Neutral Citation No: [2022] NICoroner 11	Ref: 2022NICoroner11
Judgment: approved by the court for handing down (subject to editorial corrections)*	Delivered: 11/11/2022

BEFORE THE CORONER OF NORTHERN IRELAND

BEFORE CORONER DOUGAN

THE INQUEST TOUCHING UPON THE DEATH OF

BABY JAXON MCVEY

Introduction

1. The inquest proceeded in hybrid form, meaning that a mix of remote technology and live courtroom attendance was utilised. The case proceeded in Banbridge Courthouse, between the dates of 24 and 28 October 2022. During the inquest, I received evidence from a large number of witnesses, and I also considered a number of statements admitted under Rule 17 of the Coroners (Practice and Procedure) Rules (Northern Ireland) 1963(the 1963 Rules), allied with voluminous guidelines, protocols and hospital notes and records. It is not possible to recite all the evidence, although all the evidence has been considered before arriving at these findings.

Inquest Evidence

2. The Deceased, Jaxon James McVey, was stillborn on 26 March 2017.

3. Miss Christine McCleery, mother of the Deceased, gave evidence to the inquest. She previously had an uncomplicated birth with her first child in Lagan Valley Hospital in 1999. On 25 July 2016, Miss McCleery attended her General Practitioner Surgery, and her pregnancy was confirmed. A document named "Essential Information for Antenatal Booking at Lagan Valley Hospital" was completed by her General Practitioner, Dr Isabel Chu. This document recorded

Miss McCleery's weight as 81.6kg and her height as 155cm which resulted in a Body Mass Index of 33.96kg/m2. Her estimated date of confinement was 27 March 2017. This document was forwarded to Lagan Valley Hospital Freestanding Midwifery Led Unit. Miss McCleery told the inquest that Lagan Valley was her first choice and that she was never given a reason to doubt that choice.

4. Miss McCleery suffered from the usual symptoms in the early stages of pregnancy, including sickness and reduction in appetite. The booking appointment took place on 13 September 2016 when she was at 12 weeks gestation. She was assessed by Staff Midwife Judith McIlwee in the Midwifery Led Unit who deemed her suitable for midwifery led care. At the appointment, the scan was conducted by Staff Midwife Claire McGuigan and Staff Midwife McIlwee carried out the booking process. Miss McCleery was asked personal details, health questions, family history and her bloods were taken. She was then taken into a different room where her height and weight were measured. Unknown to Miss McCleery at the time, Staff Midwife McIlwee documented her height at 160cm. Miss McCleery recalled that the Midwife wrote the height on a "scrap piece of paper" first and then transferred the figure into the computer records. Miss McCleery stated that she was not wearing shoes when her height was measured. She said she "never even thought to look at what she (the midwife) had recorded down". She told the inquest that the height of 155cm was the last recorded height taken by her GP and "I would have actually given myself a little smaller than that if I am honest". She went on to say her height would be closer to 152.5cm rather than 160cm. Miss McCleery's BMI was calculated with reference to her height of 160cm, as 32.23kg/m2. As a consequence of this calculation, she was advised that she fitted the criteria for midwifery led care in the Midwifery Led Unit. Miss McCleery stated that later, her personalised Antenatal GROW Chart for fetal measurement was plotted based on this initial error of her maternal height being recorded as 160cm.

5. At the booking appointment, Miss McCleery told the inquest that no risks of birthing in the Midwifery Led Unit were discussed with her. She explained that she is the kind of person, who, if "you talk about something with me and put something in my head I will ask you a question about it". She said there were no discussions about risks.

6. Miss McCleery's next appointment was the 20-week anomaly ultrasound on 9 November 2016. She was told that all appeared well and that the baby was healthy. Both Miss McCleery and her partner Mr Martin McVey asked what gender the baby was, and they were advised it was a boy; but that the result was never 100% accurate. Her due date was given as 24 March 2017. She was also told that as her body mass index was greater than 30 Kg/m2, a glucose tolerance test would be necessary. The glucose tolerance test took place on 21st December 2016 and the results came back as normal.

7. Miss McCleery continued to attend for antenatal care in the Lisburn Health Centre until she reached approximately 36 weeks of her pregnancy. At that point, care then transferred back to Midwifery Led Unit. The midwives from the Midwifery Led Unit held a Clinic in the Health Centre every Tuesday.

8. Miss McCleery explained that the pregnancy was normal throughout, but her pregnancy symptoms worsened with nausea and pressure. In terms of the growth of the baby, the first measurement documented on the GROW chart (at 28+4 weeks) was in and around the middle line, the 50th centile. A midwife explained to Miss McCleery that the middle line, where the deceased was plotted, was the average. The top line represented a larger baby, and the bottom line represented a smaller baby. This midwife explained that there might be risks if the baby plotted below the bottom line or above the top line. Miss McCleery described how the plot moved straight to the top line (the 90th centile) on the next visit, which was at 30+4 weeks. Miss McCleery stated that as the GROW chart was individual to her, it was incorrect, as it was based on the measurement of her height at 160cm rather than her actual height.

9. Miss McCleery told the inquest that she recalled the midwives making reference to the large size of her baby at every visit from around 35 weeks onwards. She stated that this would have been on four occasions. She was advised that the deceased was both large and long. She stated that at no point was this ever pointed out to be a difficulty or a risk in relation to delivery. She stated that no maternal or fetal risks were discussed with her concerning the deceased's size.

10. Miss McCleery felt decreased movements on the 2 and 3 March 2017. On 3 March 2017, she attended the Midwifery Led Unit where a CTG trace was carried out. The baby became more active on route to the hospital, and the Midwife was content with the CTG. On 7 March 2017, at an ante-natal review, Miss McCleery was asked if her 36 weeks checklist been conducted to assess her suitability to deliver at the Midwifery Led Unit. She advised that it had not and Staff Midwife Joyce Mack, found a checklist and then went through it at that appointment. Miss McCleery described it "as a 60 second exercise" and it was "really rushed". Miss McCleery recalled that during the checklist she was informed that there were no ambulances on site; the ambulance times for transfer and that an emergency ambulance would take approximately eight minutes to arrive at the Midwifery Led Unit, and it could even come from as far away as Newtownards. Miss McCleery told the inquest that this was the first time she was told of such risks associated with the Unit. Miss McCleery was adamant that none of the issues potentially affecting the transfer time were discussed with her during the checklist. She stated that there was no discussion about any risks or any specific reasons for transfer. She stated once again that she is the type of person who, when given information, will ask more questions to elicit detailed information. She stated that she was not given examples of potential emergency scenarios which would have permitted her to ask questions and to clarify matters. Miss McCleery stated that she was told that she could be transferred to the Royal Jubilee Maternity Hospital (Royal Jubilee) if it was an emergency and to the Ulster Hospital if it was not an emergency, but no specific reasons were given for such emergencies. She stated that during the

36 weeks checklist, the word "emergency" was used but only in relation to ambulance times. She was never given any examples of what an emergency might be. She stated that she had never heard of shoulder dystocia until after the deceased's death. She told the inquest that she was never given the opportunity to ask any questions as the information was not imparted to her at her antenatal appointments.

11. Miss McCleery told the inquest that whilst she was told of transfer times, she was not told that even when the ambulance arrives it would still be some time before she could be transferred to the Royal Jubilee. In her case, while the ambulance arrived broadly within the timescale, at 00.46 hours, it did not leave the Unit for another 10 minutes and it did not arrive at the Jubilee until 12 minutes later. The deceased was born some 40 minutes after his head was delivered and some 37 minutes after shoulder dystocia was diagnosed.

12. As no information was given to her on potential risks or the consequences of such risks, Miss McCleery told the inquest that she was not able to exercise informed consent in relation to her care pathway. Miss McCleery explained that had she been warned that transfer would become necessary if an obstetric emergency arose, and had she been given examples of those emergencies, she would have elected not to deliver in the Midwifery Led Unit. She told the inquest that she would have asked to be referred to Obstetric Led Care.

13. Miss McCleery's last antenatal appointment was on 14 March 2017 at 38+4 weeks. She told the inquest that in the last few weeks, she had been told by different midwives when they made reference to the big baby, that they were likely looking at a baby weighing in excess of 9lb. Miss McCleery stated that she and Mr McVey were given no advice or warned of any potential risks associated with such a big baby.

14. On 24 March 2017, at 40 weeks gestation, Miss McCleery attended the Midwifery Led Unit after suffering from labour pains. Staff Midwife Doreen Logan conducted an internal examination and advised her that she was only

1cm dilatated and that it might be a false labour or Braxton Hicks. Staff Midwife Logan performed a scan which confirmed that there was no breech. She also referred to the size of Miss McCleery's tummy and the fact that this was a "big baby".

15. On Saturday 25 March 2017, between 16.00 hours and 17.00 hours Miss McCleery started to feel stronger pains. She contacted the Midwifery Led Unit around 20.00 hours and she was advised to come in. She and Mr McVey arrived about 21.00 hours. She was met by Staff Midwife Laura Rankin who advised she was 4cm dilated and that she was to remain with them to observe progress. She advised that the Senior Midwife Pauline Topping would be along soon.

16. At around about 21.30 hours, Miss McCleery asked if she could get into the birthing pool to try to ease her pains. As she was getting changed, her waters broke. She struggled to find a comfortable position in the pool and so she got out and was told to lie on her side. Being on all fours was easiest for her and she told the inquest that she used this position often.

17. The pain started to get too much, and Miss McCleery asked whether it was too late to get an injection for pain relief in and around 23.45 hours. She was told that the head was nearly there, so she proceeded without further pain relief. She explained that it appeared a long time from when the baby's head was visible until delivery. Miss McCleery recalled feeling that something was wrong, and in the following 45 minutes she could see panic, at times, on Mr McVey's face. The deceased's head delivered and one of the midwives shouted "right, it's 00.32, we have a head, a few more pushes and he will be here". Miss McCleery recalled seeing a look on Mr McVey's face and she asked if something was wrong. She stated that the midwives sounded positive and told her that her baby was almost there.

18. Miss McCleery then described the scene as descending into "mayhem", "everything was total chaos" before 00.35 hours when shoulder dystocia was

declared. She stated there were lots of different very painful manoeuvres which were being tried by both midwives with the assistance of the Maternity Support Worker. Mr McVey was asked to hold Miss McCleery's leg during one of the manoeuvres. Miss McCleery stated that the pain of all the manoeuvres was excruciating. It appeared to Miss McCleery that there was no other support for them to call upon in the Unit. Mr McVey was grey, and he looked like he was going to pass out. Miss McCleery remembered Staff Midwife Topping shouting for an ambulance to be called, and for the Royal Jubilee to be informed that it was an emergency.

19. Miss McCleery described the ambulance journey as horrific. She stated she could feel the deceased's head between her legs on the way. The bed was narrow with the sides up. Her left leg was numb, and she had pins and needles sensations. Staff Midwife Rankin accompanied her in the ambulance along with Mr McVey.

20. Upon Miss McCleery's arrival at the Royal Jubilee, the deceased was instantly delivered in the delivery room. She could see a team of people working to try and resuscitate her son which stopped approximately 40 minutes later. She was told that he displayed no signs of life from the moment of his arrival at the Royal Jubilee.

21. Mr Martin McVey, father of the deceased gave evidence to the inquest. He first attended Lagan Valley Hospital with Miss McCleery on 13 September 2016 for the booking appointment. Mr McVey told the inquest that the Lagan Valley Hospital was the automatic choice and that is where Mr McVey himself was born. Miss McCleery indicated to him that she wanted to deliver in the Midwifery Led Unit unless there was any reason for her not to do so. At the appointment, Mr McVey stated that no potential risks or complications were highlighted to either of them about the delivery of their baby there.

22. On 9 November 2016, Mr McVey attended the 20-week scan when they were told all was well. The due date was changed from 27 March to 24 March 2017, based on the scan.

23. Mr McVey didn't attend any of the regular routine appointments due to work commitments. He stated that the pregnancy seemed to proceed in a straightforward manner. However, from January onwards, Miss McCleery started to struggle as the pressure of the baby was making her very uncomfortable and it affected simple everyday life such as walking and sitting.

24. On 3 March 2017, Mr McVey accompanied Miss McCleery to the Midwifery Led Unit due to reduced fetal movements. However, by the time they arrived the baby had begun to move again.

25. Miss McCleery had been having pains and discomfort from in and around 23 March 2017. On 24 March 2017, they attended the Midwifery Led Unit and a midwife examined Miss McCleery and told them that labour could be imminent. The midwife commented on the size of Miss McCleery's tummy and that the baby would be a "big baby". Mr McVey stated that this seemed to be a common theme because he recalled Miss McCleery telling him time and time again that the midwife, she attended had told her that the baby would be big. He stated that there was no discussion at that time in relation to risks. They were not told that having a big baby presented any particular risk either to the mother or to the child.

26. They reattended the Midwifery Led Unit on 25 March 2017 as Miss McCleery had started to feel pains that afternoon. When they arrived at the Unit, it was in darkness. He stated there did not seem to be anybody else there. Staff Midwife Rankin showed them into the Delivery Suite and told them that Staff Midwife Topping would be along soon. They also met Ms Caroline Wallace the Maternity Support Worker. Mr McVey stated that these were the only people they saw in the Midwifery Led Unit.

27. Miss McCleery was uncomfortable and moved to the position of all fours. She was then moved onto her back. Eventually Mr McVey was able to see the top of the deceased's head. After a few more pushes he could see all of his head. It was at just around this time that Mr McVey became extremely anxious and distressed as nothing seemed to be happening with the next contractions.

28. As the minutes went by, Mr McVey told the inquest that he could see the colour in deceased's face changing. He stated that he knew something was "very wrong". Miss McCleery was squealing at him, asking him what was wrong, but he could only answer to say that everything was going to be okay. He was trying to protect Miss McCleery and calm her down. He had to sit down on a chair beside the bed as he felt lightheaded from the stress. The midwives then called an emergency and shouted at him to get up and grab Miss McCleery's left leg. They were shouting at her to push; she was, but nothing was happening. He stated that at this point, things were not good. He told the inquest that he was "trying to keep himself on his own two feet" at that time.

29. When the ambulance arrived, he remembered feeling that the ambulance was for Miss McCleery and that their baby was likely to be dead. Mr McVey stated that when they arrived in the Royal Jubilee the deceased was delivered "in what felt like seconds". Resuscitation went on for around 40 minutes until a doctor came and told them that their son was stillborn.

30. Staff Midwife Claire McGuigan gave evidence to the inquest. She told the inquest that she has been a midwife for 22 years. She joined Lagan Valley Hospital in 2004 when it was still an Obstetric Led Unit. When the Midwifery Led Unit was opened in 2011, the old labour ward became the Birthing Centre, and the wards became the Outpatient Department. In the new Unit, Consultants attended the Outpatient Department to carry out Obstetric Led Clinics during the daytime on Tuesdays, Wednesdays, and Thursdays. Staff Midwife McGuigan told the inquest that these clinics were for any "woman who didn't fall within the straightforward midwifery led care", for example having

previous caesarean sections or growth issues. Staff Midwife McGuigan explained that at every antenatal contact, each midwife risk assesses the expectant mother and if they "felt they were deviating from the normal, then they would be referred to see a consultant".

31. In 2016 the Guidelines and Audit Implementation Network (known as GAIN guidelines) were implemented across Northern Ireland. In the document "Guideline for Admission to Midwife-Led Units in Northern Ireland and Northern Ireland Normal Labour and Birth Care Pathway", page 51 of those guidelines deals with "Planning Place of Birth" and states "This guideline predominantly relates to women with a straightforward singleton pregnancy at the point of labour (with BMI at booking between 18 kg/m2 and 35 kg/m2". It is important to note that at each point of maternity care, all women should be assessed to ensure that they are receiving care from the most appropriate professional; that is, continue with Midwife-Led-Care (MLC), transfer to consultant-led care or transfer back to MLC". It goes on to state, "if there is any uncertainty, multidisciplinary discussion is necessary, with appropriate documentation".

32. Staff Midwife McGuigan told the inquest that the Midwifery Led Unit followed the GAIN Guidelines, which stated that a mother with a BMI at booking between 18kg/m2 and 35kg/m2 at the time of booking in was considered to be "safe to birth in a Freestanding MLU".

33. Staff Midwife McGuigan told the inquest that all midwives must undergo mandatory PROMPT (Practical Obstetric Multi-Professional Training) which is training in obstetric emergencies. She stated that PROMPT courses run each year, last a full day, and take place at the Ulster Hospital. She also participated in emergency drills within the Unit monthly.

34. Staff Midwife McGuigan explained to the inquest the records each pregnant woman would receive upon booking in. She described how Miss McCleery was presented with her "green folder" which was her Maternity Hand Held Record

(MHHR) which was a paper file that contained her health and medical information throughout her pregnancy which she was to bring to all her appointments. Contained within the folder was information about the Lagan Valley Midwifery Led Unit. Midwifery Led Care was defined as "for low-risk women who wish to be cared for by midwives only". If transfer was required, it was to be by ambulance to the Ulster Maternity Hospital in Dundonald. Staff Midwife McGuigan explained that there was an agreement to transfer to the Royal Jubilee Maternity Hospital in "extremis", as occurred in the deceased's case.

35. The GP referral form entitled "Essential Information for Antenatal Booking at Lagan Valley" was placed in the green folder. At 14.45 hours on 13 September 2016, the information from the first booking appointment was inputted onto the "Booking Interview Report" on Northern Ireland Maternity System (NIMATS) by the midwife conducting the booking interview, in this case, Staff Midwife McIlwee. The form was then printed off and placed in the green folder. Staff Midwife McGuigan described how an "antenatal diary" is contained in the notes which records the times and dates of the patient's routine antenatal appointments. Pregnancy Information is contained within the folder. This gives information on various issues such as smoking during pregnancy, alcohol consumption and medicines. All of these sections were signed and dated by Staff Midwife McIlwee. Staff Midwife McGuigan described how there is also a record of each antenatal appointment which outlines the date, gestation, and other vital information such as fetal heart and fetal movement. It also contains a "summary of risk factors" box which is used to record information such as gestational diabetes, previous miscarriages, and other medical issues. It is started at the first booking appointment, in this case on 13 September 2016. She explained that the Antenatal GROW chart is generated after a patient has her 20-week scan, when pregnancies are confirmed. She explained that this was a personalised chart created from information taken from the patient, namely ethnicity, height, weight and Body Mass Index (BMI). Staff Midwife McGuigan

explained that a plot between 10th and 90th centile "following a natural growth curve" would mean "normal growth". If this deviates "then the mother is referred for a growth scan" which will measure the size of the baby. Whilst the 90th is the top centile "it is technically a normal growth". The narrative on the GROW chart states "referrals for growth scan should be arranged if EXCESSIVE growth (curve steeper than any curve on the chart). A first measurement above the 90th centile is NOT an indication for a growth scan. A scan would however be indicated if there was clinical suspicion of polyhydramnios or there was excessive growth on subsequent measurements. Please refer to your local guidance". Staff Midwife McGuigan initially told the inquest that, if, on one occasion, a baby plotted over the 90th centile, she would have referred the mother for a scan. She then admitted to the inquest that she got confused and explained that only if there were two plots above the 90th centile would she have referred a mother for a scan as midwives measure fundal heights and "a scan is more accurate because they are measuring a baby" and she would want her obstetric colleagues to estimate the weight of the baby to ensure it fell within the criteria for the Freestanding Midwifery Led Unit. She confirmed that a big baby presents a higher risk and one of those risks of a bigger baby is shoulder dystocia.

36. Staff Midwife McGuigan stated that with all documentation midwives need to be careful, including height, weight, and BMI as "it can impact on how the pregnancy is going to be progressing and which care pathway we are going to follow". She stated that since the deceased's death, at booking appointments, expectant mothers are now told of specific risks and an information leaflet is provided which explains that the Unit does not have Obstetricians. The leaflet also lists the reason for transfer and transfer times. This is then signed by the expectant mother to evidence that it was discussed.

37. On 13 September 2016, Miss McCleery attended the Midwifery Led Unit for her first antenatal booking appointment. The appointment was led by Staff Midwife Judith McIlwee. Staff Midwife McGuigan's role was to perform the ultrasound

scan to confirm viability and confirm Miss McCleery's estimated date of confinement. Staff Midwife McGuigan calculated her estimated date of confinement to be 28 March 2017. She then performed an ultrasound scan which confirmed intrauterine pregnancy. Staff Midwife McGuigan concluded that Miss McCleery had a normal, ongoing, intrauterine, singleton pregnancy. She then handed care back to Staff Midwife McIlwee for the remainder of her booking appointment.

38. Staff Midwife Judith McIlwee gave evidence to the inquest. She told the inquest she has been a midwife since 1998. On 13 September 2016, she completed Miss McCleery's first antenatal booking appointment. She told the inquest that she had no recollection of Miss McCleery's appointment and that she could only refer to the notes and records and explain to the inquest what her normal practice would have been. Staff Midwife McIlwee's role was to complete the NIMATS booking form. This was completed by recording Miss McCleery's answers to standardised questions relating to Miss McCleery's past medical, mental health, family history and obstetric history. A copy was then placed in her obstetric notes, which Miss McCleery could take home.

39. Staff Midwife McIlwee explained to the inquest that the Unit was split into two teams, the blue team and the red team, and the allocated team depended on which GP the patient was attending. The same midwives then attended GP clinics to enable continuity of care however "you couldn't guarantee it all the time".

40. Staff Midwife McIlwee took Miss McCleery into a bathroom and made a "routine enquiry" about domestic abuse in pregnancy as she would with all patients. She then measured Miss McCleery's height and weight on a set of scales which measured height and weight together. She told the inquest that in September 2016, as far as she was aware, there was no policy in place requiring removal of shoes. She stated that if the shoes were "flattish looking they were allowed to keep their shoes on rather than have a pregnant woman trying to

bend over to try and take her shoes on and off". When asked, she told the inquest that she would have asked patients in 2016 to remove shoes if they looked "too high", "we would have made them take them off". She told the inquest that after the death of the deceased, a policy was introduced requiring all patients to remove shoes.

41. At 14.45 hours Staff Midwife McIlwee recorded Miss McCleery's details and measurements in the "Booking Interview Report" on NIMATS. She recorded Miss McCleery's height as 160cm, weight as 83 kgs and BMI as 32.23kg/m2. She stated that her practice was always to take her own readings and input them into NIMATS immediately. She stated that she may well have written the measurements on a "post it" initially and thereafter inputted them. Based on a BMI of 32.23kg/m2 Miss McCleery fitted the criteria for Midwifery Led Care according to the GAIN guidelines and was therefore assessed as suitable by Staff Midwife McIlwee.

42. When asked whether she looked at the GP referral form which stated Miss McCleery's height as 155cm, weight 81.6kg and BMI of 33.96, Staff Midwife McIlwee told the inquest that not all GP's fill these details in on the referral and some may only have a height or weight "from 10 years previously so they would leave it blank". When asked, Staff Midwife McIlwee told the inquest that whilst a GP referral may have contained many details about the patient, she would not read these referrals "we can't always guarantee the information is up to date", "that is why we do our own measurements". Therefore, Staff Midwife McIlwee did not notice that Miss McCleery's height was 155cm recorded by her GP and not 160cm as recorded by her. She stated, "I can honestly say I wouldn't have looked at that to compare, it wouldn't have been something I'd have done". She agreed that it is important to get an accurate height recorded in NIMATS as it informs the GROW chart. She confirmed that she did not ask Miss McCleery her height.

43. At inquest, when told that Miss McCleery was never 160cm, and her height was closer to 155cm, Staff Midwife McIlwee stated that she would "not necessarily" accept that 160cm was wrong. "None of us know what height Miss McCleery is", "160cm with shoes on is very close to 155cm" and the 155cm may have been an "old height", "I can only go by the information I have recorded". However, she did accept that there was a discrepancy in the height recorded.

44. Staff Midwife McIlwee stated that she did record on NIMATS that Miss McCleery had a medical history of Asthma and that she was not requiring treatment or hospitalisation at any stage during her pregnancy therefore she did not treat Asthma as a risk.

45. Staff Midwife McIlwee was referred to document which recorded each antenatal appointment. In the "summary of risk factors" box, height is recorded as 160 overwritten on what could have been a figure of 152.5, weight 82.5 and BMI 32.23. Staff Midwife McIlwee was adamant that she did not write this. She also stated that it looked as though the weight was recorded where the height should have been rather than a figure of 152.5. She went on to say that that information should not have been written in that box in any event as "BMI wasn't a risk factor" and further, that someone could have written that at any stage of the pregnancy. She stated that "at the booking interview there were no risk factors identified".

46. Staff Midwife McIlwee told the inquest that the Midwifery Led Unit was for low-risk women only and anyone beyond that parameter would be referred for obstetric assessment. She explained that at the first appointment she informs patients about the care pathway and that if the midwives have any concerns, they transfer the patient to see a consultant. However, she stated it is "a very generalised conversation" and there are no specific risks mentioned or explained to the patients. Therefore, she did not explain any specific risks to Miss McCleery on 13 September 2016. She explained to the inquest that first booking appointments take over an hour and "there is only so much information that a

mum can actually retain at this stage". She stated it is a case of "you want to drip feed information to parents so you can get them to take on what you are telling them". That is why they give leaflets home so they can look at them in their own time and if they have any further questions they can come back and ask. Staff Midwife McIlwee told the inquest that it was her normal practice that once the booking in process was complete, patients were offered a tour of the maternity unit and at that stage patients were told that all the midwives were highly trained in neo-natal resuscitation as it was a unit with only midwives present. When asked, Staff Midwife McIlwee told the inquest that if a patient doesn't take the tour "then part of my conversation probably wouldn't take place", that is in relation to resuscitation. She told the inquest that she could not recall what occurred at Miss McCleery's booking appointment. She stated that this practice of explaining specific risks at the booking in appointment changed following the death of the deceased.

47. On 19 December 2017, a memo was issued by Ms Zoe Boreland, Head of Midwifery in the South-Eastern Trust titled "Measurement and Recording BMI". It stated that a Miss McCleery's height was inaccurately measured and as a result her BMI was inaccurately measured. It reminded midwives that all women's heights and weights were to be accurately measured and that measurements must be checked with the woman herself and cross referenced with the GP referral letter.

48. Staff Midwife Jayne Parkinson gave evidence to the inquest, which was admitted by way of Rule 17. On 25 October 2016, she reviewed Miss McCleery at a routine antenatal clinic at 18 weeks gestation. She recorded that fetal heart was heard and regular and the patient was well. She noted that Miss McCleery was to have a glucose tolerance test at 25-26 weeks following Trust policy and guidelines as her BMI was over 30, at 32.23.

49. Staff Midwife Joyce Mack gave evidence to the inquest. She told the inquest that she has been a midwife for 31 years. For approximately 20 of those years, she

worked in Lagan Valley Hospital. She worked in the Obstetric Led Unit and then the Midwifery Led Unit as a member of the red team. She explained that there were approximately eight members of the team. When told that Miss McCleery was seen by nine different midwives during the course of her pregnancy, she explained that while they tried to ensure continuity of care, this was not always possible. She explained that the Midwifery Led Unit offered more choice for women in relation to their antenatal care and place of birth. She stated that it was a popular choice as women in the local area enjoyed a more personalised service.

50. On 3 January 2017 and 7 March 2017, Miss McCleery attended Staff Midwife Mack for routine antenatal appointments. On 3rd January 2017, when gestation was 28+4 weeks, Staff Midwife Mack recorded a fundal height measurement of 28cms plotted slightly above the 50th centile. She told the inquest that the 50th centile is an optimal growth measurement, it showed "normal growth". This was the first measurement plotted on Miss McCleery's GROW chart. A revised GROW chart was drafted by the South Eastern Health and Social Care Trust following the death of the deceased. This was drafted to reflect Miss McCleery's accurate measurements and what should have been recorded by Staff Midwife McIlwee. It was based on Miss McCleery's height of 155cm, weight 83kg and a BMI of 34.5kg/m2. When asked how the revised GROW chart plotted, Midwife Mack explained that for the first plot it did not make a material difference, the plot was still slightly above the 50th centile.

51. On 7 March 2017, at 37+4 weeks gestation, she recorded a fundal height measurement of 38cms on the 90th centile on Miss McCleery's GROW chart. She stated that this indicated "healthy growth of the baby". On the revised GROW chart, the plot was also plotted on the 90th centile.

52. At this appointment, Staff Midwife Mack completed the "Antenatal Checklist for Suitability to Birth in the Lagan Valley Hospital Midwifery Led Unit", known as "the 36-week checklist". She stated that ideally the checklist would

have been completed as close to the 36 weeks as possible. Staff Midwife Mack explained that she went through each point on the check list and looked through the notes to find the relevant information whilst speaking to Miss McCleery. Each point on the checklist was ticked and the page signed by Staff Midwife Mack and Miss McCleery. She told the inquest that she agreed that the expectant mother should be given as full information as possible and that it is part of Midwives Code of Practice, specifically paragraph 4.2 of the NMC Code of Practice for Nurses and Midwives which states that a midwife "must make sure that you get properly informed consent and document it before carrying out any action". Staff Midwife Mack stated, "I felt I had given all the information to enable Miss McCleery to make an informed choice".

53. The checklist stated, "BMI between 18 and 35". Staff Midwife Mack stated that given the information available at the time, with a BMI of 32.23kg/m2 as recorded on NIMATS, Miss McCleery fitted the criteria for being suitable to deliver in the Midwifery Led Unit. She stated, "this was a straightforward uncomplicated pregnancy". She stated that she followed the GAIN guidelines which stated that only a woman with a BMI over 35 was not eligible to give birth in the Unit. She stated that these GAIN guidelines in relation to BMI still apply today.

54. In relation to the point on the checklist dealing with transfer time and transfer hospital, Ulster Hospital Maternity, Staff Midwife Mack told the inquest she stated that she explained to Miss McCleery that the midwives "would have to dial 999 in an emergency like any other member of the public would have to do" and she would state the urgency of the transfer requesting a "time critical" ambulance. She said she explained that the Unit did not have an ambulance on standby on site and that the ambulance would be dispatched by the Northern Ireland Ambulance Service. She told the inquest she explained the optimum time for a time critical ambulance to arrive was 8 minutes, but that time could vary depending on where the ambulance was, and that she had a previous transfer where the ambulance crew came from as far as Newtownards. Staff

Midwife Mack stated that the reasons for transfer, a point on the checklist, was explained in terms of the Unit being a standalone Midwifery Led Unit, with midwives only and that if there was a problem during her labour, she "would need to be transferred to another hospital". She told the inquest that she explained the reasons for transfer to Miss McCleery which were, if she needed help with the birth, or if her baby needed help. She stated that she told Miss McCleery there could be a life-threatening emergency either for herself or her baby and in that situation a midwife would go with her in the ambulance. She said that she explained that the transfer hospital depended on the situation and that an obstetric emergency could be a "life threatening event for you or your baby". In that event she would have to be transferred to the Royal Jubilee Maternity Service as it was the closest hospital. If it was non-life threatening, she would be taken to the Ulster Hospital. Staff Midwife Mack told the inquest that she had a clear memory of going through all that information with Miss McCleery. Miss McCleery told the inquest that the words "life-threatening" were never mentioned to her. Staff Midwife Mack agreed with Miss McCleery's evidence that she did not inform her that whilst an ambulance might arrive, it might not leave the site for a period of time. She said she would have expected any member of the public to understand this, and she did not feel it was something she had to explain.

55. Staff Midwife Mack told the inquest that there was a 15-minute slot for this antenatal appointment but "the consultations could take much longer". She said this appointment probably took a little longer, "at least 20 minutes". She stated that she spent "probably about 10 minutes" of the appointment going through the checklist. When Miss McCleery's evidence of the checklist taking approximately 60 seconds was put to her, Staff Midwife Mack stated that it would have been impossible for her to have rushed through it in 60 seconds, "it wasn't rushed at all". She went on to say, "I felt we had a very good opportunity to discuss all the points". She stated that Miss McCleery did not

ask any questions, and that "Miss McCleery appeared happy with the information I gave her".

56. The last point on the checklist outlined transfer rates between 2015-2016 from the Unit to another hospital at any stage during labour or in the immediate post-partum period. It stated 18% of first-time mothers were transferred; 4% of second time mothers; and 3% of babies born in the Unit. She told the inquest that she read that data to Miss McCleery from the checklist. She agreed that it was quite a lot of information to take on board. When asked, Staff Midwife Mack told the inquest that she did not give specific examples of obstetric emergencies and did not specifically mention shoulder dystocia. She stated she used the words "life threatening emergencies" but "didn't go into the detail of the obstetric emergency". She stated that now there is more detail on the 36-week checklist form. When asked if she agreed that Miss McCleery was at a higher risk of shoulder dystocia than the normal population, Staff Midwife Mack replied, "I would probably agree with that statement, but she met the criteria" for giving birth in the Freestanding Midwifery Led Unit. She stated that she was aware that the NICE guidelines (National Institute for Health and Care Excellence) state that the risk of shoulder dystocia climbs in woman with a BMI between 30 and 35. Staff Midwife Mack explained that this was not told to Miss McCleery as the baby was growing normally and her glucose test was normal. NICE guidelines recommended other factors which should be considered when choosing a place of birth and one of those factors was a BMI between 30 and 35. Staff Midwife Mack confirmed that this information was not contained in the Northern Ireland GAIN guidelines that they followed nor have those guidelines changed.

57. In October 2017, a revised Shoulder Dystocia Protocol was issued by the South Eastern Health and Social Care Trust. At paragraph 3.3 it stated that "each patient should be risk assessed for Shoulder Dystocia" and "women who plan to birth in a Freestanding Midwifery Led Unit and whose fundal height measurements have been above the 90th centile on the customised growth chart,

should be offered the opportunity of having an ultrasound scan to estimate the fetal weight. If the fetal weight is above the 90th centile, there must be discussion with the woman so that a decision can be made about the most suitable place of birth".

58. Staff Midwife Margretta Burden gave evidence to the inquest. She told the inquest that she has been a midwife for 36 years. She stated that many mothers chose the Lagan Valley Hospital Midwifery Led Unit as it had a family environment, and it was more relaxed than a medical unit. She stated that at the time she followed the GAIN guidelines that applied at the time. These guidelines were the main guidelines they worked under in conjunction with the Perinatal Institute, which is a provider of maternity support services including education and training.

59. On 14 March 2017, Miss McCleery attended Staff Midwife Burden for a routine antenatal appointment. At this appointment, gestation was calculated to be 38 weeks and 4 days. Staff Midwife Burden recorded a fetal heart to be 135 beats per minute and a fundal height of 39cms which was plotted on the Antenatal GROW chart on the 90th centile. She told the inquest that nothing at that appointment required a referral to obstetrics.

60. When shown the revised GROW chart with Miss McCleery's height recorded as 155cm, Midwife Burden stated that the plot for this appointment was "just above" the 90th centile. The revised chart showed that this was the second plot above the 90th centile. When asked what the consequences of that would have been at that time, she stated that, following protocol, she would have referred Miss McCleery to obstetrics in Lagan Valley Hospital which would have led to an ultrasound scan to determine the exact weight of the baby. The consultant would then decide whether the patient could return to Midwifery Led Care or whether she required Consultant Led Care. She explained that the Fundal Height Measurement does not measure fetal weight, it is a measurement of a pregnant uterus and its contents, and it has a tolerance of 2cm +/-. She

explained that a growth scan is more accurate. She would have made a referral as it would have been "safe practice" as a second plot over the 90th centile "would have been an additional risk factor which would have to be addressed". Staff Midwife Burden told the inquest that after the death of the deceased the Trust issued guidance in relation to the information discussed at the 36-week checklist appointment. The checklist became more detailed by requiring detailed discussion of the specific risks such as shoulder dystocia and other obstetric emergencies.

61. Staff Midwife Beth McDowell gave evidence to the inquest, which was admitted by way of Rule 17. On 9 November 2016, Miss McCleery attended Staff Midwife McDowell at the Unit following her anomaly ultrasound scan at 20 weeks gestation. Staff Midwife McDowell noted the results as "all appears well at time of scan" and she generated Miss McCleery's Antenatal GROW Chart which was generated based on Miss McCleery's measurements at her booking in appointment and inserted it into her green folder. Staff Midwife McDowell also performed an antenatal risk assessment and updated this in Miss McCleery's Antenatal Venous Thromboembolism Risk Assessment proforma. The expected date of confinement was brought forward 4 days to 24 March 2017. As Miss McCleery's BMI was greater than 30kg/m2, she was referred for a glucose tolerance test the results of which were normal.

62. On 17 January 2017, Staff Midwife McDowell attended Miss McCleery for her planned review. Miss McCleery was 30+4 weeks gestation. Staff Midwife McDowell measured her fundal height and she plotted on the 90th centile. Staff Midwife McDowell stated that it indicated healthy growth for 30+4 weeks gestation.

63. Staff Midwife Winifred Chambers gave evidence to the inquest. She informed the inquest that was a midwife since 1985. On 3 March 2017, Miss McCleery attended with Staff Midwife Chambers when she was 37 weeks gestation and had a history of reduced fetal movement. This was an unplanned appointment.

Staff Midwife Chambers stated that attendances by patients with reduced fetal movements was a frequent occurrence and that for all the patients they carry out a full assessment and CTG. She was seen and assessed by Sister Hannah McCauley who had commenced a CTG at 12.47 hours. Whilst Staff Midwife Chambers was in the "blue team" in the Unit, and Miss McCleery was assigned to the "red team" she stated that as it was an unplanned attendance anyone who was on duty would see a patient no matter the team. Staff Midwife Chambers was asked to discontinue the recording at 13.30 hours as Sister McCauley was reassured that fetal movements were normal. Miss McCleery was advised of this and told to contact the ward if she had any further concerns. Staff Midwife Chambers stated that as Miss McCleery was measured at her antenatal clinic at 35+4 weeks gestation, which was under two weeks prior, there was no requirement for her to be measured at this attendance. She told the inquest that since the deceased's death there were changes in the Unit which included shoes being removed for height measurements and yearly training on abdominal measurements to ensure accuracy and drills on the ward and PROMPT training.

64. Staff Midwife Doreen Logan gave evidence to the inquest. She told the inquest that she has been a midwife since 1994. She initially worked in Lagan Valley Consultant Led Unit and from 2011 in the Midwifery Led Unit. She said the people of Lisburn wanted a local community hospital and for some, travel to the Ulster Hospital or Royal Jubilee would have been difficult so the mothers were happy that there were still maternity services available in Lisburn. She first met Miss McCleery when she attended Lagan Valley Midwifery Led Unit on Friday 24 March 2017. Miss McCleery had self-referred that afternoon as she gave a history of irregular abdominal tightening and backache since the previous day. The abdominal tightening's had become more regular since lunchtime on 24 March. Staff Midwife Logan carried out clinical observations, an examination and reviewed her maternity handheld records. On examination, her temperature, pulse, respiratory rate, and blood pressure were all within normal limits.

65. Staff Midwife Logan performed an abdominal palpation and vaginal examination. The presenting part was palpable three fifths above the brim of the pelvis. She stated that she wanted to ensure the baby was "headfirst" for labour as per guidance from the Perinatal Institute. The fetal heart was regular, and the fundal height was in keeping with a gestation of 40 weeks and this measurement plotted just below the 90th centile on the GROW Chart. She stated that 90th centile was within the normal range. From her risk assessment, examination, and review of the notes, Staff Midwife Logan was reassured that Miss McCleery was not in established labour and that she continued to meet the criteria for giving birth in the Midwifery Led Unit. She stated that "I was happy she continued to be low risk". Miss McCleery was then discharged home.

66. Staff Midwife Logan told the inquest that she had no discussion with Miss McCleery about shoulder dystocia and when asked if she accepted that the risk of shoulder dystocia was higher for Miss McCleery than the normal presenting population she replied, "it is very easy looking back", but there was no evidence at that time that she was at increased risk.

67. Staff Midwife Logan stated that only a second plot above the 90th centile would require referral to obstetrics, and "only if there was excessive growth", or a "steep change in the centile". When shown the revised GROW chart, Staff Midwife Logan commented that, while there were two plots above the 90th centile, at that time, in March 2017, the protocol for referral to Midwife-Led Fetal Assessment Clinic, which Midwife Logan was involved in setting up, required a second plot above the 90th centile and only if there was "excessive growth, it changes centile", growth which "will not follow the normal curve". Therefore, Staff Midwife Logan would not have referred Miss McCleery for a scan on the second plot above the 90th centile on the revised GROW chart as she stated, "there wasn't excessive growth". She told the inquest that the midwives also followed the Perinatal Institute guidelines which also provided guidance and a definition of "excessive growth". She stated that at that time, Miss McCleery

met the GAIN, Trust and Perinatal Institute guidelines for giving birth in the Midwifery Led Unit.

68. Staff Midwife Logan told the inquest that the present policy (the South Eastern Trust policy dated October 2019 "Management of Large for Gestational Age Fetus", paragraphs 4.12, 4.13 & 4.14) states that if there is growth above the 90th centile "without other concerns does not need referred for EFW scan". It goes on to state if there is one plot above the 95th centile then there would be a discussion with the mother about a growth scan and the place of birth. Staff Midwife Logan explained that if there were two successive plots over the 90th centile today, a midwife would have "probably referred her". She stated that it was locally agreed that the expectant mother would be offered a scan in these circumstances even though the policy states only above 95th centile.

69. Since the death of the deceased, Staff Midwife Logan told the inquest of the changes that had occurred, including the introduction of the Shoulder Dystocia Protocol in October 2017. She stated that at the time, they were not aware that a BMI over 30 was a risk factor of shoulder dystocia. Since the October 2017 protocol, they are aware of the risks. Staff Midwife Logan told the inquest that, despite still working in the Unit, she did not receive the memo dated 19 December 2017 issued by Ms Boreland.

70. Staff Midwife Laura Rankin gave evidence to the inquest. She told the inquest that she has been a midwife since 2006. From 2006 she worked in the Consultant Led Unit in Lagan Valley Hospital and from 2011 in the Midwifery Led Unit. She told the inquest that she encountered shoulder dystocia approximately up to five times during her career in the Consultant Led Unit. They were all resolved with suprapubic pressure and the McRoberts manoeuvres conducted by the consultants. She had never conducted internal manoeuvres until 26th March 2017.

71. At 21.00 hours on 25 March 2017, she commenced night duty in the Midwifery Led Unit as Midwife (Band 6). She explained that at night in the Unit there is

one registered midwife and one Midwife Support Worker, with a second midwife on call from home, three staff in total. The normal procedure is for the second midwife to be contacted when a woman is deemed in established labour. This was the recommended staffing level. Miss McCleery arrived on the unit at 20.50 hours and was shown to room 2 by Maternity Support Worker Caroline Wallace.

72. Ms Wallace performed clinical observations on Miss McCleery, and they were all within normal limits. Staff Midwife Rankin reviewed Miss McCleery's maternity handheld records to confirm her suitability to deliver in the Unit. Miss McCleery's expected date of confinement was 24 March 2017 and she was 40+1 weeks pregnant. Staff Midwife Rankin told the inquest that the risk assessment review comprised of antenatal screening proformas, blood results, 20 weeks ultrasound report, 36-week assessment proforma and review of customised GROW chart findings. On completion of this review, Staff Midwife Rankin concluded that there were no risk factors that would have excluded Miss McCleery from birthing in the Midwifery Led Unit. She told the inquest that when asked if she considered Miss McCleery to be at a higher risk of shoulder dystocia with a BMI over 30, she stated "I can't say that I risk assessed her for shoulder dystocia, I risk assessed her for suitability to deliver in Lagan Valley and at that stage she was a low-risk mum". She stated that since the death of the deceased she would now be aware of the increased risks, as a result of the Trust protocol issued in October 2017.

73. When asked about the revised GROW chart, in particular if she would have had any concerns over plots that were above the 90th centile, Staff Midwife Rankin replied if she had seen the revised chart, she would not have had any concerns. In relation to the two plots above the 90th centile, Staff Midwife Rankin stated that, at the time, she only worked night duty and this would not have fallen into her remit at that stage.

74. Following an abdominal palpation and a vaginal examination Staff Midwife Rankin confirmed that Miss McCleery was in established labour. The fetal heart was 120 beats per minute (bpm). Staff Midwife Topping, who was on call, arrived at 21.30 hours. Staff Midwife Rankin explained that both midwives worked at the same level in a team rather than one being in charge. At 22.00 hours, Miss McCleery's membranes ruptured, and clear liquor was noted to drain and the fetal heart was recorded within normal limits.

75. Miss McCleery requested to labour in the birthing pool, and this was facilitated by Staff Midwife Rankin. At this time, she was feeling rectal pressure. At 22.10 hours, the fetal heart rate was within normal limits and Miss McCleery was having regular contractions, one every two minutes and they were lasting 40-60 seconds. At times, Miss McCleery was pushing involuntarily at the peak of some of the contractions. Staff Midwife Topping then entered the room. During this time, Miss McCleery was on all fours in the pool, adjusting her position occasionally. At 23.20 hours, Miss McCleery stated that her back was sore, and she left the pool and moved to the bed. She requested further analgesia. Staff Midwife Rankin performed a vaginal examination to assess the stage of the labour before administration of diamorphine. Staff Midwife Rankin assessed that the cervix was fully dilated (10 cm dilated) and confirmed the onset of the second stage of labour. As this was the case, further analgesia was not advised.

76. At 23.55 hours, Miss McCleery turned back onto all fours and the vertex was visible. The fetal heart rate was 150 bpm. Five minutes later, she returned to the supine position in the bed and the fetal heart rate was 130 bpm. Miss McCleery was pushing well and the vertex was visible. From 00.15 hours until 00.32 hours the fetal heart rate was not recorded by either Staff Midwife Topping or Staff Midwife Rankin in the notes. Whilst this was not in keeping with NICE clinical guideline 190, both recalled monitoring the fetal heart and it being within normal limits throughout this time. Staff Midwife Rankin told the inquest that she "probably" would have documented the fetal heart rate down on a paper towel but that these notes were misplaced.

77. At 00.28 hours, the vertex was advancing well but Staff Midwife Rankin noted that the face section of the head was slow to deliver. At 00.30 hours, Staff Midwife Topping suggested performing an episiotomy. She left to get Lidocaine a local anaesthesia. When she returned at 00.32 hours, the baby's head had delivered, and the fetal heart was recorded as 110bpm. They waited for the next contraction and restitution before delivering the baby. At inquest, Staff Midwife Rankin and Staff Midwife Topping demonstrated the manoeuvres they conducted during the attempted delivery of the deceased in the Midwifery Led Unit using a training mannequin.

78. Between 00.32 hours and 00.35 hours, no restitution was noted. Staff Midwife Rankin attempted to deliver the baby with normal axial traction but there was no advancement. At this point, at 00.35 hours, Staff Midwife Rankin diagnosed shoulder dystocia. Staff Midwives Rankin and Topping were in the room and Maternity Support Worker Wallace was not. Staff Midwife Rankin described how the McRoberts manoeuvre was deployed, as taught in PROMPT training. Staff Midwife Rankin explained to the inquest that this manoeuvre involved lying Miss McCleery flat with her buttocks at the end of the bed to make vaginal access easier. One assistant is on either side, the mother's legs are hyper flexed against her abdomen so that her knees are up towards her ears. Mr McVey held the left leg and Staff Midwife Topping held the right leg as Staff Midwife Rankin attempted to deliver the body. Miss McCleery was also instructed to grab behind her knees and pull back on her legs. As there was no advancement with the McRoberts manoeuvre, Staff Midwife Topping commenced suprapubic pressure whilst maintaining the McRoberts position. Staff Midwife Rankin continued to attempt to deliver the baby. Staff Midwife Rankin stated that at no time that night were stirrups used. Footrests were used for support during the second stage of labour, but the footrests were not used for McRoberts. Staff Midwife Rankin accepted that ideally four people should be used during the McRoberts manoeuvre, she agreed that they used the resources available meaning the assistance of Mr McVey and Maternity Support Worker Wallace.

79. At 00.36 hours, the maternal position was then changed to all fours and again routine traction was applied with a contraction. The vertex did not advance, and Miss McCleery was discouraged from pushing to prevent impaction.

80. At 00.37 hours, Miss McCleery reverted to the McRoberts position with Ms Wallace holding her leg as Mr McVey had become faint. Staff Midwife Rankin made her first attempt at an internal rotational manoeuvre but was unable to reach either the anterior or posterior shoulder or the posterior arm. She told the inquest that on reflection she could not reach the shoulder because she did not scrunch up her hand in the "pringle" position. Instead, she used two fingers "which was instinct" but which restricted access. She then asked Staff Midwife Topping to take over from her to complete this manoeuvre. She told the inquest that when she saw her do it "I realised my error". These attempts were unsuccessful. Ms Wallace was asked to call for a time critical ambulance.

81. At 00.38 hours, woodscrew manoeuvres and reverse woodscrew manoeuvres were attempted by Staff Midwife Topping, essentially attempting to move the baby clockwise and anticlockwise. Staff Midwife Topping also attempted to deliver the posterior arm but was unable to do so. At 00.39 hours, Staff Midwife Rankin performed an internal manoeuvre attempting to locate the posterior arm but was unsuccessful. She then applied pressure on the anterior aspect of the anterior shoulder and pressure on the posterior aspect of the posterior shoulder to attempt to dislodge the posterior shoulder and then performed the reverse woodscrew. An episiotomy was then performed by Staff Midwife Rankin.

82. At 00.40 hours, Miss McCleery moved onto all fours again and internal manoeuvres were repeated without success. From approximately 00.43 hours and 00.46 hours, Staff Midwife Rankin carried out internal manoeuvres changing direction approximately every 30 seconds. These manoeuvres were attempted in the supine position, again without success. Staff Midwife Rankin stated these involved attempting to deliver the posterior arm. She clearly remembered

feeling the anterior and posterior arms, but they were tightly applied and she was unable to reach the elbow or grasp the posterior arm to deliver it.

83. Staff Midwife Rankin stated that they were very aware of the need to quickly resolve the shoulder dystocia and expedite delivery. She stated that Miss McCleery was contracting approximately every two minutes. She stated manoeuvres were tried up to approximately 30 seconds, however when both Staff Midwives Rankin and Topping felt it was ineffective, they proceeded to the next manoeuvre. She stated that, whilst no member of the team was free to perform the role of "scribe", time intervals were closely monitored because when they were standing on the maternal right side, they had a clear view of the time as they were facing the clock on the wall.

84. During this time, approximately 12 manoeuvres were attempted during a period of 19 minutes. Some manoeuvres were performed at the same time. When asked about Miss McCleery's description of the scene as "mayhem" Staff Midwife Rankin replied, "probably for someone looking in it probably appeared mayhem because we kept switching, we kept changing". When asked whether they left enough time for the manoeuvres to take effect, Staff Midwife Rankin explained that they are taught to change if something is not working and move on to something else and "continually try".

85. At 00.46 hours, the ambulance arrived. At 00.57 hours, the ambulance left with Miss McCleery accompanied by Staff Midwife Rankin. During the journey, Staff Midwife Rankin continued with attempts to internally rotate the shoulders in one direction and when there was no movement, she changed direction approximately every 30 seconds. She stated that manoeuvres in the back of the ambulance were difficult to perform as Miss McCleery's leg had gone numb making it hard for her to hold her legs up while she continued to try and perform any manoeuvre possible.

86. On the night in question clocks were moved one hour forward (at 01.00 hours) to commence British Summer Time. At 02.08 hours, the ambulance arrived at the

Royal Jubilee. Staff Midwife Rankin transferred care of Miss McCleery and the deceased to Sister Heather Shepherd and Staff Midwife Ann Thompson.

87. Staff Midwife Rankin explained that a full retrospective note of the events was written in the Royal Jubilee at 05.15 hours, using Staff Midwife Topping's scribe note completed after Miss McCleery had left the Midwifery Led Unit and following a discussion between both Midwives as to what had taken place, including the times that events occurred. Staff Midwife Rankin told the inquest that before 17.00 hours in the Midwifery Led Unit, there were many staff on duty and also consultants attending the obstetric clinics and she agreed that it was "the luck of the draw" for expectant mothers who give birth before 17.00 hours that there are more staff available to attend the delivery room in the event of an emergency.

88. Staff Midwife Rankin told the inquest that she had her last PROMPT training in March 2016; SPH training in April 2016 and completed the Emergency drill in shoulder dystocia on 7 February 2017 using a training mannequin as demonstrated to the court. She explained that whilst the training tried to create real life scenarios "it is very different with a baby in front of you". She stated that she had never undertaken active clinical practice under experienced guidance and that the mannequin is the best training that can be offered and "no one wants to practice at a real event". She told the inquest that they both kept trying to deliver the baby but looking back, she stated that when they first diagnosed shoulder dystocia, they should have phoned the ambulance at that point "to get help there quicker".

89. Staff Midwife Pauline Topping gave evidence to the inquest. She told the inquest that she has been a midwife since 1999. She worked in the Obstetric Unit in Antrim Area Hospital before joining Lagan Valley Hospital in 2005.

90. She first met Miss McCleery on 21 February 2017 at an antenatal clinic, a routine appointment at 35+4 weeks gestation. Routine examinations were within normal limits and the fetal heart was heard and regular at 124 beats per minute.

Fundal height was plotted on the 90th centile on the GROW chart and followed the curve of previous measurements. She stated that during this review, no risk factors for exclusion from the midwife-led care were identified. Staff Midwife Topping told the inquest that, today, if there was one plot above the 90th centile they would have had a discussion with Miss McCleery if she wanted a scan "as it acts as a safety net for us in the MLU".

91. Staff Midwife Topping then met Miss McCleery on 25 March 2017. She was the second midwife on-call for the Midwifery Led Unit. She arrived at the Unit at 21.30 hours. At 22.25 hours Staff Midwife Topping entered Miss McCleery's room and introduced herself. She was in the birthing pool on all fours with regular effective contractions and maternal behaviour indicative of established labour. Staff Midwife Topping remained in the room for the next hour with her main role encouraging, reassuring, and supporting Miss McCleery as Staff Midwife Rankin was providing immediate one to one care in labour.

92. At 23.20 hours, Staff Midwife Topping along with Staff Midwife Rankin assisted Miss McCleery from the birthing pool. At 23.30, Miss McCleery was requesting further analgesia, so Staff Midwife Topping left the room to give her privacy and allow Staff Midwife Rankin to carry out a vaginal examination.

93. At 23.55 hours, Staff Midwife Topping re-entered the room and Staff Midwife Rankin gave a handover of her findings from the vaginal examination. The findings' indicated progress was continuing within the guidance of Northern Ireland Normal Labour and Birth Care Pathway. Miss McCleery was on the bed in the all fours position and the vertex was now visible at the opening of the vagina when pushing. Miss McCleery was experiencing strong contractions occurring once every two minutes. The vertex continued to advance well to the delivery of the forehead. At this stage advancement of the head slowed down. Both midwives continued to encourage Miss McCleery to push with contractions however they noticed no change. To expedite delivery of the head Staff Midwife Topping suggested to Staff Midwife Rankin that an episiotomy should be

performed. Staff Midwife Topping left to get Lidocaine to provide local anaesthesia and upon her return, at 00.32 hours, the deceased's head had just delivered. Both midwives encouraged Miss McCleery to hold her legs back with the aim of increasing the diameter of the pelvic outlet. At 00.35 hours, following the next contraction, there was no restitution or advancement of the head. Shoulder dystocia was then diagnosed. She told the inquest that shoulder dystocia "is probably one of the most frightening obstetric emergencies that you can encounter because of the time constriction that you are under to get that baby out". She had experienced it twice before in her 22 years' experience. One was relieved with a consultant internal manoeuvre and one with the McRoberts manoeuvre. She stated that in hindsight, once the emergency was declared, they should have called the ambulance.

94. When shoulder dystocia was diagnosed, Staff Midwife Topping assisted Miss McCleery to the end of the bed and the McRoberts manoeuvre was carried out by Staff Midwife Topping and Mr McVey. Staff Midwife Topping explained that this did not have any benefit and she then applied suprapubic pressure on Miss McCleery's right side as an earlier abdominal palpation clarified the fetal back on the maternal right. While carrying out suprapubic pressure, she used her body to maintain McRoberts along with giving Miss McCleery clear instruction to pull her legs back as well. Staff Midwife Topping explained and demonstrated how she used her upper left forearm to press upwards against Miss McCleery's right foot. Staff Midwife Topping stated that this allowed her to have both hands free to perform suprapubic pressure pushing in the direction of the baby's back, while ensuring the maternal buttocks were lifted off the bed as much as possible. Staff Midwife Topping explained that she performed suprapubic pressure by using both hands interlocked to apply pressure on the side of the fetal back just above the maternal symphysis pubis towards the fetal chest. This was continued for +/- 30 seconds, along with routine axial traction. Staff Midwife Topping stated "30 seconds is a long time when you are doing those manoeuvres", "if it didn't work, I moved on to something else". She

explained that “contractions don’t really have a part to play as you don’t want that mum to push” as it could impact the shoulder. “We perform these manoeuvres whether there are contractions or not”. Mr McVey stated that he was feeling unwell and looked like he might faint. He sat down and Maternity Support Worker Wallace took over holding Miss McCleery’s leg in the McRoberts Manoeuvre. However, there was still no advancement. Staff Midwife Topping told the inquest that she was adamant that she was able to perform McRoberts correctly and that suprapubic pressure was appropriately applied during the course of McRoberts.

95. At 00.36 hours, Staff Midwife Rankin instructed Miss McCleery to change position on to all fours and there was still no advancement with the next contraction. Staff Midwife Topping stated that PROMPT training clearly states, “there is no evidence that one intervention is superior to another” and “variations in the sequence of actions may be appropriate”. Staff Midwife Topping explained that all fours was performed as it is a simple, non-invasive manoeuvre which from previous experiences had been effective at rotating the shoulders.

96. At this point, Staff Midwife Topping discouraged Miss McCleery from actively pushing to prevent any further impaction of shoulders.

97. At 00.37 hours, Miss McCleery moved back to the supine position and the McRoberts manoeuvre was again attempted with Staff Midwife Topping holding Miss McCleery’s right leg and Maternity Support Worker Wallace holding the left leg. This had no effect. Staff Midwife Topping then applied suprapubic pressure to the side of the fetal back for no longer than 30 seconds. Staff Midwife Rankin then conducted the first internal manoeuvre in an attempt to dislodge the posterior shoulder. Staff Midwife Topping continued this manoeuvre and entered her right hand into the vagina posteriorly and applied pressure to the inner aspect of the posterior shoulder to try and dislodge the posterior shoulder from anterior/posterior to diagonal. She told the inquest that

she had never performed internal manoeuvres before this. She felt no change so then entered her left hand into the vagina posteriorly slid it up to the anterior shoulder (the shoulder at the top) and applied pressure on the posterior aspect in an attempt to dislodge the anterior shoulder. This was unsuccessful. At this stage, Staff Midwife Topping instructed Maternity Support Worker Wallace to phone the ambulance service. Mr McVey took over holding Miss McCleery's leg. At 00.38 hours, a time critical ambulance was ordered.

98. At 00.38 hours, Staff Midwife Topping then attempted to deliver the posterior arm but was unable to do so. She therefore continued to attempt to dislodge the shoulders and entered both of her hands and with pressure attempted "woodscrew manoeuvre" and then reverse "woodscrew".

99. At 00.39 hours, Staff Midwife Topping asked Staff Midwife Rankin to take over and deliver the posterior arm but she was unable to do so. Staff Midwife Topping then suggested to Staff Midwife Rankin to perform an episiotomy. At 00.40 hours, Miss McCleery moved to all fours and the manoeuvres were continued.

100. At 00.41 hours, Staff Midwife Topping continued to attempt internal manoeuvres to dislodge the shoulder and deliver the posterior arm while Miss McCleery was on all fours. These manoeuvres were unsuccessful. Miss McCleery's position was changed onto her back and McRoberts manoeuvre commenced again. Staff Midwife Rankin made a further attempt to rotate shoulders internally. Staff Midwife Topping told the inquest that she and Staff Midwife Rankin worked as a team and that Miss McCleery co-operated fully with "everything we asked her to do, she did it, she was working with us". Staff Midwife Topping stated "everybody in that room knows that we tried and tried, never once did we stand back and not try something different".

101. At 00.46 hours, the ambulance crew arrived, and Miss McCleery left the Unit with Staff Midwife Rankin accompanying her, while Staff Midwife Topping remained in the unit to provide midwife cover. Staff Midwife Topping stated

that whilst the posterior shoulder was visible in the Royal Jubilee, it was not present in the Midwifery Led Unit. She stated, "it was a completely different scenario and "if we had seen a posterior shoulder, we would have delivered that baby in Lagan Valley". She reflected on the death of the deceased and what could have been done differently and she stated she knew she performed the manoeuvres the way in which she was taught, and she could remember the "force" that she used to move the deceased, "I couldn't have pushed any harder".

102. Staff Midwife Topping told the inquest that she attended a shoulder dystocia drill in November 2016 and that she never missed her annual PROMPT training. She explained that the drill was a workshop during which everyone can perform manoeuvres. She went on to say, "I know I am trained to deal with an emergency and on this occasion when I practised and fulfilled the manoeuvres that I been taught they didn't work".

103. Staff Midwife Topping attended the Royal Jubilee later that night to complete her entry in Miss McCleery's handheld record. She had completed a scribe note immediately after the ambulance left at 00.50 hours with "very basic (information), I jotted down things I thought I needed to remember" and she later met Staff Midwife Rankin to discuss events and record their detailed entries in the handheld records. She accepted that there were discrepancies between her scribe note and the note in the handheld records "because of the situation".

104. Ms Caroline Wallace, Maternity Support Worker, gave evidence to the inquest. She told the inquest that she had been in her role since 2005. On 25 March 2017, she was on night duty in the Midwifery Led Unit. Ms Wallace received Miss McCleery and Mr McVey and brought them into Room 2.

105. Ms Wallace returned to the room at approximately 21.45 hours to check equipment and to fill the birthing pool as requested by Miss McCleery.

106. At 00.30 hours, Staff Midwife Topping told Ms Wallace that Miss McCleery was nearing delivery but as the head had been slow to deliver could she be available to assist if required. At 00.32 hours, Ms Wallace entered the room at which stage the head of the deceased was already born. She told the inquest that there was a sense of relief that the head had been delivered and they were awaiting the deceased's body being delivered. She stated that Miss McCleery's legs were relaxed and sitting on the footrests at this stage. The stirrups were not up. She then stayed and awaited instructions from the midwives. At inquest, she stated that at some point, she believed she may have left the room and then returned soon after. She stated at inquest that when she returned to the room, she believed Staff Midwife Topping was supporting Miss McCleery's right leg and Mr McVey was holding her left leg, Ms Wallace thought for support. Following a contraction at 00.35 hours, when shoulder dystocia was diagnosed, Ms Wallace moved to Miss McCleery's left side to put her legs into the McRoberts position at the request of Staff Midwife Topping, as Mr McVey had felt faint and unwell and needed to sit down. At 00.37 hours, Staff Midwife Topping asked Ms Wallace to initiate an emergency transfer to the Royal Jubilee Maternity Hospital. She telephoned 999 requesting a "time critical" ambulance.

107. Ms Wallace then telephoned the labour ward in the Royal Jubilee. At 00.40 hours, the other phone rang, and it was ambulance control informing her that the ambulance would be there in four to five minutes. She then informed the midwives of the estimated time of arrival of the ambulance and went downstairs and opened the door of the unit so the ambulance staff could have clear access.

108. Staff Midwife Valerie Ewing gave evidence to the inquest, which was admitted by way of Rule 17. At 00.40 hours on 26 March 2017, she received a telephone call from Ms Wallace, Maternity Support Worker, who informed her that an ambulance had been called to take Miss McCleery from Lagan Valley Hospital due to a shoulder dystocia.

109. Mr Gareth Taylor, paramedic with the Northern Ireland Ambulance Service, gave evidence to the inquest. On 26 March 2017, he was on duty with his colleague Mr Adrian Blaney, when they were tasked by the Emergency Ambulance Control Centre to attend the Midwifery Led Unit to a female who was in labour. They were in Lisburn already and once they had finished that call, they were mobile at 00.46 hours and arrived with Miss McCleery at 00.50 hours. He stated that when the call would have been made by the Midwifery Led Unit at 00.38 hours it would have been tasked immediately by the Northern Ireland Ambulance Service Control Unit but that he and his colleague must have been the only ambulance available to the Control Unit and that is why they were tasked. That time of 8 minutes Paramedic Taylor stated was "quick". He told the inquest that he filled in the times on the Northern Ireland Ambulance Service Patient Report Form using the terminal on the ambulance which records the timings. He said he did complete the form after the call as it was a "hands on call". She was in active labour and the baby's head was showing.

110. Paramedic Taylor told the inquest that when they arrived in the delivery room Miss McCleery was in distress and still lying on the bed and he could see the deceased's head and his face was pale. Both midwives were anxious to get Miss McCleery onto the stretcher as quickly as possible and on to the Royal Jubilee Maternity Hospital. He asked the midwives if they had tried absolutely everything before they moved the patient as he told the inquest that a transfer would be another delay in Miss McCleery's treatment and they replied, "yes please let's just go". They said they had done absolutely everything. He stated that his motivation in asking that question was the patient, and he was ensuring that nothing was missed. He appreciated that it was a time bound obstetric emergency when the baby had to be delivered as quickly as possible.

111. The paramedics moved Miss McCleery onto a stretcher and into the back of the ambulance with Staff Midwife Rankin in attendance. They left at 00.57 hours. In the ambulance, Staff Midwife Rankin looked after the baby and Paramedic Taylor attended to Miss McCleery. They travelled to the Jubilee under a blue

light transfer. On route, Miss McCleery was still trying to push with contractions, and on two occasions Paramedic Taylor directed Staff Midwife Rankin to help him place Miss McCleery in the McRoberts position to see if the baby would fully deliver. He thought it was necessary to give it a chance to get the baby out. These attempts were not successful, and the deceased remained pale and lifeless throughout. He told the inquest that he felt that he took charge in the ambulance as "there wasn't much forthcoming from the Midwife at that time" and he thought that "she was obviously distressed herself". They arrived at the Royal Jubilee at 01.08, with the journey taking 11 minutes. The time from when they were tasked to the time of arrival was 24 minutes which was "pretty quick". Paramedic Taylor explained that he had previously taken obstetric emergency transfers from the Lagan Valley Hospital Midwifery Led Unit but not to the degree of this call.

112. Sister Elizabeth Shepherd gave evidence to the inquest. She told the inquest that she has been a registered Midwife since 1977. On 26 March 2017, she was a Band 7 Delivery Suite co-ordinator in the Royal Jubilee Maternity Hospital for the night shift from 20.45 hours to 08.00 hours. This meant she was the most senior Midwife within the delivery suite and responsible for co-ordinating staff. At 00.38 hours, she was informed of the emergency transfer from Lagan Valley hospital of Miss McCleery who was in the second stage of labour and the fetal head had been delivered for 5 minutes and the midwives were unable to complete the birth due to a shoulder dystocia. Sister Shepherd stated that emergency transfers had happened from Lagan Valley Hospital Midwifery Led Unit before, and they accept them without question. These are immediate and life threatening, and time bound. She told the inquest that at the Royal Jubilee, which is an Obstetric Led Unit there are about 5000 to 6000 births a year. There is an "alongside" Midwifery Led Unit at the Royal Jubilee which has four rooms for low-risk pregnancies. In emergencies, Obstetric staff attend immediately from the other side of the corridor. She stated this occurs reasonably frequently.

113. Sister Shepherd allocated Staff Midwife Thompson to care for Miss McCleery. She also informed Sister Owen (sister in charge of the NICU) of the expected transfer and potential admission to NICU. At 02.11 hours, Miss McCleery arrived on the corridor on a trolley Sister Shepherd "half lifted the sheet" and could see the deceased's head down on the trolley between Miss McCleery's legs. Miss McCleery was then admitted to a delivery room and in attendance was Staff Midwife Thompson, Staff Midwife Collins, Staff Midwife Gemma Cusco, and Dr Rebecca Moore Paediatric Registrar. Miss McCleery was transferred to the delivery bed, and it was evident that the baby was not yet delivered. Sister Shepherd asked Staff Midwife Thompson and Staff Midwife Collins to assist Miss McCleery into the McRoberts position and Staff Midwife Cusco to commence removing the bottom of the delivery bed in anticipation of manoeuvres which may have been needed to deliver the baby. Sister Shepherd explained that once Miss McCleery's legs were in the McRoberts position, Staff Midwife Thompson and Sister Shepherd could see the top of the posterior shoulder which was clearly visible and with maternal effort and minimal traction the deceased was delivered into her arms. Sister Shepherd described the deceased as limp, white and made no movement with no signs of breathing. The deceased was transferred to the resuscitaire to the care of Dr Moore for resuscitation. Sister Thompson continued to assist Dr Moore and Staff Midwife Thompson continued to care for Miss McCleery and completed the birth. She stated that she has always had enough staff in accordance with PROMPT, to do one job during the McRoberts manoeuvre, being a staff of four meant one person on each leg, one person attending the baby and one person applying suprapubic pressure double-handed on the side of the mother where the baby's back is positioned.

114. Sister Shepherd stated that she heard the evidence of Staff Midwives Topping and Rankin relating to not being able to see the deceased's posterior shoulder at any point and when asked why she thought she was able to see it, she stated that, in her opinion "something changed" and it could have been Miss

McCleery's movement onto a trolley, into the ambulance and onto a delivery bed.

115. When asked, Sister Shepherd told the inquest that she had encountered shoulder dystocia in her career, it occurs "not frequently, but it does happen" and a "handful of times within the year". She stated that there are around 60 recorded declared cases of shoulder dystocia per year in the Royal Jubilee. That is approximately 1% of the births in the hospital each year. She stated that McRoberts manoeuvre would be used very frequently as it is the first action of the midwife within the room with suprapubic pressure and then manoeuvres. She has conducted internal manoeuvres approximately twice in her career when she was part of a team. She said it can be stressful, tiring and hard and that is why it is important to be part of a team who can "relieve you and also bring their experience to the patient". Sister Shepherd commented that in severe cases of shoulder dystocia, you keep trying different manoeuvres to deliver the baby and change personnel, she stated "the most experienced person around, that is who you want". She went on to say that real life experience is more important than training involving a mannequin, as used in PROMPT, however as shoulder dystocia does not happen all that often it would be very hard for medical and midwifery staff in an early career to have much exposure "so that is the best we have".

116. Staff Midwife Ann Thompson gave evidence to the inquest. She told the inquest that she has been a registered midwife since 2006. She worked in the Mater Hospital from 2006 until 2013. In 2013, when the Mater changed from a Consultant Led Unit to a standalone Midwife Led Unit, she left and moved to the Royal Jubilee. She stated that she wanted to be in a Consultant Led Unit and her personal view was that "I just like to be secure in knowing that there is help if it is required". She stated that whilst all midwives are trained to deal with obstetric emergencies, she personally "liked the comfort of knowing there are other people there" when such emergencies arise. Midwife Thompson told the inquest that approximately 8 or 10 of her midwife colleagues remained in

the new Mater Midwifery Led Unit while approximately 10 or 15 left and transferred to the Royal Jubilee.

117. On 26 March 2017, she was working in the Royal Jubilee Maternity Hospital. At 00.40 hours, Sister Heather Shepherd informed her of the "severity of the situation", that there was a patient coming from Lagan Valley with a shoulder dystocia. Sister Shepherd told her that they would be starting with the McRoberts manoeuvre immediately upon arrival. Staff Midwife Thompson told the inquest that she had encountered shoulder dystocia before on approximately between 5 and 10 occasions. She performed the McRoberts manoeuvre and applied suprapubic pressure, but she had never performed internal manoeuvres. On the occasions, when the shoulder dystocia was not relieved by McRoberts or suprapubic pressure, internal manoeuvres were carried out by the Obstetric team. She told the inquest that as she worked in a Consultant Led Unit with staff available, there are four people conducting the McRoberts manoeuvres when required.

118. At 02.11 hours, Miss McCleery was taken into Room 5 on labour ward where the staff assisted in transferring her from the stretcher onto the bed. Staff Midwife Thompson took Miss McCleery's left leg and Staff Midwife Valerie Collins took her right leg and they performed the McRoberts manoeuvre. Miss McCleery's hips came off the bed and they could see the deceased's posterior shoulder. This was the first time the posterior shoulder was visible. Sister Shepherd used axial traction and the deceased was delivered at 02.12 hours. Staff Midwife Thompson clamped and cut the umbilical cord and the deceased was taken to the resuscitaire by Sister Shepherd. Staff Midwife Thompson then cared for Miss McCleery.

119. Staff Midwife Valerie Collins gave evidence to the inquest, which was admitted by way of Rule 17. She told the inquest that she had been working as a midwife in the Royal Jubilee Maternity Hospital for 32 years. When Miss McCleery arrived into the delivery room, Sister Shepherd instructed Staff

Midwife Collins to support Miss McCleery's left leg in the McRoberts position to aid delivery of the deceased. Following his transfer to the resuscitaire for further management, Staff Midwife Collins scribed notes of the care given to the deceased.

120. Sister Wendy Owen gave evidence to the inquest. She told the inquest that she had been working as a midwife in the Royal Jubilee Maternity Hospital for 25 years. On 25 March 2017, she was on night duty in the Regional Neonatal Intensive Care Unit. At approximately 02.00 hours, she was informed by Sister Shepherd of an emergency intrapartum transfer of a mother from the Lagan Valley Hospital. She was informed that there was a shoulder dystocia, and that the infant's head was delivered but the body was not. Sister Owen immediately informed Dr Rebecca Moore, ST4, who was on call. Sister Owen attended the delivery suite when the deceased was on the resuscitaire receiving CPR. She explained to the inquest that a baby who needs extra help after delivery is moved on the resuscitaire which is an open cot, with a clock and three sides which are down so all staff can work on the baby. At approximately 7 minutes of age, Sister Owen assisted Dr Moore with successful intubation. She auscultated for the deceased's heart rate every 30-40 seconds, but it was absent throughout. She then took over ventilation from Dr Moore. At approximately 40 minutes of age, Dr John Craig, Consultant Neonatologist, arrived and resuscitation ended.

121. Dr Rebecca Moore, ST4 in the Neonatal Unit in the Royal Jubilee Maternity Hospital, gave evidence to the inquest, which was admitted by way of Rule 17. The deceased was delivered at 02.12 hours. He weighed 9lb 10oz. Dr Moore described the deceased as white, flat, and lifeless on transfer to the resuscitaire. There was no respiratory effort or heart rate on auscultation. CPR was commenced and the deceased was intubated, and good air entry was heard in both sides of the chest but there was still no heart rate detected. Four doses of adrenaline were administered by way of umbilical venous catheter, along with two doses of sodium bicarbonate, two fluid boluses, normal saline, and

dextrose. Auscultation was carried out regularly throughout and no heart rate was detected at any time. Dr Craig arrived and after discussion with the deceased's parents, resuscitation was stopped at 44 minutes.

122. Dr Stanley Craig, Consultant Neonatologist, gave evidence to the inquest. On the night of 25 March 2017, he was the Consultant-on-call in the Royal Jubilee Maternity Hospital. At 02.27 hours on 26 March 2017, he was called at home by the Night Sister and asked to attend Room 5 of Delivery Suite immediately as the deceased was requiring CPR. The deceased was approximately 40 minutes of age. He told the inquest he has encountered shoulder dystocia as the receiving paediatrician within a delivery suite, but not very often. The compromises he looks for in a baby are the heart rate, breathing, muscular tones and body colour which gives an indication of the state of circulation. He explained to the inquest that hypoxic ischemia occurs when there is a lack of blood flow and oxygen. This can occur when there is a compromise to the baby's blood flow from the placenta through the umbilical cord.

123. Dr Craig told the inquest that his duty was to work out the sequence of events from the paediatric perspective, in other words, to ensure that all the steps in the process of resuscitation, following guidelines, had taken place. Dr Craig explained that there is a short time between the compromise resulting in hypoxic ischaemia and the presentation of the baby being born white, lifeless and absence of breathing, which could be possibly up to ten minutes, meaning the obstruction needs to be relieved quickly. At no point had a return of heart rate been detected and at approximately 44 minutes, Dr Craig noted the deceased's pupils were fixed and dilated and resuscitation was discontinued. Dr Craig pronounced the deceased as stillborn at 02.52 hours.

124. Dr McCorkindale, ST4 in Obstetrics and Gynaecology, gave evidence to the inquest, which was admitted by way of Rule 17. On 26 March 2017, Dr McCorkindale was tutor / 3rd on call for the labour ward in the Royal Jubilee Maternity Hospital. She was asked to attend to Miss McCleery by Staff Midwife

Thompson. Dr McCorkindale examined and sutured Ms McCleery at 03.30 hours. She re-attended Miss McCleery at 08.00 hours and Dr McCorkindale's impression was that it was musculoskeletal and provided advice on regular analgesia.

125. Mr Brian Craythorne, Forensic Scientist with Forensic Science Northern Ireland, gave evidence to the inquest, which was admitted by way of Rule 17. He was asked to determine the nature of the obliteration on the VTE Risk Assessment for Antenatal Women form for Miss McCleery. The obliterated entry was associated with the word "Height" and currently appeared to read 160 (taken to be 160 cm). No difference could be found in the ink for the original characters and the characters written on top of them. Mr Craythorne stated that it may have been that the same pen was used to write both the original entry and the overwritten entry. Mr Craythorne examined the obliteration under the microscope and used specialised lighting conditions and concluded that the original entry appeared to be 152.5. This entry appeared to have been written over with the characters 160. Consequently, Mr Craythorne concluded that the change was most likely to be from 152.5 to 160 (cm).

126. Mr Kieran Quinn, Interim Assistant Director for Women & Acute Child Health in the South Eastern Health and Social Care Trust gave evidence to the inquest. He told the inquest that the services at the Freestanding Midwifery Led Unit at Lagan Valley Hospital were suspended in March 2022. In Northern Ireland, there are currently no Freestanding Midwifery Led Units open. Mr Quinn explained that the Unit was commissioned by the former Eastern Health and Social Services Board (EHSSB) and was commissioned in line Department of Health's strategies – 'Developing Better Services', (2003) and 'A Strategy for Maternity Care in Northern Ireland 2012-2018'. He stated that there was a strong body of evidence supporting Midwifery Led Care as an option for low-risk women. With appropriate policies and guidelines in place, the risk of obstetric emergencies would be minimised and staff in the unit would be

experienced midwives and highly trained in management of obstetric emergencies.

127. Mr Quinn told the inquest that the Trust accepted that obstetric emergencies, such as, but not limited to shoulder dystocia, can occur without warning, carry an immediate threat to life and require immediate delivery or treatment however he stated that the evidence suggests that the majority are associated with high-risk women. He explained that the Trust policy on shoulder dystocia (August 2011 and March 2017) requiring assessment of women with a BMI over 30 "was erring on the side of caution" as the GAIN guidelines did not include this risk assessment. He said when the Unit was established in 2011 the Trust's policies and procedures were benchmarked against others in the UK, before the GAIN guidelines were introduced.

128. Mr Quinn told the inquest that the Royal College of Obstetricians and Gynaecologists (RCOG), NICE, and GAIN guidelines all applied to Midwifery Led Care in Northern Ireland and he agreed it could be difficult to "wade through" the "conflicting opinions" and that can be problematic when you are trying to assemble a supportive policy to create a safe service.

129. Mr Quinn explained that Trust wide policies and protocols are circulated to staff by way of email. It is now Trust policy that no hard copies are available at ward level. They are held on an internal Trust webpage which can be accessed by staff and new policies and updates are highlighted at regular team meetings.

130. Mr Quinn stated that the Trust accepted that emergencies are inevitable, but cannot be predicted, in either a Freestanding Midwifery Led Unit or in an Obstetric Led Unit. The severity of any obstetric emergency is extremely hard to predict in all settings. The Trust put in place a range of measures to ensure the risk of encountering any obstetric emergency was minimised. He stated that the Trust recognises that the provision of healthcare across all specialties carries a degree of risk. Maternity services are no exception, and the risk cannot be reduced to zero in any setting - Obstetric or Midwifery Led. Measures can

and are put in place to minimise and manage the risk, however the risk will never be zero.

131. Mrs Pamela Redmond gave evidence to the inquest. She had been the co-ordinator and author of the Serious Adverse Incident (SAI) Report which was commissioned by the Trust following the deceased's death.

132. The SAI team made a number of recommendations. The team stated that it is imperative that all expectant mothers BMI is calculated accurately and checked with the mother to ensure appropriate risk assessment for suitability of place to deliver. In order to ensure accountability and traceability all entries in the Maternity Hand Held Records including the height and weight should be signed by the person who carried out the task. During the intrapartum period the fetal heart should be recorded and documented on the partogram in accordance with NICE guideline 190. Expectant mothers should be enabled to make an informed choice regarding place of birth based on standardised evidence-based information which should be provided in the antenatal period. Finally, when a Shoulder Dystocia is called in the MLU, help should be summoned when the first McRoberts manoeuvre has failed.

133. Mrs Redmond told the inquest that the inconsistency between the GAIN Guidelines, allowing women with a BMI of between 18 and 35 as safe to deliver in the Unit and the increased risk of shoulder dystocia in women with a BMI over 30 according to the Trust protocol, was discussed by the SAI team. The team felt that Miss McCleery met the criteria to give birth in the Unit according to the GAIN guidelines. When asked if the panel had regard to NICE guideline CG190 which states that a BMI between 30 and 35kg/m2 requires individual assessment, Mrs Redmond stated the panel did as their guidelines are based on NICE; but acknowledged that GAIN did not stipulate this. She explained that GAIN was a regional approach on how mothers should be managed and that they were written to standardise practice across Northern Ireland and "it was a strategic piece of work". According to the Department of Health that was the

guideline that Trust's maternity units were to follow. When referred to the RCOG Green top Guideline No.43 (March 2012) on Shoulder Dystocia, which highlighted the risk factor of a BMI in excess of 30, Mrs Redmond acknowledged that she was aware of the policy. Mrs Redmond stated that whilst the SAI panel did not consider the inconsistencies between the GAIN, RCOG and NICE guidelines in relation to BMI, that is now something that SAI panels should perhaps consider, and it is learning going forward. She concluded by stating "I think there are many loopholes in the GAIN guidance, and I think they make some members of the teams very vulnerable".

Inquest Evidence

Pathology

134. Dr Daniel Hurrell, Consultant Paediatric/Perinatal Pathologist gave evidence to the inquest. He conducted an autopsy on the deceased on 27 March 2017 and thereafter produced a report.

135. Dr Hurrell told the inquest that the autopsy examination showed a normally developed, a non-macerated macrosomic male baby, with no congenital abnormalities and normal internal anatomy. Customised growth was at the 91st percentile. Post- mortem skeletal survey showed no obvious abnormalities. Dr Hurrell explained that the histological examination of the deceased's kidneys showed a little fresh visceral haemorrhage which was attributed to pre-terminal hypoxia. The deceased's lungs showed an adaptive response to fetal hypoxia. The recorded weight of the deceased at birth was 4370 grams. Dr Hurrell stated that his interpretation of macrosomia, which he stated was not precisely

defined, means he was saying "the baby was large" for gestational age. He would classify it as over 4000 grams however he accepted the definition of over 4500 grams. Dr Hurrell explained that he was simply trying to convey that the baby was large.

136. Dr Brian Herron, Consultant Neuropathologist, conducted an examination of the deceased's brain, which revealed hypoxic ischaemic encephalopathy with no pre-existing primary neuropathological lesion to account for death. Dr Hurrell explained to the inquest that hypoxic ischaemia means oxygen deprivation.

137. Dr Hurrell described how tests were positive for E coli organisms and that these results were interpreted as post mortem artefact. Examination of the placenta showed that it was normally developed with no specific pathological lesion identified, which could account for the deceased's stillbirth.

138. Dr Hurrell explained to the inquest that shoulder dystocia is an uncommon obstetric emergency, which is associated with an increased risk of maternal and fetal morbidity and mortality. Delay in the delivery of the shoulder (an extended head to body delivery interval) may cause fetal hypoxic ischaemic brain injury, which can, in turn result in permanent brain damage and mortality, as in the deceased's case. Fetal macrosomia, or large baby, is associated with an increased risk of shoulder dystocia. Dr Hurrell concluded that this may have played a part in the deceased's death and therefore included it in the cause of death.

Inquest Evidence

Expert Evidence

139. Mrs Charlene François, Midwifery Expert, instructed by the next of kin; Mrs Angela Cook, Midwifery Expert and Dr Paul Weir, Consultant Obstetrician, instructed on my behalf, all gave evidence to the inquest.

140. Mrs Angela Cook told the inquest that as Miss McCleery's BMI was above 30, this should have resulted in an informed decision antenatally about possible intrapartum complications associated with a high BMI and the consideration of management strategies considered. She went on to say that women with a booking in BMI greater to or equal to 30 should be referred to a consultant obstetrician to enable this discussion according to the CMAC/RCOG Guidelines.

141. At the 36-week checklist, it was highlighted that transfer time, the transfer hospital and the reasons for transfer were discussed. Mrs Cook stated that it was her view that exact details of all emergency situations would not be discussed with women with low risk, uncomplicated pregnancies. However, as Miss McCleery was identified at increased risk in the Trust policy for shoulder dystocia due to her BMI being over 30, then following discussion and or review by a consultant, and still wishing to give birth in a Midwifery Led Unit, shoulder dystocia should have been discussed in detail. Mrs Cook stated that in Miss McCleery's case, there was no documentation to reflect a discussion relating to the benefits and limitations of giving birth in a consultant led unit and a midwifery led standalone unit to demonstrate that Miss McCleery had made an informed decision.

142. Mrs Cook stated that help should have been summoned prior to 3 minutes following the birth of the baby's head at 00.32 and this should have occurred at 00.35 when routine traction failed to deliver the baby within the context of no restitution. Mrs Cook was of the view that Staff Midwife Rankin and Staff Midwife Topping performed manoeuvres in accordance with PROMPT, they worked together, and attempts were performed by both interchangeably. She stated that the midwives received appropriate education through PROMPT training and skills drills in emergency shoulder dystocia.

143. Mrs Charlene François stated that the recording of Miss McCleery's height inaccurately fell below an acceptable standard and the consequent use of the wrong height on the GROW chart also fell below an acceptable standard.

144. Mrs François explained that the Trust policy on shoulder dystocia identified Miss McCleery as being at risk of shoulder dystocia because her BMI was above 30. She should have been referred to an obstetrician and if she still wished to birth in the Unit the risks of shoulder dystocia would have been discussed fully. It was her opinion that the midwives should have discussed the risks with her and documented that discussion in the handheld maternity records so that Miss McCleery could make an informed decision about her care pathway.

145. Mrs François told the inquest that, in her opinion, there was a failure by Staff Midwife McIlwee to accurately take the maternal height at booking and as a result the BMI was wrongly documented. There was a failure to correctly document the correct BMI on the GROW chart and as a result a large for dates fetus was missed.

146. Mrs François stated that there was a failure to properly inform Miss McCleery of the risks and benefits of having a baby in a Freestanding Birth Unit and the particular risks of shoulder dystocia associated with her delivery due to her having a BMI over 30. Therefore, there was a failure to properly consent Miss McCleery to delivery in the Midwifery Led Unit.

147. Mrs François explained to the inquest that there was a failure to listen to the fetal heart rate every 5 minutes during the second stage of labour, however this did not affect the outcome.

148. Mrs François held the view that the manoeuvres undertaken to release the shoulders were not performed correctly or for long enough by the midwifery staff who were both inexperienced in dealing with the situation. She told the inquest that you should wait until the contraction has passed, then conduct a manoeuvre and "the next contraction is the test to see if it worked". The wait

time depends on the contractions, which could be one in every two minutes. When told that the midwives performed approximately 12 manoeuvres in 19 minutes, Mrs François replied "that is far too many".

149. Dr Weir told the inquest that Miss McCleery had every right to full information concerning limitations of delivering in a free-standing midwifery unit. He referenced *Montgomery v Lanarkshire Health Board* [2015] UKSC 11 in which the court noted that "informed choice" is taken to mean the patient is entitled to be told of any material risks where that is necessary for her to make an informed decision whether to incur them. Dr Weir took the view that these obligations applied to the midwives involved in the care of Miss McCleery.

150. Dr Weir opined that there are obstetric emergencies which are unpredictable, occur without warning and carry an immediate threat to the life of the fetus and or the mother. Such emergencies require immediate delivery or treatment, they could not be managed in the recommended timeframe in a remote Freestanding Midwifery Led Unit such as Lagan Valley Hospital, and these included shoulder dystocia (recognised rate 0.25 – 0.6 per 100 deliveries (RCOG GTG 12 2012)). He stated that these major emergencies have a known frequency and so it is inevitable that sooner or later they will occur in a unit delivering a significant number of women even though they may have been previously assessed to be "low risk". In Dr Weir's opinion the *Montgomery* ruling makes it very clear that the mothers attending "such a remote unit with limited facilities and abilities to respond to serious emergencies should be fully informed of the potential risks".

151. Dr Weir explained that the fact the deceased was delivered without difficulty on arrival at the Royal Jubilee is significant and brings into question the effectiveness of the manipulations and manoeuvres attempted by the midwives in the Unit. Mrs François agreed with this. Dr Weir stated that alternatively, the easy delivery in the Royal Jubilee could be interpreted as that the shoulder dystocia resolved "spontaneously". Therefore, there was no absolute bar to

delivery. He said that assuming the dystocia resolved "spontaneously" then internal rotation manoeuvres or delivery of the posterior shoulder, if had been properly and effectively carried out, should have been effective in resolving the shoulder dystocia and have allowed delivery in the Midwifery Led Unit. In Dr Weir's opinion, the effectiveness of the internal manoeuvres carried out in the Unit were questionable. He went on to say that it is possible that the ambulance transfer and the movements that Miss McCleery had to undertake caused some rotation of the fetal shoulders that allowed spontaneous resolution of the dystocia.

152. Dr Weir told the inquest that the definition of fetal macrosomia accepted by RCOG was 4500g. The deceased's weight of 4370g fell below that definition. However, he stated fetal size is related to the mother's size and a 4370g baby "in a smallish mother is a significant issue".

153. In relation to Staff Midwife Topping and Staff Midwife Rankin, Dr Weir stated that midwives in normal practice would not encounter situations in which they would have to make such invasive intrusions, apply such force and so such manoeuvres are outside the normal / usual practice of midwives. In his opinion, Staff Midwife Rankin and Staff Midwife Topping appear to have tried their very best, they followed the guidelines as best they could, but simply encountered a situation which was outside their level of clinical capabilities and experience. He explained that they simply lacked the clinical capacity and the skills and resources to resolve the shoulder dystocia. Dr Weir went on to say that the training would have been adequate to deal with the initial steps but would not have adequately prepared them to effectively undertake the internal rotational procedures.

154. Dr Weir held the view that the discrepancy in height between Staff Midwife McIlwee and the GP should have been carefully verified by her. The BMI calculated would not have precluded delivery in a Midwifery Led Unit but according to the NICE Guideline CG190 2014 should have been referred for

individual assessment. In Dr Weir's opinion, such an assessment would have concluded that Miss McCleery would not be suitable for delivery in a Freestanding Midwifery Led Unit.

155. Dr Weir held the view that the overwriting of 160 appeared to him to be transposed over the weight figure of 82.5. When it was noticed it was corrected.

156. In Dr Weir's opinion, Miss McCleery should have been given full information about the potential risks of delivering in a Freestanding Midwifery Led Unit. This should have included the risk of shoulder dystocia because it has an incidence varying between 0.6 – 3% and this incidence increases with a maternal BMI over 30kg/m2.

157. Dr Weir told the inquest that shoulder dystocia, in ideal circumstances, is managed by four people, one to manage the baby, one to provide suprapubic pressure and two people to hold the mother's legs in the McRoberts position. He stated that in an ideal world all would be highly trained professionals, but in the initial emergency response this is simply not achievable even in a hospital setting.

158. Dr Weir opined that, in his opinion, there is no logical reason to explain why the GAIN guidelines, in the section "Planning Place of Birth", do not contain the NICE recommendation that any woman with a BMI 30-35kg/m2 should be referred for assessment. In his opinion the GAIN criteria should include table 9 of NICE CG 190 and in his opinion, this is a serious deficit in the GAIN Guideline. He stated, "I fail to understand why a local body composed of people who I would have lots of respect for should come to a different conclusion and remove a safety factor". He stated that the GAIN Guideline does contain a "catch-all/get out" statement "if there is any uncertainty, multidisciplinary discussion is necessary". In Dr Weir's opinion this is vague and does not provide adequate clear guidance. He concluded by saying "I fail to understand why or how that was allowed to arise". Mrs François agreed and

commented that she is surprised that the GAIN guidelines do not reflect national guidelines.

159. Dr Weir concluded by stating that in his opinion this situation was predictable and indeed inevitable in a remote Freestanding Midwifery Led Unit. He stated that on the balance of probabilities, the deceased died between 00.37 and 00.42 hours from cerebral hypoxic ischaemia due to compression of the arterial supply in fetal neck.

160. At inquest, Mrs Cook, Mrs François, and Dr Weir all agreed that if Miss McCleery's actual BMI was calculated as 34.55kg/m2, Miss McCleery should have been referred for obstetric assessment and review. Mrs François added that the Trust's Shoulder Dystocia Protocol refers to a BMI over 30 as a risk, while Dr Weir referred to NICE CG190 2014. All experts agreed that it is essential that accurate measurements are taken and recorded and where a BMI is between 30 and 35 the midwifery staff should have taken into account factors in addition to BMI, including, fetal size, SFH and maternal stature.

161. All experts agreed that if the correct GROW chart was plotted, foetal growth would have been plotted above the 90th centile on two occasions (35+ and 38+ weeks gestation) thereby promoting referral for an ultrasound scan and obstetric review.

162. All experts agreed that Miss McCleery should have been informed, at her booking appointment on 13 September 2016, of the benefits and risks of giving birth in a Freestanding Midwifery Led Unit. Mrs Cooke stated that whilst all intrapartum complications cannot be discussed, there is a need to inform about the context of care for a Midwifery Led Unit, that this is staffed by qualified midwives and that there are no doctors and the impact of transfer times. Mrs François agreed that the mother should be told there are no doctors and travel times and that if something went wrong for mother and baby the outcome would be worse than if delivered in the Obstetric Unit (NICE 2014). Dr Weir opined that Montgomery ruling requires disclosure of pertinent risk, essentially

the unavailability of immediate expert obstetric assistance. They all agreed this discussion should have taken place and should have been documented in the records.

163. All three experts agreed that in view of Miss McCleery's BMI, she was at risk of shoulder dystocia during the course of delivery. They all went on to say that during the 36-week checklist Miss McCleery should have been informed of the risks of delivery in the Unit, which should have included shoulder dystocia and consent should have been obtained.

164. The experts disagreed on whether Miss McCleery should have been told that the serious outcomes include the risk of brain damage or stillbirth. Mrs Cook held the view she shouldn't have been told this in accordance with NICE guidelines, while Mrs François and Dr Weir felt she should have been told this.

165. All three experts agreed that shoulder dystocia was recognised timeously by Staff Midwife Rankin and Staff Midwife Topping.

166. The experts commented on the dissemination of local guidelines, in this case the Trust protocols and memos. Mrs Cook and Mrs François stated that in their experience copies should be retained in hard copy and digitally as well as staff being informed of updates by way of email and through handovers with shift coordinators.

167. Mrs Cook stated that in her opinion there were sufficient numbers of midwifery staff present for the delivery in a Midwifery Led Unit, while Mrs François and Dr Weir disagreed. They both stated that four attendants are required to carry out McRoberts and apply suprapubic pressure. In Mrs François's opinion, the midwives would have been best to use the all fours position because you do not need as many people to conduct the manoeuvres. Mrs François went on to say that if you are going to get the mother and father to assist with McRoberts you must show them how to do the technique properly.

168. All three experts queried whether it was possible for Staff Midwife Topping to have applied suprapubic pressure effectively whilst performing McRoberts. When told how Staff Midwife Topping held Miss McCleery's leg, freeing up her two hands, they still queried the effectiveness of this. Mrs François stated that the description of Staff Midwife Topping performing suprapubic pressure was very dangerous and the "completely wrong way to do McRoberts" because the leg would not be supported correctly. Dr Weir stated he has seen it performed effectively on several occasions by midwives in the way described by Staff Midwife Topping and whilst it was not the recommended practice, he stated that it was pragmatic and the best possible in the circumstances, "needs must".

169. In relation to whether the manoeuvres undertaken by Staff Midwife Topping and Staff Midwife Rankin were performed correctly, Mrs Cook agreed they were. Both Mrs François and Dr Weir disagreed. Mrs François stated that there were problems in doing McRoberts correctly and problems with the internal manoeuvres. She stated that five internal manoeuvres were too many and on balance were performed ineffectively. Dr Weir stated that it is likely that some of the manoeuvres were applied correctly and that some were not due to a lack of experience of fetal manipulation. Dr Weir opined that, on balance, it is likely that the McRoberts, suprapubic pressure and all fours position were applied correctly. However, on balance, it is likely that the woodscrew manoeuvres and release / delivery of the posterior arm were not carried out effectively. He said he "had considerable doubts" about the way the internal manoeuvres were performed.

170. Both Mrs Cook and Mrs François agreed that the manoeuvres were not performed for long enough, however Dr Weir took the view that the duration is largely irrelevant, it is the effectiveness of the manoeuvre that matters. If one is not effective, you should move on to another.

171. In relation to whether the midwives had sufficient training and experience to deal with the shoulder dystocia when it presented, Mrs Cook believed they had.

Mrs François and Dr Weir disagreed. Mrs Francois stated that whilst they may have been trained, they had not performed internal manoeuvres before and therefore lacked experience. Dr Weir agreed, stating that they lacked the experience of the complex techniques required when the initial manoeuvres failed. He stated that McRoberts and suprapubic pressure is shown to be effective in releasing shoulder dystocia in up to 90% of cases, and on balance the midwives would have had adequate training and experience of the use of these basic initial techniques. However, PROMPT training using mannequins cannot realistically reproduce the difficulties and circumstances that are present in shoulder dystocia which has failed the initial manoeuvres. Dr Weir stated that experience is essential, but that experience is difficult to achieve because of "the rarity of this condition". Dr Weir commented that the complex internal manoeuvres can only be learned in active clinical practice under experienced guidance in obstetric emergencies. Both Mrs Cook and Mrs François agreed with this comment. Dr Weir stated, "such techniques lie outside the area of expertise of midwives". Therefore, although the midwives may have been aware of the techniques and may have attempted them on a mannequin, they would not have had the experience to carry them out effectively – they may have had knowledge but not experience.

172. When asked the question whether Miss McCleery elected to deliver in a consultant led unit after discussion of risk, would the deceased, on the balance of probabilities, been born safely, Dr Weir said yes, while Mrs Cook and Mrs François stated in all their years' experience, they only encountered one occasion when the baby was not successfully delivered alive. All three experts agreed that if obstetric care was available at the time, the deceased would have been born safely and survived. Finally, all three experts agreed that if midwifery staff were experienced in the relief of shoulder dystocia, it is likely the deceased would have survived.

173. Mrs Cook commented that she could not answer whether the death was preventable, but in terms of the shoulder dystocia, "there was a high

predictability of that occurring with Miss McCleery". Mrs François stated that on the balance of probabilities, the risk of shoulder dystocia and the deceased death was foreseeable. She stated that on balance if Miss McCleery delivered "in an obstetric unit, the death would have been preventable". Dr Weir stated the events in the Royal Jubilee demonstrated that this baby was deliverable by staff with the appropriate skills which they applied. Dr Weir explained Miss McCleery had a number of risk factors, including small stature and a high BMI "right on the margin" and if the NICE guidelines were applied, she would have been referred for further assessment which would influenced place of birth and therefore the deceased's death "would have been avoidable in my view".

Narrative Findings

174. I find, on the balance of probabilities, that the stillbirth of the Deceased was both foreseeable and preventable. Had the midwives in charge of Miss McCleery's care in the Freestanding Midwifery Led Unit in Lagan Valley Hospital identified the risk factors associated with a BMI over 30kg/m2, including shoulder dystocia, I find, on balance, that the risk of the Deceased's stillbirth would have been foreseen. Had the risks of giving birth in a Freestanding Midwifery Led Unit been explained to Miss McCleery and the

Trust's Shoulder Dystocia Protocol (August 2011), NICE and RCOG guidelines been applied and a risk assessment performed, a referral would have been made for obstetric assessment; or an informed choice made, which, as Miss McCleery stated in evidence, would have led to the choice of Consultant Led Care, and therefore, I find, on balance, that the Deceased's death was preventable.

175. On the evidence before me, there were a number of missed opportunities, in the care and treatment of the Deceased, which I outline below, each of my findings I make on the balance of probabilities.

176. I find that Staff Midwife McIlwee measured and recorded Miss McCleery's height incorrectly at the booking appointment. I find that this led to an erroneous Antenatal GROW chart being generated.

177. I find that Staff Midwife McIlwee should have read the GP referral in full and should have noticed the discrepancy in her height measurement and that recorded by the GP, and she should have taken steps to rectify the discrepancy.

178. Had the correct height been recorded, and the correct Antenatal GROW chart plotted, the deceased would have plotted twice above the 90th centile, which, according to NICE guidelines, would have resulted in a referral for individual assessment, and which would have resulted, on balance, in a different outcome.

179. I find that it is imperative that all expectant mothers' BMI is calculated accurately and checked with the expectant mothers to ensure the completion of appropriate risk assessment for suitability of place to deliver.

180. I find that, because Miss McCleery's BMI was over 30, Staff Midwife McIlwee should have had a discussion with her and/or referral to a consultant obstetrician due to the context of planned delivery in a standalone Midwifery Led Unit. I find that there was a failure to properly consent Miss McCleery for delivery in the Midwifery Led Unit. Expectant mothers should be enabled to

make an informed choice regarding place of birth based on standardised evidence-based information.

181. I find that the figure overwritten by 160 in the maternity notes was, on balance, 152.5. I find this figure was written in the "summary of risks" box after the height of 160cm was recorded in NIMATS and therefore did not affect the overall outcome.

182. I find that the 36-week checklist was not explained in sufficient detail by Staff Midwife Mack, particularly in relation to the reasons for transfer, and examples of obstetric emergencies, to ensure informed consent. I prefer Miss McCleery's evidence in relation to the information that was imparted during completion of that checklist. I find that had there been detailed information imparted, including the serious outcomes that could occur, there would have been a discussion with Miss McCleery about her care path and place of birth and this would have led, on balance, to a different outcome for the deceased.

183. I find that Staff Midwife Topping and Staff Midwife Rankin did not record the fetal heart during the intrapartum period between 00.15 hours and 00.32 hours. The fetal heart should be recorded every 5 minutes during the second stage of labour and documented in accordance with NICE guidelines. However, this did not affect the overall outcome.

184. I find that, on balance, the McRoberts manoeuvre was performed correctly by Staff Midwife Rankin and Staff Midwife Topping, but that suprapubic pressure was not applied correctly because of the lack of available staff in the Unit on the night in question.

185. I find, that while Staff Midwife Rankin and Staff Midwife Topping were trained in internal manoeuvres during their PROMPT training, they did not have enough experience to conduct the internal manoeuvres correctly or effectively. I find that as midwives can encounter and be expected to deal with obstetric emergencies in a remote Freestanding Midwifery Led Unit, they

should be trained in active clinical practice under experienced guidance, and I find therefore, that the midwives training lacked in this regard.

186. I find that Staff Midwife Rankin and Staff Midwife Topping identified the shoulder dystocia timeously. However, I find, that, an ambulance should have been summoned immediately at that point. This would have led to the ambulance arriving approximately two minutes earlier than it did. However, on balance, this would not have made a difference to the overall outcome.

187. I find that whilst the Midwifery Led Unit was comprised of small teams of midwives to ensure continuity of care, there was no continuity of care for Miss McCleery who was seen by nine different midwives during her pregnancy.

188. I find that the evidence of the midwives, in relation to protocols and policies was confusing, conflicting and at times misinformed.

189. I find that whilst midwives in evidence referred to changes in Trust policies in relation to risks for pregnant woman, there were already South Eastern Health and Social Care Trust policies in place, specifically, the Shoulder Dystocia Protocol (published in August 2011 and superseded in March 2017) at paragraphs 3.2 and 4.1 respectively, which stated that a BMI over 30 was a risk factor associated with shoulder dystocia. In evidence, the treating midwives, did not mention these Protocols. They did, however, inform the inquest of the new protocol introduced in October 2017, after the death of the deceased. This protocol simply superseded the March 2017 version. I find, therefore, that the midwives attending Miss McCleery in the Lagan Valley Hospital Midwifery Led Unit did not know of the existence of the Trust Protocol on Shoulder Dystocia that was in place at that time and therefore were unaware of essential information contained in that protocol which governed the treatment of expectant mothers in their care. Accordingly, I find that the midwives failed to risk assess Miss McCleery in accordance with this protocol. I find that had this been done throughout the antenatal appointments by the attending midwives, there would have been a discussion with Miss McCleery about her care path

and place of birth which would have led, on balance, in a different outcome for the deceased.

190. I find that the Trust protocols are inconsistent. Paragraph 3.3 of the Shoulder Dystocia Protocol (October 2017) states that women whose fundal height measurements have been above the 90th centile should be offered the opportunity of having an ultrasound scan to estimate fetal weight. However, paragraph 4.12 of the Trust's "Management of Large for Gestational Age Fetus" (October 2019) states that a fundal height measurement greater than the 90th centile without other concerns does not need referred for EFW scan. I find that the Trust should review all protocols and guidelines to ensure consistency and clarity for midwives and expectant mothers.

191. I find that the South Eastern Health and Social Care Trust failed to circulate guidelines, protocols, and memos in an effective way to ensure that all midwifery staff in the Midwifery Led Unit understood their importance for application in their daily practice. I find that these documents should be kept in hard copy in the Unit as well as being stored on the intranet and circulated by email.

192. A Strategy for Maternity Care in Northern Ireland 2012-2018 (July 2012) (para 6.13) highlighted the need for women being supported to make informed decisions about their place of birth. It stated that the risks and benefits of place of birth must be explained to women to allow them to make an informed clinically appropriate choice about the place of birth. I find that this did not occur in Miss McCleery's case. The Strategy further states that midwifery-led units will only admit women experiencing a straightforward pregnancy and birth and will follow criteria and guidelines agreed in line with NICE guidelines. I find that this did not occur in Miss McCleery's case.

193. I find that the midwives followed the GAIN guidelines in relation to the eligibility of birthing in a Midwifery Led Unit. However, I find that those guidelines fail to provide protection for women with a BMI over 30. The GAIN

guidelines are inconsistent with UK wide NICE and RCOG guidelines. NICE Guidelines 2014, paragraph 1.1.10, table 9, lists BMI at booking of 30 to 35 kg/m2 as a factor indicating that further consideration of birth setting may be required. The Centre for Maternal and Child Enquiries CMACE and RCOG Joint Guidelines (March 2010), paragraph 7 states that all pregnant women with a booking BMI over 30kg/m2 should be provided with accurate and accessible information which includes fetal macrosomia requiring an increased level of maternal and fetal monitoring. Essentially, a woman with a BMI between 30 and 35 should have individualised assessment in relation to choosing a place of birth. The GAIN guidelines do not include these safety provisions. I find that these GAIN guidelines fail to provide sufficient protection for expectant mothers with a BMI between 30 and 35 and I find that a review of the GAIN guidelines (September 2018) should be conducted.

194. I find that the number of experienced staff on duty during the night and at weekends in the Midwifery Led Unit was not sufficient to assist with complications that may have arisen, as highlighted in the deceased's case.

195. I find, that whilst there are no longer any Freestanding Midwifery Led Units open in Northern Ireland, a comprehensive review of the number of staff, experience, training, and policies should be conducted by the Department of Health, in the event of these Units reopening in the future.

196. I find that the Northern Ireland Ambulance Service provided timely and appropriate care to Miss McCleery and the deceased.

197. I find that the team in the Royal Jubilee Maternity Service acted timely and appropriately in their care and treatment of the deceased.

198. A post-mortem was performed, and it records, and I find that death was due to:

1(a) Shoulder dystocia (clinical diagnosis)

II Fetal macrosomia