HOSPITAL AND HEALTH SERVICES

OBSTETRICIAN, DR B

OBSTETRICIAN, DR C

HOUSE SURGEON, DR D

MIDWIFE, MS E

MIDWIFE, MS F

A Report by the

Health and Disability Commissioner

(Case 99HDC11166)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

Parties involved

Miss A	Consumer
Hospital and Health Services	Provider / Hospital
Dr B	Provider / Obstetrician
Dr C	Provider / Obstetrician
Dr D	Provider / House Surgeon
Ms E	Provider / Midwife
Ms F	Provider / Midwife
Ms G	Midwife
Dr H	General Practitioner

Complaint

On 13 October 1999 the Commissioner received a complaint from Miss A about maternity services provided to her at a public hospital. The complaint is that:

Hospital and Health Services

- *On 20 September 1999 at 3.00pm Miss A, who was 36 weeks pregnant, was admitted to a public hospital. Miss A's waters had broken at approximately 8.00am and the baby was expected to be small. When obstetrician Dr B examined Miss A at 5.30pm on 20 September 1999 he advised her that he would leave instructions requesting foetal traces to be taken for half an hour every two hours. No checks were taken from 6.00pm until 11.00pm.*
- *Despite no monitoring occurring from 6.00pm until 11.00pm on 20 September 1999, the duty nurse advised Miss A's mother over the telephone that all was well with Miss A.*
- *The midwife who took the trace at 11.00pm on 20 September 1999 took it for only 10 minutes instead of half an hour, and informed Miss A that the baby was in good condition.*
- *Miss A was given two sleeping tablets by the duty nurse at 2.00am on 21 September 1999. Miss A awoke at 5.00am with contractions and it was recorded that the baby had an irregular heartbeat. Miss A was taken to theatre for a Caesarean section. A preoperative ultrasound showed Miss A's baby had died. Miss A was told that a blood clot behind the placenta was the likely cause of death.*

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Dr B, Obstetrician

- *On 20 September 1999 at 3.00pm Miss A, who was 36 weeks pregnant, was admitted to the public hospital. Miss A's waters had broken at 8.00am and the baby was expected to be small. When he examined her at 5.30pm obstetrician Dr B advised Miss A that he would leave instructions requesting foetal traces to be taken for half an hour every two hours. No records were written by Dr B on this date.*

Dr C, Obstetrician

- *On 20 September 1999 at 3.00pm Miss A, who was 36 weeks pregnant, was admitted to the public hospital. Miss A's waters had broken at 8.00am and the baby was expected to be small. When obstetrician Dr B examined Miss A at 5.30pm, he advised her that he would leave instructions requesting foetal traces to be taken for half an hour every two hours. Dr B handed over care for Miss A to Dr C during the evening. Continuous monitoring did not occur while Dr C was responsible for Miss A's care.*

Dr D, House Surgeon

- *At 5.30pm on 20 September 1999, after consultation with Dr B, Dr D ordered continuous CTG monitoring. Continuous monitoring did not occur.*

Ms E, Midwife

- *At 5.30pm on 20 September 1999 Dr D ordered continuous CTG monitoring. Ms E did not monitor Miss A continuously.*
- *Despite no monitoring occurring from 4.20pm until 11.02pm on 20 September 1999, the duty nurse advised Miss A's mother over the telephone that all was well with Miss A.*
- *The midwife who commenced the CTG trace at 11.02pm on 20 September 1999 did not ensure that the trace was recording properly.*

Ms F, Midwife

- *At 5.30pm on 20 September 1999 Dr D ordered continuous CTG monitoring. Ms F did not monitor Miss A continuously.*
- *Ms F discontinued the CTG trace commenced at 11.02pm on 20 September 1999 before half an hour of useable tracing was recorded, and informed Miss A that the baby was in good condition.*
- *Ms F measured only one foetal heart recording between 11.30pm on 20 September 1999 and 5.00am on 21 September 1999, at 2.00am. Ms F, who took the CTG trace from 11.37pm on 20 September 1999 to 3.00am on 21 September 1999, did not record the foetal heart rate on this trace.*

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- *Miss A was given two sleeping tablets by Ms F at 2.00am on 21 September 1999. Miss A awoke at 5.00am with contractions and it was recorded that the baby had a heartbeat of 50bpm. Miss A was taken to theatre for a Caesarean section. A preoperative ultrasound showed Miss A's baby had died. Miss A was told that a blood clot behind the placenta was the likely cause of death.*

Ms F was also notified of the following additional complaint:

- *At 5.00am on 21 September 1999, Ms F, midwife, responded to Miss A's bell. Ms F listened to the baby's heartbeat and found it had dropped abnormally low, to 50 beats per minute. Ms F did not alert the house surgeon until 5.12am.*

An investigation was commenced on 13 December 1999.

Information reviewed

- A copy of Miss A's medical records from Hospital and Health Services.
- A copy of Hospital and Health Services' internal investigation of Miss A's complaint.
- Copies of Hospital and Health Services' pre-term rupture of membranes protocol, small for gestational age (SGA) protocol, CTG protocols and learning package.
- Expert advice from Dr Peter Dukes, an independent obstetrician and gynaecologist, and Ms Joan Skinner, an independent midwife.

Information gathered during investigation

Miss A's arrival at the delivery suite
Miss A was admitted to a public hospital on 20 September 1999. She was 26 years old and 36 weeks and four days into her fourth pregnancy, having previously had an early miscarriage and two normal deliveries. Miss A had been told her baby was small, but her pregnancy had been uneventful until approximately 8.00am on 20 September 1999, when her membranes

spontaneously ruptured. Miss A saw her general practitioner, Dr H, who arranged for a cardiotocograph (CTG) to be performed. The CTG commenced at 10.40am, and showed the baby to be in good health. Dr H made the necessary arrangements for Miss A to be transferred from her home town to the public hospital for delivery. That afternoon, Miss A was flown from her home town and arrived at the delivery suite at the public hospital, at approximately 3.00pm.

Ms E was the midwife on duty at the delivery suite when Miss A arrived. Ms E was on the 2.30pm to 11.00pm shift, and was given a handover of patients by the morning staff. Ms E was allocated Miss A, as well as another patient who was in established labour. Miss A arrived during the handover. Ms E advised me: "At [3.00pm] I chose to see [Miss A] first as I was sure she would need some reassurance as she came from out of town." Miss A and Ms E had a general discussion about Miss A's condition, and what had been happening to her. Ms E took Miss A's temperature, pulse, and blood pressure, which were normal. Miss A had been draining liquor, and Ms E checked the colour of it, which was clear. Ms E advised:

> "I put the CTG on explaining what the two transducers recorded. One being the uterine activity and the other the foetal heart rate. I gave her the attachment to press every time the baby kicked which also shows up on the tracing. I explained that if the monitor stopped recording to ring the bell so the transducer could be repositioned and that this happened often as the baby moves around. I gave her iced water and some magazines to look at while the monitor was on explaining it would be on for at least an hour."

The CTG trace taken from 3.06pm to 4.23pm was normal and reactive, and showed that Miss A was not yet in active labour. Ms E left Miss A at 3.30pm in order to attend to her other patient. Miss A advised me that the monitor was removed by another female staff member, who Miss A thought may have been a "trainee nurse", so that she could go to the toilet.

Ms E explained that on a typical afternoon duty in the delivery suite, there would be two midwives and a "care associate" on duty. The care associate is responsible for cleaning duties and "general running around", but has no direct involvement in the care of the patient. There are no other nursing staff working in the delivery suite.

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Miss A's discussion with Dr B, obstetrician
Dr B, obstetrician, saw Miss A sometime between 5.00pm and 5.30pm. Dr B advised me that he had not been aware that Miss A was in the ward until he was preparing to go home, and decided to call in to see her before he left.

Miss A advised me:

> "[At] 5.30pm obstetrician, [Dr B], examined me and said it was best not to induce, but to wait 24 hours as the baby was in good health and it was safer for a natural delivery. [Dr B] told me monitoring instructions would be left for every two hours for half hour periods."

Dr B advised me:

> "When I saw her I noted that the CTG tracing from [3.06pm to 4.23pm] was reactive and normal. There was little doubt about the diagnosis of ruptured membranes from the history and the observed vaginal leakage. … [Miss A] was well and there were no signs of labour or infection. She was afebrile and not tachycardic. She had a soft, non-tender abdomen and the fundal height was approximately 32-34 weeks size.
>
> I discussed the diagnosis of ruptured membranes with her and the planned management. I also discussed the fact that I thought that her fundal height was less than I would expect for her gestation. I discussed the implications of this and in particular indicated that it could be a sign of intra-uterine growth restriction (IUGR). Furthermore, I indicated that if IUGR were present that the baby may be at risk of hypoxia. I also explained that evidence of hypoxia is usually present on the cardiotocograph (CTG), and that the time of greatest risk to the baby was during labour, because the oxygen supply was at its lowest during a uterine contraction. She was informed that the baby would be monitored continuously in labour and that regular antenatal CTGs would be performed prior to labour.
>
> We also discussed that there was a reasonable likelihood of going into spontaneous labour overnight and that if that did not happen then we would aim to induce labour the next morning."

Dr B also advised me:

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> "I did give her an example of monitoring as every two hours for half hour periods. In retrospect, this may have been a poor example. I don't think this would have been appropriate in practice. It's not practical, nor clinically useful. I didn't mean to be misleading, but in retrospect this example was."

Dr B estimated that he spoke with Miss A for approximately 10 to 20 minutes. He thought that Miss A would have been aware that the example of monitoring that he gave was not strictly accurate, as he indicated to her that he was only giving an example.

However, Miss A advised me that Dr B did not tell her that he was only giving an example.

I have been provided with conflicting accounts as to who was present during Dr B's discussion with Miss A. Dr B's recollection is that the midwife was present for at least some of the time but no one else was. Ms E denies being present. Miss A's recollection is that both Ms E and Dr D, the house surgeon, were present. Dr D also believes he was present.

Communication between Dr B and the midwife, Ms E
Dr B advised me:

> "I saw [Miss A] before the house surgeon had seen her and she had not had a full medical admission at that stage. The house surgeon was due to perform his admission so I informed the midwife of the management plan and asked that the house surgeon ring me once he had seen [Miss A]. In my discussions with the midwife, I requested regular CTG monitoring and continuous monitoring during labour.
>
> …"

Dr B advised me that although his conversation with the midwife was a relatively casual one, he did specifically tell her that the CTG should be repeated that evening. He could not recall the wording he used, but said it may have been along the lines "look at it later on", meaning later the same day, or "make sure you keep a close eye on her tonight". Dr B advised that his instruction to the midwife to look at it later in the day was meant as a minimum.

Dr B did not make a record of any discussion with either Miss A or a midwife on 20 September 1999. On 21 September 1999, he did retrospectively note that he

had seen Miss A at approximately 5.15pm the previous day, and that he had discussed the planned management with her and Dr D.

Ms E has no recollection of a discussion with Dr B. She advised me:

> "At no time in this duty was I aware that [Dr B] had called in to see [Miss A]. He did not come to see me or write anything in the notes to say he had been nor did he leave any written instructions. [Miss A] never mentioned that he had seen her or told her anything."

Dr B could not recall the name of the midwife he spoke with, although he advised it was definitely a member of the nursing staff. He recalled that the midwife had been in the room with Miss A, and they had a discussion as he walked out of the room, which continued at the desk at the office outside Miss A's room. Ms G is the only other midwife, or member of the nursing staff, who was on duty in the delivery suite at that time. Ms G advised me that she never met Miss A, nor did she speak to any doctors about her care.

Communication between Dr B and the house surgeon, Dr D
Dr B advised me that the house surgeon, Dr D, called him to discuss Miss A's management sometime between approximately 5.30pm and 6.00pm, when Dr B was at home. Dr B advised:

> "When the house surgeon rang I discussed the management with him and specifically asked him to document the concerns regarding IUGR in the case notes and to document that an increased level of monitoring was required. I also requested that the usual clinical observations be carried out for a patient with pre-term ruptured membranes. He clearly documented the suspicion of IUGR. He also documented that a continuous CTG tracing was indicated in labour and he reiterated the requirement for close antenatal surveillance prior to labour to the nursing staff."

Dr D agreed that a discussion with Dr B occurred. However, he gave a different account of when and where the conversation happened. He denied calling Dr B at home. Dr D advised:

> "It is quite possible that [Dr B] had asked a midwife to request that I phone him at home once I had admitted [Miss A], but this message was irrelevant as I managed to admit her before he left the hospital."

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Both Dr B and Miss A advised me that they met only once, on 20 September 1999.

On 1 October 1999, Dr D made the following record of the events that had occurred on 20 September 1999:

> "I saw [Miss A] at approximately 5.30 after I had returned from the Emergency Department. I performed a clinical assessment by examination and history and reviewed the patient with [Dr B] (the duty consultant). A clinical management plan was discussed with the patient by [Dr B], including intravenous antibiotics, CTG monitoring, and induction or augmentation of labour the subsequent morning if labour had not started/progressed."

Dr D later advised me:

> "…
>
> Immediately after seeing [Miss A] with [Dr B], I wrote contemporaneous notes stating [Dr B's] management plan, and particularly the requested monitoring. [Dr B] emphasised the monitoring required DURING labour in view of the possible intra-uterine growth retardation (IUGR). He wished continuous monitoring DURING LABOUR because, as the baby was apparently smaller than normal (IUGR), the labour was at higher risk."

A note in Miss A's medical records, with the time noted at 5.30pm, outlines Miss A's medical history. The note also states in part:

> "d/w [discussed with] [Dr B]
> – INDUCE/AUGMENT AM [morning], iv [intravenous] antibiotics
> * for IUGR PROTOCOL DURING LABOUR *
> CONTINUOUS CTG
>
> Note also history of Rheumatic fever
> d/w [Dr B] – for 160mg Gentamicin post-delivery"

Dr D advised:

> "I was very specific that the monitoring should be as for a high risk pregnancy DURING LABOUR (in capitals, starred and underlined), and

> in an attempt to reinforce and clarify this, I added 'continuous monitoring' in my notes. This was meant to refer to the monitoring DURING LABOUR and not prior to labour. [Miss A] was NOT in labour at this point. I communicated this need for continuous monitoring DURING LABOUR, with the duty midwife and the requirement to start the antibiotic Augmentin (which was given half an hour later at [6.00pm]), and the need for the antibiotic Gentamicin after delivery.
>
> During the night [Miss A] was not monitored continuously, because she was not in labour during this time. This was in accordance to [Dr B's] instructions. However, the midwives would have used normal delivery suite protocols to determine the frequency that CTGs and foetal heart rate monitoring were performed.
>
> …"

Dr B said he did not give any specific instructions for monitoring *prior* to labour to Dr D. Dr B advised:

> "The reason I gave non specific instructions [for prior to labour] is that it is difficult to know what level of monitoring is appropriate. Strict guidelines aren't always clinically useful. For example, if any symptoms such as nausea, pain or bleeding developed then a CTG should be done."

Dr B advised me that although he did not give the house surgeon a specific instruction for monitoring prior to labour, he indicated that he had a "higher level of concern" because of the presence of IUGR.

Dr D advised me that the higher level of concern was appreciated by him and recorded in the notes as:

> "Prem. [premature]/rupture of membr [membranes] plus ? IUGR."

Dr D's communication with the midwives

Dr B advised me that he was aware that Dr D had told the midwives that Miss A required close monitoring prior to labour, because Dr D told him this in a conversation they had the following day.

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Dr D agreed that he had a conversation with Dr B about Miss A on 21 September 1999, but denied telling Dr B that he had told the midwives that Miss A required close monitoring prior to labour.

Dr D advised me:

> "… The labour ward cares for a large proportion of women with high-risk pregnancies and so the midwives are very experienced practitioners in understanding the nature of high risk and the PRE-labour monitoring required. Senior House Officers (i.e. junior medical staff) did not specify frequency of CTG monitoring to experienced midwives. These were the very cases that the midwives in this unit were used to caring for. The midwives would have used normal delivery suite protocols to determine the frequency that CTGs and foetal heart rate monitoring were performed. [Dr C] (the senior consultant) had previously told other medical staff and me, that the midwives were expected to monitor adequately and were competent to interpret CTG monitoring, and to contact the duty doctor if there were problems."

Dr D advised me that he did speak directly with Ms E regarding Dr B's instructions, although he did not mention monitoring prior to labour during their discussion. He stated:

> "As is usual practice I would have given a brief summary of [Miss A's] diagnosis (which by definition means communication of the higher level of concern due to IUGR and premature rupture of membranes and prematurity). …"

Dr D also advised me:

> "I do not admit patients, write in the notes and then walk off the ward assuming that other staff members will read my notes. Especially, as there were definitive monitoring plans for [Miss A] <u>during labour</u> in her notes AND she required an initial dose of Augmentin intravenous antibiotics (which was given soon after) AND required gentamicin post-delivery (which was not a usual occurrence)."

Ms E said she must have spoken to the house surgeon twice in relation to Miss A's care. She advised that she would have spoken with him during Miss A's speculum examination, when she was present as chaperone. It appears that she also spoke to him in relation to the administering of the antibiotics, because this

was charted after the speculum examination was performed. However, she no longer had any specific recollection of the details of her discussions with Dr D.

Dr B's communication with Dr C
At approximately 6.30pm that evening, Dr C, obstetrician, telephoned Dr B in order to obtain a verbal 'handover' of the patients in the delivery suite. Dr B can no longer recall full details of what he told Dr C about Miss A, but imagines that he would have mentioned his concerns about IUGR, that Miss A had transferred from another location, was 36 weeks' gestation and was multiparous [had had children before]. Dr B also advised me that he did not have any immediate concerns about Miss A at this point, and so did not convey any particular concern to Dr C.

Dr C advised me that Dr B gave him "… a very detailed report on [Miss A], and what her proposed management plan was to be. I was very comfortable with that. Knowing that two antenatal CTG traces … were reactive and within normal limits."

From the time of the handover, Dr C was responsible for Miss A's care.

Miss A's subsequent care
At 10.00pm that evening, Ms E made a record of Miss A's vital signs (but not the foetal heart).

At approximately 10.45pm, Ms E handed over Miss A's care to the night staff. Immediately prior to leaving, Ms E put the CTG back on Miss A for the night staff. Ms E advised:

> "Once the monitor was on I could see and hear the foetal heart rate was within normal limits. I made sure her bell was available and advised her that the night midwife would be in to see her.
>
> I then said goodnight and left the ward between [11.15 and 11.30pm]. This had been a very busy duty and I had not even had the opportunity to have a meal break."

Ms F was the midwife on duty from 10.45pm to 7.15am.

After receiving Ms E's report, Ms F went to meet Miss A at 11.18pm. Miss A's monitor was not recording the foetal heart, so Ms F adjusted the transducer to record the heartbeat, which was 140 beats per minute.

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At 11.36pm Miss A rang her bell. She wanted to go to the toilet and out for a cigarette. Ms F advised me: "I removed the monitor and the tracing showed what I considered a foetal resting pattern and I discontinued the monitoring."

Just after midnight Ms F gave Miss A intravenous Augmentin. At 2.00am, Miss A told Ms F that she had had a gush of clear liquor. Ms F took Miss A's temperature and pulse, and listened to the foetal heart. Miss A was not having any pain, and labour was not established. However, as Miss A had been having some trouble sleeping, Ms F offered her triazolam (sleeping) tablets. Miss A settled until 5.00am.

Ms F advised me:

> "…
>
> At [5.00am] [Miss A] rang the bell complaining of contractions. The time could have been up two minutes either side of [5.00am].
>
> I went to her room to assess the contractions. This involves putting your hand on the abdomen near the top (fundus) and waiting for a contraction to occur. This takes 2-5 minutes or longer depending on the frequency of the contractions. I can't remember how long this took with [Miss A].
>
> After palpating a contraction I transferred [Miss A] to another room (ie from antenatal to delivery room). She was pregnant and it was [5.00am] so she could not move very fast.
>
> I attempted a CTG. CTG entails putting two elastic belts around the woman's abdomen. These hold in place two transducers. One picks up and records the contractions, the other picks up and records the baby's heartbeat. The second transducer can take several minutes to set in place as it needs to be situated over the foetal shoulder to record the heartbeat and this can be difficult to find. …"

Miss A advised me that she cannot recall a CTG being used. Ms F continued:

> "I could not find the foetal heartbeat after 2-3 minutes, so I went to the office to collect a sonicaid. This is a small hand held doppler device with a narrow range of recording and is more directional. I have found,

> in my experience, that it can often act as a guide when trying to locate a difficult foetal heart rate.
>
> It was with the sonicaid that I eventually found the foetal heartbeat at approximately 50 beats per minute. This could have taken 1-2 minutes."

Ms F paged Dr D at 5.12am. She informed Dr D that she had last heard the foetal heart at 50 beats per minute, and it had subsequently not been recordable. Dr D instructed Ms F to call Dr C, the on-call obstetrician, immediately, and went straight to the labour ward. Ms F called Dr C, who told her to organise an emergency caesarean section, and start intravenous salbutamol to stop the contractions.

Dr D advised:

> "We prepared Operating Theatre for the immediate attendance of the patient (as instructed by [Dr C] on the phone) and informed the paediatric registrar on call, and whilst this was arranged I used a portable scan for a quick look (ie approximately one minute) for the baby's heartbeat (which appeared absent) and quickly and easily attached a scalp electrode to the baby's scalp per vagina (which also recorded no heartbeat)."

Ms F advised:

> "During [Dr D's] examination I sought the assistance of [a midwife] from the Postnatal Ward. She prepared the salbutamol infusion for me while I was organising the caesarean section …."

Miss A was taken to theatre where she was seen by Dr C, who scanned Miss A with the small ultrasound scanner, between 5.35am and 5.40am. The scan confirmed that Miss A's baby had died.

Miss A's labour was induced, and a stillborn baby boy, weighing 2760 grams, was delivered vaginally at approximately 11.00am on 21 September 1999. Miss A elected not to have a post mortem performed.

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Independent advice to Commissioner

The following expert advice was obtained from Ms Joan Skinner, an independent midwife, in relation to the actions of Ms E and Ms F:

> "… I will comment on the care provided by the two midwives separately.
>
> Professional standards applying to type and frequency of monitoring in cases such as [Miss A's] are consistent with those in the guidelines presented from [Hospital and Health Services].
>
> These are:
>
> 4hrly observations: temperature, pulse, uterine pain/tone, vaginal loss, and foetal heart rate.
>
> CTG daily or more frequently if directed or if any changes in maternal condition or suspicion of foetal tachycardia or FHR changes or abnormalities.
>
> I would note here that it is not usual or expected that mothers would be woken to take these recordings during the night if all previous recordings had been within normal limits and no interventions were taking place.
>
> **[Ms E]**
>
> - The CTG trace taken during [Ms E's] shift at [3.06pm] was an adequate trace to provide reassurance that the baby was well. It shows variability and reactivity. A trace of this sort is also indicative that this baby will remain well for at least 24hrs should there be no deterioration in the mother's condition such as infection, or foetal acute events such as cord occlusion or placental abruption. These conditions cannot be predicted by CTG. (Gibb and Arulkumaran, 1997.) This is confirmed by [Hospital and Health Services'] Protocols and Learning Package, and by the lecture notes produced by Dr Henry Murray, an expert in CTG tracing, included in your documentation. These state that there is a 99.5% chance of normal labour within 24 hours and a 0.3% chance of foetal death within 3 days. This is also confirmed by Ms Kate Dyer, a midwifery expert

from Sydney's Royal Hospital for Women who specialises in foetal assessment. Ms Dyer recently conducted a study day in New Zealand on the use of the CTG in foetal assessment.

- There was no indication therefore that a further CTG was required on [Ms E's] shift. I note that there has been in this case considerable disagreement as to the instructions given to [Ms E] about the frequency of CTG recordings. There was no documentation in the notes requiring this. [Dr B] in his telephone conversation with [investigation staff] dated 11/8/00 confirmed that he did not give specific instructions for monitoring prior to labour. He did however state that he had instructed the midwife to repeat the CTG later that evening. This does seem to be contradictory. [Ms E's] statement of 15/11/99 states that she did not see or talk to [Dr B] on her shift. [Dr D's] letter of 15 May 2000 does not give any indication that he requested more frequent CTG monitoring. There seems to be some contradictions in the later correspondence about who was where, and who said what to whom. Of interest in particular is the identity of the midwife who [Dr B] said was with him when he saw [Miss A].

- The foetal heart and [Miss A's] vital signs were adequately monitored by [Ms E] and were recorded on [Miss A's] antenatal chart.

- [Ms E] did however recommence the CTG at 11.02pm prior to going off duty. I gather that this had been a very busy shift. This is the time of the changeover of staff and it would be appropriate to leave [Miss A] with the CTG running while hand-over is taking place. It is not uncommon for the recording to be inadequate when a staff member is absent. It is very easy for a transducer to lose contact either through slippage or because of maternal or foetal movement. Once [Ms E] went off duty the night staff would take over responsibility for improving the quality of the CTG recording.

- I can find no instance where [Ms E's] care fell below a level of care reasonably to be expected.

[Ms F]

- The CTG trace commenced by [Ms E] at 11.02pm and discontinued by [Ms F] is neither reassuring nor alarming. It shows marginal

variability and no reactivity and could be consistent with either a sleeping baby or a baby becoming distressed. Given the 2 previous CTGs, both of which were done within the previous 24 hrs it was understandable that in the presence of no other changes in maternal or foetal condition that [Ms F] was not concerned. As I have stated above, a normal CTG gives good reassurance for at least 24hrs and up to 3 days should there be no other adverse event. However if a CTG trace is commenced at any stage it behoves a midwife to ensure that the trace is reassuring and if it is not, to continue till it is or to request medical advice. [Ms F] failed to do this. The CTG needed to be left on for up to an hour. During this time a normal healthy baby will wake and the trace will become reactive and reassuring. A non-reactive trace for one hour would have required medical advice. There is no way of knowing whether or not this trace would have been reassuring.

- Had this trace been left on and had it been reassuring no further trace would have been required during the night so long as there was no change in maternal condition. Had it been left on and not found to be reassuring then medical advice would have been sought and some other intervention would probably have occurred. Frequent CTG monitoring is not considered clinically appropriate. As I have stated, a non reassuring trace should be acted on, a reassuring trace need not be repeated frequently. The inadequacy of the 11.18pm trace is the problem in this instance.

- [The complaint that Ms F did not record the foetal heart rate on the 11.36pm trace] is confusing. The foetal heart is recorded on the trace from 11.17pm until 11.36pm. The complaint is unfounded.

- Apart from the inadequate CTG recording at 11.18pm, other vital signs were adequately monitored and are recorded on the antenatal chart.

- [Ms F] was rung by [Miss A] at [5.00am] as she was beginning to have pains. [Ms F] then transferred her to the labour room first, in view of her rapid labours. This is reasonable practice and would have taken some minutes. It is better to have women close to equipment that might be needed. She then attempted to attach the cardiotocograph. She had some difficulty so went to get the

sonicaid. This is also reasonable. CTG machines can be temperamental and a positional problem such as a deeply engaged head, for example can make using them difficult. It is important to make an appropriate assessment before summoning medical assistance. The timing of these events took about 12 minutes but I would note that there may be some difference in the setting of clocks, watches and pagers. The actual time from the first difficulty with hearing the foetal heart to summoning medical assistance is not known as [Miss A] was moved to the labour room first. In this case there is no indication of unacceptable delay once [Ms F] ascertained a low foetal heart rate.

Additional comment

The CTG trace cannot predict or warn of acute events such as placental abruption. A reassuring trace will not alert the practitioner to its possibility. This abruption was very unusual in that there were no signs or symptoms of it occurring. We do not know therefore at what stage of the night it occurred. It may have been in its early stages at 11.00pm but the trace at this time does not alert us to this. It is not of sufficient length to do so. The baby at this stage was most likely in a sleeping state but we cannot be sure of this. A reassuring trace at this stage would not have prevented this outcome.

Some further comment must be made about the instructions from the medical staff to the midwifery staff about the frequency of CTG required and I refer in particular to the correspondence with [Dr B] and [Dr D]. Both [Ms F] and [Ms E] are clear in their letters that at no time did [Dr B], [Dr D] or any other person order either continuous or 2hly monitoring before labour commenced. There is no documentation in the notes that they did so. [Ms E] states that she did not see or talk to [Dr B]. [Ms E] was present with [Dr D] however while he did his speculum examination of [Miss A] at [5.45pm].

The letters and statements from [Dr B] and [Dr D] would indicate that there is some disagreement about whether or not they saw [Miss A] together. There is also some confusion about whether [Dr B] saw [Miss A] beforehand and with another midwife, whose identity, if he did so, remains unknown. [Miss A] in her correspondence did not clarify this.

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It does seem to be clear however that neither [Ms E] nor [Ms F] received verbal or written instructions to do CTG monitoring frequently.

In [Dr B's] letter of 29 March 2000 he states in reference to his conversation with [Miss A] that 'At the time I used a half-hour every two hours as an example of what might be an appropriate degree of monitoring'. In his statement of 11 August 2000 he states 'My only specific instructions for prior to labour was that the CTG was to be repeated later that evening, and that instruction was to the midwife'. I note again that this midwife has not been identified. He goes on to state 'I did give her ([Miss A]) an example of monitoring as every two hours for half-hour periods. In retrospect, this may have been a poor example. I don't think this would have been appropriate in practice. It's not practical, nor clinically useful.' I note that the clinical inappropriateness of 2hrly monitoring has been confirmed by correspondents in these case notes and is consistent with current normal clinical practice. A baby at risk enough to require almost continuous CTG assessment in the antenatal period would require more in depth assessment. This would include ultrasound scanning and most likely immediate delivery. At the time there [were] no indications that [Miss A's] baby was in this state.

Summary

In my opinion, ascertained from reading the HDC case notes, both [Ms E] and [Ms F] have provided midwifery care at an acceptable level, except for one instance. Although I found it understandable that [Ms F] assumed that [Miss A's] baby was in the sleeping state during the 11.18pm CTG trace, she did not leave the trace running for long enough nor reconnect it after [Miss A] had been out for her cigarette. This longer trace would have either confirmed the sleeping state or required further assessment. The placental abruption, which is the probable cause of this baby's demise could not have been predicted or prevented by any actions of the midwives."

Expert advice was also obtained from Dr Peter Dukes, an obstetrician and gynaecologist, in relation to the actions of Dr B, Dr C and Dr D. Dr Dukes advised as follows:

"… Before detailing the areas where you have requested specific advice I think it would be appropriate for me to further summarise the history

as the background noted within the file needs a little amplification from an Obstetric point of view.

[Miss A] was a 26 year old para 2, gravida 4 having had a previous early miscarriage and two normal deliveries at 39 weeks in 1997 and 1998. The birth weight of the first of these, at 2.86 kg, was around about the 10th centile for the gestation but the second, at 3.45 kg, was around about the 50th centile for 39 weeks. Apart from her smoking there was no other significant risk factor although she had had an ovarian cystectomy in 1998. However, this would have had no bearing on the current pregnancy at all.

There are no other recorded antenatal problems and she was ultimately seen by her General Practitioner on the day of admission, 20 September 1999, as it was felt she had ruptured her membranes at about [8.00am] that morning. She was some 36 weeks and 4 days gestation at the time. In view of the fact that she lived in [a rural town] and she was only 36½ weeks, transfer to the Maternity Unit at [the public hospital] was arranged. Assessment in her home town showed that [Miss A] was afebrile and she had a normal CTG at the time.

She was ultimately admitted to the delivery suite at [3.05pm] when her temperature, pulse and blood pressure were normal and clear liquor was noted on her pad. The CTG monitoring was commenced shortly after admission.

At around [5.00pm], although no record of this is recorded in the notes, [Dr B] saw [Miss A] and, from his report, noted that the membranes were ruptured, that she was afebrile and that the cardiotocographic tracing was normal. The only other significant factor was the uterine size, which he felt was on the small side for dates suggesting the possibility of intrauterine growth restriction. There is some irreconcilable confusion about [Dr B's] visit in that he indicates he spoke to the Midwife concerning [Miss A] but the Midwife on duty at the time had no recollection of seeing him on the Ward or speaking to him. However, it is clear that [Dr B] did see [Miss A] and discussed the situation with her.

Be that as it may, the Senior House Officer, [Dr D], saw her at around [5.30pm] to formally admit her. Following the admission procedure he reported to [Dr B], as one would have expected. The admission record

by [Dr D] notes all the salient features and mentions one other, which was not recorded on the front booking sheet, that of rheumatic fever. However, there was no suggestion that there was any sequelae from this as far as heart murmurs were concerned. A vaginal speculum examination was done at the time which confirmed that the membranes were ruptured, that clear liquor was draining and the cervix already appeared to be somewhat dilated. However, the assessment of dilatation is a little difficult by speculum alone. Appropriately a vaginal swab was taken at the time of this assessment. He also noted the discrepancy between the height of the fundus and gestation suggesting intrauterine growth restriction. Antibiotics were started according to protocol following admission.

[Dr D] discussed the findings with [Dr B] although there was some confusion as to how this discussion took place. [Dr D] felt that it took place in [Dr B's] office and [Dr B] himself felt that he was already at home and the discussion took place by phone. This is also somewhat irreconcilable but nevertheless [Dr D] noted that [Miss A] was to be induced the following morning and that the IUGR protocol was to be used including continuous foetal monitoring. I do not think that this note could be construed as requiring continuous monitoring forthwith and even in the presence of possible growth retardation continuous monitoring forthwith would have been inappropriate.

[Dr B] had suggested that surveillance should be close although the extent was undefined and not clearly detailed within the notes. However, he expressed surprise that a subsequent CTG had not been performed until around [11.00pm]. [Dr B] clearly discussed the need for monitoring with [Miss A] and [Miss A] noted that she thought she was to be monitored for half an hour every two hours but [Dr B], in his report, indicated that this was really only an example. However, a half hourly trace every two hours would certainly seem to be excessive under the circumstances. While there is considerable variation in what monitoring might be undertaken in this situation I would have thought, given the clear liquor, the lack of labour and the lack of evidence of infection, that monitoring once in each Midwifery duty would be appropriate providing the traces were reassuring. However, should there be any question of infection, change in the colour of liquor or labour, then clearly this would call for further monitoring.

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There is within the contemporaneous file a lack of notes from the time of [Dr D's] assessment through until [2.00am]. There is however, on the antenatal chart, clear records of a four hourly pulse, temperature and foetal heart taken at [3.00pm, 6.00pm, 10.00pm and 2.00am] respectively. There is no foetal heart recording for [10.00pm] but this would be replaced by the CTG which was undertaken at the change of duty. These recordings were unremarkable and certainly did not suggest infection or any other foetal abnormality.

Thereafter further CTG monitoring was undertaken between [11.09pm] and [11.36pm] which was apparently interrupted by [Miss A] going to the toilet and going outside to have a smoke. Thereafter she retired to bed. In this particular tracing in the first 10 minutes there was virtually no contact so the trace was inadequate and thereafter the trace for the subsequent 17 minutes showed reduced variability and no reactivity. Following this [Dr D] inquired regarding the trace and was informed that it was satisfactory. In fact it was of inadequate length to allow reassurance as both normal and abnormal traces may be non-reactive and have reduced beat to beat variation. Under such circumstances the trace needs to be maintained for at least one hour or until the change of foetal state produces a reassuring reactive trace. This did not happen. Traces showing persistently reduced beat to beat variation and non reactivity lasting for more than 65 minutes suggest the possibility of foetal compromise.

Thereafter at around [2.00am] a normal foetal heart was recorded when [Miss A] was awake and had a large gush of clear liquor. At this stage she was given two tablets of Triazolam to help her sleep.

Subsequently at [5.00am] she rang the bell still a little sleepy but was starting to contract and the foetal heart was found to be less than 50 and she was transferred forthwith to theatre for Caesarean Section on the instructions of [Dr D] after consultation with [Dr C]. At the time of her arrival in theatre [Dr C] examined her at [6.00am] and found that the foetal heart had disappeared and that [Miss A] was 4 to 5 cm dilated. The labour was allowed to progress with Oxytocin augmentation. Spontaneous normal delivery ultimately occurred at [11.00am] on 21 September 1999. A stillborn male was delivered whose weight was 2.76 kg, a satisfactory weight for the gestation of 36 weeks. At delivery it was noted that there was retroplacental clot suggesting abruption

although at no stage was there any significant abdominal pain to suggest this had occurred nor was there any vaginal bleeding recorded.

COMMENT

With regard to the advice I will deal with the dot points in order although there may be some combining points at various stages.

At the outset I would say that in spite of the fact that there are differing opinions about what took place, particularly around [Miss A's] initial assessment, her care was in no way compromised by the actions of [Drs B, C and D].

1. Professional Standards with regard to Monitoring

The protocol included within the file for pre-term rupture of the membranes used by [Hospital and Health Services] is entirely satisfactory in terms of its general care. It will be noted that only a daily CTG would be required under normal circumstances unless other abnormalities were present at the time of admission or developed during the course of the admission. In this particular instance it was felt that the foetus might have been somewhat small for dates and that extra surveillance would be required in view of this. The need for continuous foetal monitoring in labour was clearly stated by [Dr D] in his note, but the matter of the frequency of monitoring prior to the onset of labour was not specifically dealt with. There is within the reports of [Dr D] and [Dr B] a further difference of opinion as to whether or not this period was specifically discussed. However, in effect she was monitored at the time of admission during the late afternoon and again at [11.00pm] and I would accept that this was appropriate frequency for monitoring given that the only abnormality was the suspicion of possible growth retardation. Continuous monitoring would be inappropriate in non-labouring patients unless there was a significant abnormality where it was felt that more immediate delivery might need to be considered. This was certainly not the case and augmentation was planned, appropriately, for the following morning. In general, where no significant abnormality is noted, monitoring during the night is not appropriate unless there is some change in condition. This situation certainly applied at [5.00am] when [Miss A] started to contract. During the night at [2.00am] she was awake and the foetal heart was noted to be normal at that stage and there was certainly no indication to further monitor her by

cardiotocography at that stage. It was appropriate for her to have some sedation to help sleep at [2.00am].

[Miss A] raises the discussion that she had with [Dr B] in which she felt he had suggested she should be monitored for half an hour every two hours. [Dr B] indicates in his statement that this was really by way of an example which, unfortunately, [Miss A] took to be the plan. This was certainly a frequency of monitoring which would not be considered necessary in these circumstances. Had the rupture of membranes occurred at an earlier gestation and the management was conservative, awaiting the spontaneous onset of labour, then a frequency of twice a day would have been acceptable, i.e. in the morning and the afternoon Midwifery duty, allowing the patient to sleep over night unless there was a change in condition, even with the possibility of growth retardation.

While there still remains some confusion about whether or not there was, on the part of the Medical staff, an instruction as to increased surveillance before the onset of labour, the surveillance provided was appropriate. However, this is not to say that the interpretation of the recordings as a result of the surveillance was necessarily appropriate.

[Dr D] states that he was reassured by the Midwives at around [11.00pm to 12.00pm] that the CTG was normal and he was entitled to accept their interpretation of the trace as there was certainly no other change in [Miss A's] condition at that stage. It will therefore be seen that the frequency of monitoring is individualised according to the patient condition and that continuous monitoring is not appropriate in the non-labouring situation.

2. Policy Document

As I have already noted in the previous dot point, the Policy Document for pre-term rupture of the membranes was an appropriate structure for management and the Unit Manager, […], noted that this had been developed from [another Hospital and Health Services] protocol.

3. Cause of death

It seems highly likely that in this instance the baby died as a result of placental separation following placental abruption. At the time of delivery it was noted that there was a significant amount of clot covering

the surface of the placenta suggesting that abruption had taken place. Abruption is a sudden event where clot develops behind the placenta separating it in part or completely and giving rise to placental separation from the uterine placental bed and inevitably leading to rapid intrauterine death from asphyxia as there is no longer any placental circulation. This situation is usually accompanied by a significant amount of pain, uterine irritability and often the onset of labour. What was unusual in this particular instance was the fact that the only pain [Miss A] appeared to experience was that of labour. However, given the placental findings at delivery this is the most likely cause of death.

The swab taken at the time of admission showed a growth of streptococcus pneumoniae and this was also grown from swabs taken from the baby's axilla and ear following delivery. This is an unusual isolate from the vagina and the baby clearly was contaminated during its passage through the vagina, but it is not possible to know whether this played any part in the foetal death. Certainly through until [5.00am] on the morning after admission there was no suggestion of any maternal infection which might have led to foetal death. Unfortunately postmortem examination and placental histology were declined. Had these been undertaken then a more definitive answer with regard to whether or not infection played any part in the foetal death would have been possible. It should be noted that the culture results from the vaginal swab taken on admission would not have become available until after foetal death had occurred. Prophylactic antibiotics had been started appropriately at the time of [Miss A's] admission, but this did not prevent the colonisation of the baby in utero.

On the bounds of probability it seems likely that abruption was the cause of death. In this situation it is likely that the abruption occurred somewhere immediately prior to [5.00am] and that no possible prediction of such an event was possible and it is very unlikely that increased surveillance could have improved the outcome.

4. [Dr D]

I feel that [Dr D] appropriately alerted the Midwives to the need for increased surveillance in labour for [Miss A] but there is certainly some confusion about whether or not increased antepartum surveillance was requested. There is certainly a difference of opinion between [Dr B] and [Dr D] about this matter but an appropriate level of monitoring

nevertheless took place. It is unclear whether this was a Midwife initiative or communicated by [Dr B] or [Dr D].

I find that [Dr D's] record keeping was entirely adequate under the circumstances.

5. [Dr B]

There remains confusion between [Dr B's] statement with regard to antepartum surveillance and that of [Dr D]. It is clear that both recognised that there was an increased need for surveillance, particularly in labour, and this is reflected in [Dr D's] notes with regard to the instructions from [Dr B]. There is an impasse as to whether or not there were specific instructions to antepartum monitoring, but as noted previously an appropriate level of monitoring was instituted. [Dr B] in his statement indicates that he felt the further CTG monitoring was a little delayed. However, in the absence of any change in [Miss A's] condition it would have been appropriate for the Midwives to fit the monitoring in with their other duties and to be monitored at effectively either end of the duty was appropriate. We are just left with the uncertainty as to whose initiative the level of surveillance was.

It is clear that [Miss A] took from her discussions with [Dr B] the idea that she should be monitored for half an hour every two hours as the appropriate plan for the situation. While [Dr B] says that this was by way of an example, it was certainly a frequency of monitoring which would not be recognised as appropriate by most Obstetricians in the presence of pre-term rupture of the membranes where labour had not supervened. It is not surprising therefore that [Miss A] found the frequency of monitoring distressing as this was certainly what she had been given to understand would take place. However, it is also clear from [Dr B's] statement that he did not expect it to be done for half an hour every two hours and therefore his discussion with [Miss A] gave her an unreal expectation of what was likely to happen. Had he really felt that this was appropriate then this should have been noted within the file as it was not likely to be perceived by other Attendants as being the standard monitoring for this situation.

With regard to [Dr B's] record keeping, it is difficult to know exactly what was appropriate as there are differing scenarios advanced by the three Attendants involved. However, it does seem that [Dr B] did have

discussions with [Miss A], either alone or with a Midwife, at around [5.00pm] and ideally it would have been appropriate if some dated and timed record of these discussions was noted within the file. In [Dr B's] version of events he went home thereafter and felt that his discussions with [Dr D] took place over the phone. I suspect the scenario which occurred was that [Dr B] was about to leave the hospital and he noted that [Miss A] had arrived and had been monitored etc and that [Dr D] had not yet been able to formally admit her. He therefore introduced himself to [Miss A] and established in his own mind that she did have ruptured membranes and discussed the management with her. However, not wishing to preempt the formal admission process by the SHO, [Dr D], he then allowed the routine assessment to occur and then issued his advice over the phone for [Dr D] to record in the notes. This is a situation which I, and I am sure many other Obstetricians, have been 'guilty of'. At the end of the day or at any other time when one is planning to leave the hospital and there are patients who have arrived but yet to be formally admitted and one's opinion is likely to be required, one introduces one's self to the patient briefly and then departs, leaving the normal admission process by the junior staff to take place. Once this has been completed then discussion would take place with the Consultant about management and the plan recorded within the notes by the junior staff.

Had this occurred at any other time of the day then the scenario which [Dr D] felt happened would have been the norm. He saw the patient and admitted her and then discussed the patient with [Dr B] in his office. The management plan was then formulated and he went with [Dr B] to see [Miss A]. In this situation it would have been entirely appropriate for [Dr D] to have recorded [Dr B's] instructions concerning management following their review and for [Dr B] not to have formally made a note at all. Under normal circumstances the Midwife would also have been present at the time when the patient was seen by the medical staff. There is often a degree of 'resentment' on the part of junior staff where Specialists persistently involve themselves in the formal admission procedure without letting them do their formal work first and they do feel somewhat disempowered by this. It also rather subverts the normal teaching aspects of the junior staff admission of a patient, subsequent presentation of the patient to the Consultant with his own plan of management for discussion and then to see the patient together. If, for example, [Miss A] had been admitted at 3.00 a.m. and she was stable

and all her observations were appropriate, then I suspect that [Dr B's] instructions would have been issued over the phone. He would then have reviewed her at 8.00 a.m. as he would not have seen the need to review her forthwith. It would therefore have been entirely appropriate for the SHO to record his discussions and plan of management in the notes. As a further example, when ward rounds take place it is usual for discussions to occur and for the junior staff to record in the notes the results of their discussion and in only exceptional circumstances would the Consultant formally make a record. It is therefore entirely appropriate that the Consultant's instructions, over the phone or otherwise, be recorded by the junior staff. Such a situation occurs frequently during any working day when junior staff consult the Specialists by phone.

As far as the discussion with the Midwife is concerned, there is of course debate as to whether the Midwife was actually present and under normal circumstances it would be appropriate to be accompanied by the Midwife when seeing patients. However I suspect, given this was an informal early introduction before the formal admission by [Dr D], [Dr B] considered any discussion he had with the Midwife to be also relatively informal and awaited the formal admission process before making final decisions about the management.

6. [Dr C]

As [Miss A] had been appropriately assessed and seen by [Dr B] following her admission there was certainly no requirement on the part of [Dr C] to visit her in person when he took over her care. She was entirely stable and such transfers of care from one Consultant to another happen frequently and unless there is likely to be some significant developing problem no personal assessment would be required. It was therefore entirely appropriate that [Dr C] did not see [Miss A] until [6.00am] the following morning when there had been a change in her condition.

OTHER COMMENT

Significant concern has been expressed by [Dr C] and others about the CTG tracing which took place between [11.00pm] and [12.00pm] on the night of admission. The tracing was short and terminated because [Miss A] went to the toilet and went outside and it would have been

appropriate for this trace to have been continued thereafter until appropriate reactivity was noted. However, like [Dr B], I did not find that the portion of trace which was present particularly worrying as there was a degree of variability and the Midwife's assessment of the foetus being 'asleep' was probably correct. However, this does not alter the fact that it would have been appropriate, for reassurance, to continue it until reactivity was present. If we accept that abruption was the likely cause of death then this could have in no way been predicted by continuing the trace and probably did not influence the outcome at all. Conversely, had there been evidence of foetal infection then one would have expected a foetal tachycardia [rapid heartbeat] to be present and this was certainly not so. It is therefore unlikely that the foetus was showing any sign of infection at this stage of proceedings or at 2.00 a.m.

In summary, while there are discrepancies in the various reports and there was a deficiency in the management of the night CTG tracing, it is unlikely that any of these affected the most unfortunate outcome for [Miss A] and her baby.

I would also note within the file the letter from yourself to [Ms F] with regard to the time interval between being called by [Miss A] at [5.00am] and notifying the House Surgeon about the foetal heart at [5.12am]. While this time may seem rather on the long side, I think this was in no way inordinate. By the time one has answered the call, ascertained the problem and gone for the equipment to do the monitoring of the foetal heart and then try to establish whether or not the foetal heart was actually present and then notify the SHO, the time involved is appropriate. It is usually easy to confirm that foetal hearts are present but it is often much more difficult to be certain that foetal hearts are slow or not present. It may take a few minutes, even with electronic equipment, to be sure in one's own mind that the slow foetal heart that is being heard is in fact foetal and not maternal.

I have also reviewed [Miss A's] concerns in her letter and I think I have dealt with most of these in my general cover. Should you have any further concerns or questions I would be happy to review the situation."

I contacted my obstetric advisor in order to further clarify his comments in relation to Dr B's record keeping. My advisor clarified that, since it appears Dr B saw Miss A, and possibly the midwife, prior to Miss A being formally admitted by the house surgeon, it is acceptable and within the bounds of normal practice

that any discussion was not documented in the notes. This is because it would be usual for Dr B's instructions to be formally documented by Dr D after the admission had taken place. If a discussion with Dr B occurred later, after the admission, it is also appropriate and usual for the house surgeon to document on the consultant's behalf.

My obstetric advisor also informed me that if Dr B did not have any direct communication with the midwife at all, it is appropriate and usual for a consultant's instructions to be conveyed to the midwife via the house surgeon.

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are applicable to this complaint:

RIGHT 4
Right to Services of an Appropriate Standard

1) *Every consumer has the right to have services provided with reasonable care and skill.*
2) *Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards.*

…

5) *Every consumer has the right to co-operation among providers to ensure quality and continuity of services.*

Other Relevant Standards

The policy document used by Hospital and Health Services for pre-term rupture of membranes states:

"**PRETERM RUPTURE OF MEMBRANES**
< 37 weeks

PURPOSE

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

To provide optimal level of care in order to prevent and/or treat potential problems.

PRINCIPLE

Preterm rupture of membranes is a pathological event. It is associated with amnionitis, APH and preterm labour all of which adversely influence perinatal outcome.

Immediate assessment of maternal/foetal condition and referral to Consultant Obstetrician is **mandatory**.

PROCEDURE

1.	Assess maternal condition:	Temp, pulse, Abdo pain, uterine tone, tenderness & activity. PV loss: pad in situ – liquor colour, smell, blood, amount Report: Above findings
2.	Assess foetal condition	CTG/foetal movements FH if < 24/40 Report: Abnormalities/alternations in FHR
3.	Confirm diagnosis	Sterile speculum examination (if scant liquor ½ hr bed rest prior to speculum to produce pool). Amnicator Visualise cervix if possible assess state. HVS for MC&S Avoid digital examination
4.	Exclude UTI	MSU to lab, ward test urine
5.	Consider steroids	As per guideline
6.	Consider antibiotics	
7.	Consider scan	For estimated foetal weight/Liquor volume and Bio Physical Profile

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

ONGOING CARE

- Diagnosis and management plan documented by medical staff
- 4 hrly observations Temp, Pulse, uterine pain/tone, PV loss and FHR.
- CTG daily or more frequent if directed. Commence CTG if any change in maternal condition or suspicion of foetal tachycardia or FHR changes/abnormalities
- Day leave/out patient management considered if maternal/foetal condition stable
- Consider delivery once 34 weeks gestation complete"

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

The following are excerpts from the CTG protocols used by Hospital and Health Services, entitled 'Interpretation of Cardiotocograms for midwives – Protocols and Learning package':

"**PART II: INTERPRETATION GUIDELINES**

…

Identify deviation from the normal:

* any deviation out of the parameters given for the 'basic patterns' (baseline and variability) is **abnormal**.

* presence of decelerations is ***not normal***.

* an unreactive trace – 65+ minutes with no acceleration in response to foetal movement is ***abnormal*** and requires specialist assessment.

* anything which makes you doubt requires a second opinion.

…"

"6. All foetuses should have regular recording of the foetal heart rate during labour. This may be done intermittently (before, during and after a contraction every 15 minutes in first stage and every 5 minutes in second stage) or continuously. Continuous recording is recommended for the following:

intrauterine growth retardation	thick meconium liquor
post term	scant or absent liquor
induction of labour	admission test not normal
hypertension in pregnancy	abnormal FHR on auscultation
previous caesarean section	abnormal uterine activity
medical disease, e.g. diabetes	syntocinon use
vaginal bleeding	epidural
preterm labour	second stage > 30 minutes"

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

Opinion:
No Breach
Obstetrician, Dr B

Right 4(1)

Monitoring instructions

Miss A has the right to obstetric services provided with reasonable care and skill. This included appropriate decisions about the level of foetal monitoring that was required. It is clear that continuous CTG monitoring prior to labour was not ordered by either Dr B or Dr D. Dr B and Dr D agree that Dr B's instruction was for continuous CTG to occur only once labour had established. As Miss A's labour did not commence until 5.00am on 21 September 1999, it was not necessary for continuous monitoring to occur before this time. Dr B's instruction for continuous monitoring to occur during labour was clearly recorded in Miss A's notes by Dr D.

My advisor informed me that it was appropriate for Dr D to document this on Dr B's behalf. I accept the advice that continuous monitoring prior to labour would have been unnecessary and inappropriate.

There is some confusion as to Dr B's instructions prior to labour. Dr B advised me that his only specific instruction for the period prior to labour was to the midwife, when he told her to repeat the CTG "later on". Ms E denied that any discussion with Dr B occurred. Dr B did not give a specific instruction to the house surgeon, but conveyed a "higher level of concern" which Dr D said he appreciated, and documented in the notes by referring to the IUGR concerns. According to my obstetric advisor the actual level of monitoring that occurred was appropriate, notwithstanding that there is a lack of certainty as to whose initiative the level of monitoring was. Dr D advised me that the midwives who cared for Miss A were experienced in dealing with high risk pregnancies and could determine the level of monitoring that was required themselves, given the IUGR concerns.

I am satisfied that Dr B's decision to continuously monitor Miss A once labour commenced was entirely appropriate, and was properly documented in her notes. Although there is some lack of clarity as to what Dr B's intention was with regard to monitoring prior to labour, I am satisfied that he did appropriately express a "higher level of concern" due to the possibility that IUGR was present.

Hospital and Health Services / Obstetrician, Dr B / Obstetrician, Dr C / House Surgeon, Dr D / Midwife, Ms E / Midwife, Ms F

I am also satisfied, on the basis of my advisor's comment, that an appropriate level of monitoring took place.

I agree with the opinion of my obstetric advisor that it is not surprising that Miss A found the level of monitoring that occurred distressing, as she had been given to understand that more frequent monitoring would occur. Dr B has indicated that when he mentioned monitoring every two hours for half-hour periods, this was meant by way of example. He acknowledges that, in retrospect, this example was misleading. I accept that Dr B did not intend to mislead Miss A at the time he made this comment. Nevertheless, this case illustrates the importance of providers taking care to ensure that the information given does not create unrealistic expectations on the part of the patient.

In my opinion there is no evidence that Dr B's decisions about the level of monitoring that was required were inappropriate, and accordingly Dr B did not breach Right 4(1) in this respect.

Right 4(5)

Miss A had the right to co-operation among the providers involved in her care to ensure that she received quality and continuity of services. In my opinion, in order for this to occur, it was necessary for Dr B to effectively communicate with Dr D, Dr C and the midwife involved in Miss A's care.

Dr B's communication with Dr D
There is disagreement between Dr D and Dr B as to the time and place of their communication about Miss A's care. Both agree that a discussion did occur. However, due to the conflicting information with which I have been provided, I am unable to establish whose recollection of events is accurate. The instruction for continuous CTG during labour was agreed upon, and clearly recorded in the notes. However, the antepartum (prior to labour) instructions are less clear. Dr B and Dr D agree that Dr B did not give a specific instruction for the level of monitoring required prior to labour, but rather conveyed "a higher level of concern". Dr D advised me that the higher level of concern was conveyed to him by Dr B, and he documented it in the notes by reference to IUGR.

With regard to Dr B's record keeping, my advisor informed me that although Dr B would ideally have made a record if he saw Miss A prior to the house surgeon, it is acceptable in these circumstances that this did not occur, as a formal admission process was to follow. Alternatively, if Dr B and Dr D saw Miss A

together, it is appropriate and usual for the consultant's instructions to be verbally conveyed to the house surgeon to document in the notes.

My advisor also informs me that, regardless of whose initiative it was, the level of monitoring that occurred prior to labour was appropriate. Although there is irreconcilable confusion as to the time and place of Dr B's communication with Dr D, I am unable to conclude that the content of that communication adversely affected the quality of, or continuity of, Miss A's care. Accordingly, Dr B did not breach Right 4(5) in relation to his communication with Dr D.

Dr B's communication with Dr C
Dr B cannot recall the exact details of his communication with Dr C, but states it is likely he advised Dr C of his IUGR concerns, and that Miss A had transferred from another location, was 36 weeks' gestation and was multiparous. He would not have raised any immediate concerns at that point. Dr C advised me that Dr B gave him a very detailed report that he felt very comfortable with. In my opinion, there is no evidence that Dr B failed to effectively co-operate with Dr C. Accordingly, Dr B did not breach Right 4(5) in this respect.

Opinion:
Insufficient evidence to form an opinion
Obstetrician, Dr B

Right 4(5)

Dr B's communication with the midwife
On the basis of the information I have received, I am unable to determine whether Dr B had a discussion with the midwife. I am satisfied that, other than Ms E, there was no member of the midwifery or nursing staff whom Dr B could have spoken to. The only other midwife on duty at the time confirmed she did not speak to Dr B, and had no involvement with Miss A's care. Miss A's recollection is that both Dr D and Ms E were present during her discussion with Dr B. Dr B informed me that a discussion took place with the midwife immediately after his visit with Miss A, outside her room. Ms E has no recollection of seeing Dr B at all. In the absence of witnesses, I cannot establish which version is correct. If a conversation did occur, there is no record of it in the notes. My advisor informed me that if this were the case, then, as with Dr

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B's conversation with Miss A, this could have been a relatively informal discussion which occurred prior to Miss A's formal admission. In the opinion of my advisor, it is acceptable for nothing to be recorded by Dr B if the conversation occurred prior to Miss A's formal admission.

My advisor also informed me that, if Dr B did not speak directly to the midwife, but Dr B's instructions were conveyed to the midwife by Dr D, this is entirely appropriate and usual.

This matter is further confused because Dr B advised me that Dr D conveyed a requirement for close antenatal surveillance to the midwives on his behalf. Dr D denied that this occurred.

Dr B informed me that his only specific instruction for monitoring prior to labour was to the midwife, and this instruction was for Miss A's CTG to be repeated later that evening. I am unable to determine whether this was the case, as Ms E denies that this discussion occurred and there is no record of it in the notes.

Although my advisors both informed me that the level of monitoring that occurred was appropriate, I am unable to determine whether this occurred as a result of Dr B's instructions, due to the conflicting accounts I have received. I am therefore also unable to form an opinion whether Dr B effectively communicated with Ms E, either directly or via the house surgeon, in order to ensure continuity of Miss A's care.

Opinion:
No Breach
House Surgeon, Dr D

Rights 4(1) and 4(2)

Policy documents supplied by Hospital and Health Services indicate that although the diagnosis and management plan must be initiated by medical staff, monitoring and initial assessment/interpretation of the CTG is a midwifery role. Hospital and Health Services' protocol for pre-term rupture of membranes states that medical referral is indicated if there are abnormalities or concerns. Accordingly, in my opinion it was not Dr D's responsibility to oversee the actual monitoring that was carried out after he conveyed the appropriate instructions to the midwives. No

problems were brought to his attention by the midwives. My obstetric advisor informed me that Dr D provided appropriate care, and his documentation was "entirely adequate". In my opinion Dr D provided services with reasonable care and skill and in accordance with professional standards, and did not breach Right 4(1) or 4(2) of the Code.

Right 4(5)

In order to ensure that Miss A received quality and continuity of services, in my opinion it was necessary for Dr D to accurately note and convey Dr B's instructions in relation to Miss A's care to the midwives who were caring for her. Dr B gave a specific instruction to Dr D that he should record Dr B's concerns regarding IUGR, and also that continuous CTG was required during labour. Dr D clearly recorded these instructions in the notes. Dr D advised me that he also verbally conveyed these instructions to the midwife who was caring for Miss A at the time.

With regard to the monitoring that was required prior to labour, Dr B and Dr D agree that although a specific instruction was not given, a higher level of concern was conveyed to Dr D by Dr B. Dr D advised me that the higher level of concern was appreciated by him and recorded in the notes as:

"prem. [premature]/rupture of membr [membranes] plus ? IUGR."

In the opinion of my obstetric advisor, Dr D appropriately alerted the midwives to the need for increased surveillance during labour for Miss A.

Ms E recalls that she had several conversations with Dr D, but can no longer recall their content. However, she agrees that it is likely that he instructed her to administer Augmentin intravenously, as she did this not long after her discussion with him. I accept that it is likely that Dr D also verbally conveyed to Ms E the other instructions that he had recorded in Miss A's notes.

Dr D accurately noted the instructions that were conveyed to him by Dr B, and appropriately conveyed them to Ms E, who was caring for Miss A at the time. In my opinion Dr D effectively co-operated with the other providers involved in Miss A's care to ensure she received quality and continuity of services, and did not breach Right 4(5) of the Code.

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Opinion:
No Breach
Obstetrician, Dr C

Right 4(5)

Dr C called Dr B at 6.30pm to obtain a verbal handover. Dr B cannot recall all the details of what he advised Dr C, but advised me that he did not convey any immediate concern, as he was not worried at that point. Dr C advised me he received "a very detailed report on [Miss A] and what the proposed management plan was to be. I was very comfortable with that …." Clearly Dr C felt all was well and that it was not necessary for him to personally visit Miss A. In my view, it was reasonable for Dr C to expect that if any concerns were raised, they would be brought to his attention by either Dr D or the midwives. This is what happened at 5.00am. In my opinion Dr C effectively co-operated with the other providers involved in Miss A's care and did not breach Right 4(5) of the Code.

Right 4(1)

In my opinion Dr C provided Miss A with obstetric services with reasonable care and skill. It has been established that continuous monitoring was not required until Miss A's labour commenced. As this did not occur until 5.00am on 21 September 1999, there was no requirement for Miss A to be continuously monitored on Dr C's shift prior to 5.00am.

I also note the comments of my advisor that there was no requirement on the part of Dr C to visit Miss A in person when he took over her care. Such transfers of care occur frequently, and it is not usual for a personal assessment to occur unless there is evidence of a developing problem, which there was not until shortly after 5.00am, when Dr C was contacted. I am satisfied that Dr C acted promptly and appropriately when he was called. Accordingly, in my opinion Dr C did not breach Right 4(1) of the Code.

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Opinion:
No Breach
Midwife, Ms E

Rights 4(1) and 4(2)

Miss A was entitled to midwifery services provided with reasonable care and skill, and in accordance with accepted professional and other relevant standards.

Level of surveillance
It is unclear what instructions Ms E received about the level of CTG monitoring that Miss A required prior to labour. Dr B advised me that he had a discussion with the midwife caring for Miss A, during which he requested that the CTG be repeated later that evening. According to Ms E, she did not have any conversation with Dr B at all. Although this conversation is in dispute, I note that Ms E did commence another CTG tracing prior to leaving her shift on the evening of 20 September 1999. If Dr B did give a specific instruction to Ms E – which is by no means clear – the request was carried out.

Dr B also advised me that Dr D told him that "he reiterated the requirement for close antenatal surveillance prior to labour to the nursing staff". Dr D denied that this is the case, although he did note Dr B's "higher level of concern" by informing Ms E of the IUGR concerns and recording it in the notes. Dr D informed me that he did not give a specific instruction for monitoring prior to labour, and that he would expect the midwives, who are experienced and trained in CTG monitoring for cases such as Miss A's, to use normal delivery suite protocols.

According to the protocols forwarded to me from Hospital and Health Services, a CTG should be taken daily or more frequently if directed. According to both my midwifery and my obstetric advisor, the Hospital and Health Services' guidelines are consistent with professional standards. I accept the opinion of my midwifery advisor that there was no indication that a further CTG needed to be completed on Ms E's shift, after the reassuring CTG taken by Ms E during the afternoon. I am therefore satisfied that Ms E exercised reasonable care and skill, and provided Miss A with a level of monitoring in accordance with professional standards.

I also accept the opinion of my midwifery advisor that Ms E took all necessary recordings, including Miss A's vital signs, in accordance with normal procedure.

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Alleged failure to ensure trace was recording properly
Ms E recommenced Miss A's CTG at 11.02pm, which was at the conclusion of her shift just before she went off duty. In the opinion of my advisor, it was appropriate to leave Miss A with the CTG running while the handover took place. I also accept the opinion of my midwifery advisor that it is not uncommon for the recording to be inadequate at times when the transducer loses contact, perhaps because of maternal or foetal movement. My advisor has pointed out that when Ms E went off duty, responsibility shifted to Ms F to improve the quality of the CTG recording and ensure an adequate tracing was taken.

I am therefore satisfied that Ms E did not breach Right 4(1) or 4(2) in relation to this respect of the midwifery care she provided to Miss A.

Opinion:
Breach
Midwife, Ms F

Right 4(1)

Length of 11.02pm trace
In the opinion of both my midwifery and obstetric advisors, the trace that was commenced at 11.02pm by Ms E, repositioned at 11.18pm by Ms F, and then discontinued at 11.36pm, was inadequate. The trace was 18 minutes in length from the time the transducer was repositioned to record accurately, until it was discontinued at 11.36pm. What was provided was a CTG trace, which due to its length and the likely "resting" pattern of the baby at the time of monitoring, was neither reassuring nor alarming. The trace could have indicated either a sleeping baby, or early signs of distress. In the opinion of my midwifery advisor, the trace needed to be continued until it showed a normal reactive pattern; if it did not, an appropriate referral could have been initiated. This may have required monitoring for up to an hour. Accordingly, Ms F should have recommenced the recording when Miss A returned to her room.

My midwifery advisor noted that two normal CTGs had been performed in the 24 hours prior to the 11.02pm trace and advised that "a normal and reactive trace, such as the one that occurred on [Ms E's] shift, provides reassurance for a 24 hour period in the absence of any adverse event, for example placental

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abruption". This is outlined in the CTG protocols used by Hospital and Health Services, which state that if there is no reactivity (as defined in the protocols) for more than 65 minutes there may be a problem and obstetric and gynaecology assessment is indicated.

I accept the advice of my midwifery advisor that, once the trace had been commenced, Ms F needed to ensure that it was reassuring before discontinuing it, or alternatively needed to seek further advice if the trace did not become reassuring.

In the opinion of my obstetric advisor, the recorded portion of the trace was not particularly worrying, as there was a degree of variability. In his opinion, the midwife's assumption that the baby was asleep was probably correct. However, my obstetric advisor agreed with my midwifery advisor that the trace should have been continued.

In the opinion of both my advisors, placental abruption was the most likely cause of Miss A's baby's death. My obstetric advisor stated that if this is accepted, there is no way an abruption could have been predicted by continuing the trace. My midwifery advisor stated that there is a possibility that an abruption was in its early stages at the time the trace was taken. However, she noted that an abruption "could not have been predicted or prevented by any actions of the midwives".

I accept the opinions of both my advisors that placental abruption, if this is what occurred, could not have been predicted by the CTG trace.

Nonetheless, by failing to recognise that the trace was too short in duration to be reassuring, and that it needed to be resumed on Miss A's return, in my opinion Ms F did not exercise reasonable care and skill, and breached Right 4(1) of the Code.

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Opinion:
Insufficient evidence to form an opinion
Midwife, Ms F

Right 4(1)

Monitoring frequency
Ms F repositioned Miss A's CTG recording at 11.18pm, and removed it at 11.36pm when Miss A needed to go to the toilet. No further CTG recordings were undertaken prior to Miss A calling Ms F at 5.00am. My midwifery advisor informed me that it is not usual to wake a patient during the night for CTG monitoring if all previous recordings have been normal. If a previous CTG recording has not been reassuring, the onus is on the midwife to act. Conversely, if the trace has been reassuring, no action is required. In this case, because the CTG trace from 11.18pm to 11.36pm was too short, I am not able to establish whether it was reassuring. I therefore am unable to form an opinion whether further monitoring was required on Ms F's shift.

Opinion:
No Breach
Midwife, Ms F

Rights 4(1) and 4(2)

Miss A's other vital signs
I accept the opinion of my midwifery advisor that Miss A's vital signs (other than the CTG) were monitored adequately during Ms F's shift. I am satisfied that Ms F exercised reasonable care and skill and acted in accordance with professional standards with regard to monitoring Miss A's vital signs, and did not breach Right 4(1) or 4(2) of the Code in this respect.

Right 4(1)

Delay in alerting house surgeon of abnormal heartbeat at 5.00am
Miss A rang her bell at 5.00am, to inform Ms F that her contractions were starting. Ms F paged the house surgeon, Dr D, at 5.12am to notify him of the abnormally low heartbeat she had detected. I accept that it is not certain that the

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exact amount of time that elapsed was 12 minutes, due to possible discrepancies in the co-ordination of pagers and watches. I have also noted that the interval of 12 minutes includes the time it took for Ms F to palpate a contraction and move Miss A to the Labour Ward. I accept the opinion of my midwifery advisor that these actions were necessary and reasonable in view of Miss A's previous rapid labours.

Ms F's action in attempting to detect the heartbeat with a sonicaid, after experiencing difficulty with the CTG machine, was also reasonable. I acknowledge that Miss A cannot specifically recollect the CTG being used. Miss A had just woken with contractions at 5.00am. In my opinion, Miss A not being able to recall the CTG in these circumstances is not sufficient evidence to indicate that the CTG did not take place.

The exact length of time between Ms F's first difficulty detecting the foetal heart rate and contacting Dr D cannot be ascertained. However, I accept the opinion of my advisors that there is no evidence of a delay between Ms F establishing with certainty that there was a problem with the heartbeat, and contacting the house surgeon. In my opinion Ms F acted with reasonable care and skill in her responses, and did not breach Right 4(1) of the Code in this respect.

Opinion:
No Breach
Hospital and Health Services

Vicarious liability
Employers are vicariously liable under Section 72(2) of the Health and Disability Commissioner Act 1994 for ensuring that employees comply with the Code of Health and Disability Services Consumers' Rights. Under Section 72(5) it is a defence for an employing authority to prove it took such steps as were reasonably practicable to prevent the employee from doing or omitting to do the thing that breached the Code.

Hospital and Health Services forwarded me a copy of its policy for pre-term rupture of membranes, and of its CTG protocols entitled "Interpretation of Cardiotocograms for Midwives/Protocols and Learning Package". Hospital and Health Services informed me that the pre-term rupture of membranes protocol

and the SGA (small for gestational age) protocol are adopted from another Hospital and Health Service. In the opinion of both my obstetric advisor and my midwifery advisor, these policy documents were appropriate and in accordance with professional standards.

In my opinion, Hospital and Health Services took reasonable steps to avoid a breach of the Code by having appropriate policies in place. Accordingly Hospital and Health Services is not vicariously liable for Ms F's breach of the Code.

Actions

Ms F
I note Ms F submitted an apology to Miss A in response to my provisional opinion. I recommend that Ms F take the following actions:

- Review her practice in light of this report.
- Undertake further training on CTG protocols. I note that Hospital and Health Services has already instigated this.

Further actions

- A copy of this opinion will be sent to the Nursing Council of New Zealand, and an anonymised copy of this opinion will be sent to the New Zealand College of Midwives and the Royal Australasian College of Obstetricians and Gynaecologists.

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Other Comments

- *Ms E's advice to Miss A's mother that "all was well"*

Whilst this matter is not covered by the Code, Miss A's mother not being a consumer for the purposes of this investigation, at the time Ms E spoke to Miss A's mother she had no reason to suspect that any problem was going to arise. I accept that to the best of Ms E's, or anyone else's knowledge at this time, she had no reason to suspect or to inform anyone that there was any problem.