix. Ms E decided to contact Ms F, as her mentor, to discuss this finding. Although Ms F thought that the anomaly might be hymen remains or scarring, Ms E was sufficiently concerned about her unusual findings that she asked Ms F to attend the birth for further assistance and clinical support. She said: "I rang specifically to discuss my findings on VE, particularly the little lumps and bumps, and said that I had never done a VE that felt so weird. I felt reassured by what [Ms F] thought they might be, but still asked for her to come and support me." When Ms E returned from talking to Ms F, she informed Mrs A that Ms F would be arriving and asked permission for her to be the assisting midwife. Mrs A agreed.

Once Ms F came in to assist with the birth, the relationship moved beyond that of mentor and she assumed the role of the assisting midwife. This is clearly

[16] "*The faces of mentoring in New Zealand: Realities for the new graduate midwife*", New Zealand College of Midwives Journal, October 2006, p. 23.
[17] Bishop, 1998 cited in Deery, 1999, p. 252.
[18] "*The faces of mentoring in New Zealand: Realities for the new graduate midwife*", New Zealand College of Midwives Journal, October 2006, p. 24.

demonstrated by Ms F taking the lead once the emergency situation arose and Mrs A's agreement to her presence in the room on this basis.

Ms F arrived at Kenepuru at 2am. At around this time, Mrs D thought Mrs A might be fully dilated and suggested that Ms E conduct another vaginal examination to assess progress. Ms E attempted to perform a vaginal examination, but because of Mrs A's position, she had difficulty reaching the cervix. Ms E said: "She was low down in the water, so it was hard to reach, but I still felt the previously discussed lumps so I then asked permission for [Ms F] to do a VE."

Mrs A agreed that Ms F could examine her vagina. However, Ms F declined, told Ms E that she was "doing fine", and suggested that they reposition Mrs A so that Ms E could reach the cervix.

At 2.15am when Mrs A had been repositioned, Ms E examined Mrs A and found that her cervix was fully dilated and the bumps were still evident. Ms E also found skin folds and what she thought was the baby's caput.

My midwifery advisor, Chris Stanbridge, was critical of Ms F's failure to examine Mrs A at Ms E's request. She advised:

> "It is part of the mentor's role to support the graduate to be confident in her assessments, and as such, it is understandable [Ms F] supported her to find a way to examine [Mrs A] more easily. This meant that [Ms E] was learning how to cope with a similar situation if she was on her own.
>
> However, while the midwives were able to explain away [Ms E's] findings, and it is generally better to have consistency of examiner, I believe it would have been more appropriate for [Ms F] to have examined [Mrs A] at the second examination around 2am and use the benefit of her greater experience in internal examinations to determine the reason for the unusual findings."

Mrs Stanbridge advised that, with hindsight, it can be seen that neither midwife appreciated the implications of Ms E's abnormal vaginal examination finding. My expert advised: "I believe not following up on an unusual finding on vaginal examination would be seen as a departure from accepted standard of care."

A critical issue in this case is whether Ms F acted reasonably when she declined Ms E's request for her to examine Mrs A. I accept that Ms F had a high level of confidence in Ms E, and had worked closely with her in the past. However, Ms E was unsure about her findings and recognised this by seeking support. She specifically asked Ms F for assistance.

In response to the provisional opinion, Ms F and Ms E stated that there was an "unfortunate misunderstanding" in relation to Ms E's request at this time. Ms F believed that Ms E was asking her for assistance because she was having difficulty in assessing cervical dilation. Ms F considered that she was being supportive by encouraging Ms E to have confidence in her own assessment. This miscommunication

partly explains, but does not excuse, Ms F's decision not to intervene. In my opinion Ms F failed to act with reasonable care and skill when she declined to examine Mrs A at Ms E's request. I conclude that Ms F breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights.[19]

Although I am critical of Ms F's failure to intervene, I note my expert's advice that even if Ms F had examined Mrs A at this time, it would not have altered the care they provided from that point, or the outcome.

Decision to proceed with breech birth in water
At 2.37am, when Mrs A pushed with another contraction, Ms E saw what she thought was the baby's hand squashed alongside his head. She then realised it was the baby's bottom and one of his feet. Ms F also saw that the baby was in the breech position. She advised Kenepuru midwife Ms G of the situation before returning to the bathroom.

An undiagnosed breech presentation in labour is an obstetric emergency. Although there was no express handover of responsibility for Mrs A's care, Ms F led the clinical management of the birth following the diagnosis of Baby A's breech presentation. This action is to her credit. It was appropriate for Ms F to take primary responsibility for this emergency situation in light of her greater experience.

With good access and view, Ms F decided it was best for Mrs A to deliver the baby where she was, reclining in the bath. It is clear that Ms F made a considered decision, taking into account a number of relevant factors. She advised the Sentinel Event Review Team:

> "I had to bear in mind that [Mrs A] was a large woman who was having great difficulty in moving and with the baby already partly born, it would be risky to both mum and baby to try to move [Mrs A's] frame out of the bath and onto the cold floor. The water was currently holding up the baby's body and was warm. I considered whether the plug should be pulled and again concluded the water was better present, as, if [Mrs A] while on her back delivered on the floor of the bath without water, the baby would not have a 'drop'."

CCDHB's "Breech presentation (singleton fetus) — management of" policy states that in the event of an undiagnosed breech presentation in labour, clinicians may decide to proceed with a vaginal delivery if it is "imminent and unavoidable". If the patient is in a level O unit (such as Kenepuru Maternity Unit) the on-call specialist should be personally contacted by phone for advice and, if the delivery is imminent, the LMC must call for emergency support and prepare for neonatal resuscitation.

Mrs Stanbridge advised that birth was immediately imminent and transfer would have been inappropriate. Neither Ms F nor Ms E expressly called for emergency back-up.

[19] Right 4(1) states that every consumer has the right to have services provided with reasonable care and skill.

However, Ms F alerted Ms G to the imminent delivery of a baby in an undiagnosed breech position and asked for the portable oxygen. It was her responsibility to ensure that Ms G appreciated the seriousness of the situation and called for emergency back-up. Mrs Stanbridge advised that, in any event, no physical obstetric support would have been available from Wellington Hospital. She noted that Ms F and Ms E could have obtained telephone advice from an obstetrician about how the birth should be managed, but they managed the birth "very well unaided".

Guided by Mrs Stanbridge's advice, I accept that Ms F's decision to continue with the vaginal delivery in the absence of specialist obstetric support was reasonable in the circumstances. However, it is questionable whether it was reasonable to continue with the vaginal delivery in the water.

Mrs Stanbridge outlined the key principles guiding the vaginal delivery of babies in the breech position. A breech baby needs to have its head, the largest part, delivered in a controlled manner for it to adapt to rapid compression changes as it comes through the pelvis. The birthing of a breech baby's head is achieved by allowing the baby's body to drop and hang from the mother until the hairline at the back of the baby's head is visible. The midwife must then lift and support the baby's body, allowing the head to gradually birth.

Mrs Stanbridge acknowledged that a number of factors influenced Ms F's decision to proceed with the vaginal delivery in the water. A short time earlier, Mrs A had great difficulty in moving herself into a new position and expressed considerable effort and discomfort in doing so. Mrs A had declined an earlier suggestion that she move out of the bath to encourage birth progress. She said that she wanted to stay where she was and indicated that any movement was difficult.

At the time of the breech diagnosis, the baby was partly born. This would have made it more difficult for Mrs A to move, particularly to get out of the bath. Furthermore, Mrs A's movement out of the bath may have resulted in the baby being born in an uncontrolled manner, which in turn could have increased the risk to the baby. Ms F took into consideration her clarity of view and access, as well as the warm environment provided by the water, and the physical space provided to allow the baby to "drop".

Mrs Stanbridge advised that the normal management would have been to ask Mrs A to leave the pool, or at least stand to enable her baby to be born in air. Acknowledging Mrs A's earlier reluctance to move, this would have necessitated making it clear that it was an emergency and the baby needed to be born out of the water. This would have been consistent with CCDHB's (CCDHB) "Water Immersion for Labour and Birth" policy which states, "In an emergency, the woman must understand that the midwife will ask her to leave the pool immediately." Although Mrs Stanbridge does not believe Ms F's failure to ask Mrs A to leave the pool, or to at least stand, influenced the outcome of the birth, she advised that birthing the breech baby in water "would not be standard care".

In response to the provisional opinion, Ms F stated that the actual wording in the CCDHB policy "Water immersion for Labour and Birth" is that water immersion and water birth is "not recommended" when there is a malpresentation such as a breech. Ms F submitted that a recommendation is not as strong as a direction or a requirement. It implicitly allows more room for clinical judgement and consideration of the individual circumstances.

Ms F stated that it would never be her practice to plan a breech birth in water. However, her decision was made in circumstances where, had she asked Mrs A to leave the pool, she might have added a greater risk to what was already an obstetric emergency.

I accept that an experienced health practitioner needs to be able to exercise clinical judgement in the light of the presenting circumstances when applying policy. I conclude that Ms F acted reasonably in proceeding with the breech birth in the water, and did not breach the Code.

Resuscitation
Baby A was not breathing and was unresponsive following his birth. Ms E and Ms F acted quickly to resuscitate Baby A in the small bathroom, which was not an ideal location for neonatal resuscitation. When Ms E and Ms F's resuscitation attempts on the floor were unsuccessful, they took him to the delivery room resuscitaire and activated an emergency call. Ms E continued with chest compressions while Ms F ventilated the baby via an ambubag. Both midwives understood that the maternity unit duty midwife, Ms G, would call for assistance. Ms E continued to provide resuscitation to Baby A until assistance arrived.

Mrs Stanbridge advised that the midwives responded quickly and appropriately to Baby A's moribund condition. I accept Mrs Stanbridge's advice that the resuscitation was well managed. In this respect, Ms F did not breach the Code.

Opinion: No Breach — Ms E

Antenatal care
In March 2008, Ms E agreed to provide primary maternity care to Mrs A as her LMC. Ms E saw Mrs A for the first time when she was 26 weeks pregnant.

Ms E recorded seeing Mrs A five times between the 26th and 40th week of her pregnancy. She performed physical checks which showed that the pregnancy was proceeding normally. Ms E noted a bicornuate uterus, which had not caused any complications in Mrs A's first pregnancy and the delivery. An ultrasound scan showed that Mrs A's baby was large, in the 98th percentile for weight.

Ms E recorded that she discussed many aspects of maternity care with Mrs A, such as her bicornuate uterus, the course of her previous pregnancy, pain relief, tests and

screening, and the venue for the birth. Ms E was aware of the possible need to recommend to Mrs A that she be reviewed by an obstetrician in accordance with the Referral Guidelines. She discussed Mrs A's case with Ms F and colleagues and was advised that referral was not warranted.

Mrs Stanbridge advised that the impact of a bicornuate uterus on a pregnancy can range from no ill effects to pre-term labour and malpresentation,[20] but where there has been a successful term pregnancy, especially if the baby was a head-first presentation, it is unlikely that there will be problems with subsequent pregnancies. The two scans that Mrs A had during her pregnancy both showed the baby to be lying in the head-first position and the placenta to be in a normal position. Mrs Stanbridge noted that babies can turn in the latter weeks of a pregnancy, but it is unusual.

Guided by Mrs Stanbridge's advice, I accept that Ms E's decision not to refer Mrs A to a specialist, and to offer the option of birth at Kenepuru Maternity Unit, was reasonable.

There is disagreement about Mrs A's preferred choice of the venue for the birth. According to Ms E, Mrs A agreed to deliver at Kenepuru Maternity Unit, knowing that epidural anaesthesia and obstetric back-up was not available at the unit, but that she could transfer to Wellington Hospital if she needed an epidural for pain or if any problems arose during the labour and delivery. On the other hand, Mrs A recalls that she wanted to deliver at Wellington Hospital because her previous labour was induced and her child was delivered by Ventouse extraction. However, in the midwifery notes of mid May, Ms E recorded: "Discussed place of birth. Kenepuru unless otherwise indicated." A few days later, she recorded: "Discussed place of birth. Kenepuru as long as everything is going well and normal." There is no indication that Ms E's midwifery notes are inaccurate. It appears that Mrs A agreed to give birth at Kenepuru Maternity Unit, unless she experienced any clinical complications that required birth at Wellington Hospital.

Mrs A became concerned that she was overdue. Mrs A's first ultrasound scan, in March 2008, estimated the date of delivery, and the second scan in May estimated the date of delivery two days earlier. CCDHB's protocols about induction for post-date pregnancies states that as long as the baby and mother are well, a pregnancy can go to 41 weeks before induction is advised. Mrs A was six days overdue when Ms E booked her for an induction. Mrs Stanbridge advised that Ms E responded appropriately to Mrs A's request for an induction. Mrs A was 41 weeks pregnant and healthy when she went into labour.

Mrs Stanbridge advised that Ms E provided Mrs A with comprehensive antenatal care, support and education, and arranged further investigations when concerns arose. Ms E was generous in her willingness to go to Mrs A's place of work for many of the

[20] Where the baby is not presenting normally.

antenatal appointments and was conscientious in following up when Mrs A missed appointments.

I conclude that Ms E provided adequate information and appropriate antenatal care to Mrs A throughout her pregnancy.

Labour
When Mrs A arrived at Kenepuru Maternity Unit in labour at 11.30pm her membranes spontaneously ruptured.

As discussed above, Ms E managed Mrs A's labour from her arrival at Kenepuru at 11.30pm. At 12.30am, Ms E contacted Ms F to discuss her unusual examination finding of "bumps" on Mrs A's cervix. Notwithstanding Ms F's opinion that the bumps might be hymen remains or scarring, Ms E was sufficiently concerned that she asked Ms F to attend and support her. I agree with Mrs Stanbridge that it was appropriate for Ms E to contact Ms F, and seek her support, at this time.

Ms F arrived at Kenepuru at 2am. At around this time, Ms E attempted to perform another vaginal examination. Because of Mrs A's position, Ms E had difficulty in reaching the cervix. She was able to determine that the "bumps" that had concerned her earlier were still present. Ms E asked Mrs A whether Ms F could examine her vagina. However, Ms F declined to examine Mrs A. She told Ms E that she was "doing fine", and suggested that they reposition Mrs A so that Ms E could perform the vaginal examination.

It is clear that Ms E felt stretched by this situation, and recognised her limitations. To her credit, Ms E sought assistance from Ms F, requesting that she conduct the vaginal examination. As noted above, I consider it unsatisfactory that Ms F did not conduct the vaginal examination as requested.

With considerable effort, Mrs A was assisted into a reclining position. She expressed significant discomfort during the manoeuvre. Ms E performed another vaginal examination at 2.15am and found that Mrs A's cervix was fully dilated, but the "bumps" were still present. Ms E also found skin folds and what she thought was the baby's caput.

Mrs Stanbridge commented that approximately 4% of babies present for birth in the breech position. It is more likely to occur in pregnancies birthing prior to 36 weeks' gestation.[21] Mrs Stanbridge cited research that 20 to 35% of breech presentations remain undiagnosed until after the onset of labour and the incidence of undiagnosed breech presentations is the same following both midwifery and obstetric assessment.[22]

[21] The higher incidence of breech presentations in babies younger than 36 weeks' gestation is thought to be because smaller babies are able to move around more freely in the uterus.
[22] Nwosu EC, Walkinshow S, Chia P, Manasse PR, Atlay RD. Undiagnosed breech. *British Journal of Obstetrics and Gynaecology* 1993; 100:531–535.

Mrs Stanbridge advised that Ms E's vaginal examination findings should have alerted her to the possibility of an abnormal presentation. While it is easier to see this in hindsight, neither Ms E nor Ms F seemed to appreciate the possible implications of the findings at each of the internal examinations. Mrs Stanbridge advised that not following up on an unusual finding on vaginal examination would be seen as a departure from the accepted standard of care.

In my view, Ms E took reasonable steps to follow up her unusual findings by seeking Ms F's assistance. Although she was falsely reassured by Ms F, Ms E's actions were appropriate in the circumstances and she did not breach the Code.

Breech birth
The baby's first leg was delivered at 2.43am and the second leg a minute later. Ms F felt the cord for a pulse, which was normal. Ms E guided the baby down with her hands on his sacrum, with Ms F standing beside her. Ms E encouraged Mrs A to push and the baby slowly moved downwards.

At 2.55am the baby was birthed to his shoulders. Ms F felt for the cord pulse again and assessed the pulse rate at 150 beats per minute. Ms E recalls that the baby was a good colour.

Ms E tried to sweep the baby's arms forward but was unable to do so. Ms F took over, and the baby's right arm birthed spontaneously. Ms F swept the baby's left arm down and delivered his head at 2.59am.

Mrs Stanbridge advised that Ms E did very well, with Ms F's assistance, to manage the actual breech birth. In my view, the care provided by Ms E during the delivery was reasonable in the circumstances.

Resuscitation and postnatal care
The resuscitation process performed by Ms E and Ms F has been discussed above. I accept Mrs Stanbridge's advice that the resuscitation was well managed. Although it was an extremely stressful situation for all involved, Ms E appropriately discharged her responsibility to Mrs A. She delivered the placenta, kept her informed about the effort to resuscitate Baby A, and was present when Mrs A was told that he had died. I also accept Mrs Stanbridge's advice that the postnatal care provided by Ms E was "appropriate and sensitive".

Documentation
Ms E documented Mrs A's labour until Ms F arrived at 2am and took over the recording. While Ms E and Ms F were occupied with resuscitation, the registered nurse who arrived in response to the emergency call took over the recording.

Mrs Stanbridge advised that the documentation by both midwives was of a reasonable standard. Ms E was diligent with documentation through the labour, frequently assessing Mrs A. I conclude that Ms E did not breach the Code in relation to her documentation.

Other comment

Ms G
Ms G, the midwife on duty at Kenepuru Maternity Unit, knew that the unit did not have ready access to obstetric and paediatric services when Ms F advised her of the imminent birth of the undiagnosed breech baby. Instead of calling for emergency back-up and making herself available to assist Ms E and Ms F, she turned on the resuscitaire in the delivery room and then took a routine telephone call from the duty nurse manager, and told her that there was an undiagnosed breech in the unit.

Ms G submitted that Ms F gave no indication, when she told her of the undiagnosed breech at 2.37am, that it was an emergency situation. Ms F did not say whether the oxygen was required as a precaution for emergency resuscitation and did not ask Ms G to call for back-up assistance. Ms G said Ms F looked calm and did not communicate any sense of urgency. She noted that Ms F is a highly skilled and well regarded midwife, and did not behave as if there was an emergency. Her calm manner led Ms G to believe that the birth was being managed. Ms G noted that my report agrees that there were no signs of fetal distress prior to the baby being born.

I note that Ms G stated that although she considered the call for emergency back-up to be the responsibility of the LMC, she had intended to notify the obstetric registrar about the situation, but did not have time to do so before the emergency call bell in the delivery room was activated. This was about 20 minutes after Ms F had asked her for the oxygen cylinder.

Ms G stated that she has been involved in two undiagnosed breech births at Kenepuru Maternity Unit where she has arranged for immediate ambulance attendance. She submitted that it is unreasonable to criticise her for failing to call for emergency back-up at 2.37am, and over the next approximately 20 minutes, when Ms E and Ms F were not aware that there was an emergency until the baby was delivered at 3am, and gave no indication that this was the case.

Even though Ms G was not specifically advised that this was an emergency, she should have assumed it was, as the policy states that undiagnosed breech presentation in labour is an obstetric emergency. In emergencies, most health practitioners, irrespective of their experience, will provide back-up in accordance with their level of training. This may include record-keeping, taking and making phone calls, and fetching equipment.

I agree with Mrs Stanbridge that it was unfortunate that Ms G did not make herself available to Ms E and Ms F once she had accessed the oxygen.

Mentoring support and oversight

The adequacy of supervision in midwifery was identified as a national issue in the Ministry of Health's "Review of the Quality, Safety and Management of Maternity Services in the Wellington area". The Review noted that "currently a new graduate midwife is authorised to assist birthing women without any oversight. While for normal births this may be safe, it may not be safe for the birthing woman, her baby or the new graduate midwife if the latter, through inexperience, does not recognise and appropriately manage or refer a complication of pregnancy or delivery."[23]

Effective monitoring, support and oversight of new midwives is critical for safe maternity care. I note the Review's conclusion that "to ensure safety of women and their babies, and appropriate support for new graduate midwives, there needs to be mandatory supervision (physical oversight) and mentoring for new midwives in their first year of practice". [24]

The New Zealand College of Midwives advised HDC that mandatory supervision has a potential to destabilise access agreements and is unwarranted. As I have previously stated in the context of supervision of international medical graduates [IMGs]: "Patient safety is clearly paramount, but flexibility is also important. The challenge for medical regulators is to develop a pragmatic solution for the supervision of IMGs which strikes a sensible balance between protecting patient safety without creating unnecessary administrative hurdles."[25]

I recommend that the Midwifery Council continue to review current arrangements for mentoring, support and oversight of new midwives.

Emergency care at Kenepuru Maternity Unit

A small percentage of babies die or are seriously injured during pregnancy and childbirth, often despite good maternity care. Newborn resuscitation is often required, but it is complex and can be complicated. There is no guarantee that skilfully administered resuscitation will improve a baby's outcome. However, to give compromised babies the best chance at survival and recovery, it is critical that appropriate healthcare providers, equipment, and facilities are readily available when required.

I support the Review's recommendation that Kenepuru Maternity Unit be provided with equipment to increase its capacity to provide immediate care to compromised babies.26 I also support the Review's recommendation that CCDHB "review the safety, adequacy of design, and accessibility to emergency equipment of the water-birth room at Kenepuru Maternity Unit, and take actions to improve these".27 I note

[23] Review of the Quality, Safety and Management of Maternity Services in the Wellington Area: Ministry of Health, pp 16 and 48.
[24] Review of the Quality, Safety and Management of Maternity Services in the Wellington Area, pp 9.
[25] http://www.hdc.org.nz/files/hdc/publications/mcnz-supervision.pdf.
[26] Review of the Quality, Safety and Management of Maternity Services in the Wellington Area, pp 11 and 66.
[27] Review of the Quality, Safety and Management of Maternity Services in the Wellington Area, pp 12, 85 and 86.

that CCDHB has already taken some steps to improve emergency support at Kenepuru Maternity Unit, as outlined in Appendix D.

Recommendation

I recommend that the Midwifery Council continue to review current arrangements for mentoring, support and oversight of new midwives.

Follow-up actions

- A copy of this report will be sent to the Midwifery Council.
- A copy of this report with details identifying the parties removed (except the name of the expert who advised on this case and references to Wellington, Kenepuru Maternity Unit and CCDHB) will be sent to the New Zealand College of Midwives, and the Maternity Services Consumer Council, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A — Expert advice from midwife Chris Stanbridge

"I am a registered midwife with extensive experience in rural Lead Maternity Carer (LMC) midwifery care following on from 20 years in various clinical/leadership/management roles in a tertiary obstetric hospital.

I have read the HDC Guidelines for Independent Advisors and agree to follow them.

I have known [Ms F] for some years. I have not worked with her in the clinical situation but have been involved with her [through the NZCOM].

In addition to the following request for an opinion, which outlines the information sent and which I have read, I have also read the material sent on 28 November 2008, and outlined in that covering letter:

- [Mr and Mrs A's] statement, dated 24.9.08, pages 1 – 8
- Affidavit of [Mrs B], dated 11.9.08, pages 9 – 16
- Copy of [Mrs A's] clinical record, pages 17 – 31.

I have read the Sentinel Event Report 107173, pages 2 – 52, sent 2.12.08. The bottoms of some lines in this report were missing.

This document includes a transcription of the notes taken during resuscitation, of which I have received the original (sent 15.12.08).

I am pleased to address the issues raised about the midwifery care of [Mrs A] by [Ms E] and [Ms F] in [2008].

Background:

Qualifications and scope of practice of the midwife:

A midwife is a person who has completed the appropriate course of studies in midwifery and passed the examinations to become registered to practise midwifery.

The midwife works in partnership with women, on her own professional responsibility, to give women the necessary support, care and advice during pregnancy, labour and the postpartum period, to facilitate births, and to provide care for the newborn. She understands, promotes and facilitates the physiological processes of pregnancy and childbirth, identifies complications that may arise in mother and baby, accesses appropriate medical assistance, and implements emergency measures as necessary. When women require referral midwives provide midwifery care in collaboration with other health professionals.

Midwives have an important role in health and wellness promotion and education for the woman, her family and the community. Midwifery practice involves informing

and preparing the woman and her family for pregnancy, birth, breastfeeding and parenthood and includes certain aspects of women's health, family planning and infant well-being.

The midwife may practise in any setting, including in the home, the community, hospitals, or in any other maternity service.

The Midwifery Council of New Zealand is the body that is responsible for overseeing the education for midwives, registration, and that midwives remain competent to practise midwifery. This is achieved through practising across the scope of midwifery practice, and an on-going recertification programme which requires midwives to partake in continuing education, professional activities and Midwifery Standards Review.

The Midwifery Council requires all practising midwives to attend annual workshops on neonatal resuscitation, and at these demonstrate competence with the same, including effective use of an ambubag (to provide artificial respiration for baby).

Midwives are guided in their practice by the New Zealand College of Midwives Code of Ethics, and the Standards of Midwifery Practice.

Primary maternity care in New Zealand is provided by registered midwives or medical practitioners under contract to the Ministry of Health under the terms and conditions set out in Section 88 of the New Zealand Public Health and Disability Act 2000. The basis of this cornerstone of maternity care in New Zealand is for each woman, and her whanau and family, to have every opportunity to have a fulfilling outcome to her pregnancy and childbirth, through the provision of services that are safe and based on partnership, information and choice. The Lead Maternity Carer (LMC) is chosen by the woman, and has the responsibility of assessing her needs, planning her care with her, and providing or coordinating the provision of care. The LMC is responsible for ensuring that contact and care is available twenty-four hours, seven days per week. This care may be provided by the LMC or her/his designated back up health professional.

Mentorship:

When [Ms E] cared for [Mrs A], [Ms E] was being mentored in her first year of practice after registration as a midwife.

The Midwifery First Year of Practice (MFYP) Programme is a year long programme designed specifically for new graduates of New Zealand midwifery education programmes.

The Programme vision is:

- 'New Zealand Midwifery graduates enthusiastically commence their careers in New Zealand:

- well-supported, safe, skilled and confident in their practice;
- meeting the needs of maternity service consumers, providers and communities; and
- building a sustainable base for the New Zealand registered midwives workforce into the future.'

The Programme is described as a graduate midwife's individual first year of practice support, education and professional development plan or strategy that will help her consolidate her practice and prepare her for her first Midwifery Standards Review. It provides newly graduated midwives with the opportunity to have a supportive environment (mentoring time, education, professional personal support) to assist them to develop specific knowledge and skills to progress from a competent graduate midwife to a confident practising midwife.

The mentor is an experienced practising midwife of good standing who has successfully completed a range of mentor development workshops.

The graduate and mentor are required to negotiate a Support and Development Partnership Agreement which identifies the graduate's self-identified support needs, her requirements of her mentor, and their mutual responsibilities.

The mentor supports the graduate to undertake formal familiarisation with maternity services in the area she is working, and three way conferences to enhance communication and practice processes across maternity services interfaces.

They meet formally and regularly to support the graduate to develop an education and professional development plan, and for her to use critical thinking and self reflection of her practice.

As well, by negotiation, the mentor may be available to provide face-to-face, telephone, fax, email or text support.

The mentor is not expected to attend births or physically supervise the practice of the graduate midwife. Registration of a midwife does not occur until the Midwifery Council is confident the midwife is competent to practice across the scope of midwifery practice. While the mentor may provide advice in relation to clinical decision making, at all times the graduate midwife remains responsible and accountable for the decisions she makes and the care she provides, until such time as she hands care on to another practitioner (e.g. another midwife, or obstetrician).

All midwives are expected to seek clinical support from their midwifery or medical colleagues when they encounter a new or unusual situation. For the graduate midwife, she may also negotiate to have her mentor present for a particular clinical situation where she feels she would like the mentor's support to increase her confidence.

At all times each midwife is responsible and accountable for her own decisions, actions and midwifery practice.

Core midwife role:

As explained by [Ms G] … the core midwife's role is to

- care for women and babies already in the facility
- maintain and check equipment
- deal with administrative tasks
- offer help and support to LMCs and their women
- assist with dealing with any emergencies.

Breech presentation:

About 4% of babies present as breech. It is more likely to occur in pregnancies birthing prior to 36 weeks (thought to be because when the baby is smaller it is able to move around more freely in the uterus).

20 – 35% of breech presentations remain undiagnosed until after the onset of labour. *Nwosu EC, Walkinshow S, Chia P, Manasse PR, Atlay RD. Undiagnosed breech British Journal Obstetrics and Gynaecology 1993; 100:531-535

This is the same percentage for both midwives' and obstetricians' assessments.

Palpation of the abdomen during pregnancy and labour, and internal examinations during labour, help midwives and doctors determine which part of the baby is coming first.

The midwife/doctor might also be alerted to an abnormal lie of baby by where the heartbeat can be heard (i.e. lower in the abdomen with a head first baby, in the upper abdomen with a breech baby who has bottom or lower limbs coming first).

Because breech birth has a higher complication rate than head-first births, they are normally referred to an obstetrician when diagnosed, and booked to birth in a base hospital.

It is not unusual for breech babies to initially be floppy and to need the stimulation of drying, movement, and commonly a few inflation breaths to trigger their response.

The Midwifery Council of New Zealand requires practising midwives (LMC and core) to attend a Technical Skills workshop at least every three years. These workshops include theoretical and practical refreshers of management of obstetric emergencies. This includes management of breech birth.

Resuscitation of the newborn:

Initial resuscitation used by all practitioners is the same —

- rapid visual assessment which is on-going
- possibly suctioning if thick meconium present
- drying the baby (and stimulating the baby with those actions)
- establishing a clear airway
- if breathing not established spontaneously then giving initial inflation breaths, preferably with oxygen via an ambubag
- if no response call for help
- continue ventilation
- assess heart rate
- commence chest compressions if heart rate less than 60

If practitioners skilled in intubation (usually paediatric specialists or registrars) are present this can be used at any stage, although most babies can be adequately ventilated with bag and mask, even for prolonged periods.

Further methods of support can be instigated under paediatric supervision — e.g. use of adrenaline, and other supportive medications and intravenous access.

Generally midwives have greater resuscitation skills for newborns than ambulance staff. However, Advanced Paramedics are taught to intubate, and may be successful with intravenous access for babies — skills midwives do not need or have.

Bicornuate uterus:

A bicornuate uterus is one where there is some degree of septum, or division, from the top of the uterus down into the body of the uterus to a greater or lesser extent, giving a heart shaped uterus. It is a congenital condition.

Impact on pregnancy can range from no ill effects, to possible increase in infertility, and increase in miscarriage, preterm labour, and mal-presentation (baby not presenting head first). If the uterus is not able to 'clamp down' well after birth, it may increase the risk of heavy bleeding.

Women can be unaware of having a bicornuate uterus.

Where a successful term pregnancy, especially with head first presentation, has occurred, it is unlikely there will be problems with subsequent pregnancies, although it is prudent to watch for signs of premature labour or malpresentation in case the subsequent pregnancy is developing in the other, possibly smaller, horn.

Summary:

From [Mrs A's] MMPO notes [Mrs A] was well into her pregnancy when she booked with [Ms E] for maternity care. [Ms E] first met and booked her [early in] 2008 although they had had phone contact previously; [Ms E] organising a scan requisition which [Mrs A] attended [a short time later]. This gave [Mrs A] an [expected date of

delivery] which was compatible with the [due date calculated] by [Mrs A] from her last menstrual period … and recorded in her notes.

[Ms E] acknowledges [Mrs A's] history of bicornuate uterus … and her previous birth (term induction of labour, head first, assisted birth with ventouse (suction)).

[Ms E] records discussing many aspects of care … as well as normal physical assessments.

In her notes she records seeing [Mrs A] at 27, 35, 37, 38 and 40 weeks with normal checks and noting baby to be head first (LOL) on abdominal palpation at these visits.

[Ms E] explains the infrequent checks in her Report for Sentinel Event Review dated 14 July 2008. She had appointments with [Mrs A] on four other occasions (30, 32, 37, and 39 weeks), which [Mrs A] was unable to keep.

[Ms E's] notes record discussing many aspects of [Mrs A's] current health, education, and planning for birth.

Her notes record repeated discussion on place of birth … including, 'pain relief in labour. Happy with options available' at 'Kenepuru as long as everything is going well and normal'.

[Ms E] records in the notes discussing tests and screening … and has written in [Mrs A's] notes 'Booking blood form given at booking [Mrs A] did not take it. 2nd Bloods given and completed […]'.

[Ms E] recalls prompting [Mrs A] several times to get her bloods taken. … Her notes of [that time] agree with this.

The commentary notes of [Mrs A's third appointment], also record [Mrs A] planning to get her bloods done the next day.

They were reported [a short time later] and were essentially normal although with low iron stores. It appears [Ms E] prescribed iron.

[Ms E] recalls discussing recommending the glucose challenge test, (presumably related to higher incidence of gestational diabetes in Pacific Island women, and [Mrs A's] BMI), as well as liver function tests (following repeated heartburn). They were normal.

Her notes record the results of two scans — the first […] showing normal anatomy, and estimating baby's [due date]. … The second was […] to check the position of the placenta (presumably related to [Mrs A's] history of bicornuate uterus) and doppler (to check blood flow to baby). … This was a normal scan with good growth and normal blood flow and liquor pools. … Of note is that baby is head first at this late stage of pregnancy. (Although it can turn in the latter weeks, it is unusual to do so.)

Neither scan identified a bicornuate uterus.

[Ms E's] notes show a referral to the physiotherapist asking for help for [Mrs A] to manage a 'heavy' pregnancy, and perhaps achieve more comfort with a support belt. This was written between visits, presumably in response to phone discussion.

[Ms E's] notes … record '[Mrs A] would like to be induced if baby does not come this week. I will phone delivery suite to discuss this'. Her report … tells of discussion about induction, dates, plan for CTG at 41 weeks, and a commitment to book an induction for the next week, in consultation with the obstetrician.

There is no record in the notes, but [Ms E] writes in her report [dated …] that at 37 weeks [Mrs A] had expressed concern about her ability to cope without an epidural. Discussion centred around [Ms E's] faith in [Mrs A's] ability to cope, reminding her of her desire for a normal birth, and discussion on the difference between an induced and natural labour. She stated she left the final decision with [Mrs A], who planned to birth at Kenepuru, but would move to Wellington Hospital if she wasn't coping.

[Mrs A] recalls three times raising concerns about her birthing history, and requesting delivery at Wellington Hospital.

Ultimately she went to Kenepuru Hospital when she was in labour.

[Ms E's] notes record her care of [Mrs A] in labour began [at 11.30pm].

[Ms E] reports setting up and checking emergency gear when she first arrived in the unit.

After a number of phone calls over several days … during which time [Mrs A] had periods of contractions, she was contracting at 5 minute intervals on admission. Her waters broke on arrival — noted by the midwife to be clear liquor.

[Mrs A] recalls the liquor was meconium (the baby's first bowel motions which are black) stained — yellowish brown with bits of dark meconium. … They did not raise this with [Ms E] at the time.

[Ms E] records her palpation of [Mrs A] — head well down in the pelvis, back to the left, reassuring baby's heart rate.

By midnight the contractions were stronger and more frequent; Mr A was using acupressure to help relieve the pain. Baby's heart rate heard and "good variation" noted.

The heart rate was listened to, through contractions, for a minute. This was done frequently — at 11.45pm, midnight, 12.15am, 12.30am, 12.50am, 1am, 1.10am, 1.20am, 1.35am, 1.50am, 2am, 2.15am, 2.25, 2.32am, 2.44am, 2.55am. … Her report tells of hearing the heart clearly at 'the usual place for head down position'.

[Ms E's] notes show she did an internal assessment at 12.30am: she felt the head at station minus 2 (2cms above a bony marker on the pelvis), cervix opened 7 — 8cms. … Her report elaborates saying she felt "some little bumps on one edge of the cervix, and wasn't sure what they could be."

She rang her mentor, and practice colleague, [Ms F], to discuss this, and to ask [Ms F] to come in for support for birthing.

They dismissed the 'little bumps' as being inconsequential.

[Mrs A] entered the pool at 12.40am, and used entonox (a pain relieving gas and oxygen mixture), at 12.50am.

There is on-going documentation of labour progressing, with [Mrs A] well supported by her family.

She had homoeopathic remedies at 1.50pm.

[Ms F] arrived at 2am, and commenced scribing for [Ms E].

At this stage [Mrs A] was becoming 'pushy' and asked for an internal examination.

[Ms E] performed the examination and the notes state [Mrs A] was fully dilated.

Her report clarifies 'I tried to carry out a VE [vaginal examination] as [Mrs A] leaned on the side of the bath, but couldn't feel if there was any remaining cervix'.

She explained to [Mrs A] she couldn't feel accurately and wanted [Ms F] to check. With discussion it was decided to ask [Mrs A] to move into a more favourable position to be able to examine her more easily and accurately. This she did with considerable effort, difficulty and discomfort. [Ms E] re-examined her and thought she could feel 'skin folds or caput', and the little bumps to one side. The presenting part had come down and there was no cervix.

Labour continued with support of the family and midwives, and observations continued to be documented. The suggestion was made for [Mrs A] to move out of the pool, but she was unwilling/unable to do so. … She was 'tired and feeling like "can't do it anymore"'. (This is common during labour.)

At 2.32am the notes record her progress and say 'No concerns. Pushing well'.

At 2.37am what looked like a head with a hand squashed up on one side was visible. … It was quickly realised it was an undiagnosed breech.

Assistance was sought from the core midwife and [Ms F] returned to the pool room with portable oxygen and baby ambubag (used to assist baby's breathing if required). … The emergency resuscitation equipment had previously been set up by [Ms E] in the birthing room.

Both [Ms F] … and later the core midwife … checked the birthing room resuscitation equipment, oxygen, and checked the heater was on. It is unclear what else the core midwife did in the next 20 minutes until she responded to the emergency bell.

[Ms F] reviewed the situation and believed it best to birth [Mrs A] where she was.

The first leg was born at 2.43am, the second at 2.44, 'cord clear & pulsating FH 160 … cord clear'.

'Pushing well'.

Mrs B ([Mrs A's] sister present at birth) says in her statement they could see baby's feet actively kicking.

[Ms E] recalls [Ms F] feeling the cord for a pulse, which was normal, when the umbilicus was born … and again when baby was birthed to his shoulders. … She recalls the cord 'was thick, purple, and pulsing well at 150bpm [beats per minute] the baby looked a good colour.'

2.55am 'Cord pulsating well heart rate 150 … Birthed up to his shoulders.'

[Ms E] attempted to, and then [Ms F] assisted the birth of the second arm, and then the baby's head.

2.59am 'Baby's head born'.

[Ms F] recalls … 'The cord was not compressed.' She said 'there was no delay in the head being delivered once the abdomen had come out', and 'that she did not think there was going to be a problem as the delivery progressed very well'.

[Mrs and Mr A] recall 'she [Ms F] asked [Mr A] if he would like to cut the cord, which he did'.

[Ms E] recalls [Ms F] clamping and cutting the cord.

[Ms F] recalls 'The cord was clamped and cut.'

Mrs B recalls '[Mr A] cut the cord'.

[Ms E] dried baby down during this time and they realised baby was not responding.

[Ms E] recalls resuscitation was commenced with baby being moved from his mother to the firm surface of a warm towel on the floor … chest compressions, and bagging.

Shortly after [Ms F] directed a move to the resuscitaire, and rang the emergency bell.

The core midwife responded; she rang the hospital's emergency number 777 and was put through to the ambulance service.

[Ms F] checked she had called an ambulance.

[Ms F] and [Ms E] continued with cardiopulmonary resuscitation. A slow heart rate (40 bpm) was elicited.

At about 3.10am the medical registrar (doctor) and a nurse arrived. The registrar assisted with on-going assessment and resuscitation and the nurse took over scribing.

From the nurses' notes (forwarded 15.12.08):

The first ambulance crew arrived at 3.18am.

Resuscitation continued (there appears to be some difficulty with the (?ambulance) suction; (there should have been suction available in the unit).

Resuscitation continued throughout the following:

3.22am, second ambulance crew arrive suction is used; adrenaline administered.
3.28am, ambulance paramedic arrives.
3.42am, baby's heart rate 118; compressions stopped; later recommenced with falling heart rate.
4.09am, Neonatal team arrive.
More advanced resuscitation.
4.35am, asystole {no heart activity}. Resuscitation withdrawn. Time of baby's death recorded.

The paediatric team arrived approximately an hour after being called.

At about 3.20am, [Ms E] returned to care for [Mrs A], who completed her third stage, showered, and settled in bed.

The MMPO notes … describe on-going postnatal care being provided through the following days.

Advice:

Antenatal care:
It appears [Mrs A] was aware of pain relief options available at Kenepuru and happy at that time with the choice to birth there. … Acknowledging her history and normal progress in the current pregnancy, it was reasonable for [Ms E] to support birth at the primary unit, if this was [Mrs A's] choice.

[Ms E] appears to have provided [Mrs A] with comprehensive antenatal care, support, education, and arranged further investigations when concerns arose.

She has been generous with her willingness to go to [Mrs A's] place of work for many of her antenatal appointments, particularly when [Mrs A] was not always available.

She appears to have been conscientious in following up when [Mrs A] did not meet her as arranged for appointments.

Post dates:
Each facility has its own protocols about induction for post dates, with the general guide being 41 to 42 weeks if all is well with mother and baby. The C&CDHB policy recognises a pregnancy of 41 plus weeks as being a valid indication for induction.

It appears [Ms E] made an appropriate response to [Mrs A's] request.

[Mrs A] was 41 weeks in a healthy pregnancy when she went into spontaneous labour.

This would be seen as normal and appropriate management.

Labour:

Overall the care of [Mrs A] in labour appears to have been thorough, supportive, and appropriate. She has been diligent with documentation through the labour, frequently assessing [Mrs A]. She has supported the family to take an active role in [Mrs A's] care and support.

There are two aspects of care I would question:

Firstly:
Abdominal palpation is generally a good guide of the presenting part of baby, but is not always accurate. As breech presentation can be difficult to identify, all practitioners can miss the diagnosis and often do. This does not represent poor care.

[Ms E] appropriately contacted an experienced midwife with her uncertainty when she felt some 'little bumps' on one edge of the cervix at 12.30am.

She presumably felt unsettled by her finding and some uncertainty in managing the labour in that she asked [Ms F] to come in to support her with the birth.

Again she described these 'little bumps' at 2.05 and 2.15am.

[Ms E's] findings, especially when they were still present at the later internals, should have alerted her to the possibility of an abnormal presentation; she identified two indicators — "skin folds" (although she was unsure whether this may have been caput (normal bruising-like swelling that can occur on the head as it descends)), and 'little bumps'.

It is part of the mentor's role to support the graduate to be confident in her assessments, and as such, it is understandable [Ms F] supported her to find a way to examine [Mrs A] more easily. This meant [Ms E] was learning how to cope with a similar situation if she was on her own.

However, while the midwives were able to explain away [Ms E's] findings, and it is generally better to have consistency of examiner, I believe it would have been more appropriate for [Ms F] to have examined [Mrs A] at the second examination around 2am and use the benefit of her greater experience in internal examinations to determine the reason for the unusual findings.

While it is easier to see this in hindsight, neither midwife seemed to appreciate the possible implications of the findings at each of the internal examinations.

Even if [Ms F] had examined [Mrs A] at the later stage, it would not have altered the care from then, or outcome.

Secondly:
It is difficult to challenge the decision made by a very experienced midwife in a difficult position. While it certainly wouldn't have been a normal plan to birth a breech baby at a primary unit, let alone in water, [Ms E] and [Ms F] were faced with the imminent birth of a breech baby in the pool, and were aware that.

A short time earlier [Mrs A] had 'great difficulty moving herself into [a new position] and expressed considerable effort and discomfort in doing so'.

When a suggestion was made to move out of the pool to encourage progress in birthing [Mrs A] had immediately declined.

[Mrs A] had said she wanted to stay where she was and indicated she was finding it difficult to do any moving.

The baby was partly born by the time it was appreciated the baby was breech. This would have increased the difficulty for the mother to move, particularly the major movements required to get out of a pool. As well, it may have resulted in the baby being born in an uncontrolled manner, which in turn could have increased risk to baby — a breech baby needs to have its head delivered in a controlled manner to allow it time to adapt to the rapid compression changes as it comes through the pelvis, as well as the need to ensure it is in the optimal position (i.e. the back of the head to the front of the mother, and the head/neck flexed).

[Ms F] also explains the clarity of view and access, warm environment provided by the water, and the physical space provided to allow the baby to 'drop' — the birthing of a breech baby's head is normally achieved by allowing the baby's body to hang until the hairline at the back of the head is visible, when it is appropriate to lift the body and provide support to the baby's head to allow gradual birthing of the head.

Breech birth remains an obstetric emergency as statistically these babies do not do as well as birthing head-first babies.

I believe the normal management would have been to have asked [Mrs A] to leave the pool, or at least stand to enable baby to be born in air. Acknowledging [Mrs A's]

earlier reluctance to move, this would have necessitated being clear with her the emergency nature of the need to birth baby in better circumstances.

I do not believe failure to do so influenced the outcome of the birth.

Notwithstanding the above, both [Ms E] and [Ms F] managed the actual breech birth and resuscitation very well.

The actual birth was handled well in difficult circumstances. Care was timely and appropriate.

Baby was unexpectedly moribund and this was responded to quickly and appropriately. Extra assistance was sought, normal resuscitation methods were used (with some success i.e. the return of a heart rate for a period of time), and care continued as extra supports became available.

Ventilation was provided initially by ambubag and mask; this was augmented by endotracheal ventilation once the paramedic intubated baby. Both midwives were actively involved in resuscitation until further help was at hand when [Ms E] returned to care for [Mrs A].

It is unfortunate [Ms G] did not make herself available to the midwives once she had accessed the oxygen for [Ms F]. This may have allowed them to think beyond their immediate management of the situation and ensured she had made contact with the base hospital, and possibly called the ambulance.

In the event it would have made no difference, as the benefit would have been to have had verbal guidance from an obstetrician with managing the birth, which [Ms F] and [Ms E] did very well unaided.

Birth was immediately imminent, and transfer would have been inappropriate. We do not have 'flying squads' in New Zealand, so no physical obstetric support was going to come from Wellington Hospital.

Neonatal retrieval only comes after the birth and baby is found to need advanced care.

[Ms F] accessed the paediatric staff by phone during the resuscitation.

Care at delivery and resuscitation met accepted standards.

Postnatal:

[Ms E] continued to provide sensitive and appropriate care postnatally. She remained open to discussing care with [Mr and Mrs A], as well as providing postnatal physical and emotional care. She, several times, offered to find another midwife to provide postnatal care if [Mrs A] wished. On the sixth day postpartum, [Mrs A] chose this option.

Documentation:

Overall the documentation of both midwives is of a reasonable standard.

It appears [Ms F] has documented her palpation of the baby's cord/heart rate during the birth on her version of the notes … but not those held by [Mrs A].

Although there is some ambiguity regarding documentation, it seems likely [Ms F] did assess baby's heart rate during/following the birth of the baby's body (it is certainly common practice to do so; also, see earlier comment).

If [Mr A] cut the cord, it would seem [Ms F] had felt reassured by a palpable pulsating cord indicating a good baby's heart rate in that she gave [Mr A] the opportunity to cut baby's cord. If pulsation was absent or slow it is more likely she would have expedited getting baby to resuscitation by clamping and cutting the cord herself.

[Mrs B] recalls [Ms F] saying, soon after birth, that she felt the cord, and the heart still pumping, as she was getting baby's head out.

Entering the heart rates soon after the event, when [Ms F] had reflected on the events and realised she had not documented the observations, is not inappropriate, and can happen when the midwife is busy.

If it was entered some time later, it should have been annotated with the time the entry was made, stating it was being written in retrospect.

The care plan held by [Mrs A] … has different dates, and more annotations, to the care plan forwarded by [Ms E]. … Perhaps these entries were made at some of the visits when [Mrs A] did not have her notes?

Similarly there are different notes on the antenatal recording page regarding blood tests/iron prescribed.

General:
It is difficult for family, and carers, to understand why some babies die. With [Baby A] it is hard to understand why a baby that appeared to be coping well with labour, who birthed as normally as possible given he was breech presentation, was moribund at birth.

There was no evidence of significant cord compression (which may have restricted the blood and oxygen flow to baby).

There does not appear to have been any signs of fetal distress one would expect prior to a baby being born in this condition e.g. fresh meconium, or abnormally low or high baby's heart rate, or decelerations.

Understandably his poor condition wasn't anticipated by the midwives.

It is possible he may have had some event during the pregnancy that lowered his ability to cope with the usual rigours of labour, such that he didn't tolerate the time at the end of his birth when there are extra demands on the baby to cope.

His post mortem examination alludes to evidence of a probable earlier (i.e. during pregnancy rather than during labour) episode of low oxygen, from which he recovered. … This may have been relevant to his ability to cope at birth.

Unexplained periods of oxygen deprivation during pregnancy can cause cerebral palsy in a baby. It is rarely caused by labour and birth and can sometimes explain why babies present in a breech position due to their poor body tone. Cerebral palsy is sometimes suspected when there is an unexpected neonatal death.

Of anecdotal interest, it is possible for him to show no detectable signs of not coping. I know of a number of situations where babies have been monitored with continuous CTG, showing normal heart rates and patterns, throughout their mother's labour, and yet have birthed a moribund baby, with no obvious explanation, or demonstration of the baby not coping with labour.

I agree with [Mr and Mrs A] that it should be a normal part of care for families whose baby dies, to have support and counselling made freely available to them.

The Health and Disability Advocacy Service can assist families in their search for the reasons for their situation as they try to make sense of it all, and are able challenge the appropriateness of the care they have been given.

It is a very difficult time to come to grips with the death of one's child, and to have a supportive listening ear while feeling so terrible, to have help to explore all the 'ifs' and 'buts', and to understand the normal reactions of sadness, anger, guilt, and blame, is more likely to allow people to grieve naturally. This support would need to be timely, and of an on-going nature.

It is normal for midwives who have unexpected outcomes to seek professional and legal advice. In doing so soon after [Baby A's] birth, [Ms E] was acting appropriately.

Summary:
Overall the care given to [Mrs A] was comprehensive and appropriate. Care during the actual birth and resuscitation was very good. Care postnatally was appropriate and sensitive.

The two areas of concern are not acting on findings from an internal examination that may have alerted the midwives to a breech presentation earlier, and birthing a breech baby in water.

I believe not following up on an unusual finding on vaginal examination would be seen as a departure from accepted standard of care.

Similarly birthing a breech baby in water would not be standard care."

Appendix B — CCDHB Water Birth Policy

Policy Facilitator: Authorised by: Signature:	Version no: 1 Issue date: 12 September 2006 Review date: 12 September 2008	Policy no. WHS **Intrapartum** **C–21**

Water Immersion for Labour and Birth

Related documents

- CCDHB Infection Control Policy
- Intrapartum foetal monitoring
- Induction of Labour policy

Policy

The water immersion for labour and birth policy is to assist all practitioners in the provision of safe care to women who choose this as part of their birthing experience. Facilities for water immersion for labour and birth are available at the Wellington delivery suite, Kenepuru Maternity Unit and Paraparaumu Maternity Unit.

Scope

- Any registered Midwife/Medical Practitioner employed by Capital Coast Health Limited
- Any registered Midwife/Medical Practitioner who has an access agreement
- Practitioners have a professional responsibility for ensuring they have education in the use of water in labour and birth

Objective

A Cochrane review concludes that water immersion during the first stage of labour reduces the use of analgesia and reported maternal pain, without adverse outcomes on labour duration, operative delivery or neonatal outcomes. Use of the birth pool or bath during labour and birth may also reduce perineal trauma, lower hypertension, increase cervical dilatation, lower rates of analgesic use, lower assisted birth rates, reduce stress, promote breast milk production and increase maternal satisfaction of the experience of birth.

Benefits

For women

- Reduces tension and anxiety, promotes relaxation
- Provides comfort and allows freedom of movement (mediated through buoyancy and hydrostatic pressure)

Names have been removed (except references to Wellington, Kenepuru Maternity Unit, CCDHB and the expert who advised on this case) to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

- Provides a release from pain (gate control theory)
- Reduces the need for pharmacological pain relief
- Provides women with a sense of privacy and sanctuary
- Encourages active birth
- Reduces the need for augmentation of labour and is useful when dystocia is diagnosed
- Promotes physiological birth
- Promotes early bonding through skin to skin and early initiation of breastfeeding
- Enables instinctive behaviour and helps women to maintain control of their labour and birth (which increases the degree of emotional well-being postnatally)

For practitioners

- Provides an increasingly rare opportunity to observe and facilitate normal physiological birth
- Develops and enhances the skill of being 'with woman'

Criteria for Use of the Birth Pool or Bath

Water immersion and water birth may be offered to women if they:

- are greater than 36 weeks
- have no adverse factors noted in fetal or maternal wellbeing during pregnancy or labour.
- make an informed choice
- are in established labour (however, judicious use for women with long latent labour is useful to promote relaxation)
- have a diagnosis of labour dystocia

Water immersion and water birth are not recommended when:

- there is maternal pyrexia, tachycardia
- vaginal bleeding
- malpresentation i.e breech
- meconium stained liquor (moderate to heavy)
- fetal tachycardia
- the woman requests epidural. (Women may use water immersion in conjunction with other forms of pain relief such as entonox, however, entry to the pool after recent opioid use should be delayed)

The availability of Aqua Telemetry means that water immersion during labour is available for women who have a need for continuous electronic fetal monitoring i.e. induction of labour or VBAC

In an emergency, the woman must understand that the midwife will ask her to leave the pool immediately.

Ruptured membranes are not a contraindication as research has not shown there to be an increased risk of infection.

There is no evidence to imply that the 3rd stage must be completed outside the birth pool.

Equipment

- Bath or Birth Pool
- A continuous supply of hot and cold tap water
- Waterproof thermometer.
- Sieve/scooper.
- Long gloves and other personal protective clothing as required.
- Torch or other light source i.e. headlamp.
- Mirror that can be used underwater.
- Waterproof Doppler
- Headrest.
- Provide a non-slip bath mat next to the birth pool
- Plenty of towels and linen.
- A chair or stool for the midwife to sit by the birth pool
- Delivery pack and oxytocics
- Neonatal resuscitation equipment
- Bed or mattress nearby
- Cleaning materials and equipment in accordance with the cleaning and sanitising policy

Procedure

- Practitioners new to water birth may wish to observe a number of water births, until confidant in their ability to manage any eventuality.
- During labour the water temperature is set to ensure the woman's physical comfort (usually at around 36 – 37 °C). Recent research has demonstrated that women self-regulate their body temperature according to changes in the water temperature.
- Provide adequate ventilation, heating and space in the room where the birth pool is located. Ensure the room is draft free.
- The water level should be at the level of the breasts when the woman is sitting and adjusted according to the position adopted by the woman.
- Observe and record fetal and maternal wellbeing throughout the time in the pool, according to routine observations for 'normal' labour and birth.
- Women are encouraged to drink fluid as required while in the birth pool
- Women are encouraged to leave the birth pool to pass urine. This use of gravity may be useful if contractions slow during immersion.
- Encourage physiological or non-directed pushing.
- A 'hands off' approach for the birth, supported by verbal guidance, keeps tactile stimulation of the baby to a minimum
- There is no need to feel for a nuchal cord. The cord is easily unwrapped as the baby is born into water. A nuchal cord must never be clamped and cut in the water.
- The baby should be born completely under water. There should be no contact with air until the baby is brought to the surface to breathe. If the baby's head becomes exposed to air during second stage, the birth must continue in air.
- The baby is brought slowing and gently to the surface straight away with the head facing down so that the water can drain from the baby's mouth and nose.

- Avoid undue traction on the umbilical cord.
- The baby's head should remain above the level of the woman's uterus and the body remains in the water to reduce the cooling effect unless the baby's condition dictates otherwise. *NB* Waterbirth babies appear more relaxed and quiet at birth and tend to take a little longer to establish respiration's and than air/land births, which may effect the 1 min Apgar score.
- The 3rd stage should be physiological (cord is left unclamped until the placenta and membranes are born
- The placenta and membranes may be delivered in the birth pool if the woman chooses.
- The mother gets out of the pool if blood loss is excessive or she feels faint, to enable appropriate action to be taken.
- Estimation of blood loss is difficult in water – close observation of the mother's condition is essential. Blood loss can be determined by comparing pre-birth and post-birth Hb estimations.

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Appendix C — CCDHB Breech Presentation Policy

Policy Facilitator: Authorised by: Clinical Director Women's Health Service Signature:	Version no: 4 Issue date: 20 February 2007 Review date: 20 February 2009	Policy no. WHS **Intrapartum** **D-02**

Breech presentation (singleton fetus) – management of

Related Documents

- CHS/WHS Indications for summoning neonatal/paediatric team attendance at birth policy

Guideline

The purpose of this guideline is to:

- establish a local approach to care that is evidence based, practical, consistently applied and takes into account local expertise
- inform good decision making.
- Support audit of clinical practice and outcomes

Scope

- Specialist Obstetricians
- CCH Midwifery staff
- Access holders/LMCs

Indications

Singleton pregnancy, otherwise uncomplicated with a breech presentation in the third trimester or in labour

Risks and precautions

Three to four percent of pregnancies are complicated by breech presentation at term. Breech deliveries are recognised to pose additional risks to mother and baby. The approach to delivery has been controversial. Over recent years, fewer breech babies have been delivered vaginally - obstetricians and midwives are less experienced in breech delivery.

A randomised multi-centre clinical trial published in the Lancet, October 2000, summarised its findings: "planned Caesarean section is better than planned vaginal birth for the term fetus in the breech presentation; serious maternal complications are similar between the groups." (2)

The decision on mode of delivery must be weighed in light of recent evidence, and medico-legal implications.

- Specialist Consultation is indicated upon diagnosis of breech presentation after 34 weeks gestation.
- Clinical diagnosis of breech presentation must be verified with ultrasound prior to any intervention.
- Decision on management of breech presentation and mode of delivery should take into account:
  - Maternal factors -including delivery preference, other indications for Caesarean section
  - Fetal factors - morphology, gestation, size, type of breech, attitude (flexion)
  - Accoucheur skill and experience
  - Facility support - including anaesthetic, obstetric and neonatal
- Informed consent is required prior to intervention.
- Decision to transfer care is a shared decision of the mother, LMC and specialist.

Procedure

Breech presentation diagnosed antenatally

Breech Diagnosis by LMC < 32 weeks Gestation

- No action required

Breech Diagnosis by LMC > 32 weeks gestation

- Ultrasound examination to confirm diagnosis.
- Specialist referral to secondary consultation clinic after 34 weeks

At the specialist consultation the obstetrician will:

- Clinically assess to:
  - Confirm breech presentation.
  - Evaluate the mothers understanding of the implications of the breech diagnosis and her aspirations regarding management.
  - Determine clinical contraindications for planned vaginal breech birth (maternal factors, fetal factors, obstetric skill available and facility factors)
  - Assess suitability for external cephalic version
- recommend a course of action.
- Document the findings and outcome of the consultation.
- Communicate ongoing plan with the LMC.

Version from the Breech Position

Spontaneous

Breech position is associated with prematurity. Almost a third will be breech at <28 weeks gestation, 4-8% at term.
At 32 weeks gestation women may be counselled that 50% will spontaneously vert before term, after 36 weeks gestation less than 20% will spontaneously vert to cephalic presentation.

Postural Manoeuvres:

Various postural manoeuvres have been developed to encourage version of the breech to a cephalic presentation. The LMC/midwife should counsel women in this regard.
Reviews of randomised trials have not indicated they make a difference, but there are no contraindications to trying these.

Polynesian Massage

Case reports of fetal trauma would indicate that this technique is dangerous and to be actively discouraged.

Acupressure/acupuncture

These techniques may be pursued independently by women. She should seek information in this regard before engaging an alternative therapist. The techniques are based on stimulating changes in uterine tone utilising the differential autonomic innervation of the upper and lower segments of the uterus. Safety and value of the techniques are unknown. Fetal welfare assessment following the procedure is strongly recommended.

External Cephalic Version: (refer to External cephalic version (ECV) protocol).

If ECV is recommended at specialist consultation, the patient and LMC will be provided the C&CDHB 'External Cephalic Version Information for Parents' pamphlet (refer to ECV protocol, Appendix 2).
If the women and LMC wish to pursue this option the women will be booked for an ECV procedure in the Wellington Delivery Suite. The ECV Algorithm will be followed (refer to ECV protocol, Appendix 3).

Planned Caesarean Birth for Breech Presentation

- Book at 39 + weeks gestation
- Prior to commencing surgery, breech presentation must be confirmed by ultrasound scan.
- At Caesarean Section the uterus should be assessed for any anomalies. If there is any anticipation of difficulties at caesarean section delivery the neonatal/paediatric team must be called to attend the birth.

Planned Vaginal Birth for Breech Presentation

- After careful assessment, a woman, her LMC and her specialist may agree on a plan for a vaginal birth.

- Hannah ME, Hannah WJ, et al Planned Caesarean Section versus Planned Vaginal Birth for Breech Presentation at term: a randomised multicentre trial. Lancet, 356, Oct 2000
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Appendix D — CCDHB Sentinel Event Review

In October 2008, CCDHB requested a Sentinel Event Review to examine the events relating to the delivery and death of Baby A. The review team consisted of the CCDHB Midwifery Leader, Perinatology Clinical Leader, NICU Clinical Leader, CCDHB Women's Health Service Quality Leader and an external midwifery expert advisor. The review report detailed the team's findings under the following headings:

- Antenatal care and booking at Kenepuru Maternity Unit
- Communication
- Patient factors
- Knowledge, skills and competence
- Notification of an obstetric emergency
- Environment and equipment
- Resuscitation

The review team advised that:

- [Mrs A's] obstetric history indicated that Kenepuru Maternity Unit was not a suitable venue for her delivery. There were indications for specialist referral during her pregnancy that could have been offered to [Mrs A].
- Although identifying breech babies may be difficult, especially for beginning practitioners, the three vaginal examinations provided an opportunity for the breech presentation to be identified.
- The breech birth was conducted in the bath, contrary to CCDHB policy. An active decision to manage the breech birth in the bath was made although there was an ability to remove [Mrs A] from the bath.
- Communication between [Ms E] and [Ms F] regarding the unexpected breech presentation and the imminent birth (an emergency situation) and the actions required by each party was ineffective in that it failed to elicit an appropriate response.

The review team made a number of recommendations which included that:

- CCDHB review its booking criteria for birthing at Kenepuru and Paraparaumu Maternity Units.

- CCDHB requires all new access holders to attend, and sign off, formal orientation to its birthing facilities.

- CCDHB develops a policy for the management of maternal and newborn emergencies in the Kenepuru and Paraparaumu Maternity Units.

- Kenepuru Maternity Unit labour rooms should have identical resuscitation equipment and explanatory brochures and posters.

- Kenepuru Maternity Unit has its own newborn oxygen saturation monitor.

- New Zealand College of Midwives Midwifery First Year of Practice programme consider the issue of the consequences of a perceived or real power imbalance when the first year midwife's mentor is also a group practice partner/colleague.

- Women should be helped from/removed from the water using any or all available resources as soon as an obstetric emergency is identified during a water birth.

- LMCs must call for emergency support in the instance of an undiagnosed breech presentation. The request needs to be explicit to the supporting hospital midwives and other support services.

On 14 January 2009, CCDHB sent a letter to Wellington Free Ambulance to suggest that when ambulance staff are involved in a doctor-led resuscitation, they defer to the person in charge of the resuscitation. The DHB also offered all ambulance staff swipe-card access to Kenepuru Maternity Unit.

In January 2009, CCDHB drafted a letter to the New Zealand College of Midwives recommending that the Midwifery First Year of Practice programme consider the issue of the potential power imbalance when a mentor is also a colleague and a practice partner.

On 27 January 2009, CCDHB advised that policies at Kenepuru Maternity Unit are in the process of being updated as per the recommendations of the review team. The resuscitation units at Wellington Hospital have been upgraded and CCDHB intends to standardise the resuscitation units across its three maternity units once the equipment ordered in October 2008 arrives. CCDHB advised that the maternity units resuscitation equipment is "completely functional and our changes are enhancements."

CCDHB has also communicated to core midwives at Kenepuru Maternity Unit that when an LMC calls for emergency support, the request needs to be explicit and the core midwives should confirm what assistance is required and initiate an emergency response.

On 7 April 2009, CCDHB advised that 10 of the recommendations have been completed, and review and development of the remaining policies — booking criteria at birthing units, sign off for orientation to birthing units, water birth, management of newborn emergencies — is progressing. The purchase of a newborn oxygen monitor and standardisation of resuscitation equipment is also being followed up.