Neutral Citation No: [2018] NICoroner 1	***Ref:*** **2018NICORONER1**
Judgment: approved by the Court for handing down (subject to editorial corrections)*	***Delivered: 08/03/2018***

IN THE CORONERS COURT FOR NORTHERN IRELAND

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IN THE MATTER OF

AN INQUEST INTO THE DEATH OF

BABY X

Before: Coroner Patrick McGurgan

[1] The Deceased, Baby X, was born on the 21st October 2014 and died on the 21st October 2014.

[2] On Thursday the 16th October 2014, due to maternal concerns, the Deceased's mother, Y, attended at Craigavon Area Hospital. The mother expressed concerns about the Deceased's apparent lack of growth and reduced fetal movements.

[3] In her evidence to the Inquest, staff midwife Bernadette McGeown explained that she first provided care for Y on the 16th October having taken over her care at 21.50hours. Physical observations were undertaken and a Cardiotocograph ("CTG") was commenced to assess fetal wellbeing. Staff midwife McGeown detected two small decelerations and she asked Dr Carron, an Obstetric SHO, to review same.

[4] In her statement to the Inquest admitted under Rule 17, Dr Carron stated that she took a history from Y that revealed no concerns. She examined Y and performed an ultra sound scan. The ultra sound scan was performed and it estimated fetal weight to be 1890 grams (10th centile).

[5] A repeat CTG was requested by Dr Carron and on reattaching the CTG, and according to staff midwife McGeown, she left Dr Carron with Y.

[6] Dr Carron evaluated the repeat CTG as normal and Y was reassured but given the question of reduced growth velocity the surveillance interval was increased and an appointment was made for her to return on the 20th October 2014. Y was instructed to return in the meantime if she had any further concerns.

[7] I find that Dr Carron's actions were appropriate at this time.

[8] Staff midwife McGeown subsequently made an appointment for Y to return on 20th October 2014.

[9] In her evidence staff midwife McGeown accepted and I find that she did not check the CTG machine before commencing the trace and that the date and time recorded on the two CTGs are incorrect.

[10] Staff midwife Julie McCartney gave evidence to the Inquest. She first provided care to Y on the 20th October at 16.00hours when she arrived for her appointment and arranged for a repeat CTG. Observations were also recorded and during the CTG staff midwife McCartney noted an unprovoked deceleration. Staff midwife McCartney described this deceleration as being abnormal and as a result, she contacted Dr Chinnadurai, a senior Registrar, to carry out a review which Dr Chinnadurai did at approximately 17.00hours.

[11] I find staff midwife McCartney's actions to have been both timely and appropriate.

[12] Care of Y was then handed over to staff midwife Patricia McKillon at 17.30hours. At this stage Y was in the process of having a CTG completed. Staff midwife McKillon stated that a deceleration had been noted on the CTG by staff midwife McCartney and that Dr Chinnadurai had reviewed the trace, performed an ultrasound scan and had asked for the CTG to continue for a further 30-40 minutes when she would again undertake a review of same.

[13] Staff midwife McKillion explained that she continued the CTG recording. Whenever she was attending to another patient, Dr Chinndurai returned and subsequently informed staff midwife McKillion that Y was for admission and to reserve pre-eclampsia blood samples. A urinalysis was performed and steroids were administered. The CTG was to be repeated according to the evidence either in 1-2 hours time or at 20.30 hours but the note in the medical records completed by Dr Chinnudari read " repeat CTG this evening ".

[14] In her evidence, staff midwife McKillion accepted that the CTG was sinusoidal but that at the time she had never seen anything like it before. She

explained that she could speak to a Consultant if she was not content with the Registrar's opinion of the CTG but that she was content that Y was being admitted and that there was a plan to repeat the CTG.

[15] In her evidence to the Inquest, staff midwife Hazel Meakin stated that she first provided care to Y on 20th October at 21.00hours.

[16] At 22.00hours she took Y's observations and her Obstetric early warning score was recorded as two yellow as her blood pressure was elevated and would therefore be rechecked within 30mins.

[17] Due to a data point for connecting the CTG machine not being available at that stage further observations were undertaken. A CTG was commenced at 22.40hours but this was only because of her concerns regarding Y's blood pressure and not as a result of Dr Chinnudari's previous request for a repeat CTG as staff midwife Meakin was unaware of that request. Staff midwife Meakin assessed the trace as suspicious due to decelerations being noted. This meant that the trace was a pathological trace. As a result, she asked Dr Mohamed Ali to review the CTG as she was on the ward. Dr Mohamed Ali was not an ST3 grade Dr at that time. Protocol dictated that such a CTG trace was to be referred to a ST3 grade Doctor or above. Dr Mohamed Ali graded the CTG as being "nothing abnormal detected". No recommendation was made for the tracing to be repeated. Notwithstanding this evaluation the CTG "sticker" in the notes has "suspicious" circled. It appears that this was circled and signed by staff midwife Meakin.

[18] Staff midwife Meakin accepted and I find that she should at this stage have contacted the Registrar herself. This represented a missed opportunity in respect of the care and treatment of the Deceased.

[19] In her evidence to the Inquest Dr Mohamed Ali stated that at the time she had been training in obstetrics for 2 years and 3 months. She was the equivalent to a SHO. She explained that she was on the ward whenever she was asked by staff midwife Meakin to review a CTG. Dr Mohamed Ali explained that she did not review Y's medical notes nor did she take a history from her.

[20] Dr Mohamed Ali accepted and I find that she should have taken a history from Y and read the medical notes. She further accepted and I find that she could not determine the CTG trace in the absence of a clinical history and without reading the notes.

[21] Dr Mohamed Ali did not make any entry in the medical notes regarding her involvement or her decision making. I find that this is unacceptable practice.

[22] I find that this CTG was not normal and that Dr Mohamed Ali's grading represented a missed opportunity in respect of the care and treatment of the Deceased.

[23] Staff midwife Emily Thompson gave evidence to the Inquest. She first provided care for Y on the 21st October 2014. She spoke to Y at approximately 09.00 hours. At 11.15 hours she undertook an antenatal examination of Y which was within normal limits. She commenced a CTG at 12.10hours and at 12.32 she had Y turn onto her left side in order to promote blood flow as she was concerned that the CTG was showing periods of reduced variability and a possible sinusoidal pattern. She also bleeped Dr Chinnadurai twice and went on her break, handing over care to staff midwife Barton.

[24] In her evidence staff midwife Corinna Barton stated that whenever she took over Y's care at 1pm she was aware that Dr Chinnadurai had been bleeped and that she was reviewing the CTG via a computer terminal elsewhere in the hospital. Staff midwife Barton described noting reduced variability, periods of sinusoidial patterns and unprovoked decelerations on the CTG. As a result she spoke directly to Dr Chinnadurai who informed her that she was not overly concerned about the CTG tracing and that "it was not classed as a pathological CTG".

[25] Staff midwife Barton was then informed that Dr McCormick, Consultant Obstetrician was going to review Y. It was staff midwife Barton's evidence that she would have contacted Dr McCormick due to her concerns notwithstanding Dr Chinnadurai's observations but for the fact that he contacted the ward first.

[26] I find that staff midwife Barton acted appropriately.

[27] On return from her lunch break, staff midwife Emily Thompson noted that the fetal heart variability remained reduced to less than five beats per minute and a deceleration was noted at 13.20hrs. Despite being informed that Dr Chinnadurai was content to allow the tracing to continue, staff midwife Thompson removed the complete tracing, discussed her concerns with Sr. Moore and took the trace to the delivery suite to try and locate the Consultant Obstetrician. She spoke to Sister Mary Dawson who agreed with her concerns and observations regarding the tracing.

[28] On direction of Sister Dawson, staff midwife Thompson then returned to the ward and Y subsequently left the ward to undergo a scan with Dr McCormick.

[29] I find that staff midwife Thompson's actions were both timely and appropriate.

[30] In her evidence to the Inquest, Sister Mary Dawson stated that she was sister on duty in the delivery suite on the 21st October whenever at approximately 13.30 hrs, staff midwife Thompson arrived into the suite. Staff midwife Thompson indicated her concerns with the CTG trace she had taken with her and that following this discussion she instructed staff midwife Thompson to return to the ward in order to prepare Y for delivery. Sister Dawson then spoke to Dr Chinnadurai and that the trace was classified as pathological and needed reviewed which the Doctor agreed to do.

[31] At approximately 14.20hours Dr McCormick contacted Sister Dawson requesting that Y be admitted to the delivery suite for an emergency caesarean section, category 2. This meant that delivery was to take place within one hour.

[32] Dr Chinnadurai gave evidence to the Inquest. At the material time she was a Senior Registrar Obstetrics and Gynaecology, year 7 with 10 months left in this role before she could apply to be a Consultant. She explained that she first encountered Y on the 20th October 2014 at 17.15hours. She was aware that Y had attended for CTG due to a concern regarding the Deceased's growth following a scan on the 16th October. She was also aware of poor fetal movement at that time but had not taken much notice of previous CTG traces.

[33] She accepted and I find that she should have questioned Y more regarding the fetal movements.

[34] Y was assessed, her blood pressure was monitored and an ultrasound scan was performed and showed an estimated fetal weight of 2180grams (on 20th centile). Umbilical artery dopplers were described as normal. A CTG was performed and described as suspicious in view of "one unprovoked deceleration possibly related to a uterine tightening at the time" and a plan was made to continue the trace and review in 30-40 minutes. Dr Chinnadurai reviewed the trace and classified it as normal.

[35] Dr Chinnadurai accepted and I find that this trace was misinterpreted and that it was a pathological trace. I find that this misinterpretation

represented a missed opportunity in respect of the care and treatment of the Deceased.

[36] In light of the high blood pressure and the falling growth centile Dr Chinnadurai arranged for Y to be admitted to hospital. She also prescribed steroids in case the Deceased would have to be delivered early. I find that this was both timely and appropriate.

[37] Dr Chinnadurai also requested that a repeat CTG be performed that evening but her note in the medical records did not specify a time. I find that this was unacceptable.

[38] At the evening handover around 20.30hours Dr Chinnadurai did not specify that Y was to have a further CTG with the result that one was not performed until between 22.40 and 23.15hours. I find that this was unacceptable and the evidence suggests that it is imperative that a full and detailed handover of patients takes place with appropriate notes being recorded.

[39] On the following day Dr Chinnadurai stated that she was asked via telephone by a midwife to review the CTG trace from that morning. This was around 12.45/13.00hours. Dr Chinnadurai reviewed the trace on TRIUM the hospital computer system from a different part of the hospital. She felt that there were periods of sinusoidal rhythm and increased variability but that the sinusoidal pattern was not longer than 10minutes, and that fetal movements were present. As a result, she classified this CTG as suspicious and advised that the trace be maintained.

[40] Dr Chinnadurai was then spoken to by Sister Dawson who expressed her concern and that of staff midwife Thompson regarding the assessment of the CTG. Sister Dawson pointed out that she believed the trace to be pathological. Dr Chinnadurai stated that she informed Sister Dawson that she would review the CTG.

[41] I find that Dr Chinnadurai did not review the CTG. I find that giving such an assurance and then not following it through to be unacceptable practice. In addition, there are no documented notes by Dr Chinnadurai detailing this encounter and I find that unacceptable.

[42] In his evidence to the Inquest, Dr McCormick, Consultant Obstetrician and Gynaecologist, stated that he first saw Y on the 21st October 2014 at 10am. He was the clinician of the week and was undertaking his ward round. He spoke to Y and noted her history. He evaluated the CTG from the previous

evening and felt that at times it appeared sinusoidal. As a result he requested that a further CTG be performed, "this am". Dr McCormick was of the view that the admission CTG was also sinusoidal. He accepted and I find that urgency should have been stressed regarding the repeat CTG being performed. I further find that Dr McCormick should have instructed midwifery staff to alert him directly of the findings of that CTG.

[43] Dr McCormick accepted that he did not look at the CTG trace performed at 17.00hours the previous day and that he relied on Dr Chinnadurai's assessment recorded in the notes. He accepted and I find that he should have reviewed the actual CTG trace. Dr McCormick stated that if he had seen this CTG trace he would have considered it sinusoidal and would have escalated matters.

[44] I find that this represented a missed opportunity in respect of the care and treatment of the Deceased.

[45] Dr McCormick had advised that he would undertake a scan at lunch time and he was specific about this as he knew that one of the two scanners would be available over lunch. He went to check on the scanners prior to performing the scan and discovered that one was being used and the other was malfunctioning. As a result at approximately 13.05hours he contacted the ward to update the staff and that he would perform the scan as soon as practicably possible.

[46] The evidence suggests that it is imperative that equipment is kept up to date, properly maintained and fully functioning at all times.

[47] Despite an entry in the notes made by staff mid wife Barton to the contrary, Dr McCormick had not seen the CTG performed that morning.

[48] I prefer the evidence of Dr McCormick on this point and it emphasises the absolute requirement for accurate note taking.

[49] Dr McCormick was of the view and I find that the CTG trace from that morning was pathological at 12.40pm and therefore matters should have been escalated at that time. I find that by not doing so represented a missed opportunity in respect of the care and treatment of the Deceased.

[50] Y was transferred for a scan at 13.50hours. Dr McCormick made a diagnosis of fetal anaemia and Y was transferred to the delivery suite for a Caesarean section. Dr McCormick categorised this caesarean section as a category two, meaning that it had to be performed within 1 hour. This was in part to facilitate the return of colleagues from an annual audit meeting as Dr

McCormick wished to have the proper people in place at delivery. I find that it was appropriate for Dr McCormick to ensure that he had the appropriate staff available prior to delivery.

[51] The evidence suggests however, that an annual audit day should not take place within regular working hours during a working week and if it is that the hospital is adequately staffed to deal with an emergency such as this.

[52] The Deceased was born at 15.24 hours and was noted to be pale, and bradycardic, that is with an abnormally slow heartbeat, with no spontaneous respirations. The Deceased was transferred to the Neonatal Intensive Care Unit but despite maximum treatment being given, the Deceased passed away and life was pronounced extinct at 23.59 hours on the 21st October 2014 at Craigavon Area Hospital.

Record keeping

[53] I find that the medical records varied from being detailed to containing insufficient detail, containing some inaccuracies or non-existent. It appears that decisions were being made particularly by doctors who were working in other areas of the hospital without access to Y's notes and records. As a result, decisions that were being made were never documented.

[54] The evidence suggests that this aspect of medical care needs addressed urgently.

[55] In relation to the hard copy CTGs these are retained in an envelope in the patient's file. In order to allow for an easier identification of these CTGs, the evidence suggests that they should be individually highlighted with a sticker identifying the time and date of the trace.

Training

[56] The evidence suggests that the interpretation of CTGs is very complex and difficult. The Inquest has been told that medical staff are required to undergo annual training by way of E-learning and that there are weekly and or monthly CTG meetings which staff are encouraged to attend. Whilst it appears that CTGs are only one tool used by staff I find that the correct interpretation of CTGs is an absolute necessity.

[57] I commend the implementation of a "buddy" system which means that two practitioners (either midwifery and or medical) review a CTG and the fact that various options are being explored in this area but the evidence

suggests that the training in this area overall is inadequate and needs re-evaluated as a matter of urgency.

[58] The evidence further suggests that there is a gap in the ability of some staff as regards their understanding as to how to use effectively the TRIUM computer system. This needs addressed urgently.

Communication

[59] In her evidence to the Inquest, Y described the level of communication between her and medical staff. I find that this ranged from being poor, to unclear for a non-medical person to understand to non-existent.

[60] In addition the communication between staff was unacceptable. The evidence suggests that communication between staff particularly at shift handover times can be poor and this area needs to be re-evaluated as a matter of urgency.

[61] The evidence suggests that proper, timely and informed communication is of absolute necessity. A suitable member of staff should be designated as a single point of communication contact with the patient and their families. In the event that this is not possible, the evidence further suggests that consideration be given to the appointment of a designated communication officer on wards.

[62] A post mortem was performed and I find that the cause of death was:

(i)(a) Hypoxic ischaemic Encephalopathy;

Due to:

(b) Massive fetal maternal haemorrhage;

(ii) Utero placental insufficiency.