Scottish Parliament Region: South of Scotland

Case 201003216: Dumfries and Galloway NHS Board

Summary of Investigation

Category

Health/Hospitals – Gynaecology & obstetrics (Maternity); clinical treatment; diagnosis

Overview

The complainant (Ms C) raised concerns about the treatment that she received from Dumfries and Galloway NHS Board (the Board) prior to the birth of her son (Baby A). She also complained about the treatment Baby A received after he was born.

Specific complaints and conclusions

The complaints which have been investigated are that:

(a) the Board failed to diagnose that Ms C had pre-eclampsia, despite her showing clear symptoms (*not upheld*);
(b) the Paediatrician's arrival was excessively delayed, despite Ms C and her family's concerns over Baby A's breathing (*upheld*);
(c) the Paediatrician failed to properly prioritise Baby A (*upheld*);
(d) the Midwife failed to recognise that there were problems with Baby A feeding when she gave him formula milk (*not upheld*);
(e) the Board failed to diagnose Persistent Pulmonary Hypertension of the Newborn despite Baby A showing clear symptoms (*upheld*);
(f) the Doctor treating Baby A did not know how to increase the oxygen when this was requested by the Consultant (*not upheld*); and
(g) Ms C was refused entry into neonatal when Baby A was admitted and she was not called when he received a heart massage (*upheld*).

Redress and recommendations

The Ombudsman recommends that the Board:	*Completion date*
(i) remind midwifery staff of the importance of maintaining consistent records of babies' physiological observations;	29 February 2012
(ii) present Baby A's case, and Adviser 2's comments,	29 February 2012

	to Neonatal staff to highlight any learning points that can be taken from this case; and	
(iii)	apologise to Ms C and Mr B for the issues highlighted in this report.	29 February 2012

The Board have accepted the recommendations and will act on them accordingly.

Main Investigation Report

Introduction

1. Ms C gave birth to her second child (Baby A) on 12 November 2009. She experienced severe swelling in her hands, feet and face 37 weeks into her pregnancy and this, along with other symptoms gave her concern that she may have pre-eclampsia. Ms C raised her concerns with midwifery staff and at the maternity ward of the Dumfries and Galloway Royal Infirmary (Hospital 1). However, she was reassured that she did not have pre-eclampsia.

2. Shortly after Baby A was born, Ms C's partner (Mr B) noticed that he was breathing rapidly. He was reassured by midwifery staff that Baby A was fine and that there was nothing to worry about. Other family members also raised concern about Baby A's breathing when they visited later that day, but again they were reassured that he was fine. Ms C's other son visited Hospital 1 and jumped on her, dislocating her knee and causing Ms C to roll onto Baby A. A paediatrician (Consultant 1) was called to check that Baby A was unharmed. It took several hours for Consultant 1 to arrive.

3. Ms C explained to Consultant 1 that Baby A's breathing was rapid, that he had not fed at all since birth and that he had not cried. Consultant 1 suggested that Baby A's condition be monitored over the following hours. Around 06:00 the following morning Baby A was examined by another Paediatrician (Consultant 2) who immediately admitted him to the neonatal unit (Neonatal). He was diagnosed with Persistent Pulmonary Hypertension of the Newborn (PPHN). Baby A's condition deteriorated on 14 November 2009 and he was transferred to Yorkhill Hospital (Hospital 2).

4. Ms C complained to the Board about the lack of action by staff when Baby A's rapid breathing was highlighted to them. She also complained about delays to his treatment and the diagnosis of PPHN. Baby A suffered damage to his brain, liver and kidneys due to oxygen deprivation and the extent and impact of this damage will not be known until Baby A is older. Dissatisfied with the Board's response to her complaint, Ms C brought the matter to the Ombudsman in November 2010.

5. The complaints from Ms C which I have investigated are that:

(a) the Board failed to diagnose that Ms C had pre-eclampsia, despite her showing clear symptoms;

(b) the Paediatrician's arrival was excessively delayed, despite Ms C and her family's concerns over Baby A's breathing;
(c) the Paediatrician failed to properly prioritise Baby A;
(d) the Midwife failed to recognise that there were problems with Baby A feeding when she gave him formula milk;
(e) the Board failed to diagnose Persistent Pulmonary Hypertension of the Newborn despite Baby A showing clear symptoms;
(f) the Doctor treating Baby A did not know how to increase the oxygen when this was requested by the Consultant; and
(g) Ms C was refused entry into neonatal when Baby A was admitted and she was not called when he received a heart massage.

Investigation

6. In order to investigate this complaint, my complaints reviewer reviewed Ms C's and Baby A's clinical records. He also reviewed correspondence between Ms C and the Board and sought additional comments from the Board and two of my professional medical advisers (Adviser 1, a maternity and neonatal health specialist and Adviser 2, a consultant neonatologist). I have not included in this report every detail investigated, but I am satisfied that no matter of significance has been overlooked.

(a) The Board failed to diagnose that Ms C had pre-eclampsia despite her showing clear symptoms

7. Thirty seven weeks into her pregnancy, Ms C experienced swollen hands, face and feet. She contacted the Board's midwifery staff and began daily visits to the maternity unit at Hospital 1. Tests carried out at Hospital 1 showed that she had high blood pressure and protein in her urine. Ms C believed that her symptoms were consistent with pre-eclampsia (a complication of pregnancy, the symptoms of which include high blood pressure, protein in the urine and fluid retention).

8. Ms C said that she told nursing staff about her swelling at each visit to Hospital 1, noting that she felt very different to her first pregnancy. She was advised on each occasion that her concerns would be raised with a consultant; however, no diagnosis of pre-eclampsia was made.

9. Ms C met with staff from the Board to discuss her complaints on 7 June 2010. At the meeting, she asked whether her symptoms prior to Baby A's birth had been pre-eclampsia, and whether her condition during

pregnancy could have caused the postnatal problems that Baby A encountered. The Board assured her that her blood pressure and swelling were monitored closely throughout the eight prenatal visits that she had to the maternity unit. Ms C was told that staff actively checked for the signs of pre-eclampsia, but her blood pressure 'never really went through the roof'. The Board accepted that Ms C was unwell prior to labour, however, not to the extent that staff would have induced the birth early.

10. Ms C attended a further meeting with the Board on 10 August 2010. The meeting followed-up on points raised at the 7 June meeting. An independent Obstetrician (the Obstetrician) had been asked to comment on Ms C's case and determine whether she had had pre-eclampsia during her pregnancy. The Obstetrician stated that, although Ms C was unwell with 'symptoms of pre-eclampsia', her symptoms did not fit with 'text book pre-eclampsia'.

11. When investigating this complaint, my complaints reviewer sought the opinion of Adviser 1. Adviser 1 explained that pre-eclampsia is a condition of pregnancy associated with an abnormally functioning placenta after birth. The condition results in high blood pressure (hypertension), protein in the urine and fluid retention but resolves after birth. Its cause is not fully understood; however, it is managed and treated by monitoring the mother's fluid balance and checking urine samples for protein and infection. Regular blood tests are taken and blood pressure is controlled with medication. Foetal wellbeing is assessed by monitoring the baby's movements and taking daily readings of foetal heart rate. A decision as to whether or not to induce labour will be made dependent on the severity of the condition.

12. Adviser 1 explained that Ms C only displayed two of the three symptoms of pre-eclampsia. Whilst she had protein in her urine and fluid retention, her blood pressure did not reach a level that would be described as hypertension due to pregnancy. Hypertension due to pregnancy is measured as a blood pressure of 140/90 or an increase in diastolic (the lower reading) 15 to 20 mmHg (millimetres of mercury) above the patient's usual reading. Ms C was initially categorised as a low-risk pregnancy at booking on 26 April 2009. At that time her blood pressure was recorded at 110/70. At no time prior to Baby A's delivery did her diastolic reading rise above 90 mmHg. As such, Adviser 1 did not consider that a diagnosis of pre-eclampsia could be made.

13. My complaints reviewer asked Adviser 1 whether Ms C's symptoms were appropriately treated. Adviser 1 said that, the clinical records showed that her symptoms were monitored closely and managed appropriately by the maternity unit with a plan put in place to induce labour if Ms C did not progress to labour herself. Adviser 1 explained that, although Ms C was not diagnosed as having pre-eclampsia, she was treated as if she had pregnancy induced hypertension. She noted that Ms C's family had a history of pre-eclampsia and that, as blood tests were taken frequently (despite a normal range of blood pressure readings) there could have been a general impression given to Ms C that she had pre-eclampsia.

(a) Conclusion

14. I accept Adviser 1's comments and found that these mirrored the Board's position as regards whether Ms C had pre-eclampsia. Although she clearly had fluid retention and protein in her urine, her blood pressure, whilst raised, did not reach a level that would be classed as pregnancy induced hypertension. For a diagnosis of pre-eclampsia to be made, all three symptoms would have to be present and I, therefore, do not consider that Ms C had this condition.

15. The evidence that I have seen indicates that staff recognised Ms C's symptoms and considered the possibility of pre-eclampsia. Whilst, rightly, this diagnosis was not made, the treatment that she received was in line with the treatment she would have received had a diagnosis of pre-eclampsia been made.

16. With all of the above in mind, I do not uphold this complaint.

(a) Recommendations

17. I have no recommendations to make.

(b) The Paediatrician's arrival was excessively delayed, despite Ms C and her family's concerns over Baby A's breathing; and (c) The Paediatrician failed to properly prioritise Baby A

18. Baby A was born at 11:15 on 12 November 2009. In her complaint to the Board, Ms C said that Mr B noticed that Baby A's breathing was quite rapid. He reportedly drew this to the attention of the midwives, but was reassured that there was no problem. The midwives turned their attention to Ms C who was losing blood.

19. The clinical records contain several notes over the following hours in which midwifery staff record that Baby A had little interest in feeding.

20. Later in the afternoon, Ms C's parents visited Hospital 1. Her father also reportedly commented on Baby A's breathing. He felt that it was very fast for a newborn. Ms C's other son arrived at the Hospital and jumped on her bed. In doing so, he dislocated Ms C's kneecap, causing her to roll over in pain close to Baby A. The clinical records indicate that Baby A was examined by a Midwife after this incident at 18:30. No concerns were noted about his condition, but a Paediatric review was requested at that time.

21. Consultant 1 attended at 01:14 on 13 November 2011. He noted the earlier incident and performed a full examination of Baby A. He noted that Baby A was 'mucousy' and that his respiratory rate was raised at 60 to 70 breaths per minute (the normal upper limit is 60 breaths per minute). He recorded that there was evidence of 'mild recession' (mild respiratory distress). Consultant 1 noted that Baby A had not fed securely from birth. He ordered a blood glucose check, which was just within the acceptable limits at 2.8 (the lower limit is 2.7). As Baby A was found to look well, Consultant 1 made a plan to observe him and review if necessary.

22. One of the midwives made an entry in the records dated 12 November 2009 at 00:45, but written after Consultant 1's entry. She reiterated that Baby A was not interested in feeding and noted that he was 'a wee bit grunty + rapid resps (on handling) settles when left to rest'.

23. At 05:00 another Midwife reviewed Baby A and noted that he was warm to the touch with cool peripheries. She also noted that his breathing rate was at 72 breaths per minute with further evidence of respiratory distress (flared nostrils). A further Paediatric review was requested urgently at 05:30.

24. Consultant 2 reviewed Baby A and noted that he continued to breathe rapidly and that he was occasionally grunting. Baby A was described as 'unsettled' and was still not interested in feeding. The clinical records indicate that Baby A was transferred to Neonatal at 06:00.

25. The Consultant Paediatrician who reviewed Baby A upon arrival in Neonatal (Consultant 3) made a presumptive diagnosis of sepsis (blood

infection) and a plan was put in place to carry out blood tests, perform a chest x-ray and commence intravenous fluids. Antibiotics were also administered.

26. Ms C complained to the Board about the length of time that it had taken for Consultant 1 to attend after he was asked to review Baby A. At their meetings with Ms C, the Board explained that cases had to be prioritised, and at the time Paediatric review was requested, the full extent of Baby A's condition could not be predicted. Based on the information that was available at the time, Baby A was not immediately prioritised. However, the Board conceded that Consultant 1 took longer to attend than they would expect and accepted that Baby A could have been seen sooner.

27. My complaints reviewer was provided with copies of internal email correspondence from the Board, commenting on Ms C's complaint. These show that the Board were unable to account for the delay to Consultant 1's arrival, apart from noting that there had been a shift-change at 20:30.

28. My complaints reviewer sought Adviser 2's opinion. He highlighted that Baby A was a mucousy baby who was reluctant to feed from birth. He said that this in itself is not unusual and he was satisfied that Baby A was regularly reviewed by the midwifery team who assessed him as being a well baby. Following the incident at 18:30, it took almost seven hours for Consultant 1 to attend. Adviser 2 considered this to be an unduly long interval, however, reiterated that Baby A had been assessed as being well and considered that he may have been a low priority amongst Consultant 1's other clinical commitments. Adviser 2 considered it highly unlikely that the seven hour delay had any impact on Baby A's subsequent condition.

29. Adviser 2 noted that there is no record of Baby A having breathing difficulties prior to Consultant 1's attendance at 01:14 on 13 November 2009. He also noted that there were no objective physiological observations (temperature, heart rate, respiratory rate) recorded by nursing staff prior to his arrival which would establish Baby A's wellbeing. Further reviews were undertaken by the midwives at 02:45 and 04:00 but, again, no physiological observations were recorded. Adviser 2 commented that a single observation of a raised respiratory rate would not merit intervention. However, a sustained or persistently raised respiratory rate would suggest the possibility of a significant underlying illness. He said that a raised respiratory rate is usually the first and

most consistent indicator of infection in new-born infants and this would be particularly pertinent in a baby with the additional symptom of poor feeding.

(b) Conclusion

30. There is insufficient evidence available to determine why, exactly, it took almost seven hours for a Paediatrician to attend after Paediatric input was requested at 18:30 on 12 November 2009. The most likely reason would appear to be the low prioritisation of Baby A's case.

31. Prior to Consultant 1's attendance, no mention is made in the clinical records of Baby A's rapid breathing and it was the fact that Ms C had potentially rolled on top of Baby A that led to the Paediatrician being asked to attend. I have no reason to doubt Ms C's recollection of events and I accept entirely that she and other family members raised concerns with staff about Baby A's breathing throughout 12 November 2009. The absence of any recorded physiological observations makes it impossible to comment as to whether Baby A's breathing was checked and deemed to be within normal parameters, or if Ms C was reassured that there was no problem without further examination taking place.

32. Had Baby A's breathing rate been checked and recorded when raised by Ms C and Mr B, any rapidity would almost certainly have been identified and, had there been a problem at that time, one would expect that Paediatric input would have been requested earlier. Furthermore, there would have been information available to pass on to Consultant 1 so that Baby A's case could be appropriately prioritised. As it was, Baby A was recorded as being 'well' without any physiological observations to support that assessment. I am critical of this and make a recommendation under Complaint (c) of this report. The evidence that I have seen suggests that Consultant 1 most likely did not prioritise Baby A's case, based on this assessment.

33. Regardless of the priority that was given to Baby A's case, I consider a wait of seven hours for a Paediatrician to arrive to be excessive. I, therefore, uphold this complaint.

(b) Recommendations

34. I have no recommendations to make.

(c) Conclusion

35. With reference to my comments under Conclusion (b) above, I consider that there is evidence to suggest that Baby A's case should have been treated as a higher priority. However, I accept Adviser 2's comments that the delay to Consultant 1's arrival would not have impacted on Baby A's overall condition (I comment on this in more detail under complaint (e) of this report).

36. My finding that Baby A's case should have been better prioritised is based on Ms C's assertion that concerns about his breathing were raised with staff and the fact that these concerns and Baby A's physiological observations were not recorded. Had they been, it is possible that a sustained or persistently raised respiratory rate could have been highlighted, resulting in both an earlier attendance by a Paediatrician and a higher prioritisation of Baby A's case.

37. I also consider that Consultant 1 did not have the opportunity to prioritise Baby A's case appropriately, due to incomplete information about Baby A's condition being maintained by midwifery staff. I uphold this complaint.

(c) Recommendation

38. I recommend that the Board:	*Completion date*
(i) remind midwifery staff of the importance of maintaining consistent records of babies' physiological observations.	29 February 2012

(d) The Midwife failed to recognise that there were problems with Baby A feeding when she gave him formula milk

39. Baby A was recorded on a number of occasions as not being interested in feeding. In her complaint to the Board, Ms C said that she had tried to breast feed Baby A, but he had not been interested. She reportedly raised this with the midwives, as she was keen to breast feed, however, the only advice given was to try formula milk. She complained that staff failed to realise that Baby A's failure to breast feed indicated a problem and that they should have explored the reasons behind this, rather than just giving him a bottle.

40. The Board told Ms C that, as Baby A had failed to breast feed throughout 12 November 2009, at around midnight the decision was made to try him on formula milk. They noted that this decision would have been discussed with Ms C and Ms C agreed that she had considered it important at that time that

Baby A should be fed in some way. The Board said that they would normally wait 24 hours before feeding a baby that is otherwise well.

41. Adviser 2 observed that a note was recorded at 20:30 on 12 November 2009 stating that Baby A remained reluctant to feed and putting a plan in place to feed him with a cup of formula at midnight if he had not fed by that point. Adviser 2 noted that Baby A would be around 13 hours old at midnight. At 00:45 (this note was apparently entered after Consultant 1's attendance – paragraph 22 of this report refers) on 13 November 2009, one of the midwives recorded that Baby A was not interested in feeding, having only taken around 5 millilitres of formula.

42. Adviser 2 drew my complaints reviewer's attention to the World Health Organisation's Baby Friendly Initiative, which promotes, for healthy and well-grown babies, skin to skin contact at birth and a feed interval of up to 12 hours as long as the baby has had an effective feed in the first few hours of life. Adviser 2 considered that the Board's staff complied with this initiative, although it was not entirely clear whether Baby A had an effective breast feed at any point. Additional milk was not offered until 13 hours after birth. He also questioned whether Baby A should have been considered a 'well baby' given his observed rapid breathing.

(d) Conclusion

43. I am satisfied that the Board's approach to feeding Baby A was in line with the recommendations of the World Health Organisation's Baby Friendly Initiative. However, this approach was pursued based on the assessment of Baby A as being a 'well baby'.

44. I commented under complaints (b) and (c) of this report on the lack of observed rapid breathing and staff appear to have considered Baby A to have been 'well' until Consultant 1's attendance at 01:14 on 13 November 2009. I consider that, had Baby A's breathing problems been recorded and highlighted earlier, his feeding plan may have been different. I accept, however, Adviser 2's view that a reluctance to feed is not, in itself, unusual for newborns (paragraph 28 of this report refers). The description of Baby A as being a 'well baby' may be questionable, for the reasons outlined under complaints (b) and (c). However, I view this as a separate issue to the question of whether midwifery staff should have attempted to get Baby A to feed by using formula, or whether they should have investigated the reasons for his failure to feed. I

am satisfied that, presented with a baby who is reluctant to feed, the use of formula after 12 hours is an appropriate practice. The records are unclear as to the precise time that formula feeding was attempted, and this may have been after Consultant 1 had attended and was aware of Baby A's respiratory problems. Regardless, I have seen no evidence to suggest that attempting to feed Baby A with formula would have been inappropriate, or that it should have been dismissed pending other investigations into the underlying causes of his reluctance to feed. As such, I do not uphold this complaint.

(d) Recommendations

45. I have no recommendations to make.

(e) The Board failed to diagnose PPHN despite Baby A showing clear symptoms

46. Ms C complained that the Board failed to identify that Baby A had PPHN, despite the symptoms that he was displaying throughout 12 and 13 November 2009. She raised her concerns with the Board during her meetings with them. She also asked whether Baby A's PPHN had been the result of her condition during pregnancy.

47. The Board commented that it is difficult to diagnose the cause of PPHN as it is a very rare condition with a number of possible causes. They said that the condition occurs when the blood vessels in a baby's lungs constrict much more than they should do. Anything that interferes with the oxygen flow getting into the lungs could cause PPHN. The Board were satisfied that Baby A did not encounter any foetal distress prior to his birth, as he had been closely monitored in the womb. He had also been monitored after birth and his condition did not indicate foetal distress. They conceded, however, that they could not say with certainty that the condition was not caused in the womb.

48. With regard to the diagnosis of PPHN, the Board told Ms C that breathing difficulties were common in babies, as they have fluid in their lungs to get rid of. Some babies take longer than others to adapt to life outside the womb. Ms C asked why Baby A was not given oxygen when his breathing problems were identified. The Board said that it could be harmful to babies to give them oxygen when it is not required. They would only do this when the baby's oxygen levels are low. Baby A's oxygen levels were not low initially, so it was not deemed to be appropriate to provide him with oxygen. The Board told Ms C that there was no indication initially that Baby A would develop PPHN. Whilst

all babies who develop this condition start off with similar symptoms, only a very small percentage go on to develop PPHN, so this outcome would not have been presumed by staff caring for Baby A. They said that once Baby A's oxygen levels dropped, he was provided with oxygen and received appropriate treatment.

49. Ms C raised particular concerns about the lack of any treatment for Baby A between 01:00 and 06:00 on 13 November 2009. Consultant 1 had noted his rapid breathing rate but had only asked that his condition be monitored. The Board reiterated that Baby A's symptoms were not unusual and that 'mucousy' babies often have some difficulty breathing initially. This normally settles in 12 to 24 hours, however, can be indicative of more serious underlying problems. As such, the baby's condition is monitored. In Baby A's case, he was found to be getting air into his lungs upon examination.

50. The clinical records indicate that when Baby A was examined by Consultant 3 following transfer to Neonatal at 06:00 on 13 November 2009, it was noted that he was still breathing rapidly and grunting. His oxygen saturations were found to be normal at 95 percent in air. A presumptive diagnosis of sepsis (blood infection) was made. Antibiotics were administered and a plan put in place to collect blood tests, perform a chest x-ray and commence intravenous fluids. A blood gas was taken, which showed a low pH balance suggesting a mild metabolic acidosis (overproduction of acid in the body). Saline was provided to address this.

51. Baby A was reviewed at 10:30 on a ward round. At this time he was still considered to have a sepsis, but the x-ray was reviewed and a possible diagnosis of pneumonia made. The records indicate that staff were finding it difficult to record Baby A's oxygen saturations, but that he was receiving oxygen intranasally (through his nose). Baby A was reviewed at 12:00 and 14:00. It is recorded that it was more difficult than expected to feel a pulse in his groin. One of the doctors treating Baby A contacted the on-call Consultant Neonatologist (Consultant 4) at the Queen Mother's Hospital in Glasgow. Consultant 4 proposed a diagnosis of PPHN.

52. Baby A was given oxygen via a headbox (a clear box placed over the head into which oxygen is pumped) and nasal prongs (tubes placed in the nose to administer oxygen). At 18:30 it is recorded that he was receiving 40 percent oxygen via the headbox and 1 litre per minute intranasally. Between 13:00 and

18:30 his oxygen saturations did not rise above 90 percent, but were recorded as being more stable in the 80s.

53. Baby A was reviewed by Consultant 2 at 18:45. Consultant 2 noted that he was receiving 70 percent oxygen via the headbox as well as intranasal oxygen. A decision was made to administer oxygen via a re-breathing mask (a mask with a reservoir bag which can deliver higher concentrations of oxygen). At 21:00 Consultant 2 noted that Baby A's oxygen saturations were improved at 90 to 93 percent. He asked for 100 percent oxygen to be continued overnight. The nursing notes record that Baby A was to be tried on oxygen at 1 to 2 litres per minute at 09:00 the following morning if he remained well overnight.

54. Baby A maintained good oxygen levels in the high 90s overnight. At 10:00 on 14 November 2009, the nursing notes record that he was tried, unsuccessfully on intranasal oxygen, his saturations falling rapidly to the 80s. He was recommenced on the re-breathing mask. His oxygen levels increased again. However, at 13:40 one of the nursing staff noted that his colour was poor and that he had become unsettled. An urgent review was requested.

55. The clinical records indicate that Baby A's condition deteriorated around 15:00. He is described as looking grey and jaundiced with oxygen saturations of 29 percent. His heart rate dropped below 60 beats per minute and cardiac compressions (heart massage) were commenced. His oxygen levels improved to 60 percent. Baby A was intubated and ventilated and his oxygen levels increased to the point where cardiac compressions could cease. He was stabilised and transferred to Hospital 2.

56. Adviser 2 considered Baby A's initial admission to Neonatal to be appropriate, as well as the initial diagnosis of an infection. He was satisfied that Baby A's treatment was escalated appropriately and that other causes of his symptoms were considered. Adviser 2 noted that Baby A required large volumes of oxygen within hours of transferring to Neonatal. This was administered via a headbox and intranasal tubes initially, but following a change of staff at 18:30 the diagnosis of PPHN was confirmed and larger amounts of oxygen were provided through the re-breathing mask. Adviser 2 expressed concern at the use of the re-breathing mask, noting that although this is used for adults and older children, it would not be considered standard neonatal care. He commented that this was the only time that he had ever encountered this practice in a neonatal unit.

57. Adviser 2 noted that, whilst his condition stabilised following introduction of the re-breathing mask, there was a gradual decline in Baby A's oxygen levels from 11:00 on 14 November 2009. This was not recognised when he was reviewed on the ward at 12:45 and his overall condition was felt to be improving with plans to de-escalate his care. Although his earlier failure to adapt to a more standard oxygen regime was noted in the nursing notes, this was not noted in the medical notes. Adviser 2 highlighted that shortly after Baby A was noted as improving, he became increasingly unsettled with deteriorating oxygen levels, resulting in a circulatory collapse. He considered the decision to provide 15 litres per minute of oxygen via the re-breathing mask to be highly questionable and believed that it artificially masked the seriousness of Baby A's condition and how little reserve he had. Adviser 2 said that, as a general rule, it is better to treat PPHN aggressively and early to prevent the terminal spiral that can happen, and indeed did happen in this case. He considered that it would have been more appropriate to escalate the respiratory support provided to Baby A by ventilating and sedating him.

58. Adviser 2 also commented that, despite changes to his condition following the 12:45 review on 14 November 2009, no further blood gases were requested or performed. The last documented blood gas was at 09:24, before his condition began to change. He felt that further blood gases should have been considered by 14:00 at which point Baby A had been agitated with oxygen levels no higher than 90 percent for two hours. He considered that the decline in Baby A's condition could have been identified at an earlier stage and that appropriate intervention and escalation of his care at this point may have prevented his subsequent circulatory collapse.

(e) Conclusion

59. I accept the Board's comments regarding the symptoms that Baby A displayed in the maternity unit and the fact that these are not uncommon in newborns. I also accept that it would not have been possible for the Board's staff to predict that Baby A would develop PPHN and, therefore, did not find it unreasonable that his condition should be monitored following Consultant 1's examination at 01:14. This monitoring highlighted the fact that Baby A's condition was not improving and led to his transfer to Neonatal, which I found appropriate.

60. The investigations carried out by staff in Neonatal were appropriate and their decision to consult Consultant 4 led to the diagnosis of PPHN. I was satisfied with the process that led to this diagnosis and did not find that it was unduly delayed.

61. It is clear that Baby A's oxygen levels were low and that he required large amounts of oxygen soon after his admission to Neonatal. This was recognised and taken seriously by Neonatal staff. That said, I accept Adviser 2's comments regarding the use of the re-breathing mask and the likelihood that this gave a false impression of Baby A's condition. I consider that, while the mask was providing an inaccurate picture of Baby A's oxygen levels, opportunities were being missed to take action that would identify and resolve his underlying problems.

62. I did not find that the Board failed to diagnose Baby A's PPHN, or that they failed to make this diagnosis in reasonable time. Having made the diagnosis, however, their subsequent treatment decisions masked important indicators of the true extent of Baby A's condition. Taking all of the above into account, I uphold this complaint.

(e) Recommendation

63. I recommend that the Board:	*Completion date*
(i) present Baby A's case, and Adviser 2's comments, to Neonatal staff to highlight any learning points that can be taken from this case.	29 February 2012

(f) The Doctor treating Baby A did not know how to increase the oxygen when this was requested by the Consultant

64. In her complaint to the Board, Ms C said that one of the registrars caring for Baby A in Neonatal did not know how to increase the level of oxygen he was being provided with when asked to do so by one of the consultants. She questioned the registrar's competence and said that he clearly had no idea where the oxygen was or how it should be administered.

65. Ms C was unable to name the registrar and the Board's enquiries established that it was probably a locum. They explained to her that there was a shortage of experienced Paediatricians and that locum staff, therefore, had to be used. They noted that the oxygen equipment is more difficult to use than it looks but that all nursing staff were able to use it. In this case, a nurse had

stepped in and assisted the registrar. The Board expressed their disappointment that the locum registrar had not been able to use the equipment.

(f) Conclusion

66. This incident is not recorded in the clinical records and there is no means of establishing the staff member involved. I accept the Board's comments that the equipment is difficult to use and that assistance was available from nursing staff. However, I would expect a trained registrar to be able to use the apparatus. In the absence of any objective evidence to establish what happened, I do not uphold this complaint.

(f) Recommendations

67. I have no recommendations to make.

(g) Ms C was refused entry into neonatal when Baby A was admitted and she was not called when he received a heart massage

68. Ms C complained that, when Baby A was transferred to Neonatal, she was not allowed to go with him. Instead, she remained in the maternity unit. She also complained that she was not told when Baby A was given a heart massage. She said that she would have liked to have been there with him, but staff had told her about the deterioration in his condition after the event.

69. When commenting on a draft version of this report, the Board stated that Ms C and Mr B had been present in Neonatal prior to Baby A's deterioration. However, they were not present at the time of his deterioration, having left the room. As the Board's priority was to treat Baby A, rather than to inform Ms C and Mr B, they were told of his cardiac massage as soon as practically possible after the event.

70. The clinical records note that Baby A was 'not with mum' when he transferred to Neonatal. During their meetings with Ms C, the Board told her that it is their normal practice to allow parents into Neonatal. The exception to this would be where there is another baby present, receiving treatment. There is no indication in the clinical records as to whether this was the case when Baby A was taken to Neonatal, however, the Board conceded when talking to Ms C that they did not recall another baby being treated in Neonatal at the time of Baby A's attendance.

(g) Conclusion

71. In the absence of contemporaneous records, I accept the Board's position that their normal practice is to allow parents to be with their children in Neonatal and that there was no reason for this not to have happened in Ms C and Mr B's case.

72. I commented under complaint (e) of this report on the circumstances leading to Baby A's heart massage. His deterioration appears to have been rapid, following a relatively stable period, and I consider that treating him should have been prioritised over contacting family members. I note the Board's comment that Ms C and Mr B had been allowed access to Neonatal prior to Baby A's deterioration, but also their apparent acceptance of Ms C's assertion that they were initially denied access. The evidence that I have seen suggests that the Board's normal practice was not followed and Ms C and Mr B's access to Neonatal during the hours preceding Baby A's deterioration was unduly restricted. With this in mind, I uphold this complaint.

(g) Recommendations

73. I have no recommendations to make.

General Recommendation

74. I recommend that the Board:	*Completion date*
(i) apologise to Ms C and Mr B for the issues highlighted in this report.	29 February 2012

75. The Board have accepted the recommendations and will act on them accordingly. The Ombudsman asks that the Board notify him when the recommendations have been implemented.

Annex 1

Explanation of abbreviations used

Ms C	The complainant
Baby A	Ms C and Mr B's son
Hospital 1	Dumfries and Galloway Royal Infirmary
Mr B	Ms C's partner
Consultant 1	A locum Paediatric Registrar working for the Board
Consultant 2	A Consultant Paediatrician for the Board
PPHN	Persistent Pulmonary Hypertension of the Newborn
Hospital 2	Yorkhill Hospital, Glasgow
The Board	Dumfries and Galloway NHS Board
Adviser 1	a maternity and neonatal health specialist
Adviser 2	a consultant neonatologist
The Obstetrician	An Obstetrician employed by the Board
Consultant 3	A Consultant Paediatrician for the Board
Consultant 4	The on-call Consultant Neonatologist

mmHg	Millimetres of mercury

Annex 2

Glossary of terms

Cardiac compressions	Heart massage
Diastolic	The lower reading in a blood pressure measurement
Headbox	A clear box placed over the head into which air is pumped
Hypertension	High blood pressure
Intranasally	Through the nose
Metabolic acidosis	Overproduction of acid in the body
Nasal prongs	Tubes placed in the nose to administer oxygen
Pre-eclampsia	a complication of pregnancy, the symptoms of which include high blood pressure, protein in the urine and fluid retention

Annex 3

List of legislation and policies considered

World Health Organisation: Baby Friendly Initiative