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| ***Judgment: approved by the Court for handing down (subject to editorial corrections)**** | ***Delivered: 07/03/19*** |

**IN THE CORONERS COURT FOR NORTHERN IRELAND**

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**IN THE MATTER OF**

**AN INQUEST INTO THE DEATH OF CLARA ROSE HYNDMAN-STEWART**

**Before: Coroner Patrick McGurgan**

[1] The deceased, Clara Rose Hyndman-Stewart, of 21 Willowmount Park, Omagh, was still born on the 1st September 2014.

[2] In his evidence to the Inquest, Dr Colin H Prendergast, Consultant Obstetrician & Gynaecologist stated that he met Mrs Hyndman-Stewart on the 11th August 2014. At that stage Mrs Hyndman-Stewart was 38 weeks gestation and was asymptomatic with normal fetal activity. An ultrasound scan showed a symmetrically grown fetus with an estimated fetal weight 3512 grams; liquor volume was within normal limits and the placenta was normally located. A weekly review by the midwife was arranged for an induction of labour at term + 10days.

[3] I will return to Dr Prendergast's evidence.

[4] In her evidence to the Inquest, Midwife Mairead Donaghy stated that Mrs Hyndman-Stewart attended the Women's Centre in Omagh for a routine antenatal check on the 30th July 2014. At that stage she was 36 plus 3 weeks gestation. Fetal movements were noted to be good.

[5] On the 20th August 2014, Midwife Donaghy reviewed Mrs Hyndman-Stewart at a routine antenatal appointment. She was 39 + 3 weeks and again fetal

movements were noted as good and 'active' baby was charted in the maternity notes. A review in one week was arranged.

[6] Mrs Hyndman-Stewart attended her further antenatal appointment on the 27th August. She was now 40 + 3 weeks gestation. Fetal heart was heard and regular and recorded at 143bpm. Mrs Hyndman-Stewart felt that the baby was not as active as usual and in particular from the previous night. Mrs Hyndman-Stewart stated that on 27th August she informed midwife Mairead Donaghy that she felt a reduction in fetal movements, that she had lost two pounds in weight and that she described the shape of her baby" bump" as being smaller than before. Midwife Donaghy had no recollection of this conversation and if there had have been such a conversation, midwife Donaghy stated that she would have recorded it in the grid within Mrs Hyndman-Stewart's maternity notes and may have queried about ruptured membranes or she may have thought that the baby's head had moved into the pelvis.

[7] In any event Mrs Hyndman-Stewart was referred to the fetal assessment unit for a CTG in line with the Trust policy. At Mrs Hyndman-Stewart's request, Midwife Donaghy contacted Dr Pendergast to try and rearrange her induction date and this was duly amended from the 4th September to the 1st September.

[8] I find that Midwife Donaghy acted appropriately throughout her involvement in this matter.

[9] In her evidence to the Inquest, Community Midwife Donna Kelly stated that she provided midwifery care for Mrs Hyndman-Stewart on the 27th August 2014 at 10am in the Fetal Assessment Unit in Tyrone County Hospital and that she had been the midwife who had booked Mrs Hyndman-Stewart at the outset of her pregnancy. According to Mrs Hyndman-Stewart, on being sent to Midwife Donna Kelly for a CTG scan that same day, Midwife Kelly reportedly commented on her weight loss. In her evidence Midwife Kelly stated that she had no such recollection and there was no note of this conversation in the maternity notes.

[10] In her assessment Midwife Kelly determined that risk was high due to raised BMI and reduced fetal movements since the previous night and the notes reflect this assessment. A cardiotocograph (CTG) was commenced at 10.03am and Mrs Hyndman-Stewart stated that she felt fetal movements immediately on lying down on the couch. Midwife Kelly determined that the CTG was normal. Although given this determination, a Doppler was not required, Midwife Kelly attempted to carry out a Doppler in order to improve her training but was unable to do so due to Mrs Hyndman-Stewart's body mass

index (BMI). Midwife Kelly stated that if she had have had any concerns regarding the CTG she would have referred Mrs Hyndman-Stewart to Altnagelvin Area Hospital. Midwife Kelly advised Mrs Hyndman-Stewart to monitor her fetal movements and to contact the hospital if there were any reductions in movement. Midwife Kelly explained that she did not measure the baby's height at this time as Trust guidelines were to do this every 2-3 weeks.

[11] I find that Midwife Kelly acted appropriately throughout her involvement in this matter.

[12] In her evidence to the Inquest, Community Midwife Deirdre Gallagher-O'Kane stated that on Saturday 30th August 2014 at 4.55pm she took a phone call from Mrs Hyndman-Stewart stating that she was having contractions, one every six minutes apart for twenty minutes and that she felt the pains across her stomach. She was six days over her due date. There was no report of ruptured membranes or vaginal loss. Mrs Hyndman-Stewart reported good fetal movement and she was advised to ring again once labour advanced.

[13] No risk factors were noted by Midwife Gallagher-O'Kane and although she was unaware of Mrs Hyndman-Stewart's BMI, even if she had been aware her advice would have been the same and she would do nothing differently.

[14] I find that Midwife Gallagher-O'Kane acted appropriately in her dealings with Mrs Hyndman-Stewart.

[15] In her evidence to the Inquest, Clinical Risk midwife Deirdre Gill stated that raised BMI was not a specifically recognised risk factor until January 2017 when the Trust introduced a new policy as part of the 'Saving Babies Lives' programme. As a result, a pregnant mother with a BMI of more than 35, as was the case here, would now follow a consultant led pathway and there would be more frequent scans and no plotting growth using fundal height measurements.

[16] In her evidence to the Inquest, Midwife Anita McCay stated that on the afternoon of Sunday 31st August she received a telephone call from Mrs Hyndman-Stewart, informing her that she was an antenatal patient at term plus seven and was having backache and asking for an antenatal check. Mrs Hyndman-Stewart also informed the midwife that she had not felt her baby move that morning. Midwife McCay advised Mrs Hyndman-Stewart to attend the Maternity Fetal Assessment Unit at Altnagelvin Hospital for assessment.

[17] I find that this was the appropriate advice at that time.

[18] In her evidence to the Inquest, Midwife Deirdre McCafferty stated that Mrs Hyndman-Stewart attended the Fetal Assessment Unit on Sunday 31st August having been advised to attend there by the community midwife due to her concerns of reduced fetal movement. Mrs Hyndman-Stewart stated that she arrived at the Unit at approximately 1pm. Midwife McCafferty explained that at weekends there is only one midwife working in the Unit and patients are seen on a first come first served basis. There is no triage system in place and patients can arrive by way of referral from the community midwife, from a GP, by attending of their own accord or by way of referral via the Emergency Department.

[19] Midwife McCafferty commenced a CTG at 2.06pm but as it did not meet the Dawes Redman analysis after 40mins, she stopped the CTG and performed an Ultra Sound Scan. Midwife McCafferty explained to the Inquest that she had concerns regarding variability from her reading of the CTG and this is why she stopped the CTG and performed an Ultra Sound Scan. The Doppler was normal although she did not visualise any fetal movements on the scan.

[20] As a result she contacted Dr Gallagher SHO to attend and review.

[21] Whilst waiting on Dr Gallagher, midwife McCafferty performed a vaginal examination and recommenced CTG monitoring. On examination she did not find any evidence of ruptured membranes although she accepted that that was not the primary purpose of the vaginal examination. Midwife McCafferty was of the view that the membranes had not ruptured at that stage.

[22] I find that midwife McCafferty acted appropriately in escalating her concerns to the SHO, although I will return to his particular aspect. However, although it had no bearing on the outcome, I find that there was too much of a delay from Mrs Hyndman-Stewart attending the Fetal Assessment Unit at 1pm and being monitored by way of a CTG at 2.06pm.

[23] In her evidence to the Inquest, Dr Caroline Gallagher stated that she was asked to review Mrs Hyndman-Stewart. On examination her abdomen was soft and non-tender. An ultrasound showed a fetal heart beat but no fetal movements. Dr Gallagher also noticed that there was minimal amniotic fluid around the baby. Dr Gallagher admitted Mrs Hyndman-Stewart, performed blood tests and asked the Registrar, Dr Quinn to review her.

[24] In her evidence, Dr Gallagher accepted and I find that she had incorrectly read the CTGs and considered them to be normal when in fact they were not. Dr Gallagher was of the view that this was due in part to the training that she had undergone in relation to the significance of accelerations on an ante-natal CTG

and on an intrapartum CTG. On the former the absence of accelerations are highly significant whereas on the latter they are of unknown significance. Dr Gallagher believed that it was the other way round as regards the significance of accelerations.

[25] I find that Dr Gallagher had not received the wrong training but had misclassified the CTGs.

[26] In his evidence to the Inquest, Dr Quinn, Consultant Obstetrician and Gynaecologist, stated that he first met Mrs Hyndman-Stewart on the afternoon of the 31st August 2014 in the Fetal Assessment Unit of Altnagelvin Area Hospital. At the time he was a ST7 doctor. Mrs Hyndman-Stewart informed him that she was overdue at dates + 7 days and had reduced fetal movements. On scan the baby's Doppler was normal and there was reduced liquor as noted by Dr Gallagher the SHO.

[27] In his evidence Dr Quinn accepted that he had incorrectly classified the CTGs and believed that they were normal. He believed at that time that the absence of accelerations on an ante-natal CTG was of no significance although he was concerned for Mrs Hyndman-Stewart taking into account the history. As a result, Dr Quinn decided to keep Mrs Hyndman-Stewart in hospital and induce labour immediately with Prostaglandin pessary. At this stage her CTG had failed computer analysis twice. The pessary was given at 5.05pm by Dr Gallagher. Dr Quinn stated that at that time he believed that only Altnagelvin Area Hospital used the Dawes Redman Computer programme.

[28] Dr Quinn explained to the Inquest that he did not opt for a Caesarean section as he weighed up the options to include the difficulties inherent in performing a C-section and whilst I find that it would not have altered the outcome I find that the decision not to perform a C-section was based in large part on the misclassification of the CTGs.

[29] Dr Quinn visited Mrs Hyndman-Stewart again at 6.05pm. He performed a scan and confirmed that there was no heartbeat. The on-call Consultant, Dr McNeill, was contacted.

[30] I find that Dr Quinn's actions were timely but inappropriate as he set about following the guidelines in respect of the induction of labour in a normal patient. This was as a direct consequence of incorrectly classifying the CTGs.

[31] Dr Quinn stated that he was alert to the risks in pregnancy for ladies with a high BMI and he accepted that best practice would indicate that those pregnant

ladies with a BMI above 35 should have Consultant led care as opposed to shared care.

[32] In her evidence to the Inquest, midwife Kellie McLaren stated that she met Mrs Hyndman-Stewart on 31st August 2014 as an inpatient on the antenatal ward at Altnagelvin Hospital. The ward was extremely busy and she was one of two midwives on duty that day. At approximately 6.05pm midwife McLaren went to commence Mrs Hyndman-Stewart's post pessary CTG one hour after the pessary had been administered by Dr Gallagher, the obstetric SHO. This was in line with Trust guidelines in Altnagelvin Area Hospital. On auscultation midwife McLaren could not hear the fetal heart. As a result she asked staff midwife McCafferty to scan Mrs Hyndman-Stewart.

[33] I find that midwife McLaren acted appropriately.

[34] In her evidence to the Inquest, Dr Sandra McNeill, Consultant Obstetrician and Gynaecologist, stated that she was contacted by Dr Quinn seeking her attendance with the result, Dr McNeill attended the Fetal Assessment Unit at 7pm on 31st August 2014. Dr McNeill confirmed the diagnosis and Mrs Hyndman-Stewart then underwent induction of labour on 1st September 2014 and had delivery at 1.29pm of a still born baby girl.

[35] Dr McNeill explained to the Inquest that on an ante-natal CTG the absence of accelerations is tolerated for up to 40mins. She had reviewed the CTGs in this matter and confirmed that they were abnormal. Dr McNeill believed that it would not have been unreasonable to induce labour along with continuous monitoring and if that indicated an issue post administration of the pessary then an emergency C-section could have been undertaken.

[36] Dr McNeill agreed with both Dr Pearse and Dr Gillham that there was nothing to indicate delivery should have occurred on the 27th August but she could not provide an opinion on whether or not the baby would have survived if delivered then. She stated a change in the shape of a pregnant mother's "bump" particularly towards or at the end of a pregnancy is not unusual and that a weight loss of 2 pounds would be insignificant. Dr Quinn was of this opinion as were Drs Gillham, Prendergast and Weir.

[37] Dr McNeill did explain that Group B Streptococcus (GBS) can only get into the system via the blood which is less likely here or as a result of ruptured membranes although Mrs Hyndman-Stewart had no history of this.

[38] Dr McNeill further explained that midwives are encouraged to contact consultants directly if they are not content with the approach being taken by

junior doctors, the "jump policy". The evidence suggests that this approach needs to be embraced and positively encouraged.

[39] Three independent experts gave evidence to the Inquest in addition to Dr Claire Thornton, Consultant Paediatric Pathologist. Dr Paul Weir Consultant Obstetrician & Gynaecologist, engaged on behalf of the Coroner and Dr Richard Pearse, Consultant Neonatal Paediatrician, and Dr Joanne Gillham, Consultant Obstetrician & Specialist in Maternal/Fetal Medicine, both instructed on behalf of Mr & Mrs Hyndman-Stewart.

[40] In his opinion, Dr Weir believed that the response to the reduced fetal movements on 27th August was appropriate and that the CTG was reassuring and that there were no reasons to deliver Clara on that date. Similarly, he felt that it was appropriate to perform an ultrasound scan and heart monitoring on the 31st August. Dr Weir was of the opinion that the CTG on the 31st August contained at least one non reassuring feature and so would be graded as suspicious. The Dawes Redman (DR) criteria were not met at 40 minutes and according to Dr Weir the recording time should have been extended to 60 minutes or greater, up to 90 minutes to take into account baby's sleep cycles. The reduction in the short-term variability (STV) would also have indicated the need for continued monitoring and assessment by senior medical staff.

[41] Dr Weir was further of the opinion that the CTG which was recommenced at 3.09pm on 31st August was suspicious and that the test was again incomplete as the DR system requires, according to NICE Guidelines, the test to continue to 60 minutes or "Criteria Met". The STV result therefore was misleading. According to Dr Weir if the CTGs had been carried out for 60 minutes or more they would have automatically been classified as pathological and the balance would have changed to require an emergency C-section.

[42] Dr Weir stated that the level of risk was not clearly graded and as Mrs Hyndman-Stewart was at a high level of risk due to a recurrent complaint of reduced fetal movements and her obesity, then investigations such as antenatal FHR/cardiotocographs and ultrasound assessments should have been considered against this background of risk.

[43] Dr Weir believed that the ultrasound examination performed by Midwife McCafferty was incomplete as it did not carry out a basic assessment of fetal environment or record the amniotic fluid volume. Given that the pulsatility index and resistive index were both abnormal, these should have been further warning signs that there was significant possibility of fetal compromise.

[44] Dr Weir believed that the membranes were compromised to some degree and this is how the GBS was able to ascend and infect baby Clara and that the infection had been on-going for a number of days prior to the 31st August. He further felt that it would have been important to monitor the fetus with continuous heart rate monitoring in the immediate phase following the administration of the induction agent. The failure to do so resulted, in his opinion, in not identifying fetal distress and compromise. He did not believe that the use of the pessary caused abnormal uterine activity, uterine hypertonus or excessive contractions.

[45] However, notwithstanding this, Dr Weir was of the opinion that even if the fetus had been monitored during and after the administration of the pessary and a heart rate abnormality detected:

"it is very unlikely that the infant could have been delivered alive …"

and that delivery by caesarean section would not have altered the outcome.

[46] Dr Weir was of the opinion that the cause of intrauterine death was acute choriomnionitis and that at the time of Mrs Hyndman-Stewart's admission, the infection was so advanced and the baby was already critically ill that even if delivered immediately baby Clara would not have survived or survived intact. He further was of the view that Mrs Hyndman-Stewart's BMI had no bearing on the outcome.

[47] In her evidence to the Inquest, Dr Joanna Gillham explained that Mrs Hyndman-Stewart was at the very high end of the class 2 (of 3) obesity spectrum and explained the complications such obesity can cause in pregnancy. Dr Gillham was of the opinion that delivery should have been expedited late afternoon of 31st August. Group B Streptococcus was the culprit infection and it is not routinely screened for in pregnancy although Dr Gillham believed that there were no features of the pregnancy indicating such screening in any event.

[48] Dr Gillham did not believe that the 2 pounds weight loss was of significance and there was no need to check baby Clara's growth on 31st August. The combination of the CTGs and the history were enough to expedite delivery then.

[49] Dr Gillham explained that in the vast majority of cases with GBS it is where the membranes have ruptured.

[50] At her first obstetric review, Dr Gillham noted that Mrs Hyndman-Stewart was not given any information regarding risks associated with raised BMI, no

vitamin D, no venous thromboembolism assessment and no low dose aspirin for her increased risk of pre-eclampsia. However, she believed and I find that the failure to deal with these issues had no bearing on the outcome. Similarly she did not believe that routine growth scans would have altered the outcome here.

[51] Dr Gillham was of the opinion that the management on the 27th August was appropriate and that there were no warning flags to indicate delivery at that time. However, on the 31st August Dr Gillham was of the opinion that the CTG which commenced at 2.06pm was abnormal from the beginning with reduced variability and no accelerations and that after 40 minutes the CTG should have been continued and an urgent obstetric review sought and delivery expedited. Dr Gillham does not take issue with Dr Pearse's opinion that earlier delivery would not have altered the outcome.

[52] In his evidence to the Inquest, Dr Richard Pearse stated that in his opinion death was due to intrauterine septicaemia causing septic shock. He further believed that some asphyxia occurred earlier and whenever the circulation collapsed on 31st August 2014 as a result of the septicaemia then the features of an acute asphyxia insult would have been generated. He opined that it was likely that whenever Mrs Hyndman-Stewart noticed a sudden apparent reduction in the size of her "bump" and that she had lost 2 pounds in weight that the membranes had ruptured possibly when going to the bathroom.

[53] According to Dr Pearse, Group B Strep is more common in pregnant ladies who have suffered ruptured membranes than those who have not. Dr Pearse was of the opinion that the cause of death being intrauterine septicaemia meant that delivery a few hours earlier:

[54] " is very unlikely to have resulted in Clara's long term survival" and that " it is very unlikely that Clara would have survived long term, even if a caesarean section had been performed at this time" {that is on the 31st August}.

[55] Dr Pearse believed that Clara was in the advanced stages of Group B Strep. at that time.

In his evidence Dr Pearse stated that if baby Clara had have been delivered on the 27th August 2014 then on balance he believed that she would have survived. However, he went on to state that he could find no evidence of any indicators which would have justified a delivery on the 27th August.

[56] Dr Pearse agreed with Dr Gillham that baby Clara almost certainly died between 5.07pm and 6.05pm on 31st August. Dr Pearse did not believe that

Mrs Hyndman-Stewart's obesity played any part in the colonisation of baby Clara with Group B Strep. He was of the opinion that her membranes ruptured and that baby Clara suffered asphyxia and GBS septicaemia. He believed that the outcome would have been no different if Mrs Hyndman-Stewart had had a normal B.M.I.

[57] Dr Pearse stated that nothing could have been done differently in this matter by the medical staff.

[58] Dr Prendergast stated that in relation to potential risks associated with Mrs Hyndman-Stewart's body mass index (BMI) these were recognised by her GP and by the booking midwife. He accepted that various risk assessments were not performed, nor aspirin, nor vitamin D given when they should have been here. The position from 2017 is that a pregnant mother presenting with a BMI of 35 + will be placed on a Consultant led pathway and will have serial ultra sound scanning from 26 weeks.

[59] Dr Prendergast was of the view that the CTGs from the 31st August were not normal and that the Dawes Redman should have been continued by the mid-wife for 60 minutes as opposed to being stopped at 40minutes. The Dawes Redman is a computer decision aid but according to Dr Prendergast one would need to "be careful" about ignoring its readings. He could think of no good reason why it was stopped after 40 minutes. He further explained that at that time an Ultra Sound Scan would have been of less value.

[60] Dr Prendergast was of the opinion that Dr Quinn made the correct decision on examining the patient that delivery was required notwithstanding the fact that Dr Quinn had misclassified the CTGs. He himself would have chosen delivery by way of a planned and controlled caesarean section. This would have achieved delivery within approximately one hour of the decision to deliver being taken whereas to induce labour would likely take up to 24hours.

[61] Dr Prendergast could not find any reasons to deliver baby Clara on 27th August and he believed on the balance of probabilities that the membranes had not ruptured.

[62] A post-mortem was performed by Dr Claire Thornton. In her evidence to the Inquest she described that the post mortem revealed a heavily meconium stained post mature baby girl. She had not reached her full growth potential and therefore baby Clara may have had less reserves in order to fight the infection. Dr Thornton was of the opinion that the infection had been present for at least several days prior to fetal death. There was also evidence of acute hypoxic brain damage. Dr Thornton explained how in most cases acute

chorioamnionitis is clinically silent and that it can occur whether or not membranes are intact or ruptured.

[63] I find that notwithstanding Mrs Hyndman-Stewart presenting at the outset of her pregnancy with a high BMI and this being noted, she was not risk assessed for venous thromboembolism, she was not given aspirin nor vitamin D. However, I find that this did not have any bearing on the outcome.

[64] I welcome the change in policy regarding those pregnant ladies presenting with a high BMI.

[65] I find that on the 27th August 2014 Mrs Hyndman-Stewart did discuss her weight loss and the change in the shape of her "bump" with midwife Donaghy and midwife Kelly but that these two factors were not significant particularly as I find that the change in shape of the" bump" was more likely than not baby Clara's head engaging in the pelvis. I further find that there were no indicators on the 27th suggesting or necessitating delivery on that day.

[66] I find on the balance of probabilities that the membranes had been compromised some days prior to the 31st August 2014 and that this explains the ability of the GBS to ascend and infect baby Clara.

[67] I find that Mrs Hyndman-Stewart attended the Fetal Assessment Unit at Altnagelvin Hospital at 1pm on 31st August 2014 and that the CTG was not commenced until 2.06pm. I find that the system operated by the Trust in that Unit at weekends to be in need of improvement and the evidence suggests that the introduction of a triage system should be considered.

[68] I find that midwife McCafferty stopped the CTG too soon and that she should have allowed it to run for 60 minutes as opposed to 40 minutes. However, I find that midwife McCafferty correctly assessed the CTG on the 31st August as abnormal and acted appropriately in escalating her concerns to Dr Gallagher.

[69] I further find that the CTG was abnormal from the outset.

[70] Dr Quinn accepted and I find that Dr Quinn misclassified the CTGs. I also find that Dr Gallagher did the same. I find that Dr Quinn did make the correct decision to deliver baby Clara but given that he had misclassified the CTGs he did not give sufficient consideration to delivery by caesarean section.

[71] Whilst I find that the misclassification of the CTGs on 31st August 2014 represented a loss of opportunity in respect of the care of baby Clara, I find that this did not affect the outcome. I find on the balance of probabilities that baby Clara should have been delivered by caesarean section but even if baby Clara

had have been delivered early on the 31st August that the outcome would still have been the same.

[72] I acknowledge that the readings of CTGs are extremely complex and in that context the evidence suggests that there needs to be on-going and regular, supervised training by all those medical staff involved in reading them. The evidence also suggests that there needs to be ongoing and regular, supervised training in the use of the Dawes Redman Criteria.

[73] In relation to policies, I find that different hospitals in the same Trust using different policies in the same area of medicine to be inexplicable. I further find that different Trusts operating different policies from each other to be inexplicable and the evidence suggests that this needs addressing as a priority.

[74] The post-mortem records and I find that death was due to:

I(a) Stillbirth;

Due to;

(b) Intrauterine Infection;

Due To;

(c) Group B Streptococcus Infection,

II Postmaturity, Nuchal Cord, Small for Gestational Age.