

**Expert Nursing Advisory Report
into the circumstances surrounding the death of
Raychel Ferguson.**

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for PSNI**

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My name is Susan Chapman and I am a Nurse Consultant at Great Ormond Street Hospital for Children NHS Trust in London.

I qualified as a Registered General Nurse (RGN) in 1988 and as a Registered Sick Children's Nurse (RSCN) in 1994. I also hold additional qualifications in Intensive Care Nursing, an Advanced Diploma in Child Development (AdvDip) and a Master of Science degree (MSc) in Paediatric Critical Care (Advancing Nursing Practice).

I have worked within paediatric nursing since 1992 and was appointed to my present post in 2003.

I have been asked to act as expert nursing advisor to the PSNI in their investigation into the circumstances surrounding the death of Raychel Ferguson in 2001.

I have received a copy of the following documents:

- a. The case notes from Altnagelvin Hospital relating to Rachel Ferguson
- b. Depositions and statements from Raychel's mother and the medical and nursing staff interviewed after Raychel's death
- c. Reports from Dr's Jenkins and Sumner
- d. The Autopsy Report
- e. The Verdict on the Inquest into Raychel's death

I have examined all the documents in detail before preparing this report and have been asked by PSNI to advise on the role played by each nurse involved in Raychel's care.

I shall discuss key aspects of Raychel's care in detail and describe the role and responsibilities of the nurse. The role played by individuals within each section will be highlighted. The key areas that will be discussed are:

- 1.0 Overview and background to Raychel's case
- 2.0 The Initial nursing assessment
- 3.0 The initial nursing care
- 4.0 The nursing care in the immediate post-operative period
- 5.0 The nursing role in administering intravenous fluids to children
 - Calculating 'maintenance' fluids
 - The type of fluid
 - Monitoring fluid balance
- 6.0 The nursing role in managing nausea and vomiting in children
- 7.0 The ongoing nursing care
- 8.0 The nursing role in documentation
- 9.0 Overall comments on Raychel's nursing care.

1.0 Overview and background.

1.1 Raychel was admitted to the Children's ward (ward 6) at Altnagelvin Hospital on the 7th June 2001 after attending the Accident and Emergency (A&E) Department complaining of abdominal pain.

1.2 She was taken to theatre in the early hours of the following morning, where she underwent removal of her appendix under general anaesthetic. She returned to ward 6 at approximately 01.55 and initially appeared to making an un-eventful recovery. However, at approximately 03.00 on June 9th, Raychel was found by the nursing staff to be unresponsive and having a seizure.

1.3 Raychel's condition rapidly deteriorated and she was intubated and taken for an urgent CT scan of her brain. She was subsequently transferred to the Intensive Care Unit at Altnagelvin and then to the Paediatric Intensive Care Unit at Belfast where she died on the 10th June 2001. A post-mortem examination showed that she died from cerebral oedema caused by hyponatraemia.

1.4 I will review the nursing care that Raychel received during her admission to Ward 6 at Altnagelvin Hospital from the time she was admitted to the Children's Ward until her transfer to the Intensive Care Unit at Altnagelvin. As there is no suggestion that the care Raychel received in the Accident and Emergency Department, Operating Theatre or Intensive Care influenced the manner of her death, no comment will be made on the nursing care she received in these departments.

2.0 Initial assessment:

2.1 Raychel was transferred from A&E at approximately 21.50 on June 7th 2001. The admitting nurse was SN Daphne Patterson. At this time, her role would be to welcome Raychel and her parents to the ward, performed her initial nursing assessment, plan her initial nursing care and subsequently oversee Raychel's nursing care for the remainder of that shift.

2.2 SN Patterson was also identified as Raychel's 'Named Nurse'. This role varies between differing hospital and units, but generally involves the Registered Nurse being the person who plans and oversees the patients overall care and acts as a point of contact for the parents and family. I cannot comment on what this title means 'in practice' at Altnagelvin hospital, but it would not affect the role and responsibilities expected of SN Patterson in caring for Raychel at this time.

2.3 The initial nursing assessment at Altnagelvin Hospital is documented on a computer-generated form (the Front Assessment Print) as seen on pages 111-114. The form asks for information about Raychel and her family and has been completed comprehensively. The form identifies that the information entered by SN Patterson was gained from Raychel's parents.

2.4 Note is also made of Raychel's initial observations of temperature, pulse, respirations and blood pressure (page 112). The majority are within the normal limits for a child of Raychel's age, except for the respiratory rate, which is recorded as 2. I suspect that this an error when the figure was

entered into the computer as the corresponding observation chart (page 74) notes the respiratory rate as 24 with the temperature, pulse and blood pressure recordings all reflecting the values noted on the Front Assessment chart.

2.5 SN Patterson notes that Raychel was 'complaining of slight central abdominal pain on admission' and that her 'colour' is 'pale' (page 74). This would be expected in a child with suspected appendicitis who has received strong pain-relieving drugs recently (Raychel was given 2mgs of cyclomorph in A&E at 20.20). SN Patterson also notes Raychel's pain-rating score as '0-1'. There are many different pain assessment tools available, and although I cannot comment on the one was in use on ward 6, it provides evidence that SN Patterson completed Raychel's initial assessment thoroughly.

2.6 Overall, the nursing assessment appears to have been completed thoroughly and to a standard expected of a Registered Nurse.

3.0 Initial Nursing Care:

3.1 SN Patterson, as the admitting nurse, would be responsible for ensuring that Raychel was adequately prepared for theatre, that any pre-operative instructions from the medical team were carried out and that ongoing nursing care needs (such as caring for her intravenous infusion of fluids, assessing her for adequate pain relief etc) were maintained. SN Patterson would also be responsible for monitoring Raychel's condition and reporting any concerns to the appropriate professional.

3.2 The Parenteral Nutrition Fluids Prescription Sheet (page 85) indicates that Raychel was to receive fluid 'No 18'. SN Patterson prepares and checks the fluids with a second practitioner, who I believe is SN Fiona Bryce, as they both sign the prescription chart indicating that Sol 18 is started at 22.15. Although there is no indication on the form that this prescription is for Raychel Ferguson, nor is the date visible, this record may be the reverse side of a form where Raychel's details are recorded.

3.3 SN Patterson would be responsible for overseeing this procedure from the nursing perspective. I shall discuss the nursing role and responsibilities in administering intravenous fluid to children in section 5.0 as these principles apply to all the practitioners involved in Raychel's care.

4.0 The Nursing Role and Responsibilities in caring for children in the immediate post-operative period:

4.1 When children have undergone a General Anaesthetic (GA) for any surgical procedure, the nurse caring for the child is responsible for ensuring that they monitor the child closely as they recovery from the GA, to observe for any post-operative complications.

4.2 The child should have frequent observations of pulse, respirations and conscious level initially and the blood pressure and temperature should be taken at regular intervals. Any wounds should also be checked at these times for signs of excess bleeding, inflammation or any other abnormalities. The

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child's pain should also be assessed and analgesia administered as appropriate. SN Patterson, in planning Raychel's post-operative care, documents the level of observation expected on page 108, which is appropriate for a child of Raychel's age and condition.

4.3 Raychel was observed closely immediately following surgery, with observations recorded by SN Patterson at 01.55 and 02.15, and by SN Noble at 02.35, 03.00, 03.30, 04.00 and 05.00. They were then recorded at 2 hourly intervals until 09.00 and approximately 4 hourly thereafter. Raychel's level of pain was also assessed at these times and appears to be under control. Her wound site was noted as 'satisfactory' on each occasion. All Raychel's observations were within the normal limits for a child of Raychel's age and condition and she appeared to be making an uncomplicated post-operative recovery.

4.4 The nursing staff observed and cared for Raychel in the immediate post-operative to a good and appropriate standard.

5.0 The Nursing Role and Responsibility in administering Intravenous Fluids to Children:

5.1 Fluid management is a key part of caring for children. All paediatric nurses should have basic understanding of the goals of intravenous fluid management, how to administer, monitor and record this and how to calculate 'normal' fluid requirements. Although nurses are not expected to prescribe a fluid regime, they should be expected to understand 'normal dosages' in order to administer the therapy safely.

5.2 Intravenous fluids may be administered for a number of reasons including providing normal 'maintenance' fluids, restoring fluid deficits and replacing ongoing fluid losses from vomiting and diarrhoea. The underlying reason for administering intravenous fluids influences the type of fluid given and the rate it is administered.

5.3 Calculating 'maintenance' fluids:

5.4 Intravenous fluids are often administered when a child is unable to drink (due to vomiting and/or diarrhoea or after surgery for example) in order to prevent dehydration. This is often referred to as 'maintenance' fluids. In children, the amount of fluid administered is based on body weight. Although there are a number of different ways to calculate this value, the one I have used throughout my paediatric practice to calculate 'normal' fluid requirements for a child of 25kgs is as follows:

5.5 For the first 10 kilograms of body weight, the child should receive 100mls per kilogram per day.

For each kilograms of body weight over 10kgs (but below 20 kilograms), they should receive an additional 50mls per kilogram per day.

For each kilograms of body weight over 20kgs (but below 30 kilograms), they should receive an additional 25mls per kilogram per day.

5.6 This formula will calculate a child's full fluid requirements. However there are circumstances when the full fluid requirement is either not required or is inadvisable. Circumstances can include the child taking in fluids orally

(and therefore only needing the intravenous fluid to make up the deficit that they cannot drink orally) or when the child may be 'physiologically stressed' and at risk of retaining fluid (such as when they are critically ill or after undergoing surgery).

5.7 In my experience, the intravenous fluids administered to children immediately following surgery are usually reduced to between 60% and 80% of the child's full maintenance requirements. The level of reduction is dependent on the condition of the child, the severity of the surgery (whether it is minor or major surgery and the overall length of operation) and the personal preference of the surgeon or paediatrician overseeing the child's care. The length of time that intravenous fluids are restricted for also varies according to the same variables described above.

5.8 Although I would not expect a competent nurse to be able to describe the physiology behind the need to restrict the amount of fluid in the post-operative period, I would expect them to know how to calculate full fluid requirements (and therefore calculate the correct amount for a child restricted to, for example 80% fluids) for a child based on their weight. I would also expect a nurse to question if a fluid prescription deviates from the normal protocol or usual custom and practice of the ward.

5.9 Raychel's weight was recorded as 25kgs and therefore her fluid requirement (using the calculation described above) should have been 1625mls per day (or 67.7mls per hour) to maintain her full fluid requirements. However, after she had undergone surgery, it would be usual to restrict the amount of intravenous fluid intake to somewhere between 60 – 80% of the normal requirement. This would make the post-operative fluid requirement for a child of Raychel's size between 41mls and 54mls per hour.

5.10 I am unsure how the medical and nursing team normally calculated the volume of intravenous fluids for children in ward 6. A note made on the parenteral nutrition fluid sheet (page 83) indicates that another professional calculated Raychel's full maintenance requirements as '65ml/hr' (a value close to my calculation of 67.7 mls). It is possible that this note was made by the paediatric SHO who attended Raychel when she was fitting.

5.11 From the statements of those involved with Raychel's care, it appears to be normal custom and practice to administer Sol 18 at the full maintenance rate to children immediately following surgery. Although the nurse queried the type of fluid initially prescribed for Raychel (section 5.14), they appear to accept the amount of 80mls per hour as appropriate for a child of Raychel's size. There would be no reason for the nurses involved in Raychel's care to question the amount of fluid administered if it was normal custom and practice not to restrict intravenous fluid intake in the immediate post-operative period. It also appears that there were no protocols or care pathways in operation at the time that stated the level and type of intravenous fluid intake in children post-operatively. Indeed, when questioned, none of the nursing team had heard of hyponatraemia in children in these circumstances.

5.12 Intravenous fluid may also be administered to 'replace' ongoing losses due to vomiting or diarrhoea. These losses are generally replaced by an equal volume of 0.9% saline with additional potassium. This does not form part of

the 'maintenance' fluid, but should be prescribed on the fluid chart with clear instructions for its administration. It is important that the attending doctors and nurses are aware of the aim of the regime (to replace ongoing losses and correct dehydration) in order to ensure it is administered safely.

5.13 The Type of fluid:

5.14 In her deposition (page 340 – 344), SN Noble notes that SN Patterson informed her that the surgical SHO Mr Makar initially prescribed an infusion of Hartman's solution at 80mls per hour for Raychel. SN Noble asked Mr Makar to change the prescription to Sol 18 as this was the normal custom and practice on the ward. I have not found the prescription of Hartmann's solution initially prescribed by Dr Malik, but the statements of SN Noble and Dr Malik himself describe these events.

5.15 In the deposition of SN Noble, she comments that she 'was not concerned with Raychel's vomits as fluids were being replaced IV.' (page 344). This statement is concerning as, although Sol 18 is a suitable fluid for use as 'maintenance' fluid in children, it is not an appropriate fluid to replace lost fluid and electrolytes from vomiting (section 5.12). An additional fluid, such as normal saline with additional potassium would be used for this purpose and the amount titrated according to the amount of fluid lost through vomiting. Ultimately, however, it would remain the responsibility of the doctor to assess and prescribe an appropriate fluid to 'replace' Raychel's additional fluid losses from vomiting if this was required, not the nurse. Interestingly, there was no alteration to the fluid regime by the medical team after the nurses had highlighted the extent of Raychel's vomiting, implying that they did not feel that additional fluid replacement was necessary. Further discussion on the nursing role in managing and monitoring nausea and vomiting is addressed in section 6.0.

5.16 The Fluid Prescription Chart:

5.17 The prescription of Sol 18 at 80mls/hour is prescribed by Dr Malik can be seen on page 85, along with the signature of SN Patterson and SN Bryce confirming that it was commenced at 10.15pm. Although this prescription is not dated, I believe it is for June 7th and is the prescription for the initial infusion started after Raychel's admission to ward 6. Below this is another partial prescription for Hartmann's solution at 80mls/hour that appears to have been written, scribbled out and signed for by Dr Vijay Gund, the anaesthetist involved in Raychel's care. In his statement, Dr Gund says that Raychel arrived in theatre without any IV infusion in progress and was subsequently given Hartmann's solution, which was discontinued before her transfer back to the ward. This is supported by the Recovery Area Care chart (page 67), which notes that the IV infusion is to be recommenced on the ward.

5.18 The fluid balance chart (page 84) supports that the IV infusion of Sol 18 was recommenced at approximately 01.00, as another 80mls had been infused by 02.00 on June 8th. There is no separate prescription for this second infusion, but it may be that the original bag of Sol 18 was re-attached and re-started. If the original bag of Sol 18 (prescribed on page 85) was re-attached, this would have continued for a further 11½ hours, making it due to be changed at approximately 12.30 on June 9th.

5.19 A second prescription for 1000mls of 'Sol 18' can be seen on page 83. This is correctly prescribed (but I am unable to determine the Doctor's signature) and is administered by SN Rice and possibly a SN Hill at 12.10 pm. This infusion also continued at 80mls/hour, meaning that this bag would have taken approximately 12 ½ hours to infuse. The prescription is not dated, but I believe this was for the June 8th and followed on from the prescription on page 85. If this continued uninterrupted, this would have been completed at approximately 00.40 on June 9th.

5.20 The fluid balance chart (page 82) indicates that this infusion of Sol 18 continued until 04.00 without any indication of the bag being changed. The amount of fluid in each individual bag is always slightly over 1000mls and varies slightly from bag to bag. Although it is impossible to determine the exact time to the minute that each bag of fluid would be completed, I would have expected the bag to have needed changing sometime between 01.00 and 04.00 unless the infusion had been suspended or stopped for a period of time. Recording the exact amount of fluid infused from the IMED (as discussed in section 5.22) would clarify whether another it is likely that another bag of fluid was used. There is no indication that if another bag of fluid was required, that the prescription would have changed from the Sol 18 currently in progress. I have known fluid prescription charts that have allowed bags to be replaced within a 24-hour period without requiring a separate prescription for each individual bag. However, they require the prescriber to state the length of time the prescription should continue for and allow the nurse changing the bag to sign and state the batch number for each individual bag used.

5.21 Monitoring Fluid Balance:

5.22 Good nursing practice is to perform hourly checks on children receiving intravenous fluids. This includes assessment of the rate of infusion (to check that it remains as prescribed), documentation of the pressure generated by the fluid infusion if available (to give an indication of cannula patency) and recording on the fluid chart of the actual amount of fluid infused (not the amount presumed to have been infused). This value can be found on the 'drip counter' or fluid infusion device (such as the IMED noted on the fluid prescription chart – page 85) and represents the most accurate assessment of the actual amount of fluid infused.

5.23 Entries on the fluid chart (pages 84 and 82) indicate that the Sol 18 was indeed infusing at the prescribed rate of 80mls per hour. The documentation is a little confusing as the 'Amt.' column has consistent entries of '150'. I am uncertain about the significance of the entries of '150', as I would have expected a figure of '80' to be recorded to reflect the amount of Sol 18 infused over that hour. The 'Total' column does appear to correspond to the expected running total for the Sol 18 (i.e a figure increasing in increments of 80 every hour).

5.24 Recording the amount of fluid infused by the fluid infusion device normally results in hourly recordings of values that deviate slightly from the

rate of infusion that is prescribed, as it is virtually impossible to ensure that you arrive to perform the assessment at the same time each hour. It does however represent the most accurate way of recording the actual (rather than presumed) amount of fluid that the child receives, as well as offering an additional safeguard against infusion device malfunction, accidental changes in programming or user error. I believe that the documenting of fluid infusions relied on a presumption that the rate of infusion equalled the actual volume of fluid that was delivered to Raychel. Although there is no question in my mind that Raychel's received an incorrect rate of the fluid infusion, I would recommend hourly assessment of the actual amount of fluid infused (as recorded on the pump), rather than presuming that the set rate has been delivered.

5.25 The fluid chart provides a record that Raychel's fluid infusion was checked on an hourly basis. The nursing staff also initialled most of the entries, which is often preceded by a tick. It may be that this signified that the cannula patency or entry site was checked, although a column specifically for this purpose was left largely blank.

5.26 The fluid chart shows entries from a number of nurses who cared for Raychel, including Staff Nurse's Patterson, Noble, Rice, Bryce and Gilchrist. There may also be entries from other personnel, whose initials I could not decipher (on the post-operative morning of June 8th and later at 20.00).

6.0 The Nursing Role and Responsibilities in managing nausea and vomiting in children:

6.1 Nausea and vomiting are common symptoms in illness in children. It can be especially common in the post-operative period, particularly following abdominal surgery.

6.2 Vomiting was a problem for Raychel following her surgery. She is noted to have vomited on a number of occasions on the fluid balance chart for 8th – 9th June (page 82). At 08.00 she is noted to have vomited, but the amount is not noted by the nurse documenting this (the initials may possibly be SN Patterson). Another 'large vomit' is noted at 10.00, possibly by SN Rice (the initials appear to be MR). Raychel is then reported to have 'vomited ++' at 13.00 and 16.00. The first entry is possibly initialled AR and may belong to Nurse Rolstron, who was on duty that day, whilst the second is noted as MR and is probably SN Rice again.

6.3 There are no further entries referring to Raychel vomiting until 21.00, when SN Gilchrist notes 'vomiting coffee grounds ++'. She makes further entries at 22.00 and 23.00 of 'vomited small amounts x 3' and 'small coffee ground vomit' respectively.

6.4 Ideally all losses, such as urine or vomit should be measured if the child's fluid balance is being monitored closely. If it is not possible to measure the amount of vomit, it can be described in a number of ways. The '++' documented on the fluid chart is generally accepted to mean a moderate-sized amount (as the range of '+' to '++++' is generally used).

6.5 Coffee-ground vomiting describes vomit that has a granular appearance and is brown or black in colour. It is usually the result of bleeding in the stomach or upper gastro-intestinal tract (although occasionally it may result from small amounts of blood that has been swallowed, following a nose bleed, for example). Coffee-ground vomiting is not normal and may result from gastric irritation due to stress or following prolonged severe vomiting or retching.

6.6 The nursing response to coffee-ground vomiting should be to ensure that is reported to the medical team, who would then be responsible for assessing and managing the condition. SN Gilchrist first observed the coffee-ground vomiting at 21.00 and again at 23.00 (page 82) and reported it to the surgical Junior House Officer on call at approximately 21.30 (page 345).

6.7 According to the fluid balance chart, Raychel vomited 9 times from 08.00 to 23.00 on the first post-operative day. In the deposition of Marie Ferguson, Raychel's mother comments that she vomited at 12.00 and as the day progressed she 'became sick more often and at one point she was vomiting bile on the bed' (page 23). After leaving the ward at 15.00, Mrs Ferguson returned at 15.45 to find Raychel was 'continually vomiting' and reported that the 'doctor gave her an injection...to stop her being sick'. Mrs Ferguson comments again on the vomiting persisting even after the injection was given sometime around 17.30 - 18.00 (administration of zofran noted on page 34 and 338). Although she does not state the number of times that she observed Raychel vomiting, it is possible that this was more than was noted on her fluid chart, as there is no record of Raychel vomiting between 16.00 and 21.00. SN Rice comments that she noted no vomiting from 18.00 to 20.00 when she went off duty (page 339).

6.8 In her deposition SN Noble comments that Raychel vomited whilst she was on her break, sometime after 00.35 (page 40) although she clarifies that this not noted on the fluid balance chart.

6.9 Prolonged or repeated vomiting can be both distressing for the child and result in loss of fluid and electrolytes, which may need to be replaced. The passing of a naso-gastric (NG) tube allows the stomach to be drained and can reduce or stop the vomiting. Passing a NG tube also allows the gastric losses to be monitored more closely, allowing accurate replacement with a suitable IV solution, such as 0.9% sodium chloride with additional potassium. The decision to pass a NG tube in a child who has recently undergone abdominal surgery is generally the responsibility of the medical team, although this may be a joint decision with the nursing staff.

6.10 In Raychel's case, passing a NG tube may have alleviated some of the vomiting and retching that Raychel experienced, especially as she did not respond well to the initial dose of anti-emetic drugs at 17.30 (zofran 2mg). Normal practice is to replace at least some of the gastric losses from a NG tube if these are persistent or excessive, in order to prevent dehydration and electrolyte imbalances.

6.11 The decision to replace vomit or NG losses with intravenous fluid is a medical one. Likewise, the decision on what fluid to use and the proportion of gastric losses to be replaced is a medical one. The nursing role is to monitor

the losses, report if they become excessive to the relevant medical team and monitor the fluid intake and output overall.

6.12 Each nurse who attended Raychel would be responsible for ensuring the fluid chart was kept up to date. For example, if she vomited whilst her primary nurse was absent, it would be the responsibility of the nurse who attended her at this time to note this on the fluid chart and report back to the Raychel's primary nurse when she returned. During Raychel's admission, she could potentially have been attended to by any one of the nurses on duty on that shift as paediatric nursing relies on strong teamwork.

6.13 It would be the role of Raychel's primary carer to monitor Raychel's condition overall. If her vomiting were severe or prolonged (as in Raychel's case), the primary carer would be responsible for reporting this to the appropriate person, either the nurse-in-charge of the ward or to the medical staff directly.

6.14 SN Rice reported that Raychel had vomited 'a couple of times' to the surgical junior house officer who administered a dose of intravenous zofran (an anti-emetic) at approximately 18.00 (page 338). Furthermore, on the night shift, SN Gilchrist discussed Raychel's vomiting with SN Noble and informed the surgical junior house officer at approximately 21.45 on 8th June (page 345), who administered a dose of cyclizine (another anti-emetic).

6.15 The nurses took appropriate action by informing a member of the medical team about Raychel's repeated vomiting. They continued to observe Raychel and informed a doctor again when the vomiting persisted. The responsibility for the type and amount of intravenous fluid lies with the medical team. The management of the nausea and vomiting with drugs and the decision whether or not to pass a NG tube again lies with the medical team (the nurses at Altnagelvin Hospital note that they are not able to administer intravenous drugs such as anti-emetics – page 345). The nursing role is to monitor the child's progress and response to treatment and to ensure that the medical team are made aware of any ongoing problems.

7.0 The Ongoing Nursing Care:

7.1 Generally, each child on a children's ward is assigned to a member of the nursing team at the beginning of each shift. If the nurse is not a Registered Nurse (ie a healthcare assistant, auxiliary nurse or a student), then the care would be supervised by an allocated Registered Nurse.

7.2 The allocated Registered Nurse would be responsible for planning and overseeing Raychel's care for that shift. The care needs would broadly include monitoring Raychel's progress and reporting any concerns to the nurse-in charge, doctor or other appropriate professional, attending to Raychel's needs, including hygiene needs and pain management and keeping Raychel and her family informed of her progress. This nurse would be responsible for ensuring that Raychel and her care needs were met, either by delivering the care directly or co-ordinating and / or supervising others who may have been involved. From the documentation I have seen, it appears that SN Patterson was the allocated carer during the night shift on June 7th 2001,

SN Michaela Rice (nee Mc Cauley) on the day shift of June 8th and SN Gilchrist on the night of June 8th.

7.3 Although nursing care is organised in this way, it also relies on the nurses working together as a team. Some 'tasks' may require the assistance or involvement of other nurses, or the child and family may require immediate help and ask the nearest nurse for assistance. This was certainly the case for the nurses involved with Raychel. Therefore, all the nursing staff on duty would potentially be involved (directly or indirectly) in caring for Raychel.

7.4 The three nurses who acted as Raychel's allocated Registered Nurse (SN Patterson, SN Rice and SN Gilchrist) played a key role in caring for her. However, valuable information can be gained from other members of the team, such as Nursing Auxillary Lynch and SN Noble, who found Raychel fitting. In order to provide a complete review of Raychel's case, it may be necessary to interview all nursing staff on duty on the children's ward for the duration of Raychel's admission.

7.5 From the documentation I have reviewed, it would appear that Raychel's nursing care was both appropriate to her needs and delivered to a good standard overall.

7.6 Although concerns have been raised about the amount and type of fluid administered to Raychel (sections 5.10 and 5.14), the nursing response reflected the appropriate nursing role (primarily to ensure the fluid was administered correctly, within local and professional guidance) and was within the accepted custom and practice for Altnagelvin hospital. Likewise, the nursing response to Raychel's nausea and vomiting was appropriate (section 6.15).

8.0 The Nursing Role and Responsibilities surrounding documentation:

8.1 Clear and accurate record keeping is fundamental to good clinical and professional practice. The body that regulates the practice of Registered Nurses in the UK, the Nursing and Midwifery Council (NMC) gives clear guidance of what is expected of Registered Nurses in regard to record keeping (2004), administration of medicines (2004) (including intravenous fluid administration) and within the Code of Professional Practice (2002).

8.2 Overall, the documentation by the nursing team caring for Raychel appears to be clear and comprehensive. All the necessary documentation, such as an initial nursing assessment, individual care plan and nursing evaluation are present, signed (in electronic form) and dated. Generally, the observation, fluid balance and prescription charts have also been completed appropriately. As previously discussed, I cannot determine the relevance of the entries of 150 in the 'Amt.' column on the fluid balance chart (page 82). Generally fluids are documented by charting the amount received in the past hour in one column and the running total in the next column. Whilst the 'Total' column appears correct, I cannot determine the significance of the entries in the 'Amt' column.

8.3 Where the documentation completed by other professionals was incomplete (such as the unsigned prescription for flagyl noted by SN

Patterson and documented in the deposition of SN Noble on page 341), this was questioned appropriately.

9.0 Overall comments on Raychel's nursing care:

9.1 Although there have been concerns raised about the type and amount of fluid administered to Raychel and the management of her nausea and vomiting, it appears to stem from what was considered to be the accepted 'culture and practice' in managing intravenous fluids in children in Altnagelvin Hospital. Again, these concerns primarily relate to the medical role in 'prescribing' of appropriate type and amount of fluids, rather than the nurses role in administering them.

9.2 Overall the nursing care of Raychel Ferguson appears to be comprehensive, appropriate and performed to a good standard. The nurses appear to have monitored and cared for Raychel following her surgery in an appropriate manner. The documentation is, on the whole, clear and comprehensive.

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